RESEARCHING TECHNICAL DIALOGUE WITH ALASKAN COASTAL COMMUNITIES: ANALYSIS OF THE SOCIAL, CULTURAL, LINGUISTIC, AND INSTITUTIONAL PARAMETERS OF PUBLIC/AGENCY COMMUNICATION PATTERNS

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CHAPTER 1.0
INTRODUCTION AND PROJECT SUMMARY

1.1 RESEARCH PROBLEM AND APPROACH

The Minerals Management Service (MMS) is charged with managing mineral resource development on the Outer Continental Shelf (OCS), which includes the federal waters 3 to 200 miles off the coast of the United States. In Alaska, OCS mineral resource development occurs primarily in two regions: Cook Inlet and the Beaufort Sea. In its management role, MMS has the task of communicating ideas, plans, and supporting documentation that are often technical and complex to residents and other stakeholders in these two regions.

Since government decision makers rely upon effective communication with an informed public, this study was developed to discover ways to improve the ongoing technical dialogue between local citizens and Alaska Regional Office of MMS, Offshore Program. Specifically, the study aims to determine whether the use of newsletters might initiate better dialogue between the public and the agency, as well as facilitate meaningful public participation, in the National Environmental Policy Act (NEPA) process. For this study, technical dialogue refers to the formal written process of two-way communication between local citizens and the agency concerning information about (or from) MMS. This includes MMS administrative activities with regard to resource evaluation, leasing, regulating industry, conducting environmental studies, and producing environmental assessments or impact statements in the Alaska region.

According to MMS's initial description, this study sought to,

> *[P]rovide fresh insight into the following types of questions: Is the MMS successfully communicating the messages that it intends to communicate? Are unintended messages being communicated? Do local citizens feel adequately informed about the matters they deem pertinent? How can the MMS enhance public opportunities to respond to agency messages in technically rich and precise language? Are some stakeholder concerns inadvertently overlooked through the existing NEPA process? Should the MMS supplement broadcast public documents with narrow-cast newsletter formats?*

To create a holistic foundation from which effective newsletters could be developed, the research team investigated primarily the effects and dynamics of written communication efforts in Barrow, Alaska. It sought to enrich the exchange of pertinent information and the pursuit of mutual understanding between MMS and diverse stakeholder groups by systematically identifying and analyzing communication methods and potential problems within a specific sociocultural and politico-institutional context.

The research team explored possible improvements through pilot-testing a series of experimental newsletters with targeted focus groups. A series of focus groups was established to identify significant communication obstacles, using controlled testing throughout the study. This report presents the recommendations that were developed to help shape future agency interactions with the public.

Ultimately, the study aimed to determine whether MMS can improve communication techniques through ongoing newsletter distribution and, if so, how it can best be developed. Through improved technical dialogue, citizens of Alaskan coastal communities could potentially participate more fully in the NEPA decision-making process.

Before pilot-testing the newsletters with targeted focus groups, a series of intermediate steps were completed that informed the types of issues to the presented and developed. Each component built upon the next, ultimately informing the final newsletter format and content. These project components included:

(1) A literature search (and key informant review) documenting and assessing alternative models of federal agency written communication efforts with local residents that are relevant to the goals of this study and related processes in the Alaska region. The literature review incorporates linguistic concerns that can influence the effectiveness of technical dialogue.

(2) Sampling and analysis of the record of public comments from MMS planning activities in the Cook Inlet and Beaufort Sea to assess the range of communication issues and stakeholder perspectives specific to technical dialogue in the Alaska region.

(3) Interviews of appropriate MMS technical staff and management to identify and clarify the institutional parameters of potential communication obstacles with various stakeholders that reduce effective technical dialogue.

(4) The documentation of key findings about technical dialogue and significant communication challenges in the Alaska region.

(5) The identification of appropriate samples of study participants in a representative North Slope community (Barrow) and organization of them into focus groups.

(6) The convening of a series of focus group meetings to assess public knowledge and attitudes about the OCS regulatory environment, the communication of scientific and technical information, and the scoping process in general.

(7) Collaboration with MMS management and staff to prepare experimental newsletters that allowed for testing the effectiveness of key agency technical messages across a range of social variables.

(8) The convening of a second series of focus group meetings to test a variety of newsletter messages against the baseline reactions and monitor changes in understanding, perceptions of technical information, and durability of opinions among study participants associated with new materials.

(9) The continued testing and monitoring of technical communication efforts in a limited and controlled newsletter format until a model based upon "lessons learned" was implemented.

1.2 LITERATURE REVIEW

Chapter 2 presents a review of relevant literature analyzing the role of public participation and written technical dialogue between the North Slope communities and the federal government within the context of NEPA and planning for oil and gas development on the North Slope. The literature review includes a typology of public participation processes within federal and state agencies and identifies those that may be most relevant toward improving technical dialogue between MMS and the North Slope communities.

The literature review concludes that the public participation process manifests differently throughout the country, with those differences largely dependent on the internal policies of the agency leading the project, the level of interest present in stakeholder groups, the historical level of trust between different involved parties, and the established political powers of all involved. The public participation process can result in the perception that some comments are being ignored, leading to a feeling of disenfranchisement among public stakeholders. The communication used between federal entities and the public during the NEPA process can also be impeded by a number of barriers, including the use of highly technical language, linguistic and cultural differences in communication patterns, institutional challenges that may include budget limitations, and competing

policy goals. It is common for complex projects to regularly encounter two or more of these barriers.

1.3 CONTENT AND DISCOURSE ANALYSIS

Chapters 3 and 4 present a content analysis and discourse analysis, respectively, of public comments from previous Cook Inlet and Beaufort Sea lease sales. The analysis of these comments informed the development of the newsletters and subsequent focus group questions. These analyses assess the scope and character of documented communication issues and stakeholder perspectives about offshore oil development activities and the MMS regulatory framework in the Alaska region. The analyses are meant to provide insight into relevant concerns such as the demographically representative nature of public comments, the types of knowledge upon which comments were founded, prevailing themes of concern, changes in concern over time, and variations of concerns by community.

The research presented in Chapter 3 is a content analysis of six collections of public comments elicited during the course of oil and gas lease sales, spanning approximately 30 years. This content analysis finds that the topic areas of most consistent concern over time where sociocultural effects, comments about natural conditions likely to be challenging to development, and direct effects upon wildlife. The degree to which these comments are present varies from one collection of comments to another, but the most common recurring concerns present throughout all testimonies are those regarding the effects upon wildlife and natural conditions.

The research presented in Chapter 4 is a discourse analysis concentrated on the central issues regarding the linguistic and communicative patterns of MMS documents and their impact on the stated goal of MMS to practice consensus-based management through open dialogue among stakeholders. This analysis suggests that problems in communication exist between MMS and stakeholders because the goals of the participants in the consensus-based process—and rhetorical strategies employed for achieving these goals—are vastly different. The analysis leads to a recommendation that MMS make its communication explicit when and where it is seeking to meet the legal requirements of the NEPA process while also creating avenues for public discussion of the broader sociopolitical issues commonly submitted through the public comment process that may focus more or less tightly on a given proposed action within the NEPA context. These comments include those related to national energy policy, community impact mitigation and support, global climate change, environmental justice, and wilderness preservation.

1.4 INTERVIEWS WITH MMS STAFF

A series of interviews were conducted with MMS over the course of this study. The analysis of these interviews is presented in Chapter 5. The purpose of these interviews was to identify and clarify the institutional parameters of potential communication obstacles that reduce effective technical dialogue. These interviews were conducted with staff of the Alaska Region Environmental Assessment and Environmental Studies Sections and the Office of the Regional Supervisor of Leasing and Environment. The issues or themes that emerged from these interviews were used to inform the creation of hypotheses subsequently tested through the focus group sessions. A number of general comments were elicited from interviewees, including the perception that communicating technical risk to anyone is difficult, irrespective of whether or not cultural obstacles are present. Interviews also suggest that specific technical dialogue issues on the North Slope are shaped by the presence of a local Scientific Advisory Committee[1] and translation issues surrounding the use of Iñupiaq in public testimony.

