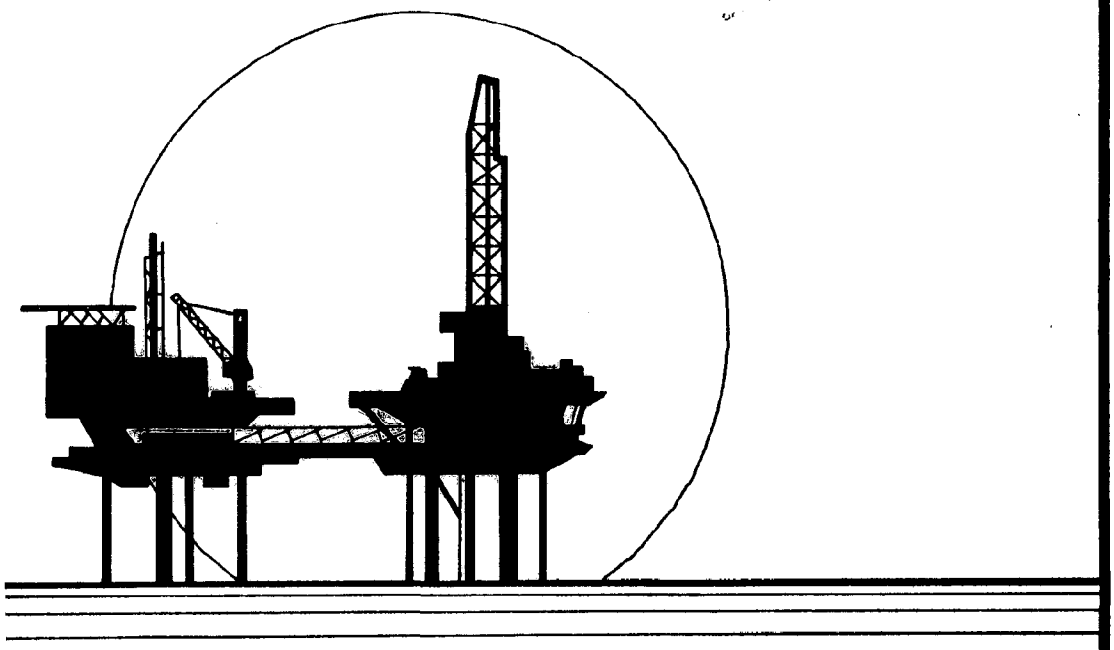
ATTACHMENT 2

Regional Outer Continental Shelf Onshore Facilities Siting Study for West Florida



West Florida Regional Planning Council

WEST FLORIDA REGIONAL PLANNING COUNCIL

COASTAL ENERGY IMPACT PROGRAM

REGIONAL OUTER CONTINENTAL SHELF ONSHORE FACILITIES SITING STUDY FOR WEST FLORIDA

The preparation of this document was financed through a grant from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration in conjunction with the Florida Department of Community Affairs.

Grant No. 82-CE-66-01-00-21-015

April 1983

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

ACKNOWLEDGEMENTS

The literature review, evaluation of oil industry facilities needs, regional onshore impacts assessments and preparation of this document were the assigned work tasks of the environmental staff of the West Florida Regional Planning Council. The success of this work is largely due to the input from the OCS Advisory Commitee and from technical representatives of the oil industry. A great deal of assistance was offered by staff representatives of the Florida Department of Community Affairs, Division of Local Resource management and the Office of Planning and Budgeting, Office of The Governor.

The Planning Council staff extends its sincere thanks to these people who generously extended the staff the benefit of their time and expertise.

A list of the OCS Advisory Committee and other participants is included to recognize their helpful assistance.

Participant	Representing
Larry Anchors	Okaloosa County
Sydney Andrews	Florida Dept. of Agriculture and Consumer Services
Arthur Apfell	Minerals Management Service
Micheelle Armstrong	Pensacola News-Journal
Jim Barkaloo	U.S. Fish and Wildlife Service
Jon Barnes	WKGC Radio
Michelle Beale	Getty Oil Company
Tom Bell, Jr.	West Florida Homebuilders Association
Pat Blackshear	Walton County
William Blaskis	City of Gulf Breeze
Al Borchik	Town of Cinco Bayou
Sylvia Bourke	Citizen
Michael Burke	Pensacola News-Journal
Carolann Bowen	Florida Dept. of Natural Resources
R.J. Broussard	Sohio Petroleum Company
Gary Brown	City of Niceville
E.J. Burgin	Florida Gas Transmission Company

Linda Carden	Town of Jay
Jim Chitwood	Destin Log
Louis Coakley	University of West Florida
Judy Coe	Sierra Club
J.C. Collis	Exxon Company, USA
E.J. Cowan	ASCS
Ted Czupryk	City of Callaway
Grover Davis	Marine Transportation Service
Gloria Dawson	League of Women Voters
Howard Demmig	U.S. Air Force
Mark Dougherty	WOWW Radio
Brian Doyle	Playground Daily News
James Dyehouse	Sierra Club
Bob Echols	Northwest Florida Water Management District
Ralph Edenfield	Florida Division of Forestry
Pete Edwards	Bay County
Sylvia Edwards	DeFuniak Springs Herald Breeze
Patrick Emmanuel	Citizen
Rudy Etheredge	Port of Panama City
Gabriele Gaddis	League of Women Voters
Dick Fancher	Florida Dept. of Environmental Regulation
John Farquhar	Getty Oil Company
M. Fifield	Pensacola News-Journal
Mike Ford	Citizen
Virginia Foster	Audubon Society
John R. Franklin	City of Fort Walton Beach
Shirley Gade	Audubon Society
Peter Gagnon	Gulf Breeze Sentinel
Elizabeth Gauthier	Office of The Governor
Jerry Gerde	Citizen
Earl Gilbert	City of Parker
Wayne Goodson	City of Niceville
Gene Goslin	Southern Natural Gas Company
Joe M. Gregory, Jr.	Getty Oil Company
Philip Griffitts	City of Panama City Beach
Paul Groom	Saint Joe Paper Company
John Hair	Reading and Bates Construction Company
George J. Hall	City of Lynn Haven
Alton Ray Hammond	Town of Century
Virgil A. Harris	Shell Offshore, Inc.
Richard Hatch	U.S. Navy
Wilbur Howell	Florida Division of Forestry
Charles V. Helton, Sr.	City of Freeport
Tom Herbert	T.A. Herbert's Associates
Jon Herring	Amoco Production Company
Cherie Hicks	News Herald
John Higgins	Exxon Company, USA
Robert Holmes	Pensacola Chamber of Commerce
Jennifer Hodnette	City of Pensacola
Jim Howell	Santa Rosa County

Roy Hyatt	Environmental Studies Center
Carlton Jackson	Florida Petroleum Council
Terry Jernigan	Florida Depart. of Community Affairs
Glen Key	Perdido River Soil and Water Conservation District
Roy Kingsmill	City of Callaway
James L. Kirkland	United Gas Pipeline Company
Jeff Kiss	Florida Dept. of Community Affairs
Bob Koncar	City of Valparaiso
Ingrid Kreis	Destin Log
Ingrid Kristensen	WFSH Radio
Linda Lampl	T.A. Herbert's Associates
William Laseter	City of Valparaiso
Timothy Leonard	Five Flags Pipeline
A.C. Littleton, Jr.	City of Panama City
John C. McElhaney	Five Flags Pipeline
W.M. McLean	Walton County
Rick McNutty	Channel 6 TV
Rich McWilliams	Northwest Florida Water Management District
Delores Meleney	DeFuniak Springs Chamber of Commerce
Bill Metzger	Escambia County
Mike Mitchell	Okaloosa County
Jane Moore	Preservation of Destin
James P. Morgan	Citizen
F.D. Musson	Mobil Oil Exploration and Production Southeast, Inc.
Sally Patrenos	Florida Petroleum Council
Philip Payne	Citizen
Bill Peebles	Okaloosa County
Cass Pentecost	Town of Mexico Beach
Fred L. Pryor	Town of Mary Esther
Dick Radford	Midway Water System
David Reinhart	WJHG TV
Joseph Reynes	City of Gulf Breeze
Bruce Richards	City of Milton
Ola Richborg	City of Laurel Hill
Billy Roberts	Bay County
J.M. Ros	Southwest Forest Industries
David Roundtree	Pensacola News-Journal
Russell Rudd	Soil Conservation Service
James Rueff	U.S.S. Lexington
Cynthia Russell	City of Pensacola
Jack Salmon	University of West Florida
David Schaller	Port of Pensacola
Donald Setterberg	U.S. Air Force
Thomas Serviss	Florida Division of Forestry
John Seymour	Southern Natural Gas Company
Jim Sheffer	Santa Rosa Island Authority
Walt Sikes	U.S. Navy
Randy Smith	WEAR TV
Sam Smith	Okaloosa County Pollution Board

Karen Spence	WFSH Radio
Alice Stewart	Citizen
R.W. Thackery	Gulf Islands National Seashore
R. Thomas	U.S. Navy
R.F. Thomas	Gulf Oil Company
Marion Tidwell	Farm Bureau
Doug Topper	Citizen
Sid Verinder	Minerals Management Service
Robert Von Axelson	Agricultural Stabilization and Conservation Service
William F. Wade, Jr.	Town of Cinco Bayou
Muriel Wagner	League of Women Voters
Sally Webb	WJHG TV
George W. Wheeler	Town of Shalimar
Raymond Williams	City of Gulf Breeze
Grey Wilson	City of DeFuniak Springs
Randy Wood	WMBB TV
Gerald Woolard	Escambia County
Erica Woolley	Audubon Society
Lewis E. Zangas	Florida Marine Patrol

West Florida Regional Planning Council Staff Participants

Daniel F. Krumel	Executive Director
D.T. Raynor	Environmental Director
Michael Zeigler	Regional Planner
Helen Clarkson	Research and Clerical Assistance
Leo Doidge	Research and Document Cover Design

A special recognition is extended to Mr. Virgil Harris, Mr. Carlton Jackson, Ms. Elizabeth Gauthier, and Mr. Jeff Kiss for their attention and generous assistance during the completion of this work.

INTRODUCTION

Energy requirements are increasing worldwide. Available supplies of natural gas and crude oil are being depleted at a rate which threatens acute shortages. Alternative sources of energy are being explored by government and industry, however, each alternative requires many improvements in technology to meet energy demands safely.

Current American energy demands are met primarily by domestic and foreign fossil fuels. More than one-half of our fossil fuels are imported. In order for the United States to become independent of foreign oil imports domestic energy sources must be further developed or alternative energy sources must be substituted. Continued dependence on foreign fuel imports will heighten the present energy supply problems. The United States is one of the world's greatest producers and refiners of crude oil and natural gas. Americans are the greatest consumers of these petroleum products. In 1978 the United States consumed approximately 6.9 billion barrels of petroleum, or approximately 29.6 percent of the total world demand. In 1978, oil accounted for 48.5 percent of American energy needs and natural gas accounted for 25.6 percent. Coal and nuclear power contributed much less energy to meet the nation's demand.[1]

No expert can declare the actual origin of petroleum. The "organic" theory of petroleum's origin is the most widely accepted. This theory proposes that crude oil and natural gas are organic minerals formed by the decay and chemical alteration

of the remains of prehistoric flora and fauna.

Petroleum is most often discovered in sediments laid down in ancient oceans. These sediments contain the organic residue of decayed organisms settled and accumulated in layers. As the layers formed they were compressed under the weight of the layers above. Under this pressure, heat was generated which combined with chemical, bacterial and radioactive factors to form the organic matter known as petroleum.

During the time petroleum was being formed loose sands, marine forms and sediments were being formed and cemented into sandstone, limestone and shale. Some sedimentary rock layers were too dense for petroleum or natural gas to migrate slowly through. Other rock layers were less dense and the petroleum and natural gas flowed upward toward the surface because the oil and natural gas are lighter and less dense than water. Wherever a formation of dense nonporous rock lay above a porous layer the upward migration was halted. Natural gas was trapped under the nonporous rock layer and petroleum was trapped beneath the natural gas.

Through the centuries the earth's crust has shifted and folded breaking the sedimentary layers into irregular forms. Traps were created that collected migrating natural gas and oil. Some of these traps are commonly called: faults, salt domes and anticlines. Oil and natural gas are extracted from these traps.

Early oil explorers and geologists learned to closely survey the underground structures and formations where oil and

gas were found. Today oil geologists and other experts use many technical tools to search and find buried petroleum deposits.

During the summer of 1970, oil was discovered near Jay in Santa Rosa County. Production of oil in the three (3) Jay fields accounts for more than 80 percent of Florida's oil produced. Experts have estimated that the Jay oil fields may yield 340 million barrels of oil before depletion early in the twenty-first century.[2]

Development of the Outer Continental Shelf (OCS) resources is intended to have a positive impact on domestic oil and natural gas production to achieve United States energy independence. By holding lease sales of OCS lands, the federal government (Department of the Interior) seeks to encourage domestic exploration, development and production of oil and natural gas.

Offshore operations of the petroleum industry began as extensions of onshore exploration, drilling and production. In the late 1930's seismic surveys had been conducted of coastal marshlands, bayous and shallow bays adjacent to the Gulf of Mexico. Most of the early oil industry activities in areas under water were to extend oil field boundaries and to recover oil from reservoirs already defined onshore.

As offshore operations move into deeper water and more hostile environments, all exploration and production costs increase. Larger petroleum reserves must be discovered to justify the development and production of a new discovery.

Recent federal policy changes have been made to stimulate industry interest in development of the OCS. Under the Outer Continental Shelf Lands Act Amendments, the Department of the Interior, Minerals Management Service (MMS) is charged with administering mineral resource development of offshore areas under federal jurisdiction. The formation of MMS resulted from an effort by the Department of the Interior to improve royalty management of oil and gas lease receipts. MMS is charged with all leasing and resource management functions for the OCS. Some of these functions include: selection of areas for possible leasing, evaluation of potential resource volumes, supervision of exploration activities, management of lease sales, supervision of drilling and production activities and collection of lease royalties. The MMS is second only to the Internal Revenue Service among government agencies in revenue collected for the U.S. Treasury.[3]

In July, 1981 the U.S. Department of the Interior announced its intention to revise and "streamline" the OCS leasing process. The revision has been completed and provides for more OCS terrirory to be leased than ever before. A basic summary of the OCS leasing process includes:

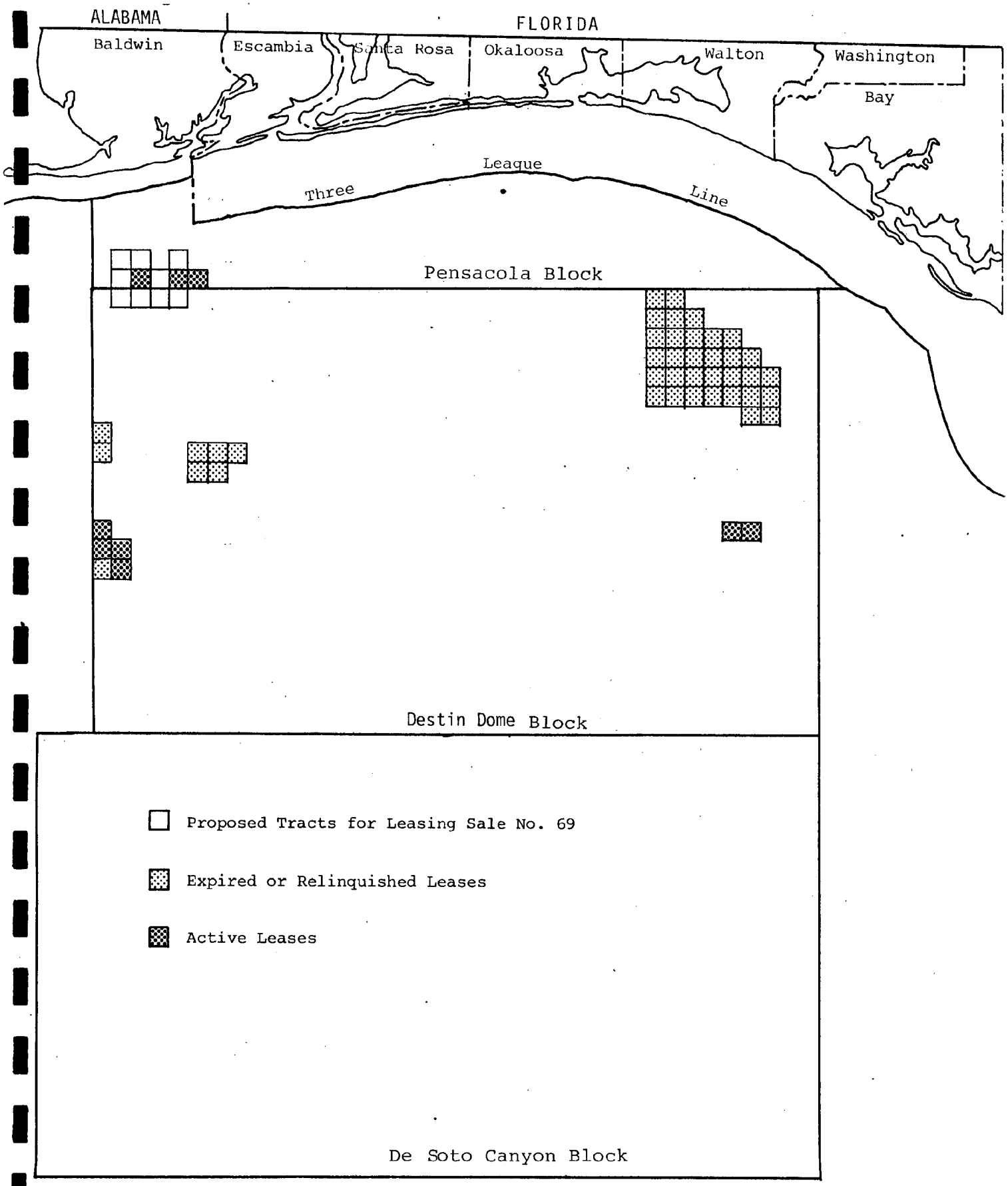
1. the DOI identifies OCS areas which have hydrocarbon potential;
2. DOI issues a call for information and suggestions from the oil and natural gas industry for other areas to be considered for lease;

3. DOI determines which areas are to be considered in the supplemental EIS;
4. DOI completes EIS focused on "potential environmental effects of oil and gas activities in the area proposed for leasing";
5. DOI issues notice of a lease sale;
6. the governor submits comments within sixty (60) days;
7. bids for leases are submitted to DOI;
8. DOI releases a notice of sale and allows for public comment; and,
9. lease sale.

Regional and local agencies can affect a lease sale very little. Local citizens become involved in the OCS onshore facilities siting process after a lease sale had been made and after the oil companies have completed exploratory activities. A summary of the historical OCS lease sales offshore from west Florida is offered in Figure A-1.

Currently, one area of the OCS offshore from West Florida is omitted from lease sales. This area is known as the Eglin Corridor, offshore from Eglin Air Force Base. The area is omitted to minimize military conflicts with OCS activities. This 70 miles wide by 160 miles long area is used by the military for research and testing of missiles and other arament testing (see Figure A-2).

The OCS offshore from the WFRPC area had been a focal point for significant oil industry interest since the early 1970's. Exploratory drilling in West Florida and the frontier offshore from West Florida has been a subject of public controversy



SOURCE: Final Regional Environmental Impact Statement, Gulf of Mexico. Minerals Management Service. January, 1983.

FIGURE A-1
OCS Leases Offshore From West Florida

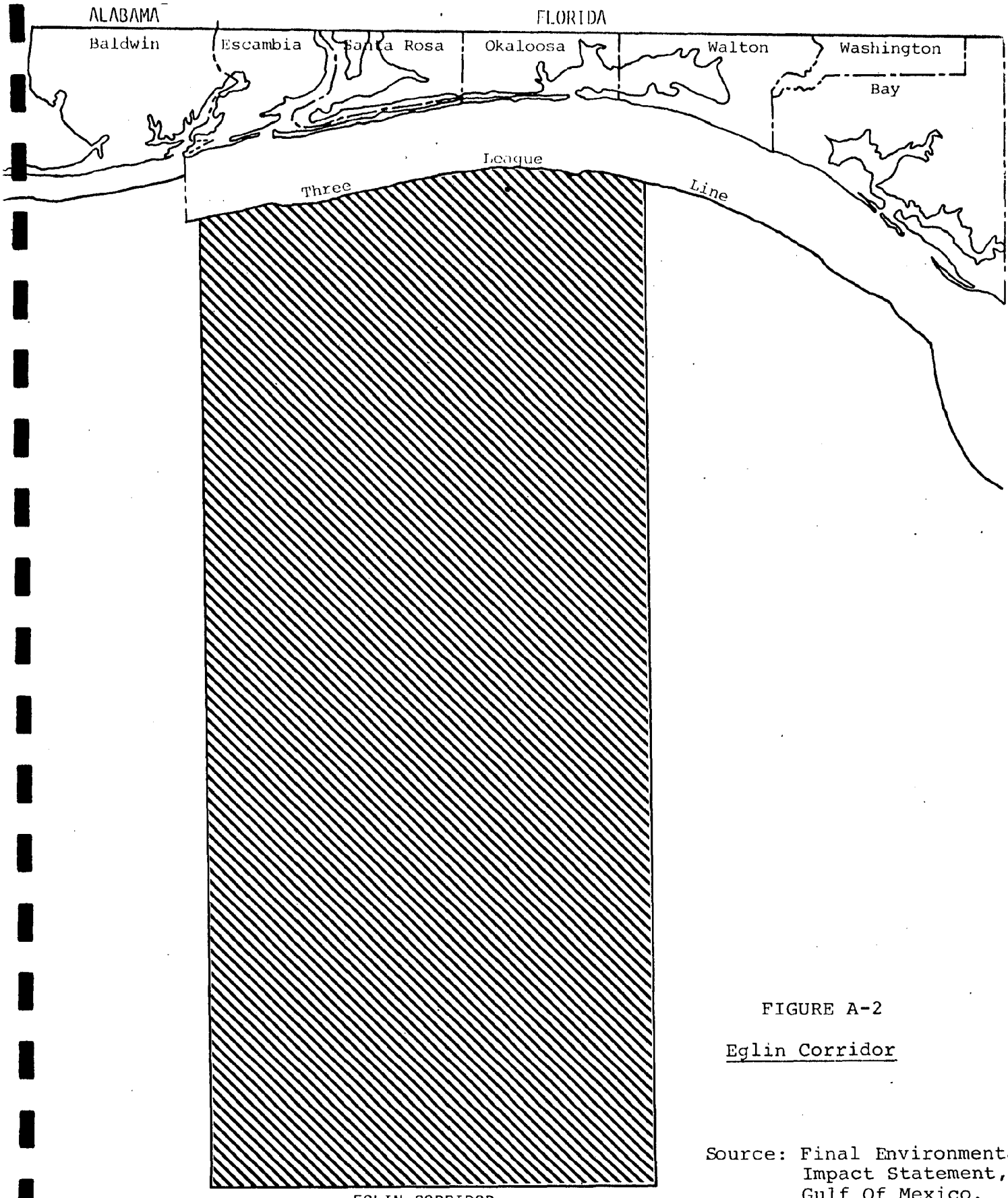


FIGURE A-2

Eglin Corridor

Source: Final Environmental Impact Statement, Gulf Of Mexico. MMS. January,1983.

and concern. Local government representatives and citizens have expressed apprehension concerning exploration and development of the OCS offshore from this region. Major topics of local concern include:

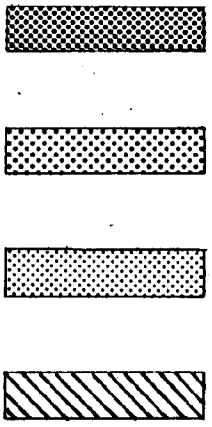
1. locations for oil industry support facilities, such as pipeline corridors and gas treatment facilities;
2. potential increases to population;
3. changes in demand for public services;
4. changes in demand for public facilities;
5. changes in demand for housing;
6. localized inflation rate increases;
7. impacts to fishing and tourism industries;
8. impacts to the mission of the U.S. Air Force and U.S. Navy in West Florida;
9. risk of oil spills or blowouts;
10. impacts to west Florida's economy;
11. environmental impacts, and
12. impacts to public safety.

Three (3) areas of the Gulf of Mexico OCS which may yield oil and/or natural gas which could impact West Florida are: Destin Dome Block, De Soto Canyon Block, and the Pensacola Block (see Figure A-1). Federal, state and oil industry experts maintain that the Destin Anticline and the southwest corner of the Pensacola Block are the most promising of these areas (see Figure A-3). Various oil companies have maintained exploratory interest in lease blocks offshore from West Florida since the early 1970's. Eighteen (18) exploratory wells have been drilled within the Destin Dome area. Although none of these

FIGURE A-3

(facing page)

OCS Resource Development Potential
Offshore From West Florida



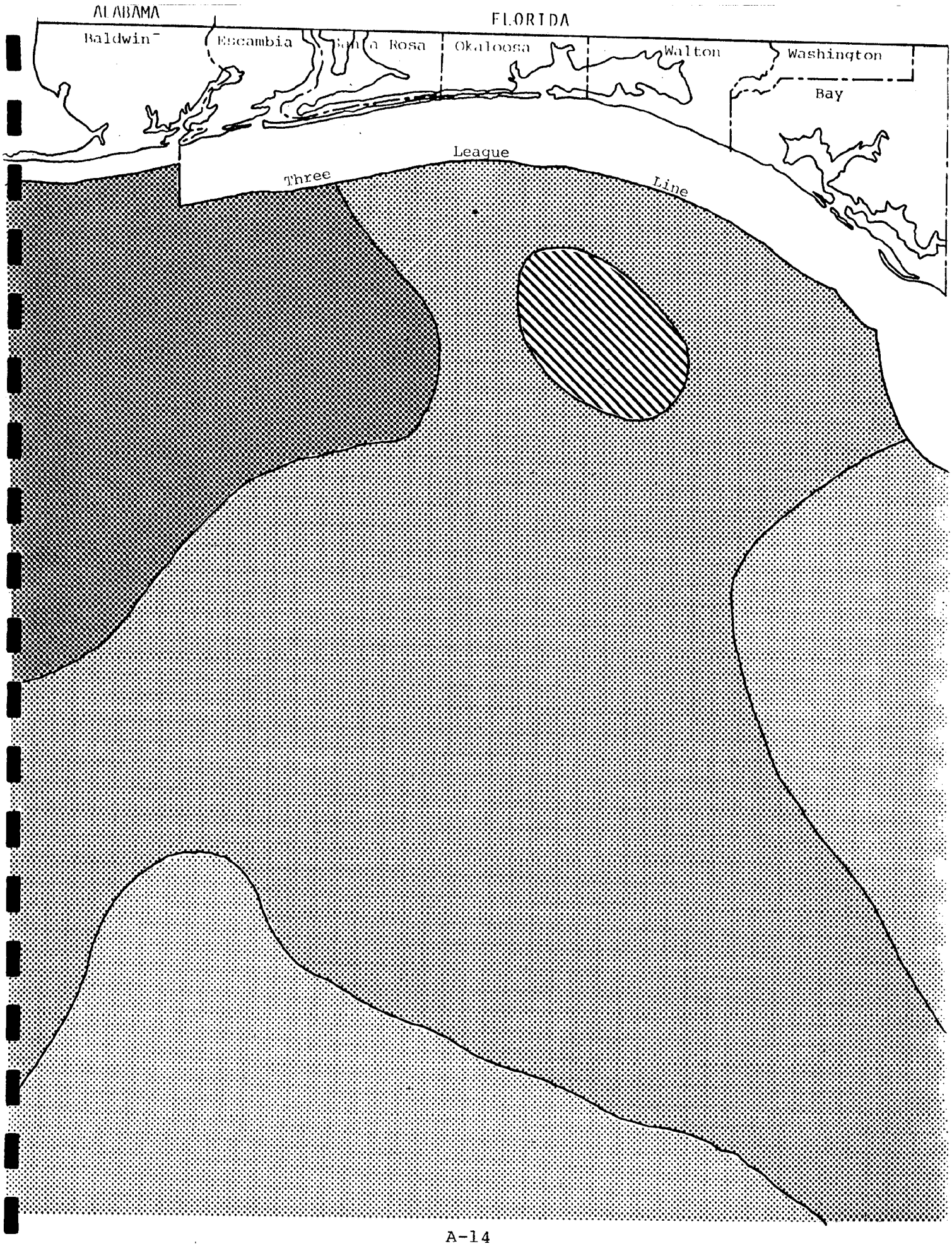
Highest Hydrocarbon Potential

Moderate Hydrocarbon Potential

Least Hydrocarbon Potential

Destin Anticline

Source: Final Regional Environmental Impact Statement, Gulf of Mexico. Minerals Management Service. January, 1983.


ALABAMA
FLORIDA
Baldwin
Escambia
Santa Rosa
Okaloosa
Walton
Washington
Bay
Three
League
Line

wells produced commercial volumes of petroleum or natural gas the MMS continues to judge that a geologic potential for hydrocarbons still exists. MMS proposes that 110 exploration wells may be drilled in the eastern Gulf of Mexico between 1984 and 1990 with five (5) production platforms and ninety (90) production wells during the period 1989-1996. Two (2) pipelines are proposed to landfall in Florida, one (1) is expected in the vicinity of Pensacola or Panama City and the other in the Tampa area.[4]

In consideration of the continued industry interest in both lease sales and drilling operations it is evident that local government representatives and citizens within Region I should continue to consider the potential impacts that may occur from OCS activities. Using funds provided by the Federal Coastal Energy Impact Program (Section 306 of the Coastal Zone Management Act Amendments of 1976) in coordination with the Florida Department of Community Affairs, Office of Federal Coastal Programs; the West Florida Regional Planning Council has completed this OCS Onshore Facilities Study (OCS Study) to evaluate the potential onshore impacts of OCS activities and to assist state and local government representatives and citizens to prepare for and manage any potential impacts. The objectives of this study are:

1. To develop local and regional expertise in understanding and managing OCS facilities.
2. To increase local and regional understanding of the OCS process and opportunities for effective participation.
3. To conduct assessments of possible impacts from OCS activites offshore and onshore.

4. To promote orderly OCS related development within the region by selecting preferred oil industry facility sites before OCS discoveries are made.

This study has been completed to help the state and local communities prepare to influence facility siting and management of impacts. This OCS onshore facilities siting study is not intended to be a technical encyclopedia of every possible action that may be anticipated, but it is intended to demonstrate the critical points that west Floridian's should be aware of regarding OCS oil and natural gas. Other documents are readily available which contain detailed technical information and possible "scenarios" of what might happen. This document cannot serve as a handbook for local government or oil industry representatives to use to make every necessary OCS related decision. The recommendations are offered for events that may never occur, however, contingency plans need to be maintained for any future proposals for onshore facilities.

Because of wide variations in oil and/or gas fields and the individual specific facilities, personnel and operations of these fields, the approach of this OCS Onshore Facilities Siting Study was not to produce a hard and fast output, but to offer quidelines for West Florida's citizens. Today, there is no mechanism to determine if hydrocarbon reserves are located in the OCS offshore from West Florida. The Minerals Management Service's estimate of recoverable oil and natural gas is for the entire eastern Gulf of Mexico. Little disaggregation of this estimate is available for the subplanning areas of the Gulf. To

evaluate the possible onshore impacts of OCS acitivity it was necessary for the study staff to formulate a realisitc estimate of the hydrocarbon resource that could landfall in West Florida. The approach taken to estimate the resource volume was to determine the minimum volume find necessary to justify field development and production costs. This determination was based on oil and natural gas industry technical input.

A second assumption concerns the probability of what type of hydrocarbon reserves could be discovered. The MMS and oil industry technical input strongly indicates that natural gas discoveries are more likely than discoveries of oil.

CHAPTER 1

EXECUTIVE SUMMARY

AND

RECOMMENDATIONS AND CONCLUSIONS

CHAPTER 1

EXECUTIVE SUMMARY AND RECOMMENDATIONS AND CONCLUSIONS

Because the worldwide demand for energy is steadily increasing and because the United States is determined to decrease its energy dependence on non domestic resources, it is inevitable that Florida's offshore Outer Continental Shelf (OCS) will be explored and developed. The nation's need to stimulate domestic production has accelerated the federal OCS leasing process which could accelerate the oil industry's activity in Florida's offshore areas. Although the Minerals Management Service (MMS) received no bids for lease blocks in the OCS areas offshore form northwest Florida in the 8 March 1983 sale, the oil industry contends it does maintain its interest. Federal, state, regional and local concern over possible oil industry impacts in west Florida remain, and certain preparatory actions are needed before any oil or natural gas landfalls in Region I.

This OCS facilities siting study examined the potential impacts of five (5) likely types of OCS-related, onshore facilities and up to seven (7) alternative sites for each type of facility. Due to the proximity of the oil industry facilities in and around Mobile, Alabama, and in Mississippi, Louisiana, and Texas, there is a possibility that a resource discovery may not impact west Florida. This alternative was examined because oil industry technical representative input indicates its viability if a resource discovery is made in

the southwest corner of the Pensacola Block or extreme western magrin of the Destin Dome Block (see Figure A-1).

The West Florida Regional Planning Council staff began the contracted work using the approach developed by the New England River Basin Commission, but found that the scenario approach and format was not adequate for developing an assessment of the potential OCS onshore impacts for West Florida. The method used for completing this OCS Study is basic and relatively uncomplicated. The process followed eleven (11) basic steps/procedures.

1. Literature review/research.
2. Identification of typical oil industry facility needs.
3. Evaluation of regional constraints for OCS facilities siting.
4. Direct technical input from oil industry representatives and public participants.
5. Development of regional assumptions.
6. Selection of alternative facilities sites based on oil industry requirements and local suitability.
7. Formulation of socioeconomic evaluation matrix.
8. Formulation of environmental impact matrix.
9. Evaluation and assessment of the role of federal, state, regional and local regulatory and policy mechanisms.
10. Evaluation of alternative sites for development of specific West Florida recommendations.
11. Conclusions and final report preparation.

RECOMMENDATIONS

Due to a lack of any "real" information concerning the location, type, or volume of a resource discovery, the West Florida Regional Planning Council staff and OCS Advisory Committee were not able to recommend actual sites for all industry needs. However, recommendations have been developed which will serve to assist any future siting decisions to be made when further OCS exploratory activity yields more detailed data. This combination of general and specific recommendations are presented in four (4) different categories. Some recommendations are pertinent to more than one (1) category. The recommendation categories are:

A. Environmental Resources

B. Industry Activities

C. Facilities Siting

D. Public Policy Actions

The following recommendations have been developed to provide a basis for decision makers to evaluate and permit OCS related facilities to locat in this region.

A. Environmental Resources Recommendations

Implementation of certain methods or measures are necessary to minimize any environmental degradation or loss from OCS onshore activities. The adoption and use of these recommendations is a function of the region's elected officials and the staffs that support local governmental processes.

1. Efforts should be made to employ an environmental quality

(air, water, and groundwater) and safety monitoring program prior to and during the construction and operation of an OCS facility site.

2. Facility sites should not be located in areas that are environmentally sensitive, or where environmental quality is stressed prior to an OCS facility siting.
3. OCS facility sites should be located away from marine or estuarine meadows.
4. Efforts should be made to retain natural vegetation, where feasible, at an OCS facility site.
5. OCS facilities (service bases and pipelines) should be installed with blowout or pressure activated shutoff devices whereever located in or near environmentally sensitive areas or populated areas.
6. Efforts should be made to minimize any oil industry activity impacts in nearshore marine and estuarine areas.
7. Efforts should be made to mitigate for any habitat loss by reestablishment of a comparable habitat at an alternate location.
8. facility sites should contain an onsite stormwater/drainage retention/detention area.
9. Any approved discharge from a retention/detention system should be accomplished through natural vegetated areas and not directly into open estuarine or marine waters.
10. Efforts should be made to employ the best practicable technology to control dust or any other suspended particles in the air during construction and operation phases of any ocs onshore facility.

11. Efforts should be made by all OCS vessels to operate within defined navigation areas in a manner not to generate wakes or otherwise increase turbidity or to otherwise impact shellfish beds, marine grass beds or other sensitive estuarine areas.

12. Effort should be made to employ sediment control techniques and to avoid actions that might promote erosion.

13. All solid waste products, domestic and industrial, should be disposed of at approved, permitted solid waste disposal areas or resource recovery facilities.

14. Any hazardous waste (chemical or physical) should be disposed of at a authorized disposal site, and the facility operator should be notified in advance of the characteristics and composition of the waste and the time of its transport.

15. Efforts should be made to eliminate any thermal discharge to estuarine or other temperature sensitive habitats.

16. Facility sites that will generate high noise levels should be located, where feasible, in areas to minimize noise impacts.

17. Efforts should be made for facility related transportation to avoid all noise sensitive areas.

18. High noise level activities should be limited to daylight hours if surrounding land use will be impacted.

19. Any pipeline landfall should be made by horizontal drilling so as to not disturb the beach dune system

B. Industry Activity Recommendations

When an industry establishes a facility onshore in west Florida certain measures should be implemented to minimize any degrading impacts due to facility operations. Necessary management measures described prior to development are more readily incorporated by the industry and therefore less costly to implement.

1. OCS facility site construction should be staged to minimize the amount of area under construction at any one time.
2. OCS facility sites that are related or complementary should be located in close proximity to each other.
3. Efforts should be made by industry representatives to conduct ongoing technical and public presentations to educate and inform about OCS activities and related onshore operations.
4. Efforts should be made by the OCS industry to provide local labor training programs and to employ from the existing labor force.
5. Efforts should be made to maintain natural vegetation, grass or other ground cover (e.g. mulching, sodding, etc.), on any unused areas of an OCS facility site.
6. Efforts should be made to preserve any wetland areas that may be a part of or adjoining an OCS facility site. These areas should be incorporated into the site's drainage system.

7. Efforts should be made to minimize dredging, bulkheading or other engineered disturbance activities. Procedures such as "jack and bore" to cross roads and horizontal drilling to cross barrier islands and rivers should be emphasized to minimize dredging.
8. OCS facility site maintenance dredging should employ turbidity devices and be conducted at a time when impacts to the surrounding environment will be minimized (i.e., winter).
9. OCS facility site operation and maintenance procedures should be conducted at times to minimize any negative impacts to flora, fauna and environmental quality (i.e., cross rivers and streams during low flow).
10. OCS facility sites should maintain a drainage system for stormwater and for spillage that drains to an onshore retention area.
11. OCS facility sites should employ other best management practices where onsite retention/detention is not viable (e.g., grassed swales, grading, shallow depression retention, rooftop retention, etc.).
12. OCS facility sites for fuel servicing should include fuel spill containment equipment to be used whenever any fuel or product is spilled.
13. Efforts should be made to insure that spill containment devices are readily available at any product transfer site.
14. Any discharge or disposal from OCS facilty sites or

vessels into estuarine or other nearshore waters should be prohibited.

15. Efforts should be made to designate and use upland diked disposal sites for any spoil generated during maintenance dredging needed for an OCS activity.
16. OCS facility sites should be as hurricane proof as possible.
17. Facility sites for OCS crew and supply boats should be designed to allow the vessels to use onshore power rather than onboard generators at dockside.
18. Efforts should be made to transport OCS products by pipeline, where feasible.
19. Efforts should be made to incorporate blow out or shutoff divices at product transfer points.
20. Onshore facilities should be constructed with fan-cooled equipment to minimize impacts on water resources.

C. Facilities Siting Recommendations

Onshore facilities are necessary for OCS operations. Specific methods and actions should be employed prior to and during construction of any OCS facility to minimize any negative impacts. Decisions for siting industry facilities should incorporate issues of public concern regardless of an absence of existing regulatory provisions. These recommendations should be considered by all levels of government involved in facilities siting, as well as the oil industry.

1. OCS facility sites that are not water dependent should be located as far as feasible from the region's estuarine water areas.

2. OCS facility sites should be located in areas where needs can be accomodated by existing onshore facilities, where feasible (e.g., existing docking facilities).
3. OCS facility sites constructed in flood prone areas should include provisions for accomodating hurricane force wind and water surges.
4. OCS facility sites should be located in areas that will not impact rare, endangered or threatened species.
5. OCS pipelines should be located away from environmentally sensitive areas and be placed in previously disturbed (e.g., rights-of-way) areas, where feasible.
6. OCS right-of-way areas should be no wider than necessary to minimize impacts.

D. Public Policy Action Recommendations

Local elected officials, federal agancy personnel, state agency personnel and regional government officials must be involved in any onshore activities to support OCS development by industry. Representatives of governments and government agencies are charged with making the decisions that will ultimately determine what industry activities take place and what the subsequent impacts will be.

1. Efforts should be made by federal, state, regional and local governments to promote the development of OCS resources in a coordinated, environmentally sensitive, and responsive manner.
2. Efforts should be made by federal and state governments

to promote research and development of techniques that will further minimize the negative impacts of OCS related activities.

3. Efforts should be made by regional and local governments to stay aware and become involved in OCS related real issues affecting the regional and local environment and economy.
4. Efforts should be made by state and local governments to prepare for regulatory and fiscal needs prompted by OCS onshore activities.
5. Efforts should be made by local governments to incorporate policies and provisions for OCS related facilities and impacts into all comprehensive planning efforts.
6. OCS onshore facilities should be considered to have regional impact and should be reviewed and permitted by regional and local clearinghouse procedures.
7. Efforts should be made by gas utilities in Region I to guide development of OCS onshore facilities so that the region's residents obtain optimum benefit from regionally produced energy resources.

CONCLUSIONS

This OCS facility siting study examines probable industry facility needs and the impacts that may be presented within the West Florida region and offers guidance for federal, state, regional and local decision makers to prepare for these impacts. During the preparation of this study certain conclusions were reached. Overall conclusions pertinent to this study are summarized as follows.

Petroleum fuel (oil and natural gas) has been determined to be a resource of vital importance to the United States and is therefore subject to national control. Federal government policy has established that domestic petroleum fuel reserves will be explored and developed to the greatest possible extent. The Outer Continental Shelf of the United States has been viewed for extensive and systematic resource development and is the subject of the U.S. Department of the Interior's OCS Oil and Gas Leasing Program.

Although the U.S. Department of the Interior Minerals Management Service and Geological Survey have been charged with estimating the oil and gas reserves in the OCS, including the Gulf of Mexico OCS; the reserves of natural gas and oil are not known. Some technical sources report that the world is depleting its rapidly declining supply of petroleum fuels, while other technical experts claim that development of vast new reserves is imminent. The same disagreement occurs between experts concerning the resource reserves in the Gulf of Mexico OCS.

The State of Florida has maintained: "Florida supports OCS operations for leasing, exploration and production, providing that consideration is given to our unique coastal environment."[1] The state has pledged close supervision of any OCS activities and has conscientiously fulfilled its pledge. Florida filed (14 September 1982) a petition for judicial review of Secretary of the Interior James Watt's approved Five-Year Outer Continental Shelf Oil and Gas Leasing Program. The petition was filed because the state was not satisfied that its "unique coastal environment" has been adequately provided for in the Department of the Interior leasing program.

Although there is a need to determine and prepare for OCS related facilities in west Florida there is an uncertainty about exactly when any such facilities may be expected to occur. The U.S. Department of the Interior has streamlined the OCS federal lease sale process to promote and accelerate OCS exploration. However, at the same time the process was revised the worldwide supply of petroleum fuels was at a surplus level. The current surplus of petroleum fuels has precipitated a decrease in the price for the fuels. This surplus and reduced price combination has caused the oil industry to be less interested in OCS exploration. It is not cost effective for the oil industry to continue to spend funds for lease options and expensive exploration activities at a time when product volumes are at a surplus level and when domestic supplies cost the same or more than foreign supplies. Oil companies are interested in selling their product as soon as possible and maintain it is too costly

to "sit on" a resource find while waiting for a more favorable market.

Another factor that makes it difficult to estimate when onshore facilities for OCS activities will be needed is the time periods involved in the lease sale process. Once a leasing schedule has been developed by MMS, it requires two and one-half years to three and one-half years to complete the leasing process. After the lease process is completed the lease holder has five to ten years to conduct exploration drilling within a lease block.

Even if a lease block were sold today, local citizens and government representatives would have ample time to complete any necessary planning efforts and to implement any necessary regulations or management controls.

"Remaining recoverable reserves of oil and gas in the Gulf of Mexico Outer Continental Shelf and Continental Slope have been estimated to be 2.90 billion barrels of oil and 39.8 trillion cubic feet of gas, as of December 31, 1981."[2] MMS further estimates that the recoverable oil and gas resources of the eastern Gulf could be:

1. Most Likely Find: 123 Million Barrels of Oil
   157 Billion Cubic Feet of Gas

OR

2. Maximum Find: 980 Million Barrels of Oil
   1.26 Trillion Cubic Feet of Gas[3]

MMS states that "over 90% of the gas resources are estimated to be discovered in subplanning area E-1" which provides an estimate of:

1. Most Likely Find: 31 Million Barrels of Oil
147 Billion Cubic Feet of Gas

OR

2. Maximum Find: 242 Million Barrels of Oil
920 Billion Cubic Feet of Gas

These MMS estimates have not been disaggregated into subplanning areas which corresponded to the West Florida Regional Planning Council OCS facilities siting study boundary. Using input supplied by four (4) different oil industry representatives the study staff prepared an estimate of the minimum resource that would justify the cost of developing a production field in the OCS offshore from West Florida. This minimum volume is estimated as 100 million cubic feet of gas per day and 10 thousand barrels of oil per day.*

It has been concluded, for this study, that two (2) areas of the OCS are more likely to yield a resource find that could impact Region I. The two (2) areas are:

1. Destin Anticline
2. Southwest corner of the Pensacola Block and western margin of the Destin Dome Block (see Figure A-1).

The MMS has determined that the only "high resource potential" in the eastern Gulf of Mexico in an area south of Escambia and Santa Rosa Counties. Currently there are seven (7) active leases in this area. It is likely that any resource discovery made in this area will be transported to Alabama rather than to Florida.

*for a field life of seven (7) years.

If a resource discovery is in the OCS offshore from West Florida it is very likely that the product will be transported to shore in a pipeline. The State of Florida has developed a stipulation that disallows any other transportation system (e.g. barge or tanker ship) unless a pipeline is not economically feasible. If a discovery is made that would yield less than 100 million cubic feet of gas per day or 10 thousand barrels of oil per day, a pipeline would not be cost effective, therefore, another transportation system would be required. Oil produced at a rate of less than 10 thousand barrels per day may be tankered ashore, while gas produced less than 100 million cubic feet per day might not be produced.

Based on input offered by three (3) oil company representatives it has been assumed that if a pipeline is to landfall in West Florida it will be sixteen (16) inches in diameter. Such a pipeline is designed to transport more than a minimum volume discovery. Most pipelines that landfall on the Gulf Coast are less than twenty (20) inches in diameter.

While it is not possible to detail exact locations for all oil industry facility sites it is possible to offer seven (7) potential sites for an OCS pipeline landfall. Related industry facilities would be located in close proximity to a pipeline landfall. The seven (7) potential landfall sites are:

1. A1 - Perdido Key (Escambia County) in the vicinity of Highway 292 and the Intracoastal Waterway Bridge (see Figure 5-3).
2. A2 - Santa Rosa Island/Gulf Breeze (Santa Rosa County)

in the vicinity of the Santa Rosa County and Okaloosa County line (see Figure 5-3).

3. A6 - Panama City Beach (Bay County) in the vicinity of the intersection of Highway 79 and U.S. Highway 98 (see Figure 5-3).
4. A7 - Mexico Beach (Bay County) between Tyndall Air Force Base and Mexico Beach (see Figure 5-3).

If two (2) resource discoveries were made, one (1) close to Pensacola and one (1) close to Mexico Beach, it is possible that two (2) pipeline landfalls could occur, however, such an occurance is not an assumption for this study.

MMS and oil industry experts state natural gas has been concluded to be the most likely resource find in the OCS offshore from West Florida. The resource finds in Jay, Florida and in Mobile Bay, Alabama have come from the geologic formation called "Smackover". This same formation is the likely source for any future find in the OCS offshore of Region I. The Smackover formation is producing "sour" natural gas or gas that contains hydrogen sulfide, therefore, a gas treatment facility will be necessary to remove the hazardous hydrogen sulfide. The most suitable sites for gas treatment facilities in West Florida are recommended as:

1. C1 - Southwest Escambia County (see Gigure 5-3).
2. C2 - Gulf Breeze Peninsula/Garcon Point (Santa Rosa County)(see Figure 5-3).
3. C3 - Holley/Navarre vicinity (Santa Rosa County) (see Figure 5-3).
4. C6 - West Bay (Bay County) (see Figure 5-3).

The onshore support or service base is the first onshore facility that would be located to accomodate OCS activity in West Florida. Factors that are considered when locating an onshore support base include:

1. land availbaility and surrounding land use;
2. waterfront access;
3. access to the Gulf of Mexico;
4. access to rail and road transportation;
5. availability of support services, e.g. potable water, fuel, and communication facilities; and,
6. potential for flooding and hurricane damage.

The most suitable sites for onshore support bases are recommended as:

1. B1 - Bayou Chico Industrial Park (Escambia County) (see Figure 5-3).
2. B7 - Southwest Forest Industries (Bay County) (see Figure 5-3).

