

CIRCULATING COPY
Sea Grant Depository

AKU-T-75-006 C. 2

ALASKA

LOAN COPY ONLY

SEA GRANT PROGRAM

STUDY PLAN

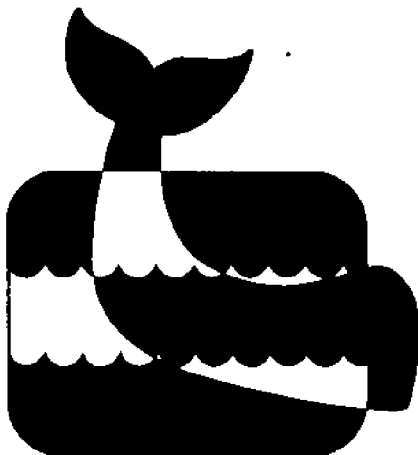
SOCIAL AND ECONOMIC IMPACT ASSESSMENT OF ALASKA OUTER CONTINENTAL SHELF PETROLEUM DEVELOPMENT

PREPARED FOR THE

Alaska Outer Continental Shelf Office



BUREAU OF LAND MANAGEMENT



University of Alaska

SEA GRANT REPORT 75-15
DECEMBER, 1975

CIRCULATING COPY
Sea Grant Depository

STUDY PLAN

SOCIAL AND ECONOMIC IMPACT ASSESSMENT
OF ALASKA OUTER CONTINENTAL SHELF
PETROLEUM DEVELOPMENT

PREPARED BY THE
ALASKA SEA GRANT PROGRAM
UNIVERSITY OF ALASKA
FAIRBANKS, ALASKA

FOR THE

ALASKA OUTER CONTINENTAL SHELF OFFICE
BUREAU OF LAND MANAGEMENT
U. S. DEPARTMENT OF THE INTERIOR

NATIONAL SEA GRANT DEPOSITORY
PELL LIBRARY BUILDING
URI, NARRAGANSETT BAY CAMPUS
NARRAGANSETT, RI 02882

Sea Grant Report 75-15
December, 1975

Donald H. Rosenberg
Director
Alaska Sea Grant Program

"OCS is more than oil and fish. OCS development means a series of extraordinary changes (only a few of which we dare to label as good or bad) in Alaska life, particularly for sparsely inhabited regions destined to host major onshore petroleum development facilities."

Dr. Robert Weeden, Director,
Division of Policy Development
and Planning, Office of the
Governor, State of Alaska.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iv
INTRODUCTION	1
PROGRAM GOAL AND PROGRAM RATIONALE	3
PROGRAM DESIGN	5
DEVELOPMENT REGIONS AND LOCAL IMPACT AREAS	8
PETROLEUM DEVELOPMENT REGIONS	9
LOCAL IMPACT AREAS	11
RESEARCH ELEMENTS	12
SUB-SYSTEMS ANALYSIS AND MODELS	12
Technological Analysis	12
Physical Environmental Analysis	13
Social and Cultural Analysis	16
Economic and Demographic Analysis	22
LEASE SALE AREA DEVELOPMENT SCENARIOS	27
IMPACT IDENTIFICATION	28
COMPARATIVE STUDIES	30
PROGRAM MANAGEMENT	32
STUDY MANAGEMENT GROUP	32
ADVISORY GROUP	33
PROJECT DETERMINATION	33
DATA MANAGEMENT	34
PROGRAM INTEGRATION	35
FOOTNOTES	36

APPENDIX I	37
APPENDIX II	39
TABLE I	40
TABLE II	42
TABLE III	43
APPENDIX III	44
HISTORICAL AND ARCHEOLOGICAL WORKSHOP	45
ECONOMIC WORKSHOP	54
NATURAL ENVIRONMENTAL AND INFRASTRUCTURE WORKSHOP	63
LIFESTYLES WORKSHOP	69

ACKNOWLEDGEMENTS

This study plan was developed for the Alaska Outer Continental Shelf Office, Bureau of Land Management, U. S. Department of the Interior, under contract AA550-CT6-2. The findings, conclusions, and recommendations are those of the Alaska Sea Grant Program and do not represent the official position of either the sponsor or the organizations or individuals who cooperated with the study.

We wish to acknowledge the support and effort of all those who attended and participated in the workshop held September 23-25, 1975, and the public conference held November 11-13, 1975. Thanks are offered to Mr. Kevin Waring, Director, Community Planning Division, Department of Community and Regional Affairs, State of Alaska; Mr. Thomas Morehouse, Division of Policy Development and Planning, Office of the Governor, State of Alaska; Mr. Vincent Hecker, Chief, Economic Analysis Branch, Bureau of Land Management, U. S. Department of the Interior; Mr. William Civish, Planner, Bureau of Land Management, U. S. Department of Interior; Mr. David Pumphrey, Economist, Bureau of Land Management, U. S. Department of the Interior; Ms. Lisa Jorgenson, Economist, Bureau of Land Management, U. S. Department of the Interior; Ms. Rosita Worl, North Slope Borough; Ms. Mim Dixon, Fairbanks North Star Borough; Dr. Michael Baring-Gould, University of Alaska, and Dr. Larry Naylor, University of Alaska, who worked with the Alaska Sea Grant Program in the design and final development of this study plan.

A special thanks goes to Dr. George Rogers, Institute of Social, Economic and Government Research, University of Alaska, who provided the overall program design and pulled together many of the general concepts used in the program.

INTRODUCTION

The Bureau of Land Management, Department of the Interior contracted with the University of Alaska's Sea Grant Program to develop an integrated, comprehensive planning document to study the effects of petroleum development of Alaska's Outer Continental Shelf on the physical, social, and economic environments. The planning document will help guide the Bureau of Land Management in its social, economic study program. This document was to be developed by planning and conducting a three day workshop with participants from appropriate Federal and state agencies, universities, and industries. A public conference was then to be held to provide a public review of the document resulting from the workshop and to develop recommendations for its change. The document was then to be modified in accordance with these recommendations and submitted to the Bureau of Land Management for their final review.

The workshop was held on September 23-25, 1975 on the campus of the University of Alaska in Anchorage. The draft study plan was then prepared by the Alaska Sea Grant Program and given public review at a conference held in Anchorage on November 11-13, 1975. The results of both the workshop and public conference are reported in Alaska Sea Grant Program report 75-14 entitled "Proceedings of the Conference to Review the Draft Study Plan for Social and Economic Impact Assessment of Alaska Outer Continental Shelf Petroleum Development".

The reports and comments which resulted from these two meetings, in addition to direct input by a small group of scientists advisory to the Alaska Sea Grant Program and a detailed review by the Alaska OCS Office of the Bureau of Land Management, were used to develop this document. Additionally, the results of the socio-economic subcommittee of the February 19-21, 1975 public conference/workshop sponsored by the Bureau of Land Management to review the draft "Environmental Study Plan for Outer Continental Shelf Impacts"; the proposed "Research Program for

Alaska OCS Onshore Impact Studies" submitted by the State of Alaska to the Alaska Outer Continental Shelf Office of the Bureau of Land Management and a draft study plan entitled "Studies Required to Analyze Assessment of Potential Social and Economic Impacts of Petroleum Development on the Alaskan Outer Continental Shelf" developed by the Alaskan OCS Office of the Bureau of Land Management dated June 1975 were used.

This document is developed to be a guide to the Bureau of Land Management in their implementation and execution of studies on the social and economic impacts associated with OCS development in Alaska. The program is not intended to be fully developed in this document. The scientific subjects involved, the size and complexity of the problem and of the state, and the flexibility of the development plans by Federal, state, and industry will make it necessary that the individual research tasks be designed and described as the program develops. What is represented within is a complete program design with major research areas described which, if followed, will provide for a complete comprehensive study of the economic and social implication of OCS development in Alaska.

PROGRAM GOAL AND PROGRAM RATIONALE

The goal of the program is the prediction and evaluation of the effects of Alaska Outer Continental Shelf (OCS) petroleum development upon the physical, social and economic environments within Alaska at the state, regional and local community levels.

Because of the various degrees of subsistence living in the rural regions of Alaska, the social and economic impact of OCS petroleum development takes on a much higher significance than in the "Lower 48." Populations in the major urban areas of the state (Fairbanks and Anchorage) and in the "Lower 48" OCS development areas have most of the social and cultural traditions and characteristics of contemporary Western industrial society. In these areas, development will impact man's use of the land, the natural physical environment, and alter local economic and social structure, but those who are subjected to the consequences of these events will at least end up in a still familiar cultural setting. Under these circumstances, the costs and benefits of the dislocation can be calculated, for the most part, in common economic and social accounting terms.

Rural Alaska differs culturally not only from the dominant Western industrial society, but regions and areas within the state present a wide diversity among themselves. The Alaska Native Land Claims Settlement Act, for example, recognized this basic diversity in the organization of Native Alaskans into twelve regional corporations "with each region composed, as far as practicable, of Natives having common heritage and sharing common interests" and approximately 223 village corporations representing further sub-cultural and social classifications. This diversity is rooted deeply in the local physical setting of the communities, the land and natural resource base, patterns of local use (both commercial exploitation and subsistence) and inherited cultural traditions. Not only is there lack of uniformity in the cultural and social structures of these local areas, but their paths and their stages of evolution differ.

Outer Continental Shelf petroleum development poses possible changes to the existing rural communities and their societies. This development could affect these communities by changes in their current support systems (use of land and ocean space, resource use, etc.) or by their submergence through an influx of immigrants with different lifestyles and cultural values. Depending upon the goals of these communities, such change could be considered as positive or negative. If the nature and magnitude of these possible changes are known in advance, then these communities may take appropriate action to mitigate unfavorable changes or to enhance favorable changes. These changes, however, go beyond conventional economic considerations and are of deeper social and cultural significance. The ultimate objective of this research program is to arrive at a basis for prediction and evaluation of the changes.

PROGRAM DESIGN

This research program treats the complex interrelations among the physical, economic, social, individual human and political phenomena which condition human welfare. The analysis is organized in terms of geographic entities - the State of Alaska as a whole, the several regions within which the oil and gas development will take place and, within these regions, the local communities or places of population congregation or social-cultural integration takes place.

The first research element deals with the internal nature, structure and essential processes which determine the evolution of these geographic units. This element is represented by a multidisciplinary set of descriptions or systems translated for purposes of research into a series of analytical abstractions or models--technological, physical environmental, social and cultural, and economic and demographic. Provisions are made for analysis of the interaction between these systems in the several regions and at other geographic levels.

The second research element involves the drawing up of alternative sets of assumptions regarding possible future events, in this case the location, nature and timing of OCS petroleum development and related activities. These sequences of possible future oil and gas development events (development scenarios) are translated into quantities and forces which are then introduced as exogenous factors affecting the systems described and analyzed in the first element of the program.

In the third research element, the ranges of predicted consequences are evaluated in relation to present individual, group, state and national objectives, values, and expectations in order to identify potential impacts (positive or negative). Existing management institutions (federal, state, local and private) and their capabilities for dealing with the consequences of OCS induced change and issues will be examined.

The information on and the analysis of the consequences of OCS petroleum activities developed in the above element are not intended as ends in themselves, but as decision-aiding tools to be used by the Department of the Interior in relation to the OCS program. Other Federal agencies, state governments, local communities, Native corporations, and private individuals and organizations will find the results to be extremely valuable in their own planning sources.

Paralleling these three elements and contributing to their analysis and interpretation will be a series of case studies of other petroleum development experiences--North Sea, Upper-Cook Inlet-Kenai and North Slope oil and gas development.

The individual studies will proceed generally in the sequence of the proposed Federal OCS leasing schedule. Technology models, environmental and physical infrastructure models, social and cultural models, and economic and demographic models; assumptions regarding future oil and gas development; and prediction of consequences would first focus on areas and communities within the Gulf of Alaska region. Similar projects in other regions would be phased-in sequentially. Social economic baseline studies related to preliminary versions of development assumptions will be initiated for all regions early in the overall program schedule.