1.5 NEWSLETTER DEVELOPMENT

Following the completion of the literature review, content analysis, and MMS interviews, the research team developed a series of newsletters. The newsletters and a discussion of the development process, including comments from all three focus group sessions, are presented in Chapter 6.

Focus group research was conducted in Barrow with three representative groups of stakeholders and two control panels, each drawn for an initial round of stakeholders. Each focus group participant was asked a series of questions and his/her answers were compiled. The research team subsequently tallied specific issues and themes from the focus group participants' answers for each session.

The results of the development and testing of the various newsletters suggest that the format substantially improves meaningful and informed public engagement; however, this improvement is conditioned upon four main variables: (1) the degree of prior notification the agency provides to the community leading up to a lease sale, (2) the tone of engagement by an agency in the village affected (positive or negative), (3) the credibility and legitimacy of the agency as perceived by the community, and (4) the

[1] The Scientific Advisory Committee is a technical committee composed of scientists from various technical fields. In the broader Alaskan context, a Scientific Advisory Committee typically advises a Regional Citizen Advisory Council on scientific issues. On the North Slope, the Scientific Advisory Committee engages directly with other scientifically oriented stakeholders on technical issues.

establishment of a parallel and/or ongoing secondary form of verbal or visual communication. Newsletters can be used to enhance communication by addressing, at least to some degree, all four of these variables.

1.6 CONCLUSIONS AND RECOMMENDATIONS

Due to the iterative nature of the study as a whole, conclusions and policy recommendations regularly resulted from each of the smaller research projects described above. Conclusions and recommendations specific to the smaller analyses are included in their respective chapters. Conclusions and recommendations applicable to the development of newsletters and improved technical dialogue (the ultimate goal of the study) are separately presented for the reader's convenience in Chapter 7.

CHAPTER 2.0
LITERATURE REVIEW

2.1 INTRODUCTION

This chapter presents a review and analysis of "lessons learned" from literature on public participation in environmental decision making under NEPA and from the experiences and public participation processes of other federal and state agencies in Alaska. The information presented in this chapter informed subsequent development of the *Offshore Perspectives* and *Offshore Outlook* newsletters discussed in Chapter 6, the purpose of which was to improve technical dialogue between the agency and public. This technical dialogue includes discourse within the NEPA context as well as discourse held during ongoing agency/public communication independent of NEPA-triggering agency actions.

By seeking to reduce areas of miscommunication and increase areas of successful communication with resident stakeholders, MMS hopes to enhance the ability of the public to better communicate with the agency in general as well as participate more fully in the NEPA process specifically. Beyond NEPA, consultations and discussions with resident stakeholders are generally at the behest of the agency. Even within NEPA, agencies have latitude in the manner by which they fulfill requirements for public review and public meetings. Public engagement methods differ widely, as long as the agency meets basic requirements.

The literature reviewed in this chapter suggests that meaningful participation is dependent upon a few key variables. These variables include the degree of public notification, the degree of direct impact on people's lives, the level of engagement of the agency in a community, the credibility and legitimacy of that agency as a result of positive or negative agency engagement, and financial and political resources available to the community for the purpose of participation.

Some agencies have established local liaisons who maintain an ongoing relationship within the community. For example, MMS has established regional education programs to conduct outreach to the public about the OCS program via exhibits at public events and conferences, presentations at schools and MMS-sponsored community meetings, and interviews with the news media. This continuing communication (not necessarily formal) brings people together to try and address issues that may undergo further analysis through the NEPA process; further, if a NEPA process is initiated, the process is often more streamlined and successful if ongoing dialogue has occurred (Garland 2006).

Stakeholder/agency communication can also cut across federal regulatory processes. For example, information exchange between federal agencies and Alaska Native residents of the North Slope also occurs during implementation of the Marine Mammal Protection Act subsistence regulations and associated interactions with National Oceanic and Atmospheric Administration (NOAA) and/or its National Marine Fisheries Service (NMFS) division personnel. Similarly, the MMS Environmental Studies Program requires public participation to successfully carry out social science research on behalf of the agency. Moreover, the integration of individual but often interdependent regulatory processes into a consolidated environmental decision-making process is often conducted under the NEPA regulatory umbrella.[2]

This chapter begins with a brief discussion and analysis of the NEPA process as it applies to public participation in environmental decision making, which is the process the development of the newsletters is ultimately meant to improve. Next, information is presented that identifies and describes various obstacles to effective communication between government agencies and local stakeholders that are present in the literature. The third section of this chapter describes participatory approaches utilized by other federal resource management agencies and assesses the relevance of these approaches for MMS initiatives to improve technical dialogue between the agency and public.

2.2 PUBLIC PARTICIPATION IN THE NEPA PROCESS

2.2.1 The Role of Public Participation in the NEPA Process

Public involvement in administrative decision making has been a political and legal factor in federal agency life since the signing of NEPA into law in 1970. Prior to NEPA's enactment, communities had little formal opportunity to participate in decisions made by federal agencies regarding the social, economic, and environmental costs and benefits of projects that would affect them (CEQ 1997a). NEPA intended to create a more transparent decision-making process by providing a vehicle for public disclosure of potential impacts from federal actions. The Act facilitated public review of relevant available information and ensured the consideration of environmental, social, and economic issues in federal agency decisions.

[2] The Council on Environmental Quality (CEQ) regulations for implementing the provisions of NEPA require agencies, to the fullest extent possible, to prepare draft environmental impact statements concurrently with and integrated with environmental impact analyses and related surveys and studies required by other environmental review laws and executive orders (40 C.F.R. § 1502.25).

In recent testimony before the House Task Force on Updating the National Environmental Policy Act, Robert Dreher, Deputy Executive Director of the Georgetown Environmental Law and Policy Institute, emphasized that NEPA is "first and foremost a governmental accountability statute," and further noted:

> It is the primary law that requires public involvement, and public participation, and public disclosure of the effects of government actions on ordinary people. It is a law that empowers little people. It empowers business people. It empowers individuals. It empowers Native Americans. It empowers minorities. It empowers all of your constituents (Dreher 2005).

Dreher (2005) indicated that two specific functions are served by public participation in the NEPA process. First, input from communities and local residents can improve NEPA documents and the quality of agency decisions. Second, public participation in the NEPA process serves the fundamental principles of democratic governance by allowing citizens to communicate with federal decision makers. According to Dreher, NEPA reflects the "belief that citizens have a right to know, and to be heard, when their government proposes actions that will affect local communities and residents" (Dreher 2005). Similarly, Representative Tom Udall (2005), Ranking Member of the House Task Force on Updating the National Environmental Policy Act, remarked: "A central tenet of our democracy is that government should be accountable to the people, and NEPA has fundamentally served to make our democracy work better by greatly enhancing citizen participation in the process of federal agency decision-making."

Under NEPA, the involvement of the public in decision making has been an interactive process whereby federal agencies disseminate to and receive information from the public. These interactions can significantly affect the decisions made for any particular federal action. Dreher (2005) provided the following specific examples of federal actions that were dramatically improved by NEPA public participation:

> The initial management plan for the Los Alamos National Laboratory in New Mexico did not address the risk of wildfire. However, comments on the draft Environmental Impact Statement led to preparation of a fire contingency plan and protective actions including cutting back trees and underbrush around the buildings and replacing wooden pallets holding drums of radioactive waste with aluminum supports. When a major wildfire swept through Los Alamos the following year, these preparations turned out to be invaluable.

Community concerns in Michigan about the impacts of a proposed four-lane freeway expressed during the NEPA process forced the state highway agency to consider other alternatives for expansion avoiding a loss of a large wetland and saving taxpayers approximately $1.5 billion.

In Kentucky the public input and legal action under the NEPA process led to a design of a proposed freeway in the scenic bluegrass region that protected historic, aesthetic and natural values.