Although oil is not likely to be discovered, another onshore oil industry facility that has been considered for West Florida is an oil barge terminal. Such facilities already exist and may be expanded or modified to accomodate hydrocarbons discovered in the OCS offshore from West Florida. An oil barge facility would be more likely to be needed if an oil find is made which would generate less that the minimum volume of oil to justify a pipeline. In such an event, oil would be loaded onto barges at the production platforms and shipped to an oil barge terminal for storage and transshipment. Factors considered

hydrocarbon resources discovered in the OCS offshore from West Florida. An oil barge facility would be more likely to be needed if an oil find is made which could generate less than the minimum volume of oil to justify a pipeline. In such an event, oil would be loaded onto barges at the production platforms and shipped to an oil barge terminal for transshipment. When sizing and locating an oil barge terminal factors examined are:

1. rate of oil production;
2. size of barges to be used to ship oil;
3. frequency of crude oil deliveries to be made from the terminal to an oil refinery;
4. crude oil storage capacity needed if barge traffic is interrupted;
5. flood and hurricane exposures;
6. access to intracoastal waterway, rail and road transportation;
7. proximity to existing petroleum facilities;
8. land availability, and surrounding land use;
9. soil suitability for staorage tanks; and,
10. distance from oil and gas separation facilities and crude oil refineries.

The sites evaluated to be most suitable in West Florida for a potential oil barge terminal are:

1. D2 - Pensacola Bay (Escambia County), and
2. D5 - St. Andrews Bay (Bay County)

(see Figure 5-3).

The last type of onshore oil industry facility considered for

West Florida is a natural gas compression and metering facility. These facilities are needed to transport and measure any natural gas produced from the OCS. The need for and the size of these facilities depends on how much pressure the natural gas has at the OCS well, the distance from the production wells to the onshore interstate transmission pipeline and the pressure maintained in the interstate pipeline. These facilities will be located along the onshore pipeline corridor connecting the interstate transmission pipeline and the OCS submarine pipeline, therefore, the siting of these facilities is dependent upon where the pipeline corridor is constructed.

Two metering stations will be needed, one (1) on the offshore production platform and the other along the onshore pipeline. These facilities may easily be located at the points of interconnection between the OCS pipeline and the onshore transmission pipeline. Six alternative sites (E1-E6) are summarized in Figure 5-3.

Any needed gas compressor facility is likely to be sited at the gas treatment facility or at the point of interconnection between the OCS pipeline and the onshore transmission pipeline. The sites that have been determined to be most suitable for a gas compressor and metering station are (see Figure 5-3):

1. E1 - United Gas Pipeline Terminal (Escambia County)
2. E2 - Juniper Creek Compressor Station (Santa Rosa County)
3. E5 - Choctwhatchee River Compressor Station (Washington County)
4. E6 - Connection to Panama City lateral pipeline at

Bayou George (Bay County)

OCS related oil industry facilities that were evaluated for this study, but have been determined to be unlikely to locate in West Florida include:

1. drilling mud companies;
2. wellhead equipment companies;
3. platform fabrication yards;
4. separate platform installation service base;
5. cement companies;
6. permanent pipe watering facility;
7. marine terminal;
8. oil refineries; and,
9. petrochemical facilities.

The eastern portion of the Destin Anticline has been offered for lease and exploratory wells have not discovered commercially producible volumes of hydrocarbons. Due to the U.S. Air Force mission at Eglin Air Force Base an area of the Gulf of Mexico known as the Eglin Corridor has been excluded from lease sales. The Eglin Corridor exclusion has prevented any industry exploration of the western portion of the Destin Anticline. The U.S. Department of the Interior and the U.S. Department of Defense are currently involved in discussions to determine if the western portion of the Destin Anticline can be explored by using lease stipulations or other mechanisms to allow industry to explore.

CHAPTER 1

Footnotes

1. Graham, Robert, Governor, State of Florida. Letter to Cecil Andrus, Secretary of the Interior. 7 September 1979.

2. U.S. Department of the Interior, Minerals Management Service. Estimated Oil and Gas Reserves, Gulf of Mexico Outer Continental Shelf and Continental Slope. December 1981.

3. U.S. Department of the Interior, Minerals Management Service. Final Regional Environmental Impact Statement, Gulf of Mexico. January 1983.

CHAPTER 2

ASSUMPTIONS FOR EVALUATING OCS ONSHORE IMPACTS

CHAPTER 2

ASSUMPTIONS FOR EVALUATING OCS ONSHORE IMPACTS

Oil and natural gas discoveries in the eastern Gulf of Mexico have had very little impact on any part of West Florida. Previous discoveries have produced onshore impacts in other states, but none in Florida's Planning Region I.

In the absence of discoveries of commercially producible volumes of hydrocarbons in the Destin Dome or De Soto Canyon, it has been impossible for the Mineral Management Service (MMS), U.S. Geological Survey (USGS) or oil industry experts to predict the potential yield of the geological formations of the eastern Gulf of Mexico or the resulting onshore impacts.

The study is not able to offer exact figures for volumes of oil and/or natural gas finds nor exact numbers of jobs, or the exact number of dollars that may be spent locally by the oil industry. For this study, onshore requirements for OCS development have been determined based upon existing, available data and certain assumptions.

The formulation of the basic assumptions for this OCS onshore facility siting study was done with direct input from ten (10) oil and gas industry representatives, and other pertinent input. Because there is no readily available or approved mechanism for communication between the oil companies and local public agencies attempting to project oil industry activity, the WFRPC staff set out to develop a mechanism to receive input from oil company representatives for this study. Fortunately, the oil industry

representatives were willing to provide assistance to the staff to complete this study. No oil industry was able to offer confidential or corporate priority information, nor were the companies willing to be quoted directly in this study.

The WFRPC was able to make contact and receive input from key personnel of the following representatives of the industry:

1. Amoco Oil Company
2. Exxon Corporation
3. Florida Gas Transmission Company
4. Getty Oil Company
5. Gulf Oil Company
6. Mobil Oil Exploration and Producing, Southeast, Inc.
7. Shell Offshore Inc.
8. Sohio Petroleum Company
9. Southern Natural Gas
10. United Gas Pipeline Company

Other pertinent input was received for these assumptions from representatives of:

1. Eglin Air Force Base
2. Florida Department of Community Affairs
3. Florida Petroleum Council
4. Minerals Management Service of the U.S. Department of the Interior
5. Office of the Governor of Florida
6. Port of Panama City
7. Port of Pensacola
8. Reading and Bates Construction Company
9. St. Joe Paper Company

I. Assumption 1 - OCS Resource Estimate

One major assumption formulated for this study concerns the estimate of recoverable oil and/or natural gas in the eastern Gulf of Mexico. In its Final Regional Environmental Impact Statement, Gulf of Mexico, the MMS offers two (2) scenarios for oil and gas finds in the eastern Gulf OCS: 1) most likely find, and 2) total find. The MMS estimates are:

1. most likely find: 123 million barrels of oil
   157 billion cubic feet of gas

and

2. total find: 980 million barrels of oil
   1.26 trillion cubic feet of gas

MMS projects that only twenty-five percent (25%) of the estimated oil deposits and ninety percent (90%) of the natural gas would impact Florida Planning Region I (West Florida). Therefore, the MMS estimate of the volumes of hydrocarbons that could offset West Florida is:

1. most likely find: 31 million barrels of oil
   147 billion cubic feet of gas

and

2. total find: 242 million barrels of oil
   920 billion cubic feet of gas

The assumption of the volume of hydrocarbons to be discovered was further defined by considering a minimum volume find of oil and/or natural gas that would justify the oil industry's capital expenditures for development, production, transport and processing. The oil industry input agreed that a minimum volume of 100 million cubic feet of gas per day and/or more than 10 thousand barrels of oil per day for a field life of seven (7) years would

be required to justify OCS development costs offshore from West Florida. Any smaller volume find might be taken, but would not be transported by pipeline and therefore, would most likely not landfall in West Florida.

II. Assumption 2 - Potential Resource

An assumption of what type of hydrocarbon resource may be discovered offshore of Planning Region I is based on the previous and continuing oil industry experience onshore and offshore of West Florida.

The Jay oil field is producing oil and natural gas from a geological formation known as the "Smackover". The current oil industry activity in Mobile Bay has yielded commercially producible volumes of natural gas from the same geologic formation. The "Smackover" formation also extends into the Gulf of Mexico. To date, eighteen exploratory wells have been drilled into the "Smackover" formation in the Destin Dome portion of the OCS (see Table 2-1). Each of these eighteen (18) wells were drilled to depths which would more likely yield natural gas than oil. If a hydrocarbon resource is discovered below 17,000 to 19,000 feet it is generally natural gas because the temperature at that depth modifies oil into gas.

The natural gas discovered in the "Smackover" formation in Jay and Mobile Bay contains hydrogen sulfide and is, therefore, said to be "sour". Hydrogen sulfide is corrosive and hazardous which makes it less desirable and more costly to produce and transport than gas without hydrogen sulfide ("sweet" gas).

TABLE 2-1

Exploratory Wells Drilled In The Destin Dome

Lease Block No.	Lease No.	Operator	Well No.	NID*	Proposed Bottom Depth
617	2463	Zapata	1	4-76	10,500
360	2468	Gulf	1	1-75	21,000
250	2472	Exxon	1	12-74	11,000
251	2473	Chevron	1	10-74	12,000
205	2479	Exxon	1	6-74	7,000
207	2480	Exxon	1	6-74	7,000
162	2486	Exxon	1	6-74	7,000
162	2486	Exxon	2	8-74	12,000
162	2486	Exxon	3	3-75	19,000
163	2487	Exxon	1	6-74	7,000
166	2490	Sun Oil	1	8-74	19,000
118	2492	Exxon	1	6-74	7,000
118	2492	Exxon	2	12-74	7,500
119	2493	Amoco	1	11-74	12,000
119	2493	Amoco	2	11-74	12,000
31	2502	Amoco	1	6-77	?
529	3888	Shell	1	11-79	19,450
563	3890	Sohio	1	8-81	21,500

*Notice of Intent to Drill

Source: Mineral Management Service, Personal Communication

MMS oil industry technicians and data from existing production wells indicate that high sulfur, "sour" gas is more likely to be found offshore of Florida than "sweet" gas or oil.

III. Assumption 3 - Potential OCS Hydrocarbon Resource Sites

Based on data presented in the MMS Final Regional Environmental Impact Statement, Gulf of Mexico and responses from the oil industry it is assumed that there are two (2) areas of the eastern Gulf of Mexico which are more likely to yield hydrocarbons than other OCS areas offshore of West Florida. The two (2) areas which are assumed to be potential locations of OCS resource discoveries are:

1. Destin Anticline

   This area of the Gulf of Mexico OCS is located approximately ninety-five (95) miles south of the Okaloosa County community of Destin. This area is in the Destin Dome Block of the OCS.

2. Southwest Corner of Pensacola Block

   One area that MMS has projected as having a high resource potential for hydrocarbon reserves is the area which includes the southwest corner of the Pensacola Block and the western margin of the Destin Dome Block. The center of this area in the OCS is located approximately thirty-five (35) miles south of Gulf Breeze. There are currently seven (7) active active leases in this area of the OCS. Two (2)

unsuccessful exploratory wells have been drilled here.

IV. Assumption 4 - Transportation of OCS Reserves

If a hydrocarbon reserve is discovered in the OCS offshore from West Florida there are assumed to be only two (2) likely transportation mechanisms for the resource to reach onshore facilities. The two (2) mechanisms are:

1. pipeline
2. tanker vessel or barge

If more than a minimum resource find is made, it is assumed that industry will construct a sixteen (16) inch diameter pipeline to onshore facilities. The diameter of the pipe for the pipeline has been selected based on technical input from the oil industry representatives.

Oil industry representatives maintain that a sixteen (16) inch diameter pipeline would be adequate for the minimum discovery (100 million cubic feet of gas per day or more than 10 thousand barrels of oil per day). Such an OCS pipeline could transport more than the minimum volume find.

There is a possibility that if a resource discovery is made in the western portion of area 2 of Assumption 3 that the resource would be transported to Alabama, therefore, Florida would experience no onshore impacts.

A second transportation assumption is that if a volume of 10 thousand barrels of oil per day or less is discovered in the

OCS the cost of an OCS submarine pipeline would not be cost effective. In such a discovery the oil would be loaded onto tanker vessels at offshore mooring sites and then shipped directly to a refinery. There are no refineries in West Florida and it is assumed there will not be any located here, therefore, tankered oil would not impact West Florida directly. Although the State of Florida has taken a posture that all OCS hydrocarbon reserves should be transported by pipeline, the state's transportation stipulation would permit surface tankering of oil if a pipeline is not cost effective.

V. Assumption 5 - OCS Pipeline Landfall

The determination of the actual route an OCS pipeline might follow to landfall is dependent on where the resource is discovered. The key determining factor for a pipeline route is cost. A sixteen (16) inch OCS pipeline costs 1.2 million dollars per mile.[1] Due to this high cost factor the oil industry seeks the shortest distance for a OCS pipeline.

To propose OCS pipeline routes the study staff located potential landfall sites based on capital cost factors, environmental suitability and distance from landfall to existing onshore transmission pipelines.

Due to the natural function, environmental quality or physical character, five (5) areas of the coast of West Florida were assumed to be inappropriate or unacceptable for OCS pipeline landfall. These areas are:

1. Perdido Key between the Florida/Alabama State Line and a point west of the Perdido Key Bridge on Highway 292

This barrier island and the associated estuarine system is highly sensitive to disturbance. A pipeline route would involve approximately fifty-three (53) miles from a point of landfall to an existing intrastate pipeline. If located in this area the pipeline would be required to cross Perdido Bay or an alternate route involving the crossing of several streams.

2. Perdido Key between the Perdido Key Intracoastal Waterway Bridge and Pensacola Pass

This portion of the barrier island is also sensitive to disturbance. A major part of this eastern end of Perdido Key is part of the Gulf Islands National Seashore and the site of Fort McRae, a historical and archaeological site. The distance for a pipeline to connect to a gas transmission facility is approximately twenty-four (24) miles.

3. Santa Rosa Island from Pensacola Pass to a point two (2) miles west of the Santa Rosa/Okaloosa County Line

North of this barrier island is the Pensacola Bay system and the Port of Pensacola. The bottom of the bay system contains hazardous substances

and the bay receives heavy waterborne traffic. To route a pipeline across this bay system would be very costly.

4. The Gulf Coast from a point approximately four (4) miles east of the Santa Rosa/Okaloosa County Line eastward to the Walton/Bay County Line

North of this area is the Eglin Air Force Base. The Air Force has stated that only existing right-of-ways may be used for a pipeline route and that a gas pipeline would adversely affect the mission of Eglin Air Force Base.[2] A pipeline routed through this area would require a submarine pipeline across Choctwhatchee Bay.

The area between Choctwhatchee Bay and the Walton/Bay County Line is the Point Washington Wildlife Management area which may be crossed only if no other alternative is satisfactory.[3] If it was necessary to cross the Point Washington Wildlife Management area; ten (10) major waterways, including the Intracoastal Waterway and the Choctwhatchee River would have to be crossed by the pipeline. These required crossings would be very costly.

5. The Gulf Coast from between Highway 79 in Bay County and a point approximately four (4) miles west of the Bay/Gulf County Line

A pipeline route would have to cross the Saint Andrews Bay System and the metropolitan area of

Panama City. An alternate route through Tyndall Air Force Base would adversely impact the mission of the air base.[4]

After the above areas were identified as unsuitable for a pipeline landfall the staff examined the remainder of the coast of Planning Region I for suitable landfall sites. Based on oil industry input it is assumed that four (4) pipeline landfall sites are suitable. The sites assumed to be serviceable are:

1. Perdido Key in the vicinity of the Perdido Key Intracoastal Waterway Bridge and Highway 292

   If a pipeline landfalls in this area there is a distance of approximately fifty-three (53) miles from the point of landfall to a connection with Florida Gas Transmission Company's interstate gas transmission system (see Figure 5-3).

2. Santa Rosa Island in the vicinity of the Santa Rosa/ Okaloosa County Line

   A landfall for an OCS pipeline in this area would be approximately forty (40) miles from Florida Gas Transmission Company's gas transmission line. Such a route for an onshore pipeline would require the pipeline to be constructed through five (5) river/ creek crossings. A convenient connection point could be made at Florida Gas Transmission Company's Juniper Creek Compressor Station (see Figure 5-3).

3. Bay County/Panama City Beach in the vicinity of Highway 79 and Highway 98

An OCS pipeline landfall in this area would require a connecting onshore pipeline approximately thirty-one (31) miles long to reach Florida Gas Transmission Company's interstate gas transmission system. This route would require the industry to cross two (2) creeks, the intracoastal waterway and the Point Washington Wildlife Management Area along the right-of-way for Highway 79 (see Figure 5-3).

4. Bay County, between Tyndall Air Force Base and the Bay/Gulf County Line

To connect an OCS pipeline landfall from this area to the Florida Gas transmission system would require an onshore pipeline approximately forty-three (43) miles long. An onshore pipeline following this route would cross the Intracoastal Waterway (see Figure 5-3).

VI. Assumption 6 - Timing of OCS Onshore Activities

Any assumption of when OCS onshore impacts may be anticipated is dependent on the oil industry and the OCS Leasing Schedule. The oil companies ultimately determine which lease blocks will be purchased and when exploratory drilling will be conducted because it is the oil industry's money that is being used. No federal, state or local government agency can require an oil company to offer a bid during a lease sale nor insist exactly when an exploratory well will be drilled. Oil company interest in OCS leases is directly proportionate to the worldwide market for petroleum fuels and the status of surplus or insufficient fuel

supplies. The oil industry is not eager to conduct exploratory drilling for "sour" gas in the OCS at a time when there is a surplus of natural gas throughout the world. At the time of this writing (April 1983) such a situation exists. However, based on oil industry input it is assumed that lease blocks in the eastern Gulf will be sold again during or before the November 1985 sale. If leases are sold in 1985 then exploratory drilling activity will begin during or before 1988.

No leases were sold in the Destin Dome, Desota Canyon or Pensacola Blocks during the Spring 1983 sale. The next lease sale of leases in the eastern Gulf is scheduled for November of 1985.

Based on oil industry input it is assumed that the oil companies will continue to explore the OCS offshore of West Florida at present decreased levels in the short term, but both exploration and development are likely to increase over the long term throughout the Gulf of Mexico OCS.

VII. Assumption 7 - Industry Onshore Facilities

To determine what facilities the oil industry may need to locate onshore in Region I if a resource discovery is made required an examination of available technical literature and direct input from MMS personnel and from oil industry representatives.

OCS onshore facilities range from a simple support service base for exploratory work to complex deep water ports and oil refineries. Based on available information it is assumed that the oil industry will not recreate the complex oil and gas

infrastructure that have been developed in Texas and Louisiana.

It is assumed that at least one (1) onshore service base will be located in Florida Planning Region I. All service for previous exploration activity offshore of West Florida has been conducted from Louisiana and the Port of Panama City. The temporary service base established at the Port of Panama City generated very little local or regional impact. It is assumed that a larger service base would be necessary if a resource discovery is made. It is possible that one (1) service base could be established near Pensacola and one (1) near Panama City if discoveries were made in each of the two (2) OCS areas discussed in Assumption 3.

It is assumed that drilling mud and cement manufacturing companies would not be built in Region I because it is cost effective to transport these necessary materials from already existing facilities in Texas or Louisiana or Mississippi. Storage space would be required to provide for holding the drilling mud and cement until used. It is also assumed that drilling tools and wellhead equipment would be transported to West Florida from existing manufacturing facilities.

It is assumed that established catering service companies could be employed to supply OCS activities offshore from West Florida. Local surveyors and local labor could provide any necessary support for catering service companies.

It is assumed that platform fabrication yards will not be located in West Florida. When field development begins it is assumed that development platforms will be supplied by existing facilities.

Permanent pipe coating yards may not be necessary in West Florida because the current facilities along the Gulf Coast can cost effectively supply any necessary pipe to West Florida by barge or rail transport.

It is assumed that no refineries will be constructed in West Florida. Refineries are already operating in Mobile, Mississippi, Louisiana and Texas. However, it is assumed that one (1) or more natural gas treatment/processing facilities will be constructed in West Florida if a resource discovery of sufficient volume is made.

VIII. Assumption 8 - Regional Resource Committment

The general requirements for land, water and labor are assumed to increase only minimally or moderately. Air emissions, wastewater treatment and solid waste from OCS activities are expected to be manageable.

Analysis of the anticipated OCS onshore facilities indicates that it is unlikely that any community in West Florida will be subjected to an unreasonable rise in demand for housing or social services.

CHAPTER 2

Footnotes

1. "Oil and Gas Journal". November 1982.

2. Eglin Air Force Base, personal communication.

3. St. Joe Paper Company, personal communication.

4. Tyndall Air Force Base, personal communication.

CHAPTER 3

OCS STUDY METHODOLOGY

CHAPTER 3

OCS STUDY METHODOLOGY

It was very difficult to assemble a methodology of acceptable format to determine the OCS onshore impacts in West Florida. The staff examined seven (7) different study approaches. The seven (7) methodologies were developed by:

1. New England River Basin Commission;
2. Roy F. Weston, Inc.;
3. Conservation Foundation;
4. Maryland Major Facilities Study;
5. Texas Coastal Management Program;
6. Alaska Division of Community Planning; and,
7. Louisiana Coastal Resource Management.

At first, the New England River Basin Commission methodology was determined to be the most appropriate. However, during the literature review process and during preliminary evaluation, it was determined that none of the previously developed methodologies were directly applicable to West Florida. The lack of adequate data pertinent to West Florida is a significant problem and required that a modified approach be developed.

The decision was made that any methods used to assess potential OCS onshore impacts and to determine suitable sites for oil industry needs would have to be as uncomplicated as possible. The approach was to aim for a plan which can be easily reviewed and modified as new data becomes available, but is also adequate for local West Florida citizens and elected officials to understand

potential OCS problems in order to formulate implementable programs to minimize any negative impacts and to maximize any positive impacts.

A basic, twelve (12) component program was formulated and executed. The twelve (12) components are described below.

I. Literature Review and Background Research

Throughout the entire study process the staff acquired any and all available pertinent literature. Documents were reviewed and evaluated for applicability to West Florida. Many excellent documents were reviewed and the findings have been incorporated into this OCS study effort. A list of these works is presented in the bibliography of this document.

As previously mentioned, there is very little information or data that is directly relevant to the OCS offshore from West Florida nor about potential onshore impacts in this region. In an effort to generate pertinent input and to provide data, the staff established direct contact with oil industry corporate decision makers and oil industry technical representatives. The oil industry was found to be very willing, helpful and capable. Much of the findings of this OCS study is based on the information and data shared by oil industry representatives.

II. Identification of Typical Oil Industry Onshore Facility Needs

The staff devoted significant time and effort to learning about and analyzing the types of onshore and offshore facilities that are common to the oil industry. Tours of existing facilities

were arranged to provide "first hand" experience concerning the industry's onshore activities. Again, the oil industry was very cooperative and helpful as the staff learned about oil industry facilities. The input of the oil company representatives combined with the information contained in the current literature served to provide an understanding of the oil industry's facility needs. Discussions of the industry's general facility needs is presented in Chapter 4 and a discussion of the needs and impacts of the facilities which are likely to be needed in West Florida are discussed in Chapter 5 .

III. Evaluation of Regional Constraints for OCS Onshore Facilities

Public and elected official concern has been expressed that certain environmentally, recreationally and aesthetically significant areas may be degraded or destroyed by OCS onshore activities. It was determined to be in the best interest of the state, region, local citizens and the oil industry that any critical or delicate areas should be identified and considered for protection. Public input, technical input and pertinent literature data, including the recent document The Sensitivity of Coastal Environment and Wildlife To Spilled Oil In West Florida, were evaluated to define the areas that are unsuitable or only marginally suitable for OCS onshore facilities. Three (3) exclusion considerations have been applied.

A. Bays and Estuaries

The shallow depth and activity levels of the bays and estuaries of West Florida would require the oil industry to

construct a submerged pipeline using the same techniques used for OCS pipeline installation. The cost of a submerged pipeline is five (5) or six (6) times greater than an onshore pipeline. Because bay crossings are relatively short in length (three (3) to seven (7) miles) and it would require great capital expense to transport a smaller lay barge (lay barges used in the Gulf of Mexico may be too large to maneuver in bays) into the region's bays; the cost of a short, submerged, estuarine pipeline may approach $5 million per mile. As a result of this high cost, it is presumed that a gas pipeline company would avoid crossing major bays: Perdido Bay, Pensacola Bay, Escambia and East Bays, Choctawhatchee Bay, and the St. Andrews Bay System.

B. Large Land Areas In Single Ownership

The second exclusion consideration considered ownership and use of large land areas. Eglin Air Force Base is the largest single ownership, land area in West Florida (463,542 acres). The primary activity at Eglin is developing and testing weapon systems, which requires use of explosives on the military reservation. Such activity would preclude construction of surface or buried petroleum facilities on the reservation. Officials at Eglin have confirmed that the reservation should not be considered as a potential site for OCS onshore support facilities. Tyndall Air Force Base, located in Bay County, received the same consideration as the Eglin Air Force Base reservation.

Another large land area under single ownership is the

Point Washington Wildlife Management Area, owned by the St. Joe Paper Company and managed by the Florida Game and Freshwater Fish Commission. When briefed on the objectives of this OCS Study, officials at St. Joe Paper Company stated that proposals for outleases of the Point Washington Wildlife Management Area would be considered on a case-by-case basis. Proposals for construction of a buried pipeline may receive favorable consideration, since the land may still be used for wildlife management, except trees cannot be grown in the right-of-way. Proposals for construction of large facilities will, according to St. Joe Paper Company officials, most likely be denied. Therefore, the Point Washington Wildlife Management Area is excluded from consideration for onshore support facilities, except for a pipeline corridor.

C. Major River Systems

The third exclusion criterion involves crossing major river systems. The water volume and flow rate of large rivers makes dredging and turbidity control difficult. In addition, large rivers usually have an associated broad floodplain and wetland area. Crossing rivers and associated floodplains is expensive, since erosion and water turbidity must be controlled. The potential for significant environmental damage increases with river system size. Because of the potential for greater environmental damage and high cost (the more expensive horizontal drilling process is recommended for making river crossings), it is presumed that a gas pipeline company would avoid crossing large rivers with gas pipelines.

The Choctawhatchee River delta, at the head of Choctawhatchee Bay, is the largest area excluded for this reason.

The second process of selecting alternative sites involves matching petroleum industry needs with existing, compatible facilities. In this process, locations of potential support services were mapped and correlated with gas/oil industry needs. The types of areas researched included:

1. industrial parks (existing and proposed) and industrially zoned land (see Figure 3-1).
2. isolated, undeveloped land where an industrial site and adequate buffer zone could be located;
3. areas with access to the Gulf of Mexico;
4. areas with access to the Gulf Intracoastal Waterway (GIWW);
5. dredged, maintained navigation channels and improved waterfront sites;
6. existing rights-of-way compatible with potential gas pipeline needs;
7. existing petroleum fuels barge terminals; and,
8. existing natural gas pipelines and gas facilities (see Figure 5-1).

In addition to mapping and researching the above areas and facilities, policies and regulations of federal, state and local governments were compared with gas and oil industry needs. Specifically, the following were considered:

1. existing regulatory authority (Chapter 6);
2. Florida Coastal Management Program, laws and regulations; and,

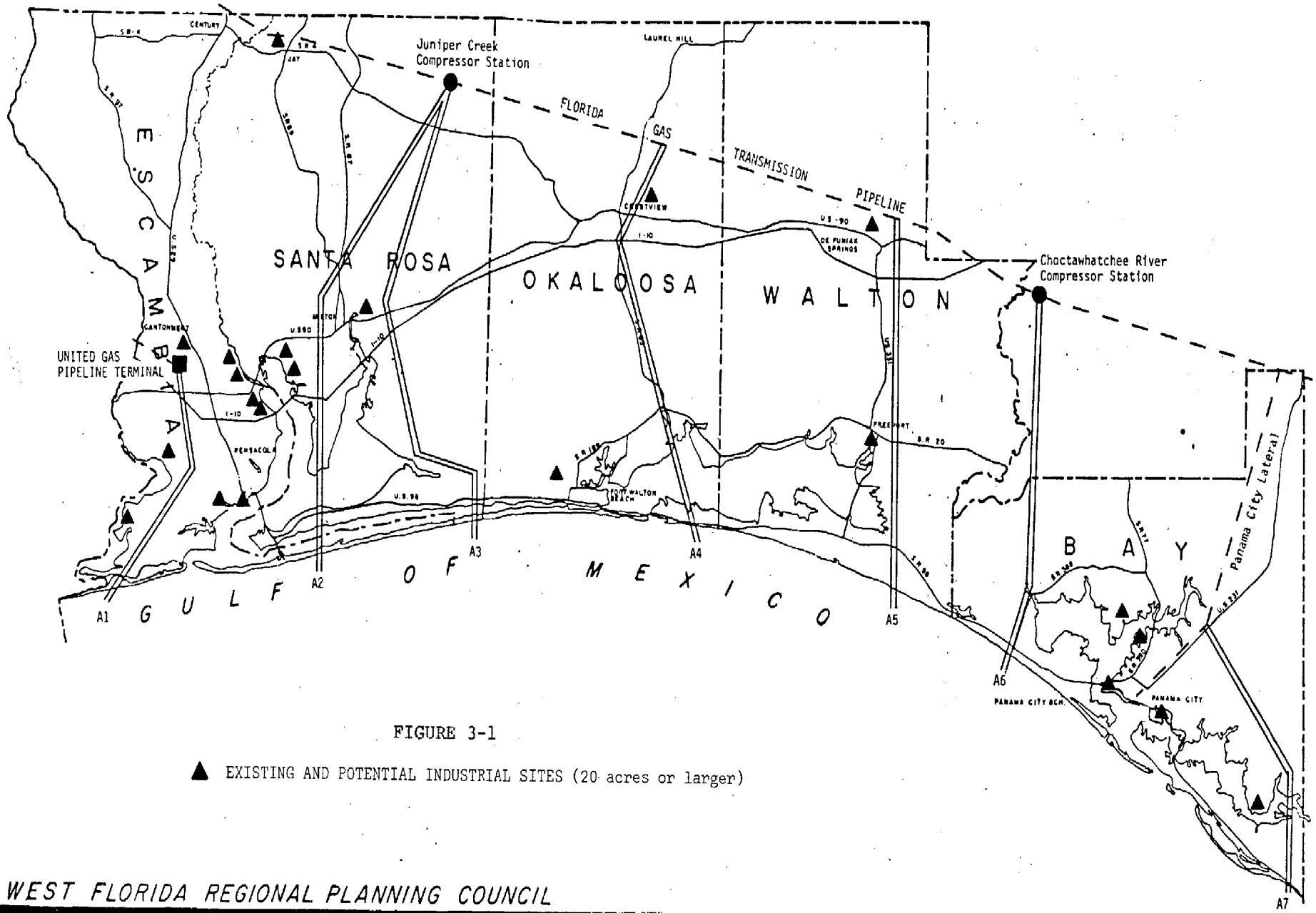


FIGURE 3-1

▲ EXISTING AND POTENTIAL INDUSTRIAL SITES (20 acres or larger)

3. local government comprehensive plans, ordinances and regulations.

IV. Direct Technical Input

Perhaps one (1) of the most significant components of the OCS Study process involved the staffs direct communication with oil industry technical representatives. These knowledgeable experts served as the only source of current, comparative data. The industry representatives which have been most cooperative, responsive, and helpful are:

1. Shell Offshore, Inc.
2. Mobil Oil Exploration and Producing, Southwest, Inc.
3. Southern Natural Gas
4. United Gas Pipeline Company
5. Florida Gas Transmission Company
6. Florida Petroleum Council
7. Exxon Oil Company
8. T. A. Herbert and Associates (Environmental Consultant to Getty Oil Company)
9. Amoco Oil Company
10. Gulf Oil Company
11. Sohio Petroleum Company
12. Getty Oil Company

The staff directed batteries of questions to the various oil companies and other oil industry representatives. Industry responses were compared and evaluated for regional pertinence and consistency.

V. Regional Assumptions

During the staff search for an applicable study methodology it was realized that the study effort could be unending and of little use unless some basic factors or assumptions were determined. After consulting technical representatives, MMS and State of Florida personnel, the staff determined eight (8) assumptions for the evaluation of alternatives and preparation of recommendations. The assumptions involve:

1. OCS resource estimate;
2. potential resource;
3. potential hydrocarbon resource sites;
4. transportation of OCS reserves;
5. OCS pipeline landfall;
6. timing of OCS onshore activities;
7. industry onshore facilities; and,
8. regional resource committment.

The eight (8) assumptions are discussed in detail in Chapter 2.

VI. Selection of Alternative Facilities Sites Based On Oil Industry Requirements

During the literature search data collection and direct communication with oil industry representatives, the staff listed and conducted preliminary evaluations of oil industry onshore facility needs. Each facility type was then evaluated for its specific requirements, characteristics, and for probability of being located in West Florida. The results of the evaluation are contained in Chapter 4. The types of onshore oil industry facilities and

ancillary services examined include:

1. temporary support or service bases;
2. permanent support bases;
3. supply boats;
4. crew boats;
5. drilling mud companies;
6. wellhead equipment companies;
7. platform fabrication yards;
8. platform installation service bases;
9. cement companies;
10. catering services;
11. drilling rigs;
12. pipeline corridors;
13. temporary pipe coating yards;
14. gas processing/treatment facilities;
15. gas compressor and metering facilities;
16. oil storage/barge facility;
17. marine terminal;
18. refineries; and,
19. petrochemical facilities.

VII. Formulation of Socioeconomic Evaluation Matrix

The selection of a technique to conduct an analysis of impacts of potential onshore facilities in West Florida was of the most difficult work tasks of this entire study. If the selected technique was too complicated it might have been too complicated for general use for the citizens and elected officials and if the

technique was over simplified it could have not been acceptable to evaluate impacts. The staff opted to employ an approach which has been a very successful technique for other studies conducted by the West Florida Regional Planning Council staff. It was determined that a matrix of impacts should be developed which could be used to evaluate all the potential facilities and which could record the assessment of positive and negative impacts in a way that would make a comparison of each alternative site and each potential facility possible. The matrix approach was used for both socioeconomic and environmental impact assessments. The matrices were determined to be satisfactory and had the advantage of being serviceable as a public information device.

Seven (7) alternatives were evaluated for most of the five (5) facility types of OCS onshore support facilities. Each facility alternative was evaluated for fifteen (15) different socioeconomic parameters. The socioeconomic parameters/impacts evaluated are:

1. population;
2. local employment;
3. local revenue;
4. land use;
5. access to the Gulf of Mexico;
6. utilities;
7. availability of support services to a proposed site;
8. access to transportation (water, rail and roads);
9. traffic flow;
10. recreation/tourism;
11. conservation/preservation areas;

12. ports;

13. facility costs;

14. aesthetics; and,

15. navigation.

An evaluation weight scale was used for rating impacts. The scale ranges from a plus three (+3), representing highly favorable impact to a minus three (-3), representing a highly unfavorable impact. Each impact for each alternative was carefully evaluated with attention for consistency. After each alternative for each facility had been rated individually, the total for each evaluation was calculated. If an alternative was evaluated to have a positive impact it was considered to be favorable for recommendation as a suitable site for an industry facility. The determining factor for a final recommendation was the combined total of the socioeconomic and environmental matrices evaluations. The completed matrices are presented in Appendix A of this document.

It is important to remember that the alternatives evaluated do not represent every possible site for industry needs. As industry activities in the OCS offshore from West Florida increase there will be additional data which may modify the assumptions. At that time the matrices may be reevaluated and new alternative sites may be evaluated.

The approach taken to evaluate the previously mentioned impacts is summarized in the following discussion.

A. Population

Each alternative site was considered for the potential impact it might produce to the total population of the region

and to the closest local population center. The distance to a population center which could provide necessary service for labor or which might serve as a source for workers was considered. Also each facility type was evaluated for the type and number of jobs that could be generated. If the potential populated areas were evaluated to be able to accomodate an expanded population and if these areas could offer the type of workers necessary for a potential industry onshore facility, a positive weight was assigned. If an area was evaluated to not be able to accomodate or offer adequate labor, a lower weight was assigned.

B. Local Employment

The alternative sites were evaluated for any impacts on the local employment level. In every case it was determined that if local jobs could be added, a positive impact would result.

C. Local Revenue

The impact of each alternative site on the local economy was evaluated. If a site was determined to bring additional revenues to local businesses rather than add additional expenses to an area, a positive weight was assigned.

D. Land Use

The land use demand and characteristics of each alternative site was carefully compared to adjacent and surrounding land uses. If adequate land use was available and if land uses were

compatible, a positive weight was assigned. If property costs were high and/or it was determined that a land use conflict would result, a lower weight was assigned.

E. Access to the Gulf of Mexico

If a potential industry onshore facility requires access to the Gulf of Mexico OCS a weight was assigned for each alternative's proximity to the Gulf. If an alternative site did not require access to the OCS (e.g. natural gas compressor and metering facility) no weight was assigned. If an alternative was evaluated to have a serviceable access, a positive weight was assigned.

F. Utilities

Each alternative site was examined and evaluated for its proximity to existing utility service. If a utility service was not located in the area of a potential facility site, a low weight was assigned.

G. Availability of Support Services

The availability and proximity of support services (e.g., emergency and fire protection) was determined to be a positive impact or asset for most of the alternatives examined. If a potential site might locate in an area that has adequate support services, a positive weight was assigned.

H. Access to Transportation Systems

Each alternative was evaluated for its transportation needs and then compared to the existing systems available in

the adjacent area. If adequate water, rail and road systems were available which did not require capital improvements to accomodate a facility, it was determined to be highly favorable and therefore was assigned a positive weight. Lower weights were assigned if additional capital expenditures were needed or if a proposed site was distant from a needed transportation system.

I. Traffic Flow

If an alternative facility site was determined to have a loading or congesting impact on any transportation system, a low weight was assigned.

J. Recreation and Tourism

Each facility site was evaluated for any potential impacts to the region's vibrant tourism industry and recreational facilities. If a facility might impact on existing recreation areas or interfere with tourist facilities, a low weight was assigned. If a facility was determined to be away from existing recreation areas and was evaluated to be of sufficient size to draw visitors who may choose to recreate in West Floria, a positive weight was assigned.

K. Conservation/Preservation Areas

Each alternative site was considered for its proximity to any significant conservation/preservation areas. Sites that are away from critical estuarine, wetland or historical areas were assigned higher weights than areas which might generate potential negative impacts to a conservation or preservation area.

L. Ports

Because the two (2) major ports located in West Florida add so much to the region's economy, each alternative was evaluated for any potential impacts to the ports. If an alternative facility site was evaluated to add, but not burden a port's activity, a positive weight was assigned.

M. Facility Costs

It was determined that some sites would require the oil and natural gas industry to expend higher capital funds than other alternative locations. If an alternative site was determined to be costly to develop or locate, a lower weight was assigned.

N. Aesthetics

The aesthetic appeal of West Florida is one of the region's most valuable resources. If an alternative site was determined to degrade the aesthetics of a significant area, a low weight was assigned. It is unlikely that any facility site would add to the local aesthetics, however, if a alternative site is to be located away from recreation areas it was determined to be less of a negative impact to the local aesthetics.

O. Navigation

If an alternative facility was determined to have a loading or clogging impact to navigation in the region's intracoastal and other waterways, a low weight was assigned. In many cases the alternative site would have no impact on navigation.

VIII. Formulation of Environmental Matrix

The same approach selected for evaluating socioeconomic impacts impacts was applied to evaluating environmental impacts. Eighteen (18) different potential environmental impacts were evaluated for each of the alternative sites. The eighteen (18) impacts evaluated are:

1. air quality;
2. water quality;
3. groundwater quality;
4. water supply;
5. solid waste;
6. hazardous substances;
7. wetlands and marshes;
8. grassbeds;
9. noise;
10. riverine and stream systems;
11. beach ecosystem;
12. wildlife;
13. endangered species;
14. shell fisheries;
15. fin fisheries;
16. energy consumption;
17. dredging; and,
18. oil spill impacts.

A. Air Quality

The air quality of West Florida is considered to be good, generally, with some ambient air quality standard violations

in areas of high population. The major impact producing factors on air quality from OCS related activity are due to:

1. combustion of raw materials;
2. evaporative loss of hydrocarbons;
3. internal combustion from on-site power generation; and,
4. product processing techniques.[1]

The major impact producing factors from offshore and onshore OCS related activities are:[2]

1. Offshore
    a. catastrophic events
        1 - blowouts with fire
        2 - oil spil
        3 - escape of "sour" gas
    b. operational emissions
        1 - exploration drilling
        2 - platform installation
        3 - developmental drilling
        4 - oil production
        5 - gas production
        6 - barge loading
2. Onshore
        1 - gas processing plants
        2 - refineries

Air quality impacts generated by a OCS onshore facility may have short term and long term impacts. Air emissions that are characteristic of oil industry facilities are:

1. Nitrogen Oxide;
2. Sulfur Dioxide
3. Carbon Monoxide;
4. Total Suspended Particulates;
5. Hydrogen Sulfide; and,
6. Hydrocarbons (e.g., butane, propane and natural gas).

During the study consideration of the air quality characteristics of each facility alternative site, the staff evaluated the types of air emissions, both general and catastrophic; and the proposed facility site's proximity to populated areas. If a facility was determined to have low volume air emissions or not near a populated or conservation/preservation or recreation area, a moderate or no weight was assigned.

B. Water Quality

The quality of the surface and ground waters of West Florida have been of major concern since the late 1960s. A great deal of effort and money has been dedicated to study, restore, and improve the region's water quality.

Potential water quality problems resulting from offshore OCS activity can be attributed to several factors:[3]

1. resuspension of bottom sediments through exploration, development and pipeline construction activities;
2. discharge of deck drainage;
3. sanitary wastes;

4. domestic wastes;
5. discharge of formation and produced waters;
6. discharge of drilling fluids and muds;
7. accidental hydrocarbon discharge due to spills and blowouts; and,
8. discharge of radionuclides.

OCS related onshore facilities may impact local onshore and nearshore water quality by increasing the point and non-point pollution sources. Increased runoff from facility sites may increase the loading of:

1. particulates;
2. heavy metals;
3. petroleum products and chemicals; and,
4. biological ozygen demand (BOD),

to the streams and estuaries of West Florida.

Offshore water quality impacts from OCS oil industry activities "are expected to be very low..." and "...impacts to onshore water quality is expected to be very low."[4] "The total cumulative effect of OCS related and other activities is expected to result in a very low to moderate level of input on regional offshore and onshore water quality."[5]

"OCS oil and gas related population and support facility increases are expected to create a low to moderate impact on regional water supplies. However, the overall cumulative impact which includes the effect of projected population and industrial growth is expected to be high to very high."[6]

The evaluation of potential water quality impacts for

each alternative site considered in this study was a complex process. The general and potential catastrophic discharges of each facility type were defined. Each site location was examined in relation to the adjacent and surrounding water quality segments. The potential discharges were compared to the segment's water quality as recorded in the 208 Clean Water Plan for West Florida. A determination of overall water quality and water supply impacts was made for each facility site location. If a facility was determined to be located in a critical water quality segment and if it was characterized by a potentially hazardous discharge, a negative weight was assigned.

C. Groundwater Quality

The protection of the region's groundwater has been identified as a high priority goal in the region's comprehensive plans. Any facility that may severely degrade groundwater quality in an area would require detailed analysis prior to permitting.

Any discharge into West Florida's groundwaters is unlikely to be permitted. Accidental discharge may degrade groundwater in localized areas, however, long term impacts from continuous accidental discharge could be significant.

Each facility type was evaluated and its potential discharges were characterized. The products and any hazardous materials for each facility were evaluated and a determination of groundwater impacts if the products or materials reached the local groundwater was conducted.

The only OCS related onshore facility that is assumed to locate in West Florida that has been evaluated to have a potential impact on groundwater is a natural gas treatment facility. Each alternative site could impact the groundwater depending on the size and processes of the facility.

D. Water Supply

Most of the water for potable use in West Florida is supplied by the Sand and Gravel aquifer and the upper Floridan aquifer. These two (2) resources have had adequate capacity to meet the region's needs until recently. The Northwest Florida Water Management District has completed a regional water supply study which identifies the future water supply needs and recommends water resources to develop to meet future needs. In the future, potable water will be available, but at a higher cost due to resource development expenses.

Each alternative was characterized for its specific potable water needs and demands. Facilities that demand large volumes of potable water were assigned a negative weight. Some alternative sites were considered which are in areas that presently have water supply problems and have, therefore, assigned negative weights. An onshore support base was determined to have the highest potable demand and therefore the greatest impact on water supply of the five (5) types of OCS related facilities that are assumed to be most likely to locate in West Florida.

E. Solid Waste

Solid waste disposal and any potentially hazardous

components of the solid waste are of significant concern in West Florida. The State of Florida and each county permit and and maintain sanitary landfills for the disposal of solid wastes. The types of general solid waste (e.g., paper, packing material, metal and wood products, cement) from OCS related facilities have been determined to be compatible for the landfills in West Florida. The extra tons of solid waste from the facilities can be accomodated in most of the region's landfills. None of the alternatives that have been evaluated have determined to be likely to generate a volume or type of solid waste that could not be disposed of using current permitted procedures.

F. Hazardous Substances

Hazardous solid wastes are required to be disposed of in a special permitted landfill. These landfills are prepared to eliminate the pollutants from seeping into groundwater and surface waters or from impacts to air quality. The OCS related substances that are hazardous that have been identified during literature search and data collection are:

1. sludges;
2. scums from settling ponds;
3. oiled drilling muds;
4. hydrogen sulfide;
5. desicants from gas treatment facilities;
6. degraded amine;
7. gas treatment process sludges;
8. oiled cleaning materials and supplies; and

9. hydrocarbon wastes and sludges.

Some potentially hazardous materials will be used during the construction of OCS related facilities and during specialized operations.

The alternative facility sites were evaluated for susceptibility to hazardous waste substance spills and for proximity to permitted hazardous waste disposal sites. Matrix evaluation weights were assigned based on a site's potential for generating hazardous materials and on its proximity to highly susceptible conservation/preservation areas.

G. Wetlands/Marshes

Wetlands and marshes are prevalent all along the coast of West Florida. These highly productive areas are some of the most valuable resources in the region. The wetlands and marshes are rich nurseries and wildlife habitats and serve as flood water storage areas. These areas also serve as groundwater recharge areas.

Each alternative site was evaluated for any potential impacts on the region's wetlands and/or salt and freshwater marshes. If a facility would require dredging or waterfront modification or could not be located away from marsh areas, a negative weight was assigned.

H. Grassbeds

Marine and submarine grassbeds were once widespread throughout West Florida. Increased stormwater runoff,

improper land use, dredging and industrial discharges have degraded many of the grassbeds in the region. These highly productive areas serve as habitats and nursery areas for shell and fin fish.

Any alternative site that was determined to be likely to disturb, degrade, or destroy grassbeds was assigned a negative weight.

I. Noise

Noise pollution is a more significant concern in populated areas or in areas that already experience high noise levels. Each alternative facility type noise levels were characterized and each facility site was evaluated for combined noise level impacts. Some facilities produce high noise levels during construction, but are characterized by low noise levels during operation. Some facilities, e.g., natural gas treatment facilities, are always noisy and have unfavorable impacts in populated areas. Facilities with high noise levels or alternative sites that may be adjacent to populated areas were assigned negative weights.

J. River/Stream Ecosystems

River and stream ecosystems were examined for susceptibility to OCS onshore facilities and also for the cost to the industry if it becomes necessary to develop a facility in a river or stream area. One recommendation of this study is that any crossing of a major river or stream system should be conducted using directional or horizontal drilling under

the stream rather than dredging of a space for the industry's needs. A pipeline corridor passing through a stream ecosystem was determined to be more costly and more likely to degrade the ecosystem than a pipeline which did not require a major stream crossing. Disturbances and dredging in river and stream areas can generate turbidity and resuspension of hazardous substances in some areas or may involve the disruption of critical wildlife habitats. Any facility site that was determined to have a potentially degrading impact on river or stream integrity was assigned an negative weight.

K. Beach Ecosystem

West Florida's beach ecosystems are the regions most aesthetically valuable and appealing resource to the tourism industry. However, the region's beaches serve a highly valuable function as the primary defense mechanism against any storm forces coming across from the Gulf of Mexico. The beach ecosystem is highly susceptible to oil spills and human development processes. Due to the dynamics and natural functions of the West Florida beach system, this study recommends that any pipeline crossing through a Gulf front beach be done using horizontal or directional drilling techniques.

Any facility site that would require modification to a beach ecosystem or that would have a long term impact on the region's beaches, was assigned a negative weight.

L. Wildlife

The marine, estuarine and upland wildlife of West Florida

have been determined to be valuable resources throughout the region and have been identified in the local government comprehensive plans to be subject to protection and preservation because of their value.

If a facility was determined to require the displacement of natural animal species during construction or operation or if wildlife could not coexist at a proposed facility site, a negative score was assigned.

M. Endangered Species

No alternative facility site was determined to be proposed for a known endangered species site. However, most potential sites could impact endangered species. Without detailed field survey data of each site it is impossible to identify the degree of potential impact on an endangered species, therefore, all proposed facility sites were assumed to have the same potential for impacting endangered species except sites that are proposed for previously developed areas.

N. Shell Fisheries

The shellfish (e.g., shrimp, oysters and scallops) of West Florida serve as a food source and add to the economy in West Florida. Any facility that was determined to have a degrading or harmful impact to shellfish and shellfish habitats was assigned a negative weight during the matrix evaluation process.