Studies would proceed beyond the time of actual development. As the actual development process occurs, follow-up studies will be undertaken in the impacted areas. The results of such studies will be compared with the original assumptions and discrepancies would be studied in order to assist in future research design. This method of follow-up studies will facilitate a better understanding of the impact processes and allow each phase of the program to contribute positively to the next phase.

The research task descriptions presented in this document are for the most part addressed to the initial phase of the program. Task

descriptions have been limited to title, objectives and identification of output elements. Modification, new task definition and the development of detailed descriptions of research tasks will be a continuing function of the program management. Priority for funding specific projects has not been specified in the study plan. Such priorities would be recommended by the Study Management Group and advisory group.

The complete report of the results of the September workshop is included as an appendix to this study plan. These results should be used by the management group in the design of projects.

DEVELOPMENT REGIONS AND LOCAL IMPACT AREAS

The proposed schedule of OCS lease sales is made in terms of specific target dates and defined geographic areas (Appendix I). The subsequent activities of exploration, development, production and phase-out will likewise take place within time and space boundaries dictated by the nature and location of the resources, physical conditions, and development and transportation technology. The physical, social and economic impacts which are the focus of this program are registered and transmitted through a number of systems which likewise have geographic dimensions. Regions are described in this section which are large enough to embrace the entire process of development from a given set of OCS lease locations and the interrelated local social and economic impacts under consideration.

Physical, social and economic impacts within each region will be felt in geographically defined areas and local communities. For physical assessment, a hierarchy of interrelated areas can be defined within each region. These will be defined according to the physical characteristics of geology, climate, drainage basins, natural landscape or ecosystems, and man's use of the land (i.e., traditional, urban, and rural land use classifications). For economic assessment, a hierarchy of interrelated areas can be defined within each region. These will be defined according to the economic characteristics and functions of the area in relation to specific OCS development processes, together with an assessment of impacts registered beyond the region by population and work force movement, by dislocations caused by development-induced inflation, or by changes in the expenditure of the state and local governments. For social assessment, existing communities and places within the region can be listed and characterized structurally and functionally. These can then be grouped together on the basis of shared cultural traditions, resource bases, and social and economic patterns.

These local impact areas have not been identified in the present research program. This task must be accomplished as part of specific research tasks to be undertaken with local and regional participation through existing institutions, special local and regional advisory groups, and by other means.

It will be necessary to integrate these separate regional studies to identify and measure their interactions with each other. The effects of different schedules of regional development upon state-wide labor force and migration or the cumulative effect upon the Anchorage community by serving as headquarters for several regional developments will need to be studied. Also, the entire state must be studied in order to reflect the impact of increased revenue from onshore developments within its taxing and regulatory jurisdiction and subsequent increases in state government spending.

PETROLEUM DEVELOPMENT REGIONS

The regions described in this plan were arrived at through two sets of considerations. The first was functional. In keeping with the purpose of the program, the regions had to be small enough to separate the localized OCS development areas but large enough to embrace reasonably homogenous and interrelated social and physical environmental resources (other than oil and gas), social and economic patterns, stage and nature of existing economic development, social and political arrangements and major programs shared by the residents of coastal Alaska. The second set of considerations reflected the more practical necessity of definition using existing statistical units of public agencies, Native corporation boundaries, and the results of existing or current research where appropriate. A comparison of the sources consulted in the development of these regions is included in Appendix II. Proposed, present, and anticipated oil and gas developments in Alaska are defined in terms of three major (and not entirely interrelated) geographic systems that meet the general requirements discussed above. Both offshore and onshore developments are considered together because of their interaction in planning, development, transport, and other related facilities.

It should be understood that the development regions, described herein, are examples of possible OCS development areas. The regions described are examples oriented to identification of economic development processes and, therefore, could primarily serve the purpose of the initial economic and demographic analysis. For this purpose, they have been further subdivided into analytical units which reflect the boundaries of existing economic and demographic data and administrative units. The social and cultural analysis will be derived initially from the local impact areas and then combined into the regional units.

Southcentral: This includes the land and waters south and east of the arc of the Alaska Range and the spine of the Alaska Peninsula, but excluding the areas embraced in the Matanuska-Susitna and most of the Valdez-Chitina-Whittier census divisions (this exclusion because the area will be almost exclusively part of the North Slope-Trans Alaska Pipeline region).¹

Analytical units within the region are the Anchorage Census Division (the headquarters and support for all Alaskan oil and gas development and the probable residence of many of the platform operators and their dependents), the Cook Inlet basin (the location of present development and petrochemical industries and transport systems and the location of further proposed offshore sales in the lower Inlet), Northeast Gulf of Alaska area (Cordova-McCarthy Census Division, Yakutat-Ocean Point Enumeration Districts and the continental shelf embracing proposed sales area and intervening ocean space), Kodiak-Shelikof Strait area (Kodiak and Seward Census Division and related continental shelf) and the Aleutian Shelf area (Alaska Peninsula south side and Aleutian Island Census Division east of 171° W, and related continental shelf).

South Bering Sea-Bristol Bay: This region includes the United States' share of the continental shelf south of 60° N, and the land area draining directly into this portion of the Bering Sea and the Anchorage Census Division.² Proposed Federal sales areas are located in the St. George Basin and the Bristol Basin.

North Bering Sea-North Slope: This region includes the entire land area of the North Slope, the Kobuk River Basin, Seward Peninsula, St. Lawrence Island; the United States' share of the continental shelf area of Norton Sound, Chukchi Sea and Beaufort Sea; the Trans Alaska Pipeline corridors; and the cities of Anchorage, Fairbanks, and Valdez. Analytical units within this region related to the proposed sales locations will be the Norton Sound area (Nome and Wade Hampton Census Division and United States' share of the Chukchi Sea), the North Slope area (Barrow Census Division and Upper Yukon Enumeration District 05 and related continental shelf), Fairbanks (Fairbanks and Southeast Fairbanks Fairbanks Census Division), Valdez and Anchorage.

LOCAL IMPACT AREAS

With the exception of the Anchorage and Fairbanks areas and the Cook Inlet analytical area of the Southcentral Region, the Development Regions are characterized in demographic and economic terms as rural groupings. These rural groupings represent remote communities and places supported by mixed monetary and subsistence economies which are based upon a combination of commercial and subsistence renewable resource harvests (fish, game, furs); seasonal or irregular migratory employment outside of the local community; defense activities (Department of Defense and Coast Guard); and transfer payments (receipts of State and Federal social and welfare programs). On this basis alone, the economic and demographic analytical areas within the regions exhibit high degrees of uniqueness. Diversity is even greater among local communities and social-cultural areas. Generalized analysis in most cases is inappropriate (if not impossible) and research must proceed on the basis of specialized local investigations and with a high level of local participation to assure collection of relevant data, appropriate insights and quality of research findings. The identification of the local impact areas for this analysis, therefore, is not part of the research design but is an element of a major research task under the section on Social and Cultural Analysis (Research Task III).

RESEARCH ELEMENTS

SUB-SYSTEMS ANALYSIS AND MODELS

For purposes of research design, coordination of project work and synthesis of results, each geographic unit (development regions, the State of Alaska, local impact areas and communities) is considered to be represented by an arrangement of interrelated systems (physical, economic, demographic, social, etc). This research element is represented by analytical abstractions or models of several generalized aspects of reality and of the process of change. The aspects are classified into four program areas: technology analysis, physical environmental analysis, social and cultural analysis, and economic and demographic analysis.

Technological Analysis

Technology embraces all activities involving mass and energy transfer, but for purposes of this program will be restricted to specifics of industrial and transportation technology related to OCS oil and gas development and related industrial development. Models describing these technological aspects of OCS development are already in use. These existing models will be adopted, where possible, for use by this program to assist in organizing the development scenarios for the lease sale areas.

Research Task I

Title: Adaption of Technology Models

Objective: To evaluate and adapt the existing technology models for use by the program in specific assessment and analysis required by the lease sales areas development scenarios.

Output: Technology models which can be used in the lease sales areas development scenarios.

Physical Environmental Analysis

As used in this program, physical environment includes both the natural environment (the natural landscape or ecosystem) and man's use of the land. The natural environment includes the geophysical and historical conditions and processes which comprise the total human environment, the ecological processes in living environment, and all the natural resources which support (presently or potentially) human life and economic activity. Man's use of the land includes his physical infrastructures (those structures and facilities which alter the natural environment and comprise the physical aspect of the manmade environment). Included are the physical aspects of such items as communications, housing, transportation, industry, agriculture, water, sewer, and energy services.

Research under this section will draw upon, but not duplicate, other research programs on OCS physical and biological impacts. This interplay between programs will allow the results of all programs to be related to social and economic change and in turn to change upon the total physical environment affecting mankind.

Research Task II

- Title: Physical Environmental Analysis*
- Objective: To assess the range and nature of existing physical environments (natural and manmade) that are identified as subject to impact and to identify physical changes.*
- Sub-objective: To conduct a broad-based natural environment inventory to include the following:*
- . Large scale assessment to identify areas, sites and resources; concentrate intensive inventory efforts on those identified areas, sites and resources.*

- . *Natural environments' capability of absorbing impact from man-induced changes, especially natural constraints and identification of critical areas.*

Sub-objective: To conduct a broad-based historic and archeological resource inventory to include both marine and on-shore areas.

Sub-objective: On the basis of present conditions and activities and changes inherent in the alternative development scenarios and technological models, to conduct a broad-land-use inventory to include residential, commercial, subsistence, industrial/utility, transportation, communications, recreation, open space and other uses.

Sub-objective: On the basis of present conditions and activities and changes inherent in the alternative development scenarios and technological models, to conduct a broad-ocean-space-use inventory including commercial and subsistence fishing, offshore mining, recreation and commercial shipping.

Sub-objective: To evaluate for impacts to the natural environment caused by changes predicted by the alternative development scenarios technological models and related physical infrastructure changes. Evaluation must include impact on beaches, embayments, channels, water courses, wetlands, uplands, and associated biota; impacts on historic and archeological resources and unique environments; impact on air and water quality; noise and visual impact.

Sub-objective: To evaluate for impacts to the land, ocean space and air space use and physical infrastructure caused

by change predicted by the regional petroleum development scenarios and technology models. Evaluation must include:

- . Primary and secondary impacts of land-use activities including, but not limited to: oil service industry base, oil storage, gas storage, processing energy based industry, platform construction, materials supply, transportation, oil and gas transshipment.
- . Primary and secondary impacts of activities to ocean space use including, but not limited to: survey and supply vessels, exploratory and production platforms, submarine pipelines and pipelaying; and oil and gas marine transport.
- . Primary and secondary impacts of infrastructure activities including, but not limited to: warehousing, workshops, pipe and material storage, storage tanks and terminals, port facilities, air and heliports, overland pipelines and highways.
- . Secondary induced industrialization impacts from such activities as LNG plants, refineries, petrochemical industries, and steel and concrete fabrication plants.
- . Secondary and tertiary growth impacts on renewable resource availability in urban and rural areas, and perceived environmental quality.

Output:

Identification of major impacts to the natural physical environmental systems and to the manmade physical environmental systems.

Social and Cultural Analysis

Social and cultural phenomena embrace those individual and collective aspects of human behavior and values related to the social institutions to which man belongs. Research tasks focus upon the local community and the welfare of its residents and how these are affected by those changes that occur from OCS development in the total environment, the physical infrastructure, the economy and the demography. Due to the cultural diversity of the state, the high predominance of Native people in the areas to be impacted, and the social isolation of most regions, social and cultural impact assessment must be localized. No single category of Alaskan Native exists or can be assumed. The diversity of cultures, languages, beliefs, lifestyles and communities prohibit generalizations being made from one community to another. In addition, within single cultural groups and communities, recognition must be given to the complexity of sub-groups and interest, which form each local system.

In particular, the research must recognize as basic assumptions that:

- (1) the preservation of local culture is an inherent right of those communities;
- (2) great social and cultural diversity exists in all areas to be impacted by OCS development in Alaska;
- (3) the economies and lifestyles of many of those cultures and groups are not based on the logic of supply and demand and are not geared to the monetary concepts held in Western society;
- (4) perceptions of land and its appropriate use are significantly different;
- (5) the adaptive strategies of such groups, therefore, may differ significantly from those of Western society; and
- (6) the multi-cultural context of OCS research in such communities will necessitate the adaptation of a variety of traditional field research methods used by a number of different disciplines.