A positive outcome resulted from the NEPA process in the Gifford Pinchot National Forest in Washington where environmentalists, the timber industry, labor representatives, and local citizens worked together to generate timber harvest plans to restore the forest's natural ecosystem while yielding 5.1 million board feet of commercial timber.

While these cases are instructive, the transmittal of information in the NEPA process is intended to be a two-way form of communication; it is information from the agency to the public as well as information from the public to the agency that generates greater awareness about a proposed action and its potential effects and thereby results in better decision making and better outcomes for both the agency and resident stakeholders. In these, as with many cases, local and national interests are often at odds with each other. The agency is placed in a position of having to follow administrative and congressional directives while being required to respond to concerns over local impacts. The agency is also in a position of navigating between carrying out national policy and being responsive to local concerns. The potential impact that this agency/public interaction can have in terms of promoting the overall public good underscores the importance of carefully considering the way in which the agency/public communication process is structured and implemented.

2.2.2 Opportunities for Public Participation in the NEPA Process

NEPA's multi-step process affords public stakeholders several opportunities to comment on proposed federal actions and requires federal agencies to consider such comments (Bass et al. 2001). As noted above, such opportunities are designed, in theory, to make NEPA an interactive process in which citizens are better able to communicate with government officials, leading to more informed decision making and resulting in better outcomes for the participating communities. Of course, this structured exchange of information can be a double-edged sword; while the NEPA process ensures specific

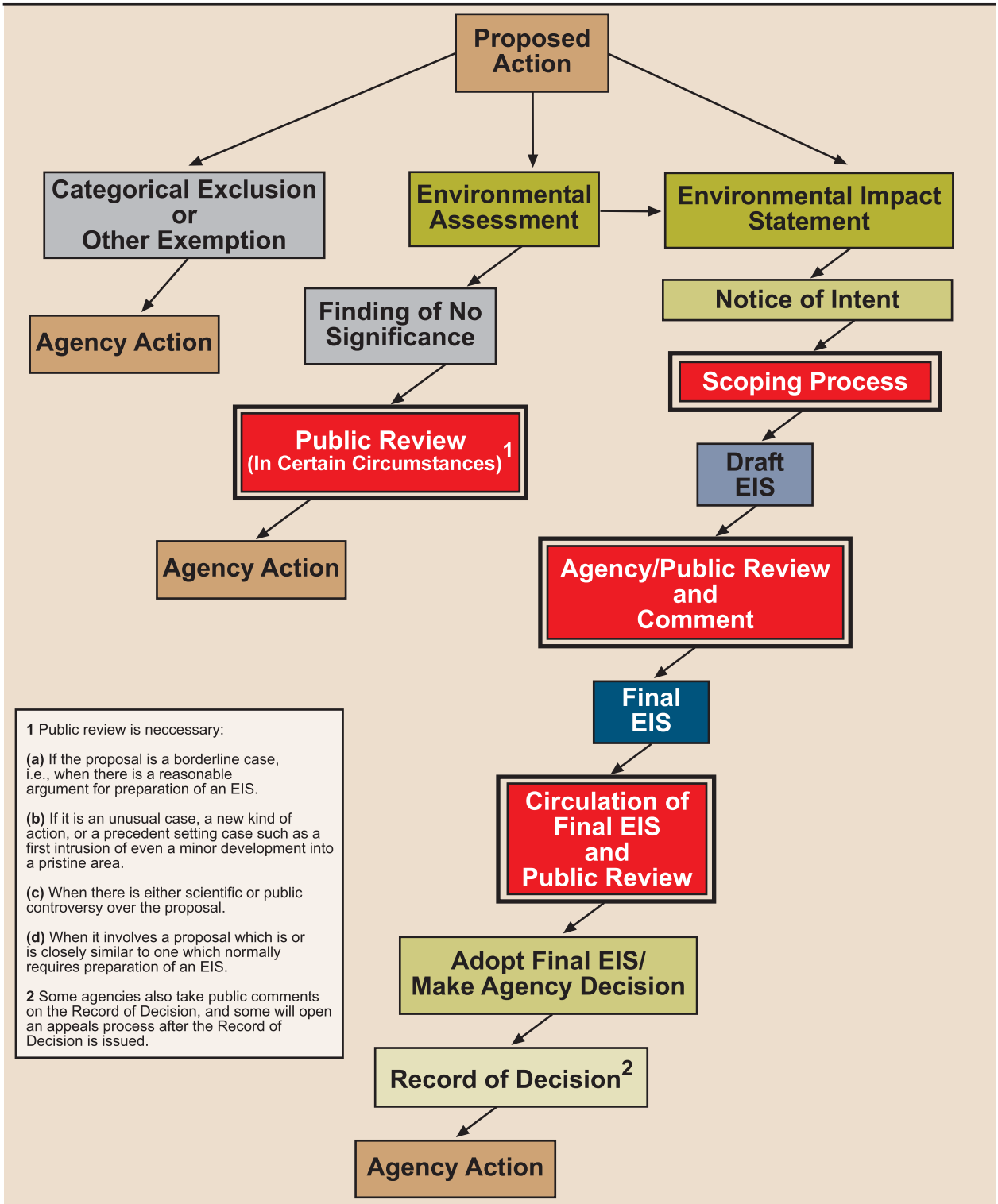
opportunities for public input, it can also effectively constrain communication in ways that will be discussed in Section 2.3.

The public involvement component of the NEPA process is most structured in the preparation of an environmental impact statement (EIS) for a proposed action, although some level of public input may also be solicited if a federal agency prepares an environmental assessment (EA) or uses a categorical exclusion.[3] Figure 2-1 illustrates formal public access points in the NEPA process that are required by the Council on Environmental Quality (CEQ) NEPA regulations. Following the publication in the Federal Register of a Notice of Intent to prepare an EIS, these access points include the scoping process and public review and comment on the Draft EIS (DEIS) and Final EIS (FEIS). The Notice of Intent and each public access point in the preparation of an EIS are described in more detail below. Some agencies and their public engagement processes provide additional entry points, but Figure 2-1 provides the minimum allowable under NEPA.

- Notice of Intent. The Notice of Intent states the need for action and provides preliminary information on the EIS scope, including the alternative actions to be evaluated, the kinds of potential environmental impacts to be analyzed, and related issues. The Notice of Intent also generally serves as the beginning of the next step, the scoping process. It explains how the public can participate in the scoping process and provides information about dates and locations of public meetings. Other means of public notice besides the Notice of Intent may include local newspapers, radio and television, posting notices in public places, etc. (CEQ 1981).

[3] According to the CEQ NEPA regulations, a federal agency may prepare an EA to determine whether a proposed action has the potential to cause significant environmental effects and, therefore, requires the preparation of an EIS (40 C.F.R. § 1508.9(a)). When an agency prepares an EA, it must involve other federal environmental resource agencies, project applicants, and the public (40 C.F.R. § 1501.4(b)), but the CEQ NEPA regulations provide no specifics on how, or to what extent, to involve other agencies or the public in EA preparation. A "finding of no significant impact" upon completion of a Draft EA should be made available for public review for 30 days before the agency's final determination whether to prepare an EIS (a) if the proposal is a borderline case, i.e., when there is a reasonable argument for preparation of an EIS; (b) if it is an unusual case, a new kind of action, or a precedent setting case such as a first intrusion of even a minor development into a pristine area; (c) when there is either scientific or public controversy over the proposal; or (d) when it involves a proposal that is or is closely similar to one that normally requires preparation of an EIS (40 C.F.R. § 1501.4(e)(2), 1508.27).

A federal agency may also determine that a proposed action falls within a category of activities that the agency has determined should be excluded from NEPA; these are known as "categorical exclusions." NEPA defines a categorical exclusion as "a category of [federal] actions that does not individually or cumulatively have a significant effect on the human environment…for which, therefore, neither an environmental assessment nor an environmental impact statement is required" (40 C.F.R. 1508.4). Most federal agencies do not routinely notify the public when they use a categorical exclusion to meet their NEPA responsibilities. In situations where there is a high public interest in an action that will be categorically excluded, CEQ encourages federal agencies to involve the public in some manner (e.g., notification, scoping); however, the CEQ NEPA regulations do not require public involvement when using a categorical exclusion.