O. Fin Fisheries

Just as shellfish are a valuable resource throughout

West Florida, so are the fin fish. Any alternative facility site that was determined to potentially generate an impact that would damage or harm fin fish or fin fish habitats was assigned a negative weight.

P. Energy Consumption

The need for this work is based on the fact that the world's energy supply has become degraded to a point that energy conservation is necessary. It has been assumed that any OCS onshore facility that is characterized by a high rate of energy consumption is only justified because it may assist in generating additional energy resources from OCS reserves. If a facility has been determined to consume a great deal of energy it was assigned a negative impact weight.

Q. Dredging

The modification of the waterways, estuaries and waterfronts of West Florida by hydraulic dredge is energy intensive and degrades environmental quality with increased turbidity and resuspension of bottom sediments.

All proposed facility sites were evaluated for dredging requirements. Facilities that require slight or no dredging were determined to have no impact or only slight negative impact. Facilities that would require dredging during construction and continued long term maintenance dredging, were assigned impact weights to reflect their highly unfavorable impacts.

R. Oil Spill Impacts

One potential environmental impact that is of primary interest to the study staff, Advisory Committee and the public is oil spills. It is known that there will be a oil spill in the Gulf of Mexico, according to the MMS.[7] When a spill will occur is unknown, however, the negative impacts of an oil spill can be anticipated and can be minimized with proper planning. MMS stated that there is a three percent (3%) chance that an oil spill equalling or greater than 1,000 barrels of oil from the OCS will reach shore in Escambia County within ten (10) days of a spill.[8]

The potential for an oil spill exists outside of an OCS oil spill. If oil transported by oil barge to a terminal in West Florida there is an increased potential for an oil spill in the Intracoastal Waterway or other nearshore areas. The potential impacts of an oil spill in a nearshore area vary in severity depending on the area that a spill might occur. Containment of a spill from a collision or during an exchange operation (loading or unloading) depends on the availability of containment equipment. The clean up of an oil spill in a marsh area or in a grassbed area could be disastrous.

There are fourteen (14) different causes of oil spills from offshore operations on the OCS. A summary of OCS oil spills of greater than fifty (50) barrels is summarized in Table 3-1.

There are many different causes of oil spills from a

TABLE 3-1

Causes Of Oil Spills Greater Than 50 Barrels Resulting From Offshore Operations On The Federal OCS

Causes of Spills	Number of Incidents	Number of Barrels Spilled
Blowouts	9	63,582
Fire	1	30,500
Collisions of Vessels	4	4,325
Hurricanes and Storms	7	14,457
Abandonment Process	1	500
Barge or Marine Vessel Accident	3	7,265
Tank, Separator, Sump Overflow	8	1,013
Transferring Oil, Fuel Operations	7	1,211
Human Error	8	55,316
Equipment Malfunction	12	11,190
Pipeline Leak/Break (unknown cause)	13	14,158
Pipeline Leak/Anchor Dragging	6	191,702
Pipeline Leak/Shrimp Trawler	1	4,000
Pipeline Leak/Mud Slide	1	250

SOURCE: Final Regional Environmental Impact Statement, Gulf of Mexico, Department of the Interior, Minerals Management Service. January 1983.

petroleum pipeline. External corrosion from the sea, damage from equipment such as ship anchors or fishing nets, defective pipe seams, and human error are the most common causes of pipeline oil spills.

Alternatives for managing an oil spill after it occurs are to try to burn the spilled oil, allow it to sink or add chemicals to cause the oil to sink; booms and other devices to contain the oil spill, manually remove it and allow the spilled oil to remain. If a spill occurs far from shore and if the sea state is harsh enough a spill may disperse and be subject to biodegradation before it can impact marine or estuarine habitats and wildlife.

Detailed containment and clean up procedures are developed and adopted in the National Oil and Hazardous Substances Pollution Contingency Plan. The oil industry has developed a special oil spill clean up technology which is effectively applied on an as needed basis. The oil companies subscribe to Clean Gulf Associates which develops a operation's manual to guide in procuring for use oil spill equipment in the Gulf of Mexico.

Each alternative site was evaluated for its potential to be a site for an oil spill. Oil barge terminals have a greater potential to experience an oil spill than any other facility evaluated. If a facility does not service oil no weight was assigned.

IX. Evaluation and Assessment of the Roles of Federal, State, Regional and Local Regulatory and Policy Mechanisms

An inventory of pertinent regulatory and policy mechanisms was completed to allow an evaluation of the regulatory mechanisms with reference to future industry facility siting and any subsequent impacts (see Chapter 6). Some regulatory mechanisms have been determined to be comprehensive while others are less comprehensive.

X. Evaluation of Alternative Sites For Development of Specific West Florida Recommendations

Each alternative considered was evaluated for consistency or compatibility with the existing regulatory mechanisms. After an evaluation of the alternative and regulatory mechanisms was completed the staff developed a list of fifty-two (52) policy and study recommendations intended to be considered and implemented by the appropriate federal, state, local and industry representatives.

XI. Conclusions and Final Report Preparation

Public and technical input was requested and assembled throughout the entire study process. After the work tasks and assessments were completed the WFRPC environmental staff summarized the conclusions of the work and authored this document to record the results of the contracted work.

CHAPTER 3

Footnotes

1. Minerals Management Service. Final Regional Environmental Impact Statement, Gulf of Mexico. January 1983.

2. Ibid.

3. Ibid.

4. Ibid.

5. Ibid.

6. Ibid.

7. Ibid.

8. Ibid.

CHAPTER 4

OIL AND NATURAL GAS INDUSTRY NEEDS, ALTERNATIVES, AND IMPACTS

CHAPTER 4

OIL AND NATURAL GAS INDUSTRY NEEDS, ALTERNATIVES, AND IMPACTS

The onshore industry facility needs for OCS development are dependent on the scale and timing of offshore activity. The volume of a resource find, the character of the resource discovered, distance from existing industry facilities, local social and economic conditions, legal controls, existing land use, and characteristics of the land and marine environmentalists all combine to dictate what type of onshore development the industry will locate in West Florida. The time frame for any onshore development activity is flexible and can be changed or modified as the other listed factors become more defined.

The following summary approach is offered to provide a general description of what types of facilities could be anticipated if different volumes of resources are discovered (see Table 4-1). No single combination of facilities is necessarily a description of what will happen in West Florida. However, this summary approach does provide a basic description of what facilities the oil and natural gas industry employs and, therefore, provides insight into what impacts can be anticipated.

Detailed descriptions of the facilities which are most likely to be located in West Florida are offered in Chapter 5.

OCS operations and associated onshore activities and facilities occur in six (6) phases. Each phase is characterized by specific requirements and activities. The six (6) phases are

TABLE 4-1

Summary of General Oil Industry Onshore Facility Needs

Type of Facility	Land Needed	Waterfront Access	Dock Space (Approximate)	Capital Cost (Approximate)	Construction Jobs (Approximate)	Operations Jobs (Approximate)	Locating In West Florida
Temporary Support Base	2-10 acres	yes	100-200 feet	$150,000 ±	20-90	30-60	very likely
Permanent Support Base	less than 50 acres	yes	100-200 feet	$150,000-$1 million	20-90	30-60	likely
Supply Boats	dock space	yes	200 feet	$3.5-$4.25 million	50-80	14	very likely
Crew Boats	dock space	yes	100 feet	$850,000	20-25	8	very likely
Drilling Mud Company	1-2 acres	variable	variable	I.I.*	I.I.*	5-10	very unlikely
Wellhead Equipment Company	1-2 acres	preferred	variable	I.I.*	20-100	10-100	very unlikely
Platform Fabrication Yard	200-800 acres	yes	variable	I.I.*	I.I.*	200-500	very unlikely
Platform Installation Service Base	same as permanent support base				15-30	variable	possible
Cement Company	1 acre	preferred	variable	I.I.*	I.I.*	I.I.*	unlikely
Pipeline Corridor	100 feet wide access	no	0	$600,000-$9.3 million per mile	15-25 variable	variable	likely
Temporary Pipe Coating Yard	10-20 acres	preferred	variable	$1 million	I.I.*	10-50	possible
Gas Processing/Treatment Plant	20-60 acres	no	-	$25-$100 million	300-500	30-60	likely
Gas Compressor and Metering Facility	less than 1 acre	no	-	$146,000-$18 million	I.I.*	I.I.*	likely
Oil Storage/Barge Facility	10-50 acres	yes	variable	variable	I.I.*	I.I.*	possible
Marine Terminal	15-60 acres	yes	variable	$50-$100 million	500-800	20-40	very unlikely
Refinery	up to 1,000 acres	no	-	$8-$800 million	1,500-3,000	400-600	very unlikely
Petrochemical Facilities	variable	variable	variable	variable	variable	variable	very unlikely

*I.I. - insufficient information available.

identified as:[1] (see Figure 4-1)

1. Pre-Production Phase

   This phase involves the oil industry's preliminary evaluation of existing or specifically generated data to predict the potential for hydrocarbons from a geologic formation.

2. Geological and Geophysical Exploration Phase

   Using the OCS lease schedule and information obtained during pre-exploration the oil industry searches for potential petroleum deposits by analyzing geologic characteristics of the areas proposed for lease sale. Geophysical survey data is collected and an assessment of the potential for petroleum is conducted.

3. Exploratory Drilling Phase

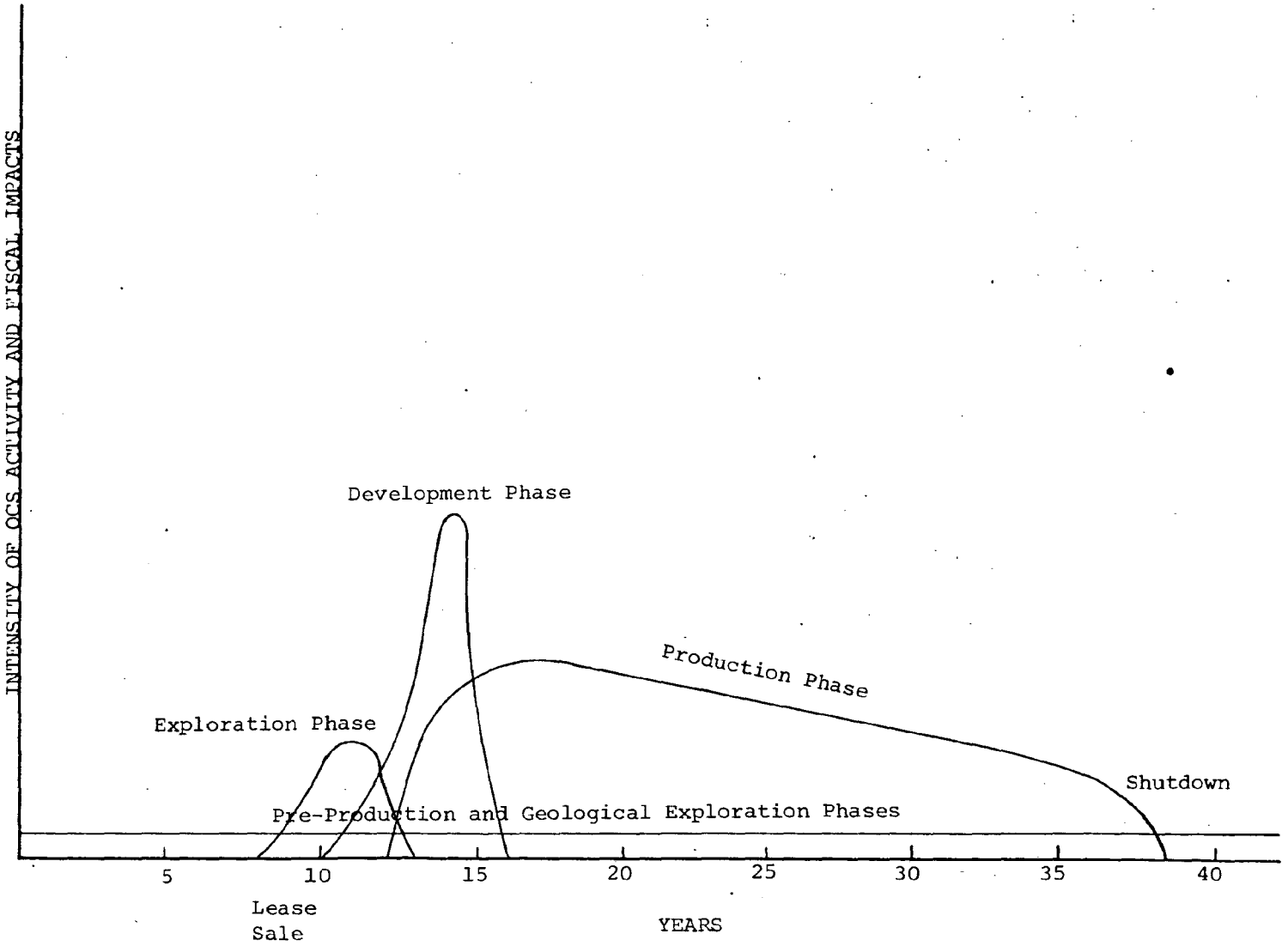
   Exploratory drilling occurs after seismic data has been evaluated and the oil company technicians have located areas of potential for oil and/or natural gas in the lease blocks leased by the company. The exploratory drilling phase is the first phase that requires investments for OCS offshore and onshore facilities. The oil company employs an exploratory drilling rig in the OCS and a support or service base is located onshore for the rig(s).

4. Field Development Phase

   Field development involves additional drilling by the oil companies to determine the limits of the field or formation containing the resource. Construction of

Figure 4-1

Phases of OCS Activity



production platforms to extract the oil and/or natural gas occurs during this phase. Extensive onshore facilities are required to fabricate and service the production platforms. The greatest amount of offshore activity, and, therefore, the greatest potential for onshore impacts is during the development phase.

5. Production Phase

The production or extraction of hydrocarbons can last for ten (10) to forty (40) years. The average field life is between twenty (20) and thirty (30) years. During this phase the industry uses its production platforms to capture or recover the hydrocarbons. It is during this phase that OCS pipelines are developed to transport the recovered resource to the onshore treatment or refinery facilities.

6. Shutdown Phase

After the industry has exhausted all techniques to capture as much resource from a field as possible, the established facilities are dismantled and removed to other sites for continued use or decommissioned.

I. General Scenario of OCS Onshore Activity

The following description is based on the oil industry's trends and past accomplishments. The facilities referenced in this general description are characteristic of a commercially successful find. A low or moderate volume resource discovery would not involve the expensive and complex facilities and

associated impacts summarized below:

A. Pre-Exploration Phase

The facilities needed by the oil industry during pre-exploration are only the office facilities that the company maintains for analyzing data and decision making. No permanent facilities are needed in the OCS on onshore from the frontier area that is being examined.

B. Geological and Geophysical Exploration Phase

As during pre-exploration, onshore activity is generally minimal. A docking service facility to maintain exploration vessels is the only new facility needed during this phase. Seldom is a new or permanent facility constructed to service seismic exploration activities. Representatives of the oil industry and of the U.S. Department of the Interior, Minerals Management Service discuss and negotiate OCS lease activity during this phase. Bids are offered, leases are purchased and permits are completed during this phase.

C. Exploratory Drilling Phase

The exploratory drilling phase requires the first siting and development of offshore and onshore facilities to support the industry's exploration activities.

1. Exploratory Drilling Rig

Depending on the depth to the bottom of the OCS and the sea state different types of drilling rigs are used to search for hydrocarbon reserves. The rigs used for exploratory drilling are constructed onshore and floated

or towed to the site for drilling in the OCS. Mobilization, positioning, and support requirements are important considerations to the oil company when selecting what type of drilling rig to employ. The most common rigs used are:

1. jackup rig
2. semisubmersible rig
3. self propelled rig
4. drillship

Jackup rigs are platforms with legs that can be moved up and down. These rigs have drilled in water depths up to 350 feet and are commonly used in the OCS.

Semisubmersibles are mobile rigs that are towed or self propelled to a drill site and then stabilized in the water by partial flooding of pontoons and moved by seabed anchors or by dynamic positioning using motor driven thrusters. The jackup and semisubmersible rigs are considered to be most likely for OCS use offshore from West Florida by the oil companies contacted.

2. Temporary Service Base

During the exploratory drilling phase a service base or staging area is located. Exploratory drilling activities in the eastern Gulf of Mexico have been serviced from two (2) different types of base. Some exploratory rigs have been serviced from existing service bases in Louisiana and Mississippi. Other exploratory wells have been serviced from a temporary service base at the Port of Panama City.

The initial service base, temporary or permanent, is

designed to support the exploratory drilling rig during its work. The main function of the service base is to serve as a transfer point or station for materials and crew necessary to install, operate, manage, and dismantle an exploratory drilling rig in the OCS.

The service base must be located on a waterfront on two (2) to ten (10) acres of land. The base contains service space for a docking facility for the supply boats and crew boats, and for loading and unloading supplies and materials for the drilling rigs. Other space is needed for open storage area; crew quarters; office space; communications equipment; small warehouse; parking; material processing/handling; and, often, for a helicopter landing area.

Auxiliary facilities to support the service base and the exploratory drilling rig include a food catering service, equipment repair facilities, and warehousing.

3. Permanent Service Base

After a commercial volume has been discovered, the temporary service base may be expanded to serve as a permanent service. Literature estimates of fifty (50) to one hundred (100) acres for a permanent base are inflated when compared to actual industry experience on the Gulf Coast. The type of activity characteristic of the permanent service base, however, the activities are more intense. During the development and production

phases fifty (50) or sixty (60) wells may be drilled and require servicing. Tons of materials will need to be handled, stored and transported to the rigs.

Support bases may be owned (or leased) and operated by the oil company that possesses the OCS lease that is being explored or may be managed by an independent general shore support or oil field service company.

Support services for repair and maintenance may be contained at the support base or at a separate yard. General repair services for vessels may be performed at the service base, but major repairs would be likely to be performed by a contracted repair service. Local repair and maintenance work is one way that local industries and employment may be involved in OCS support. There are adequate repair and maintenance facilities within the OCS study planning area to support potential industry needs.

Other ancillary or general OCS support services that may be supplied through the service base vary with the phase of OCS activity. During the exploration and development phases drilling mud supplies are distributed through the support base. Logging and perforating companies for testing well tailings and drilling progress are also conducted through the support base. Cement supplies, wellhead equipment and any other activity needed on an OCS rig or platform may pass through the

support base.

A detailed explanation of potential service base impacts in West Florida is offered in Chapter 5.

4. Supply Boats

Supply boats are the vessels used to transport equipment from the service base to the exploratory drilling rig. These boats are the primary support mechanism for a rig. Supply boats differ in size but most have drafts of less than fifteen (15) feet. The dock space required for a supply boat is dependent on the size of supply boat that is being used. The average length for a supply boat is two hundred (200) feet, therefore, a minimum of two hundred (200) feet of dock space is needed.

The most common drilling supplies that are carried to the rigs during the life of an exploratory well are:[2]

a. drilling muds 642 tons
b. cement 315 tons
c. tubular steel pipe 455 tons
d. diesel fuel 3,318 barrels
e. fresh water 1.19 million gallons

Other supplies carried by supply boats include drilling tools and equipment, wellhead equipment, blowout preventers, rental tools, offshore food, and housekeeping supplies.

Depending upon the amount of exploration activity, the

number of supply boats will vary, however, there are usually two (2) supply boats per OCS drilling rig.

5. Crew Boats

Crew boats are the boats that transport personnel from the service base to the OCS rigs and back. The crew boats are crewed twenty-four (24) hours a day and are used on an as needed basis. These boats are generally one hundred (100) feet long and require five (5) feet of draft. Crew boats may be operated from the same dock space as the supply boats or may operate from a separate docking facility.

6. Catering Services

Catering companies supply food and general housekeeping services to offshore facilities. A catering service may operate from one (1) central onshore facility that services an offshore area or may be operated from various separate local supply centers. Catering services that service the Port of Panama City or the Port of Pensacola may be able to provide OCS service. The catered supplies could be delivered to the support base for transportation to the OCS rig on an as needed basis.

Initially a new onshore catering service facility may not be located in West Florida. Catering may be contracted with local food suppliers. The type and magnitude of catering service required is dependent on the volume of

resource discovered.

7. Helicopter Companies

Helicopters are used to transport crews, deliver supplies and provide emergency services to offshore rigs and platforms. It is unlikely that a local helicopter company would be contracted for helicopter services due to the highly specialized service required. Specilized helicopter service would be supplied by a offshore operator experienced in OCS activities. It is likely that one (1) helicopter could be located in Region I if the resource find was substantial enough. The helicopter company could expand or relocate to service any OCS activity offshore from West Florida.

As previously mentioned, a support base could include a helicopter landing area. If needs for helicopter service cannot be met at the service base a new facility could be constructed. Such a helicopter facility would require a landing area, a radio or communications tower, repair and fuel storage area, office/communications structure and parking area for employees and visitors. A landing area for a helicopter requires one (1) acre or less of land. The amount of land necessary to ensure a clear flight path free from obstructions would determine the amount of land necessary for a helicopter service area.

Employees for helicopter service would be supplied by the helicopter service company and may range in number from two (2) to twenty (20) depending on the number of helicopters and the level of service needed.

8. Drilling Mud Companies

These companies supply drilling fluids to drilling contractors. The facilities needed to produce the drilling fluids consist of office/sales space, laboratory and mixing and storage space. Generally one (1) or two (2) warehouses are sufficient for the drilling mud companies.

It is unlikely that a new drilling mud company will locate in West Florida. Drilling fluids may be transported to the support service base and then transferred to supply boats for shipment to the OCS rigs. It is not likely that drilling mud companies will employ local, West Florida workers.

9. Wellhead Equipment Companies

These companies produce the equipment used to control and operate the wells during drilling and production. The facilities that manufacture wellhead equipment do not need to be located onshore from the OCS activity. If a substantial find is made, wellhead drilling companies may locate a regional sales office or a temporary facility to assist installation of equipment

at the support base established by the OCS lease owner. If a separate facility is located it will require office space and storage space on one (1) acre of land. Warehouse space may be needed if on-site storage of equipment is necessary. Between two (2) and one hundred (100) people could be employed at a wellhead equipment facility depending on the level of OCS drilling activity and the facility is prepared to perform maintenance service.

D. Field Development Phase

As oil and/or natural gas reserves are discovered, additional OCS support services need to be supplied from onshore. The services may be supplied from existing onshore facilities in Louisiana, Mississippi and Texas or new facilities may be constructed closer to the OCS resource discovery.

1. Permanent Service Base

The permanent service base (discussed in Section C.3 above) may be established during the exploration phase or during the field development phase. It is likely that a temporary service base will become the permanent service base if there is adequate space to accomodate the increased activity which will occur as more levels are drilled to define the resource find.

2. Platform Fabrication Yards

Platform fabrication yards are large, waterfront facilities consisting of warehouses, buildings and cleared land used to construct the OCS platforms to support resource develop-

ment and recovery activities. A platform yard does not have to be sited onshore from the OCS lease area. It is unlikely that the industry would spend the money to develop a fabrication yard in Region I because unused platforms are currently available and because platform fabrication yards are already located in the Gulf Coast. There are four (4) platform fabrication facilities in Mississippi, nineteen (19) in Louisiana, and ten (10) in Texas.[3]

There are two (2) types of platforms used in the OCS: steel and concrete. The type of platform employed depends on the field being developed, the mix of oil and gas, sea condition, OCS bottom conditions and number of wells to be drilled. Platforms are composed of a superstructure called the jacket, and deck for drilling operations. OCS platform fabrication companies have never located a new yard in a frontier area unless a significant hydrocarbon discovery has been made. Platform fabrication yards have the highest impact on the economy and environment of any onshore facility during the development phase.

Platform or platform sections can easily be fabricated at existing yards along the Gulf of Mexico and towed from these yards to sites offshore from West Florida. It is assumed that there will be no impacts in West Florida from platform fabrication yards.

For a platform fabrication yard to locate there are certain requirements which must be met. Between 200 to 1,000 acres of land adjacent to navigable water accompanied by a skilled labor force, transportation access, and energy supply are needed. The required water depth varies between 15 feet to 30 feet.

The impacts of a fabrication yard include increased employment, increased tax base, increased service requirements, increased utility requirements, increased raw material sales, increased water supply demand, increased sewage effluent loading, increased solid waste disposal, increased stormwater runoff, increased potential for dredging, increased potential for fuel spills and displacement of fish and wildlife.

3. Platform Installation Service Base

If new deep water platforms are needed they may be towed and assembled on the OCS site. After a platform has been completed and towed to the OCS offshore site, one (1) or two (2) derrick barges are required to lift, position, and for the deck modules into the jacket. A temporary service base may be needed while the platform is being assembled. If such a service facility is needed it is likely that the service base established during the exploration phase would be adequate.

Due to the conditions in the Gulf of Mexico offshore from West Florida and due to the availability of platforms in

Texas and Louisiana it is assumed that field development platforms will have very little impact in West Florida's economy.

4. Cement Companies

Cement companies provide highly specialized services for OCS offshore operations. The cement companies produce and supply bulk cement and additives and blends them in proper proportions. Because the requirements for OCS cementing operations are highly specialized the oil companies and drilling contractors purchase needed cement supplies from proven companies.

It is unlikely that a new cement fabrication facility will locate in West Florida. A cement distribution center may be located at the OCS support base or at an adjacent site. The distribution center requires water-front access and approximately one (1) acre of land or less to store the product before shipment to the OCS rigs or platforms. The only local employment that may be derived from cement distribution is local manual labor to load or unload the cement products.

5. Pipelines

Marine/submarine pipelines are the primary transportation mechanism used to conduct OCS hydrocarbon resources to onshore facilities. Pipelines connect the OCS platforms to onshore facilities. The distance between an OCS

platform and landfall site is generally the shortest distance due to the high cost of constructing a submarine pipeline. The decision to construct a pipeline is influenced by the estimated volume of a resource discovery, the rate of production, distance from the OCS site to onshore facilities, water depth, bottom topography, type of OCS resource discovered and the value of the resource found. In the Gulf of Mexico most of the oil that has been produced has been brought to shore by submarine pipeline. Virtually, all OCS natural gas has been brought to onshore facilities by submarine pipeline.

A pipeline system may include a pressure source, gathering pipelines from scattered OCS production platforms, major trunk lines, pressure booster stations and a onshore landfall connection to onshore pipeline.

The laying of a submarine pipeline is a technical accomplishment and requires special techniques. The pipeline is constructed using a "lay barge" supported by pipe supply boats, tug boats and a bury or "jet" barge which trenches and covers the pipeline on the bottom of the OCS.

There are several different methods for installing an OCS pipeline. Commonly, the lay barge is used to weld sections of pipe together and release the welded pipeline

into the water. The pipeline is allowed to rest on the bottom or is buried in a trench to prevent damage.

A second technique uses a reel barge. Long sections of welded pipe are wound onto a large reel placed on a reel barge and the pipeline is installed by unrolling the pipeline from the reel and placing it on the ocean floor.

A third installation technique is to pull pipe assembled onshore short distances from the onshore facility using pull boats. This mechanism is not considered feasible for laying a pipeline from the OCS of the eastern Gulf of Mexico.

The possibility of a pipeline landfalling in West Florida is likely if a resource find is made offshore from West Florida.

During installation of a pipeline the industry must locate a base to support the lay barge and other associated vessels. Space is needed to service the lay barge, tug boats, cargo barges and the jet or bury barge. It is likely that the service base established by the oil company during the exploration phase may be used to support the pipeline installation activities.

The impacts from pipeline installation in West Florida depend on pipeline landfall and distance for the pipeline to connect to a transmission line or oil barge terminal.

If a pipeline landfalls in Region I local jobs, goods and services will be needed during the time of construction. The environment will be disturbed during construction, but only in the pipeline corridor. The degree of disturbance and any degradation of water quality will depend on the techniques used to install the pipeline. If the pipeline is layed across the coastline using a dredge barge the potential for environmental degradation is higher than if the beach is crossed using a horizontal drilling procedure to drill under the beach and install the pipeline by pulling it through the drilled hole. Increased turbidity, temporary destruction of wildlife habitats, increased potential for spill of hazardous materials (e.g., oil) are the major environmental concerns generated by a pipeline landfall. After installation of the pipeline and restoration of the corridor the impacts of an OCS pipeline are minimized unless a blow out or other catastrophe occurs to the pipeline.

A detailed analysis of potential pipeline impacts in West Florida is offered in Chapter 5.

6. Pipe Coating Yards

A pipe coating yard is a large facility designed to store and prepare steel pipe for use in a submarine pipeline. The pipe is prepared for underwater use by applications of concrete and asphalt sealers for corrosion proofing

the pipe and to help sink it during installation.

A pipe coating yard is located in a frontier area, such as West Florida, only after contracts are signed and if a large amount of activity is indicated. The yard is only needed for a short period of time and is only used for one season when coated pipe is needed.

It is unlikely that a pipe coating yard will be located in West Florida unless several pipelines are to be installed. A temporary or portable facility may move to this area for the duration of a season, or until a particular pipeline is installed. Factors that determine if a pipe coating yard will be established include: the distance between the production platform and existing pipe coating facilities; ability of existing yards to meet delivery schedules; expected quantity of work; whether subsequent lease sales are made and if these sales may also be served by a newly established facility; and access to steel pipe and raw material sources. A portable pipe coating facility requires between ten (10) and thirty (30) acres on a waterfront with access to overland transportation. If a significant discovery is made the temporary facility can be made permanent. A permanent pipe coating facility will be established only when a long term contract or possiblility for large scale business is determined. Pipe coating yards presently located on the Gulf Coast vary from 75 acres to 200 acres

in size. Existing pipe coating facilities include administrative offices, pipe cleaning buildings, pipe coating areas, cleared, open storage space, storage buildings, rail terminal, marine terminal, and maintenance facilities. It would be possible for coated pipe to be shipped to West Florida from these existing facilities rather than locate a pipe coating yard in Region I.

If a pipe coating facility is located in West Florida most of the employees will be hired locally and trained on-site. However, employment for this type of work is generally temporary. It is customary for a pipe coating company to relocate supervisory personnel to a temporary pipe coating facility.

The environment adjacent to a pipe coating yard is impacted by dust, stormwater runoff, and maintenance dredging activity. If a new facility is established a large area of land will be needed and therefore an increased potential for loss of fish and wildlife habitat.

7. Gas Processing/Treatment Plants

Gas treatment facilities resemble gasoline refineries are designed to removed impurities, valuable liquefiable hydrocarbons such as butane and propane and other constituents from the raw natural gas stream. The gas treatment plant removes all extra compounds before the

gas enters the gas transmission system. Although industry representatives state that there are no standard sizes or formats for gas treatment plants, these facilities usually are located on fifty (50) acres or less. A gas treatment plant is designed and operates for the life of production of an OCS find.

It is possible to construct the gas treatment plant on a platform in the OCS, however, such an action is cost intensive. Also, there is available technology to liquify natural gas using extremely low temperatures and then tanker the liquified gas to an onshore facility, however, this process is prohibitively expensive and hazardous.

The decision to locate a gas treatment plant is made after the characteristics of the natural gas found are identified. Factors that affect the siting of a gas treatment facility are: size and quality of the find, location of pipeline, location of pipeline landfall, distance and location of a commercial transmission lines and relationship to petrochemical development.

A gas treatment plant will contain refrigeration units, compressors, power generators, contact towers, storage tanks, flare stacks, control center, and sulfur recovery components.

Partial processing of the gas stream generally is performed

on the OCS production platform. Water is removed from the natural gas stream before it enters the pipeline. Partial processing facilities may be located onshore rather than on the offshore production platform.

During construction of a gas treatment facility as many as 250-500 workers may be employed for approximately one and one-half years. After construction approximately 35-50 employees will be needed.

Gas treatment facilities do not need to be located on a waterfront and may be located up to ten (10) miles inland from the point of pipeline landfall. These facilities are noisy (80-100 decibels twenty-four hours a day, every day) and generate air, water and solid waste discharges. The air emissions include hydrogen sulfide, sulfur dioxide, various hydrocarbons, particulates, carbon monoxide and nitrogen oxides. Wastewater may contain dissolved hydrocarbons, acids and various heavy metal wastes. Solid wastes generated include sludges, spent dessicants, filtration media and oil absorbants.

8. Natural Gas Compressor and Metering Facilities

If natural gas is discovered offshore it must be metered or measured to determine volume, flow rate etc., and may need to be compressed to transport it in the OCS submarine pipeline.

Two (2) metering facilities will be needed if natural gas

is discovered. One (1) metering facility will be installed at the OCS production platform and a second along the onshore pipeline. The metering will record the volume of gas produced and help determine if there are any leaks in the OCS pipeline or onshore transmission pipeline.

A compressor facility may be needed at the OCS production platform if the natural gas being produced isn't under sufficient pressure to move through the OCS pipeline. A second compressor facility may be located at the gas treatment facility or at the point of interconnection between the OCS pipeline and onshore gas transmission pipeline.

A more detailed discussion of natural gas compressor and metering facilities is presented in Chapter 5.

9. Oil Storage/Marine Terminal

Some type of marine terminal is required whenever waterborne shipments of crude oil are made. These facilities may range in service from a small oil barge terminal to a large deepwater port servicing "supertankers". Oil storage terminals are generally sited on waterfront property to minimize pipeline distance. The decision to site a marine terminal is made at the time that production and transportation strategies are formulated. If the oil discovered is in insufficient volume to

justify a pipeline the product may be loaded directly onto barges or tankers and transported to onshore facilities. If a minor oil find is made it is unlikely that anything larger than an oil barge terminal will be located in West Florida.

A highly productive oil field less than 150 miles from shore would very likely justify the construction of a full marine terminal.

A full marine terminal will contain large storage tanks on approximately thirty (30) acres of waterfront land. A depth of forty (40) to fifty (50) feet or mooring buoy is needed to accomodate large tankers to service the terminal. A terminal could also include equipment for pumping and cooling equipment, pipelines and management offices.

Different types of oil terminals include:

a. Crude Oil Receiving/Storage Terminals - These facilities are designed to receive crude oil from OCS platforms by pipeline or by tanker. Often these terminals are built near oil refineries to hold or store crude oil until it is processed. The crude oil is received, metered, evaluated and stored. These tank farms act to hold the crude oil before it is processed or loaded onto tankers to be transported to other facilities.

b. Transshipment Terminals - A transshipment terminal receives crude oil by pipeline from offshore platforms and loads the crude oil onto tankers for processing elsewhere.

c. Product Terminals - These facilities receive refined petroleum products by barge or tanker for storage and subsequent delivery to regional or local markets. Product terminals do not have a direct contact with OCS activities. Several small product terminals exist in West Florida; Pensacola, Freeport, Eglin Air Force Base and Panama City.

If a full marine terminal is located a large number of jobs will be created for construction workers. The number of jobs depends on the size of facility to be constructed. To construct a facility to accomodate 250,000 barrels of oil per day would require between 500 and 600 workers. Many of the construction jobs could be offered to local workers. However, a simple oil barge terminal is more likely than a full marine terminal, therefore, fewer jobs will be created to modify or expand existing storage facilities.

Potential environmental impacts may be produced by increased oil tanker and barge traffic; maintenance dredging; crude oil or processed petroleum transfers; collision, spill, fire or hurricane hazards. The need for adequate channels

and turning basins at oil storage facilities may generate increased dredging problems and subsequent turbidity. Dikes will be required around a oil storage facility to serve to minimize oil spill and flooding impacts.

10. Refineries and Petrochemical Facilities

a. Oil Refinery

A modern crude oil refinery consists of a series of processing units to chemically or physically process or refine the crude oil into more useful petroleum products, e.g., gasoline, fuel oil, and jet fuel (see Table 4-2). The size and type of facility to be located depends upon the type and volume of crude oil to be refined. As the percent of gasoline produced increases so does the complexity of the refinery.

The actual crude oil refining process takes place by fractionation or distillation. A refinery includes processing units, storage tanks, water treatment facilities, offices, machine ship, storage space and warehouse, electrical substation, fire equipment, pumping station, truck loading areas, pipelines, rail spurs, parking areas and a buffer area around the facility.

Oil refineries are generally located by market demand rather than by proximity to OCS production area. Offshore development does not dictate the site for a refinery. Due to the limited chance of discovery of oil offshore

TABLE 4-2

Average Yield From One (1) Barrel of Crude Oil

Product	Gallons/Barrel	% Yield
Gasoline	19.28	45.9
Jet Fuel	2.86	6.8
Ethane	0.04	0.1
Liquified Gases	1.09	2.6
Kerosene	0.55	1.3
Distillate Fuel Oil	9.16	21.8
Residual Fuel Oil	3.65	8.7
Petrochemical Feedstocks	1.26	3.0
Special Naphthas	0.34	2.8
Lubricants	0.67	1.6
Wax	0.08	0.2
Coke	1.18	2.8
Asphalt	1.55	3.7
Road Oil	0.08	0.2
Still Gas	1.64	3.9
Miscellaneous	0.21	0.5
Processing Shortage	-1.64	-3.9
TOTALS	42.0	100.0

SOURCE: American Petroleum Institute. 1974.

from West Florida and the existing refineries west of this region on the Gulf coast, it is unlikely that a refinery or other petrochemical facilitiy will locate in West Florida. There are three (3) refineries in Alabama, twenty-five (25) in Louisiana, one (1) in Mississippi and thirty-seven (37) in Texas.[4] Refineries are generally separated from other OCS related facilities and tend to be sited in areas that are acceptable to public opinion and away from environmentally sensitive areas.

The capital cost to construct a refinery can range from eight (8) to eight hundred (800) million dollars. A small portable facility may cost much less. During construction between 1,500 and 3,000 jobs may be generated to complete a refinery that can process 200,000 barrels per day. After completion approximately 500-600 jobs are created. Approximately ten percent (10%) are administrative jobs and eighty percent (80%) involve operation and maintenance jobs require skilled labor. Refineries located on the Gulf coast have annual payrolls averaging approximately seven (7) million dollars.

If a refinery was to locate in West Florida a potable water quantity problem could occur. Refineries require large volumes of water to operate. Also, a refinery generates air emissions that may degrade ambient air quality. Anticipated air emissions include hydrocarbons,

carbon monoxide, particulates, sulfur oxides, and nitrogen oxides.

Refineries are noisy and can generate between 90 and 100 decibels every day of the year.

Wastewater impacts may result from discharges of metal fragments, hydrocarbons, particulates, alkaline substances, and process chemicals.

Other environmental impacts that may be anticipated if a refinery is located in West Florida include loss of fish and wildlife habitat due to land clearing, thermal pollution from cooling operations and aesthetic problems.

b. Other Petrochemical Facilities

These facilities are designed to manufacture chemicals or products from refined petroleum products and natural gas. Two (2) basic petrochemical products are made; aromatics and olefins. The final yield of the petrochemical operations include such substances as plastics, paints, dyes, resins, fibers, textiles and rubber.

Petrochemical facilities can be as large as 400 acres for large complexes or small for specialized products. These facilities are costly, employ large numbers of workers, have high energy use demands, many require large amounts of water and most generate air emissions.

As with a refinery, petrochemical facilities do not directly connect with OCS activities and, therefore, do not need to be located onshore from a OCS discovery.

Actual types of petrochemical product determine what

types of impacts will be generated. Some petrochemical products are seen as "dirty" because hazardous substances may be used or generated during processing. Large petrochemical complexes require detailed federal, state and local permits for location, construction and operation. Due to the limited oil and natural gas find anticipated in the OCS offshore from West Florida it is highly unlikely that any petrochemical facilities will be located in Florida Planning Region I.

As previously mentioned, a description of the facilities which are more likely to be located within the study area considered in this document are offered in Chapter 5.

CHAPTER 4

Footnotes

1. Tampa Bay Regional Planning Council. Coastal Energy Facilities Siting Study. December 1982.

2. New England River Basins Commission. Onshore Facilities Related To Offshore Oil and Gas Development. November 1976.

3. Minerals Management Service. Gulf Of Mexico Summary Report 3. August 1982.

4. Minerals Management Service. Gulf of Mexico Summary Report 3. August 1982.

CHAPTER 5

POTENTIAL OCS ONSHORE FACILITIES SITES AND ANTICIPATED IMPACTS

CHAPTER 5

POTENTIAL OCS ONSHORE FACILITIES SITES AND ANTICIPATED IMPACTS

In the event of a gas or oil discovery on the Outer Continental Shelf (OCS) south of West Florida, this region could expect a range from "no impact" to the limited impacts of five (5) types of petroleum industry facilities. According to petroleum industry sources, the proximity (Texas and Louisiana) of a large, permanent oil and gas infrastructure to West Florida will prevent any major increase in manufacturing related supplies. Because petroleum industry employees work 7 days on - 7 days off, or similar schedules, employees and dependents are unlikely to move into West Florida. Therefore, large scale impacts on schools, housing and municipal services will not occur.

The "No Impact Scenario" could result from onshore support facilities being located in Mobile and Baldwin Counties, South Alabama. There currently is active oil and gas production in Alabama, onshore and in coastal waters, and the petroleum infrastructure (pipelines, storage tanks and gas treatment facilities) is being constructed to support onshore and offshore production. Fifteen (15) active lease blocks immediately south of Mobile Bay and the Mississippi Sound are currently held by oil companies. There are only two (2) active leases on the OCS south of West Florida. As the petroleum exploration and production infrastructure in Alabama enlarges and spreads toward Florida waters, gas and/or oil activities south of West Florida could cost-effectively be supported entirely from Alabama.

In the "Limited Impact Scenario", West Florida could receive limited impacts from five types of onshore petroleum facilities.

I. Identification and Profile of Onshore Support Facilities

The five (5) onshore oil and/or natural gas facilities which are expected to impact the West Florida region are:

1. an onshore support base;
2. a pipeline landfall site and pipeline corridor connecting an OCS production platform to an interstate gas transmission system;
3. a natural gas treatment facility;
4. an oil barge terminal; and
5. a natural gas compressor and metering station.

These facilities would be expected during the three (3) phases of drilling activity; exploration, development, and production. Descriptions of the five (5) facilities have been collated from direct responses of oil and natural gas companies operating in or near the Gulf of Mexico. Because of the uniqueness of the Gulf, requirements for these facilities differ greatly from estimates presented in the New Jersey Energy Facility Development Potential Study[1] and Onshore Facilities Related to Offshore Oil and Gas Development - Factbook.[2]

A. Service Base

An onshore service base would be the first onshore activity observed. A service base would be established prior to transporting an exploratory drilling rig to a lease site

on the OCS. Factors to be considered when locating an onshore service base are:

a. land availability and surrounding land use;
b. waterfront access and presence of bulkhead, dock and navigation channel;
c. access to rail and to road transportation;
d. access to the Gulf of Mexico;
e. availability of support services, potable water, fuel and communication facilities; and
f. susceptibility to flooding and hurricane damage.

The initial service base, used to support early exploratory drilling efforts, may be considered temporary. If wells yield no commercially producible volumes of petroleum, the service base may be in use for six (6) to twelve (12) months, then dismantled when the exploratory well is sealed and the drilling rig is removed from the lease site.

The primary need for an onshore service base would be for a location for crew changes, a supply point for food, water, fuel, and small emergency supplies, and a point of local communications. When an exploratory drilling rig is transported to a drilling site from permanent fabrication, launching, and mooring sites in Texas and Louisiana, it usually is already loaded with drill pipe, well casing, drilling muds, casing cement, and equipment required to complete the proposed number of wells. Therefore, an onshore service base in West Florida will not act as a major supply point.

1. Characteristics of an onshore service base for exploration are:

   a. Land Area - 1.5 to 5 acres can support exploratory drilling for as many as five (5) drilling rigs. The land would be used for a mobile home, to be used as an office, communications center and housing for the shore-base crew; a covered warehouse of 1,000-2,000 square feet; open storage; a helipad, unless an airport is nearby; and a parking lot for crew members (35 to 40 persons).

   b. Docks - a dock length of 150-300 feet is required for crew boats (90-110 feet each) and supply barges.

   c. Water Depth - a navigable channel of 12 to 15 feet depth and about 100 feet in width is required to operate barges, crew boats, and work boats. Crew boats operating in the Gulf are about 100 feet long and have a draft of 5 to 8 feet.

   d. Access to Gulf - a reliable channel (15 feet deep, 100 feet wide, and does not require constant maintenance) to the Gulf is required for access to the OCS. Distance from the service base to the Gulf is important.

   e. Transportation - an onshore service base site would ideally be served by water, rail and road transportation systems.

   f. Water - exploratory drilling rigs require about 1,500 gallons per day of potable water for the crew and about 12,600 gallons per day of freshwater for drilling and washdown. Some OCS drilling rigs are equipped with desalinators which produce potable water. Drilling and

washdown water may be river water or highly treated sewage effluent.

g. Fuel - one (1) OCS drilling rig and a supply boat require approximately 2,450,000 gallons of diesel fuel per year. Fuel is usually purchased locally and some fuel storage tanks or a fuel storage barge may be located at the service base.

h. Waste Disposal - crew boats return solid waste to the service base from the rig. A waste contractor hauls wastes to an approved sanitary landfill site.

i. Support Services - fire protection, security and electricity must be available at a potential service base. Food supplies for crew members will be purchased and transported by the drilling company or by a caterer.

j. Access to Machinery Parts and Maintenance Services - small repairs, replacement parts, and welding may be purchased locally; availability of these services near a service base is beneficial.

Little distinction is noticeable between temporary onshore service base for exploration and a long-term service base to support resource development phase and production phase activities. In most cases, a temporary service base may be enlarged to support production activities. There will not be a large increase in the movement of materials and equipment through West Florida, because there will continue to be supplied directly from Texas and Louisiana to the OCS site. For example, Mobil Oil Exploration and Producing Southeast, Inc. (MOEPSI) originally established a

base of two (2) or three (3) acres to support exploratory activities in Mobile Bay, Alabama. As the result of a large gas find, Mobil has proposed to enlarge the same site to four (4) to six (6) acres to support field development and production from five (5) production platforms and twenty (20) wells.

B. Pipeline Landfall and Onshore Corridor

In the event of a commercial natural gas or oil discovery that meets the minimum resource specifications in the assumptions (Chapter 2), a pipeline must be constructed from the OCS production platform to an interstate distribution system. For this study, one pipeline landfall containing one (1), sixteen (16) inch pipeline is assumed to occur.

A pipeline is the preferred transportation method because it is safer, presents less hazard for spills, and has a lower operating cost. Also, the State of Florida has adopted a transportation stipulation for OCS oil and gas leases off the coast of Florida, requiring product transportation to shore in a pipeline, unless a pipeline is not economically feasible.

In the unlikely event of a commercial oil discovery, the discovering oil company (producer) would construct an oil pipeline ashore, along with required facilities. In the event of a natural gas discovery, the producer usually sells the gas to a gas transmission company, at the platform, and the gas transmission company would construct a pipeline and associated facilities. While some offshore pipeline construction activities

may be supported through the onshore service base, most materials are expected to be loaded onto the lay barge "spread" before it departs the permanent pipe fabrication and pipe coating yards in Louisiana and Texas. Steel pipe and supplies for the onshore pipeline would be transported by truck directly to the pipeline corridor.

Many factors are considered by oil and gas companies when selecting a pipeline corridor:

1. total oil and gas reserves;
2. oil and gas composition (gas containing hydrogen sulfide and carbon dioxide is more costly to transport since pipe must be thicker and anti-corrosion precautions must be taken);
3. rate of production - determines pipe diameter;
4. distance and route from production site to delivery point;
5. water depth;
6. topography under water and on land;
7. geology and soils;
8. types and number of crossings (estuary and large river crossings are expensive; road, rail, and wetlands crossings add cost);
9. land use within and surrounding proposed ROW (laying pipeline on beachfront and waterfront ROW is expensive because of the high cost of leases and, while laying pipeline through urban areas is possible, cost increases because of additional safety factors);

10. proximity to existing ROW's;
11. environmental concerns about estuaries, wetlands, etc.;
12. capital cost of pipeline;
13. operating costs; and,
14. revenue to be derived from sale of the petroleum resource.

Offshore and submerged estuarine pipelines cost four (4) to six (6) times as much as an onshore pipeline.[3] Because of the high cost of submerged pipelines ($600,000 to $9.3 million per mile), oil and gas companies tend to construct offshore pipelines to the closest landfall and avoid crossing sounds, bays and large rivers. Also, the cost of a pipeline carrying sour gas is considerably higher than the cost of a pipeline carrying commercial gas. Therefore, gas is usually treated soon after making landfall.

When seeking a pipeline corridor, the pipeline company will seek the shortest acceptable route to an interstate pipeline system. In West Florida, OCS natural gas would be marketed through Five Flags Pipeline Company (a local pipeline); Florida Gas Transmission Company (an interstate pipeline with major markets east of West Florida), or United Gas Pipeline Company (an interstate pipeline which terminates in Escambia County, Florida).

An existing pipeline can be tapped at any location, provided several general conditions are met. The conditions are:

1. The site must be accessible by land for routine

operation and maintenance. The land area at the point of interconnection ranges from virtually no new right-of-way for a meter station and tap to several acres if hydrocarbon liquids are to be removed or if the gas must be compressed before entering the pipeline.

2. The existing transmission pipeline must have capacity available to transport new gas.
3. There must be a market for new gas.