Social and cultural research will focus on three strategic areas. The first research task is devoted to baseline studies of communities that are identified as subject to impact from OCS development. Impact analysis of each community will consist of three basic components: the residents who currently reside in the community and share its socio-cultural traditions, the transient workers and external interests associated with OCS developments, and the interaction between these two broad groups and their distinct cultural systems and values.

The second research task will study existing educational and community service infrastructure and delivery systems within both the development regions and local impact areas. The impact upon these service systems will be correlated to OCS development and an assessment made of the ability of these systems to adapt to new and increased demands. A determination will be included of which community programs will be required to meet the needs of both transient workers and current residents.

Whereas the former research tasks focus on social processes and the anticipated institutional responses of people on a collective basis, OCS developments can also be expected to bear consequences of a psychological nature at both the community and the individual level. Although the range of consequences on the individual subject is extremely broad, the third research task will focus on a specific aspect, namely, the relationship of mental health to social stress that is induced by OCS development.

Research Task III

Title: Social and Cultural Impact Analysis

Objective: To assess the range and nature of existing cultural, social, economic, religious, and political patterns and structures in those communities that are identified as subject to impact and to identify the potential

changes in those that will occur from the projected environmental, economic and demographic changes. This assessment must incorporate the local resident, transient workers and interaction components, as well as the perceptions and expectations which local residents hold toward OCS development.

Sub-objective: To develop a typology of communities by OCS regions which will guide in the selection of representative communities to be used in baseline studies. Such a typology must consider such factors as OCS leasing schedules; types and extents of projected impact and social, economic, political, religious, and cultural patterns associated with each community. The typology must be developed in such a manner that the baseline studies and community research projects can be undertaken on a comparative basis so that study results will serve a predictive and cumulative purpose.

Sub-objective: To prepare comprehensive baseline studies of representative communities and communities in the process of impact in order to assess changes in cultural, baseline studies will by necessity be formulated with local participation in all phases.

Sub-objective: To incorporate within the resident component the following factors:

- (1) the identification of community as defined by the resident group,*
- (2) the identification of the total physical and social environmental landscape which places constraints upon the local community,*
- (3) the identification of the social and economic patterns of the present community residents*

(4) *the community and individual perceptions and expectations toward impending OCS development.*

Sub-objective: To analyze the characteristics of potential transient workers which will accompany OCS development in the region, and to identify migration patterns within the regions, within the state, and between Alaska and areas outside the state.

Sub-objective: To analyze the interaction processes that occur, or are likely to occur, between residents and transient workers. In studying the interaction of residents and transient workers, particular emphasis must be given to predicting potential conflict situations, changes in political structure, social structure, cultural knowledge, languages, values and behavior.

Output: Basic information and alternative options will be identified so that positive aspects of impact can be accommodated and the dysfunctional effects of change mitigated. Information on community attitudes and expectations will be provided so that planning for development and impact can be realized in the best interests of the community. An assessment of the ability of the impacted units to deal with the effects of change will be made. Through the study of various community types in differing stages of development, projections will be made anticipating various problems to be encountered.

Research Task IV

Title: Education and Community Service Delivery Systems in OCS Development Regions, Local Impact Areas and Communities.

- Objective:* To determine the ability of existing community services, including those of education, health, legal, law enforcement, recreational, and social service to meet new or increased demands associated with OCS development.
- Sub-objective* To evaluate the adequacy of regional and community service agencies and programs to meet those community needs which are anticipated from OCS impact. Such assessment must include both those needs of the community which are being met through present institutions and agency programs, and those needs currently being performed through traditional institutions or interpersonal relationships.
- Sub-objective:* To identify in a historical perspective those elements of social displacement that are likely to arise, increase or otherwise accompany OCS impact, and to evaluate the adaptive ability of present community services and agencies to adequately meet these new conditions.
- Sub-objective:* Through utilization of research findings in the economic and demographic analysis and the various lease sale area scenarios, project specific future impacts upon community services.
- Output:* A body of quantitative and qualitative data and analysis that will focus on:
- (1) how community service delivery systems presently function in the region and communities to be impacted;
 - (2) the communities' present abilities to meet the social and cultural service needs of residents in potentially impacted regions;

- (3) *anticipated problems in current delivery systems that may accompany projected population growth and change;*
- (4) *the prediction and ability of traditional mechanisms to deal with these new needs.*

Research Task V

- Title: Social Stress and Mental Health in Communities Potentially Impacted by OCS Development.*
- Objective: To identify those situations and conditions that occur with OCS development which either create or alleviate stress, and to determine the relationship of these factors to community problems of mental health.*
- Sub-objective: To identify culturally significant indicators of stress which can be used for both predicting and measuring mental health, to identify those social behaviors and their frequencies that are the manifestations of mental health problems, and to identify target populations or segments of populations and communities which are most likely to experience increased or alleviated stress and mental health problems in regions impacted by OCS development.*
- Sub-objective: To assess the ability of mental health programs to confront adequately the increased or alleviated mental health needs that may be associated with OCS development.*
- Output: To identify causes of stress under impact, to identify relevant measures for assessing mental health, to document the incidence of mental health problems in impacted communities, and to provide assessments for mental health programs.*

Economic and Demographic Analysis

Economics and demography are considered together because it is difficult to deal with them separately in analyzing Alaska's economic and social evolution. In recent years, employment has been the dominant dynamic factor in determination of statewide and most regional population change and is predicted to continue to be so. The economic dimensions of OCS petroleum developments will change drastically the employment structure and in turn the levels and characteristics of regional and community populations. Natural resource subsistence economies, in varying degrees, have been the basis of survival of Alaska's rural communities. OCS developments also could adversely affect these subsistence resources and/or activities and in turn destroy or alter the local economic support systems of rural communities and local areas within the broader development regions.

The existing analytical techniques or models deal only with those parts of the total process which take place within monetary or market economies and the demographic forces generated through their manpower requirements. In the major urban centers (Anchorage and Fairbanks), in some large regional units, and in the Cook Inlet-Kenai area, this might be sufficient for preliminary purposes; but in rural Alaska the non-monetary or subsistence economies play an important role. Means must be developed to analyze these unique local systems in order to understand and interpret the total economic system.

Research output from the environmental and socio-cultural studies will be required as a basis for setting up the geographic dimensions of the mixed economy analysis on a sub-regional basis. Some investigations and surveys of subsistence use of natural resources have been made in the Bristol Bay and lower Yukon and Kuskokwim areas and are planned elsewhere, but much data gathering remains to be accomplished. It is important that these studies include the extent of subsistence activities and the delineation of the cultural aspects of subsistence activities in the local systems. The means of analyzing these types of economies,

furthermore, is still largely in a pioneering stage; and it will be necessary, in most cases, to design the analytical tools most appropriate to each study area. For these reasons and because of its importance in adequately identifying and measuring local economic and demographic impacts, the research task related to the mixed economy should be stressed.

A third research task treats the expectation that OCS development will create conditions both expanding other unrelated economic developments (through creation of new and expanded infrastructure and markets) and reducing or eliminating some presently existing economic activities (through pre-empting land and port use, generating adverse environmental changes, creating conflicts in natural resource access and use). The output of research conducted under the physical environmental program area will be analyzed in terms of these types of economic impacts and the consequences identified and measured by introduction into the economic and demographic growth models and the mixed economy analysis.

Research Task VI

Title: Regional Economic Growth Models

Objective: To review, modify and update existing statewide and regional economic models to provide regional profiles of changes identifiable from alternative petroleum development scenarios.

Output: Projection of changes in the economic profiles of development regions in terms of employment and income by industrial classification. Projection of changes in income distribution patterns.

Research Task VII

Title: Local Economy - the Economics of the Mixed Economy

Objective: To identify and project current and future economic evolution within mixed market and subsistence economies of OCS impacted areas and localities.

Sub-objective: To draw upon research results from environmental and socio-cultural studies to identify the geographical boundaries of local populations sharing common subsistence resource bases and harvesting and trading activities to define local mixed economies to be studied.

Sub-objective: To gather data from existing sources or new surveys and to determine the role of the following elements in the functioning of each of the local mixed economies: monetary employment and income, non-monetary income and subsistence activities, other non-employment sources of income (Native claims and corporation payments, transfer payments, etc.), land and resource base, availability and price of complementary resources, changes in population composition and social cultural implications, land use and ownership implications (local, intra-regional, inter-regional), access to and use of natural resource base, and the role of labor unions, State Department of Labor and other organizations in relation to employment.

Sub-objective: To identify OCS development impacts on the above elements within each local area caused by changes identified by the economic and demographic regional growth models and the research under the physical environmental studies.

Output: Identification of OCS development impacts on the local mixed economies.

Research Task VIII

- Title:* External Economic Effects of OCS Development
- Objective:* To identify and measure the external costs and benefits not directly accounted for under Research Tasks VI and VII.
- Sub-objective:* Measurement of OCS-induced change to the commercial fisheries and subsistence harvests as affected by offshore and onshore facilities siting; impact upon resource base, port facilities, and biological production functions; and the value of ultimate harvests.
- Sub-objective:* Measurements of OCS-induced changes of population growth, changes in local industrial structure, and physical infrastructure, in terms of changes in real prices of goods and services locally available because of scale economies in transportation distribution or other factors.
- Output:* Inventory and measurement of the major external costs and benefits caused by OCS development.

Research Task IX

- Title:* Demographic Models
- Objective:* To review, modify, and update existing demographic models to provide regional and community demographic profiles. To provide each development region with an updated replication of the 1970 census.
- Sub-objective:* Determine residence patterns such as family groups, the number of adults living with family groups as

opposed to the number of children, the age range of the children within the community, the number of households where both parents work, and the number of one parent households.

Sub-objective: Determine resident-use density and recreation, service, and commercial use densities.

Sub-objective: Identify the education attainment of the population. This will include such parameters as: median educational attainment of various age groups, college education, percent of population with a baccalaureate degree or advanced degrees.

Sub-objective: Identify the stable family organization marital unrest index. Determine the ratio of divorced and separated persons to now married persons. Determine percent of female household heads with their own children. Determine the percent of women with three or more children. Establish the general fertility rate of birth per thousand females in the age intervals 15 to 44. Determine the replacement formula or gross reproduction rate.

Sub-objective: Identify the morbidity index; percent of population reporting a chronic acute health problem.

Sub-objective: Identify the non-migrant index; percent of population over 5 years of age living in the same house for 5 or more years. Interstate migrants - percent of population born outside of Alaska. Percent of population with one or both of the parents foreign born, or born of Native parents.

Sub-objective: Determine the descriptive indicators. These include racial composition; i.e., Alaska Natives and

other minority races and the proportion of the population that is Alaskan Native or other minority race; percent of the population 65 years of age or older; median age of household head; average household size; a mean number of person(s) in the household; dependency rate; number of persons under 18 years of age or over 64 years of age per thousand persons; age distribution of female population and the age distribution of the married female population.

Sub-objective: Identify OCS-development impacts on the above elements within each local area caused by changes identified by the demographic regional growth models.

Output: Projection of impacts to the population of the development regions in terms of the above demographic indicators.

LEASE SALE AREA DEVELOPMENT SCENARIOS

The second research element of the program is the formulation of coherent development scenarios emanating from each of the proposed lease sale areas. These scenarios are essentially alternative courses of events reflecting the major factors affecting changes in economic and social models. They focus on the Department of the Interior decisions regarding when and where to lease; the industry decisions on staging, timing, and magnitude of development; and the state and local government and Native corporation decisions on the land use. The key actors (Federal, state, and local government, Native corporations, and industry) are considering many alternative scenarios and associated patterns of development. The lease-sale-areas-development scenarios will have to be developed through interaction of all parties and interests. The design

of scenarios to be studied in depth lies ultimately with the relevant decision makers, not the researchers, who will only provide guidance and assistance in constructing them.