Note: NEPA allows federal agencies the ability to add access points through mechanisms that vary across the agencies. For example, the MMS Environmental Studies Program provides additional public engagement opportunities through the special studies conducted in communities where planning occurs.

Source: Adapted from Bass et al (2001)

Figure 2-1
Public Access Points in the NEPA Process

- Scoping Process. During the scoping process, the federal agency requests public comments on the scope of the EIS, including what alternatives should be evaluated and what potential environmental impacts should be analyzed. There is no established or required procedure for scoping. The process can be carried out by meetings, telephone conversations, written comments, or a combination of all three (CEQ 1981). Federal agencies tailor the type, the timing, and the location of public and agency meetings or comments to the proposal at hand. The scoping process typically lasts at least 30 days, with at least one public meeting. Comments collected during scoping are considered in preparing the DEIS. Some agencies have made a practice of sending out a post-scoping document to make public a summary of the issues to be evaluated in the EIS, a list of those who participated in the scoping process, and the views of those participants (Bass et al. 2001). Especially when scoping has been conducted by written comments, and there has been no face-to-face contact, a post-scoping document is the only assurance to the participants that they were heard and understood until the DEIS is made available (CEQ 1981).

- Public Review and Comment on DEIS. After issuance of a DEIS, a public comment period begins, which usually lasts at least 45 days (40 C.F.R. § 1506.10(c)). The lead federal agency must provide public notice of the availability of the DEIS to interested persons and agencies (40 C.F.R. § 1506.6(a),(b)). In all cases, an agency must provide notice to those who have requested it for an individual action (40 C.F.R. § 1506.6(b)(2)). For a proposed action with effects of national concern, notice must be published in the Federal Register and sent by mail to national organizations reasonably expected to be interested (40 C.F.R. § 1506.6(b)(2)). For actions of primarily local concern, several public notice mechanisms may be applicable (40 C.F.R. § 1506.6(b)(3)). The lead agency will usually announce details regarding how the public may comment on the DEIS, either orally at a public hearing or in writing.[4] All timely public comments on the DEIS are considered in preparing the FEIS. The FEIS must contain the lead agency's responses to all received comments and must discuss any opposing views on issues raised (40 C.F.R. § 15029(b)).

- Circulation of FEIS. The lead agency must circulate the FEIS for at least 30 days prior to making a decision on the proposed action. If, however, the FEIS is unusually long, then the federal agency may circulate the summary. However, the

[4] A lead agency must conduct a public hearing on the DEIS when there is (1) substantial environmental controversy concerning the proposed action; (2) substantial interest in holding a public hearing; or (3) a request for a public hearing by another federal agency with jurisdiction over the proposed action (40 C.F.R. § 1506.6(c)).

entire FEIS must be provided to federal agencies with jurisdiction by law or special expertise, environmental regulatory agencies, the project applicant, those requesting copies, and those who submitted substantive comments on the DEIS (40 C.F.R. § 1502.19). Although there is no requirement for the federal agency to respond to comments received on the FEIS, the administrative record should reflect that the federal agency considered these comments prior to making a decision on the proposed action (Bass et al. 2001).

- Preparation of Record of Decision. After preparing and adopting the EIS, the lead agency makes a decision on the proposed action. At this time the Record of Decision must be prepared by the agency. The Record of Decision is a written public record explaining why the lead agency has taken a particular course of action. Some federal agencies take public comments on the Record of Decision, and some will open an appeals process after the Record of Decision is issued (Bass et al. 2001).

While NEPA established the basic framework for integrating environmental considerations into federal decision making, it did not provide the details of how the process should be undertaken. The CEQ provides federal agencies the ability to define specific environmental considerations in undertaking their NEPA processes, as well as providing specific overarching guidance. NEPA processes follow these agency-specific environmental review procedures as well as CEQ regulations. The U.S. Supreme Court has affirmed on several occasions that the CEQ is to interpret NEPA and address the law's action-forcing provisions in the form of regulations and guidance. In short, NEPA is a procedural law—so long as the basic NEPA process is followed, few direct restrictions are placed on how federal agencies can implement NEPA. Consequently, the NEPA environmental review process may vary across agencies.

The U.S. Department of Interior Manual on NEPA (516 DM) provides general guidance to its bureaus with regard to public involvement in the development of NEPA analyses and documents. The following policy prescript deals directly with public participation:

> 1.2.B. To the fullest practicable extent, to encourage public involvement in the development of Departmental plans and programs through State, local, and tribal partnerships and cooperative agreements at the beginning of the NEPA process, and to provide timely information to the public to better assist in understanding such plans and programs affecting environmental quality in accordance with the CEQ Regulations.

Section 1.3 of the Manual calls for consensus-based management and community-based NEPA training. Consensus-based management is defined as the inclusion of interested parties "with an assurance for participants that the results of their work will be given consideration by the decision maker in selecting a course of action." Section 1.6 calls upon U.S. Department of the Interior (DOI) bureaus to "develop and implement procedures to ensure the fullest practicable provision of timely public information and to include public involvement in the development of NEPA analyses and documents." These procedures are to include (wherever practical) public meetings, newsletters, and status reports of NEPA compliance activities. This information is to be provided in a readily accessible, consistent format.

An example of the enhanced public participation recommended by the DOI is the EIS prepared by MMS for OCS Sale 170 in the Beaufort Sea (MMS 1998). During the NEPA process MMS addressed environmental justice-related items through extended scoping and public participation activities that included the following:

- Scoping meetings were held in the local Alaska Native communities (Nuiqsut, Kaktovik, and Barrow). Issues, alternatives, and mitigation identified at these meetings focused on subsistence whale hunting concerns.
- A Beaufort Focus pamphlet, published in both English and Iñupiaq, was mailed to the North Slope communities. This pamphlet outlined the planning process for the proposed sale; indicated concerns, possible alternatives, and mitigating measures identified to date; and requested comments on additional information to be analyzed in the EIS.
- An Alaska OCS Region Offshore Advisory Committee was established to provide a forum through which Alaska stakeholders could collectively make recommendations on the analysis. This Committee included Alaska Native community representation.
- An Arctic Seismic Synthesis and Mitigating Measures Workshop was held in Barrow, Alaska, in 1997 to elicit observations from subsistence whaling captains on the effects of seismic activities on bowhead whales. This "traditional knowledge" was combined and synthesized with research and monitoring data on bowhead whale migration.[5]

[5] "Traditional knowledge" in this report refers to that knowledge concerning environmental and/or biological conditions that have been transmitted for generations in the Iñupiat culture.

- Public hearings for the DEIS were held in the local Alaska Native communities. Translators were used to present the information in the Iñupiaq language, as well as English.
- "Dialogue" meetings with the North Slope Borough (NSB) were also held to obtain and use traditional knowledge information for the EIS analysis, especially in regard to effects on bowhead whale subsistence hunting.

In addition, since 1973, what is now the the MMS Environmental Studies Program[6] has defined information needs and conducted studies to predict the effects of oil and gas exploration and development on the human, marine, and coastal environments. Some studies provide information applicable to NEPA analyses, such as information on Alaska Native subsistence, sociocultural, and economic patterns.

Although the DOI and other federal agencies are afforded some leeway in the way the NEPA process is carried out, it is important to note that NEPA also provides the grounds for legal challenges by the public (Wondolleck and Yaffee 1994). Since NEPA's enactment, the primary means of enforcing the legislation has been through lawsuits brought by concerned private citizens, interest groups, and state and local agencies (Bass et al. 2001). Due to the requirements for challenge of a NEPA document, legal actions are typically focused on procedural issues—that is, whether the process follows the letter and intent of the law properly. The result of this emphasis is that, even under court challenge, procedural determinations tend to be debated more so than those that result in a change of policy.[7] The Supreme Court clarified agency responsibilities by requiring that agencies take a "hard look" at the environmental consequences of proposals before proceeding with them (*Kleppe v. Sierra Club,* 427 U.S. 390, 410 n.21 (1975)). This standard of judicial review requires reviewing courts to determine if the agency took a "hard look" at the environmental considerations and whether the agency acted arbitrarily or capriciously in its decision. The "hard look" must satisfy two aims of NEPA: to provide enough information to the agency regarding potential environmental impacts to ensure a "fully informed and well-considered decision," and to ensure that the agency will inform the public that environmental concerns have been considered during the decision-making process (*Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council,* 435

[6] MMS was not a separate entity within DOI in the early years of this program, with studies previously carried out by the Bureau of Land Management.