The major pipeline systems involved in West Florida are Florida Gas Transmission Company, United Gas Pipe Line Company and Five Flags Pipe Line Company (see Figure 5-1). Florida Gas is currently involved in a project to remove a portion of its existing system from gas service. One (1) of two (2) pipelines will be converted to transport refined petroleum liquids from Baton Rouge refineries to south Florida. If the remaining pipeline does not have adequate capacity for new natural gas, Florida Gas could apply to the Federal Energy Regulatory Commission (FERC) to divert an equal volume of gas to an interconnecting pipeline west of Florida, thus, creating pipeline capacity to receive new OCS gas in Florida.

The easternmost terminus of United Gas' system is located in Escambia County, Florida. Therefore, United could probably only purchase gas found south of Escambia and Santa Rosa Counties. As with Florida Gas, United must also divert an equal volume of gas from its pipeline west of Florida, to create capacity for new gas.

If OCS gas production volumes are large and field reserves indicate a long-term production forecast, then connection to the Southern Natural Gas Company System or to the South Georgia Natural Gas Company system might be cost-feasible. All new major pipeline construction must be approved by FERC, so that existing pipelines may receive maximum use. Southern Natural Gas' main system is located 135 miles north from the West Florida coast. South Georgia's system is 40 miles north of St. Marks, Florida; however, it consists of 6 to 10 inch lines, which may not be of sufficient diameter to accept new OCS gas.

Because Florida Gas Transmission Company's main pipeline traverses the entire West Florida Region, it will be the most likely destination for natural gas found on West Florida's outer continental shelf.

Laying an offshore pipeline begins at the production platform. The lay barge "spread" (lay barge and two (2) support barges) is the surface platform where pipe lengths are welded together; inspected, then lowered to the seafloor. A submarine pipeline ROW is about 200 feet wide.

At a water depth of 200 feet, in the Gulf of Mexico, particularly where trawling and shipping activities are high, the pipeline must be buried under the seafloor to prevent fouling and rupture, caused by fishing gear and ship anchors.[4] From the 200 foot isobath landward to the point of landfall, a pipeline will be buried. Offshore, a dredging barge would precede the point at which the pipeline being lowered would

contact the seafloor. A trench would be cut in the bottom, either by hydraulic dredge or by use of a jet sled, which blows a trench in soft bottoms with high-pressure water jets. After the pipe is lowered into the trench, natural water currents are usually allowed to cover the pipe. Other submarine pipeline laying techniques are in use, but this is the most common method used in the Gulf of Mexico.

The actual landfall may be made by one of two methods. The lay barge will operate as close to land as water depth permits. While final sections of the offshore pipeline are being constructed, a bucket dredge excavates a trench behind the beach. In the final stage, the bucket dredge cuts through the dune-beach system, creating a trench in which onshore and offshore pipeline sections are joined. The original beach topography and vegetation are reconstructed.

The second method of making a pipeline landfall is preferred and recommended in this study, because environmental disturbance is greatly reduced. A drilling rig may be set, either on the lay barge or on land, to drill horizontally under the beach and dune system, so pipeline connections may be made on land. If horizontal drilling is performed from land, behind the dunes, the drilling rig may be pivoted 180^{o} to drill under Santa Rosa Sound and the Gulf Intracoastal Waterway. The 16-inch pipeline would then be pulled, from offshore, through the hole and connections made to complete onshore and offshore pipeline segments. This landfall method requires very little surface and bottom

disturbance providing protection to the valuable, fragile barrier island dune system.

Pipeline construction on land consists of clearing the pipeline corridor, digging a trench with equipment suitable for the soils being moved, assembling pipe sections along one side of the ROW, lowering the completed pipeline into the trench, covering with soil, and revegetating the ROW. The ROW may be used for agriculture, recreation, pasture, etc., after completion of the pipeline. Because pipelines are surveyed aerially and, for safety reasons, trees and buildings cannot be located in the ROW. For a single, 16-inch pipeline, the ROW could be as narrow as 50 feet, or as wide as 100 feet, depending on soils and topography.

Pipelines can safely pass through urban areas, but the cost is higher because of added safety precautions. Pipe wall thickness is greater, more X-rays are taken, and the pipe casing is vented to prevent accumulation of explosive gases. Again, the ROW must be cleared of surface structures.

This report recommends that major river crossings be horizontally drilled, to reduce environmental disturbances. River crossings may also be dredged. Small streams may be crossed by dredging, as long as adequate turbidity curtains are used.

Road crossings may be made by cutting through the road or using a procedure of boring under the road and pushing the pipeline through a hole casing (called "jack and bore"). Counties and the Florida Department of Transportation

strongly recommend "jack and bore".[5]

Two (2) methods are commonly used to cross wetlands, depending on soil stability. In the "flotation method", a floating dredge excavates a channel wide enough to float a small lay barge through the wetland. The ROW is refilled and revegetated. If soils will support a crane, the crane excavates a ditch wide enough for only the pipe. The pipe sections are welded either on a barge or on land, floats are attached, and the pipeline is pushed/pulled through the ditch. The ROW is leveled and revegetated. This is the "push-pull" method.

Several other configurations of pipelines and transportation systems, other than a single gas pipeline from the OCS production platform to an existing gas transmission pipeline, are possible. If the discovered natural gas resource is less than the minimum specification, it cannot be produced. Natural gas can be tankered/barged only after it has been liquefied, and offshore liquefaction plants are more costly than a pipeline.

If a less than minimum oil discovery is made, oil may be loaded on a tanker/barge at the production platform and shipped directly to a refinery.

If sufficient quantities of gas and oil are found together so that a pipeline is justified, oil, gas, and water would be separated on the production platform, water discarded, gas and oil dehydrated, then both products may be put into one pipeline and transported ashore. Onshore, at a gas treatment

plant, oil and gas would be reseparated, oil piped to a marine terminal for shipment to a refinery, and gas treated and piped to an interstate pipeline.

Finally, in the event that gas found south of Pensacola is transported to Escambia County and gas found south of Destin is piped ashore in Bay County, it is remotely possible that West Florida could experience two (2) pipeline landfalls.

Characteristics of potential West Florida pipelines are:

1. construction time: depends on length; for the shortest route of 35 miles offshore and 24 miles onshore, one year may be required.
2. labor requirements: about 250 jobs, 20 percent of which may be local laborers.
3. cost: 16-inch offshore pipelines average $1.55 million per mile while onshore 16-inch pipelines average $275,000 per mile.[6]
4. noise: localized along 1 to 2 mile sections of the onshore segment; during construction, equipment would generate about 86 decibels, 100 feet from the source; no noise during operation.[7]
5. energy: pipelines are the least energy-intensive transportation methods; energy consumption is included in the discussion of compressor stations.

C. Natural Gas Treatment Facility

Natural gas produced from the OCS south of West Florida is expected to contain hydrogen sulfide, a poisonous and corrosive

gas. Hydrogen sulfide and carbon dioxide, when combined with water, form acid compounds which corrode well casing, processing facilities and the natural gas pipeline. The gas may be dry, or it may contain petroleum condensates or liquids, such as propane, butane, ethane, and pentane, which have a higher energy content than natural gas (natural gas is essentially methane) and are usually separated from the gas stream and sold to industrial and chemical markets. Therefore, a gas treatment, gas processing, and liquids fractionation facility will be required.

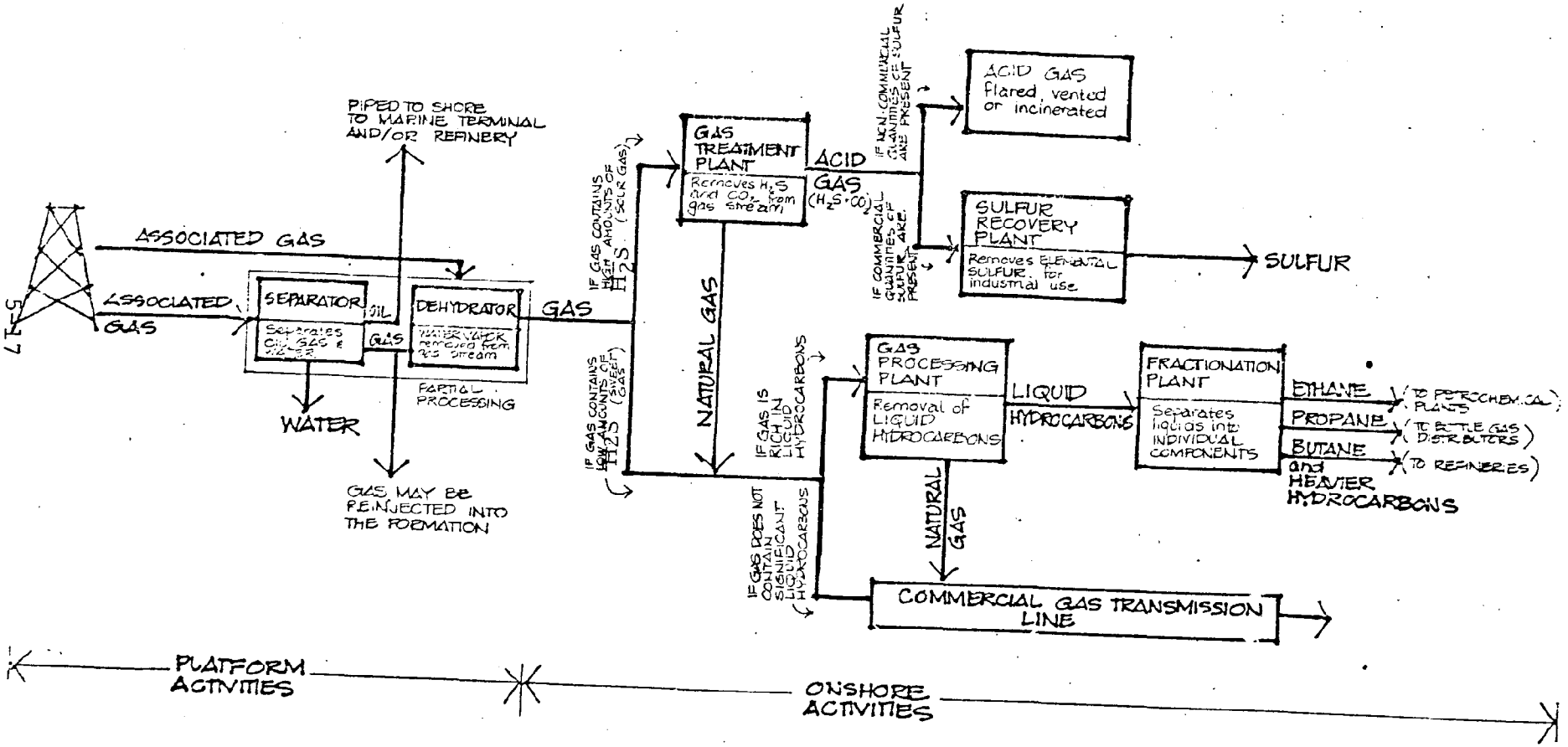
A typical gas treatment and processing flow diagram is illustrated in Figure 5-2.

When sour gas is discovered, the gas and gas condensates are separated and dehydrated on the offshore production platform. Dehydration removes water vapor and reduces corrosion and danger caused by hydrogen sulfide and/or carbon dioxide. Gas liquids are reinjected into the gas stream and both are piped ashore.

Onshore, natural gas enters the gas treatment plant for removal of carbon dioxide and hydrogen sulfide, which is further processed to recover elemental sulfur, which is sold to chemical markets. Sweetened gas (gas with hydrogen sulfide removed) and condensates enter the gas processing plant (commonly called the "gas plant"), where valuable gas condensates are removed. Some condensates may be added to the gas to produce contract-specified energy content (usually about 1000 British Thermal Units per 1000 cubic feet), before gas enters an interstate gas transmission pipeline. If gas liquids are recovered at an economical rate, they enter the fractionation plant, where they are separated and

FIGURE 5-2

GAS PROCESSING AND TREATMENT



SOURCE: Onshore Facilities Related to Offshore Oil and Gas Development, Factbook. New England River Basin Commission. November 1976.

sold to distributors or consumers. If gas liquids are not present in large quantities, they may be stored prior to shipment to an existing fractionation plant.

This may be one opportunity where the St. Regis gas treatment facility, owned and operated by Exxon Company, USA, may be shared by oil/gas companies that may discover petroleum on Florida's OCS. The Exxon facility is designed to treat 90 million cubic feet of gas per day but currently processes only 70 million cubic feet per day. If OCS gas condensates are not of sufficient volume to justify a gas fractionation plant, these liquids could be trucked to the St. Regis facility, near Jay, for fractionation.

Three factors determining the location of a gas treatment facility receive high consideration. If sour gas is transported ashore, the gas facility is usually located within five (5) to ten (10) miles of the landfall site, to eliminate the corrosive effects of carbon dioxide and hydrogen sulfide and reduce pipeline cost. A gas treatment facility should be located along the pipeline corridor. Also, if gas and oil are transported in one pipeline, the gas treatment facility should be located adjacent to or near a waterfront site suitable for an oil barge terminal.

Other factors determining the development potential for a gas treatment facility are:

1. flood and hurricane hazards;
2. land availability and cost;
3. access to transportation routes (rail not required);
4. proximity to the interstate gas transmission pipeline;
5. surrounding land use and need for buffer;

6. local air quality;

7. rate of gas production;

8. percent of hydrogen sulfide; and,

9. flowing pressure of gas wells.

According to gas industry sources, the percent of hydrogen sulfide and well pressure are important factors in determining the location of a gas treatment plant. It is not a gas industry practice to compress sour natural gas. Lubricants, equipment maintenance and a multitude of operational problems associated with the presence of hydrogen sulfide make compression a very high risk process. Therefore, gas treatment plants must be located as close to the source as possible and, if well pressure is insufficient to push gas ashore, the gas might be treated on the production platform, or a field platform. If well pressure is insufficient to push sour gas ashore, the discovered gas resource must show a large reserve to justify the large capital expense of building an offshore gas treatment facility. A low-pressure sour gas find of 100 million cubic feet of gas with a seven (7) year reserve would probably be uneconomical to produce.

The size of a gas treatment facility is dependent upon gas production rate and the chemical structure of the gas. Gas plants range in size and complexity from a small, dehydration tower, located at each well site to treat sweet, dry gas, and requires an area about 25 square feet; to a central complex covering 65 acres, which separates gas and oil, dehydrates both resources, removes and recovers sulfur, separates gas liquids and fractionates gas

liquids into marketable components.

Separate gas treatment modules would be manufactured at existing sites in Texas or Louisiana, transported to West Florida, then connected on the site of a gas treatment facility. The size, number, and types of modules assembled are dictated by OCS production rate and chemical composition of the product.

The land requirement for a gas treatment facility sized to treat 100 million cubic feet of gas per day is 30 to 35 acres. For treatment of sour gas and abatement of noise, odor and aesthetics, an additional buffer zone of 200 to 400 acres may be purchased or leased by a gas company, making a total land requirement of 300 to 800 acres. For example, MOEPSI has purchased sufficient land in Mobile County, Alabama, to control 850 acres; 33 acres of plant site, 120 acres of fenced area, and 730 acres for residential buffer. Alternately, Exxon Company, USA, leases a treatment plant site of only 65 acres, which is located about one-half mile from the Town of Jay, Florida. Surrounding land is owned by St. Regis Paper Company and is planted with pine trees, so the forested area creates a buffer. In both cases, land adjacent to the treatment plant is unavailable for residential or commercial development.

Hurricane and flood hazards are a priority concern of gas companies. High, dry sites are selected for gas plants.

Other pertinent characteristics concerning a gas treatment facility include:

1. Construction Time - Gas treatment facilities on the Gulf coast have generally been completed in one (1) year.

2. Labor Requirements - About 350 construction jobs are generated when a gas treatment facility is under construction. Approximately 225 of these jobs can be jobs for local construction workers. After completion a gas treatment facility will generate between 25 and 35 operations jobs. About half of these jobs can be filled by West Florida workers.

3. Capital Cost - Previous gas treatment facilities have ranged in cost between 50 and 60 million dollars, with a monthly operating cost of 3.5 million dollars.

4. Noise - Gas treatment facilities are noisy during construction and during the life of operation. During construction the on-site noise level is estimated to be between 74 and 98 decibels for approximately ten (10) hours per day. If an adequate buffer zone surrounds the construction site the noise level may be reduced to nine (9) decibels above daytime background noise at a distance of 3,000 feet from the site.

   During facility operation, noise levels at the facility range between 75 and 100 decibels. This noise level would be continuous 24 hours per day, seven (7) days a week.

5. Water Consumption - The consumptive use of a gas treatment facility may be minimized by the use of air-cooled or fin-fan equipment. Water is needed for fire protection and for domestic needs. Water consumption is approximated to be 150,000 gallons per day, or less, if air cooled or

fin-fan coolers are used. Where feasible, on-site wells may provide water for fire protection and associated needs and a municipal system could provide the low volume of potable water needed for domestic use.

6. Energy Consumption - If a gas treatment facility to treat 100 million cubic feet of gas per day is constructed the estimated electrical usage would be approximately 750,000 kilowatt hours per month for the sweetening, processing and fractionation operations. Fuel consumption is estimated to be approximately 270 million cubic feet of natural gas per month. If the gas treatment facility is located in an area which already experiences a high level of industrial emissions, it may be necessary to increase the use of electricity to prevent additional loading to the ambient air quality.

7. Air Emissions - For a proposed gas treatment facility with capacity to treat 100 million cubic feet per day of sour gas (six (6) to eight (8) percent of hydrogen sulfide, by volume) sulfur dioxide and nitrogen oxide emissions are of primary concern. Such emissions may require the issuance of a federal Prevention of Significant Deterioration (PSD) air permit and a Florida Department of Environmental Regulation (FDER) air permit.

Other potential air emissions include water vapor, carbon dioxide, carbon monoxide, particulates, certain

volatile organic compounds, and hydrogen sulfide.

If a leak of untreated natural gas, containing hydrogen sulfide, occurred the gas flow would be shunted to the flare stacks and burned. The hydrogen sulfide would be converted to a less harmful sulfur dioxide.

The specific volume of air emissions depends on the volume of gas treated and the hydrogen sulfide content of the gas being treated. Table 5-1 records the estimated air emissions from Mobil Oil Company's gas treatment facility proposed for Mobile, Alabama.

Air emissions may be controlled by using the best available control technology (BACT).

D. Marine Oil Barge Terminal

In the unlikely event that a minimum volume of oil to justify a pipeline cost is discovered in the OCS offshore from West Florida, a submarine pipeline would be installed to transport the oil to onshore facilities. If a less than minimum discovery of oil is made, the oil would be loaded onto barges at the production platform and be shipped to a refinery.

If an oil pipeline is constructed in West Florida, a crude oil barge terminal with storage tanks would need to be located. There is only one (1) existing petroleum liquid's pipeline in West Florida. This sixteen (16) inch diameter oil pipeline transports crude oil from Exxon's St. Regis facility in Jay, Florida to Mobile, Alabama. Because of the lack of existing onshore oil pipelines in Region I it would be more cost effective

TABLE 5-1

ESTIMATES OF AIR EMISSIONS FROM A GAS TREATMENT FACILITY

Pollutant	Amount
Sulfur Dioxide (SO_2)	881 tons per year
Nitrogen Oxides (NO_x)	298 tons per year
Carbon Monoxide (CO)	29 tons per year
Volatile Organics (hydrocarbons)	17 tons per year
Particulates	7 tons per year
Hydrogen Sulfide (H_2S)	5 tons per year

SOURCE: MOEPSI. May 1982. Production of Natural Gas from the Lower Mobile Bay Field, Alabama - Permit Applications.

for the oil industry to transport the crude oil from point of landfall through the Gulf Intracoastal Waterway on barges to existing refineries west of this region.

Factors which must be considered by the oil industry when locating and sizing a oil barge terminal are:

1. rate of oil production;
2. size of barges to be used at a terminal;
3. frequency of oil shipments to refineries;
4. crude oil storage capacity required if barge transport is interrupted;
5. flood and hurricane exposures;
6. access to intracoastal waterway, rail access and road access;
7. proximity to existing petroleum facilities;
8. land availability, cost, and surrounding land use;
9. soil suitability for storage tank foundation;
10. distance from OCS pipeline landfall; and,
11. distance from oil-gas separation facility.

Oil industry input indicates that an oil barge terminal in West Florida would include:

1. To accomodate a potential OCS oil discovery of 10,000 barrels of oil per day, a oil barge terminal would require approximately four (4) to six (6) acres of waterfront property.
2. 300-400 feet of dock space would be needed for servicing crude oil barges and associated tug boats.
3. 10-15 feet of draft with a 100 feet wide navigable channel

connecting the docking facility and the Intracoastal Waterway would be needed.

4. Tank storage capacity of about 100,000 barrels, providing about a ten day reserve. Tanks are used to meter oil volume, to determine state and federal revenues.
5. Approximately one (1) year would be needed to construct a new barge terminal. If an existing facility could be modified the construction time could be reduced to three (3) months. A new facility could employ approximately 250 workers and have a capital cost of 30 million dollars.
6. After completion a crude oil barge terminal would employ between ten (10) and fifteen (15) workers.
7. Noise levels could range from 85 to 100 decibels at the facility if compressors or oil heating boilers are needed. These noise sources would be intermittant and would occur on an as needed basis.
8. The energy requirement for a crude oil barge terminal may range between 500,000 and one (1) million kilowatt hours per year to operate the pumps, motors, yard lights, heating units, etc. An additional supply of 10 to 25,000 barrels per year of diesel fuel would be needed for tug boats and trucks.
9. Depending upon the volume of oil transferred through a West Florida barge terminal, the predominant air emissions would consist of evaporated hydrocarbons, combustion emissions (nitrogen oxides, sulfur oxides and carbon monoxide) from tug boats, trucks and other

on-site combustion engines. It is estimated that hydrocarbon emissions could be as high as 1.4 tons per year.

For comparison, Shell Oil operates an oil barge terminal, near the mouth of the Mississippi River, which occupies 5.7 acres, contains a 450-foot dock, and has storage capacity for 272,000 barrels of crude oil.

As previously discussed, it is conceivable that a small OCS oil find could be transported ashore with natural gas. In this situation, the oil barge terminal would preferrably be located near the gas treatment facility, since oil must be reseparated from gas and stabilized.

Oil storage tanks are constructed at an elevation to reduce flood hazards and oil facilities in coastal areas are constructed to withstand hurricane winds. Oil facilities must have a spill containment dike or berm surrounding the site. Additional facilities and services are an office and communications center, control console, water for fire protection, domestic sewage and solid waste collection.

E. Compressor and Metering Facilities

The requirement for compression facilities depends upon OCS well pressure, distance from wells to the interstate transmission pipeline, and pressure in the interstate pipeline. The Federal Energy Regulatory Commission usually requires pipelines to operate at no less than 60 percent of design capacity, therefore, the

need for compressors will vary with pipe diameter and rate of production.

According to oil industry sources, it is much easier to "push" gas through a pipeline, so compressors would usually be located on the production platform. However, it is dangerous to compress sour gas, so OCS geologic formation pressure must push gas through the gas treatment plant. Therefore, if compression of natural gas is required, compressors would be located either at the gas processing plant (after sulfur removal) or adjacent to the interstate transmission pipeline.

A major compression facility could require up to three (3) acres. However, if the compressor is located at the gas plant or adjacent to an existing compressor station or Florida Gas' Transmission Pipeline, very little new land would be required.

Characteristics of a compressor station are:

1. The land area required depends on OCS well pressure, production volume, distance from well to destination, and pressure within the interstate pipeline.
2. The capital cost for construction is between $750 dollars and $1,500 dollars per horsepower needed to operate the compressor facility.
3. Construction of a new compressor facility may provide 30 to 50 jobs for about four (4) months. There are no on-site jobs generated by a gas compressor station during operation.
4. A gas compressor station must be accessible by road, in order to conduct maintenance, as needed.

5. The compressor may be operated by electricity or natural gas, depending upon ambient air quality. The energy requirement is small, compared to treatment plants or barge terminals and is dependent on the size of the facility and volume of gas being transported.
6. Compressor station compressor noises may be muffled so that they produce 55 to 66 decibels at a distance of 800 feet. Noise is produced 24 hours per day. Approximately once per year, a high pressure pipeline is vented at the compressor station, producing 85 to 140 decibels.
7. Hydrocarbons and sulfur oxides are produced in a gas combustion compressor. The level of emissions are small, from 0.6 to 1.2 pounds of emissions per million cubic feet of gas compressed.

Two (2) gas metering stations may be required; one (1) on the production platform to determine the volume of gas entering the pipeline, and one at the interstate pipeline to measure sales. Metering facilities are important in detecting leaks.

Metering stations could cost between $100,000 and $750,000 and require an area only 100 by 100 feet square. Construction takes about four (4) months and would be constructed concurrent with the compressor station. No on-site jobs are generated at a gas metering facility after construction.

II. Alternative West Florida Sites Considered for Onshore Natural Gas and Oil Facilities

For purposes of this study, up to seven (7) alternatives for transporting natural gas and/or oil ashore, providing treatment,

and marketing to an interstate gas system, were considered. At least one alternative in each of the five (5) coastal counties in Planning Region I was evaluated in detail and recommended for oil industry and local consideration.

Using the information from the completed methodology described in Chapter 3 the OCS onshore support facility alternatives were developed. The alternatives are illustrated in Figure 5-3. Locations for seven (7) pipeline landfalls and corridors (A1-A7), seven (7) onshore service bases (B1-B7), seven (7) gas treatment facilities (C1-C7), five (5) oil barge terminals (D1-D5), and six (6) compressor - metering stations (E1-E6) were chosen. A description of each considered alternative follows.

Because of the general nature of a OCS hydrocarbon discovery and due to a lack of detailed data, the sites selected and described are general areas. In some cases actual land owners have been contacted and specific sites have been named and described.

A. Pipeline Landfall and Corridor

1. Alternative A-1 - The Perdido Key (Escambia County) landfall is located in the vicinity of State Road 292 as it crosses the Intracoastal Waterway. This route crosses the GIWW at its narrowest point in Escambia County. The pipeline corridor considered continues inland to the area of U.S. Highway 90 at Bayou Marcus Creek, where the pipeline could be constructed in an existing right-of-way of a United Gas Company pipeline. The considered OCS pipeline corridor would continue northward and interconnect with the United Gas Pipeline Company system, at the company's

eastern terminal.

This corridor would require crossing of the GIWW (horizontal drilling recommended) and, as with all proposed corridors, several roads, streets and streams. The distance from landfall to destination is approximately 24 miles. The determination of distance from the OCS for the alternative submarine pipeline corridors was approximated starting from one (1) lease block, each, determined to be in the center of the productive areas of the Destin Dome Block and the Pensacola Block (assumed to be the most likely find areas). Block Number 144 was selected for the Pensacola Block and Block Number 995 was selected for the Destin Anticline area (see Figure 5-4).

2. Alternative A-2 - The Santa Rosa Island/Gulf Breeze landfall (Santa Rosa County) is located approximately four (4) miles east of Pensacola Beach. The pipeline corridor considered crosses Santa Rosa Island to Range Point, crosses Santa Rosa Sound to an area about three (3) miles east of Gulf Breeze, crosses East Bay to Garcon Point, then continues inland to an area west of Milton. This considered corridor crosses State Road 87 between Milton and Naval Air Station Whiting Field, and interconnects with the Florida Gas Transmission Company interstate gas pipeline at the Juniper Creek Compressor Station.

   This considered corridor requires a two (2) mile crossing of Santa Rosa Sound and a three (3) mile crossing of East Bay. Since both crossings are beyond the capability limits of horizontal drilling, the pipeline must be

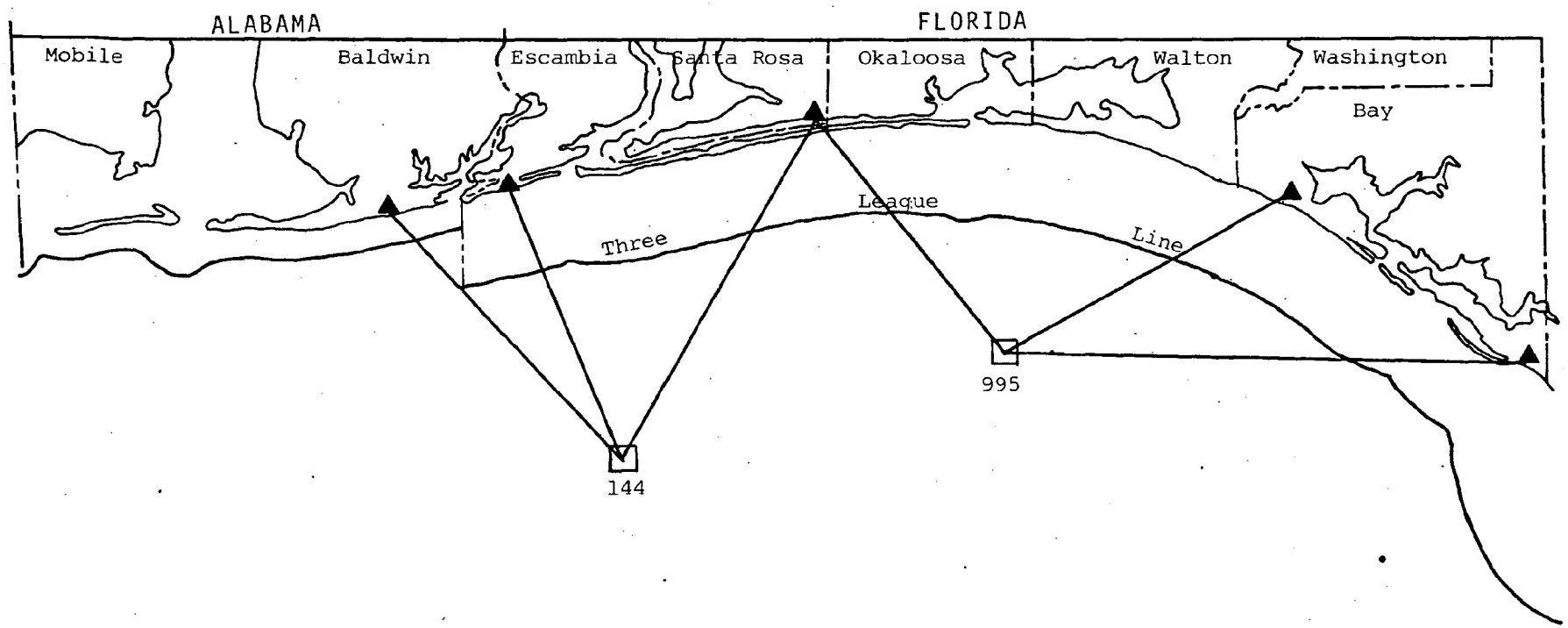


FIGURE 5-4

Center Lease Blocks

For OCS Production Areas

must be buried by dredging. Both estuarine systems are valuable and very fragile.

Further inland, the considered corridor crosses Interstate Highway 10 and Pond Creek. The distance from landfall to destination is approximately 44 miles.

If Getty Oil Company discovers natural gas in East Bay, this pipeline corridor could be shared with Getty to transport OCS and onshore generated natural gas.

3. Alternative A-3 - The Holley-Navarre pipeline landfall (Santa Rosa County) is located in the vicinity of the Santa Rosa/Okaloosa County Line. The considered corridor crosses a one (1) mile section of Santa Rosa Sound (horizontal drilling is recommended), crosses U.S. Highway 98, and parallels State Road 87 and Okaloosa County Gas District pipeline rights-of-way across Eglin Air Force Base to U.S. Highway 90. The considered pipeline could then follow State Road 191, or be constructed in a straight line to interconnect with the Florida Gas pipeline at the Juniper Creek Compressor Station.

This considered corridor requires crossing of two (2) major rivers, Yellow River and Blackwater River; the second of which may be performed by horizontal drilling. Distance from landfall to destination is about forty-one (41) miles.

This potential corridor could be modified (Alternative A-3A) as follows. Near U.S. Highway 90, the OCS pipeline corridor could turn west and follow the Okaloosa County

Gas District pipeline right-of-way around Milton to the vicinity of the intersection of County Road 187 and 194 (Section 32, Township 2N, Range 29W). Near this location, an OCS pipeline could interconnect with the local Five Flags Pipeline Company pipeline, which could market gas to area industries in Escambia and Santa Rosa Counties, or transport OCS gas north to Jay, to an interconnection with the Florida Gas Pipeline.

For Alternative A-3A, the distance from landfall to destination is about 33 miles.

As in Alternative A2, this pipeline could potentially be shared by Getty Oil Company and the OCS gas producer.

4. Alternative A-4 - The Destin landfall (Okaloosa County) is located about two (2) miles west of the Okaloosa-Walton County Line. The corridor crosses the peninsula to Piney Point, crosses an eight (8) mile section of Choctawhatchee Bay and Boggy Bayou, to meet and parallel State Road 85 and Okaloosa County Gas District rights-of-way across Eglin Air Force Base reservation. At Interstate Highway 10 or U.S. Highway 90, the considered corridor could depart State Road 85 and interconnect with the Florida Gas pipeline northeast of Crestview.

   This considered corridor requires one (1) major river crossing; the Shoal River. The total distance from landfall to destination is about 34 miles.

5. Alternative A-5 - The Seagrove Beach Area landfall (Walton

County) is approximately two (2) miles east of the unincorporated community of Seagrove Beach. The considered corridor continues northward to cross the Choctawhatchee River delta, pass east of Freeport, and interconnect with the Florida Gas pipeline east of DeFuniak Springs.

This considered corridor requires crossing of a major river delta, extensive wetlands, two (2) rivers (Choctawhatchee and Mitchell), Black Creek and the Intracoastal Waterway. The distance from landfall to destination is approximately 31 miles.

6. Alternative A-6 - The Panama City Beach area landfall (Bay County) is near the junction of U.S. Highway 98 and State Road 79. This is the only landfall considered located within an urbanized area. However, the urbanized area (residential and tourist attractions) along the coast is only one-half to one (1) mile wide, therefore, horizontal drilling might be used to reduce any disturbances.

The considered corridor continues inland along State Road 79, through West Bay to the vicinity of County Road 284, northeast of Ebro. The corridor continues north and interconnects with the Florida Gas pipeline at the Choctawhatchee River Compressor Station.

The only water crossing is the Intracoastal Waterway at West Bay. The distance from landfall to destination is approximately 33 miles.

7. Alternative A-7 - The Mexico Beach area landfall (Bay County) is located between Tyndall Air Force Base and Mexico Beach. The pipeline considered corridor extends inland, either crossing or going around East Bay, parallels County Road 167, and interconnects with the Panama City Lateral of the Florida Gas Transmission system near U.S. Highway 231 and County Road 167.

This considered corridor may require approximately a three-quarter mile crossing of East Bay, with the exact route determined by economic and environmental impacts. The distance from landfall to destination is about 23 miles, making this the shortest considered onshore pipeline alternative. However, the offshore pipeline may be too long, from production platform to landfall, to make this alternative feasible.

The actual pipeline corridors that will receive detailed analysis by a gas transmission company will be determined, in part, by the location of a petroleum resource discovery in the Gulf of Mexico.

B. Onshore Service Base

1. Alternative B-1 - This considered base is located on the eastern side of Bayou Chico (Escambia County) on 55 acres of undeveloped industrial land. Surrounding land use and zoning are industrial and the landowner has been contacted and is receptive to leasing space for oil/gas industry facility needs.

All requirements for a service base could be met with a minimum capitol investment. There is access to support services, boat repair facilities, and parts supplies.

The distance from this site to the Gulf of Mexico is about eleven (11) miles.

2. Alternative B-2 - The Port of Pensacola (Escambia County) is an industrial area, which has all facilities to meet the requirements for an onshore service base. However, using this port to support OCS activities would cause two (2) conflicts: the Port of Pensacola is actively using all land available, and accommodating OCS activities would require the City of Pensacola to purchase additional expensive waterfront property. Port of Pensacola officials have stated that they prefer to use all available facilities for the handling of rapid turnover commodities, which produce more revenue than a long-term lease of space to an oil company. According to port officials, as long as needed, suitable waterfront facilities can be found elsewhere in the Pensacola Bay vicinity, the Port of Pensacola will not consider leasing space to an oil company.

   The Port of Pensacola is approximately ten (10) miles from the Gulf of Mexico.

3. Alternative B-3 - This considered site is located on Blackwater Bay, between the community of Bagdad and the

City of Milton in Santa Rosa County. A grain elevator is located in the area and a maintained navigation channel and docks are present. Construction of an onshore service base would require a large capital investment.

Drawbacks of this considered site are its distance from the Gulf (about 32 miles) and the surrounding land use is primarily residential, creating a conflict with a 24-hour oil industrial operation. Boat repair and industrial services are also distant from the considered site.

4. Alternative B-4 - The Fort Walton Beach Industrial Park (Okaloosa County) is the fourth considered service base. This site is north of U.S. Highway 98, west of the intersection of U.S. Highway 98 and State Road 189. Hurlburt Field (U.S. Air Force facility) operates a barge fuel dock on Santa Rosa Sound. An onshore support base would more appropriately be located south of U.S. Highway 98, on the Intracoastal Waterway.

There is one major obstacle to locating a service base near the Choctawhatchee Bay area. The East Pass Channel, connecting Choctawhatchee Bay with the Gulf of Mexico, shoals in to a four (4) to six (6) foot depth rapidly after maintenance dredging. Therefore, this channel is considered unreliable for OCS support vessel traffic, and the next closest access to the Gulf is 40 miles, at Pensacola Pass. If the Fort Walton Beach area were to

be considered for a service base, the oil company and taxpayers would be required to spend money for the Corps of Engineers to maintain a reliable twelve (12) feet deep channel at East Pass.

5. Alternative B-5 - The considered site of a petroleum fuels barge dock in Freeport (Walton County) is an industrial site which contains the channel and shoreline improvements required for a service base. The industrial site is about 15 acres.

   The largest obstacle to locating a service base in Freeport is the East Pass Channel, as discussed under Alternative B-4. The distance to the St. Andrews Bay channel is about 30 miles from Freeport.

6. Alternative B-6 - The Port of Panama City (Bay County), like the Port of Pensacola, has all facilities required for a service base. The Port of Panama City has one advantage in that oil companies have previously leased space for a service base. Recently Standard Oil of Ohio (SOHIO) leased space at the Port of Panama City during the drilling of an exploratory well on Lease Block 562.

   Again, officials at the Panama City Port Authority have taken the position that, as long as suitable water-front sites can be found near Panama City, the Port will not serve as an onshore service base.

This port is about six (6) miles from the Gulf of Mexico.

7. Alternative B-7 - The area surrounding Watson Bayou, Panama City (Bay County), is possibly the largest refined petroleum products receiving terminal in West Florida. Approximately six oil companies operate fuel terminals and storage tanks with a combined capacity exceeding 1.5 million barrels of refined petroleum liquids. Southwest Forest Industries also has a paper mill near this location.

   All requirements for an onshore service base could be met in Watson Bayou, with minimum capital investment. There is a company that builds and operates crew boats in the area. Boat repairs, industrial parts, welding services, or even steel fabrication services would be readily available in this area.

   This site is about nine (9) miles from the Gulf of Mexico.

C. Gas Treatment Facility

A gas treatment, processing and fractionation facility would be located along the pipeline corridor. Because sour gas is anticipated, the proposed alternative facility sites are within ten (10) miles of the landfall site.

1. Alternative C-1 - There is adequate undeveloped land in southwest Escambia County that may be used for gas treatment facility with a controlled buffer zone. There are

several industries in and north of Pensacola with air emissions, however, southwest Escambia County is free of industries and may allow sufficient dispersion of air emissions; therefore, complex air discharge permits may not be required.

The groundwater supply in southwest Escambia County is adequate to supply the demand of a gas treatment facility. Large portions of this part of Escambia County lie within the 100-year flood hazard zone, therefore, the plant site must be carefully selected. Gulf Power has a transmission substation within four (4) miles of the proposed site and a 46 kilovolt (KV) transmission line passes nearby.

2. Alternative C-2 - A gas treatment facility along the Santa Rosa Island/Gulf Breeze pipeline corridor (Alternative A-2) might be located on the Gulf Breeze peninsula or on the southern tip of the Garcon Point peninsula, both in Santa Rosa County. A Gulf Breeze peninsula location may create a serious land use conflict, since this area contains residential subdivisions and the Naval Live Oaks portion of the Gulf Islands National Seashore. Another significant point is that Getty Oil Company has stipulated that, should natural gas be discovered in East Bay, gas will not be transported to the southern shore of East Bay. This stipulation indicates that residents along the Gulf Breeze peninsula

would not favor a gas facility in the area.

A Garcon Point peninsula location is more feasible for hurricane and flood protection. However, prevailing southerly winds may mix air emissions with the air emissions of nearby industries, creating an air quality problem and the need for complex air discharge permits. The Garcon Point peninsula location is reasonably isolated and a controlled buffer zone could be leased. This area is served by county roads, which may require improvement for heavy truck traffic. As discussed with pipeline corridors, Getty Oil Company could possibly share a gas treatment facility located on Garcon Point peninsula.

There is a Gulf Power transmission substation within two (2) miles of a possible Gulf Breeze peninsula site and a 110 KV transmission line traverses the peninsula. There are not adequate electrical facilities convenient to a Garcon peninsula location.

3. Alternative C-3 - A gas treatment facility along the Holley-Navarre pipeline corridor could be located in southeast Santa Rosa County, before the pipeline enters the Eglin Reservation. A location adjacent to Eglin Air Force Base could minimize the need to purchase a controlled buffer zone, since development is not permitted on the reservation. Also, Getty Oil could share gas facilities at this location.

There has been difficulty in obtaining groundwater from the shallow sand-and-gravel aquifer in southeast

Santa Rosa County. Several wells may be required to fulfill the 150,000 gallon demand of a gas treatment facility. Wells may be drilled into the Upper Floridan Aquifer, or surface water may be used.

Gulf Power Company has a substation within six (6) miles of this area and 230 KV and 110 KV transmission lines pass within four (4) miles of the area.

4. Alternative C-4 - For the Destin pipeline corridor, a gas facility must be located on the Destin peninsula, because of insufficient available land north of Choctawhatchee Bay. Eglin Air Force Base officials have stated that the Air Force would not outlease a portion of the reservation for a gas treatment facility.

The Destin-Moreno Point area is currently undergoing rapid residential and commercial development to accommodate tourism and recreation. Removal of expensive land for industrial use would be costly and in conflict with surrounding land use.

Because the Destin peninsula is surrounded by saltwater, obtaining adequate freshwater may overburden the groundwater aquifer and promote saltwater intrusion. Also, the area is subject to hurricanes.

There is a Gulf Power substation within four (4) miles of the pipeline corridor and a 46 KV transmission line traverses the Destin Peninsula.

5. Alternative C-5 - A gas treatment facility along the

Seagrove Beach area pipeline corridor would probably be located north of the Choctawhatchee River delta (Walton County). The only large land parcel, not in the Point Washington Wildlife Management Area, south of the Gulf Intracoastal Waterway, is adjacent to the Eden State Ornamental Garden, at Point Washington.

The northern location would be served by State Road 20 and U.S. Highway 331. This location is isolated and distant from an urban area. As with Alternative C4, if this gas facility were located adjacent to property owned by St. Joe Paper Company or Southwest Forest Industries, an additional controlled buffer may not be required.

There is a Gulf Power Substation within five (5) miles of the southern, Point Washington site, or within thirteen (13) miles of a site north of the Gulf Intracoastal Waterway. Both 46 KV and 110 KV transmission lines pass within one (1) mile and eight (8) miles of the respective southern and northern locations.

6. Alternative C-6 - The only available large parcel of private land in southwestern Bay County not in the Point Washington Wildlife Management Area is the area around West Bay. This is in the vicinity where State Road 79 intersects the Intracoastal Waterway. This site has been suggested by representatives of a gas transmission company.

West Bay is surrounded by water and the Point Washington Wildlife Management Area, therefore, a controlled buffer may not be required. This considered site is served by State Road 79 and is approximately 20 miles from industrial centers in Panama City. Since this portion of Bay County is undeveloped, the impacts of any air emissions would be low.

West Bay is about four (4) miles from a Gulf Power Substation, eleven (11) miles from the Lansing Smith Generating Plant, and within one-half mile of 230 KV and 110 KV transmission lines.

7. Alternative C-7 - A gas treatment plant on the Mexico Beach area pipeline corridor could be located north of Mexico Beach, in the southeasternmost corner of Bay County. This area is 26 miles from an urban center, but is not served by adequate electrical facilities. About five (5) miles of improved, paved road must be constructed to connect a plant site with U.S. Highway 98.

A more suitable location on this pipeline corridor would be north of East Bay, in an area served by County Road 187 and State Road 22. This location is about fifteen (15) miles from Panama City and within three (3) miles of a 230 KV electrical transmission line owned by Florida Power Corporation, or within ten (10) miles of a 110 KV line owned by Gulf Power Company.

D. Oil Barge Terminal

It is unlikely that an oil barge terminal will be located in West Florida, because an OCS oil discovery is not anticipated. However, in the event that a terminal is required, it could be located at numerous sites along the Gulf Intracoastal Waterway, since this route is used extensively for distribution of crude and refined petroleum products. Also, if oil and gas were to be transported ashore in one (1) pipeline, the oil barge terminal would best be located adjacent to or near the gas treatment facility.

1. Alternative D-1 - An oil barge terminal could feasibly be located in the Big Lagoon area or along Perdido Bay (Escambia County). A Big Lagoon site would create serious land use and aesthetics conflicts. Two (2) Navy airfields, Bronson and Saufley, located along Perdido Bay, are not being used at original capacity. A portion of either field could be converted to oil industry use at a moderate capital cost. Negotiations with the Navy and Department of Defense may require several years.

2. Alternative D-2 - There are currently three (3) oil companies which maintain refined fuel storage tanks and barge docks along Pensacola Bay (Gulf, Chevron, and Union 76). Belcher Oil stores Bunker C oil at the Port of Pensacola. It may be possible that the oil companies may be receptive to combining product distribution services, then leasing excess barge terminal space for use as an OCS oil barge terminal.

If this arrangement were negotiated, all facilities would be available without major capital investment. However, constructing a crude oil pipeline from southwest Escambia County (gas treatment site) to the Pensacola waterfront would require considerable expense.

If an oil barge terminal were constructed along or near pipeline corridor Alternative A-2, the most suitable location may be on the Garcon Peninsula. Construction of all barge terminal requirements, channel dredging, constructing docks and storage tanks, and providing electrical service and support services, would be needed, involving large capital expenditure.

3. Alternative D-3 - This site is on the south shore of Choctawhatchee Bay, near pipeline corridor Alternative A-4. No facilities are available, therefore, all facility requirements must be constructed.

   A second terminal site in Choctawhatchee Bay may be considered; the petroleum facility in Freeport. This location is a short distance from pipeline corridor Alternative A-5.

4. Alternative D-4 - A barge terminal could be located at West Bay (Bay County), on the site of the gas treatment facility (Alternative C-6). While this site is adjacent to the Intracoastal Waterway, all improvements must be developed.

Other possible terminal sites west of Panama City include the currently used military petroleum terminal west of Lynn Haven (along North Bay), or a site adjacent to the Gulf Power Company Lansing-Smith Power Plant, in Alligator Bayou (also on North Bay). Gulf Power maintains a barge channel and docks for barge shipments of coal, so some facilities may be available to service industry needs. The Alligator Bayou site is about ten (10) miles from a potential pipeline corridor (Alternative A-6).

5. Alternative D-5 - This location is within the existing petroleum complex in Watson Bayou. All terminal facility requirements, except storage tank capacity, can be met without substantial capital investment. As in the case with existing petroleum barge facilities in Pensacola, there may be difficulty in constructing a crude oil pipeline from a gas facility location to Watson Bayou, since an onshore pipeline must be constructed through an urbanized area.

   Another barge terminal site may be chosen in East Bay (Bay County), near pipeline corridor Alternative A-7. Eastern Marine, a boat building company, has a 130 acre boatyard on Murray Point, in East Bay (Figure 5-3). Additional industrial development is possible adjacent to Eastern Marine. This site is adjacent to the Intracoastal Waterway.

E. Compressor and Metering Station

Any onshore compressors required could be located on the site of the gas treatment facility, causing little added impact on the region. Another potential location would be at the point of interconnection between the OCS pipeline and an onshore gas transmission pipeline. If a new compressor were located adjacent to an existing compressor station (E1, E2, E5), additional impacts on land use, noise, wildlife, aesthetics, cost of facility, etc., would be relatively small. If a new compressor station is constructed (E3, E4, E6), up to five (5) acres of land may be required, a new noise source would be created, and all impacts would increase.

Two (2) gas metering facilities per pipeline are required; one (1) on the offshore production platform to measure gas produced and put into the pipeline (no impact); and a second onshore to meter gas sold to a transmission company. Metering stations are important for measuring gas volumes to determine leakage and revenue. The six (6) potential locations for onshore metering stations (E1 through E6) require small facilities with no impact on the region.

III. Positive and Negative Impact Assessment of Potential Sites

The positive and negative impacts of seven (7) alternatives each for five (5) types of OCS onshore support facilities (total of 32 alternatives) were evaluated in the matrix, presented in Appendix A. Each industry alternative was evaluated against fifteen (15) socio-economic impacts and seventeen (17) environmental impacts.

As previously stated, the seven (7) alternatives presented and evaluated in this study do not represent every possible alternative for onshore oil and gas facilities serving OCS activities. As industry activities offshore from West Florida increase and assumptions are changed to known factors, new alternatives may be developed by the oil and gas industry. The evaluation matrix may be used to select any alternative that is finally constructed.