The scenarios will specify the critical choices that can be made concerning the timing and location of OCS development at its various stages -- leasing, exploration, field development, and production. Four alternative scenarios will need to be constructed for each area: (1) no development, (2) low development, (3) medium development, and (4) high development.

Research Task X

Title: Lease-Sale-Area-Development Scenarios

Objective: To develop four alternative scenarios (no, low, medium, and high development) for each of the proposed lease sale areas.

Output: Quantification of petroleum and related facilities requirements, space (ocean and onshore) requirements, quantities and nature of temporary (accidental spills) and chronic discharges, and direct employment by types of occupations.

IMPACT IDENTIFICATION

The third research element deals with the integration of results, the identification of impacts and the preparation of those results and impacts into a format for use by political and management institutions. A review and assessment of the ability of existing institutions to respond adequately and efficiently to the predicted changes will be undertaken. These institutions are taken here to represent the reality of all the political systems involved in the development process, both in its promotion and its modification or reversal. In particular, they

include existing and emerging Native and regional governmental, quasi-governmental and private organizations involved in managing social and economic change and providing political representation and means of making known the views and desires of the citizens of Alaska. The tasks of impact- and consequences-identification through application of the lease-sale-area-development scenarios to the regional and local sub-systems analysis and models, and the transfer of information regarding impacts so identified will be the responsibility of the Study Management Group (see Program Management section).

Research Task XI

Title: OCS Development Social-Economic Impact and Consequences Identification

Objective: Through application of the lease sale area development scenarios to the analytical models, to identify the social and economic impacts resulting from OCS-petroleum development.

Sub-objective: To translate the findings of the research programs into terms and format that will make them understandable and usable to regional and local, as well as to Federal and state, decision-makers.

Output: Identification of impacts of OCS-petroleum development and communication of findings to management institutions.

Research Task XII

Title: Political and Management Institutions -- Ability to Assess and Alter Impacts

Objective: To inventory and analyze function of the existing political and managerial institutions, to indicate

emerging institutions, and to evaluate the institutions' abilities to respond adequately and efficiently in mitigating impacts from OCS-petroleum development.

Output: Identification of political and managerial institutions and assessment of their abilities to respond to OCS-development impacts.

COMPARATIVE STUDIES

Within the past decade, there have been major new discoveries of off-shore oil and gas reserves in the North Sea. After a period of intense, rapid development, these reserves are now being brought into production by a number of North Sea nations, most relevantly, Great Britain, Norway, and Holland. In many ways, including climate, ruralism, economy, and frontier status, the North Sea region resembles in varying degrees the development circumstances of Alaska's OCS regions. Also, since the affected North Sea countries have adopted many different strategies to manage onshore aspects of resource development, a comparative study of their experiences would provide a fruitful point of departure for Alaskan OCS planning.

The past experience of the Upper Cook Inlet offshore and onshore oil and gas development in relation to the City of Kenai, the development region and Anchorage, and the present experience of the Alaska pipeline construction would also provide important comparative case-study subjects. These comparisons may not only help define the scope of potential impacts and the processes of impact but may also provide examples of policy alternatives.

The fourth research element focuses on the varying past approaches to regional and local planning for and management of onshore effects. Strategies for distribution of control of industrial and population growth, land use planning and provision of public facilities and services will be reviewed. Particular attention will be given to social planning

for community growth and adjustment. The study will identify needs and problems that may have arisen with regard to such social concerns as family welfare, education, health, housing, social services, recreation, social adjustment, changing occupational and income patterns, social mobility, migration and large transient populations in a context of rapid community change. The adequacy of different planning and service techniques for providing for these social needs will also be evaluated.

Research Task XIII

Title: Comparative Case Studies

Objective: To compile information on and methods of mitigating the social and economic impacts which have resulted from past petroleum development and to relate these experiences to the sub-systems analysis and model level of this program.

Output: Information on past impacts created by petroleum development and its relevance to potential OCS developments.

PROGRAM MANAGEMENT

The research program described in this study plan will draw upon varied research and planning resources available in Federal, state, and local governmental agencies; universities; Native organizations; private consultant firms; independent research organizations and industry. Although general program management will be the responsibility of the Bureau of Land Management, some of the management functions may be contracted out. This contracted program management should be consolidated into one organization, preferably based in Alaska, in order to guarantee continuing relevant program design, participation by people to be impacted, project integration and effective dissemination of research findings.

STUDY MANAGEMENT GROUP

The main component of program management is a Study Management Group or core group. For a program this complex, this core group should be composed of from four to six individuals. These individuals should be experienced in Alaska in the social science discipline and be experienced in interdisciplinary oriented research. These individuals must devote a significant amount of time (ideally 50 percent or more) to this program's management function. One of these individuals must be capable of dynamic leadership and be able to provide management for this complex program. The functions of the Study Management Group should include: recommend framework and components for research proposals; review research proposals and make recommendations on awarding contracts; develop detailed research plans based upon the program design and proposals, recommend priorities by regions and areas; conduct overview of ongoing research; integrate separate research results during and after completion; assume data management; disseminate research findings during and upon completion of research and liaison with studies and research under other programs.

The core group must establish a continuing relationship with user organizations. This can be accomplished by exchanging scientists and organizational working personnel for short periods of time so that all parties become familiar with the respective groups' practical needs and problems pertaining to the utilization of research results.

ADVISORY GROUP

Review of the overall program direction and applicability to real problems should be carried out in consultation with an external advisory group. The group should be composed of individuals knowledgeable in the policies, conflicts and problems of the State, the nation, and the sub-regions of Alaska hosting proposed OCS development projects. To assure maximum interchange between the principal interest groups at all levels and to serve the Study Management Group's need to be fully informed, the appointees should include representatives from agencies and groups engaged in the development of criteria for impact studies and statements as well as groups engaged in broader planning activities at local, rural, regional and statewide levels.

As research is initiated in the various regions, as outlined in this program, regional and local advisory groups should be established to foster local input into the research effort. The members of these more specialized advisory groups should include representatives from existing and emerging governmental, corporate and organizational units within each region.

PROJECT DETERMINATION

Guidance for this program should be sought from the general direction of this document and recommendations of the advisory groups. Project solicitation should be recommended by the Study Management Group. This core group must define carefully the problem to be addressed, the

specific objectives, reporting requirements, and the format of the expected outcome. Proposals solicited should include the following major components:

- Background: A review of the significant previous work in the problem area.
- Data Collection: A specification of what information is to be collected.
- Design: A complete description of the methods or experimental design to be used. This section includes the extent of on-site research, a discussion of methods of analysis including explanation and justification of logical and statistical summaries, degree of local involvement, and inferences to be made from the data.

Proposals should be reviewed by the core group. Recommendation for change, acceptance, or rejection should be made by this group to the Bureau of Land Management. Actual contract negotiation should be the responsibility of the funding agencies and not that of the Study Management Group.

DATA MANAGEMENT

All data used or developed by the various research elements of this program must be readily accessible not only to the researchers involved in the program but also to the Federal, state and local management planners and other interested individuals or groups. A data-management system must be designed to insure that data and data products are responsive to that need. This system must include all aspects of data handling, data exchange and data archiving. It must lay the guidelines for the development of an operational data base which will interface with current and future research programs.

It will be the responsibility of the Study Management Group to start data-management planning early in the implementation of this program. This group must develop a detailed data-management plan. Elements of this plan are management structure, data flow and control, data archives, data standards, and data service.

The Study Management Group will have responsibilities beyond these purely archival functions. To assure fullest availability of research findings to all Alaskans, adequate provision should be made for ongoing information dissemination and feedback systems culturally relevant for Alaska's cultural and language groups for those who have decision-making roles in OCS related developments that might be subsequently impacted.

PROGRAM INTEGRATION

Information being obtained under the U. S. Department of Commerce, National Oceanic and Atmospheric Administration's program on Environmental Assessment of the Alaskan Outer Continental Shelf, is important to the completion of this program. Integration and coordination of these two programs must take place both in the planning stages and in the execution phases.

FOOTNOTES

- 1 A more precise definition in terms of 1970 Census Division consists of Anchorage, Kenai-Cook Inlet, Seward, Kodiak, and Aleutian Islands (excluding Enumeration Districts 01-07 and 35-36) Enumeration Districts 13, 15 and 16 of the Valdez-Chitina-Whittier Census Division, Enumeration Districts 03-04 of the Skagway Yakutat Census Division, and Cordova-McCarthy Division.

- 2 In terms of 1970 Census Division, this includes Aleutian Enumeration Districts 30-36 (the Pribilof Islands), Bristol Bay, Bristol Bay Borough, Bethel, and Kuskokwim.

APPENDIX I

Proposed OCS Planning Schedule

June 1975

APPENDIX II

Comparison of Program Oil and Gas Development
Regions with Other Existing Statistical, Manage-
ment and Regional Units

TABLE I COMPARATIVE BOUNDARIES - DEMOGRAPHIC, ECONOMIC AND PLANNING STATISTICAL UNITS

Proposed Oil and Gas Development Regions & Analytical Areas	1970 U. S. Census Divisions and Enumeration Districts (Approx. Dept. Labor Market Areas)	U of A -Map Economic and Demographic Models Regions	Joint Federal - State Land-Use Planning Committee and Arctic Environmental Information & Data Center Planning Sub-Regions
---	--	---	---

1. <u>SOUTHCENTRAL Anchorage</u>	Anchorage Division	5. Anchorage	
Cook Inlet	Kenai - Cook Inlet Division))
			) 5.2 Cook Inlet (Exclude Matanuska Susitna)
Northeast Gulf	Cordova-McCarthy Valdez-Chitina-Whittier ED 13, 15 and 16 Skagway - Yakutat ED 03, 04)	4. Southcentral (exclude Matanuska Susitna, Add Skagway-Yakutat ED 03, 04))
Kodiak-Shelikof Strait	Kodiak Division Seward Division )		) 5.1 Kodiak - Shelikof
Aleutian Shelf	Aleutian Isls Division Excluding ED 01-07 and 35, 36))
2. <u>SOUTH BERING SEA -BRISTOL BAY</u>	Aleutian Isls ED 01-07 35, 36-Bristol Bay Div. Bristol Bay Borough Div. Bethel Division Kuskokwim Division)	2. Southwest (Subtract Wade Hampton)	) 4.1 Kuskokwim Bay 4.2 Bristol Bay 4.3 Aleutian
Anchorage	Anchorage Division	5. Anchorage	Included 5.2 Cook Inlet

TABLE I COMPARATIVE BOUNDARIES - DEMOGRAPHIC, ECONOMIC AND PLANNING STATISTICAL UNITS (cont.)

Proposed Oil and Gas Development Regions & Analytical Areas	1970 U.S. Census Divisions and Enumeration Districts (Approx. Dept. Labor Market Areas)	U of A - MAP Economic and Demographic Models Regions	Joint Federal - State Land-Use Planning Committee and Arctic Environmental Information & Data Center Planning Sub-Regions
---	---	--	---

3. NORTH BERING SEA - NORTH SLOPE

Norton Sound	Nome Division Wade Hampton Division	) )	2.2 Norton Sound 3.1 Lower Yukon
Chukchi Sea	Kobuk Division	)	2.1 Kotzebue Sound
North Slope	Barrow Division Upper Yukon ED 05	) )	1.1 West Arctic 1.2 Colville 1.3 East Arctic
Fairbanks	Fairbanks Division Southeast Fairbanks Div.	) )	3.5 Tanana
Valdez	Valdez-Chitina-Whittier	)	Included in 5.3 Copper River Gulf of Alaska
Anchorage	Anchorage Division	)	Included in 5.2 Cook Inlet

TABLE 2 COMPARATIVE BOUNDARIES - FISHERIES MANAGEMENT AND RESEARCH UNITS

Proposed Oil & Gas Development Regions & Analytical Areas (a)	ADF&G Management Areas	Commercial Fisheries Entry Commission Administrative Areas	Fisheries Employment & Social Economic Impact Research (NOAA, Sea Grant)
<u>1. SOUTHCENTRAL</u>			
Northeast Gulf	(5. Copper-Bering River (6. Prince William Sound ((Yakutat Combined (with Juneau Area)	(E. Prince William (Sound (D. Yakutat	(2. Prince William Sound ((Yakutat Included in (Southeast Region)
Cook Inlet	8. Cook Inlet	(H. Cook Inlet	(3. Cook Inlet
Kodiak - Shelikof	(7. Resurrection Bay (9. Kodiak	(K. Kodiak	(
Aleutian Shelf	(10. Chignik (11. South Peninsula	(L. Chignik	(4. Southwestern
<u>2. SOUTH BERING SEA - BRISTOL BAY</u>			
	(12. Aleutian Island (	( M. Alaska Peninsula (Aleutian Island (T. Bristol Bay	(5. Bristol Bay
	(13. North Peninsula (14. Bristol Bay (15. Arctic - Yukon (Kuskokwim	(W. Kuskokwim	(6. Arctic-Yukon (Kuskokwim
<u>3. NORTH BERING SEA - NORTH SLOPE</u>			
Norton Sound	(	( Y. Yukon	(
	(	( Z. Norton Sound	(
	(	( V. Port Clarence	(
Chukchi Sea	(	( X. Kotzebue	(
North Slope	(	( U. Northern Alaska	(

(a) Anchorage, Fairbanks and Valdez not covered by any fisheries areas.