[7] The Supreme Court (*Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council*, 435 U.S. 519, 558 (1978); *Strycker's Bay Neighborhood Council, Inc. v. Karlen*, 444 U.S. 223 (1980); *Robertson v. Methow Valley Citizens Council,* 490 U.S. 332 (1989)) has repeatedly ruled that although NEPA requires agencies to prepare EISs and weigh alternatives, it does not mandate federal agencies to make decisions that promote environmental goals. Despite evidence contrary to congressional intent, the Court has concluded that NEPA is procedural and not substantive; the Act requires agencies to consider the effects of their decisions on air, water, and land but not to avoid or mitigate adverse environmental effects.

U.S. 519, 553, 558 (1978); *Baltimore Gas & Electric Co. v. Natural Resources Defense Council,* 462 U.S. 87, 97 (1983)). In other words, NEPA "prohibits uninformed—rather than unwise—agency action" (*Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351 (1989)).

2.2.3 Future Developments in the NEPA Process

NEPA has been applauded for opening the federal process to public input. Yet, few public commentators—from ordinary and interested citizens to functionaries of industries and nongovernmental organizations (NGOs)—are completely satisfied by the way in which agencies responsible for preparing EISs have responded to public participation (CEQ 1997a; Greczmiel 2005). The NEPA process has been evolving through litigation, judicial interpretation, and agency usage since 1970. In 2002, the CEQ convened a task force composed of federal agency representatives to seek public comment to determine how NEPA practice could be made more effective and timely. Over 50 recommendations, covering a broad range of practical measures to improve and reinvigorate the process, are presented in the task force report (CEQ 2003). These recommendations are being implemented by the CEQ through several actions, among which is the development of a handbook that describes how interested and affected parties (e.g., the public, tribes, NGOs, permit applicants, and state and local governments) can be involved in the NEPA process (CEQ 2005).

More recently, the U.S. House of Representatives Committee on Resources convened a task force charged with reviewing and making recommendations on NEPA. The House Task Force compiled the testimony and comments received from federal officials and national representatives over 8 months and presented its final recommendations to the House Committee on Resources. With respect to public participation, the House Task Force reported the following finding: "Public participation is central to the success of NEPA but many groups and applicants feel somewhat disenfranchised. Some groups informed the House Task Force that it is difficult to provide meaningful comments and in some instances, the comments were ignored" (House Task Force 2005:4).

Increased communication between federal agencies and public stakeholders, throughout the NEPA process and beyond, is an effective means for bringing issues to the forefront before litigation becomes the only option. Moreover, stakeholders who feel that their voices are heard and respected are less likely to threaten or pursue a NEPA challenge. An increase in communication will yield a more efficient NEPA process.

2.2.4 Environmental Impact Assessment as a Decision-making Tool

For projects with a federal nexus within the United States, a NEPA document is required that in some form identifies impacts resulting from a development scenario. Most state governments have some form of an environmental quality act requiring that environmental documents be prepared and vetted prior to developments that affect local environments. These state requirements not only identify potential effects of a proposed plan but also identify issues for which no scientific information is available, thus exposing topics that have not been, but should be sufficiently researched. Because "environmental impact assessment" is a generic term used by researchers when referring to a variety of types of documents and assessment tools, this term will be used as we present research that has measured public participation as a vital part of the environmental assessment process.

To measure the degree of participation within the EIA process, Cashmore et al. (2004) analyzed the role EIAs play in building consensus and effecting decisions. Cashmore's team conducted a review of empirical studies to determine whether stakeholders believed the public participation process they engaged in was effective. "Effectiveness" was measured by either shifts in the project design or shifts in the scope of the project as a result of the EIA and public process. Cashmore et al. (2004) concluded the majority of stakeholders believed the EIA does, in fact, influence consent and design decisions but to varying degrees. Sawyer argues that "effectiveness" of the EIA process must refer to both *substantive* and *procedural* criteria (Sadler 1996). Within the United States a focus on procedure often appears to take precedence over substance, and this, Sawyer argues, is due to "judicial interpretation of NEPA as essentially procedural legislation; that is, NEPA requires federal agencies to follow a set course of action rather than mandating a specific level of environmental protections." In the United Kingdom, studies show that approximately half to two-thirds of the time moderate levels of modifications were made to project design (Cashmore et al. 2004). Generally, an EIA was found to be limited as a "participation tool" but is viewed as having an influence on incremental change in the bureaucracy, companies, and scientific institutions.

Evolution of Environmental Assessment Tools

This section suggests how EIAs have evolved into their current technical and scientific form based upon the use of *rational decision theory*. Rational decision theory emerged coterminously with the establishment of a framework for the assessment. Rational decision theory is defined as "a decision in which the option that most satisfactorily achieves the stated objective(s) is selected, based upon a complete understanding of the

consequences of all relevant alternatives and consensus about the goals that govern the decision" (Cashmore et al. 2004:298).

This section also presents findings from a study commissioned by the State of Montana, in which the state surveyed stakeholders on ways to improve public participation under the Montana Environmental Protection Act (MEPA). This example is provided to allow the reader to begin to consider how other agency experiences apply to the dialogue that occurs between federal agencies and the public with regard to offshore oil and gas development scenarios.

Cashmore et al. (2004) claim that most research on public participation "effectiveness" has focused on procedure rather than substance, leading them to reason that the measure of effectiveness has only been partially tested by the research community. Nitz and Brown trace this emphasis on procedure back to the birth of the EIA as a decision-making tool. When environmental assessments were in their formative years, "rational decision theory" enjoyed a significant place in analyses of public policy (Nitz and Brown 2001).

Rational decision theory, when applied to impact assessment, translated to a belief that accurate predictions on the environmental impacts of various alternative development plans would lead to better (more rational) decisions (Kornov and Thissen 2000). This theory influenced how EIA practice was developed, resulting in narrow scientific analyses of environmental and social consequences. The effectiveness EIA is determined by scientific rigor in predicting impacts (through statistical and other predictive models applied to appropriate data) and presentation of the findings in a logical and comprehensive manner (Rosenberg et al. 1981; Mostert 1996; Munn 1979; Royal Commission on Environmental Pollution 1998; Beanlands and Duinker 1983 cited in Cashmore et al. 2004). The problem with this approach is that rationalist theory describes how a process *should* take place, as opposed to how it actually takes place in the real world.

Although an impact assessment document is typically designed to be implemented in accordance with a rationalist process, decision making in regard to environmental impacts occurs in a complex political framework where compromise, power relations, stakeholder interaction, and trade-offs intersect with the rationalist framework. It therefore may be unreasonable and unrealistic to expect that "decisions made in political arenas and informed by science will be truly rational" (Cashmore 2004). As a result, the rationalist approach as a guiding principle to EIA decision making has been revisited by scholars, and researchers are beginning to measure the effectiveness of public input by

incorporating these types of interactions more thoroughly into analyses of the process. Underlying all analyses for oil and gas development is the policy that creates the basis for the impact assessment, in this case, national energy policy, and these policy decisions are made at the federal administrative level. A well-developed EIA rarely influences the decision whether or not to develop at all; rather, it addresses how, where, and to what degree development will occur.