As a result of these evaluation, the recommended, most suitable OCS onshore support facility alternatives are:

A. Pipeline Landfall and Corridor:

1. Alternative A-1 - Perdido Key, Southwest Escambia County
2. Alternative A-3 - Holley-Navarre, Santa Rosa County
3. Alternative A-6 - Panama City Beach, Bay County
4. Alternative A-7 - Mexico Beach, Bay County

B. Onshore Service Base:

1. Alternative B-1 - Bayou Chico, Escambia County
2. Alternative B-7 - Watson Bayou, Bay County

C. Gas Treatment Facility:

1. Alternative C-1 - Southwest Escambia County
2. Alternative C-3 - Southeast Santa Rosa County
3. Alternative C-6 - Southwest Bay County
4. Alternative C-7 - Southeast Bay County

D. Oil Barge Terminal:

1. Alternative D-2 - Pensacola Bay, Escambia County
2. Alternative D-5 - Watson Bayou, Bay County

E. Compressor and Metering Station:

1. Alternative E-1 - United Gas Pipeline Terminal, Escambia County

2. Alternative E-2 - Juniper Creek Compressor Station, Santa Rosa County

3. Alternative E-3 - Choctawhatchee River Compressor Station, Washington County

4. Alternative E-6 - Panama City Lateral at Bayou George, Bay County

CHAPTER 5

Footnotes

1. Minerals Management Service. Gulf of Mexico Summary Report 3. August 1982.

2. New England River Basins Commission. Onshore Facilities Related To Offshore Oil and Gas Development - Factbook. November 1976.

3. "Oil and Gas Journal". November 1982.

4. Minerals Management Service. Final Regional Service Impact Statement, Gulf of Mexico. January 1983.

5. Florida Department of Transportation. Utility Accomodation Guide.

6. "Oil and Gas Journal". November 1982.

7. Mobil Oil Exploration and Producing Southeast, Inc. Production of Natural Gas From the Lower Mobile Bay Field, Alabama. May 1982.

CHAPTER 6

REGULATORY MECHANISMS ASSESSMENT

CHAPTER 6

REGULATORY MECHANISMS ASSESSMENT

Identification of existing management, regulatory and policy mechanisms is an important task if all impacts of OCS onshore activities are to be understood and prepared for. Mechanisms and regulatory structures that might induce, constrain or influence the location of onshore facilities have been examined and summarized here. The agencies and mechanisms identified here have been compiled from existing works and from local government comprehensive plans and regulatory structures. The summary is arranged in the following order:

1. Federal Regulatory Mechanism
2. State of Florida Regulatory Mechanisms
3. Regional Procedures and Policies
4. Local Regulatory Mechanisms

Federal level actions and regulatory mechanisms have a more comprehensive effect on OCS activity than any action of the other three (3) levels mentioned. Federal agencies are mandated to control any activity that occur directly on the OCS.

Federal Agencies Charged With Management of the OCS

Seventeen (17) federal agencies are directly or indirectly charged with the regulation and management of OCS resource exploration, development and production offshore from west Florida.

I. U.S. Department of the Interior

Mineral resources are managed by the Department of the Interior (DOI) under the provisions of the Outer Continental Shelf Lands Act, which mandates orderly development of OCS resources.

A. Minerals Management Service

The Division of DOI that is directly responsible for supervising the exploration, development, production and resource transportation in the OCS is the Minerals Management Service (MMS). MMS is also responsible for collecting royalty revenues from the oil industries for leases and resource production.

B. United States Geological Survey

OCS safety regulation issuance and enforcement, review of industry exploration and development plans, drilling permit issuance, OCS pipeline easements are some of the responsibilities of the U.S. Geological Survey (USGS). USGS has generated the estimates of OCS resource reserves that are used for evaluating onshore impacts of OCS facilities. The USGS is responsible for regulating air quality from OCS activities.

C. Bureau of Land Management

An Intergovernmental Planning Program has been formed to involve the different involved government agencies in the OCS development program. This unique program is

managed by the Bureau of Lan Management (BLM). BLM reviews all industry exploration and development plans for lease stipulations.

II. National Oceanic and Atmospheric Administration

The National Oceanic and Atmospheric Administration (NOAA) is a branch of the U.S. Department of Commerce. NOAA is charged with a wide range of responsibilities including weather service, estuarine and marine sanctuaries, ocean surveys, deep sea bed mining and the Coastal Energy Impact Program (CEIP). CEIP funds were used to fund this study effort.

A. Office of Oceanic and Coastal Resource Management

This office of NOAA was previously named the Office of Coastal Zone Management (OCZM) and is charged with assessing environmental impacts of OCS activities and is responsible for the protection of marine and coastal resources. OCZM also reviews and offers comments for all industry OCS exploration and development plans and environmental assessment.

B. National Marine Fisheries Service

The National Marine Fisheries Service (NMFS) is charged with the administration of sections of the Endangered Species Act and the Marine Mammals Act. NMFS also assesses the environmental impacts of OCS projects on commercial fisheries and other marine resources. NMFS reviews all industry plans for exploration and development of OCS resources.

III. U.S. Army Corps of Engineers

The Army Corps of Engineers (COE) is charged with regulating any fixed structures on the OCS. All exploration well platforms, field development and production platforms and product pipelines are permitted by COE. The COE is assigned the permitting authority for any structure or modification procedures in any United States navigable water.

IV. U.S. Environmental Protection Agency

The Environmental Protection Agency (EPA) has been charged by Congress to administer all federal laws for environmental quality protection. EPA has developed a system for permitting discharges into United States surface waters. This National Pollutant Discharge Elimination System (NPDES) is designed to limit the discharge of harmful substances. Exploratory drilling facilities are permitted by EPA as are discharges of drilling muds, drilling cuttings and other non-toxic discharges.

V. U.S. Department of Energy

The use of petroleum fuel pipelines in the OCS is regulated by the U.S. Department of Energy (DOE). DOE establishes the wellhead price of OCS produced natural gas and set the production rates for all federal leases and bidding systems to foster competition.

VI. U.S. Coast Guard

The U.S. Coast Guard (USCG) has many responsibilities

pertinent to OCS activity. The safety and prevention of oil spill pollution on the OCS is a major role of the USCG. USCG issues Aids to Navigation permits to mobile and fixed drilling facilities, establishes and enforces safety regulations for drillships, platforms, and other fixed structures, enforces federal oil pollution laws in offshore waters, and shares responsibility with USGS for oil spill prevention and cleanup. Procedures for the transfer of oil from vessel to vessel, between onshore and offshore facilities and vessels must be approved by USCG. USCG conducts pollution surveillance patrols in OCS waters. The USCG offers comments on proposed industry activities in the OCS as they relate to navigational safety and oil spill contingency plans.

VII. U.S. Department of Defense

All U.S. military activities are directed toward protecting and defending the territories and allies of the United States.

A. U.S. Department of the Air Force

The United States Air Force (USAF) becomes involved in the management process for the OCS because of the armament testing mission of the Eglin Air Force Base. Eglin's Armament Division is responsible for maintaining the integrity of a portion of the OCS known as the Eglin corridor for the testing of U.S. military armament devices. This mission has prevented any leases from being sold in the western portion of the Destin Dome Block.

B. U.S. Department of the Navy

The United States Navy (USN) is involved in OCS activities only as the mission of the Navy is impacted by any industry actions. The Navy's flight training program based in west Florida directly involves the U.S. Navy in the review and comment process for any OCS actions. The Navy must insure that the requirements for the missions are considered when OCS leases and permits are issued.

VIII. U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife (FWS) provides biological assistance and comments for environmental assessments for lease sales, explantion plans, development plans and production plans.

IX. U.S. National Park Service

The U.S. National Park Service (NPS) offers comments for environmental assessments if any OCS activities are anticipated to impact any national parks.

X. U.S. Heritage Conservation and Recreation Service

The U.S. Heritage Conservation and Recreation Service offers comments on sections of environmental assessments that pertain to historical and archaeological sites on federally leased lands.

Federal OCS Related Regulatory Mechanisms

Any OCS activity must comply with the federal regulatory process, however, the exact process or procedure for compliance depends on the type and level of the activity that is proposed. The following federal statues and regulatory mechanisms have been identified as pertinent to the development of OCS resources.[1]

General OCS Regulatory Mechanisms

The Outer Continental Shelf Lands Act Amendments of 1978 (P.L. 95-372)

The 1978 Amendments to the 1953 Outer Continental Shelf (OCS) Lands Act provided new regulations for the management of oil and natural gas resources on the OCS by the Department of the Interior (DOI). The original act emphasized orderly, timely development of mineral resources; the protection of the environment; and the receipt of fair market value for resources of leased OCS lands. "In contrast, the amended act reflects additional concerns about offshore activities... such as:

1. Preserving free competition;
2. Encouraging development of improved technologies to minimize human and environmental damage;
3. Assuring that states receive adequate data at the earliest possible time in order to plan for anticipated OCS impacts;
4. Assuring states an opportunity to participate in OCS policy and planning decisions;
5. Minimizing conflicts between oil and gas development/ production and other users of OCS resources;

6. Establishing an oil spill liability fund; and

7. Establishing a fund to compensate fishermen for damage to equipment caused by petroleum activities.[2]

Major regulations which appear in the OCS Lands Act Amendments are:

A. 43 CFR 3320.2(d) - The Secretary of the Interior may cancel a lease when:

1. Continued activity pursuant to such lease would probably cause serious harm or damage to life, property, any mineral, national security or defense, or to the marine coastal or human environment;

2. The threat of harm or damage will not disappear or decrease to an acceptable extent within a reasonable period of time; and

3. The advantages of cancellation outweigh the advantages of continuing such lease or permit in force.

B. 44 CFR 76212 - USGS OCS orders regulate the following:

1. Identification of wells, platforms, structures, mobile drilling units, and subsea objects;

2. Drilling operations;

3. Plugging and abandonment of wells;

4. Determination of well producibility;

5. Production safety systems;

6. Well completion;

7. Pollution prevention and control;

8. Platforms and structures;

9. Oil and gas pipelines;

10. Sulfur drilling;

11. Production, rates, prevention of waste, and correlative rights;
12. Public inspection of records;
13. Product measurement and commingling; and
14. Approval or suspension of production.

The three significant programs established by the Amendments to the OCS Lands Act are the Offshore Oil Spill Pollution Fund, the Fisherman's Contingency Fund, and the OCS Oil and Gas Information Program.

The offshore Oil Spill Pollution Fund is composed of fees assessed per barrel of OCS produced oil (43 USC 1812(d)), and is available for financing removal and cleanup of OCS related oil spills. The owner and operator of an offshore facility, including pipelines, is liable for all costs associated with removal and cleanup, and for damages up to $35 million. Additionally, the owner of a pipeline must give evidence of financial responsibility sufficient to satisfy the maximum amount of liability.[3]

The Fisherman's Contingency Fund is a million dollar fund established to provide compensation to fishermen for damages incurred and profits lost, as a result of activities related to exploration, development, or production of OCS oil or gas (43 USC 1842). The Fund is maintained by fees collected from OCS lessees, holders of pipeline rights-of-way, and holders of exploration permits. Compensation from area accounts is available only for losses caused by OCS related activities within that particular area. If a financially responsible party is liable, the fund makes no payment. However, if a fisherman suffers uncompensated

damage to either his vessel or gear, he may seek compensation from the Fund.

One of the more important components of the Act provides that state and local governments have access to information relating to OCS activities and decisions at the earliest possible time so that they may effectively participate in OCS policy and planning decisions (43 USC 1802 (5)(6) (1978)). Accordingly, the Amendments established an OCS Oil and Gas Information Program.

Submerged Lands Act (P.L. 83-31)

This Act establishes state title to lands beneath navigable state waters and to the natural resources within such lands and waters. Florida's state boundary on the Gulf Coast extends three marine leagues (approximately 10.5 miles). Local governments in coastal areas should be aware that the term "natural resources" as it is used in this act "includes oil, gas, all minerals, and all marine animal and plant life, but does not include water power or the use of water for the production of power."[4] State or local water controls may be needed considering the high demands for water especially during OCS exploration. The Act also maintains the right of the federal government to control these lands and waters for the production of power.

Clean Air Act (P.L. 84-159, as amended by P.L.s 88-206 and 91-604)

This Act provides for air pollution prevention/control activities and is administered by the Environmental Protection Agency (EPA). National Ambient Air Quality Standards (Section 109) have set permissible atmospheric levels for air pollutants.

These standards are divided into two categories: primary standards to protect public health, and secondary standards to protect welfare, including property and aesthetics. Air emissions from certain stationary (industrial) and mobile (automotive) sources are also specifically regulated.

Implementation Plans (Section 110) "provides that after June 30, 1979, no major stationary source shall be constructed or modified in any non-attainment area if the emissions from such a facility will cause or contribute to concentrations of any pollutant for which a national ambient air quality standard is exceeded unless... the plan meets requirements relating to non-attainment areas."[5]

Section 111 requires the EPA Administrator to set standards of performance for new stationary sources and revise them every four years. The New Source Performance Standards limit emissions from major new industrial sources. Also, if a new industry locates in a non-attainment area that industry must insure that a previously existing industry reduces its pollution by more than the new source will emit. This is known as offsetting and theoretically reduces emissions while adding industry. Section 112 requires the Administrator to establish national emission standards for hazardous air pollutants. The Act requires states to have a State Implementation Plan for achieving federal air quality standards and provides for Prevention of Significant Deterioration which prevents industries from moving out of developed areas to less developed areas in order to avoid pollution control requirements.

Acid rain is a special problem in air pollution resulting

when sulfur oxide and nitrogen oxide emissions in the air are transformed into sulphuric and nitric acids and fall as rain. OCS storage facilities as well as coal burning power plants contribute these pollutants to the air. OCS facilities and the additional electrical power they require to operate could worsen the already significant acid rain problem.

Federal Water Pollution Control Act (FWPCA) or Clean Water Act (P.L. 845 as amended by P.L.s 579 and 660)

The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The Act directs the EPA Administrator to establish Federal Standards of Performance for new source facilities and establishes the National Oil and Hazardous Materials Pollution Contingency Plan. Section 303 of the Clean Water Act establishes water quality standards. Sewage water contains large concentrations of organic matter, suspended solids and plant nutrients (nitrogen and phosphorus compounds) and is an excellent medium for the transfer of disease. For these reasons, sewage wastewater discharges are carefully regulated and treatment is required to allow receiving waters to continue to be utilized to support freshwater or marine aquatic life, swimming, and shellfish harvesting.

An individual utilizes approximately 40 gallons of water each day to dispose of sewage wastes. It is evident that OCS related facilities which employ the largest number of workers, (e.g., refineries, petro-chemical plants, and platform fabrication yards), are potentially capable of causing the greatest

environmental impact from sewage discharges. Usually, the sewage will either enter an approved septic system or be discharged to a sewage system for treatment and disposal at another location. When sewage is properly treated prior to discharge, no appreciable harm should occur within the receiving waters provided that the effluent is discharged into receiving waters where disposal is permitted and dilution and dispersion can occur. However, should the receiving waters also contain high organic carbon concentrations, toxic levels of organic-chlorine compounds (e.g., chloramines, chloroform) could be produced.

Marine terminals may generate the following types of wastewater: domestic (sewage); bilge; ballast; cooling; boiler; process; and runoff. Bilge water generated by tankers and tugs servicing a marine terminal is collected at the terminal and treated prior to discharge. Discharge of bilge will have minimal environmental impact if treatment includes the removal of toxic substances. Ballast water is taken on by tankers after unloading to improve handling and is therein contaminated with oil. It also often has a high biological oxygen demand, a high concentration of fecal bacteria, and heavy metals. Ballast water can be toxic to aquatic life. Federal regulations require it to be treated prior to disposal, if treatment facilities are available. Some new tankers have separate ballast tanks to avoid contamination.

Section 311 directs the President to publish a National Contingency Plan for the removal of oil and hazardous substances and specifies liability and recovery of removal cost.

In addition, the Act provides control over thermal discharges to receiving waters. Partial oil/gas processing facilities in

combination with related marine terminal facilities may cause large net increases in receiving water temperature. These increases in water temperature can kill aquatic life and may also increase the solubility of heavy metals and toxic substances.

Thermal discharges which will cause appreciable harm to the balanced indigenous population of fish, shellfish, and wildlife in or on the receiving waters are prohibited. "The operator of a marine terminal may be permitted however, to exceed federal standards if he can show that the heat discharge does not harm receiving water organisms."[6]

Section 402 of the Clean Water Act establishes the National Pollutant Discharge Elimination System (NPDES) program. This program regulates the discharge of pollutants from point sources (such as OCS facilities) and related activities into United States' waters. All such discharges or activities are unlawful without an NPDES permit. A permitted discharge that does not comply with the terms and conditions of the permit is also unlawful. A discharge of a pollutant is defined as 1) any addition of any pollutant or combination of pollutants to waters of the U.S. from any point source, or 2) any addition of any pollutant or combination of pollutants to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation (40 CFR 122.3). The last clause is significant because it gives EPA jurisdiction over floating OCS facilities, since they are not being used as a means of transportation.

The NPDES program performs three basic functions. First,

it sets limitations, on discharges, based on the effluent guidelines developed by EPA for the oil and gas extraction industry. Second, it outlines requirements for monitoring discharges, and reporting actual volumes discharged and any permit violations to EPA. Third, it imposes a schedule of compliance for the permittee to complete construction or to install new pollution control technology.

Discharges of ammonia, heavy metals, suspended solids, oil and grease, phenol and heat are regulated for each industry category (such as petroleum refining) by the NPDES. In addition, quality standards for receiving waters have been set by individual states, with the assistance of federal water quality guidelines. These standards vary depending on whether the receiving water in question is used for public water supply, recreation, irrigation, fishing or other uses. Discharges which threaten to increase pollutant concentrations in a body of water in excess of standards set by the state are prohibited. Therefore, although a discharge may meet the requirements stated in an NPDES permit, additional pollutants reduction may be necessary to ensure that the standards for the receiving water are not exceeded as a result of the chemically contaminated discharge. Cooling water from power facilities (marine terminals may generate their own electricity) must meet NPDES discharge limits.

Brine water has a unique status under the Clean Water Act. The term "pollutant" in the Act is defined to exclude "water derived in association with oil or gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes, is approved by authority of the state

in which the well is located, and if the state determines that such injection or disposal will not result in the degradation of ground or surface water resources." Therefore, the disposal of brine from the crude oil stream by injection into a well is regulated at the state level; disposal into surface water requires a permit under the National Pollution Discharge Elimination System (NPDES).

Stormwater runoff from tank storage areas and process areas at a terminal is collected, stored, treated and discharged with the process water. Effluent stormwater runoff from the storage areas may not exceed a concentration of 35 parts per million of total organic carbon or 15 parts per million of oil and grease when discharged (40 CFR 419.12(b)(3)(c)(1)).

A policy statement in the Federal Water Pollution Control Act of 1972 declared that no discharge of oil into or upon navigable waters of the United States, adjoining shoreline, or into or upon the waters of the contiguous zone (12 miles out from shore) shall be allowed. Regulations, however, apply only to harmful quantities of oil, defined as those which: 1) exceed water quality standards, or 2) produce a sheen on the surface of the water or form an emulsion or sludge. The Oil Discharge Regulations (40 CFR 110) require that discharges of this magnitude be immediately reported by the owner of the property from which the spill originated so that clean up activities both by the owner and others as necessary can proceed. This legislation applies to both point and non-point discharges.

Since OCS facilities are not presently considered to be new

sources (40 CFR 122.66(a) and (b), EPA is not required to prepare National Environmental Policy Act (NEPA) related documents in its review of a permit application except where rigs will be operating in areas which have been designated "environmentally sensitive" by the Bureau of Land Management (BLM) (45 Federal Regulation 68391, October 15, 1980). If the decision is to issue a permit, a draft permit is formulated specifying any limitations and requirements. A fact sheet or a statement of basis is prepared to accompany each draft permit and to explain the technical and legal basis for the terms of the permit (40 CFR 124.7 and 124.8). A fact sheet presents this information in greater detail than a statement of basis and is prepared in cases of major discharges, widespread public interest, or where major issues are raised. An administrative record for each permit is available to the public for inspection and reproduction (40 CFR 124.9).

Actually, most of the drilling currently done on the OCS is done without an NPDES permit. EPA has sent most applicants letters of nonobjection. EPA sends the letters to operators within 30 days after receipt of a request for a permit. Permits are gnerally issued at a later date.

In cases of initial licensing, EPA prepares a draft permit and issues a public notice (40 CFR 124.113). Any person may then request a panel hearing on the draft permit. The request must include objections to the draft permit and issues to be raised at the hearing. Denial of a panel hearing may be appealed to the Administrator.

If EPA elects to hold the hearing, public notice of it is issued. Any person may request to participate (40 CFR 124.117). Thirty or more days before the hearing each party to the hearing must file comments on the draft permit. These comments constitute evidence to be presented at the hearing (40 CFR 124.118). After the hearing, the presiding officer prepares and files a recommended decision including any modifications on the permit (40 CFR 124.124). Copies of the decision are sent to each party and the Administrator. Unless the recommended decision is appealed to the Administrator, or the Administrator elects to review the decision, it becomes final once the time for filing any appeals has expired (40 CFR 124.127).

Any person may request an evidentiary hearing to contest the final permit decision (40 CFR 124.74(c)(8)). No issue may be raised at an evidentiary hearing that was not raised during the comment period on the draft permit unless good reason can be shown for the failure to raise it (40 CFR 124.76). Any person may submit a request to be admitted as a party to the hearing within 15 days after the public notice is issued. After expiration of the public notice period, any person may file a motion to intervene as a party, if certain requirements are met (40 CFR 124.79(b)). Such requests must specifically identify the issues which the requester seeks to address at the hearing (40 CFR 124.79). After the hearing the presiding officer reviews the record and issues an initial decision. This decision becomes effective within 30 days unless an appeal is made to the Administrator or the Administrator elects to review the decision.

States can participate in the 402 program by establishing water quality standards (Section 303, Clean Water Act) granting or denying certification of EPA's draft permits wherever discharges occur within their territorial limits, or by sharing with EPA in the permit development process.

When a discharge occurs beyond the territorial limit, states may participate through:

1. Review and comment upon draft permits;
2. Oral and/or written testimony at public hearings;
3. Participation in evidentiary hearings;
4. Appeal of decisions made at evidentiary hearings or denial of an evidentiary hearing to the Administrator;
5. Participation in initial licensing procedures; and
6. Appeal of decisions made at panel hearings or denial of a panel hearing to the Administrator.

Finally, states with approved Coastal Zone Management (CZM) programs, such as Florida, may review draft permits for consistency with these programs. Section 401 of the Clean Water Act requires that anyone proposing to conduct any activity which may result in the discharge of a pollutant into waters of the United States must provide the permitting agency with a certification from the state in which the discharge originates. This ensures that the discharge will comply with applicable effluent limitations and water quality standards (33 USC 1341).

If the state fails or refuses to act upon a request for certification within a reasonable period of time (three months), the certification requirements shall be waived (33 CFR 325.2(b)(1)).

No license or permit shall be granted until the certification required by this section has either been obtained or waived. No license or permit shall be granted if state certification has been denied.

Section 304 of the Clean Water Act, Ocean Discharges, states that in any event where insufficient information exists on any proposed discharge to make a reasonable judgment on any of the guidelines established pursuant to Subsection 304 (C)(2), no permit shall be issued.

Section 404 of the Clean Water Act regulates the discharge of dredged or fill materials into the waters of the United States, including adjacent wetlands. The program is administered by the Army Corps of Engineers (COE), which has primary responsibility for issuing discharge permits, while EPA holds veto power over the location of the disposal site. The disposal of dredged or fill material in wetlands/aquatic ecosystems may destroy or alter habitats, increase sediment loads and bottom sedimentation, and alter hydrologic patterns. The general ecosystem may also experience a reduction in species variety and productivity, depending upon the type of wetland, the activities involved, and the volume and type of material used. The Section 404 program requires that adverse impacts be assessed prior to the discharge of dredged or fill material into waters of the United States. In addition to a public interest review by the COE prior to issuing Section 404 permits, environmental and social factors, and the existence of alternate sites must be considered. Losses to the public as a result of damage to an aquatic ecosystem must be balanced against

the public benefits derived from a project.

Florida's role in the federal Section 404 program is limited to the following: Affected states receive public notice of all applications for permits and are invited to comment on proposed activities when circumstances warrant a public hearing (33 CFR 325.3(c)(1)). State certification and waiver conditions are the same as those described in the federal Section 402 program.

Section 404 was the only water quality regulatory program under the 1972 Clean Water Act that was not originally intended to be administered by state governments. However, in 1977 Congress amended Section 404 to allow the states, at their discretion, to assume responsibility for the administration of the Section 404 regulatory program, including the issuance of general permits (33 USC 1344(g)(1)). Besides protecting wetlands and aquatic ecosystems within their borders, states can include regulation of wetlands use in their general planning for growth and development.

The transfer of Section 404 program responsibilities to a state is subject to approval by EPA. This approval is conditioned upon the state's adoption of a program which assumes that discharges will comply with Subsection 404(b) guidelines. The 1977 amendments also gave the EPA responsibility for overseeing state Section 404 programs. Florida does not presently have a state Section 404 program.

In the absence of an approved state program the COE retains jurisdiction over the permit program. Since most pipeline construction is accompanied by discharge activities, the selection

of disposal sites must be consistent with guidelines developed by EPA in consultation with the COE. If EPA determines that the proposed discharge will have an unacceptable adverse environmental impact it is authorized to prohibit or restrict the activity (33 USC 1344 (c)).

Marine Resources and Engineering Development Act of 1966, Including Title III, Coastal Zone Management Act of 1972 (P.L. 89-454, as amended by P.L.s 89-688 and 92-583, respectively)

Title I of this Act provides for the accelerated development of marine resources and for the expansion of knowledge concerning the marine environment.

Title III of this Act is the Coastal Zone Management Act (CZMA) of 1972. This Act, administered by the Department of Commerce (DOC), sets major goals for the following: protection, development, and restoration of natural and historic resources; increased recreational access and management of coastal development; and coordination/streamlining of federal and state decisions affecting coastal resources. The CZMA is a major tool which states can use to coordinate the many federal regulatory measures enacted during the 1970s, such as the National Flood Insurance Program, the Deepwater Port Act of 1974, Fishery Conservation and Management Act of 1976, and the OCS Lands Act Amendments of 1978. The CZMA allows affected states the opportunity to participate in and plan for the impacts on their coastal areas from oil and gas production in federal OCS areas. Also, the CZMA has the potential for use as a mechanism to delay oil and gas operations in federal territories.

Each participating state is required to submit a coastal zone management program to the DOC. States with approved programs have greater control over activity in the federal OCS. If a state is not receptive to federal OCS development, it could delay OCS activity by requesting modification or denying certification near the end of its six month time frame. This tactic could result in prohibiting any OCS oil and gas operations from taking place, since the state review would allow another six month period. However, if the affected state does not respond in some manner within three months after receiving a proposal, it is conclusively presumed that the state concurs with the proposal.

Upon final approval of a state management program, which must provide adequate consideration of national interests in the siting of facilities, the state becomes eligible for grants under Section 306 of the CZMA. These facilities would include energy production and transmission facilities, national seashores, military installations, and interstate highways. There is some fear that the Act's language will compel states to locate facilities which might be detrimental to environmental protection in coastal areas. However, the CZMA regulations state that, "the requirement should not be construed as compelling the states to propose a program which accommodates certain types of facilities, but to assure that national concerns are included at an early time in the state's planning activities and that such facilities not be arbitrarily excluded from or unreasonably restricted in the management program without good and sufficient reasons."

The 1976 amendments to the Coastal Zone Management Act extend

the federal consistency requirements to include Outer Continental Shelf (OCS) energy exploration, development and production. Specifically, federal agencies must "provide state agencies with consistency determinations for all federal activities significantly affecting the coastal zone...at the earliest practical time in the planning of the activity," according to federal consistency regulations.

Section 307 of the act deals with inter-agency coordination and cooperation. Local governments must consider state and regional interests in exercising their regulatory powers in the coastal zone, and federal actions within or directly impacting the coastal zone must be consistent with a state's program once that program has been approved by the Secretary of Commerce. However, should the state determine that a project is inconsistent with its program, it may request mediation efforts by the Secretary of Commerce. If it is determined that the proposed federal action is consistent with the purpose of CZMA or necessary in the interest of national security, the state's objection may be overruled. Confusion has arisen over the consistency Subsection 307(c)(1) phrase "directly affecting" the coastal zone in regards to prelease activities. Prelease activities include: 1) call for nominations and comments; 2) tentative tract selection; 3) environmental statements; and 4) consultation with governors. The DOI has taken the position that prelease sale activities do not directly affect the resources in the coastal zone.

The state of California contends that prelease activities do directly affect the resources of the coastal zone because they

initiate a chain of impact-producing events. California is currently in litigation with the Secretary of the Department of the Interior over this issue. The language of Section 307 (c)(1) is unclear and the act itself provides no definition of key terms. Therefore, the U.S. District Court in the State of California v. Watt (CV81-2080) had to turn to the Act's stated purposes, its legislative history, and the interpretations of agencies charged with administering the Act. The District Court determined in favor of California that decisions made during preleasing establish the timing of OCS development and production, and therefore, do "directly affect" the coastal zone. The Court's evaluation determined that the intent of the CZMA was to involve states in the consultation process at the earliest time to prevent unnecessary losses in the coastal zone, and to encourage cooperation between federal, state and local governments rather than conflict. The case will go to the Supreme Court for a final determination.

Additionally, state agencies are required as part of their management program to develop a list for consistency review of federal permit activities which are likely to affect the coastal zone. If the state agency elects to review federal permits for activities outside of the coastal zone but likely to affect the coastal zone, it must generally describe the geographic location such activities (15 CFR 930.53(b)). The permit list may be amended by the state following consultation with the affected federal agency and approval of the National Oceanic and Atmospheric Administration (NOAA). Copies of the list and any amendments

shall be provided to federal agencies and the public by the state (15 CFR 930.53(d)). With the assistance of federal agencies, states are encouraged to monitor unlisted federal permit activities and notify federal agencies and applicants of unlisted activities affecting the coastal zone which require state review. Monitoring can be undertaken through the use of the A-95 process, review of NEPA Environmental Impact Statements or by a Memorandum of Understanding to ensure that the state has an opportunity to review any federal permit activity which can be expected to affect the coastal zone (15 CFR 930.54(a)). If the state believes that an unlisted activity should be subject to state review, it must notify NOAA. Following notification to the federal agency by the applicant and NOAA, the federal agency may not issue a permit unless NOAA disapproves the state's decision to review the activity or certain requirements are satisfied (15 CFR 930.54(b)). The federal agency and the applicant must provide comments to NOAA within 15 days from receipt of the state agency notice. The basis for NOAA's approval or disapproval is whether the proposed activity can reasonably be expected to affect the coastal zone of the state. NOAA's decision shall be issued, along with supporting comments, within 30 days (15 CFR 930.54(d)). In the event of serious disagreement between a federal agency and a state regarding whether an unlisted activity is subject to consistency review, either party may request mediation by the Secretary of Commerce (15 CFR 930.55)).

When satisfied that the proposed activity is consistent with the provisions of the CZM program, an applicant for a federal

permit subject to state review must provide in the application a certification that the proposed activity complies with and will be conducted in a manner consistent with the state's approved management program. A copy of the certification must also be provided to the state along with supporting information (15 CFR 930.57(a)). The supporting information shall furnish the state with a description of the proposal adequate to permit an assessment of the probable coastal zone effects, and a set of findings indicating that the proposed activity, its associated facilities, and their effects, are all consistent with the provisions of the management program (15 CFR 930.58 (a)).

State review begins when the state receives the applicant's consistency certification and the supporting information (15 CFR 930.60(a)). The state ensures timely public notice of the proposed activity which must include a summary of the proposal, an announcement that public information submitted by the applicant is available for inspection, and a statement inviting comments (15 CFR 930.61(b)).

Federal and state agencies are encouraged to issue joint public notices and hold joint public hearings whenever possible to minimize duplication of effort and to avoid unnecessary delays (15 CFR 930.61(d) and 15 CFR 930.62, respectively).

At an early stage, the state must notify the federal agency and the applicant whether it concurs with, or objects to, the consistency certification. In the absence of an objection, concurrence by the state will be conclusively presumed six months after commencement of state review (15 CFR 930.63 (a)). If the

state has not issued a decision within three months following the review, it must notify the applicant and the federal agency of the status of the matter and the basis for further delay (15 CFR 930.763(b)).

If the state objects to the consistency certification, it must notify the applicant, the federal agency and NOAA of its objection. The state must describe how the proposed activity is inconsistent with specific elements of the management program. A state objection must also include a statement informing the applicant of a right of appeal to the Secretary of Commerce (15 CFR 930.64). Following receipt of a state agency objection to a consistency certification, the federal agency may not issue the license or permit except as provided below (15 CFR 930.65):

1. The parties should consult informally to try to resolve the matter. NOAA's Office of Coastal Zone Management is available to assist the parties in discussions (15 CFR 930.124).
2. If there is still disagreement, the applicant may file a notice of appeal with the Secretary of Commerce within 30 days of receipt of a state objection. Copies of the notice and supporting documents must be sent to the state and federal agency involved (15 CFR 930.125(a)).
3. Upon receipt of the notice of appeal the state and the federal agency will have 30 days in which to submit comments to the Secretary of Commerce. Comments are forwarded to the applicant and the agency within the same time period (15 CFR 930.126(a)).

4. The Secretary of Commerce shall provide public notice of the appeal in the immediate area of the coastal zone which is likely to be affected by the proposed activity (15 CFR 930.127(a)).
5. Following public notice, receipt of comments and possibly a hearing, the Secretary of Commerce must determine if the proposal is consistent with the objectives of the CZMA, or is necessary in the interest of national security (15 CFR 930.130(a)). The Secretary of Commerce shall issue a decision in writing to the applicant, the state, and the federal agency (15 CFR 930.130(c)).
6. If the Secretary of Commerce finds that the proposed activity is either consistent with the objectives of the CZMA or is in the interest of national security, the federal agency may approve the permit activity (15 CFR 930.131(a)).
7. If the Secretary of Commerce does not make either of these findings, the federal agency is prohibited from approving the activity (15 CFR 930.131(b)).

Important sections of this Act in regard to funding include Section 308 which establishes the Coastal Energy Impact Program with grants for qualifying coastal states and Subsection 315(1) which provides 50 percent federal matching grants for the acquisition of estuarine sanctuaries for conservation and for use as laboratories for education and research. Five sanctuaries have been established. The federal share of any individual estuarine sanctuary cannot exceed two million dollars. In addition to these

funded sections, the CZMA includes grant provisions for interstate planning (Section 309), research, technical assistance and training (Section 310) and public access to beaches and other coastal areas of special value (Subsection 315(2)).

The National Environmental Policy Act (NEPA) of 1969 (P.L. 91-190 as amended by P.L.s 94-52 and 94-83

EPA requires that all federal agencies proposing actions significantly affecting the quality of the human environment consult with other agencies having jurisdiction by law or expertise over such environmental concerns and prepare a detailed statement including:

1. The environmental impact of the proposed action;
2. Any adverse environmental effects which cannot be avvoided if the proposal is implemented;
3. Alternatives to the proposed action;
4. The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and;
5. Any irreversible and irretrievable resource commitments involved if the proposed action is implemented.

Copies of such statement and the comments of appropriate federal, state and local agencies shall be made available to the President, the Council on Environmental Quality and to the public as provided by Section 552 of Title 5 USC, and shall accompany the proposal through the existing agency review processes (42 USC 4332).

In July 1979 the Council on Environmental Quality's regulations for implementing the provisions of NEPA (40 CFR 1500 et. seq.)

became effective. Federal agencies undertaking a major action must produce a public record indicating the manner in which the Environmental Impact Statement was utilized in the decision process, and which alternatives were considered in the EIS for minimizing environmental impacts.

40 CFR Section 1501 requires the integration of NEPA into planning at the preliminary stages to ensure consideration of environmental concerns. Part 1501.4 outlines the criteria for determining if an activity is a major federal action requiring preparation of a full EIS.

Section 1502 of NEPA requires that an EIS be prepared as early as possible so that it can be included in recommendations on the final proposal.

Section 1504 establishes procedures for referring unresolved conflicts concerning proposed federal actions to the Council on Environmental Quality. This procedure in effect extends the NEPA process, and the agency is precluded from taking any action on the proposal until the conflict has been resolved.

Section 1506 prohibits a federal agency from undertaking actions having any adverse environmental impact while the review process is underway. Subsection 1506.2 authorizes affected state and local governments to contribute to the preparation of an EIS in order to eliminate duplicate EIS preparation.

Section 1507 requires that all federal agencies comply with NEPA regulations and that environmental impact statements and comments on the statements be adequately prepared. In recent years court challenges contending that EISs were not prepared

by DOI in accordance with NEPA criteria have occurred in all OCS areas. These have delayed OCS exploration, development, and production activity by three months to two years.

The construction of a pipeline requires that a number of federal permits be obtained. For each permit, the agency with the primary permitting responsibility is designated as the lead agency. Other federal agencies with jurisdiction over areas affected by pipeline activity are included in the NEPA process. All involved agencies, however, may combine their procedures to satisfy NEPA and other requirements simultaneously.

When the environmental review indicates that no significant impacts are anticipated, or when a project is altered to eliminate significant impacts, a Finding of No Significant Impact (FONSI) is issued. The environmental assessment shall be included as part of the FONSI.

Once a decision to prepare an EIS is made, notice of intent must be published in the Federal Register and appropriate federal, state and local agencies must be invited to participate in the scoping process. During this process, the range of actions, alternatives, and impacts is determined, and significant issues to be analyzed are identified.

An EIS is initially prepared and circulated for review in fraft form. Copies of the draft are submitted to the Governors of affected states, CZM agencies of states with approved CZM programs, and upon request, to local government officials. The draft EIS is also available to affected federal agencies, and the public.

The review period for a draft EIS is generally 45 days, although this is frequently extended for major pipeline projects. Interested parties are encouraged to submit written comments during this period. After evaluation of comments received, a final EIS is prepared which must list any mitigative measures necessary to make the recommended alternative environmentally acceptable. A decision on a proposed activity is usually made within 60 days after the release of the final EIS, though decisions on major projects may take longer. The lead agency prepares a concise public record of the decision and provides a monitoring mechanism to assure proper implementation of the decision.

Coastal Barrier Resources Act of 1983 (P.L. 97-348)

The Coastal Barrier Resources Act prohibits federal subsidies for flood insurance, bridge construction, sewage treatment facilities and other construction on designated undeveloped barrier islands. The Coastal Barrier Resources Act:

1. Establishes a coastal barrier resources system consisting of undeveloped barrier islands, beaches and spits on the Atlantic and Gulf coasts;
2. Prohibits new federal expenditures and federal financial assistance within the coastal barrier resources system;
3. Maintains federal assistance for energy facilities, navigation channel maintenance, air and water navigation aids, and emergency disaster assistance; and
4. Preserves local zoning and permitting authority.

Solid Waste Utilization Act as amended by the Resource Recovery Act of 1970

This Act requires that EPA establish criteria for identifying hazardous wastes and a federal permit program (similar to the NPDES program) to regulate their handling and disposal).

In cases of specific hazardous toxic substances (such as cyanide), the federal government becomes involved in waste management. Generally, however, solid waste management is a state responsibility.

Solid wastes are generated by offshore oil operations and service bases. Offshore wastes are the more significant in terms of both quantity and environmental impacts. During drilling operations, approximately six tons of solid wastes will be generated per well per day. This includes drilling wastes, such as mud, mud additives, bit cuttings, sand and sludges collected in separation vessels and tanks; galley garbage; oily sludges; lubrication oils and waxes; rags, packaging wastes; drums, spools, cables, and scrap metals; and human wastes. Some of this material is treated and disposed of at sea, but a large quantity is returned to shore through the service bases.

Offshore operators are not permitted to dispose of any oiled drilling mud and drill bit cuttings at the platform. Discharges of non-oiled drilling mud and cuttings are permitted in federal waters.

Since drilling wastes often contain hazardous materials, such as oil, acids or heavy metals, they must be disposed of in a special landfill site where there is not danger of penetrating the ground water, running off into surface waters, or evaporating.

This may prove difficult in Florida due to its geology, soil and climate conditions.

Less hazardous offshore wastes, such as scrap metal, paper, or wood products, are recycled or treated at the service base before disposal in an incinerator or sanitary landfill.

Solid wastes generated by service base operation include dunnage (material used to protect cargo) collected during boat unloading, garbage from supply and crew boats (approximately 6.5 lbs. per person per day) and garbage/refuse from service base employees. These wastes can be incinerated, disinfected and used as landfill or, in the case of garbage, ground up and disposed of with the sewage. Little adverse environmental impact is anticipated if these materials are disposed of in accordance with existing regulations.

National Historic Preservation Act of 1966 (P.L. 89-665 as amended by P.L.s 91-243, 93-54, 94-422, 94-558 and 96-625 and Executive Order (EO) 11593

The National Historic Preservation Act (NHPA) of 1966, as amended, authorizes the Secretary of the Interior to expand and maintain a National Register of districts, sites, structures, and objects significant in American history, architecture, archaeology, and culture. The Act provides for the nomination of properties of national, state, or local significance for placement in the National Register but prohibits the listing of privately owned property when the owner objects in writing. The criteria for including properties in the National Register

(36 CFR 60.2) provides the standard to judge whether a cultural property is important enough to warrant special consideration during the planning of federal undertakings.

Section 106 of the Act requires federal agencies to take into account properties listed in the National Register or that meet the criteria of the National Register during the early planning of federal projects. The agency must allow the Advisory Council on Historic Preservation a reasonable opportunity to comment when cultural properties are affected by its project (36 CFR Part 800). The goal of Section 106 is to ensure that alternatives that avoid or minimize damage to significant cultural properties are examined in all federally supported actions. If the agency complies by considering Council comments, then it may proceed with any course of action that it feels is justified.

Prior to approving any action that would foreclose alternatives or the Council's ability to comment, the lead federal agency shall take the following steps according to EO 11593:

1. Identification of properties eligible for or listed in the National Register

   The agency official shall consult the State Historic Preservation Office, the published lists of National Register and National Register eligible properties, public records, and experts in the field to determine if there are any properties within the area of the undertaking's potential environmental impact that warrant special attention.

   If a property meets the National Register Criteria,

or may meet the Criteria, the agency shall request a determination of eligibility from the Secretary of DOI (36 CFR 63). If the agency and the State Officer agree that no property within the area meets the Criteria, this finding must be documented.

2. Determination of effect

The agency and the State Historic Preservation Office must apply the Criteria of Effect (36 CFR 800.3(a) to each National Register or National Register eligible property within the area of the undertaking's potential impact. If both parties agree that the undertaking will not affect the vital characteristics of the property, the undertaking may proceed. In the case of an objection to a determination of no effect, the Executive Director of the Advisory Council may review the determination and respond to the objecting party within 15 days.

3. Determination of no adverse effects

Determinations by the agency official and the Historic Preservation Officer must be documented and forwarded to the Executive Director for review (36 CFR 800.6).

4. Adverse effect determination

If the agency finds that the undertaking will have an adverse effect on the characteristics of the property, or if the Executive Director does not accept a determination of no adverse effect the agency shall: 1) prepare a case report requesting the comments of the Council; 2) notify the State Historic Preservation Office of this

request; and 3) proceed with the consultation process.

5. Suspense of action

   Until the Council issues its comments, good faith consultation precludes a federal agency from making or sanctioning any irreversible or irretrievable commitment that could result in an adverse effect on any property eligible for or listed in the National Register (36 CFR 800.4 (a-e)).

The State Historic Preservation Officer may participate in the review process whenever it concerns an undertaking located within the state's jurisdiction. Unless an extension is agreed upon, the State Historic Preservation Officer may take up to 30 days after receipt of a consultation request to respond. If the Officer does not respond within 30 days, the agency may proceed with the review process.

State nominations need not be limited to state-held properties. Federally owned properties may also be nominated by a state. It is unclear, however, if this would include federal property outside state borders. In such cases, the State Historic Preservation Officer shall notify the appropriate federal representative in writing before the nomination is forwarded to the National Park Service (36 CFR 60.11(d)).

To fulfill Section 101(b)(4) of NEPA regarding the preservation of our national heritage, federal agencies should coordinate NEPA and National Historic Preservation Act (NHPA) responsibilities to ensure that historic/cultural properties are given proper consideration in the prepartation of environmental assessments and environmental impact statements.

Occupational Health and Safety Act of 1970 (P.L. 91-596 as amended by P.L.s 93-237 and 95-251)

This Act protects workers from excessive, injurious noise and limits noise levels to 90 decibels for an eight hour day. It also stipulates that the permissible exposure time must be halved for every five decibel increase. For instance, noise levels of 100 decibels are allowed for only two hours/day. Noise will be produced during construction of OCS facilities and at marine terminals from compressors and boilers and to some extent from tankers and barges.

ENVIRONMENTAL LEGISLATION

Marine Mammal Protection Act of 1972 (P.L. 92-522 as amended by P.L.s 93-205, 94-265, 95-136 and 95-316)

This Act (50 CFR Part 216) establishes a national policy designed to protect and conserve marine mammals and their habitats. The Act specifically prohibits the harassing, hunting, capturing, or killing of any marine mammal unless otherwise exempted under its provisions. The Marine Mammal Commission is responsible for advising federal agencies on the protection and conservation of marine mammals. The Commission has a Committee of Scientific Advisors to provide advice on actions needed to fulfill the purposes of the Act. Authority has been delegated to the DOC, which is responsible for all cetaceans and pinnipeds (except walrus) and to the DOI, which is responsible for walrus, sea otters, manatees, and dugongs. DOI is responsible for determining which OCS oil/gas activities will threaten marine mammal populations or violate

provisions of the Act.

Because certain species and population stocks of marine mammals are in danger of extinction or depletion as a result of man's activities, the goal of this Act is to keep these species from diminishing below their optimum sustainable population. The Act also calls for immediate measures to be taken to replenish any species or population stock which has already diminished below that population. Efforts are to be concentrated on the protection of rookeries, mating grounds, and critical habitat areas. Currently, knowledge of the ecology, reproduction, and population dynamics of marine mammals is inadequate for their protection.

Marine Protection Research and Sanctuaries Act of 1972 (P.L. 92-532 as amended by P.L.s 93-254, 93-472, 94-62, 94-326 and 95-1523)

The purpose of the Marine Sanctuaries Program is to: 1) identify distinctive areas in the ocean, from the coast to the edge of the continental shelf; 2) preserve and restore these areas by designating them as marine sanctuaries; and 3) provide appropriate regulation and management. Program emphasis is on the protection of natural and biological resources.

The presence of conflicts among existing or potential uses of a candidate site is not, in itself, a basis for designation of a site as a marine sanctuary. Activities will be permitted within a designated marine sanctuary to the extent that they are compatible with the purpose for which the sanctuary was established. This determination is "based on an evaluation of whether the individual or cumulative impacts of such activities (may) have a significant adverse effect on the resource value of the sanctuary" (15 CFR 922.1(c)).

The Coastal Zone Management Office, within NOAA, administers the Marine Sanctuary Program which is coordinated with the Coastal Zone Management and Estuarine Sanctuary Programs established under the Coastal Zone Management Act of 1972.

The Secretary of Commerce is authorized to designate areas to be preserved or restored for their conservation, recreational, ecological or aesthetic values as marine sanctuaries. The Secretary of Commerce also issues regulations to control designated activities within each area. Activities occurring within the sanctuary may be authorized by other authorities, but are valid only if the Secretary of Commerce certifies that the proposed activity is consistent with the purposes of Title III of the Act and can be undertaken pursuant to the regulations established for the sanctuary (15 CFR 922.26(c)).

Any person may recommend that a site be considered for designation as a marine sanctuary (15 CFR 922.20(a)). Recommendations should be addressed to the Director of the Sanctuary Programs Office, Office if Coastal Zone Management, NOAA. Recommendations should be submitted as follows:

1. Site recommended;
2. Description of area;
3. Approximate coordinates;
4. Area in square miles;
5. Name of person/organization submitting recommendations;
6. Principal contact;
7. Detailed description of the feature(s) which make the site distinctive;

8. Data on the resources and site;
9. Summary of existing research to support description;
10. Data deficiencies;
11. Description of past, present and prospective uses of site;
12. Impacts of present and prospective uses of site and its distinctive features;
13. Probable effects of marine sanctuary designation and recommended regulations;
14. Present/future resource uses;
15. Uses of adjacent onshore areas; and
16. Summary of who should manage area and why and a summary of activities which must be regulated to ensure protection of distinctive features.

Within three months of receiving a recommendation for any site, the Assistant Administrator shall review the site to determine if it should be placed on the List of Recommended Areas. The Assistant Administrator must notify the recommender of a site in writing of his determination. If the site is rejected, reasons for the rejection must be indicated. Also, notice must be given that a recommendation may be resubmitted with additional information.

Eligibility criteria for the List of Recommended Areas (15 CFR 922.21(b)(1-5) and boundary guidelines (15 CFR 922.21(C)) are discussed in the Federal Register (Vol. 44, No. 148, July 31, 1979).