TABLE 3 COMPARATIVE BOUNDARIES - NATIVE REGIONAL CORPORATIONS

Proposed Oil & Gas Development Regions & Analytical Areas (a)	Native Regional Corporations
1. <u>SOUTHCENTRAL</u>	
Cook Inlet	Cook Inlet Region, Inc.
Northeast Gulf	Yakutat (Included in Sealaska Corp.) Ahtna, Inc. Chugach Native, Inc. (Excluding Seward portion)
Kodiak-Shelikof Aleutian Shelf	Chugach Native, Inc. (Seward portion only) Koniag, Inc.
2. <u>SOUTH BERING SEA-BRISTOL BAY</u>	
	Aleut Corporation Bristol Bay Native Corporation Calista Corporation (Excluding Lower Yukon Area)
3. <u>NORTH BERING SEA-NORTH SLOPE</u>	
Norton Sound	Calista Corporation (Lower Yukon portion only) Bering Straits Native Corporation
Chukchi Sea	Nana Regional Corporation, Inc.
North Slope	Arctic Slope Regional Corporation

(a) Anchorage, Fairbanks and Valdez considered as being outside Native Corporation's boundaries for purposes of this comparison.

APPENDIX III

Results of the workshop on Social and
Economic Impact Assessment of the Alaska
Outer Continental Shelf Petroleum
Development, September 23-25, 1975, as
modified by the Public Conference of
November 11-13, 1975.

HISTORIC AND ARCHEOLOGICAL
WORKSHOP

September 25, 1975

Anchorage, Alaska

- I. Historic and Archeological Resources I
- II. OCS Office Professional Staffing
- III. Both on and off shore oil related construction activities will already affect and/or destroy cultural resources. Protective measures are required to meet legal mandates of 1906 Antiquities Act, 1966 Historic Preservation Act, 1969 National Environmental Policy Act, 1971 Executive Order 11593 and 1974 Conservation of Historical and Archeological Data Act.

This project will increase the ability of the existing management system to respond to historic and archeological consequence of potential OCS development and suggest improvements for the data management system.

Managers, to meet above requirements, must know what Cultural Resources (historic, architectural, archeological) exist in the region and what the significance of these resources are.

- IV. Objective:

To manage the acquisition and the application of incoming data, the BLM/OCS offices must have an adequate Professional Cultural Resources Staff.

- V. Methodology

Hire a professional staff, at a professional level, historians, archeologists, underwater archeologists, historic architects, cultural anthropologists and other cultural resource managers.

- VI. Product:

A staff that can identify legal requirements, development programs to acquire data, administer contract programs, and insert research results back into the agency OCS planning and management system.

- VII. Priority:

Extremely important

VIII. Estimated costs:

Supervisory Cultural Research Specialist SG-12/1	21,800
Cultural Anthropologist 11/12	18,500
Underwater Archeologist 11/12	18,500
Historian 11/12	18,500
Secretary 5/6	9,500
Clerk Typist 3/4	7,600
Clerk Typist 3/4	<u>7,600</u>
	102,000
10% personnel benefits	10,200
25% cost of living	<u>25,500</u>
	137,700
25% related costs	<u>34,500</u>
	\$172,200

- I. Historic and Archeological Resources II
- II. Assessment/synthesis/summary of existing information
- III. Required to meet legal mandates of 1906 Antiquities Act, 1966 Historic Preservation Act, 1969 National Environmental Policy Act, 1971 Executive Order 11593 and 1974 Conservation of Historical and Archeological Data Act.

Managers, to meet the above requirements, must know what cultural resources (historic, architectural, archeological) exist in the region and what the significance of these resources are. This project will provide information to aid in the prediction of developmental effects. This should also be incorporated into the Statewide data management system.

IV. Objective:

The object of this project is to summarize and synthesize all existing Archeological and Historical Data.

V. Methodology:

- A. Review all existing literature, publications, reports, etc.
- B. Contact and review survey data and records of all professionals/institutions/agencies working (having worked) in the region.
- C. Contact and develop Native cultural history.
- D. Develop historic and prehistoric themes
 - 1. Time-cultural sequences
 - 2. Significance levels
- E.
 - 1. Develop a services of baseline historical narratives of the various regions likely to be impacted. These baseline narratives would utilize and analyze existing data as well as original sources.
 - 2. These narratives would, among other things, identify existing historical sites; make recommendations as to their disposition; and be plugged into the economic models in order to give time depth.
 - 3. These narratives, together with the economic models, would help policy makers to meet impact situations.
- F. Summarize existing knowledge.
 - 1. List and evaluate historic and prehistoric resources known

to date and recommend those that warrant to be nominated to National Register of Historic Places.

2. Synthesize cultural sequences and processes.

G. Define gaps in knowledge and outline program of research with rough cost estimates.

H. All sites and information will be filed and integrated with the Alaska State Heritage Resource Survey Index.

VI. Products:

Report on Series of Reports

Shipwreck study - offshore, coastal and riverine zones.
Historic Site Study
Late Prehistoric ethnographic study
Demographic survey
Regional Historic narratives
Social-political-economic development
Coastal Geomorphological Studies
Prehistoric Site Survey
Series of research proposals to fill in gaps in existing knowledge

VII. Priority:

Extremely important - must be done immediately to provide base for all other research/study activities. Should begin this fiscal year (1976)

VII. Estimated Costs:

\$40,000 to be completed by 1 June 1976

one archeologist
one historian

3 mos/regional ea x 2

9 regions

= 54 manmonths @ \$2,000
= \$108,000

Overhead and associated costs x 2

= \$216,000

- I. Archeological and Historic Resources III
- II. Cultural Baseline Survey and National Register Evaluation
- III. Required to meet legal mandates of 1906 Antiquities Act, 1966 Historic Preservation Act, 1969 National Environmental Policy Act, 1971 Executive Order 11593 and 1974 Conservation of Historical and Archeological Data Act.

Managers, to meet above requirements, must know what cultural resources (historic, architectural, archeological) exist in the region and what the significance of these resources are:

Historical and archeological programs are conducted by the state historian and archeologist within the Alaska Division of Natural Resources. Various Native corporations are in the process of developing historical and archeological programs, and all 12 regional corporations are assisted by the U. S. Park Service under Article 14 h of the Alaska Native Claims Settlement Act of 1971 in identifying, locating and selecting historical, cultural and archeological sites. Furthermore, individual researchers within the State University and Alaska Methodist University are conducting historical and archeological research.

IV. Objective:

To locate and determine significance of all historic and prehistoric resources.

V. Methodology:

Of necessity this project must be a multi-phase study, beginning with existing data, through a predictive model building, a total coverage (in stages) beginning with development sites.

- A. Utilize cultural resource assessment for a frame to build research design.
- B. Conduct a predictive model study to infer high-productivity zones.
- C. Conduct systematic survey of each development area to locate all cultural resources that will be affected by development (for planning process).
- D. Develop greater regional survey that, in addition to development related surveys, will provide a complete inventory of all cultural resources in the region.
- E. Recommend/nominate sites/objects/districts that warrant to the National Register of Historic Places.
- F. Field testing and excavation generates greater responsibilities for designated repositories. This represents a long term (unending) commitment for what are already overtaxed institutions. The

repositories must receive either direct funding to enable them to cope with increased demands, or a portion of project costs. Funding should be long range, requests for proposals should be generated to recommend methods and levels of relief.

VI. Products:

Baseline historical narratives of the regions.
Base Map (classified info?) of the regions.
National Register Nominations.
Professional Publications.
Cultural Resource Management Plan.
New sites and artifacts.

VII. Priority:

Extremely important. Studies should start this fiscal year.

VIII. Estimated costs:

9 areas

1 archeologist and 1 historian for 1 year to do all this?

= \$30,000/year x 9
= \$270,000 x 2
= \$540,000

underwater survey (magnetometer)
5 boat years @ \$250,000 = \$1,250,000

= \$1,800,000 total

I. Historic and Archeological Resources IV

II. Resource Evaluation

III. Background:

This project is required to adequately identify sites or locales where further research will produce significant information regarding the history of the state.

IV. Objective:

To outline specific studies for future (1 or 2 years) work.

V. Methodology:

Using the data generated in projects 1 and 2 (literature search and survey), areas, specific sites or particular kinds of projects, that show significant promise will be identified.

VI. Product:

Short term research proposals.

VII. Priority:

In some areas, it may be extremely important.

- I. Historic and Archeological Resources V
- II. Specific Studies (such projects can only be defined after assessment and survey phases have been completed)
- III. Required to meet legal mandates of 1906 Antiquities Act, 1966 Historic Preservation Act, 1969 National Environmental Policy Act, 1971 Executive Order 11592 and 1974 Conservation of Historical and Archeological Data Act.

Managers, to meet above requirements, must know what cultural resources (historic, architectural, archeological) exist in the region and what the significance of these resources are.

IV. Objective:

To meet additional legal mandates, to provide additional and/or specific needed data which will be required for management or as a direct result of specific development.

V. Methodology:

To be determined as result of assessment and survey phases.

VI. Products:

To be determined by (V) above.

VII. See above

VIII. See above.

ECONOMIC WORKSHOP

September 25, 1975

Anchorage, Alaska

I. Economics I

II. Strategies for Cooperative Development of Petroleum Resources in Alaska

III. Background:

Present petroleum resource development patterns in Alaska are essentially random, in a spatial sense, leading to serious land use, economic, environmental, and cultural problems. In addition, competition between major resource owners (i.e., federal and state government, Native corporation) leads to further costly and time consuming delays in some instances. It is in the interest of all parties to look for common bases of interest upon which cooperative resource development strategies could be developed.

IV. Objectives:

- A. To identify necessary and sufficient strategies, economic and non-economic, which must be met if cooperative resource development is to be possible between the federal and state governments and the Natives of Alaska.
- B. To identify and evaluate consequences of Alaskan OCS development on the economic potential of State and Native petroleum resources; i.e., the relationship of OCS activity to the supply and demand functions for State and Native petroleum resources, and other federal petroleum resources in Alaska.

V. Methodology:

- A. Develop thorough, up to date inventory of present ownership of known and potential petroleum resources, including location and potential magnitude of resources.
- B. Develop analyses of basic grounds for economic cooperation under general conditions, and apply them to the specific question of petroleum resources in Alaska.
- C. Analysis should include the development of one or more formal quantitative economic models to describe the interrelationships between the various resource owners and the listing of economic variables under the "general economic analysis" project.

VI. Products:

Answers to questions found in II and IV above.