Bartlett (1986) argues that the EIA not only provides for information exchange; it also influences norms and values that govern decision making, moving beyond scientific dialogue alone. Therefore, to measure effectiveness, Bartlett talks of a revised rational theory known as "ecological rationality," a rational approach to decision making that takes into account the ecological foundation required to maintain livelihoods and human society. In analyzing the effectiveness of the EIA process under this revised theory, one must measure the influence of the acceptance of social, cultural, and ecological values within the assessment decision-making process (Cashmore 2004). While NEPA focuses on procedural requirements, the literature suggests that improvements toward substantive public involvement will benefit the parties involved and the final outcome.

In 1999, the Montana Legislature commissioned an independent study to evaluate the effectiveness of public participation within the state's EIA process. Many of the comments apply equally well to the EIS process on the North Slope. The Montana Consensus Council, a nonprofit organization administered through the governor's office, conducted a survey of stakeholders to evaluate the effectiveness of public participation. Though the survey was not based on a random sample, the findings are enlightening about whether substantive participation can be improved within an EIA process.[8] It demonstrated that more people participate when (a) a project requires an EIS, (b) when a project is located near a population center, or (c) when interest groups identify the project as controversial. It also found that people think that public participation is discouraged when notices of projects are described in technical or legal terms. The most notable finding is that there is a lack of common understanding of the objectives and purpose of the public involvement process under the state Environmental Protection Agency.

The Montana study identified a split in perception of the purpose and intent of public involvement; some respondents stated they thought the purpose was to assist the agency to "examine and disclose to the public the environmental impacts of a proposed action and its alternatives." Others thought its purpose was "to discover the interests and

[8] Of 280 surveys, 93 individuals responded, including conservation organizations (24 percent), independent citizens (23 percent), business and industry (18 percent), local/federal agencies, universities, law firms (18 percent), and state agencies (17 percent).

concerns of stakeholders and the public regarding a proposed project." They saw the process as providing an information flow from the public to the agency to advise the agency in decisions that affect public resources and society. This was also true among state agency staff. Some agency staff explained they had utilized the public review process to establish a dialogue with the public and have face-to-face meetings with stakeholders. Other state agency staff saw their position as one that receives comments from both proponents and opponents, without the responsibility of serving as a bridge between the two. Thus, people either expected the public process to serve more than one purpose or thought that the objectives were unclear to the public. Survey respondents suggested improvements to the public involvement process. Below are a few suggested improvements that came out of the study that have broad applicability:

(a) Public involvement should be facilitated by an impartial third party to reduce the possibility that meetings become unproductive and go off on tangents.

(b) Small groups (focus groups and advisory committees) should be used more often to encourage a detailed discussion of the issues and alternatives at hand. Larger group meetings do not lend themselves well to getting into detail or to creating discussions about the details of a project.

(c) Agencies should provide better summaries on the issues and decisions—a newsletter that covers one aspect of the project and includes a balanced view and the science particular to that topic would be helpful.

(d) Agencies should be required to respond to substantive comments.

Stakeholders in the Montana study agreed that they have public involvement opportunities and that there are multiple entry points for that involvement. Agency staff, however, pointed to workload, budget constraints, personnel constraints, and political pressure, which drives them to minimize public involvement. With regard to written communication, agencies were seen as needing to provide better, more timely information to educate citizens as well as show consideration for public comments such that social, cultural, aesthetic, and natural values are taken into consideration in equal measure as the economic value of the project and the scientific analysis provided. Stakeholders felt the information provided by staff to be unnecessarily technical, legal, or difficult to understand.

Staff from state agencies participating in the Montana study thought that most of the public comments received were not of a substantive nature or were not relevant to the review at hand. When asked if agencies fairly and accurately incorporate public comments into the final agency decisions, agency staff responded that while they respond to public

comments, their ultimate obligation is not to incorporate public comments so much as it is to provide the rationale for the agency decision, which, in and of itself, documents the fairness of the decision. Again, the lessons learned in the Montana analysis would appear to be broadly applicable to other agencies, including MMS.

Results from the Montana study suggest that to incorporate substantive written comments into the analysis, there must be a way to engage in a genuine exchange of information and a process for learning how both sides view the situation. To achieve this mutual exchange, the common strategic positioning that occurs among proponents and others must be acknowledged and a mutual two-way dialogue developed. Stakeholders responded this would be easier to achieve if public involvement occurred earlier and if participants felt equipped to comment on the purpose and need of the action itself rather than the details in the study only.[9]

2.3 COMMUNICATION BARRIERS IN THE NEPA PROCESS

One of the objectives of the current study was to systematically identify and analyze potential communication obstacles in the NEPA process. By identifying these obstacles, the newsletters that were developed could be tailored to avoid as many of these issues as possible. To analyze these obstacles (and how to reduce their respective influence on the newsletters), the following categories of potential barriers were identified by EDAW and MMS early in the development process:

- Technical language barriers: obstacles including jargon, grammar, word choice, and organization. This includes the language of expertise in scientific dialogue and risk communication.
- Linguistic and communication style barriers: misunderstandings that may arise from differences in language and communication styles among different cultural/ethnic groups.

[9] Recommendations included (1) amending MEPA to clarify the value and purpose of public involvement under MEPA: This includes provisions that allow the public to comment on decisions about actions that affect their lives; processes to seek out and actively facilitate the involvement of people who will be affected; defining how stakeholders will participate; establishment of a process that communicates to stakeholders how their input affected the decision; and (2) amending MEPA rules to provide a more transparent and interactive process to integrate public input and scientific information by establishing a process that allows the public to review whether the agency has fairly and accurately incorporated public input and scientific information. This could come in the form of a task force, which would review public comments or "a feed-back panel" to review the manner in which the agency incorporated public comment. This type of process results in greater accountability to the public and an increased understanding of the rationale behind agency decisions.

- Institutional barriers: funding and legal constraints that affect communication choices in the NEPA process and in the Federal Advisory Committee Act (FACA) process.
- Sociocultural barriers: communication issues attributable to broad sociocultural differences between federal government employees and local public stakeholders.
- Political barriers: problems generated by differential access to the locus of decision making over resource management; differences between perceptions and realities as to how decisions are made and by whom; and differences about whose interests (e.g., national vs. local) are at stake.

The categories are interrelated (not mutually exclusive) and separated here as a convenient organizational tool. Some share characteristics and most problematic situations combine several of these categories. Moreover, these categories may not be exhaustive, although they can be defined broadly enough to encompass most issues of interest for this document. Federal agencies will likely find the communication obstacles that head the list amenable to change. Part of the reason for the decreasing tractability of obstacles further down the list is that they extend beyond technical dialogue per se to encompass an increasingly complex set of human social interactions.

The analysis of each of these categories was accomplished through a literature review. Literature was selected for its relevance to communication barriers in the MMS decision-making process in the Alaska region.[10]

2.3.1 Technical Language Barriers

The CEQ regulations implementing NEPA require EISs to be written in plain language (40 C.F.R. § 1502.8), while the Executive Memorandum of June 1, 1998, extended this requirement to all government documents.[11] With the increasing public demand for improved access to supporting data and models, particularly scientific and technical information (CEQ 2003), the need to comply with the plain language requirement in NEPA analyses and documents has become both more pressing and more challenging as balancing scientific accuracy and public accessibility is a formidable task.

[10] Information from the literature review was supplemented with input from MMS staff regarding general communication challenges (EDAW 2005). This input was received during personal one-on-one interviews conducted by EDAW from June 15-16, 2005. The summary of these interviews is presented in Chapter 5.

[11] President Clinton issued an Executive Memorandum on June 1, 1998, directing the Executive Departments and Agencies to write in plain language.

Technical writing has earned the reputation of being dense, difficult to read, and at times, incomprehensible. Walker (2002) points out the barriers to communication that result from program and scientific language. Translating the language of science, which he calls "scientese," into "layman's English" is often a formidable task. In many ways the language of science has become reified by scientists and technocrats. Moreover, each scientific discipline has its own technical terms and way of communicating. That said, many of today's scientific magazines have made science accessible and readable for many years; *New Scientist*, for example, as with other science magazines developed for the lay audience, has been making science readable for over 50 years.