After a site has been included on the List of Recommended Areas, it may be considered for selection as an active candidate for designation as a marine sanctuary (15 CFR 922.23(a)). Prior

to selecting a site as an active candidate, the Assistant Administrator must consult federal agancies, state and local officials, including port authorities, Regional Fishery Management Councils, and interested persons, including the recommender, to determine the nature of potential impacts in the area and to gain additional information. Selection of a site as an active candidate for designation as a marine sanctuary shall be announced in the Federal Register (15 CFR 922.23(c)).

Within six months of selection as an active candidate, the Assistant Administrator must conduct at least one public workshop in the affected area. Based on the information obtained at the public workshop, the Assistant Administrator determines whether the site shall continue to be listed as an active candidate. The Assistant Administrator's decision shall be published in the Federal Register within 90 days of the last workshop (15 CFR 922.24(b)).

If the site continues to be an active candidate, the Assistant Administrator must prepare a draft Environmental Impact Statement (DEIS) containing a designation document and implementation regulations. Additionally, the Assistant Administrator must hold at least one public hearing on the DEIS in the area(s) most affected by the proposed designation (15 CFR 922.24(c)).

In response to comments received at the public hearing, the Assistant Administrator shall prepare a final EIS and file it with EPA. After consultation with appropriate federal agencies, the proposed designation shall be transmitted to the President for approval (15 CFR 922.26(a)).

The designation shall specify the geographic coordinates of

the sanctuary area, the distinctive features requiring protection, and the types of activities subject to regulation. In instances where immediate and irreversible damage might occur, activities other than those listed in the designation may be regulated on an emergency basis for up to four months. During this period, amendments to the designation terms may be initiated by following the same procedures taken for the original designation (15 CFR 922.26(b)).

If a proposed sanctuary falls within the territorial limits of a state, the Assistant Administrator must notify the designated Coastal Zone Management Agency of an affected state(s) with an approved Coastal Zone Management Program. The Assistant Administrator must make every effort to cooperate and consult with affected states throughout the entire review and consideration process.

In particular, the Assistant Administrator shall:

1. Consult with relevant state officials prior to selection of an active candidate;
2. Ensure that any state agency designated under Sections 305 or 306 of the Coastal Zone Management Act, and any other appropriate state agencies are consulted prior to holding any public workshop or hearing; and
3. Ensure that workshops and hearings include consideration of the proposed designation's relationship to state waters and its consistency with the approved state Coastal Zone Management Program (15 CFR 922.725(b)(1-3)).

The Governor of a state whose waters are included in the sanctuary may object to the terms of the designation if they are unacceptable. The Governor may take up to 60 days following

publication of the designation to raise objections. Should this occur, terms and regulations of the designation shall not take effect for the part of the sanctuary in state waters until the objection is withdrawn. If, in the opinion of the Assistant Administrator, subsequent modifications of the designation terms no longer achieve the objectives of the Act, the designation may be withdrawn (15 CFR 922.26(e)).

In some cases, the Sanctuary Programs Office has consulted adjacent states prior to designation of a sanctuary in waters beyond state jurisdiction.

While the designation of an area as a sanctuary would allow oil and gas operations, two main proposed features could delay or prohibit those operations. First, permits issued prior to the area designation and effective date of regulations remain valid for one year. For those permits that expire after the one year period and for all permits issued after the designation and effective date of regulations, certification ws required by the Assistant Administrator. This could result in up to a 120-day delay for the administrative process and might prohibit oil and gas operations in the event of an unfavorable decision. However, it is felt that where Bureau of Land Management (BLM) regulations are adequate to provide safety in oil and gas operations they will be used in lieu of new regulations.

Secondly, a large sanctuary might impede recovery of hydrocarbon resources should discoveries be made just outside the sanctuary and the reservoir extend into the sanctuary. This has not happened yet, but should it occur, the DOC officials intent

to permit oil and gas operations in the sanctuary provided the activity is consistent with any ongoing operations. However, if no ongoing oil and gas operations existed within the sanctuary, enough uncertainty might exist to delay the decision process.

Migratory Bird Treaty Act (MBTA)

The earliest of the wildlife laws is the Migratory Bird Treaty Act (MBTA) (Ch. 128, 52, 40 Stat. 755) passed in 1916 to implement the terms of the treaties with Great Britain and Canada and in later years signed with Mexico and Japan. This Act can be an effective weapon in the battle against destruction of habitat. Because it is based on treaties, it surpasses the importance of other statutes which Congress may enact. The basic ranking of legal importance in declining order is constitution, treaties, and statutes. This means that as long as it does not affect anyone's constitutional rights, an expression of the MBTA will take precedence over laws. This make the MBTA a very effective tool.

The MBTA, which construes the word "take" to mean "pursue, hunt, shoot, capture, collect, kill," or any attempt to do so, has been used to prevent the baiting of fields in U.S. vs. Reese, 27 F. Supp. 833 (W.D. Tenn. 1939) and the use of lead shot in the hunting of migratory waterfowl (see 41 Fed. Reg. 31386, 28 July 1976). An act which prohibits any taking of migratory birds with no requirement of "guilty knowledge" can be used to great advantage.

Guilty verdicts in the cases of the U.S. vs. F.M.C. (a pesticide manufacturer charged with violation of the MBTA for bird deaths from a contaminated company holding pond) and in the U.S.

vs. Corbin Farm Services (defendants charged with bird deaths as a result of pesticide field spraying) indicate that courts are willing to accept use of the MBTA in cases where pollution has killed migratory birds without the intent or knowledge of the actors. Interpreted in this manner, degradation resulting from construction and channelization projects (if migratory birds will be harmed) could be a violation of the MBTA.

This new dimension to the MBTA provides an additional means to accomplish Fish and Wildlife Service (FWS) objectives in the coastal zone. Also the Property Clause, U.S.C.A. Constr. Art. 4.S3, Cl, 2, has recently gained greater efficacy in providing protection to federal projects. The Supreme Court in Kleppe vs. New Mexico held that a state agency acting in accordance with a New Mexico law could be prevented from removing wild burros from federal lands under the Property Clause. This line of reasoning was taken a step further in the U.S. vs. Brown (522 F. 2d. 817, 1977) where the court found that the Property Clause permits Congress to enact legislation protection federal lands from "spill-over" effects from activities occurring on nonfederal public lands or waters. State laws allowing hunting on waters within a National Park were overridden under the Supremacy Clause by federal regulations protecting wildlife and visitors on the land. If other courts agree with the Brown reasoning, it is possible that activities on public areas adjacent to refuges in the coastal zone can be prohibited if they have an adverse effect on the purposes for which the federal land is held.

Endangered Species Act of 1973 (P.L. 93-205 as amended by P.L. 94-325)

Under the Endangered Species Act (ESA), consultation authority is delegated to the Director of the Fish and Wildlife Service (FWS) and the Assistant Administrator for Fisheries, National Marine Fisheries Service (NMFS), both referred to as the Service.

The Secretary of Interior or Commerce, and all federal agencies in consultation with them, are required to ensure that any program authorized, funded or carried out by a federal agency is not likely to jeopardize the existence of any endangered or threatened species, or result in the destruction or adverse modification of critical habitat.

This Act defines the terms "critical Habitat" and "endangered species" (Sect-on 3(5) and (6) and empowers the Secretary of the Interior to determine critical habitat boundaries and to specify species as endangered or threatened. However, the Secretary of the Interior may not list, remove from any list, or change the status of any endangered/threatened species listed before enactment of this Act without a prior favorable determination by the Secretary of Commerce (Subsection 4 (a)(2)(c)). An exemption for an agency action will not be considered a major federal action provided that an EIS discussing the impacts upon the endangered/threatened species or upon their critical habitats has been prepared previous to the action (Special Provisions, Section 7(k)).

If the proposal is a major federal action significantly affecting the quality of the human environment, the federal agency

or the designated representative shall request of the Service a list of species (listed and proposed) that may be in the action area. Within 30 days, the Service will respond with a species list. The federal agency or designated representative will then conduct a biological assessment to determine how the species in the action area will be affected. The federal agency will submit this biological assessment to the Service. If a federal agency determines that the action "may affect" listed species or critical habitats, either adversely or beneficially, they shall initiate Section 7 consultation with the Service. In addition, if the federal agency determines that the action is likely to jeopardize the continued existence of proposed species or result in the destruction or adverse modification of proposed critical habitats, it shall confer with the Service.

The Service will complete the consultation within 90 days and render a biological opinion. The biological opinion may include conservation recommendations. If the biological opinion concludes that the action is likely to jeopardize a listed species or result in modification of a critical habitat, mutually agreeable and prudent alternatives will be included. During the consultation process, no irreversible or irretrievable commitment of resources may be made which might foreclose the formulation/ implementation of any reasonable alternative measures.

States now have, in addition to the inclusion of endangered and threatened plants under the program, an alternate set of requirements available to them to be eligible for a state Section 6 program. These requirements include:

1. An appointed state agency with authority to conserve resident species of fish or wildlife determined by the state agency or the Secretary of Interior to be endangered or threatened;
2. A state agency authorized to conduct investigations to determine the status and requirements for survival of resident species agreed upon;
3. A state agency authorized to establish programs, including acquisition of land or aquatic habitat or interests therein, for the conservation of resident endangered or threatened species of fish or wildlife (but not for plants); and
4. Provisions for public participation in designating resident species of fish or wildlife or plants as endangered or threatened.

Whereas NEPA requires consideration of potential environmental hazards, the Endangered Species Act (ESA) mandates the preservation of endangered life.

The adequacy of DOI's consideration of endangered species in planning both Pacific and Alaskan OCS lease sales has been challenged. The most important court case involved Alaska's Beaufort Sea lease sale. The Court of Appeals held that DOI's leasing program is a continuum of planned events and that holding a lease sale does not, in itself, generate any irreversible or irretrievable action that would jeopardize the endangered species.

The OCS Lands Act Amendments, NEPA, and ESA all insist on foresight when planning any proposed action. Since holding an

OCS lease sale is only one planned event, further consideration of these statutory goals mst be addressed before exploration, development, and production will be allowed. Therefore, if in any of these evaluations it is found that a lessee's OCS oil and gas exploration plan will jeopardize an endangered species or its critical habitat, the proposal would not be allowed to proceed.

Mineral Leasing Act (Section 28), Amended and National Wildlife Refuge System Administration, Amended

These Acts require approval by the FWS of rights-of-way for pipeline construction across national wildlife refuges and other federal lands under its control.

Title 50 incorporates the requirements of the Act to amend Section 28 of the Mineral Leasing Act of 1920, and the Act to amend the National Wildlife Refuge System Administration Act of 1974. The amendment to Section 28 establishes special requirement for pipeline rights-of-way for oil, natural gas, synthetic liquid or gaseous fuels. The National Wildlife Administration Act, as amended, establishes criteria for granting rights-of-way across lands of the National Wildlife Refuge System.

Applications for all rights-of-way over lands administered by the FWS must be submitted to the Regional Director who determines if the right-of-way is compatible with the purposes established for units of the National Wildlife Refuge System (50 CFR 29.21-1(a)).

Applications must include an environmental analysis sufficient to enable FWS to satisfy NEPA and other cultural, historical and archaeological protection requirements (Hudson Canyon Transportation

Management Plan, Review Draft, Janduary 1981, pg. 136). The analysis must also include information concerning the impact of the proposed use on: air and water quality; scenic and aesthetic features; and wildlife, fish and marine life (50 CFR 29.21-2).

If the land administered by the Secretary of Interior through the FWS is owned in fee by the United States and the proposed use is compatible with the objectives of the area, a permit may be granted by the Regional Director, generally for a term of 50 years. However, rights-of-way granted under the Section 28 for pipeline transportation, may not exceed 30 years in term nor exceed 50 feet in width (plus the area occupied by the pipeline and its related facilities). The Regional Director may find that a wider right-of-way is necessary for operation/maintenance, or to protect the environment or public safety (50 CFR 29.21-3(a)).

In instances where damage to a unit of the National Wildlife Refuge System may result, the Regional Director may require mitigation measures to make the proposed use compatible with the purposes for which the unit of the system was established.

State involvement with respect to pipeline rights-of-way on federally-owned offshore lands is limited to two forms. First, the Regional Director must offer state, local, other federal agencies, and the public an opportunity to comment on right-of-way applications. Notice of public hearings is published in the Federal Register (50 CFR 29.21-9(f)). Second, the Regional Director must consider, and basically comply with, applicable state standards for right-of-way construction, operation and

maintenance (50 CFR 29.21-9(1)).

The Fish and Wildlife Coordination Act (P.L. 73-121 as amended by P.L.s 732, 80-697, 86-624 and 89-72)

Under the Fish and Wildlife Coordination Act, any pipeline project that would affect a water body of the United States requires that the FWS and the NMFS recommend that wildlife conservation receive equal consideration with other project features throughout the planning and decision-making process. The Secretary of the Interior is authorized to make recommendations and issue reports on the wildlife aspects of proposed water-related projects. These reports and recommendations, and those of the head of the state agency exercising authority over the wildlife resources of the state, are included in the final report by the responsible federal agency (16 USC 662(b)). Wildlife agencies can recommend that permits, including COE permits issued under Section 404 of the FWPCA, be denied. However, the COE is not required to heed the counsel of the wildlife agencies.

The coordination Act process begins when the FWS is notified of a federal permit application or of a proposed federal activity. The project is then reviewed for its impact on fish and wildlife resources and recommendations are made to preserve, protect or enhance those resources.

The Fish and Wildlife Service's goal is the protection of fish and wildlife resources and their habitat. However, the ultimate determination regarding permit issuance rests with the permitting agency rather than with the wildlife agencies.

Strengthening the Fish and Wildlife Coordination Act would help protect coastal/wetland areas. The decision in the case of The Avoyelles Sportsmen's League Inc. vs. Alexander (C.A. 78-1428, W.D. la) held that the clearing of wetlands to convert bottomland into farmland is subject to permit under the FWPCA "even where no earth is moved". The Corpos had based its determination that no Subsection 404 permit was necessary by invoking the normal farming exemption (Subsection 404 (f)(1)(A) and the fact that no earth was moved. The court ruled that the clearing of 20,000 acres of bottomland to plant soybeans was not the normal farming activity contemplated by Subsection 404(f)(A) and that the clearing activities fall under Sebsection 404(f)(2) which takes away the exemption for activities which change the use of the land. Those activities which would be exempted under Subsection 404(f)(1)(A) are denied the exemption if they are part of an effort to convert a wetland area to another use which will reduce the reach, or impair the flow or circulation of the water. The Corps' argument was rejected in this case as an attempt to ignore the purposes of the Coordination Act.

OCS Related Transportation Regulatory Mechanisms

A. General OCS Related Mechanisms

Deepwater Port Act of 1974 (P.L. 93-627 as amended by P.L. 95-36)

This Act provides for licensing and regulation of any fixed or floating manmade structure, other than a vessel, located beyond the territorial sea which is to be used as a port or terminal for transport of oil to any state. This regulation applies to all

associated equipment, pipelines, pumping stations, service platforms, and mooring buoys to the extent they are located seaward of the high water mark.

The Act authorizes the Secretary of Transportation to grant licenses to construct and operate deepwater ports. Prior to issuing a license, the Secretary of Transportation must consider the recommendations of EPA, the Federal Trade Commission, the Attorney General, the Secretary of the Army, the Secretary of Defense, the Governors of adjacent coastal states, and the general public (33 USC 1503(c)). The Secretary of Transportation may grant licenses only if the applications are consistent with the criteria and regulations of the Act. The Act prohibits any person from transporting oil between a deepwater port and the United States unless such a port has been licensed (33 USC 1503(a)).

Section 6 requires that the Secretary of Transportation establish environmental review criteria to be used in evaluating proposed deepwater ports. By amendment of Part 1, Title 49 CFR, this responsibility is delegated to the Commandant of the Coast Guard (49 CFR 1.46(t)). The Coast Guard regulations apply to all United States deepwater ports regardless of location or design. During the license application review, each port is examined for its potential environmental impacts and utilization of technology.

The Secretary of Transportation promulgates regulations which allow for cooperation with other federal agencies and with any potentially affected coastal states (33 USC 1504(a)). An "adjacent coastal state" is defined as any coastal state which would be directly connected by pipeline to a port or would be located within

15 miles of such a proposed deepwater port. Upon request, the Secretary of Transportation may also designate other states as "adjacent" if it is determined that the risk of damage to the coastal environment of that state is equal to or greater than the risk posed to a state connected by a pipeline. To obtain this designation, the state must make its request known within 14 days of the Federal Register publication of notice for a proposed deepwater port. The Secretary shall make a determination within 45 days after receipt of such a request by a state (33 USC 1508(a)).

The Department of Transportation (DOT) must publish notice of receipt of a license application in the Federal Register. The application is reviewed by interested federal agencies and is subject to an Environmental Impact Statement review and a public hearing. At least one public hearing must be held in each adjacent coastal state. Any interested party may present relevant material at any hearing. If the Secretary of Transportation determines that factual issue(s) exist which may be resolved by a formal evidentiary hearing, at least one adjudicatory hearing shall be held. The record developed at any adjudicatory hearing will serve as the basis for the Secretary's decision to approve or deny a license. All public hearings on all applications within a designated application area shall be consolidated and must be concluded within 240 days after notice of the initial application has been published.

State participation with respect to the Act ranges from receipt of notification of public hearing to collection of user

fees for the land-based facilities related to a deepwater port facility. The Coast Guard Commandant must issue a notice of public hearing to each applicant and each adjacent coastal state. The Governor of an adjacent coastal state may consult with the application staff concerning license conditions that are under consideration (33 CFR 148.407). Should the Governor of an adjacent state notify the Secretary that an application is inconsistent with state programs relating to environmental protection, land and water use, or coastal management, then the Secretary of Transportation shall condition any license granted so as to make it consistent with the state programs (33 USC 1508(b)).

Section 1508 further requires that the Secretary of Transportation transmit a copy of all applications to the Governor of each adjacent coastal state. Prior to the issuance of a license, the Secretary must obtain the approval of the Governor of each of these states.

In summary, the proposed project must conform to approved state programs. The Governor of an "adjacent coastal state" can veto a proposed action if it is deemed inadvisable, and state participation is based on the provision that "the law of the nearest adjacent coastal state, now in effect or hereafter adopted, amended, or repealed, is declared to be the law of the United States, and shall apply to any deepwater port licensed pursuant to this Act, to the extent applicable and not inconsistent with any of the federal provisions (33 USC 1518(b))." The nearest adjacent coastal state is defined as that state whose seaward boundaries, if extended beyond three miles, would encompass the site of the deepwater port.

Finally, any state which has land-based facilities directly related to a deepwater port is entitled to set "reasonable fees" for the use of such facilities. Fees may not exceed the economic, environmental, and administrative costs inflicted upon a state. All fees are subject to approval by the Secretary of Transportation (33 USC 1504(h)(y)).

Port Safety and Tank Vessel Safety Act of 1978, amending Ports and Waterways Safety Act of 1972 (P.L. 95-474)

This Act is important because it regulates designation of shipping routes on the OCS and enforcement of safe access routes. There are two forms of official shipping lane designations; safety fairways and traffic separation schemes. Safety fairways are routes that have been established by the Corps of Engineers by means of denying permits for platforms within their limits (Section 10, River and Harbor Act of 1899, 33 USC 403). Traffic separation schemes establish directional lanes for vessel movement.

The 1978 Port and Tanker Safety Act amended the Ports and Waterways Safety Act (1072) and the Tank Vessel Act (1936). The Act authorizes the Secretary of Transportation (Coast Guard) to designate port access routes for the movement of vessel traffic in U.S. coastal waters...and to designate necessary fairways and traffic separation schemes. Within the designated areas, navigation is to have "the paramount right over all other uses." Regulations for a specific designated port access route may prohibit or restrict placement of drilling or production platforms within or adjacent to vessel traffic lanes. Before a port access route can be designated, the Coast Guard must study the need for

such routes. The Secretary of Transportation is forbidden to make a designation that would deprive a leaseholder of the effective exercise of a right granted by lease or permit, so long as the effective lease or permit date preceded the publication of the Federal Register notice announcing the undertaking of a study regarding potential vessel traffic density and the need for safe access routes (44 FR 22543, April 16, 1979).

The Secretary of Transportation is authorized to adjust the limits of fairways or traffic separation schemes as necessary to accommodate the needs of other uses which would not be inconsistent with the purpose for which the existing designation was made.

In compliance with the Act, the Coast Guard initiated a Port Access Route Study. Notice of the study appeared in the Federal Register on April 16, 1979.

The initial stage of the study evaluated existing routes and determined where ship routing measures were needed to ensure safe access to and from United States ports. Required routing proposals may create new measures or amend existing measures relative to the study assessment.

In connection with any designation of fairways and traffic separation schemes, the Secretary of Transportation is directed to issue reasonable regulations for the use of the designated area. Further, the Secretary of Transportation may make the use of fairways and traffic separation schemes mandatory for certain types and sizes of vessels (the most direct route is generally the actual practice). Following completion of the Port Access Route Study, appropriate regulations will be issued.

When appropriate, states may encourage the Coast Guard to adopt more rigorous protective measures for the transport of oil by tank vessel. The designation of safe passage lanes over the OCS and the establishment of vessel traffic systems should be urged where necessary.

During the initial phase of the Port Access Route Study, the Governors of all coastal states were consulted for input relating to commercial traffic routes, traffic concentration, and potential traffic density, fishing activity, recreational vessel traffic, and OCS resource development activities in the study area.

Also, prior to issuing regulations, the Secretary of Transportation is directed to establish procedures for receiving further input by officials from affected states (33 USCS 1223 (c)(3)(B)).

The River and Harbor Act of 1899 (Sections 9 and 10 only)

This Act regulates permitting for any work in or affecting navigable waters of the United States. Section 9 specifically addresses permits for pipeline construction of elevated crossings over such waters.

Section 9 of the Rivers and Harbors Act prohibits construction of any dam or dike across any navigable waters of the United States without congressional consent and approval by the COE. Where the navigable portions of a water body lie exclusively within the jurisdiction of a single state, the structure may be built under the authority of the state legislature if the plans are approved by the COE. Section 9 also applies to elevated bridges, causeways,

and pipeline crossings. The Secretary of Transportation delegated authority with respect to elevated crossings to the Coast Guard Commandant. The Coast Guard's function in reviewing plans for pipelines across navigable waters (for the purpose of this program) is to ensure that structures meet the requirements of navigation.

If the District Commander's preliminary examination of the application suggests that the permit should be denied, he must notify the applicant of this determination and state the reasons for denial. If the applicant desires that the application receive further consideration by the Commandant, the District Commander is required to give public notice that the application has been filed and proceed with the case (CFR 115.60(b)).

Public hearings will be held only for cases where there are substantial issues relevant to the effect that the proposed pipeline will have on the reasonable needs of navigation. Notice of the hearing is to be communicated to the applicant, state(s), county, and municipal authorities by mail.

Hearings are open to the public and conducted in an informal manner. Submission of written and oral statements is invited and encouraged.

The District Commander prepares a report reflecting the findings based on information obtained at the hearing and knowledge derived from his experience. The completed report is sent to the Bridge Division of the Office of Navigation. If the Commandant disagrees with the findings of the District Commander on a substantive matter, he may return the case for reconsideration. If the Commandant decides not to issue the permit, he must inform the

applicant of the reasons for rejection and the modification of plans that would justify reconsideration (33 CFR 115.60(e)(1)).

Generally, state participation in the review of Section 9 permits takes three forms: (1) affected states receive notification of applications received and public hearings; (2) certification that the project meets with state water quality standards; and (3) where applicable, certification that the proposed project would be consistent with an approved state coastal management plan. States are also invited to offer testimony at public hearings and to submit written comments to the District Commander.

Anyone proposing to conduct an activity which might result in any discharge of a pollutant into navigable waters must provide the Coast Guard with a certification from the state in which the discharge originates. This ensures that the discharge will comply with the applicable state effluent limitations and water quality standards (33 USC 1341).

If the state fails or refuses to act upon a request for certification within one year, the certification requirement will be waived. No permit may be granted until the certification requirement has been obtained or waived. If state certication has been denied, no permit may be granted.

Finally, a state with an approved CZM program which includes the Section 9 permit, must also recieve the applicant's consistency certificate. If the state finds the proposed activity is inconsistent with the CZM program, it can object to the issuance of a permit.

Generally, a decision to issue a permit rests primarily on the effect of the proposed work on navigation. However, in cases

where the proposed structure is unobjectionable from the standpoint of navigation, but state or local authorities decline to give their consent to the work, it is unusual for the Coast Guard to issue a permit. In such cases the applicant is informed that the structure is unobjectionable from the standpoint of navigation and that the permit would be issued were the consent of the local authority also forthcoming (33 CFR 114.10(a)).

Section 10 permits are required for all structures or work in, or affecting, the navigable waters of the United States, for work on artificial islands, and for all installations and other devices permanently or temporarily attached to the seabed on the outer continental shelf (Section 4(e), OCS Lands Acts of 1953, as amended).

To obtain a permit an applicant must submit information describing the project to the District Engineer of COE office having jusisdiction over the area in which work is to be performed.

Upon receipt of an application, the COE issues a public notice (within 15 days) for the purpose of informing the public and soliciting comments. The notice is distributed to all levels of government, interested groups and individuals, is posted in public places in the vicinity of the proposed work, and is occasionally advertised in local newspapers (33 CFR 325.3, 1979). The notice must include sufficient information on the nature of the proposed activity to generate meaningful comments.

Generally, the comment period is 30 days from the date the public notice is distributed. In no case may it be less than 15 days. All comments received become part of the public record and are used by the District Engineer in determining whether a public hearing is warranted.

When structures on the OCS are to be constructed on lands under mineral lease from the BLM, that agency, in cooperation with other federal agencies, will have previously evaluated the potential effects of the leasing program on the total environment. COE, therefore, limits its evaluation of the proposal to its impact on navigation and national security. If state concerns and objections go beyond the questions of navigation and national sucurity, the COE will refer the matter to the Department of the Interior.

Generally, Section 10 permits will not be denied, although modifications in timing and location may be required in the interest of navigation or national security. Notice must be given to the COE prior to the commencement of authorized work even after a permit has been issued.

States will receive public notice of Section 10 permit applications and may submit written comments to the District Engineer. In cases where all facilities and activities are located outside the state limits, state concerns and objections beyond the scope of national security and navigation will be referred to DOI (NERBC-RALI Projects State Participation in OCS Development and Production Decisions, p. 35, July 1980).

A state with an approved CZM program (such as Florida) which has included COE permits in its program lists will receive the applicant's consistency certificate. If the state finds that the proposed activity is inconsistent with the CZM program, it can object to the issuance of the permit.

The Natural Gas Act of 1979

The Natural Gas Act authorizes the federal regulation of

interstate transport of natural gas. The movement of natural gas from the OCS into any coastal state constitutes interstate transport. It is not necessary that a pipeline cross from one state into another. Section 717(f)(c) of Title 15 U.S.C. states that no natural gas company shall engage in the transportation or sale of natural gas, undertake the consturction or extension of any facilities, or acquire or operate any such facilities or extensions without first obtaining a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission (FERC).

The Act provides that the FERC shall fix charges and rates for the transportation and sale of natural gas subject to its jurisdiction. The public convenience and necessity standard of Subsections 7(c) and 7(e) of the Natural Gas Act gives FERC authority over pipeline safety, including siting issues.

The requirements for certificate applications are outlined in 18 CFR 157. The required information is to be submitted through series of exhibits, the type, scope, and purpose of which are covered in 18 CFR 157.52 et seq. The guidelines set substantive requirements with respect to location and construction of a pipeline. The FERC guidelines are designed to avoid and mitigate adverse impacts on environmental/scenic values and to require consultation with interested state and local officials.

FERC has also promulgated specific guidelines for the applicant's environmental report. The applicant is expected to consult with appropriate officials at all government levels during the preliminary stages to assure that all environmental concerns are identified. The applicant must also conduct studies to determine

the impact of a proposed action on the environment and to assess any measures which may be necessary to preserve the values of the affected area (18 CFR 2.82).

The FERC staff must review environmental reports and perform its own independent studies to determine whether the proposed licensing action is a major federal action significantly affecting the quality of the human environment. If it is such an action, the FERC staff must prepare a draft EIS which is reviewed by the Council on Environmental Quality (CEQ), EPA, other appropriate agencies and the public. The public has 45 days after publication of a notice of availabilityof the draft EIS to offer comment. After the expiration of the comment period, the FERC staff must consider all submitted comments and revise the draft EIS as necessary to produce a final EIS.

A public hearing may be held at the FERC's request or due to public objection. Any party which may be directly affected may file a petition to intervene (15 USC 717n(a)). For a state to intervene, notice of intervention must be filed by a state commission or any regulatory body of the state having jurisdiction to regulate rates and charges for the sale of electric energy or natural gas to consumers within the intervening state (18 CFR 1.8a (1)). This notice of intervention is not subject to the Commission's approval.

Petitions to intervene must clearly set out the grounds of the proposed intervention, and the position of the petitioner in the proceeding (18 CFR 1.8c).

The exercise by FERC of its authority to sanction interstate

transactions involving transmission of natural gas by pipeline is not dependent upon approval by state regulatory commissions (Public Service Commission of West Virginia v. Federal Power Commission, 437 F.2d 1234 (1971)). The state can, however, exercise its influence by preparing comments on the draft EIS and by taking an active role in the hearings.

Natural Gas Pipeline Safety Act of 1968 (P.L. 90-481 as amended by P.L.s 92-401, 93-403, 94-477 and 96-129)

DOT is responsible for establishing federal safety standards for natural gas pipeline facilities. No permits are required, but all applicants for a certificate of public convenience and necessity under the Natural Gas Act must certify to FERC that applicable DOT safety standards will be satisfied (49 USC 1676). Safety standards require that certain pipeline leaks and failure be reported to the Office of Pipeline Safety Operations (49 CFR 191). Federal safety regulations contained in 49 CFR 192 cover design, construction, testing, operation, installation, inspection, replacement, and maintenance of gas pipeline facilities.

The regulations focus on materials, maintenance and operating practices required to keep a pipeline functioning safely. While environmental protection is an incidental result of these regulations, the principal objective is safety.

A Memorandum of Understanding (MOU) regarding pipeline safety regulations was signed in May 1976 between the Secretary of the Interior and the Secretary of Transportation. This MOU specified each agency's responsibility as well as their joint responsibility

for inspection, enforcement and coordination.

The Act allows for federal regulation of those facilities used to transport natural and other gases in, or affecting, interstate or foreign commerce. It created exclusive federal authority over interstate gas transmission facilities (49 USC 1671). Under no circumstances may states adopt standards which apply to such facilities.

The DOT also possesses overall responsibility for the safety regulation of intrastate gas pipeline systems covered by the Act. However, states may assume safety regulatory jurisdiction over the intrastate systems within their boundaries, so long as the concerned state agencies meet the certification or agreement criteria called for under 49 USC 1674. Any state may adopt additional or more stringent safety standards for intrastate pipeline transportation, if such standards are compatible with federal standards (49 USC 1672).

With respect to participation in DOT pipeline safety rulemaking actions, the state's participation is permitted in accordance with the Administrative Procedures Act (5 USC 551 et.seq.) and DOT's rules of procedure (49 CFR 5 and 106). In addition to administrative appeal procedures, any party adversely affected by DOT's pipeline safety rulemaking actions is afforded judicial review in the Court of Appeals (49 CFR 1675(a)).

The Hazardous Liquid Pipeline Safety Act of 1979 (P.L. 96-129 (Title II))

The Hazardous Liquid Pipeline Safety Act (HLPSA) vests

responsibility in the DOT for establishing and enforcing minimum federal safety standards for hazardous liquid pipeline facilities. The Act extends to all hazardous liquids, including petroleum and petroleum products. As in the regulation of a natural gas pipeline (under the Natural Gas Pipeline Safety Act), DOT applies criteria to the design, inspection, installation, construction, extension, operation, replacement and maintenance of hazardous liquid pipeline facilities.

Like its gas counterpart, the Hazardous Liquid Pipeline Safety Act has no permit requirements. State/public participation in rule-making actions are to be in accordance with the provisions of the Administrative Procedure Act.

As in the case of the Natural Gas Pipeline Safety Act, states are not permitted to adopt or enforce safety standards applicable to interstate pipelines carrying hazardous liquids. A state may adopt additional or more rigorous standards for intrastate pipelines, provided these standards are compatible with the federal standards. To carry out such a program, a state must submit to the Secretary of Transportation an annual certification that the state agency exercising regulatory jurisdiction over intrastate pipelines has adopted the Act's federal safety criteria, is enforcing these standards, promoting programs designed to prevent damage to pipeline facilities and has a reporting and inspection program equivalent to the federal program (49 USC 2004).

B. OCS Pipeline Rights-of-Way

BLM approves pipeline rights-of-way for all proposed transportation pipelines (as opposed to "gathering pipelines"). BLM

generally issues permits for the federal portion of common carrier pipelines used to transport oil and gas from the field to a shore facility or in some cases to an offshore facility where the resource is transshipped by barge or tanker. Transportation lines which are confined to the tract(s) or unit(s) of a single lessee or operator are granted permits by the USGA.

The BLM is responsible for conducting pipeline management studies to determine the best routing for pipeline placement and also collects rental fees for each mile of right-of-way and each pumping or support station.

The regulations of Title 43 CFR 3340 provide steps for granting and administering rights-of-way for the transport of minerals by pipeline from the OCS.

By accepting a right-of-way grant an applicant agrees to comply with the regulations which the Secretary of Interior determines to be necessary in order to conserve the natural resources of the OCS (43 CFR 3340.1(a)(1-12)). Included in these regulations is the requirement that right-of-way holders utilize the best available and safest technology that the Secretary determines to be economically feasible. Failure to comply with the Act, the regulations, or any conditions prescribed by the Secretary shall be grounds for forfeiture of the approval (43 CFR 3340.1(b)).

In reviewing a right-of-way application, the authorized officer shall consider the potential effect of the pipeline on the human, marine, and coastal environments. The authorized officer shall prepare an environmental analysis, and may consider recommendations of appropriate federal agencies, hold public meetings after issuing appropriate notice, and consult with state agencies,

organizations and individuals.

As a condition of approval, stipulations may be attached to protect the human, marine and coastal environments, life (including aquatic life), and property and mineral resources, located on or adjacent to the proposed right-of-way. In approving the pipeline right-of-way, consideration shall be given to recommendations of the IPP (43 CFR 3340.2-2(a)).

If the application is rejected, notification shall be made in writing and reasons for the decision shall be stated (43 CFR 3340.2-2(e)).

Once an application is approved, the holder of a right-of-way may take up to five years to construct the pipeline. If pipeline construction has not been completed within five years, the right-of-way grant shall be considered forfeited. Any deviation from the proposed plan prior to securing approval shall be at the risk of the holder (43 CFR 3340.3(a)).

Right-of-way grants shall be reviewed annually prior to commencement of pipeline construction. Significant changes in conditions subsequent to the grant of a right-of-way but prior to commencement of construction may be grounds for a request to alter the grant by the authorized officer (43 CFR 3340.2(b)).

Also, any changes made by the holder in the use of the pipeline or direction of flow may be made only if approval is first obtained from the Department of Transportation and the authorized officer (43 CFR 3340.6(a)).

C. Tanker Vessel Regulatory Mechanisms

State governments have retained only limited control over

oil tanker operations. In the Supreme Court decision, Ray vs. Arco, 435 US 151 (1978), the Court ruled that the Port and Waterways Safety Act (1972) preempted the field of tanker design/operations except as to tug requirements, pilot requirements on vessels engaged in foreign trade, safety standards for "structures" in the waterways, and valid state regulations concerning safety and protection of the marine environment.

Generally, the regulation of interstate commerce, such a tanker traffic, falls within the jurisdiction of the federal government, pursuant to powers derived from the U.S. Constitution (Article I, Section 8). State governments are permitted to regulate only certain aspects of interstate commerce, such as for the protection of public health and safety. State programs may not conflict with or preempt federal laws. Particularly strict state regulations are subject to close judicial scrutiny to determine whether the resulting burden imposed on interstate commerce is legitimate. Regulations adopted in an arbitrary and capricious manner cannot be expected to withstand judicial challenge (Johansan, K. and Parrish, R., Oil Spills/Oil Tanker Operations, Report 5: The Development of Petroleum Resources from the Outer Continental Shelf: Legal Management Problems and Capabilities in Oregon, Law Center, University of Oregon, p. 68, Jan. 1979).

Regulation of other aspects of tanker design and operation for the safety and protection of the marine environment also appear to be preempted by the Ports and Waterways Safety Act (33 USCS 1221 et seq.) Training specifications, inspection programs, and traffic

systems all fall under the exclusive jurisdiction of the Coast Guard. The Coast Guard exercises police powers over all vessels transporting OCS oil in coastal waters (14 USC 89(a) and (b) (1-2)). Accordingly, a state has only two alternatives when seeking to protect its marine environment from the adverse impact of tanker traffic. First, states may monitor and evaluate Coast Guard regulations applicable to oil tankers, and where necessary, encourage the Coast Guard to adopt more rigorous protective measures. The designation of safe passage lanes over the Outer Continental Shelf and the establishment of vessel traffic systems where needed, as well as improvements in recordkeeping and information dissemination should be urged. In addition, the Coast Guard should be encouraged to exercise its authority to deny port entry to vessels not conforming to federal standards for safety and design.

Second, a state such as Florida with an approved Coastal Management Program can require federally approved or funded activities affecting its coastal resources to be consistent with the objectives of the state Coastal Zone Management Plan (CZMP). Thus, the Coast Guard may not approve any activity described in the development/production plans affecting land or water use in a state unless that state concurs with the consistency certification that accompanies the plan. Federal permits for OCS activities affecting coastal resources mut be consistent with navigational safety (16 USCA 1456 (c)(3)). Proposed activities that might interfere with navigational safety could not be expected to receive the necessary consistency determination.

Ongoing Federal Mechanisms

Geological and Geophysical Surveys and Analyses (30 CFR 251)

Industry data from tests is released ten years after the issuance of the permit under which they were collected. Deep stratigraphic tests are released 60 days after issuance of an OCS lease within 50 miles of the test site. States may review proprietary data submitted to the USGS Director at locations designated by the Secretary of the Interior pursuant to Sections 26(d)(2) and 205(g) of the OCS Lands Act Amendments of 1978. These sections require that an official be appointed by the Governor for inspection of the information and that the state be subject to provisions of confidentiality.

Intergovernmental Planning Program

The Intergovernmental Planning Program (IPP) was implemented in 1979 to provide formal coordination and planning for three OCS program elements administered by BLM: the leasing process; the Environmental Studies Program; and the transportation planning for OCS oil and gas. The IPP brings together government and private interests to provide analysis of areas that will be impacted by OCS development where residents are unfamiliar with such activity. The IPP has also established a Regional Technical Working Group Committee (RTWCC) for each leasing region to provide information and advice to DOI.

Regional Environmental and Socioeconomic Studies (43 CFR 3331)

This BLM program was initiated in 1973 and serves to establish

environmental information for comparison with previously collected data to identify any significant changes in the human, marine, and coastal environments.

OCS Oil and Gas Information Program (30 CFR 252 and 43 CFR 3300.2)

Section 26 of the OCS Lands Act Amendment establishes this program which requires the USGS Director to make available to affected states a regional summary report to assist state and local governments in planning for onshore impacts of potential OCS development. The program regulations also require the USGS and BLM Directors to provide affected states with an index which lists the relevant programs, plans, reports, EISs and lease sale documents. The index summary reports and limited technical assistance are available from the OCS Information Office, U.S. Geological Survey, 640 National Center, Reston, Virginia 22092, (703) 860-7166.

Land and Water Conservation Fund

The Land and Water Conservation Fund (L&WCF) is the major grants program instituted by Congress to assist the states in developing and acquiring outdoor recreation lands/facilities and comprehensive recreation planning. The L&WCF assists federal land managing agencies in purchasing recreation and endangered species lands throughout the country. Over $3 billion has been dispersed through the Heritage Conservation and Recreation Service (HCRS) to states and federal land management agencies since the fund's inception in 1965. Over 65 percent of these revenues were derived

from leases and royalties stemming from production of oil and natural gas on the OCS. A 1976 amendment to the L&WCF Act increased the annual L&WCF authorization ceiling from 300 to 900 million dollars.

Marine Fisheries Management

The Fishery Conservation and Management Act (FCMA) of 1976 (16 U.S.C. 1801-1882) established a 200 mile fisheries conservation zone off the coasts of the United States and its possessions, effective 1 March 1977. It also created eight Regional Fisheries Management Councils composed of fishermen, state representatives, and officials of federal agencies with responsibilities affecting commercial and recreational fisheries in the marine environment. This Act mandates a continuing planning program to be initiated by the Councils. A Fishery Management Plan based upon the best available scientific and economic data must be prepared for each species (or related group of species) of fish harvested within each region. Public hearings are held during the development of each plan, and approval by the Secretary of Commerce is required prior to the issuance of regulations to implement the plans. These plans generally regulate the level and method of catch by domestic and foreign fishermen, and may close areas to fishing. Closures concern only fishing activities and not other uses of the OCS such as shipping of oil and gas. Given staff and funding limitations some significant species may not have plans completed for five to ten years or more.

Pertinent Proposed OCS Related Federal Legislation

Amendment to the OCS Lands Act Amendments of 1978 and the CZMA of 1972, as amended (H.R. 4597)

The major provisions of the proposed bill are to:

1. Clarify wording in Title II of the OCS Lands Act Amendments pertaining to the oil industry's liability for oil spill damage. The amendment would require the owner or operator of a vessel or offshore facility to be liable for damages and the cost of removal and cleanup. The liability limit for a vessel is determined by its size whereas the liability for an offshore facility is $75 million.
2. Simplify the leasing, exploration, and development process and attempt to provide industry with a more predictable and cost-effective lease sales process; and
3. Provide coastal states with a new source of revenue for coastal management and protection to replace funding which is being phased out. The revenue potential of this bill is especially important to the Tampa Bay Region since the bill seeks to create an Ocean and Coastal Resource Management Fund. The money in this fund, not to exceed $300 million during any fiscal year, would be distributed to all coastal states in the form of a block grant. The distribution formula would be based on OCS activity, coastal-related coal activity, coastal-related energy facilities, miles of shoreline and coastal population for each state.

State of Florida Regulatory Mechanisms

The State of Florida faces great potential effects from the U.S. Department of the Interior's Outer Continental Shelf Oil and Gas Leasing Program. In consideration of this effect Florida's Governor Graham has established a policy approach that unfounded or unreasonable regional objections should not override the national need to increase domestic energy supplies, but maintains that it is in the national interest, as well as the interest of Florida and other coastal states, to minimize air and water pollution from OCS operations. Florida seeks to control economic and environmental damage from oil spills and threats to marine and terrestrial wildlife from OCS related activities through its regulatory mechanisms.

State of Florida Agencies Responsible for Managing OCS Impacts

I. Office of the Governor

A. Office of Planning and Budgeting

The Office of Planning and Budgeting is the State of Florida's designated agent for preparing State of Florida policy for OCS related activities. The state contracts with Dr. Murice O. Rinkle to serve as the OCS Representative for the state and Governor. The Office of Planning and Budgeting is:

1. responsible for preparing review comments for OCS related activities;
2. responsible for establishing State of Florida policy for OCS leasing, exploration, development, and production activities;

3. the designated representative for the Regional Technical Work Groups;
4. responsible for preparing State of Florida comments for Environmental Impact Statements for MMS;
5. responsible for development of OCS Transportation Management Plans;
6. responsible for preparing lease stipulations; and
7. coordinating State of Florida OCS activities with other states.

II. Florida Department of Community Affairs (DCA)

A. Division of Local Resource Management

Coordination of OCS activities and planning programs between the State of Florida, regional governments and local governments is managed by the Division of Local Resource Management of the Florida Department of Community Affairs (DCA). The Division provides Coastal Energy Impact Program (CEIP) funds to the Office of the Governor, Office of Planning and Budgeting to conduct its OCS responsibilities. This OCS onshore facilities siting study is founded, coordinated and managed through the Division of Local Resource Management. This Division of DCA serves to coordinate and educate Florida's citizens about OCS activities and works to develop "grass roots" OCS policy.

DCA's Division of Local Resource Management is also responsible for administoring Florida's Development of Regional Impact (DRI) program. As provided by Chapter 380 F. S. (Land and Water Environmental Management Act of 1972), certain developments are presumed to have regional impacts

and are required to complete a review process to evaluate impact prior to construction. Under the same legislation, DCA also administers the Area of Critical State Concern program. At the time of this study the southern portions of Escambia, Santa Rosa, Okaloosa and Walton Counties are the subject of a Resource Planning and Management Committee which is charged with considering growth management issues within the study area. Both the DRI process and the Resource Planning and Management Committee conclusions could effect the siting of OCS facilities within Region I.

DCA also coordinates and assists Florida's county and municipal governments to prepare, adopt and amend comprehensive plans ar required by the Florida legislature.

III. Florida Department of Environmental Regulation

Protection of Florida's environmental resources is the primary charge of the Florida Department of Environmental Regulation (FDER). FDER has the responsibility of monitoring and permitting activities in the waters of the state. All dredging fill activity, stormwater discharges, effluent discharges (domestic and industrial), air emmissions and waste disposal is administered by FDER. Any OCS onshore siting would be required to comply with the administrative rules of FDER.

IV. Florida Department of Natural Resources

The "administration, supervision, development and conservation of Florida's natural resources" is the legislative charge of the Florida Department of Natural Resources (DNR).

A. Division of Beaches and Shores

This division of DNR administers a comprehensive program for the protection of Florida's Atlantic and Gulf beaches. Permits are issued for all construction seaward of the established coastal control setback.

B. Florida Marine Patrol (Division of Law Enforcement)

This division is responsible for enforcing state statutes covering the state's marine resources. The Marine Patrol provides assistance in disaster situations including search and rescue.

V. Northwest Florida Water Management District

The Northwest Florida Water Management District (NWFWMD) has been charged by the Florida legislature for the conservation, protection, management and control of the surface and groundwaters of west Florida. To accomplish this responsibility the NWFWMD performs:

1. consumptive water use permits;
2. regulation of the construction of wells;
3. regualtion of the construction of dams and impoundments;
4. permits artificial recharge of groundwater, and
5. preparation of water shortage plans.

The NWFWMD has completed a water supply development plan to insure that adequate potable water will be available to meet public demand in west Florida.

Any OCS related onshore potable water needs must be satisfied consistent with the plans and authority of the NWFWMD.

VI. Florida Game and Freshwater Fish Commission

The Florida Game and Freshwater Fish Commission was formed to manage Florida's wildlife and freshwater fish resources. The commission promulgates and enforces codes and regulations for the protection of these resources. The commission's Division of Fisheries works to improve sport fishing throughout the state. The Division of Wildlife is charged with the development and implementation of wildlife management practices and issues hunting permits. The Division of Law Enforcement is responsible for protecting the state's wildlife and freshwater aquatic life from abuse. The Office of Environmental Services reviews projects requiring dredge and fill permits, clearinghouse review and Development of Regional Impact (DRI).

The commission would be directly involved if a pipeline or other industry facility should locate in Florida.

Florida'a OCS Related Regulatory Mechanisms

The State of Florida has assumed a position of supporting OCS resource development, but has made a statement that the state's environmental quality should not be unduly jeopardized during the resource development process. The necessary laws and agencies to administer these laws are in place and are identified as follows:

I. Dredge and Fill Permits

The regulation of construction, dredging and filling in Florida waters are the responsibility of the Florida Department of Natural Resources (DNR) and the U.S. Army Corps of Engineers (COE). The DNR operates its program according to Chapter 16B-24,

FAC while DERs rules and regulations are contained in Chapters 17-3 and 17-4, FAC. The rules and regulations governing the COEs permitting program are contained in 33 CFR 289.320.

The purpose of the DER permitting program that regulates dredge and fill and related activities is to maintain and, where appropriate, to improve the quality of waters in the state. The primary purposes of the DNR permitting programs are: 1) to manage and protect state lands; and 2) to control beach erosion. The primary purposes of the permitting programs of the Corps of Engineers are: 1) to restore and maintain the integrity of the nation's waters; 2) to maintain the navigability of waterways; and 3) to protect ocean waters from pollutants dumped by vessels.

Unless specifically exempted, all dredging and filling activities that are to be conducted in or connected directly (as by way of an excavated water body) to certain waters of the state require state and federal permits. Activities requiring a permit include, but are not limited to, the following: 1) the construction or emplacement of piers, wharfs, docks, dolphins, mooring pilings, riprap and revetments, retaining walls, groins, breakwaters, jetties, beach restoration, levees, wires or cables over or under the water, pipes and tunnels under the water, artificial fishing reefs, channels and upland canals, intake and outfall pipes or structures, navigational aids, platforms, ramps, signs, and fences; 2) excavation, clearing, and commercial sand and gravel dredging; and 3) filling, disposal of dredged material, and the transportation and deposition of dredged material in open water.

II. Pollutant Spill Prevention and Control Act, Chapter 376, Florida Statutes

Subsection 376.021, F.S. of the Pollutant Spill Prevention Control Act acknowledges that the seacoast is a source of private and public recreation and, as such, should be protected. In enacting this legislation, the legislature found that the transfer of pollutants between vessels, and between terminal facilities and vessels within the jurisdiction of state waters and pollutants occurring as a result of procedures involved in the transfer, storage and transportation of such products pose threats of danger and damage to the environment of Florida. For purposes of the legislation, pollution was defined as the presence of substances in the air or water in quantities potentially harmful to human welfare, animal/plant life or property, or in quantities which may unreasonably interfere with the enjoyment of life or property including outdoor recreation. Pollutants include oil or any kind and in any form, gasoline, pesticides, ammonia, chlorine and derivatives thereof. With regard to storage facilities, the Act provided that operation of terminal facilities shall require an annual registration certificate and adhere to regulations formulated to govern the operation and inspection of such facilities. Subsection 376.021(6) further declared that it was the intent of this legislation to support and complement applicable provisions of the Federal Water Pollution Control Act as amended. The Florida Department of Natural Resources was empowered to carry out the duties and powers of this Act (Subsection 376.051, F.S.).