- I. Economics II
- II. Distributional and Production Consequences of Price Effects of OCS Developments
- III. Economic expansion (development) which entails significant changes in the supply and demand conditions in many markets can be expected to have consequences for absolute and relative prices (wages, interest rates, etc.) which are both short-run and long-run and which have consequences for (1) the mix of goods and services produced in the area, and (2) the economic well-being of various members of the society.
- IV. Objective:

Understanding of the price (wage, interest rate, etc.) consequences of OCS development is necessary to facilitate planning to achieve specific economic efficiency and equity objectives.
- V. Implementation by utilization of quantitative micro and macro economic models. Explicit recognition must be given all scenarios and time, phase of development, spatial incidence, and other variables.
- VI. Identify prices (wages, interest rates, etc.) which are particularly sensitive to "rapid" economic change or "radical" economic structural changes. Differentiate between short-run and long-run effects. Identify industries and classes of individuals which are most affected. Identify likely responses to these price changes (i.e., bankruptcy, relocation, product quality changes, input substitution, scale-consequences, out-migration, altered standard of living, increased consumer choice, etc.).
- VII. A. Identify groups most adversely impacted in long-run.
B. Identify other production and distribution consequences.

I. Economics IV

II. Economics of Mixed Economy

III. Background:

- A. Majority OCS impacted areas are predominantly Native Alaskan communities which are predominantly subsistence resource economies.
- B. Past research has been ineffective in outlining baselines and in evaluating major impacts of OCS magnitude. Existing study programs are highly localized, dependent on communications between non-nature researchers and Native communities which does not exist. Which in effect retards proper analysis.

IV. Objective:

Identify and project current and future economist lifestyle within mixed economy areas.

V. A. Components

- 1. Employment and income
- 2. Physical (non-monetary)
- 3. Native claim:
 - a. Regional Development Corporation, 7(e) ANCSA
 - b. Village Development Corporation
 - c. Section 2-C ANCSA
- 4. Transfer
- 5. Resource Base
- 6. Availability and price of complimentary reports
- 7. Changes in population composition and social cultural implications
- 8. Land use implications (local, intra-regional, inter-regional)
 - a. BLM Corridors
 - b. Tideland estuary
 - c. Water quality
 - d. Coastal Zone Management
 - e. Intra-Village development
 - f. Energy

B. Methodology

- 1. BLM-OCS convening a pre-contractual workshop to identify components and methods with representatives of mixed economies
- 2. In order to obtain most accurate data and validate collected materials, Native regional and local researchers must be incorporated into BLM-OCS research design
- 3. Incorporation of economic data into traditional lifestyle

VI. Products

A. Baseline study of current mixed economy conditions

B. Projected conditions under all scenarios of OCS

C. Possible mitigating measures

VII. Priority:

Extremely important

VIII. Estimated Cost:

\$100,000 - 300,000.

- I. Economics V
- II. External Economic Effects
- III. OCS development will induce changes in population growth, changes in industrial structure of localities, regions, and the State, and changes in the technological support base, which will have external costs and benefits not directly accounted for in the general economic framework. Some of these, such as the impact on the resource base of commercial fisheries as it is affected by both offshore and onshore facilities siting, may be quantifiable through biological production functions and the value of ultimate harvests degradation or enhancement. Others, such as the value of non-priced recreational opportunities which are altered due to changes in crowding or access, may not be quantifiable, but ought to be identified as real sources of gain or loss to localities in particular. Still other examples of external benefits and costs may be quantifiable, but of uncertain source, such as reduced real prices of goods and services locally available because of scale economies in transportation and distribution to larger populations.

External economic effects ought to be identified as external to the locality, but internal to the region, external to the region, but internal to the State, and those external to the State, but internal to the United States as a whole.

I Economics VI

II. Demographic Changes and Economic, Social, and Environmental Consequences

III. Background:

OCS development in Alaska will bring about major changes in total population and the composition of population, locally, regionally, and at the statewide level. Various consequences related to these changes should be explored.

IV. Objective:

The study should identify and explore the major implications of population changes resulting from Alaskan OCS development. Both total population and the composition, racially, ethnically, and in terms of age-sex, should be treated.

Economic consequences to investigate include the implications of population change or the demand for social overhead capital and social services, and other demands in the private and public sectors.

Environmental consequences analyzed should include the impact on air, water and sound quality, as well as the broader consequences relative to demands on surrounding lands and resources, such as increased pressures on fish and game resources, other recreation resources, etc.

Social consequences should include impacts on family structure, changes in other basic social units, inter-racial problems, inter-cultural conflicts, etc., as well as impacts on various social indications such as crime rates, alcoholism, divorce rates. Changes in political attitudes, structures, etc., also need to be incorporated.

V. Methodology

- A. Baseline inventory of census data and identification of information gaps to prepare a population profile; age, sex, race and household information.
- B. Rate of change: birth, death, and mother/child ratios developed for communities of different sizes and cultural backgrounds.
- C. Migration: immigration and emmigration of the community, length of tenure.
- D. Level of education.
- E. The baseline inventory should be prepared for each population by phase of OCS development, special incidence and time period.

VI. Products

- A. A description of the labor force and the availability of skilled and unskilled surplus labor.
- B. The rate of entrance of people into the labor force; locally, regionally, state, immigration.
- C. The impact of the population profile of the study area.
- D. Identification of social overhead capital and social service needs.
- E. The per capita cost of social services over time.
- F. Identify levels of demand for private and public services.

NATURAL ENVIRONMENT AND INFRASTRUCTURE
WORKSHOP

September 25, 1975

Anchorage, Alaska

- I. Natural Environment, Land and Ocean Space Use and Infrastructure
- II. Regional Suitability Model for Gauging Natural Environment, Land and Ocean Space Use and Infrastructure Impacts from Oil and Natural Gas Lease Sales, Exploration, Development, and Production and Abandonment

III. Objective:

- A. To develop a framework of analysis for assessing socio-economic impacts to the natural environment, land and ocean space use and infrastructure of outer continental shelf petroleum development in Alaska.
- B. To suggest research which evolves from the framework developed in objective "A" above.

The task areas given in Section V will provide both a framework for analysis and broad suggestions of studies which, when complete, will aid public and private decision makers in policy determinations regarding resource development in the OCS areas of Alaska.

IV. Background:

Process - The tasks in Section V are designed to implement a proposed regional suitability model. In general terms the model was built with the following step-by-step procedure which might be utilized in carrying out the itemized tasks.

- A. Examine pertinent case studies
- B. Develop generic activities from OCS development scenarios
- C. Generate lists of potential effects from those activities which:
 - 1. generate need for specific inventory data
 - 2. suggest alternatives and/or mitigation measures

Key elements in developing the regional suitability model were felt to be:

- A. Natural Environment
 - 1. off shore and onshore critical areas/processes
 - 2. other natural constraints, e.g., steep slope
- B. Social Environment
 - 1. institutional constraints
 - 2. regional social and economic costs and benefits.

Phases and intensities - All impacts should be looked at within the following developmental phases: pre-sale and post-sale exploration, development and production and level of OCS development, high, medium and low.

V. Tasks

A. Descriptive Tasks

1. Conduct a broad based natural environment inventory on the following aspects:
 - a. large scale assessment to identify areas, sites and resources; concentrate intensive inventory efforts on those identified areas, sites and resources
 - b. natural environments capability for absorbing impact from man-induced changes, especially
 - i) natural constraints
 - ii) identification of critical areas
2. Inventory of existing upland land use and infrastructure including residential, commercial, industrial/utility, transportation, communications, subsistence, recreation paths/open space, other public uses, and agriculture.
3. Inventory of existing ocean space use including commercial fishing, recreation and commercial shipping.
4. Identification of existing and unused institutional framework at the federal, state, and local level pertaining to regulation and/or control of land and ocean space use and infrastructure.
5. Identify time schedules, as well as space and material requirements for oil and natural gas scenarios for low, medium, and high levels of development, as well as the different phases of development including pre-sale and post-sale exploration, development, production and abandonment. Note that key variables that have to be addressed in these scenarios will come from information supplied by industry, federal, and state government.

These variables are:

- a. amount of potential reserves
- b. timing and magnitude of development effort
- c. land use, natural environment and infrastructure
- d. probable production facilities

Having completed the above listed tasks, the study can move on to evaluation.

B. Evaluation Tasks

1. Evaluation of scenario impacts on natural environment which should include but not be limited to:
 - a. impact on beaches and associated biota
 - b. impact on embayments, channels, water courses, and associated biota
 - c. impact on wetlands
 - d. impact on uplands
 - e. impact on unique environments
 - f. impact on air and water quality
 - g. noise impact
 - h. visual impact

2. Evaluation of scenario impacts on land and ocean space use and infrastructure including:
 - a. primary and secondary impacts of OCS related land use activities including, but not limited to: oil service, industry base, oil storage, gas storage, processing energy based industry, platform construction, materials supply, transportation, oil and gas transshipment
 - b. primary and secondary impacts of OCS related activities to ocean space use including, but not limited to: survey and supply vessels, exploratory and production platforms, submarine pipelines and pipelaying; and oil and gas marine transport
 - c. primary and secondary impacts from OCS related infrastructure activities including, but not limited to: warehousing, workshops, pipe and material storage, storage tanks and terminals, port facilities, air and heliports, overland pipelines and highways
 - d. secondary induced industrialization in the coastal zone from such activities as LNG plants, refineries, petrochemical industries, and steel and concrete fabrication plants
 - e. secondary and tertiary growth impacts on:
 - i) renewable resource availability in urban and rural areas, e.g., pressures on wildlife resources from an increasing highly mobile population
 - ii) perceived environmental quality (cherished lifestyles) in urban and rural areas, i.e., less unused space for unrestricted living

3. Evaluation of scenario impacts on the institutional framework's ability to accommodate land and ocean space use, infrastructure and natural environmental change. This should include, federal, state, regional and local agencies, as well as citizen groups. It should include examination of federal and state coastal zone planning effects as well as local land use and zoning statutes. The emphasis should be placed on the collective abilities of these agencies to cope with potential impacts given a high rate of OCS development.

This brings us to the synthesis and integration phrase.

C. Synthesis/Integration Tasks

1. Design a mechanism for adequate citizen participation throughout the study to provide adequate information dissemination.
2. Development of performance standards to be utilized after regional and local site suitability evaluation. These can be used to reduce impact from OCS activities and facilities.
3. Design a decision-making model which:
 - a. identifies trade offs and provides a method for ranking alternatives when considering OCS facility development
 - b. promotes coordination and integration of all levels of decision-making
4. Analysis and development of enforcement measures and procedures which can be used to ensure compliance with environmental standards and criteria to minimize natural environmental, land use and infrastructure impacts.

VI. Background:

That the following should precede other Alaska OCS studies and development.

That OCS studies include development of a macro-model (macro-studies) of the world-wide energy development picture (and Alaska OCS development relationship to it) to include:

- A. Effects of Alaska OCS development upon U. S. and world economics (to include effects of U. S. balance of payments, availability of financial resources, natural resources, and sources of manufactured goods required for Alaska OCS development)
- B. Effects on U. S. long-term energy reserves (to include relative

amounts of energy resource used up in the process of slow, medium and accelerated OCS development - i.e., energy resource reserves used up in order to develop OCS energy at an accelerated rate versus a slower rate.

- C. Comparison and evaluation of alternatives in
 - 1. timing
 - 2. rate of development
 - 3. degree of development
 - 4. types of energy development

- D. Effects on world resource base and availability of energy to the U. S. in the long-term.

LIFESTYLES WORKSHOP

September 25, 1975

Anchorage, Alaska

as modified by the Public Conference

November 11 - 13, 1975.

(modifications are presented in Italics)

- I. Lifestyles
- II. Social-Cultural Effects of OCS Development in Alaska
- III. Background:

It is critically important to analyze and define the probable effects on change within the region under development on the social, cultural, political environments and the economics of income distribution. Prior impact statements have emphasized physical environmental factors. There is a need for a more intensive analysis of OCS development on people and their way of life, and for consideration of impact as defined by the local community. The following are potential information sources (not meant to be an exhaustive list):

- A. Oil companies
- B. Federal sources
- C. Pipeline-related information
- D. Union sources
- E. Conservation foundations
- F. Native groups
- G. Ethnographic studies
- H. Alaskan impact studies, i.e., Kenai, Valdez
- I. OCS studies, i.e., Norwegian, Scotland
- J. Relevant literature within sociological, economic, demographic anthropological disciplines
- K. See Appendix I for examples mentioned in the workshop.