In addition to being baffling, sentences filled with scientific or technical terms may be viewed by some stakeholders as a contrivance by government agencies to wield power over the general public; at the very least excessive use of technical language can make agencies appear arrogant and obfuscatory. Sullivan et al. (1996:179) argues an agency's overdependence on technical and scientific language has unintended consequences. The agency actually loses its opportunity to fully engage and describe a proposed project to citizens:

> When citizens do not understand the material presented in an EIS they often rely on other sources of information—newspapers, consultants, special interest groups—to learn about the proposed project. For a variety of reasons, these alternative sources may not provide accurate critiques of the proposed project and any shortcomings that may occur in the EIS. The sequence of events that pits experts writing the EIS against experts reviewing the EIS for the public, clearly works against the agency and against the public participation process.

In short, the transfer of technical or scientific information to the lay public in a way that is comprehensible is not only required by the CEQ regulations implementing NEPA, it also is in the best interests of government agencies. Furthermore, CEQ regulations stipulate that environmental information made available to the public be scientifically accurate (40 C.F.R. § 1502.24). Thus, agencies often err on the side of technical and scientific description to ensure compliance with this requirement. The U.S. Office of Management and Budget's "Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies" implementing the Information Quality Act further emphasize the need for high-quality information in NEPA analyses and documents. This emphasis on technical accuracy may lead to difficulties in writing a clear message. To some degree, the overuse of technical language can have a chilling effect on providing easily understood descriptions due to the fear that the

description will not be as technically sound or scientifically defensible as one using more precise technical language. As a result, the overuse of statistics and graphs can both confuse and bore an audience. Appendices of environmental documents often consist of dozens of tables that are rarely used (EDAW 2005).

Further, attempts to describe and solve problems using statistics and mathematical models may oversimplify complex "real-world" situations. As noted by the National Research Council (NRC 1992:92):

> "in preparing NEPA analyses it is necessary to recognize that certain considerations, often decisive ones, lie beyond the reach of plausible numerical representation. Attempts to reduce radically components of the world to common metrics as a preliminary to 'bottom-line' calculations are not justified as an aid to clear thinking—the clarity and certainty so claimed is false."

In conclusion, the fact remains that it is often difficult to balance scientific accuracy with lay person readability. There are some areas of knowledge that require an understanding of complex, highly technical information. While effectively communicating technical or scientific information to the lay public can be difficult, a number of guides have been published that show how agencies can use well-established techniques for writing in plain English to create clearer and more informative disclosure documents (e.g., Axline and Bonine 1990; Detwiler 2005; U.S. Securities and Exchange Commission 1998). These guides also help agencies prepare documents that avoid poor grammar, cumbersome sentence structure, and unimaginative style.

The Language of Experts

Both the literature and previous experience on the North Slope suggest that biological, physical, and highly quantitative explanations of risk and the impacts of a project may be viewed by the public as having an inappropriate technical and quantitative focus that is separate from the risks and concerns that could interfere with their way of life. In other words, the manner in which social and cultural impacts are typically addressed is seen as disconnected from the risk analysis conducted through an EIS. This compartmentalization marginalizes the public who perceives the risk of the project and its impacts to their social/cultural heritage as being left unanalyzed. The manner in which risk is analyzed and its direct relationship to cultural/social impacts (versus direct biological impacts) becomes a significant barrier to technical dialogue with the public.

A significant body of literature exists on scientific dialogue and risk communication and theory. The subject is large enough that it could easily become its own separate literature review to better understand how scientific information contributes or inhibits the public's understanding and the public's support or opposition within a particular policy context. While this review will not be able to do justice to the body of work available, there are key points from recent studies that are provided below.

The NRC has taken a lead in developing approaches to risk and the integration of science into the public participation process to develop policy. In 1983 and again in 1996 the NRC developed two approaches applicable to federal resource agencies. The first is known as the "linear scientific approach" introduced in the NRC publication *Risk Assessment in the Federal Government: Managing the Process* (1983). This approach was an attempt by the NRC to ensure that risk assessment be scientifically based and free from political and policy influences (Weible et al. 2004). Under this initial NRC approach, risk assessment was thought to be value-free, a top-down straight-line approach to policy planning typically carried out by appointing a scientific panel of experts on a given subject, having them craft a plan amongst themselves and then present this plan through a public review process. Little public input is encouraged until the plan is complete. The theory behind this model is that science should be separated so as to be integrated into policy, independently, appropriately, and without corruption along the way. In 1996, the NRC adjusted their view, acknowledging the limitations of this approach, specifically that it was limited by scientific uncertainty and that it failed to address stakeholder concerns.

Zimmerman (1987) argues that risk communication must be viewed from a "process" perspective, rather than a "goal-oriented" framework because the goals or purpose of risk communication is not universally accepted. By viewing communication from a process framework, it becomes apparent that there is a polarization between stakeholders and others—"others" refer to regulators, scientists, project sponsors, and experts. Zimmerman describes this polarization thus: the public does not perceive itself as rule-bound by NEPA or any other review process and tends to be skeptical of established risk estimates, while regulators and experts from the scientific community are more inclined to stay within the rules and procedure that must be followed by regulations and guidelines. The public feels less of an obligation to be bound by institutional constraints, particularly when it comes to health, safety, and quality of life.

Other studies indicate the public acceptance of risk is determined by the public's confidence in the management of that risk, rather than quantitative modeling (Zimmerman 1987). Public trust can be restored through the adherence to process, which becomes more important as data prove less certain or absent.

Risk communication can also be problematic in that the public views the legitimacy of experts very differently than do regulators. Even when expert opinions are accepted by the public, the uncertainty in these opinions and in the risks themselves may be so great that they undermine the opinions. "The public is particularly skeptical of the use of experts and expert systems to characterize and communicate technical information about pre-project construction tests, containment provisions, and health risks" (Zimmerman 1987). Education efforts aimed at changing perceptions about risks (with the aim of changing the minds of stakeholders) have not been successful because people's judgments are influenced by previous values. Risk communication efforts may simply reinforce rigid views on both sides of an issue.

Zimmerman identifies ways in which federal agencies can improve the public engagement process when it comes to risk. He recommends establishing forums prior to the start of the permitting and review process that focus on specific key issues. This could include stakeholder meetings that explain:

(a) The project's planning framework and timeline (e.g., the time of year exploration will occur),

(b) The agency's track record on risk analysis (e.g., presentation of cases where projects were altered to reduce risks in response to public inquiry), and

(c) The over-arching mission of the agency and its relationship to policy-setting (e.g., explanation of MMS's mandate and how that mandate might affect its options).

In the case of Alaska offshore development, the decision-making process for lease sales is inevitably influenced by national energy policy. Though the public actively provides requests for consideration of alternative policies in terms of energy supply, public comments within specific EISs will not in and of themselves directly affect national policy. In the interests of clarity, federal agencies bound by policy mandates in their processes likely do well to make their agency directives, and the limitations they must operate under for a particular EIS, clear to those attending stakeholder meetings. Instead, agency staff (for any number of reasons) tend to reference the laws relevant to the proposed action, despite the fact that these comments do not directly emphasize that an agency may have no choice but to follow a certain course of action (Zimmerman 1987).

Several scholars question the role played by science in setting policy. Mostashari (2005) has organized several of these analyses, including:

- Meidinger and Antypas (1996), who argue that science has rarely settled a science-policy dispute, and that the production of more scientific knowledge for policy often leads to more questions and more controversy.
- Dror (Mostashari 2005) states that science should not only supply input toward policy options, but good science advice should also provide a minimum of science literacy that is essential for correctly using or rejecting science advice, apply scientific frames of thinking to the nonscientific dimensions of main choices, and improve the cognitive maps of decision makers and stakeholders. While Dror emphasizes the importance of science in informing policy decision making, "providing a balanced understanding of the scientific bases of main issues on the political agency ... is the most important service science advice can provide the public at large," it is also important to acknowledge that the underlying assumption of pure objectivity in science is questionable and certainly has its critics.
- Jasanof (1990), who calls regulatory science a "hybrid activity that combines elements of scientific evidence and reasoning with large doses of social and political judgment."