Subsection 376.07(g), F.S. required that prior to being

granted entrance to any port in Florida, the master of a vessel shall report:

1. Any discharge of pollutants the vessel has had since leaving the last port;
2. Any mechanical problem on the vessel which creates the possibility of a discharge; and
3. Any denial of entry into any port during the current cruise of the vessel.

Fraudulent evasion of the provisions of Chapter 376 is a second degree felony punishable as provided Subsections 775.082-.084, F.S.

Under the provisions of Subsection 376.11, F.S. the Florida Coastal Protection Trust Fund was established. This fund provided a mechanism whereby financial resources are available for the cleanup and rehabilitation after a pollutant has been discharged, to prevent further damages, and to pay for those damages which have occurred. The Florida Coastal Protection Trust Fund is a nonlapsing revolving fund, which is maintained at a level of $35 million from excise taxes on barrels of pollutant handled. Monies from the fund are disbursed for administrative costs, pollution discharge abatement, cleanup and rehabilitation of wildlife and natural resources, provable discharge damages, acquisition of spoil disposal sites and improvements to spoil sites.

Subsection 376.12, F.S. established limits on liability for prohibited discharges within state boundaries up to $14 million or $100 per gross registered ton for vessels in violation of Chapter 376, F.S. When the Department of Natural Resources (DNR)

can show that the discharge was the result of willful or gross negligence or willful misconduct within the knowledge of the owner or operator, that owner/operator will be liable for the full amount of funds expended. When a discharge occurs from a terminal facility, the liability is limited to eight million dollars, except in the case of negligence or misconduct, in which case the operator is liable for all costs. Additionally, any person claiming to have suffered damages as a result of a discharge of a prohibited pollutant may, within 180 days of the date of the discharge, apply to the DNR for reimbursement from the fund. This statute also prohibits a governmental agency from "holding - harmless" a vessel or terminal facility from liability for a prohibited discharge.

III. Energy Resources Part I, Regulation of Oil and Gas Resources, Chapter 377, Florida Statutes

Public policy, as defined in Chapter 377, F.S. is to conserve and control the natural resources of oil and gas in said state and the products made therefrom (Subsection 377.06, F.S.). The Florida Department of Natural Resources is responsible for governing all phases of the exploration, drilling and production of oil, gas, or other petroleum products in the state including exploration, drilling, and production in the offshore waters of the state (Subsection 377.22, F.S.). Subsection 377.24, F.S. mandates that a permit is required prior to the drilling of an exploration well. No permit will be granted to drill for oil or gas within the corporate limits of any municipality unless the governing authority

approves the application for such permit by resolution. No permit will be granted in tidal waters within three (3) miles of a municipality or county unless approved for permit by resolution of the governing body (Subsection 372.24(6), F.S.). Subsection 377.242, F.S. states that no structure intended for the drilling or production of oil may be located within one mile seaward of the coastline of the state. No permit shall be granted within one mile inland from the coastline unless it is determined that the estuaries, beaches, and shore areas of the state will be adequately protected in the event of an accident. Under the provisions of Subsection 377.243, F.S. two conditions must be met prior to obtaining a drilling permit. These are: the ownership of a valid deed or lease which grants the right to explore for oil and/or gas; and, satisfactory evidence that the applicant will implement a program for the control of pollution which may occur as a result of the activity. In order to protect the gas and oil fields in the state, Subsection 377.40, F.S. declared it to be unlawful for any person to permit negligently any gas or oil well to go wild or to get out of control. The owner of any such well shall, after 24 hours written notice by the Division of Resource Management given to him or the person in possession of such well, make reasonable effort to control such well.

IV. Environmental Land and Water Management Act, Chapter 380, Florida Statutes

The purpose of this Act is to develop growth and management policies to protect the natural resources, environment, and water

quality of the state which may be implemented to the maximum extent possible by local governments through existing processes (Subsection 380.021, F.S.). Subsection 380.05, F.S. provides for the designation of areas of critical state concern by the Administration Commission (Governor and the Cabinet) if these areas contain or have a significant impact upon environmental, historical, natural or archaeological resources of regional or statewide importance. An area of critical state concern may be designated if it is affected by, or has a significant effect upon, an existing or proposed major public facility or other area of major public investment. Once an area is designated, the Land Planning Agency may recommend specific principles for guiding the development of the area. The local government having jurisdiction over the land area designated has the opportunity to develop land use plans and regulations for these lands which are consistent with the specific principles established by the State Land Planning Agency. Development permits issued for activities within these areas must be in accordance with these development plans and regulations.

Subsection 380.06(1), F.S. defines the concept of Developments of Regional Impact (DRI) to be any development which, because of its character, magnitude, or location would have a substantial effect upon the health, safety, or welfare of citizens of more than one county. Proposals for DRIs must be reviewed by regional planning councils (RPCs) which request comments from local governments as part of the review process and then make recommendations to local governments whether to approve, deny or approve with conditions the proposed DRI. Local governments are

responsible for implementing the recommendations made by RPCs. Chapter 27F-2, Florida Administrative Code contains the standards which identify developments presumed to be of regional impact. Industrial parks/plants must provide parking for more than 1,500 vehicles or occupy a site greater than on square mile to be considered a DRI. Petroleum storage facilities are assumed to be DRIs if the facility would be located within 1,000 feet of any navigable water and have a storage capacity of over 50,000 barrels or if the facilities would have a storage capacity exceeding 200,000 barrels (Subsection 2.08, Ch. 27F FAC). Therefore, it is probable that the only OCS facilities that might be reviewed as developments of regional impact would be the petroleum storage facilities.

Further, Subsection 380.23, F.S. specifies the following projects which require a consistency review to ensure that activities are in accordance with Florida's Coastal Management Program:

1. Federal development projects which significantly affect coastal waters and adjacent shorelands of the state;
2. Federal assistance projects which significantly affect coastal waters and adjacent shorelands of the state and which are reviewed as part of the A-95 review process; and
3. Federal activities affecting land or water uses when such activities are in or seawatd of the jurisdiction of local governments required to develop a coastal zone protection element and when such activities involve:

a. Permits required under Sections 10 and 11 of the Rivers and Harbors Act of 1899, as amended;

b. Permits required under Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended;

c. Permits required under Sections 201, 402, 403, 404 and 405 of the Federal Water Pollution Control Act of 1972, as amended, unless permitting activities pursuant to such sections have been delegated to the state;

d. Permits required under the Marine Protection Research and Sanctuaries Act of 1972, as amended (33 U.S.C. Sections 1401, 1402, 14-1-1421, and 1441-1444);

e. Permits for the construction of bridges and causeways in navigable waters required pursuant to 33 U.S. Section 401, as amended;

f. Permits relating to the transportation and dumping of hazardous substance materials which are issued pursuant to the Hazardous Materials Transportation Act, 49 U.S.C. Sections 1801-1812, as amended, or 33 U.S. C. Section 419, as amended;

g. Permits and licenses required under 43 U.S.C. Section 717 for construction and operation of interstate gas pipelines and storage facilities;

h. Permits required under 15 U.S.C. Section 717, as amended, for construction and operation of facilities needed to import/export natural gas;

i. Permits and licenses required for the siting/ construction of any new electrical power plants as defined i n Subsection 403.503(7), as amended;

j. Permits and licenses required for drilling and mining on public lands;

k. Permits for areas leased under the OCS Lands Act, as amended, including leases and approvals under 43 U.S.C. Section 1331, as amended, or exploration, development, and production plans;

l. Permits for pipeline rights-of-way for oil and gas transmission; and

m. Permits and licenses required for deepwater ports under 33 U.S.C. Section 1503, as amended.

v. Local Government Comprehensive Planning Act, Chapter 163.3161 Florida Statutes

The Local Government Comprehensive Planning Act (LGCPA) requires all local governments to adopt a local comprehensive plan. It is the intent of the Act to encourage and assure cooperation between municipalities and counties and to encourage coordination of planning and development activities between local governments and regional and state agencies. The direct effect of this Act on OCS onshore activity was stated in Subsection 163.3194(1), F.S. Once a comprehensive plan has been adopted, "all development undertaken by, and all actions taken in regard to development orders by governmental agencies in regard to land covered by such plan or element shall be consistent with such plan or element as adopted."

This consistency also applies to local government zoning, subdivision, building, and construction, or other regulations controlling the development of land (Subsection 163.3194(2)(b), F.S.). It should be noted that Subsection 163.3177(4), F.S. calls for the local government comprehensive plan to be coordinated with the state comprehensive plan. Under the provisions of the Federal Coastal Zone Management Act, local comprehensive plans within a state participating in the coastal zone management program must be consistent with the state's coastal zone management plan. Because the Coastal Zone Management Act states that local governments cannot unreasonably restrict uses of regional benefit, local governments would not, in all probability, be able to prohibit onshore OCS development through provisions contained within their comprehensive plans.

VI. Land Acquisition Trust Fund, Chapter 253, Florida Statutes

The Board of Trustees of the Internal Improvement Trust Fund (BTIITF) of the state is vested and charged with the acquisition, administration, management, control, suspension, conservation, protection and disposition of all lands owned by, or which may hereafter insure to, the state or any of its agencies or departments (Subsection 253.02(1), F.S). Lands vested in the BTIITF according to Subsection 253.03, F.S. include all:

1. Swamp and overflowed lands held by the state;
2. Lands owned by the state by right of sovereignty;
3. Internal improvement lands;
4. Tidal lands;

5. Lands covered by shallow waters of the ocean, gulf, or bays/lagoons, and all lands owned by the state covered by fresh water;
6. Parks, reservations or lands/bottoms set aside in the name of the state excluding held for road and canal rights-of-way; and
7. Lands which may accrue to the state from any source excluding road and canal rights-of-way or spoil areas/ borrow pits; or land which is or may become vested in any port authority, flood control, navigation, or water management district created by any general or special act.

The BTIIF may sell the land to private interests but must consult the Department of Environmental Regulation (DER) in the case of submerged tidal lands. The BTIFF must be party to any action seeking to acquire submerged lands or lands lying beneath navigable waters in the state through eminent domain proceedings (i.e. pipelines, etc.). Subsection 253.023, F.S. discusses the Conservation and Recreation Land Trust Fund whose purpose is the acquisition and protection of such lands.

If objections are filed concerning the sale of state tidal lands, the BTIIF shall withdraw the lands from sale if it appears that the sale will:

1. Be contrary to public interest;
2. Interfere with riparian owners rights;
3. Result in a serious navigation impediment;
4. Interfere with natural resource conservation; or
5. Result in destruction of marine productivity of habitats.

Subsection 253.47, F.S. authorizes the BTIIF to lease or sell bottoms of state owned bay, lagoon, straits, etc. for petroleum purposes. No drilling or permanent structures can occur within one-quarter of a mile of the shoreline of lands of an upland owner without the owners consent nor can private property be invaded. Further, Subsection 253.60, F.S. specifies that the development of lands leased by the BTIIF for the production of oil/gas will be in accord with Florida's conservation/control laws and in cases of conflict these laws shall prevail. State permitting agencies must obtain consent of the BTIIF before issuing permits over state lands post July 1980,

1. Lands within a municipality's corporate limits except by prior consent of the municipal governing authority;
2. Tidal or submerged lands abutting or adjacent to the corporate limits of a municipality or within three miles of such corporate limits from the mean high tide line into the waters except by prior municipal consent; or
3. Lands on any improved beach located outside an incorporated town or municipality or such lands in the tidal waters abutting or adjacent ot any improved beach or within three miles of an approved beach from the mean high tide line into such waters except by prior consent of the county commissioners.

VII. Florida Industrial Siting Act, Chapter 288, Florida Statutes

This chapter requires procedures to coordinate and facilitate state decisions relating to industrial plant siting and applies to

eligible oil and gas related onshore facilities. A person proposing construction within aquatic preserves may use the procedures established by this Act only if the construction is water-dependent and consistent with applicable aquatic preserves acts in Chapter 288. A person proposing construction within any of the Outstanding Florida Waters may use this Act's procedures only if the construction is consistent with Chapter 17-3, Florida Administrative Code, as amended.

Subsection 288.505, F.S. states that no certification hearing for the construction of the facility will be held until local government approval has been received verifying compliance with Chapter 380 (if applicable); the local government comprehensive plan, zoning, land use and local pollution control ordinances. This local government approval is effective for two years during which time the zoning and land use of the project may not be altered except with the applicant's agreement.

Under Subsection 288.509(4), F.S., the Florida Department of Environmental Regulation is required to conduct or contract for, studies of the proposed project including its:

1. Environmental impact;
2. Economic impact;
3. Impact on public facilities including transportation facilities;
4. Impact on energy demand; and
5. Compliance with agency standards.

Studies must be completed two months after their initiation. Certification is effective for seven years and constitutes the sole

license of the state and any agency as to the approval of the construction/operation of the proposed project. Additional rules by DER will become automatic modifications of the certification except where specific variances/exemptions are included in the certification. Certification may be revoked or suspended pursuant to Chapter 120, F.S.

VIII. Easements, Chapter 704, Florida Statutes

This chapter provides that state interest for easements preempt other rights of entry and that rights of entry for the purpose of mining, drilling, exploring or developing oil/gas, minerals or fissionable materials will be reserved unless those rights are excepted or not affected by the provisions of Subsection 712.03 or Subsection 712.04, F.S.

General State Regulatory Mechanisms

I. Miscellaneous Executive Functions, Part I: State Comprehensive Planning, Chapter 23, Florida Statutes

Subsection 23.0114, F.S. mandates the preparation of a state comprehensive plan by the Division of State Planning. The state comprehensive plan must be based on the best available data and must provide long range guidance for orderly social, economic and physical growth of the state by setting forth goals, objectives and policies. Chapter 77-306, Laws of Florida mandate the State Coastal Zone Plan to become a part of the State Comprehensive Plan. The State Comprehensive Plan, once adopted by the Florida

Legislature, has the potential to indirectly manage most energy facilities which are likely to locate in the coastal zone since it will include the State Coastal Zone Plan. The state and area-wide clearinghouse review proposed federally sponsored activities for consistency with state/regional/local policies and objectives. Any energy facility relying upon federal assistance would be subject to an A-95 review conducted by a regional planning council.

Subsection 23.012, F.S. calls for the coordination of planning and programming among federal, state and local levels of government for a number of activities including, but not limited to: economy; industrial development; commerce and trade; transportation and safety; oceanic and water resources; pollution and environmental health; and public utilities and services.

II. Beach and Shore Preservation Act, Part I: Regulation of Construction, Reconstruction and Other Physical Activity, Chapter 161, Florida Statutes

Part I of this law provides for the regulation of construction along the coast by the Division of Marine Resources, Department of Natural Resources (DNR). Subsection 161.041, F.S. provides for permits which are rquired for any coastal construction or reconstruction specifically undertaken for shore protection purposes, if upon lands of the state below mean high water line.

Subsection 161.051, F.S. declares that the state shall not be liable for nay damages arising out of construction, maintenance, or improvements of permitted coastal works.

Subsection 161.052, F.S. establishers coastal construction

setback lines on a statewide basis. A 50-foot construction setback line from the mean high water line is established which prohibits construction seaward of the line without a waiver or variance approved by DNR. These setback requirements do not apply to coastal locations having vegetative non-sandy shores. The DNR may authorize the construction of pipelines or piers extending outward from the shoreline, unless it determines such construction would cause erosion of the beach in the area of the structure(s). Also the DNR may exempt portions of the coastline from the setback provision if, because of their nature, they are not subject to erosion of a substantially damaging effect to the public.

In Subsection 161.053, F.S. coastal construction is regulated on a county basis by DNR by establishing coastal construction lines following studies and a public hearing for each area involved. Control lines established under provisions of this section shall be subject to review at the discretion of the DNR after consideration of hydrographic and topographic data. The aim is for local administration of coastal control lines through building and zoning ordinances. However, if DNR determines the local program is inadequately administered it has the power to revoke the authority granted to the county or municipality.

III. Intergovernmental Programs, Chapter 163, Florida Statutes

Enables counties and incorporated municipalities to plan for future development and to prepare, adopt and amend comprehensive plans to guide future development. Counties and incorporated municipalities of the state may adopt comprehensive plans, adopt and enforce zoning and subdivision regulations, land and water use,

as well as building, electrical, gas and sanitary codes. Subsection 163.180, F.S. provides for planning commissions. Subsection 163.185, F.S. charges planning commissions to review proposed activities or plans for conformity with a duly adopted comprehensive plan prior to construction or alteration. Performance standards for the use of property and location of structures thereon may be regulated through zoning ordinances. Subsection 163.3167, F.S. directs each county and each municipality in this state to prepare and adopt a comprehensive plan as set out in this Act. For those units of local government lying in part or in whole in the coastal zone, a coastal zone protection element shall be included. Also to be included is a utility element in conformance with the ten-year site plan required by the Florida Electrical Power Plant Siting Act, Part II, Chapter 403, F.S.

IV. State Parks and Preserves, Chapter 258, Florida Statutes

Subsections 258.17-258.32, F.S. are known as the "State Wilderness System Act". The Department of Natural Resources is directed to give early consideration to wilderness areas which:

1. Are in close proximity to urban or rapidly developing areas;
2. Are in imminent danger from some other source;
3. Are designed to protect rare or endangered species or other unique natural features; and
4. Constitute the last vestiges of natural conditions within a given region.

The following is a list of general management criteria for all wilderness areas.

1. No alteration of physical conditions within a wilderness area shall be permitted except to provide:
   a. Minimal use facilities, such as hiking trails, pit toilets, manually operated water pumps, and primitive camp sites; and
   b. Minimum management facilities, which may include boundary fences and unimproved vehicle trails for control purposes and emergency access.
2. The following are specifically prohibited activities or uses:
   a. Dredging and dredge spoil dumping;
   b. Artificial drainage or impoundments;
   c. Farming;
   d. Clearing of land;
   e. Dumping of wastes;
   f. Mining;
   g. Pesticide spraying, except emergency measures required to protect public health and spraying for forestry disease control;
   h. The use of motorized vehicles on land or water, except for emergencies or valid management purposes; and
   i. Removal of timber, except to restore original plant communities.
3. All human activity within each wilderness area shall be subject to special rules and regulations for implementing the intent and purpose of Subsections 258.17-258.32 for the particular area involved.

4. Other uses of a wilderness area, or human activity within the area, although not originally contemplated, may be permitted by DNR, but only after a formal finding of compatibility made by DNR, and subject to regulation.

Subsections 258.35-258.46, F.S. are known as the Florida Aquatic Preserve Act of 1975. Section 258.16, F.S. establishes the Boca Ciega Bay Aquatic Preserve, Pinellas County, specifies its boundaries and prohibits dredging, drilling, and excavation for minerals.

Subsection 258.391, F.S. designates Cockroach Bay in Hillsborough County as an aquatic preserve for a period of 40 years under a lease with Tampa Port Authority and gives the exact boundaries.

Subsection 258.42(3)(a), F.S. limits dredging and filling in aquatic preserves to certain activities which require a permit. These include:

1. Minimum dredging and spoiling as authorized for public navigation projects;
2. Minimum dredging and spoiling as authorized for the creation and maintenance of marinas, piers, docks, and associated navigation channels;
3. Other maintenance dredging as required for existing navigation channels;
4. Reasonable improvements as may be necessary for public utility installation or expansion; and
5. Installation/maintenance of oil and gas transportation facilities.

Subsection 258.42(3)(c), F.S. prohibits drilling of gas or oil wells within aquatic preserves. However, the state is allowed to

lease oil and gas rights and permit drilling from outside the preserve area. Subsections 258.42(3)(f) and (g), F.S. prohibit the discharge of excessive amounts of permitted wastes and of non-permitted wastes in aquatic preserves (amounts that would inhibit the accomplishments of the purposes of this Act).

No energy facilities may be sited in state parks, wilderness areas, or aquatic preserves without the approval of the Board of Trustees of the Internal Improvement Trust Fund, or for more routine types of construction, the Department of Natural Resources. All such construction as may be allowed must obtain the necessary permits and must not pollute these areas sufficiently that deterioration of their natural qualities is noticeable. Certain types of energy transportation facilities are allowed within aquatic preserves, but oil and gas drilling within the preserves is expressly prohibited by law.

V. Florida Archives and History Act, Chapter 267, Florida Statutes

Subsection 267.061, F.S. states it is the policy of the state to protect and preserve sites and properties which have scientific, cultural or historical value or are of interest to the public. This Act provides for the acquisition and preservation of historic sites and properties and includes, but is not limited to fossil deposits, Indian habitations and sunken or abandoned ships. It is also state policy that treasure found on state lands (including submerged state lands) shall belong to the state. A permitting process to regulate field investigation activities upon publicly designated archaeological sites is provided for in the law.

Subsection 267.11 provides a procedure for publicly designating and archaeological site. Once a site is so designated, no person may conduct field investigation activities without first securing a permit from the Division of Archives, History and Records Management.

VI. Game and Freshwater Fish, Chapter 372, Florida Statutes

Subsection 372.85, F.S. prohibits contamination of fresh waters by the introduction of any substance in sufficient quantities to injure, stupify, or kill fish. Thus any drilling operations located on or near the fresh waters of the state must employ precautionary measures to prevent pollution of those waters as required by the Florida Game and Fresh Water Fish Commission.

VII. Water Resources Act, Part I: State Water Resources Plan, Chapter 373, Florida Statutes

The Florida Water Resources Act of 1972 covers all waters in the state unless specifically exempted by general or special law (Subsection 373.023, F.S.). Subsection 373.016, F.S. provides for the comprehensive management of water and related land use including but not limited to: the development of dams, impoundments, reservoirs and other works and to provide water storage for beneficial purposes; and to prevent damage from floods, soil erosion and excessive drainage.

Subsection 373.033, F.S. establishes a procedure whereby a saltwater barrier line is drawn. This could affect the construction of energy facilities since no deepening or widening of waterways

would be permitted that would allow further saltwater encroachment. Subsection 373.036, F.S. mandates a state water use plan which must address the use and quality of water in the state of Florida. This plan has the potential to preclude energy facilities for reasons relating to water consumption or water quality.

VIII. Water Resource Management Act, Part II: Permitting of Consumptive Uses of Water, Chapter 373, Florida Statutes

Subsection 373.219, F.S. sets forth the requirement for a permit for the consumptive use of water and imposes reasonable conditions to assure that the permitted use is consistent with the overall objectives of the water district or DER and is not harmful to the water resources of the area. No permit is required for domestic consumption of water by individual users. Subsection 373.223, F.S. sets forth the conditions for a permit. The use to which the water is to be put must be a "reasonable-beneficial" one. This means the use must be reasonable from the standpoint of other landowners and the public.

For the West Florida Region, consumptive use permits are required by the Northwest Florida Water Management District under the following conditions:

1. If the withdrawal of water exceeds 1,000,000 gallons on any given day or if the average annual daily withdrawal exceeds or will exceed 100,000 gallons average a day on an annual basis;
2. If the withdrawal is from a well with an inside diameter of six inches or more;

3. If the withdrawal eqpupment or other facility has a capacity of more than 1,000,000 gallons a day; and

4. If the withdrawal is from a combination of wells or of other facilities or of both, having a combined capacity of more than 1,000,000 gallons a day.

During the exploratory stage OCS facilities require approximately 5,200,000 gallons of water per year per exploratory rig. In the permitting of consumptive uses of water by energy facilities, states may develop performance standards or other reasonable criteria.

Subsection 373.590 has been called the Save Our Rivers Bill. When adopted, this subsection increased the documentary stamp tax on deeds and other land transactions and deposited the increase into the Water Management Lands Trust Fund. Florida's five (5) water management districts use the money to purchase interest in lands necessary for water management, water supply and the conservation/protection of water resources.

IX. Environmental Control, Part I: Pollution Control, Chapter 403, Florida Statutes

Subsection 403.021, F.S. declares that the pollution of the air and waters of the state constitutes a menace to public health and welfare and is harmful to industrial, recreational and other beneficial uses of air and water. Parts II and III proclaim that it is the public policy of this state to conserve the air and waters of the state and to protect, maintain and improve the quality thereof. The propagation of wildlife and aquatic life is protected

for domestic, agricultural, industrial, recreational and other beneficial uses. No wastes are allowed to be discharged into any waters of the state without the necessary treatment to protect the beneficial uses of the water. Waters of the state include rivers, lakes, streams, and all other bodies of water such as saline, brackish and tidal waters. Subsection 403.088, F.S. mandates that permits are required for stationary installations which will reasonably be expected to be a source of air or water pollution. No discharge into water within the state of any waste that reduces the quality of the water is permitted without authorization. Permits are to be denied if the discharge of waste will lower the water quality below established levels. Subsection 403.085, F.S. requires permits for ocean outfalls. Secondary treatment or other treatment as may be required is necessary before the permit will be granted.

Subsection 403.061, F.S. grants authority for pollution control to DER, which must establish ambient air and water quality standards, determine sources of pollution and establish a permit system for operations or construction activities that may be a source of air or water pollution. Energy facilities that significantly affect the coastal zone may be regulated by the enforcement of performance standards relating to air and water quality.

X. Forestry, Chapter 589, Florida Statutes

Subsection 589.011, F.S. authorizes the Division of Forestry to grant easements for rights-of-way through state forest lands for the construction and maintenance of electric power lines and oil and gas pipelines under such conditions/limitations as the Division

may impose. The Division may be allowed to lease its interest in oil, gas, and minerals within state forests under certain conditions. Actions of the Division of Forestry and the Board of Trustees of the Internal Improvement Trust Fund in administering this law frequently result in rerouting of proposed pipelines/powerlines.

Although the law gives authority to the Division of Forestry of the Florida Department of Agriculture and Consumer Services to grant easements through state forest lands for power lines and oil and gas pipelines, in fact, final approval is granted by the Governor and Cabinet sitting as the Board of Trustees of the Internal Improvement Trust Fund (Subsection 253.03(g), F.S.).

XI. Air Pollution, Chapter 17-2, Florida Administrative Code

Chapter 17-2.03(4)(b), FAC, Prevention of Significant Deterioration, provides standards for determining when significant deterioration of air quality occurs in three specified types of areas, and contains guidelines to prevent air quality from being degraded below significant levels. The rule states that each area of the state shall be placed in one of three specified deterioration classes. Allowable deterioration of air quality in each class of area is estimated or measured from a 1974 air quality baseline. The air quality areas are labelled Class I, II or III. Standards are established for maximum allowable annual increase in micrograms per cubic meter of particulate matter and sulfur dioxide in each area. Twenty-four hour maxima are established for both types of pollutants, and three hour maxima are instituted for sulfur dioxide. Restrictions on increased concentrations of these pollutants are most severe with Class I areas; Class II areas

pollutants are most severe with Class I areas; Class II areas have moderate restrictions on allowable increases in air quality degradation; and Class III areas are least restrictive. The rule establishes no significant deterioration standards in any class of area for carbon monoxide, lead, nitrogen dioxide, or any known air pollutants other than the two already mentioned. The West Region is a Class II area.

Procedures are also set forth in the rule for either upgarding or downgrading the classification of an area. The designated Class I areas and any area exceeding 10,000 acres in sixe which is also a national monument, a national primitive area, a national preserve, a national recreational area, a national wild and scenic river, a national wildlife refuge, a national lakeshore, or a national seashore may not be downgraded to Class III areas.

Any energy facility that would emit sufficient amounts of particulate matter or of sulfure dioxide to cause a cumulative reduction in air quality for the class of area in which it is located would have to use cleaner technology or it could not be built. Energy facilities cannot be located in any of the areas designated as Class I. Class II and III standards have little effect on energy facilities siting except in those areas where air pollution levels of particulate matter and sulfur dioxide are already high. Most of thses areas are found within metropolitan air sheds. In the West Florida Region there are no non attainment areas.

Regional OCS Related Mechanisms

The West Florida Regional Planning Council (WFRPC) is an association of local governments formed to provide citizens of the region with policies, plans and data to guide development and use of regional resources in Escambia, Santa Rosa, Okaloosa, Walton, Bay, Holmes and Washington Counties, Florida (Planning Region I). The WFRPC serves in a advisory capacity and has no regulatory authority. Due to its unique format the WFRPC is in a position to participate in any planning effort which has a regional or subregional scope. The Planning Council conducts several planning programs that may directly impact any onshore OCS facilities within Planning Region I.

I. Regional Outer Continental Gulf Onshore Facilities Siting Study for West Florida

The topic of this study is to evaluate the potential onshore impacts of OCS activities and to propse possible facility sites for oil and natural gas industry needs. The findings of this work are contained herein.

II. WFRPC Clearinghouse Review

A. Development of Regional Impact

The WFRPC is the designated agency responsible for reviewing and assessing the potential impacts of any development presumed to be of regional impact. The Planning Council staff reviews proposed development plans and makes recommendations to local governments and to the Florida Department of Community

Affairs pertinent to the impacts of a Development of Regional Impact (DRI).

B. State of Florida Intergovernmental Coordination and Review Process

This review process replaces the review process established by the U.S. Office of Management and Budget as per Circular OMR. The review process is designed to review and determine the consistency of any proposed federal funding or rules promulgation. The process is intended to insure the evaluation, review and coordination of any proposed federal action at the regional and local levels. The WFRPC is the designated regional clearinghouse for this review process for Florida Planning Region I.

III. WFRPC Ongoing Planning Programs

A. Transportation Division

The WFRPC maintains a staff of transportation planners to study, plan and propose solution for the current and future transportation needs of the region. The staff works through metropolitan Planning Organizations (MPOs) for input and public participation. Any long term transportation needs for OCS facilities would be considered by the Transportation Division.

B. Clean Water Planning

The WFRPC Environmental Division has worked to prepare a three (3) county plan for the restoration of clean water. The plan and its recommendations have been updated and expanded annually since 1978. Any proposed onshore OCS activities

within the region would be reviewed for consistency with the 208 Clean Water Plan recommendations.

IV. Regional Issues Positions

The WFRPC has compiled a Regional Issues list that was prepared to assist interested persons determine what the Council's positions are for various issues of regional significance in Planning Region I. The list is divided into seven (7) categories, each containing a statement of the Council's positions.

1. Economy
2. Environment/Natural Resources
   a. water quality
   b. water quantity
   c. other natural resources
3. Public Support Services
   a. potable water
   b. wastewater treatment and disposal
   c. drainage
   d. solid waste
4. Transportation
   a. highways and roads
   b. rail transportation
   c. waterborne transportation
   d. mass transit
5. Housing
   a. fair housing
   b. land use

6. Energy

   a. energy generation

   b. energy utilization

7. Government and Human Services

   a. emergency and safety services

   b. education

   c. recreation and open space

V. Regional Goals, Objectives and Policies

The WFRPC has prepared and adopted a regional goal of "achieve the highest long-term quality of life for all residents of the region, consistent with sound social, economic, and environmental principles through proper land development". The Council maintains its policy statements in twelve (12) different categories. The Council policy categories are:

1. Regional Residential Land Use Policies
2. Regional Commercial Land Use Policies
3. Regional Industrial Land Use Policies
4. Regional Transportation Policies
5. Regional Agricultural and Silvicultural Policies
6. Regional Air Quality Policies
7. Regional Water Resources Policies
8. Regional Wetland Policies
9. Regional Topography and Soils Policies
10. Regional Beaches and Dunes Policies
11. Regional Natural Hazard Policies
12. Regional Economic Development Policies

WFRPC policies which have a direct impact on the siting of OCS onshore facilities are:

1. Influence the timing, distribution, type, density, scale and design of development through the coordination of land development proposals with state and local comprehensive plans and public investment programs to insure the availability of adequate public facilities, services, and other resources.
2. Protect and maintain the desirable social and economic characteristics and functions of developed areas in a manner consistent with the capabilities of the natural and man-made systems of the area.
3. Encourage the provision and maintenance of adequate public facilities in already developed areas, and control further growth and new development in areas where public facilities and services overburdened.
4. Allocate to newly served developments an equitable share of the cost of expanding public facilities.
5. Recruit industrial development at the regional level in order to limit unnecessary counterproductive competition between area local governments.
6. Encourage the establishment of tax incentives for new industries which meet existing federal and state standards and locate in appropriately designed industrial parks or suitable sites.
7. Regulate industrial development in the 100-year flood plain in compliance with the requirements of the National Flood Insurance Program.

8. Discourage industrial development on soils and slopes which are unsuited for the proposed use.
9. Discourage industrial development that would degrade environmental quality below that defined by Florida and National laws and regulations.
10. The location of industrial development should be in areas where air pollution resulting from such developments will not sevely degrade the air quality of nearby residential areas.
11. Protect estuarine areas and other marine habitats from adverse environmental impacts resulting from improper industrial development.
12. Provide industrial park locations in close proximity to the Region's population and labor market centers.
13. Incentives should be used to encourage the reservation of prime industrial sites for future industrial use.
14. Discourage industrial development in areas not readily served by public facilities.
15. Encourage the location of industrial parks near other employment centers which have similar utility and service requirements.
16. Encourage protection of industrial developments from incompatible land uses.
17. Industrial land use development should be compatible with the local road and street system.
18. The transportation system should be designed to support planned growth and minimize conflicts with other land uses and the environment.

19. Encourage development of the road network in a manner which affords access to areas where future development is desirable.

20. Sufficient right-of-ways and building setbacks should be reserved for future road construction and expansion.

21. Encourage the provision of adequate parking facilities for proposed land developments.

22. Protect major transportation facilities from incompatible land uses.

23. Local streets and roads should be designed to be compatible with auto and truck traffic resulting from major transportation facilities.

24. Utilizing the siting requirements and standards of the Federal Clean Air Act and Chapter 17-2, F.A.C., insure that stationary sources emitting air pollutants be located and operated in such a manner as to:

    a) Protect and enhance the public health and welfare.

    b) Prevent the significant deterioration of air quality.

    c) Insure the attainment and maintenance of primary and secondary ambient air quality standards.

25. Discourage concentrations of wells which would produce adverse drawdowns in the aquifer and allow saltwater intrusion.

26. Discourage individual disposal systems, such as septic tanks, in urban areas and areas considered environmentally sensitive.

27. Encourage protection of groundwater supplies and aquifer

recharge areas through surface water management, regulation of development activities, and implementation of 208 Clean Water Plan Recommendations.

28. Promote land use patterns and land development practices which result in minimal non-point and point source discharges into surface waters.
29. Encourage the protection of lakes, streams and wetlands as natural occurring water storage areas.
30. Land development decisions should be based on the long and short term capabilities of the hydrologic systems to provide adequate supplies of water.
31. Encourage the development and use of wetlands and submerged lands only for purposes which are compatible with their natural values and functions.
32. Discourage the discharge into wetlands and submerged lands of pollutants or materials in amounts which would destroy or significantly harm their value and functions.
33. Discourage the drainage and filling of wetlands and submerged lands.
34. Discourage commercial, industrial, residential development and other developments, which by their general purpose, are not required to be located in wetlands or submerged lands.
35. Development in adjacent upland areas should be located and constructed so as to minimize adverse impacts on the values and functions of wetlands and submerged lands.

36. Promote on-site erosion and sedimentation control practices on land alteration projects.

37. Encourage the use of beaches and dunes primarily for recreation oriented activities which do not alter or disturb these resources.

38. Discourage urban, residential, or other development along sandy beaches and dunes which would threaten the integrity of the primary dunes and beaches.

39. Encourage protection of estuarine beaches against incompatible uses, and close regulation of developments which require locations on or near beaches and shores.

40. Encourage regulation of flood prone areas for purposes compatible with hydrological characteristics of the area.

41. Non-residential and public facility development in the 100-year floodplain areas should be flood proofed.

42. Flood flow ways in riverine floodplains should be protected from development which would impair their normal capacity to discharge water from the 100-year flood.

43. Development below the 100-year flood level, in coastal areas, should be located above the mean high tide line, adequately elevated and anchored, and designed to minimize the impact of abnormally high tides and/or wind driven water.

44. Adequate transportation facilities should be provided to enable prompt evacuation of people from hurricane danger zones.

45. Discourage increased urban and residential development in flood hazard areas which would require large expenditures of public funds for flood control, through the use of non-structural flood controls.

46. Encourage the utilization, preservation, and restoration of natural resources so as to provide protection from wind, wave, and water damage.

Local Government OCS Related Regulatory Mechanisms

The local governments of the region may be required to accomodate more onshore impacts of OCS oil industry activity than any other level of government. No local government has specifically addressed the onshore needs of the oil industry if a hydrocarbon find is discovered offshore from West Florida, however, certain OCS related regulatory mechanisms are in place. Local governments have been granted authority or mandated by the Florida Legislature to accomplish certain activities that may impact OCS onshore developments. The general OCS related functions are summarized below.

General Local Government Regulatory Mechanisms

I. Local Government Comprehensive Plans

All local governments are required to adopt a local government comprehensive plan, as mandated by the Local Government Comprehensive Planning Act (LGCPA). These plans are intended to serve to preserve and enhance the present advantages of Florida's resources

and to encourage and guide appropriate future use of each government's resources. Each comprehensive plan contains elements determined, by the state, to be necessary for a comprehensive plan.

Amendments to comprehensive plans may be required to provide for onshore OCS facilities.

II. Zoning

Subsection 163.205, F.S. provides that zoning may affect the development of onshore OCS facilities in three ways. First, zoning defines permitted or prohibited uses in the local governments zoning districts. Secondly, zoning ordinances define uses permitted on particular parcels of land. Finally, zoning ordinances can regulate onshore activities through the adoption of performance standards for particular districts or industries. Subsections 163.260-295, F.S. also afford local governments an opportunity to address the impacts ofonshore facilities. These include: 1) the control of the location and development of facilities through the emphasis of onsite requirements and/or the division of lots into certain threshold sizes; and 2) building regulations which specifically address certain types of onshore activities.

III. Development of Regional Impact

Local governments can directly affect onshore OCS facilities siting through the Development of Regional Impact (DRI) process. Chapter 380, F.S. provides that certain developments are presumed

to have regional impacts and that the local government involved must issue a development order allowing the development after an impact assessment review has been completed. It is not likely that any OCS onshore facilities would be presumed to be a DRI.

IV. Local Pollution Regulations

Subsection 403.182, F.S. provides that a county or municipality may establish and administer an air and water pollution program. Additional provisions also allow for noise and odor pollution to be regulated. Under this statute, local requirements cannot be less stringent than those of the state. Thus, a local government might use these local pollution controls to regulate or discourage onshore OCS development by making the costs of pollution control prohibitive.

V. Harbor and Port Controls

Harbor and port regulations are administered by various authorities. The latitude granted these agencies is dependent upon the authority contained in the appropriate local charter or special legislation. Activities at a port may be controlled by either port regulations or tariffs. The use of these mechanisms allows the port manager extensive authority over what may enter the port. This includes the right to accept or reject cargo considered to be dangerous. This could conceivably prohibit oil or gas from entering a port. Such action is highly unlikely in the Tampa Bay area due to the extent of petroleum imports.

If the port authority or district is autonomous, local land use controls may not apply. Therefore, a port may choose to develop

onshore OCS facilities despite municipal or county opposition. All of the ports in the Tampa Bay Region, with the exception of St. Petersburg, have established industrial zoning which would allow the development of OCS related facilities.

VI. Areas of Critical State Concern

Subsection 380.05(2)(c), F.S., contains provisions whereby up to five percent of the land within the state of Florida may be designated as areas of critical state concern. This designation requires that protective development regulations be promulgated within one year. Such action would make the development of onshore facilities in areas of critical state concern very difficult. It should be noted that local governments may nominate areas for this designation.

VII. Historic Preservation Districts

Under the provisions of Subsection 267.0615, F.S., the Secretary of the Florida Department of State may establish a historic preservation board for jurisdictions throughout the state. The purpose of such boards is to locate and identify through research all historic districts, sites, buildings, structures and objects of historical significance (Subsection 267.0615(3)(d)1, F.S.). By nomination of a local government, the establishment of a waterfront historic preservation district, if appropriate, may prevent onshore OCS facilities from developing in those areas.

VIII. Interlocal Coordination

A decision to encourage or discourage development of onshore

OCS facilities by one jurisdiction may conflict with a decision by another jurisdiction. In order to avoid such instances, Subsection 163.3177(4), F.S. called for each comprehensive plan to include a specific policy statement indicating the relationship of the development of the area to the comprehensive plans of adjacent jurisdictions, counties, regions, and the state. Additional provisions of the Florida Statues allows local governments to coordinate with other jurisdictions in one of two ways. These are: 1) enter into interlocal agreements (Subsection 163.01, F.S.); and 2) form a council of local public officials (Subsection 163.02, F.S.). Either method would allow for a unified position when dealing with the possibility of OCS onshore development.

Local Government OCS Related Regulatory Mechanisms

I. Escambia County

A. Comprehensive Plan

Policies which may impact OCS onshore facilities siting are:

1. Develop a sound industrial base to attract new industries compatible with existing and future planned land use.

2. Encourage new industries to locate in suitable areas served by utilities and transportation facilities.

3. Avoid excessive drawdown of subsurface water supplies to prevent a saltwater intrusion.

4. Discourage location of residential, commercial and industrial land uses or other developments in floodplains or wetlands by restricting extension of public utilities and services.

5. Dredge and fill activities should be prohibited in areas designated as freshwater swamps and wetlands.

6. Maintain and protect the primary dune systems and the vegetation associated with marshes and wetlands on the barrier islands.

7. The marshes and marine grass beds of the coastal zone are considered vital to the maintenance and protection of the coastal and economic resources of Escambia County, and as such, developments which would degrade or minimize the natural productive capacity of such areas are discouraged.

8. The white characteristics of the sands of the barrier islands shall be retained through strict enforcement of Escambia County Ordinance 74-2. All staining, bleeding and leaching soils which would tend to discolor the sands shall be strictly prohibited.

9. Activities or developments which cause or allow saltwater intrusion into the freshwater lens of the barrier islands are prohibited except as authorized through special review processes.

10. Dredging, filling or activities artifically lowering the water table of the barrier islands are prohibited except as authorized through special review.

11. Use the industrial development program to attract industries requiring skills that match those of Escambia County residents or that residents can easily acquire.

12. Promote industrial development and guide it to locations in planned parks or selected sites which are economically sound, protect the natural environment and protect the health and safety of people.

13. Encourage the executive and legislative branches of of state government to take a positive attitude toward new industry and promote industrial growth which would meet federal and state environmental regulations.

14. Encourage state legislation providing tax incentives for new industries.

15. Provide industrial parks designed to attract and accommodate the type industries desired for the area.

16. Cooperate with military authorities and congressional representatives to maintain a strong military presence in the County.

17. Cooperate with industries now located or planning to locate in the County to develop a favorable climate for compatible industrial growth.

18. Increase employment opportunities in those businesses and industries that are seasonally, cyclically and structurally stable.

19. Encourage industrial parks located with exposure to major traffic arteries.

20. Industrial parks not requiring direct surface water access should be discouraged from locating within the 100-year floodplain and encouraged to examine alternative sites outside the floodplain.

21. Adopt and enforce a local ordinance which requires flood prevention facilities in all new and existing industrial development in the 100-year floodplain.

22. Discourage industrial development that would degrade environmental quality below that defined by Florida and national laws and regulations.

23. Develop and adopt construction and operating standards to protect estuarine and other environmentally sensitive areas, from adverse environmental impacts due to industrial development.

24. Locate industrial parks and other industrial sites away from sensitive estuarine/marine environments.

25. Control stormwater through onsite development of structures designed to minimize peak stormwater flow.

26. Insure continued potable water availability by preventing excessive withdrawals, particularly in areas of known and suspected saltwater encroachment.

B. Zoning

Escambia County has not adopted a county wide zoning ordinance. Only portions of the county are zoned (City of Pensacola, University of West Florida), however, a zoning ordinance is being drafted for the barrier island, Perdido Key which is considered as a possible landfall for an OCS pipeline.

C. Site Plan Review Process

Escambia maintains a planning and engineering services department which operates a site plan review process. Any proposed OCS onshore development would be required to comply with the county's review and building permit provisions.

D. Sedimentation Control Ordinance (74-6)

Escambia County requires that stormwater volumes should be retained on site or that stormwater discharges cannot be any greater after development than before development.

II. Santa Rosa Island Authority

The Santa Rosa Island Authority was established by a special act of the Florida Legislature to serve on behalf of Escambia County to develop and manage the Santa Rosa Island Development Code. The code is intended to insure that all development on Pensacola Beach will be done in an orderly manner. The Authority is responsible for permitting construction and leases to Pensacola Beach properties and would be involved in any discussions concerning a possible landfall for a pipeline at Pensacola Beach.

III. City of Pensacola

A. Comprehensive Plan

Policies which relate to OCS onshore facilities' siting are:

1. The City should promote industrial development and guide it to locations in planned parks or selected districts or sites which are economically sound, protect the natural environment, and protect the health, and safety of people.

2. Industry should be located near major transportation nodes to reduce travel time and energy consumption.

3. The City should insure the:

   a) protection of industrial development areas from incompatible uses,

   b) establishment of land uses which are compatible with industry types already located in the area,

   c) adequate land adjacent to the site has been set aside for future expansion without encroaching on land uses of an incompatible nature.

4. Industrial land use development should be compatible with the local road and street system and should not be located in areas where increases in traffic flow will overtax the existing road system.

5. Existing industrial sites which by nature of their location constitute non-conforming uses should be phased out.

6. Highest priority must be given to water dependent uses, particularly in those areas suitable for commercial use including port and marine facilities, recreation or resort areas.

7. Development shall be compatible with adjacent land and water uses to the maximum extent practical.

8. Development in areas adjacent to environmentally sensitive areas are to be sited and designed to prevent impacts which would significantly degrade such areas.

9. The City should continue to take whatever actions are appropriate and within its jurisdiction to mitigate the efforts of rail traffic within its boundaries.

10. Minimize the relocation of existing transportation facilities.

B. Zoning

The Pensacola City Council has prepared and adopted a comprehensive zoning ordinance. Any siting of OCS related facilities would be in compliance with the City's ordinance.

C. Site Specific Zoning

The intent of this ordinance is to allow more flexibility and creativity in site planning, building arrangement, open space and other site planning considerations.

D. Site Plan Review Process

The City of Pensacola maintains a planning department and and engineering department to conduct the site plan review and to insure any development is in compliance with existing codes, plans and regulations.

E. Erosion and Sedimentation Control

This City runoff ordinance establishes responsibility for the alleviation of the harmful and damaging effects of on site generated erosion, sedimentation, and runoff upon the developer.

F. Port of Pensacola

Pensacola's port is managed and operated by the City's Port Director. All activities at the port must be consistent with the goals and plans of the Port of Pensacola.

IV. Santa Rosa County

A. Comprehensive Plan

Policies which relate to OCS onshore facilities are:

1. Industrial development should occur in areas where the terrain is well drained, free from flooding, and has a good soil bearing capacity.

2. Industrial development should provide a variety of

desirable sites which are relatively level, regular in shape, and provided with, or easily accessible to, basic utilities such as water, sewers, and electricity.

3. Industrial development should be coordinated in relative industrial complexes in areas large enough to meet the needs of several types and varieties of industrial activities.

4. Industrial areas should have direct access to one or more major transportation systems including highways, railroads, airports, and water facilities.

5. Functional and related activities should be located together in coordinated and compatible clusters of development.

6. The natural environment should be conserved by maintaining sensitivity to development in areas prone to flooding and tidal action.

7. Compatible and coordinated development should be facilitated by encouraging all development to employ good design and high standards as well as to utilize the natural environment to its best advantage.

8. Create an attractive and safe place to live.

9. Preserve areas of critical environmental importance, areas of high ecological sensitivity, and areas containing unique natural features.

10. Preserve and protect marine life in shoreline waters.

11. Prevent atmospheric pollution of any type which would adversely affect the environmental quality.

12. Prohibit land and water use activities which lead to a continuation of water quality problems in estuarine bayous.

13. Control and reduce the amount of effluent transmitted to coastal waters from domestic, commercial, and industrial sources.

14. Promote the conservation of marine life vegetation and shoreline areas.

15. Construction within the 100-year floodplain areas should be limited to appropriate construction techniques.

16. All new development whether residential, commercial, or industrial should be designed to retain within their boundaries the maximum quantity of rainfall.

17. Natural upland vegetation removed for development purposes should immediately be replaced with vegetation indigenous to the area. By replanting with vegetation characteristic of the area, maintenance and fertilization practices are reduced.

18. Wetlands and tidelands should not be disturbed or altered in any way except in cases of overriding public interest where there is no other feasible alternative.

19. Submerged grasses should be preserved and not modified except in cases of overriding public interest. If removal is required for a public project, regrassing should immediately follow, if practicable.

20. No new development should be permitted that would threaten the stability of any beach area unless proven otherwise by the developer.

21. Industries and power plants should be encouraged to employ recirculating water systems in their production facilities in an effort to conserve water supplies. Surface water supplies should be utilized as an alternate source with the stipulation that water quality will not be degraded.

22. Insure that designated natural drainage corridors are maintained in an open and unobstructed condition in order to conserve their function and prevent flooding.