IV. Objective:

To assess the existing cultural, social, and political structures within the community of the affected regions and the potential changes in those communities as a result of immigration and OCS hydrocarbon activities, and to integrate community findings into a cohesive regional study. This information and analysis would be designed to support decision-making by the local communities, the Native regional corporations, state and federal governments, and private individuals and organizations, for the purpose of helping them cope with change.

V. Methodology: Components of the project

- A. Analysis of previous research and relevant available information especially from the North Sea, Kenai and Fairbanks experiences. See Appendix II and IV.
- B. Study of the communities to be impacted, including the assembly

of baseline data on Native values, lifestyles, expectations, subsistence living patterns, kinship patterns, patterns of justice and the resolution of disputes, etc. See Appendix IX.

C. Analyses of potential immigrants after reviewing material from number A above. See Appendix II and VII.

D. Analyses of interaction processes that are likely to occur, taking into account analyses from A, B, and C above. See Appendix III, V, VI, VIII, and X.

VI. Product:

The project will provide basic information and resulting opinions for use by decision-makers to accommodate change and ameliorate some of the dysfunctional effects of change as it impacts the region under development. An assessment of the ability of the impacted units to deal with the impact of change will be made. When required, recommendations will be made as to needed federal, state, or local aid in assisting the region and its population in the process of change.

VII. Priority:

The overall project has been assigned priority A for reasons stated in III above. Subdivisions of the project should be assigned priorities at a later time, determined by the region under development and the stage of development of the region.

VIII. Estimated Cost:

Conservative estimate - \$4,000,000.

APPENDIX I

Cursory Inventory of Existing Research

1. MSNW Study - Northwest and Gulf (Yakutat, Cordova, Seward), use of an economic model, very general, so sociological input.
2. Valdez Study - interviews of old residents and new arrivals, concern for community identity, change in individuals and community patterns, processes of integration, the model used needs to be tested in other areas, not a regional study, Valdez must be considered a rather unique community, few Natives, quite a bit of out-migration, some signs of unexpected positive effects upon the family.
3. Resource Planning Associates - population and employment estimates for 10 regions, not much social data.
4. ISEGR Study - use of economic model, regional and statewide population models, wages and salaries, employment patterns, map program, energy development models, not much on social or cultural considerations.
5. ISEGR Study - related to above, Bristol Bay Region, 1973 - 74, economic and social indications, broad development models, an ongoing study.
6. Yakutat Study - de Laguna, Under Mt. St. Elias, culture and culture history stops at 1950.
7. Earthquake Study
8. Rowan Group Studies - Yakutat, contracted by the city council, another study of Seward.
9. Tryck, Wyman & Hayes - land use study of Yakutat.
10. MSNW Study - now in process, applies Kenai experience to three other communities.
11. AK Consultants - Yakutat, opinion poll, what elements of culture do people want to preserve, especially employment and ownership patterns.
12. Jack Peterson Alcoholism Study - Barrow, Valdez, Old Harbor, Anchorage, etc., income, population, followups.
13. Tom McClure and Ed Helwerick - alcoholism and high school students.
14. Child Abuse Study - for BLM-OCS, Anchorage, relation to pipeline work, an inventory of existing data.

15. Criminal Justice Agency - study of crimes related to pipeline work, Juneau, increase in rates, rise in population.
16. A wealth of data is found in Juneau, but not collated, compiled, Division of Family and Children Services.
17. NAS Study - recreational impact, OCS and pipeline related.
18. Forest Service Study - land use in two forest areas; impact of pipeline.
19. Impact Information Center Reporting
20. Coastal area studies
21. AFN - health data available
22. Nancy Davis Study - Old Harbor
23. Van Stone Study - Pt. Hope
24. Burgess Study - St. Lawrence people
25. IBP - Wainwright
26. Rosita Whorl Study
27. Larry Johnson Study - subsistence use of water resources, Barrow.
28. Dick Nelson Study - hunters of northern ice.
29. Michael Novak - Nunavak Islands.
30. Llewellyn Johnson - group process game for establishing community priorities, lifestyles, trade-offs between subsistence and other lifestyles.
31. University of Alaska bibliography on research going on in Alaska.
32. OCS research for areas other than Alaska.

APPENDIX II

This statement represents an overall assessment of the need for information on potential immigrants. Numerous specific studies are subsumed under this general heading.

Characteristics of potential immigrants:

- A. Those that will influence social service demands.
 - 1. Using such variables as:
 - a. expectations of social services
 - b. age
 - c. family status
 - migration pattern
 - d. income
 - e. numbers
 - f. permanency of residence
 - g. recreation demands
 - h. past use of social services
- B. Those characteristics which will influence cross-cultural impactation.
 - 1. Variables:
 - a. past exposure to other cultures
 - b. racial attitudes
 - c. income
 - d. education
 - e. sex ratio changes
 - f. reasons for local contact, e.g., school age children
 - g. recreation orientation and environmental ethic
 - h. rural-urban background
 - i. self-image

(NOTE: this information must be integrated with comparable information for local populations).

Location of research would include the following:

- A. Pipeline
 - 1. Studies of a comparative nature to assess the specific Alaskan experience.
 - 2. Studies to assess transfer of personnel and skills from pipeline to OCS.

B. Point of origin studies

Assessing characteristics of potential immigrants via existing studies and survey data.

C. Comparative studies

1. Other OCS development

- a. particular emphasis on Kenai
- b. North Sea, Gulf of Mexico, etc.

2. Valdez and other Alaskan communities which have been impacted.

D. Manpower needs, direct

1. Oil company information

- a. direct engineering studies
- b. through study of other OCS projects

2. Union

3. State and federal statistics

4. Study of formal and informal educational requirements of various skills.

E. Manpower needs, indirect.

This involves assessment of the characteristics of those individuals who will fill the positions vacated by local residents filling OCS jobs.

1. State and federal statistics relevant to pipeline impact

2. Local impact offices.

F. Organizational responsibilities - this includes public vs. private provisions of social services such as housing, police, fire, health and impact grants.

- Past responses of pipeline related groups

- Other OCS situations specifically Norway and Scotland.

Methodological Framework:

A. Baseline/inventory

1. aggregation of existing data
2. survey interviews
3. demographic modelling analysis - census materials
4. organization study

B. Effects

1. comparative
2. pre-during-post
measured by: raw data, reanalysis, bibliographic content
analysis, aggregate data, survey data
3. retrospective

C. Solutions

1. comparative - historical
2. naturalistic experiments
3. programmed experiments

Information Sources:

1. Oil Companies, Federal, Unions, Conservation Foundation,
Environmental Groups
2. Alaska: Kenia, Valdez
3. Norwegian Studies, Scotland Studies
4. Impact Information Center
5. OCS study R.P.A.
6. Siever - immigration
7. Rao - Alaskan migration studies
8. State statistics
9. Labor Dept., Alyeska
10. Gooding - characteristics of Natives on pipeline.

APPENDIX III

- I. Lifestyle
- II. Impact of Labor Unions as Labor Brokers in Small, Rural, Communities Affected by OCS Activities

III. Background:

In rural Alaskan villages, labor is organized informally or formally into fast groups or which are local in nature and function relatively independently. Energy resource development projects rely upon unions as labor brokers. As unions will be introduced as a new institution in villages in which OCS developments occur, there is a need to understand union structure and how unions will affect the experience of persons living in the affected villages prior to OCS developments.

IV. Objective:

- A. To identify and describe the formal and informal networks and organization of labor unions at both the local and national level.
- B. To assess the extent of membership or experience with labor unions of persons residing in coastal Alaskan villages.
- C. To assess the potential role of unions in these villages.
- D. To assess the potential desired or actual interaction of villagers in unions during OCS development.
- E. To project possible cultural impacts upon the coastal villages as a result of interactions with labor unions.

V. Methodology:

- A. The research will be carried out both in local communities and with union locals outside of the communities.
- B. A review of literature available on union organization and data available from Alaska State Department of Labor, and other sources on rural participation in construction industry.
- C. Provide baseline data on coastal villages including the following:
 - 1. what is the extent of membership in labor unions?
 - 2. what is the extent of understanding of how labor unions function?
 - 3. how many people have skills which would make them employable on OCS oil development projects if they could be placed on jobs?
 - 4. how many people have actually worked on energy resource development projects, and on OCS projects specifically?
 - 5. how many people would like to work at jobs related to OCS development near their community?

6. what are the current patterns of labor organization to accomplish tasks in the community?

D. Provide baseline data on labor unions, including the following:

1. which unions participate in OCS activities?
2. where are the closest local union halls located?
3. how are these locals organized formally and informally?
4. do these unions have histories of racial prejudice or recruiting minorities? what training programs are available?
5. how many members are there currently in the state, in the nation?

E. Determine what planning has been done by State Labor Department and unions to integrate coastal village residents into the unions via training, enforcement activities, or other programs.

F. Determine the number of labor requirements by union for each stage of OCS project for each potential level of development.

G. Project possible cultural changes in village resulting from either:

1. local people are not employed in OCS-related jobs
2. local people are assimilated into unions and OCS-jobs
3. local people are given taken OCS-jobs through the union but experience racial/ethnic discrimination.

F. Suggest policies which could effect either 1, 2, or 3, above.

VI. Product:

The products of this study will be:

- A. a written report
- B. oral presentations to potentially affected villages on the results of the study.

VII. Priority:

VIII. Estimated costs: \$82,000

1 yr x 3 people @ 15,000	\$45,000
Travel	10,000
Production of report	2,000
	<u>\$57,000</u>
Overhead	25,000
	<u>\$82,000</u>

APPENDIX IV

I. Lifestyle

II. Developing Model of Social Impact in Energy Resource Development Situations.

III. Background:

Environmental Impact Statements (EIS) have tended to predict impacts according to a linear model which generally follows the following formula:

- A. Describe the community or region
- B. Describe the OCS project and population projections
- C. Add (A) and (B) to project impacts

Studies of impact from the trans-Alaska pipeline in Fairbanks suggest that impact does not happen according to a linear model.

IV. Objective:

The purpose of this project is to develop an alternate model based upon pipeline experience which could be used in developing environmental impact statements in OCS areas.

V. Methodology:

Using the trans-Alaska pipeline as a basis for this study:

- A. Examine assumptions made in predicting impact and evaluate the accuracy of those assumptions. Suggest alternate assumptions which would have been more accurate.
- B. For each component at impact, determine whether impacts occurred as a linear function.
- C. Where components did not function linearly, develop models to explain the shape of impact.
- D. Can the social impact be subsumed under a single theoretical model, such as cultural ecology? Can this be expressed graphically or in flow chart format?
- E. In what ways will the Fairbanks experience be similar to and different from OCS experiences? How can the Fairbanks model be modified to be more relevant to OCS?

VI. Products:

A model which can be expressed graphically.

VII. Priority:

Very important

VII. Estimated Cost:

\$150,000 (I'd settle for \$20,000.... - Mim)

APPENDIX V

I. Lifestyle

II. Social Service Systems and Rural Mental Health Levels in Impacted (or Proposed Impact) Rural Coastal or Island Communities

I. Background:

Small communities both Native and non-Native tend to come under stress from OCS development. What levels of positive or negative mental health occur? How does this stress affect the social service delivery systems found in these areas? What action (if any) can be taken by local or state agencies to help members of the community to adjust to stress from positive or negative mental health indicators?

IV. Objective:

- A. Prepare a census of population in area in question.
- B. Prepare a census of the social service system.
 - 1. Number of agencies in region
 - 2. Number of staff in agencies
 - a. MSW social workers
 - b. BSW social workers
 - c. Ph.D. psychologists
 - d. M.D. psychiatrists
 - e. etc.
- C. Tabulate social disorganization factors over past several years.
 - 1. Number of clients needing services
 - 2. Levels of disorganization
 - 3. Causes of disorganization
- D. Projections of future impacts upon the people and the delivery system.

V. Methodology:

- A. Use of survey research methods.
- B. Review of effects, both pro and con.
- C. Solutions: What action, if any, needs to be taken?

VI. Product:

- A. A body of statistical data showing how the system functions. Data will also show if problems are on increase and/or decrease.
- B. A body of statistical data showing general population growth.
- C. A body of statistical data showing problems, if any, within existing social systems.
- D. A body of data showing action needed to be taken, if any, as a result of OCS impact, if it occurs.

VII. Priority:

Extremely important to know what possible stress might do to the area to be impacted.

VIII. Estimated costs:

Might wish to take several communities at once.

- A. Anchorage
- B. Homer
- C. Seward
- D. Kodiak
- E. Yakutat
- F. Cordova
- G. etc.

APPENDIX VI

I. Lifestyle

II. The Impact of Rapid OCS Development on Mental Health of Persons Residing in the Impacted Areas Prior to OCS Activities.

III. Background:

Rapid increases in population and changes in communities resulting from energy resource development create stress on individuals which is manifest in changes in mental health. The purpose of this study is to determine the specific sources or causes of stress which are related to OCS impacts and to identify segments of the population which may experience significant changes in mental health. This will be done by studying mental health experiences during other energy development impact situations.

IV. Objective:

- A. To identify situations related to energy development which either create stress or ease stress.
- B. To identify indicators which are manifestations of stress.
- C. To identify target populations or segments of populations which are most likely to experience changes in stress/mental health in impact situations.

V. Methodology:

The basic approach will be to use records of mental health service providers (professionals and agencies) over time in areas which have experienced energy resource development. The specific research will be conducted in conjunction with the mental health professions and agencies. The following steps will be taken:

- A. Identify sample of person seeking professional aide for mental health problems prior to impact.
 - 1. Determine sub-sample which resolved problems during boom situation.
 - 2. Determine predictive factors in which mental health can improve during boom situation.
- B. Identify sample of persons who did not seek help for mental health problems prior to impact situations, but did during or directly after impact.
 - 1. What factors created stress in those individuals?

2. How did stress manifest itself?
 3. Determine predictive factors which can lead to mental health problems under impact situation.
- C. Based upon the findings in (A) and (B), how can mental health professionals and agencies expect their clientele to change during impact situations, and what programs could be introduced to prevent or deal with mental health casualties under impact.

VI. Products:

- A. Identifying causes of stress under impact
- B. Identifying manifestations of stress
- C. Identifying target populations which will experience fewer or greater mental health problems.

VII. Priority:

VIII. Estimated Cost:

\$160,000

APPENDIX VII

- I. Immigrant Population
- II. Pipeline oriented project: A Direct Employment State
- III. Number of transferable skills and individuals who might transfer. Relevance to the pipeline phase of OCS and support links.
- IV. Provide comparison information relevant to an Alaskan experience to generate predictions concerning manpower transfer.
- V.
 - A. Use of Bureau of Labor, Union, and Alyeska information as a data base to structure a model of occupational transfer similar to HRPI.

Method: Data aggregation, demographic analysis.
 - B. Effects would be to provide information necessary to judge the extent of in-state migration of a particular relevant occupational group.
 - C. Exploration of various policies concerning the rates of intrastate migration.
- VI. The number of pipeliners who will go to work on OCS.
- VII. Approximately \$10,000.

APPENDIX VIII

- I. Lifestyles
- II. Impact Study Planning Process
- III. Background:

Alaska has repeatedly experienced "development"/exploitation of its national resources by non-Alaskan interests (whales, gold, furs, timber, etc. and now petroleum) as well as "studies" by non-local groups which have tended to further outside interests. Planning process for impact studies connected with the Alaska Pipeline project have been subjected to extreme criticism, especially social and health impact studies, because of local communities feeling "ripped off" by outsiders, not listened to, not meaningfully involved in decisions.

We need to make a major effort to gather adequate information about the process involved in carrying out impact studies so as to design planning models that are effective, efficient, and have a high degree of consumer and local community acceptability.

- IV. Objective:

Gather information and perform appropriate analysis so as to develop models for planning and implementation of impact studies that will be efficient, effective, and have a high degree of local community acceptability.

- V. Methodology:

- A. Baseline/inventory

1. Prepare annotated bibliography on petroleum development impact studies relevant to lifestyles, social and health impacts carried out in Alaska and elsewhere in the past.
2. Prepare historical review of past mineral development in Alaska with focus on planning processes, payoffs as perceived by local communities.
3. Prepare review based on contacts with communities in other parts of the country who have experienced petroleum development projects re lifestyle impact.
4. Prepare review based on interviews and reports and field-work with local communities, BLM, CDQ, Sec. Interior, etc. to document impact on lifestyle of current impact studies. This should include information on political, social, economic, health ramifications of current OCS impact study to include "external" measures (accurate population base, social indicators, culture and age, sex adjusted rates, etc.) of impact on kinship obligations, traditional concepts of law and

and justice, spatial use values, rate of activity acculturation in selected areas of behavior (percent of population by age speaking active language, percent of Native population participating annually in selection patterns, etc.), rate of white acculturation by Native norms, etc., as well as "internal" measures such as community perceptions of impact, attitude surveys, etc., sampling of views of community leaders over time, Native versus non-Native styles of research, planning, decision-making.

B. Effects.

Demonstration projects based on the above.

C. Solutions.

It may turn out that research in the lifestyles impact areas sponsored by government-industrial petroleum interests is irreparably co-opted and politicized due to the heavy pressures created by "energy crises", economics, political expediency to proceed with OCS petroleum development regardless of any results of impact studies. We need to attempt this study anyway to see if:

1. OCS development could be planned in such a way that it would really meaningfully involve the local communities that will be most impacted.
2. Policies could be established that would have a high degree of local community support.

VI. Products.

Planning documents and demonstration projects that would enable BLM to "plan the planning" for impact studies and establish appropriate policies so that the major changes in lifestyle that will undoubtedly be necessitated by OCS development can take place with maximum regard for cultural integrity and human consequences.

VII. Priority

Extremely important

VIII. Estimated Cost:

To best carry out this project, consultation with Native corporation leaders should be carried out before arriving at detailed cost estimates,

and very careful consideration should be given to who will have management control of the funds. An assumption of this project proposal is that impact studies tend to be influenced to a considerable degree by funding mechanisms. A project where funds were given to University of Alaska in Fairbanks to carry out studies for impacted communities on lifestyle may reach completely different conclusions than a project where the same funds were given directly to local communities, who then subcontract for technical support services from university groups. It is also an assumption that meaningful research in this area will be quite difficult because of anger of local groups about past experiences with "outside" business interests, government projects, and researchers who have been perceived as exploitative and not to be trusted.

APPENDIX IX

- I. Lifestyles
- II. Subsistence Patterns in Coastal Areas
- III. Background:

Subsistence use of fish and game is a foundation of rural Alaskan cultures and lifestyles. The Alaska Native Claims Act 2(c) study found in its statewide survey of Native views: "Given the relationship between living in a Native village and the maintenance of subsistence pursuits, it is not unexpected that residents of small and medium villages most frequently name hunting and fishing as the aspect of village life which they like best. And no other problem facing Natives elicited such extensive replies as those dealing with the future of subsistence activity."

Increased population will put additional strains on the limited subsistence resource base. In order to determine what impact population growth will have on these resources and uses, it is important to know the present extent of subsistence use in relationship to available fish and game resources. This information is needed both in terms of total amounts of food taken and relative to the dependence on imported food.

Information on the summer subsistence salmon harvest has been gathered yearly by the Alaska Department of Fish and Game since 1961 in most areas. Other subsistence fishing and some hunting harvest data has been gathered for some years in some areas by ADF&G.

Various subsistence studies have been done by agencies, Native groups and universities covering certain species for specific areas and time periods. These studies have produced little or no areawide trend data, however.

- IV. Objective:

To gather baseline data on dietary patterns of communities with special regard to the amounts of subsistence foods taken and the relative dependence on fishing, hunting and gathering activities compared to imported foods.

- V. Methodology:

This data will be gathered through on the spot surveys and subsistence calendars, on a seasonal and yearly basis. There will be maximum involvement of the local leaders in the data-gathering process.

The data gathering will be coordinated with the ADF&G's yearly subsistence salmon surveys and other groups' ongoing surveys

In addition, the ADF&G's harvest ticket information will be analyzed in order to determine harvest figures for each area and species and percentages of harvest by local residents.

VI. Products:

- A. Figures on the amount of each species taken for subsistence on a seasonal and yearly basis, by area.
- B. Knowledge of the relative importance of subsistence foods in the total diet.
- C. A breakdown on the percentages of total harvest being used by local residents.

Data will be collected in such a way as to be useful for trend analysis and projections.

APPENDIX X

- I. Lifestyles
- II. Interaction Patterns and Processes
- III. Background:

Previous impact analyses have concentrated their research efforts on issues related to change agents (immigrants) or the effects on residents but have generally overlooked the dynamics of the interactive process between these two groups, the sequence of events and their consequences, and the effects these have on changes in lifestyles of the interacting groups within the region under development prior to, during and after development.

- IV. Objective:

The objective of this project is to provide decision makers with an analysis of the impact of change on (insert area under study), and to provide these decision makers with a series of options to offset the dysfunctional effects of this change or to ease the process of change on _____ within the region under development.

- V. Product:

The project will provide basic information and resulting options for use by decision makers to accommodate change and ameliorate some of the dysfunctional effects of change as it impacts the region under development. An assessment of the ability of the _____ to deal with the impact of change will be made. When required, recommendations will be made as to required federal, state or local aid in assisting the region and its population in the process of change.

NOTE: (The blanks will be filled in by a phrase reflecting one of the following areas of inquiry.)

- A. Interpersonal Relationships, i.e., but not inclusive

- 1. Family Kinship Relationships, i.e.

- a. mother-father, i.e. as social control mechanisms
- b. parent child, i.e. child abuse
- c. larger kin network
- d. etc.

2. Family as Functional Units, i.e.
 - a. economic units
 - b. property holders
 - c. etc.
 3. Etc.
- B. Social Organizations, i.e., but not inclusive
1. Religious, i.e.
 - a. impact of change on its role as a social control agent
 - b. etc.
 2. Political, i.e.
 - a. formal and informal decision making mechanisms
 - b. locus of power in the interactive process
 - c. etc.
 3. Economic, i.e.
 - a. subsistence lifestyle
 - b. gainers and losers
 - c. etc.
 4. Social Service, i.e.
 - a. justice agencies
 - b. health agencies
 - c. etc.
 5. *Education Institutions*
 - a. *elementary, secondary and post-secondary*
 - b. *community education (general and OCS specific)*
- C. Values and Beliefs, i.e., but not inclusive
1. Attitudes, i.e.
 - a. desirability of change
 - b. etc.
 2. Expectations, i.e.
 - a. reliance on government for social services
 - b. etc.

- 3. Motivation, i.e.
 - a. concepts of success
 - b. etc.
 - 4. Moral Judgements, i.e.
 - a. marriage, divorce, birth control
 - b. prostitution
 - c. etc.
 - 5. Education, i.e.
 - a. utility to lifestyle of region
 - b. etc.
 - 6. Etc.
- D. Behavioral Patterns, i.e., but not inclusive
- 1. Special Purpose Group Associations, i.e.
 - a. craft or trade unions
 - b. etc.
 - 2. Deviant Syndromes, i.e.
 - a. delinquent, criminal, child abuse and neglect
 - b. etc.
- E. ETC., i.e., but not inclusive.

The four areas or structures just described are provided as specific examples of four areas of interaction which the subcommittee believes deserve research attention.

Obviously, the process of interaction and its effects can only be measured, defined, or controlled if much is known about the change agents (immigrants) and the recipients of change (Alaskan residents). Consequently, it is the subcommittee's recommendation that studies in this area be initiated (generally) after work has begun on residents and immigrants. Thereafter, however, the subcommittee believes that these areas of inquiry should be given highest priority.