23. Discourage development practices which give rise to overdrainage of land and soils.

24. Require developers of industrial sites, subdivisions and PUD's to provide stormwater retention systems where determined feasible after engineering studies to minimize both flooding and non-point source pollution.

25. Preserve the County's beaches and estuarine system through programs of erosion control, beach restoration, marine life restoration, conservation, and pollution control.

B. Zoning

Santa Rosa County has not adopted a county wide zoning ordinance. Only the City of Milton and the Town of Jay are zoned.

C. Site Plan Review Process

Santa Rosa County's engineering and inspection department reviews proposed development plans for consistency with the County's ordinances, regulations and plans.

D. Navarre Beach

Navarre Beach is a portion of Santa Rosa Island which Santa Rosa County leases from Escambia County. The Navarre Beach Executive Director assists the Santa Rosa County Board of Commissioners to insure development is consistent with the plan for Navarre Beach development.

V. Gulf Breeze

A. Comprehensive Plan

1. Secure the maximum physical, economic, and social welfare for the community through the thoughtful and planned use and development of land, buildings, streets, public facilities, and natural resources.

2. Preserve the quiet, residential atmosphere of the City as a relief from the intense activity of its neighboring large city.

3. Provide a high quality natural environment.

4. Minimize the impact of urban development on natural environmental systems of the locale and the region.

5. Preserve areas of critical environmental importance, areas of high ecological sensitivity, and areas

containing unique natural features.

6. Limit population and development activity to a level that will not place demands on the area's natural resources by exceeding their practical capacity or by causing a substantial decline in their quality.

7. Protect and improve the natural distribution and replenishment systems of the area's water resources.

8. Preserve and protect marine life in shoreline waters.

9. Prevent atmosphere pollution of any type which would adversely affect environmental quality.

10. Develop a transportation system capable of efficiently moving people and goods within and through the community.

11. Ensure that all development within the city harmoniously fits into the existing natural environment.

12. Encourage future growth to take place in compact clusters supported by adequate transportation facilities and related community facilities.

13. Encourage all development to employ good design and high standard as well as to utilize the natural environment to its best advantage;

14. Nonresidential activities should be adequately separated from residential areas by landscaping or other appropriate buffering methods.

15. Dredging and filling of any saltwater tidal marsh or swamp area should be carefully considered in light of many valuable benefits accruing to the area from the presence of these land types.

16. Principal natural drainage corridors should be maintained in an open and unobstructed condition in order to conserve their function, prevent flooding, and provide for the safety of area residents.

17. Control and reduce the amount of effluent transmitted to coastal waters from domestic and commercial sources.

18. Promote the conservation of tidal marshes and grass beds in the shoreline areas.

19. Prohibit all construction within the 100 year floodplain unless adequate state approved construction techniques are utilized.

20. Encourage site planning and design characteristics which will minimize environmental damage by all new developments in the City.

21. Utilize, where possible and feasible, techniques to minimize urban runoff, including the retention of stormwater on site.

22. The natural pattern of drainage and vegetation should be maintained as closely as possible to achieve natural purification and to control the rate of runoff.

23. Shell, rock, or wood chips should be used in place of impervious surfacing materials. Surfaced areas should be surrounded on as many sides as possible by buffer vegetation to reduce runoff flow rates and absorb pollutants where determined feasible by engineering studies.

24. Regulate development in flood prone areas so that they adhere to Federal Flood Insurance guidelines.

25. Keep low lying areas free from intensive urban development to minimize flood probelems.

26. Encourage reduction of nonpoint source pollution which results from drainage runoff.

27. Wetlands and tidelands should not be disturbed or altered in any way except in cases of overriding public interest where there is no other feasible alternative.

28. Submerged grasses should be preserved and not modified except in cases of overriding public interest. If removal is required for a public project, regrassing should immediately follow, if practical.

29. Bayous and wetlands should not be dredged, filled, pre-empted, or altered for nay reason other than in overriding interest projects where there is no other alternative.

30. New development that would threaten the stability of any beach area should be discouraged.

31. Promote water conservation in all new or existing developments.

32. Assure effective administration of solid waste management practices.

B. Zoning

The City of Gulf Breeze has adopted and maintain a active zoning ordinance. The City does not encourage any industrial or heavy development.

C. Site Plan Review Process

Gulf Breeze maintains a site plan review process to insure consistency of new development with the City's goals and plans.

D. Erosion and Sedimentation

Gulf Breeze's runoff control ordinance insures that runoff, erosion or sedimentation problems will be precipitated by new development within the City's limits.

VI. Okaloosa County

A. Comprehensive Plan

Policies of the Okaloosa County Comprehensive Plan which could impact OCS onshore development are:

1. A range of choice in land areas and locations for the different types of industry should be provided to meet the anticipated expansion of industry in the County.

2. Whenever possible, industrial plants should group together in planned industrial districts on sites capable of being expanded and developed in stages.

3. Significant aquifer recharge areas should be protected.

4. The impacts of proposed developments on public facilities should be predetermined.

5. In order to attain a state in the local economy that is consistent with its growth management objectives, Okaloosa County will direct its economic planning efforts toward protecting and enhancing employment opportunities in military, tourism, construction, forestry and agricultural industries.

6. Environmentally acceptable industrial and other employment center development should be encouraged to locate in suitable locations in the County to diversify the economy and provide increased employment opportunities to the residents of the County.

7. Industrial areas should have direct access to one or more major transportation systems including highways, railroads, airports and water facilities for the transfer of its goods or services.

8. Specific sites should be allowed in areas where the terrain is well drained, free from flooding, has acceptable soil bearing capacity and has direct access to at least one major transportation system.

9. Refine the growth strategy to guide future development and to enhance the overall quality of the County, maximize the effective allocation of public and private resources, provide increased opportunities to the citizens of the County for personal betterment and foster community identity.

10. To reestablish the natural foredune environment in increments, preventing sand damage to private property, retarding erosion, and stabilizing foredune sand drift.

11. Ameliorate estuarine water quality by increasing flushing, eliminating stormwater runoff, improving point source discharge, increasing natural assimilation of nutrients, and reducing turbidity.

12. Retard saltwater intrusion by reducing stormwater runoff, reducing well water demand and inducing groundwater recharge.

B. Zoning

Okaloosa County is the only county in Planning Region I that has adopted and maintains a county wide zoning ordinance.

Any siting of OCS onshore facilities would be required to be in compliance with the County's prescribed zoning.

C. Site Plan Review Process

Okaloosa County's engineering and inspection department reviews proposed development plans to insure consistency with the County's ordinances, regulations and comprehensive plans.

D. Erosion and Sedimentation Control

Okaloosa County has adopted a stormwater runoff control ordinance to insure that any impacts of stormwater runoff are abated by the developer prior to development.

VII. Fort Walton Beach

A. Comprehensive Plan

Policies of the Fort Walton Beach Comprehensive Plan that may affect OCS onshore facilities siting are:

1. Prohibit intense industrial development in the area (should be located in Fort Walton Beach Industrial Park).
2. Discourage land and water use activities which lead to continuation of water quality problems in Choctawhatchee Bay and the Santa Rosa Sound.
3. Encourage the maintenance of a quality environment through the proper use and development of land.
4. Encourage the minimization of the impact of development on natural environmental systems of the area.
5. Encourage any future development to see that it fits harmoniously into the natural environment.

6. Promote the preservation of areas of environmental importance, ecological sensitivity, and unique natural resources.

7. Encourage growth and development in areas in which the resources are capable of supporting such growth.

8. Discourage development in flood prone areas within Fort Walton Beach.

9. Discourage development in those areas which serve to recharge the Floridan Aquifer.

10. Discourage development in low lying areas free from intensive urban development to minimize flood problems.

11. Encourage the preservation of the natural shoreline in Fort Walton Beach.

12. Promote the conservation of marine life vegetation and shoreline areas.

13. Wetlands and tidelands should not be disturbed or altered in any way except in cases of overriding public interest. If removal is required for a public project, regrassing should immediately follow, if practical.

14. Marine grass beds should not be destroyed by dredging or any other modification except in cases of overriding public interest. In such cases, where marine grass beds require removal during project construction, replanting of the destroyed submerged grasses should be included in the project design and undertaken as soon as possible.

15. The disposal of spoil in estuarine waters should be eliminated in favor of open ocean disposal sites, carefully chosen upland sites, or for use in the creation of spoil islands.

16. Wetlands and tidelands should not be dredged, filled, preempted, or altered for any reason other than overriding public interest projects where there is no other alternative.

17. Industries should be encouraged to employ recirculating water systems in their production facilities in an effort to conserve water supplies. Surface water supplies should be utilized as an alternate source with the stipulation that water quality will not be degraded.

18. Encourage site planning and design characteristics which will minimize environmental damage by all new developments in the City.

19. Discourage intensive development around creek basins in both the City and the fringe area.

20. Utilize, where possible and feasible, innovative design techniques to minimize urban runoff.

21. Areas experiencing a drawdown in the groundwater level should immediately begin studies to determine if any surface water bodies in the vicinity can supply sufficient potable water. Where possible, potable surface fresh water sources should be used as the primary source of water. The use of this alternative source of fresh water would allow the aquifer time to replenish.

22. The natural pattern of drainage and vegetation should be maintained as closely as possible to achieve natural purification and control the rate of runoff.

23. All new developments whether residential, commercial or industrial should be designed to retain within their boundaries the maximum quantity of rainfall. The quality and release rate of these waters should be maintained as closely as possible to the natural state. The indigenous vegetation and the original soil type of the site should be replenished immediately following the completion of the project.

24. Discourage all construction within the 100-year floodplain unless adequate approved construction techniques are utilized and development approval is granted by the Fort Walton Beach City Council.

25. Provide a compatible network of streets linked in accordance with proper use and scale so as to meet existing and anticipated traffic needs.

B. Zoning

The City of Fort Walton Beach has adopted a City wide zoning ordinance. Any siting of OCS related onshore facilities in Fort Walton Beach would be in compliance with the City's zoning ordinance.

VIII. Mary Esther

Policies of the Mary Esther Comprehensive Plan that relate to OCS onshore facilities siting are:

A. Comprehensive Plan

1. Encourage the minimization of the impact of development on natural environmental systems of the area.

2. Require all development to fit harmoniously into the natural environment.

3. Promote the preservation of areas of environmental importance, ecological sensitivity, and unique natural resources.

4. Encourage a high level water quality in Mary Esther's surface and groundwater resources.

5. Encourage the preservation of the natural shoreline in Mary Esther.

6. Protect the aesthetic value of the community in conjunction with physical resources.

7. Encourage orderly and planned growth and expansion consistent with the protection of Mary Esther's natural resources in areas which are capable of supporting such growth.

8. Promote and preserve the residential character of the City.

9. Encourage conservation oriented development techniques which utilize land efficiently.

10. Promote growth in areas where soils are suitable for development.

11. Encourage site planning and design characteristics which will minimize environmental damage by all new development in the City.

12. Discourage development in flood prone areas within Mary Esther unless adequate, approved construction techniques are employed.

13. Keep low lying areas free from intensive urban development to minimize flood problems.

14. Discourage intensive development around creek basins in both the City and the fringe area.

15. Future development should be discouraged in the flood prone area east of Magnolia Avenue and south of Highway 98. This site stands at the foot of a corridor that channels significant amounts of drainage runoff toward Santa Rosa Sound. Although it should be left as open space, the property is privately owned. Future use of this area should be permitted only at low densities.

16. Utilize the natural environment in such a way as to provide less costly, non-structural solutions to drainage problems.

17. Properly regulate land development in flood prone areas.

18. Maintain and enhance coastal economic development, public access, and recreational use consistent with resource limitations;

19. Specific vegetated areas known to be inhabited by endangered or threatened species should not be disturbed for any reason other than overriding public interest. This could be accomplished through the acquisition of this vegetated area by the state as a reserve for the propagation of the dwindling species.

20. Shell, rock or wood chips, where deemed feasible by a qualified engineering study, should be used in place of impervious surfacing materials. Surfaced areas should be surrounded on as many sides as possible by buffer vegetation to reduce runoff flow rates and absorb pollutants.

21. Preserve and enhance the environmental and aesthetic quality in Mary Esther.

22. Reduce health hazards presented by the disposal of garbage and other materials.

23. Provide solid waste facilities to meet existing and future demands.

24. Ensure that surface and sub-surface water drainage will not adversely impact land development, the transportation system, or surrounding estuarine bodies.

25. Provide services at minimum cost to the environment, minimum public cost, and at a rate compatible with growth trends.

26. Encourage the maintenance of a quality environment through the proper use and development of land.

27. Assure current levels of water quality are maintained or improved.

28. Before a parcel of land is developed, the long term effects of the structures and of the expected inhabitants on the public works systems should be examined. Development and the associated population growth should not be allowed to exceed capacity of public services.

29. No dredging should be allowed in Class II waters (approved for shellfish harvesting) except for maintenance dredging of existing public navigation channels.

30. Marine grass beds should not be destroyed by dredging or any other modification except in cases of overriding public interest. In such cases, where marine grass beds require removal during project construction, replanting of the destroyed submerged grasses must be included in the project design and undertaken as soon as possible.

31. The disposal of spoil in estuarine waters should be eliminated in favor of open ocean disposal sites, carefully chosen upland sites, or for use in the creation of spoil islands.

32. Wetlands and tidelands should not be dredged, filled, preempted, or altered for any reason other than overriding public interest projects where there is no other alternative.

B. Zoning

The Town of Mary Esther has adopted and maintains a zoning ordinance aimed at promoting residential development and discouraging industrial development. Industrial siting is encouraged at the Fort Walton Beach Industrial Park. Any OCS related facilities to locate in Mary Esther would be in compliance with Mary Esther zoning ordinance.

C. Site Plan Review Process

The Town of Mary Esther conducts a site plan review process of all proposed development to insure consistency

with the Town's ordinances, regulations and plans.

D. Estuarine Setback

Mary Esther had adopted a requirement that all development on Santa Rosa Sound must be setback from the margin of the Sound.

IX. Walton County

A. Comprehensive Plan

The Walton County Comprehensive Plan contains the following policies that may affect OCS onshore facilities siting:

1. Adopt and implement viable zoning ordinances and subdivision controls designed to guide residential, commercial and industrial development throughout Walton County, consistent with goals and policies of this plan.

2. Encourage provision of public services as a positive mechanism for guiding future growth to those areas most suited for development.

3. Preserve the unique environmental, aesthetic, and recreational features associated with Walton County's coastal zone.

4. Provide for the preservation of ecologically fragile and unique open space areas within Walton County.

5. Guide future growth and development to areas consistent with resource limitations and constraints.

6. Encourage sound land development practices which minimize negative impacts upon natural coastal zone features.

7. Promote the wise and prudent use of the County's coastal resources as a means for enhancing the economic well being of Walton County residents.

B. Site Plan Review

The Walton County planning and inspection department

reviews proposed development plans for consistency with the County's ordinances, regulations, codes and plans.

X. Bay County

A. Comprehensive Plan

Policies contained in the Bay County Comprehensive Plan which could affect the location of OCS onshore facilities are:

1. Adopt a model zoning ordinance.
2. Activities and developments shall not diminish existing water qualities.
3. Develop and utilize the County's natural resources and man-made infrastructure for the economic and social benefit of the County's residents.
4. Expand appropriate economic opportunities in order to curtail out-migration.
5. Activities and developments in the Hurricane Flood Zone should occur in a manner that does not jeopardize public safety or welfare.
6. Activities and developments should be designed and constructed to protect against the statistical one hundred (100) year storm.
7. Activities and developments in other flood zones should occur in a manner that prevents runoff and erosion, and allows the free flow of water that can be expected to incur at intervals and during wet seasons.
8. Natural vegetation should be preserved to the maximum extent possible, to prevent or reduce erosion and runoff, and to protect the natural beauty of flood zones.
9. Prevent surface and storm drainage of contaminants and pollutants.
10. Ensure that dredging and filling occur only when in the overall public interest.
11. Any activity or development on either barrier island

in Bay County shall be carried out with minimum risk to the safety and welfare of prospective residents on the island, and of citizens on the mainland.

12. No activity or development shall be permitted which will reduce the ability of either barrier islands to absorb high waters and hurricane winds.

13. Ensure that no contaminants or pollutants may be discharged into the waters of the lake or its tributary creeks.

14. Port facilities are important and should be maintained, provided always that the associated activities do not diminish existing water quality below the DER standards.

15. Any proposal to dredge channels or berths to serve Port Panama City should be approached with an open mind, and judged on its merits, with the benefits to be fairly compared with the costs of any such proposal.

16. Consider noise levels in decisions regarding public services and facilities, including location, site preparation, orientation (design), and building materials.

B. Zoning

Bay County has adopted a County wide zoning ordinance.

C. Site Plan Review Process

Bay County conducts a site plan review process of all proposed development to insure consistency with the County's ordinances, codes, regulations and plans.

D. Proposed Ordinances

The Bay County Comprehensive Plan contains a list of ordinances that could impact OCS onshore facilities, if adopted. These proposed ordinances are:

1. Zoning Ordinance
2. Industrial Waste Ordinance
3. Flood Hazard Ordinance
4. Erosion, Runoff and Sedimentation Ordinance
5. Beach Setback Ordinance

XI. Panama City

A. Comprehensive Plan

Policies which may impact OCS onshore facilities siting are:

1. Maintain, restore and enhance the overall quality of the coastal zone environment.

2. Utilize coastal zone resources in accordance with conservation principles.

3. Employ ecological planning principles to determine suitability of permitted development.

4. Preserve endangered living and non-living coastal zone resources.

5. Guard against resource commitments of an irreversible nature.

6. Encourage and promote the development of presently defined industrial areas such as the port, railroad industrial park, and airport industrial park.

7. Industrial uses should be located so as to have good frontage and adequate access to major arterial streets, rail or port facilities.

8. Light industrial areas or activities (wholesale warehousing, commercial) should be well served by rail or truck transportation. Such areas and activities may be able to be located near residential uses if properly screened, buffered and access provided.

9. Discourage land development in areas which have been designated for preservation or conservation by limiting transportation services to those areas.

10. Encourage and strengthen the commercial business and employment opportunities for area residents.

11. Provide acceptable access as needed by motor freight carriers.

12. Conservation areas should be utilized as passive recreation facilities, such as picnicking, hiking, nature study and bike trails.

13. Areas of poor soils and potential flood hazards

should be considered areas of conservation. Development may take place but only after more thorough study and special precautions are taken to minimize potential problems.

14. All development adjacent to areas of Class II waters (West Bay), marine grass beds, and selected coastal marshes, should be carried out with caution and all reasonable attempts should be made to contain all wastes generated by the development on site; control runoff and nutrients, and prevent sedimentation.

15. The development of selected freshwater swamps should be prohibited or discouraged for all but the least disruptive uses. These areas have a high water table, poor drainage and support extensive stands of water-tolerate vegetation. Such areas serve as valuable resources for surface water storage and are unsuited for intensive land development without major alteration.

16. All new development within the Hurricane Flood Zone or 100-year flood line should be required to minimize flood damage by building the groundfloor elevation above the level subject to flooding or flood proof to those elevations.

17. Unless water access is required, development in flood plains should be prevented rather than later attempting to protect such investments through construction of flood control structures at public expense.

18. Natural vegetation in flood plains should be preserved to the maximum degree possible to prevent erosion, retard runoff and protect the natural beauty of the flood plains.

19. All activities in flood plains should consider their potential detrimental effects on water quality, downstream resources, allow for the free flow of water and take adequate measures to prevent these effects.

20. Flood damage prevention facilities should be incorporated in all flood plain development.

21. Natural vegetation along existing drainage channels and in flood plains should be preserved to prevent erosion, retard runoff, and preserve natural beauty.

22. Marsh areas of greater than forty acres should be placed off limits to development that would significantly alter their character.

23. Marine grass beds (along West Bay) are particularly sensitive to increased turbidity that may result from development activities in adjacent areas. Special attention should be given to control of runoff and introduction of nutrients into such areas in order to prevent increased water turbidity.

24. Marine grass beds should not be modified except in cases of overriding public interest.

XII. Panama City Beach

A. Comprehensive Plan

Policies of the Panama City Beach Comprehensive Plan which may affect OCS onshore facilities siting are:

1. To promote and enhance the resort character of the City of Panama City Beach while protecting residential neighborhoods and environmentally sensitive areas.

2. To evaluate during the land development review process the impact of all new land development projects on the natural systems of the City, including soils, vegetation, and water resources.

3. To design, construct, and maintain the stormwater drainage system to protect property from hazards of flooding, preserve adequate water quality, and maximize the use of the existing natural system in order to minimize stormwater drainage problems and improve overall water quality.

4. To encourage the preservation of marginal lands in their natural condition.

5. To protect, maintain, and develop the variety of natural resources found in the coastal zone and the hurricane flood zone through coordinated management and regulation.

6. To discourage development on properties designated as "marginal land".

7. To discourage future development between Front Beach Road and the Gulf.

8. To require all development to connect to the wastewater collection system.

9. To require all new development to be connected to the central water system.

10. To require new development to pay the cost of extending service to the development site according to City standards and then dedicate the improvements to the City.

11. To require land development designs and construction that retain the first one-inch of stormwater runoff on-site or discharge it to regional stormwater control areas that have been determined to have capacity to accommodate flows from the development.

12. To require land development designs and construction that maintain stormwater runoff flow quantities, peaks, and velocities at or below levels that existed prior to development.

13. To ensure that new development does not adversely impact surrounding properties by altering drainage patterns and water storage capabilities.

B. Zoning

The City of Panama City Beach has prepared and adopted a zoning ordinance which required that any new development be in compliance with the City's plans for future expansion and growth.

C. Site Plan Review Process

Panama City Beach reviews all plans for proposed new development to insure compliance with the City's ordinances, codes and plans.

XIII. Mexico Beach

A. Comprehensive Plan

Mexico Beach's policies that could affect OCS onshore facilities siting are:

1. Identify the impacts of new developments on environmental and community systems.

2. Minimize excessive public costs of providing facilities in areas with low suitability for development.

3. Provide for restricted building heights along the beach.

4. Eliminate surface drainage runoff and erosion problems along the beach.

5. Protect and enhance the beaches and lowland areas by the use of proper development techniques.

6. Preserve and enhance the residential character of Mexico Beach.

7. Encourage industrial development in the areas compatible with residential development.

8. Utilize coastal zone resources in accordance with conservation principles preserving endangered living and nonliving coastal zone resources.

9. Allow a consumptive use that will diminish a particular resource only after there has been full disclosure to the Town Council and to the public of the short term and long term costs and benefits, so that a wise decision may be made.

B. Building Inspection

Mexico Beach requires that any development be inspected to insure compliance with existing codes and ordinances.

CHAPTER 6

Footnotes

1. Tampa Bay Regional Planning Council. Coastal Energy Facilities Siting Study, Technical Appendix. September , 1982.

2. Comptroller General of the United States. Report to the Congress of the United States: Impact of Regulations - On Outer Continental Shelf Oil and Gas Development. 27 February 1981.

3. New England River Basins Commission. State Participation in OCS Transportation Decisions. July, 1981.

4. U.S. Geological Survey and Bureau of Land Management. Compilation of Laws Related to Mineral Resource Activities on the Outer Continental Shelf, Volume II. January, 1981.

5. U.S. Geological Survey and Bureau of Land Management. Compilation of Laws Related to Mineral Resource Activities on the Outer Continental Shelf. Volume II. January, 1981.

6. New England River Basins Commission. Onshore Facilities Related to Offshore Oil and Gas Development Factbook. November, 1976.

BIBLIOGRAPHY

BIBLIOGRAPHY

Alabama Office of State Planning. Alabama Coastal Energy Impact Program Five Year Implementation Strategy, Draft.

American Institute of Mining, Metallurgical, and Petroleum Engineers, Inc. Production Case History, Jay Field, Florida. 1974.

American Petroleum Council, Myths and Misperceptions: Exploring The New World Of Energy.

American Petroleum Institute. Facts About Oil.

American Petroleum Institute. Installation of Underground Petroleum Storage Systems. November 1979.

American Petroleum Institute. Recommended Practice For Abandonment or Removal of Used Underground Service Station Tanks. March 1981.

American Petroleum Institute. Recommended Practice For Bulk Liquid Stock Control At Retail Outlet. 1977.

American Petroleum Institute. Recommended Practice For The Pressure Testing of Liquid Petroleum Pipelines. December 1981.

American Petroleum Institute. Service Station Tankage Guide. January 1961.

American Petroleum Institute. Underground Spill Cleanup Manual. June 1980.

American Petroleum Institute. Standard For Welding Pipelines and Related Facilities. September 1980.

American Petroleum Institute. Standard For Welding Pipelines and Related Facilities, Supplement. June 1982.

Bay County. Bay County Code of Ordinances.

Bay County. Bay County Comprehensive Plan. 1976.

City of Fort Walton Beach. Fort Walton Beach Code of Ordinances.

City of Fort Walton Beach. Fort Walton Beach Comprehensive Plan. 1979.

City of Gulf Breeze. Gulf Breeze Code of Ordinances.

City of Gulf Breeze. Gulf Breeze Comprehensive Plan. November 1980.

City of Milton. Milton Code of Ordinances.

City of Milton. Milton Comprehensive Plan. 1981.

City of Panama City. Panama City Code of Ordinances.

City of Panama City. Panama City Comprehensive Plan. 1978.

City of Panama City Beach. Panama City Beach Code of Ordinances.

City of Panama City Beach. Panama City Beach Comprehensive Plan. 1981.

City of Penacola. Pensacola Code of Ordinances.

Ctiy of Pensacola. Pensacola Comprehensive Plan. 1980.

Clean Gulf Associates. Operations Manual. 1980.

Escambia County. Escambia County Code of Ordinances.

Escambia County. Escambia County Comprehensive Plan. 1980.

Escambia County. Planning For Energy Impacts In Escambia County. January 1982.

Exxon Company, U.S.A. Faces of Energy.

Exxon Company, U.S.A. "Here's How Enhanced Oil Recovery Works." Fourth Quarter, 1982, Volume XXI, No. 4.

Farnsworth, Edward G. Natural Revegetation of Tidal Freshwater Marshes Disturbed By Natural Gas Pipeline Construction In Savannah, Georgia. October 1979.

Florida Energy Office and State University System of Florida. Florida Coastal Policy Study: The Impacts of Offshore Oil Development. 1975.

Federal Energy Regulatory Commission, Office of Pipeline and Producer Regulation. Zachery - Fort Lauderdale Pipeline Construction and Conversion Project, Final Supplement To Final Environmental Impact Statement. May 1980.

Florida State University Bulletin, Research In Review. "Ocean Exploration". Volume 75, Number 8. December 1982.

Gosselink, James, Eugene P. Odum, and R.M. Pope. The Value of the Tidal Marsh. 1974.

Graham, Robert, Governor, State of Florida. Letter to Cecil Andrus, Secretary of the Interior.. 7 September 1979.

Manatee County Port Authority. Port Manatee OCS Impact Study. December 1982.

Maryland Department of Natural Resources. Maryland Major Facilities Study, Executive Summary. January 1978.

Mobile Oil Exploration and Producing Southeast, Inc. Production of Natural Gas From the Lower Mobile Bay Field. May 1982.

National Supply Company. Oil and Gas Pocket Reference. 1982.

New England River Basins Commission. Onshore Facilities Related To Offshore Oil and Gas Development, Estimates For New England. November 1976.

New England River Basins Commission. Onshore Facilities Related to Offshore Oil and Gas Development, Factbook. 1976.

New England River Basins Commission. Procedures for Preparing Regional Transportation Management Plans. 1981.

New Jersey Department of Environmental Protection, Division of Coastal Resources. New Jersey Outer Continental Shelf Natural Gas Pipeline Siting Study, Phase 1: Corridor Identification. January 1981.

New Jersey Department of Energy. OCS Natural Gas Pipelines: An Analysis of Routing Issues. March 1980.

Odegard, Gregory J., James F. George, John A. Sproul, Jr., and Ted M. Sawyer. Vegetation Recovery Of A Pipeline Right-Of-Way On A Texas Coastal Barrier Island. February 1982.

Oil and Gas Journal. "U.S. Pipelines Keep Energy Moving." November 1982.

Okaloosa County. Okaloosa County Code of Ordinances.

Okaloosa County. Okaloosa County Comprehensive Plan. 1980

Petroleum Extension Service, Industrial and Business Training Bureau, University of Texas at Austin. A Primer of Oil Well Drilling. January 1975.

Pipeline and Gas Journal. "First Drilled Beach Crossing Protects Mustang Island Dunes." July 1982.

Santa Rosa County. Santa Rosa County Code of Ordinances.

Santa Rosa County. Santa Rosa County Comprehensive Plan. 1982.

Santa Rosa Island Authority. Santa Rosa Island Authority Development Code.

State of Florida, Department of Veteran and Community Affairs. Oil and Gas Exploration On The Outer Continental Shelf.

State of Florida, Department of Community Affairs. Oil Spill Shoreline Priority Protection Response Strategy and Procedures For Assessing Damages To Natural Resources. November 1980.

State of Florida, Department of Community Affairs. Regional Report, The Sensitivity of Coastal Environments and Wildlife To Spilled Oil In West Florida. 1983.

State of Florida, Department of Natural Resources. Florida Coastal Pollutant Spill Contingency Plan. May 1981.

State of Florida, Department of State. Florida Administrative Code: Official Compilation of Rules and Regulations of Regulatory State Departments. 1981.

State of Florida, Department of Transportation. Utility Accomodation Guide.

State of Florida, Executive Office of the Governor. A Florida Scenario of Oil and Gas Development In the Eastern Gulf of Mexico. July 9, 1981.

State of Florida, Office of Planning and Budgeting. Analysis and Options For Florida's OCS Decision-Making Process. April 1982.

State University System of Florida, Institute of Oceanography. A Summary of Knowledge of the Eastern Gulf of Mexico. 1973.

Sturges, W. and J. C. Evans. On The Variability Of The Loop Current In The Gulf Of Mexico. July 1982.

Tampa Bay Regional Planning Council. Coastal Energy Facilities Siting Study. December 1982.

Tampa Bay Regional Planning Council for Coastal Energy Advisory Committee. Major Facilities Site Assessment Matrix. 1982.

Town of Mary Esther. Mary Esther Code of Ordinances.

Town of Mary Esther. Mary Esther Comprehensive Plan. 1981.

Town of Mexico Beach. Mexico Beach Code of Ordinances.

Town of Mexico Beach. Mexico Beach Comprehensive Plan. October 1980.

U.S.D.A. Soil Conservation Service. Soil Survey, Escambia County, Florida. 1960.

U.S.D.A. Soil Conservation Service. Soil Survey of Santa Rosa County, Florida. 1977

U.S. Department of the Army, Army Corps of Engineers. Generic Environmental Impact Statement Hydrocarbon Drilling/Production Mobile Bay - Mobile Delta, Mississippi Sound and Contiguous Waters (Alabama and Mississippi), Plan of Study, Report to Executive Review Board. September 1982.

U.S. Department of the Interior. Onshore Impacts of Offshore Oil: A User's Guide To Assessment Methods. May 1979.

U.S. Department of the Interior. Onshore Impacts of Outer Continental Shelf Oil and Gas Development, South Atlantic, Volume I and II. 1977.

U.S. Department of the Interior, Bureau of Land Management. Final Environmental Impact Statement Proposed OCS Oil and Gas Sales 67 and 69. August 1981.

U.S. Department of the Interior, Bureau of Land Management. Regional Transportation Management Plan, Gulf of Mexico. 1981.

U.S. Department of the Interior, Geological Survey. Gulf of Mexico Outer Continental Shelf Orders Governing Oil and Gas Lease Operations. 1980.

U.S. Department of the Interior, Geological Survey. Socioeconomic Impacts Of Outer Continental Shelf Oil and Gas Development - A Bibliography. 1977.

U.S. Department of the Interior, Minerals Management Service. Draft Regional Environmental Impact Statement, Gulf of Mexico. August 1982.

U.S. Department of the Interior, Minerals Management Service. Estimated Oil and Gas Reserves, Gulf of Mexico Outer Continental Shelf and Continental Slope. March 1981.

U.S. Department of the Interior, Minerals Management Service. Final Regional Environmental Impact Statement, Gulf of Mexico, Volume 1. January 1983.

U.S. Department of the Interior, Minerals Management Service. Final Regional Environmental Impact Statement, Gulf of Mexico, Volume 2. January 1983.

U.S. Department of the Interior, Minerals Management Service. Gulf of Mexico Summary Report 3. August 1982.

U.S. Department of the Interior, Minerals Management Service. Information Kit, To Hold Public Hearing On The Draft Regional Environmental Impact Statement For Sales 72, 74 and 79. September 1982.

U.S. Department of the Interior, Minerals Management Service. Outer Continental Shelf Oil and Gas Information Program Gulf of Mexico Index (December 1980-August 1982). 1982.

U.S. Department of the Interior, Minerals Management Service. Regional Environmental Impact Statement, Gulf of Mexico, Visuals Packet. August 1982.

U.S. Environmental Protection Agency. A Small Oil Spill At West Falmouth. March 1979.

U.S. Environmental Protection Agency. An Inventory of Used and By-Product Hydrocarbon Streams. August 1982.

U.S. Environmental Protection Agency. Choosing Offshore Pipeline Routes: Problems and Solutions. 1980.

U.S. Environmental Protection Agency. Oil Spills, Research Summary. February 1979.

U.S. Fish and Wildlife Service. Coastal Systems and Management Options Related To Outer Continental Shelf (OCS) Development. 1978.

U.S. Fish and Wildlife Service. Environmental Planning for Offshore Oil and Gas, Volume III: Effects on Living Resources and Habitats. 1978.

U.S. Fish and Wildlife Service. The Effects of Low Levels of Oil On Aquatic Birds. 1980.

University of Florida Law Review. Onshore Impact In Florida Of Offshore Energy Development. 1979.

Walton County. Walton County Code of Ordinances.

Walton County. Walton County Comprehensive Plan. October 1979.

West Florida Regional Planning Council. A Solid Waste Management Plan. 1975.

West Florida Regional Planning Council. Land Use Plan For The West Florida Region. 1976.

West Florida Regional Planning Council. Land Use Plan For The West Florida Region, Volume 2. 1977.

West Florida Regional Planning Council. Land Use Policy Guide. 1978.

West Florida Regional Planning Council. 208 Clean Water Plan. 1978.

APPENDIX A

IMPACT EVALUATION MATRICES

WEST FLORIDA REGIONAL PLANNING COUNCIL

SOCIOECONOMIC RESOURCE IMPACTS

A. Pipeline Corridor
(Proposed Industry Facility)

IMPACTS

Alternative Sites	Population	Local Employment	Local Revenue	Land Use	Gulf Access	Utilities	Support Services Availability	Transportation Access	Traffic Flow	Recreation/ Tourism	Conservation/ Preservation Areas	Ports	Facility Costs	Aesthetics	Navigation	Subtotal
1. Perdido Key	0	+1	+1	-2	NA	-1	0	+1	0	-1	-1	NA	+2	-1	-1	-2
2. GINS/Santa Rosa County	0	+1	+1	-1	NA	-1	0	-1	0	-1	-3	NA	-2	-1	-1	-9
3. Santa Rosa County/ Okaloosa County Line	0	+1	+1	-1	NA	-1	0	+1	0	-1	-1	NA	+1	-1	-1	-2
4. Destin	0	+1	+1	-3	NA	-1	0	-1	0	-1	-2	NA	-3	-1	-2	-12
5. Grayton Beach Vicinity	0	+1	+1	-1	NA	-1	0	-1	0	-1	-2	NA	-3	-1	-1	-9
6. State Road No. 79, Bay County	0	+1	+1	-1	NA	-1	0	+1	0	-1	-1	NA	+1	-1	-1	-2
7. Mexico Beach	0	+1	+1	-1	NA	-1	0	-1	0	-1	-1	NA	0	-1	-1	-5

*NA = Not Applicable

WEST FLORIDA REGIONAL PLANNING COUNCIL

ENVIRONMENTAL RESOURCE IMPACTS

A. Pipeline Corridor
(Proposed Industry Facility)

IMPACTS

Alternative Sites	Air Quality	Water Quality	Groundwater Quality	Water Supply	Solid Waste	Hazardous Substances	Wetlands/ Marshes	Grassbeds	Noise	River/Stream Ecosystem	Beach Ecosystem	Wildlife	Endangered Species	Shell Fisheries	Fin Fisheries	Energy Consumption	Dredging	Subtotal
1. Perdido Key	0	-1	0	0	0	-1	-1	0	-1	-1	-1	-1	-1	0	0	*-2	0	-10
2. GINS/Santa Rosa County	0	-2	0	0	0	-1	-3	-3	-1	-1	-1	-1	-1	-2	-2	-3	-1	-22
3. Santa Rosa Co./ Okaloosa County Line	0	-1	0	0	0	-1	-1	0	-1	-1	-1	-1	-1	0	0	-2	0	-10
4. Destin	0	-3	0	0	0	-1	-3	-2	-1	-1	-1	-1	-1	-1	-1	-3	-1	-20
5. Grayton Beach Vicinity	0	-3	0	0	0	-1	-3	0	-1	-3	-1	-1	-1	0	0	-2	-1	-17
6. State Road 79, Bay County	0	-1	0	0	0	-1	-1	0	-1	-1	-1	-1	-1	0	0	-2	0	-10
7. Mexico Beach	0	-1	0	0	0	-1	-2	0	-1	-1	-1	-1	-1	0	0	-2	0	-12

*NA = Not Applicable

WEST FLORIDA REGIONAL PLANNING COUNCIL

SOCIOECONOMIC RESOURCE IMPACTS

B. Onshore Support Base
(Proposed Industry Facility)

IMPACTS

Alternative Sites	Population	Local Employment	Local Revenue	Land Use	Gulf Access	Utilities	Support Services Availability	Transportation Access	Traffic Flow	Recreation/ Tourism	Conservation/ Preservation Areas	Ports	Facility Costs	Aesthetics	Navigation	Subtotal
1. Bayou Chico	0	+1	+1	+1	+3	+3	+3	+3	-3	-1	0	0	+3	0	-1	+13
2. Port of Pensacola	0	+1	+1	-3	+3	+3	+3	+3	-3	-1	-1	-1	-3	0	-1	+1
3. Milton/Bagdad	0	+1	+1	-1	-2	-2	-2	+2	-1	0	0	0	-2	-2	0	-8
4. Fort Walton Beach Industrial Park	0	+1	+1	+1	-3	+3	+2	+2	-3	-1	0	0	-2	0	-1	0
5. Freeport	0	+1	+1	-1	-3	-1	+1	-2	-2	0	0	0	-2	-1	0	-9
6. Port of Panama City	0	+1	+1	-1	+1	+3	+3	+3	-1	-1	-1	-1	+1	0	-1	+7
7. Southwest Forest Industries	0	+1	+1	+1	+1	+3	+2	+3	-2	0	0	0	+2	0	-2	+10

*NA = Not Applicable

WEST FLORIDA REGIONAL PLANNING COUNCIL

ENVIRONMENTAL RESOURCE IMPACTS

B. Onshore Support Base
(Proposed Industry Facility)

IMPACTS

Alternative Sites	Air Quality	Water Quality	Groundwater Quality	Water Supply	Solid Waste	Hazardous Substances	Wetlands/ Marshes	Grassbeds	Noise	River/Stream Ecosystem	Beach Ecosystem	Wildlife	Endangered Species	Shell Fisheries	Fin Fisheries	Energy Consumption	Dredging	Subtotal	TOTAL
1. Bayou Chico	0	-1	0	-2	-1	-1	0	0	-1	0	0	0	0	0	0	-2	-1	-9	+4
2. Port of Pensacola	0	0	0	-2	-1	-1	0	0	-1	0	0	0	0	0	0	-2	-2	-9	-8
3. Milton/Bagdad	0	0	0	-2	-1	-1	-1	0	-1	0	0	-1	0	0	-1	-2	-1	-11	-19
4. Fort Walton Beach Industrial Park	0	-1	0	-2	-1	-1	0	-1	-1	0	0	0	0	-1	-1	-2	-1	-12	-12
5. Freeport	0	-1	0	-2	-1	-1	-1	-1	-1	-1	0	-1	0	-1	-1	-2	-2	-16	-25
6. Port of Panana City	0	0	0	-2	-1	-1	0	0	-1	0	0	0	0	0	0	-2	0	-7	0
7. Southwest Forest Industries	0	0	0	-2	-1	-1	0	0	-1	0	0	0	0	0	0	-2	0	-7	+3

*NA = Not Applicable

WEST FLORIDA REGIONAL PLANNING COUNCIL

SOCIOECONOMIC RESOURCE IMPACTS

C. Gas Treatment Facility
(Proposed Industry Facility)

IMPACTS

Alternative Sites	Population	Local Employment	Local Revenue	Land Use	Gulf Access	Utilities	Support Services Availability	Transportation Access	Traffic Flow	Recreation/ Tourism	Conservation/ Preservation Areas	Ports	Facility Costs	Aesthetics	Navigation	Subtotal
1. Southwest Escambia County	+1	+1	+2	-1	NA	-1	-1	-1	-1	-1	0	NA	+1	-1	NA	-2
2. Gulf Breeze Peninsula/ Midway/Garcon Point	+1	+1	+2	-2	NA	+1	-1	+1	-1	-2	0	NA	-1	-1	NA	-2
3. Holley/Navarre	+1	+1	+2	-1	NA	+1	-1	+1	-1	-1	0	NA	+1	-1	NA	+2
4. Destin	+1	+1	+2	-3	NA	-1	+1	+1	-1	-3	0	NA	-3	-3	NA	-8
5. Southeast Walton County	+1	+1	+2	-1	NA	-1	-1	-1	-1	-2	0	NA	-1	-1	NA	-5
6. West Bay	+1	+1	+2	-1	NA	+2	-1	+1	-1	0	0	NA	+1	-1	NA	+4
7. Mexico Beach	+1	+1	+2	-1	NA	-3	-1	-1	-1	0	0	NA	-1	-2	NA	-6

*NA = Not Applicable

WEST FLORIDA REGIONAL PLANNING COUNCIL

ENVIRONMENTAL RESOURCE IMPACTS

C. Gas Treatment Facility
(Proposed Industry Facility)

IMPACTS

Alternative Sites	Air Quality	Water Quality	Groundwater Quality	Water Supply	Solid Waste	Hazardous Substances	Wetlands/ Marshes	Grassbeds	Noise	River/Stream Ecosystem	Beach Ecosystem	Wildlife	Endangered Species	Shell Fisheries	Fin Fisheries	Energy Consumption	Dredging	Subtotal	TOTAL
1. Southwest Escambia County	-2	-1	-1	-1	-1	-1	0	NA	-3	0	0	-1	-1	NA	NA	-3	NA	-15	-17
2. Gulf Breeze Peninsula/Midway	-2	-1	-1	-1	-1	-1	0	NA	-3	0	0	-1	-1	NA	NA	-3	NA	-15	-17
3. Holley/Navarre	-3	-1	-1	-1	-1	-1	0	NA	-3	0	0	-1	-1	NA	NA	-3	NA	-16	-14
4. Destin	-3	-1	-1	-1	-1	-1	0	NA	-3	0	-2	-1	-1	NA	NA	-3	NA	-18	-26
5. Southeast Walton County	-2	-1	-1	-1	-1	-1	0	NA	-3	0	0	-1	-1	NA	NA	-3	NA	-15	-20
6. West Bay	-2	-1	-1	-1	-1	-1	0	NA	-3	0	0	-1	-1	NA	NA	-3	NA	-15	-11
7. Mexico Beach	-3	-1	-1	-1	-1	-1	0	NA	-3	0	0	-1	-1	NA	NA	-3	NA	-15	-22

*NA = Not Applicable

WEST FLORIDA REGIONAL PLANNING COUNCIL

SOCIOECONOMIC RESOURCE IMPACTS

D. Oil Barge Terminal
(Proposed Industry Facility)

IMPACTS

Alternative Sites	Population	Local Employment	Local Revenue	Land Use	Gulf Access	Utilities	Support Services Availability	Transportation Access	Traffic Flow	Recreation/ Tourism	Conservation/ Preservation Areas	Ports	Facility Costs	Aesthetics	Navigation	Subtotal
1. Perdido Bay/Big Lagoon	0	+1	+2	-1	NA	-1	+1	+1	-1	-1	-1	0	-1	-1	-1	-3
2. Pensacola Bay	0	+1	+2	-1	NA	+2	+2	+2	-1	-1	0	-1	+1	-1	-2	+3
3. Choctawhatchee Bay	0	+1	+2	-2	NA	-1	+1	+1	-1	-1	0	0	-2	-1	-1	-4
4. West Bay	0	+1	+2	-1	NA	+1	+1	+1	-1	-1	-1	0	-1	-1	-1	-1
5. St. Andrews Bay	0	+1	+2	-1	NA	+2	+2	+2	-1	-1	-1	-1	+1	-1	-2	+2

*NA = Not Applicable

WEST FLORIDA REGIONAL PLANNING COUNCIL

ENVIRONMENTAL RESOURCE IMPACTS

D. Oil Barge Terminal
(Proposed Industry Facility)

IMPACTS

Alternative Sites	Air Quality	Water Quality	Groundwater Quality	Water Supply	Solid Waste	Hazardous Substances	Wetlands/ Marshes	Grassbeds	Noise	River/Stream Ecosystem	Beach Ecosystem	Wildlife	Endangered Species	Shell Fisheries	Fin Fisheries	Energy Consumption	Dredging	Subtotal	TOTAL
1. Perdido Bay/ Big Lagoon	-1	-1	NA	-1	-1	-2	-1	-2	-2	NA	-2	-1	-1	-2	-1	-2	-2	-22	-25
2. Pensacola Bay	-1	-2	NA	-1	-1	-2	0	0	-2	NA	-1	-1	-1	0	-1	-2	-1	-16	-13
3. Choctawhatchee Bay	-1	-1	NA	-1	-1	-2	-2	-1	-2	NA	-2	-1	-1	0	-1	-2	-2	-20	-24
4. West Bay	-1	-1	NA	-1	-1	-2	-1	-1	-2	NA	-2	-1	-1	-1	-1	-2	-2	-20	-21
5. St. Andrews Bay	-1	-1	NA	-1	-1	-2	-1	-1	-2	NA	-1	-1	-1	-2	-1	-2	-2	-20	-18

*NA = Not Applicable

WEST FLORIDA REGIONAL PLANNING COUNCIL

SOCIOECONOMIC RESOURCE IMPACTS

E. Gas Compresser/Metering Station
(Proposed Industry Facility)

IMPACTS

Alternative Sites	Population	Local Employment	Local Revenue	Land Use	Gulf Access	Utilities	Support Services Availability	Transportation Access	Traffic Flow	Recreation/ Tourism	Conservation/ Preservation Areas	Ports	Facility Costs	Aesthetics	Navigation	Subtotal
1. Escambia County, Southwest of Cantonment	0	+1	+1	0	NA	+3	+3	+3	0	0	0	NA	+3	-1	NA	+1
2. Santa Rosa County, East of Jay	0	+1	+1	0	NA	+3	+3	+3	0	0	0	NA	+3	-1	NA	+1
3. Okaloosa County, Northwest of Crestview	0	+1	+1	-1	NA	-1	-1	-1	-1	0	0	NA	-3	-2	NA	-8
4. Walton County East of DeFuniak Springs	0	+1	+1	-1	NA	-1	-1	-1	-1	0	0	NA	-3	-2	NA	-8
5. Washington County, East of Choctwhatchee Bay	0	+1	+1	0	NA	+3	+3	+3	0	0	0	NA	+3	-1	NA	+1
6. Bay County - U.S. 231, Near Deer Point Lake	0	+1	+1	-0	NA	-1	+1	+1	-1	0	0	NA	-2	-2	NA	-3

*NA = Not Applicable

WEST FLORIDA REGIONAL PLANNING COUNCIL

ENVIRONMENTAL RESOURCE IMPACTS

E. Gas Compressor/Metering Station
(Proposed Industry Facility)

IMPACTS

Alternative Sites	Air Quality	Water Quality	Groundwater Quality	Water Supply	Solid Waste	Hazardous Substances	Wetlands/ Marshes	Grassbeds	Noise	River/Stream Ecosystem	Beach Ecosystem	Wildlife	Endangered Species	Shell Fisheries	Fin Fisheries	Energy Consumption	Dredging	Subtotal	TOTAL
1. Escambia County, Southwest of Cantonment	-1	NA	NA	0	-1	-1	0	NA	-1	0	NA	-1	-1	NA	NA	-1	NA	-7	6
2. Santa Rosa County, East of Jay	-1	NA	NA	0	-1	-1	0	NA	-1	0	NA	-1	-1	NA	NA	-1	NA	-7	6
3. Okaloosa County, North of Crestview	-1	NA	NA	0	-1	-1	0	NA	-2	0	NA	-2	-1	NA	NA	-1	NA	-9	-17
4. Walton County, East of DeFuniak Springs	-1	NA	NA	0	-1	-1	0	NA	-2	0	NA	-2	-1	NA	NA	-1	NA	-9	-17
5. Washington County, East of Choctwhatchee Bay	-1	NA	NA	0	-1	-1	0	NA	-1	0	NA	-1	-1	NA	NA	-1	NA	-7	6
6. Bay County, U.S. 231, Near Deer Point Lake	-1	NA	NA	0	-1	-1	0	NA	-2	0	NA	-2	-1	NA	NA	-1	NA	-9	-12

*NA = Not Applicable