Mostashari outlines the breakdown between scientists and the public, suggests how this division can impact the role of science in regulatory decision making, and provides recommendations to address these barriers (see Table 2-1). Table 2-1 was designed to pertain to engineering-related decisions.

Table 2-1
Potential Problems in Different Stages of Conventional Technical Analysis

Problems	Process Stages	Possible Solutions
Perceived sponsor and/or organizational bias on problem definition, choice of alternatives, and findings	All stages in the scientific sphere	Independent funding for policy-related research, strong oversight on analysis, and inclusion of stakeholders throughout the scientific analysis process. Elicit stakeholder inputs in choosing alternatives. Use multiple criteria for comparison, refrain from optimization.
Perceived Bias in Model Assumptions	Model building, formal peer review process	Use of a wide range of sensible assumptions and incorporate a sensitivity analysis, agree on acceptable range of uncertainties with stakeholders. Choose wide range of reviewers and include reviewer comments and responses to critique in the final report.
Uncertainty in baseline data	Data gathering, model building	Bounding some uncertainties by bounding social-economic system interaction, provision of funding for good initial data, measuring possible impact and change rather than emphasizing baseline conditions.

Problems	Process Stages	Possible Solutions
Uncertainty in relationships between system components	Model building	Early stakeholder engagement and use of stakeholder inputs to gain better knowledge of the system. Use of stakeholder values to bound acceptable uncertainty. Continuous reevaluation as more is known.
Uncertainty in future projection	Model building, evaluation	Use scenario analysis to bound possible future developments and draft robust strategies that perform well across different futures.
Exclusion of issues of interest to stakeholders	Problem definition, evaluation of alternatives	Inclusion of stakeholders early in the scientific analysis process starting from the problem definition.
Politicization and selective use of scientific findings	Public review and comment on findings, use of findings in negotiation, inclusion of findings in policy design	Make language as unambiguous as possible and clearly explain the significance of uncertainties and the areas of the analysis they impact to avoid selective use. Promptly respond to media characterizations of the findings to prevent misrepresentation. Include stakeholders from early on in the process, make entire process transparent.
Weak stakeholder understanding of the scientific process and findings	Public review and comment on findings, use of findings in negotiation, inclusion of findings in policy design	Early involvement of stakeholders in the scientific analysis. Active efforts to explain the scientific complexity and consideration of stakeholder lay knowledge in the process. Create an accessible version of the report with the important highlights for public understanding of the issues considered. Use an accessible report format, supported by easy-to-interpret figures and graphs. Maximize communication using new participatory techniques.
Stakeholder resistance towards implementation	Policy implementation	Change the process toward a more participatory process from the beginning and take into account stakeholder inputs and interests at all stages of the policymaking process. Take into consideration social and political feasibility in addition to technical feasibility of alternatives.
No feedback between policy process and scientific analysis (open system)	All stages of the process	Change the process toward a more participatory process from the beginning and take into account stakeholder inputs and interests at all stages of the policymaking process. Continuing improvement and input of science during the process. Use of scientific models in the negotiation and policy design stage.

Source: Mostashari A., "Stakeholder-Assisted Modeling and Policy Design (SAM-PD) for Engineering Systems," Doctoral research, Engineering Systems Division, Massachusetts Institute of Technology, September 2005.

Risk Communication

A large amount of literature is available on the manner in which risk is evaluated, managed, and communicated to the public (Fischhoff 1985, 1987, 1996; Fiorino 1989, 1990; NRC 1983; Jasanoff 1990; O'Riordan 1983; Zimmerman 1987). While these issues will be presented in overview, this section will focus on the current thinking about risk communication and where improvements can be made.

Several fundamental questions face those who would seek to accurately communicate with the public regarding risk. How should the public perceptions shape how risk is evaluated? How does public fear affect the manner in which risk is determined? Sunstein in *Laws of Fear: Beyond the Precautionary Principle* (2005) argues that social beliefs inflate the public's concerns over risk, that the only thing to fear is the fear of risk itself (as opposed to the project in question), and that the only rational way to counteract these "irrational" public fears is for expertly done cost-benefit analysis to be conducted. These analyses should be insulated from politics and presented publicly, and risk analysis should largely be based upon such unbiased findings (Sunstein 2005). Kahan et al. (2006) counter Sundstein's "irrational-weigher theory" with a critique that Sunstein's analysis excludes the importance of cultural cognition and worldviews from the risk perception equation.

Kahan et al. argue that "the tendency of individuals to adopt risk perceptions that reflect and reinforce their cultural worldviews" plays a much more expansive role in risk perception than Sunstein and others have addressed (Kahan et al. 2006). Their study tries to explain the variation in individual risk perception and the political conflict over risk, as well as reconcile risk regulation with deliberative democratic procedures. They argue that expert cost-benefit analysis simply protects the law from a truly deliberative form of expressive politics, and that what is needed is a model that allows for rational risk decisions that are respectful of cultural worldviews.

In overly simplistic terms, rational theory, or the "rational-weigher model," is based upon neoclassical economics and assumes that individuals can be expected to make decisions that maximize their well-being, and, therefore, institutions that regulate risk are unnecessary and even destructive. Regulation should exist only when individuals expose others to risks where costs are shared by those creating and being affected by the risk. Irrational-weigher theory contends that individuals approach risk in a manner that widely overestimates the magnitude of a high-profile risk, such as an oil spill, while underestimating smaller risks, such as health risks from mercury accumulation in fish or cancer from a popular food. Interaction between individuals only adds to heighten and exaggerate the concern over the risk, with risk perceptions that reinforce and feed upon one another, leading to irrationality and fear. Government regulation, under the irrational theory, then should depend on expert advice because scientific experts tend to be less inclined toward irrational public perception of risk as they regularly analyze and weigh various sources of information through robust procedures and informed observations. Therefore, scientific experts are the appropriate individuals to entrust environmental regulations.

The alternative to both these theories is the "cultural cognition" theory, which is based upon the notion that cultural values and cultural worldviews determine the significance an individual places on the consequence on a regulatory action, including what they believe the consequences to be.

> The impact of cultural worldviews is not an alternative to, but rather a vital component of, the various psychological and social mechanisms that have been shown to determine perceptions of risk. … That is, the direction in which they point risk perceptions depends on individuals' cultural values (Douglas and Wildavsky 1982 cited in Kahan et al. 2006, p. 18).

In testing this theory, Douglas and Wildavsky conducted a random national survey of 1,800 people and measured the impact of cultural worldviews on risk perception. Known as the National Risk and Culture Survey, they confirmed the relationship between worldviews and risk as it related to, for example, environmental risk. The team concluded "The more egalitarian and solidaristic persons become, the more concerned they are about global warming, nuclear power, and pollution generally, whereas the more hierarchical and individualistic persons become, the less concerned they are" (Kahan et al. 2006 p. 22-23).[12] Risk perceptions, according to the model, "will vary across persons in patterns that reflect and reinforce their cultural worldviews. … It follows that cultural variation in risk perception will manifest itself in systematic differences in risk perception across different social groups."

While Sunstein may argue that an expert-based approach moves the risk evaluation away from highly representative institutions to a more insulated and scientific-based one, Kahan's group argues their "cultural evaluator" model incorporates scientific expertise with a more deliberative and participatory approach toward risk evaluation. They point to Fishkin's Deliberative Poll (Fishkin and Farrar 2000), using expert moderators, which has been shown to result in citizens changing their mind over contesting issues of fact. For example:

> Deliberation has the potential to alter individuals' understandings of the relationship between their cultural affiliations and particular beliefs. On this view, what individuals learn in the course of deliberation isn't so much new information about the facts being debated but rather new information about the identities of those who hold particular factual beliefs. If participants

[12] In this instance, egalitarian and solidaristic individuals are those who perceive that there is little difference between people and that all humanity is linked. Hierarchical and individualistic individuals have opposite views, where there are perceived to be pronounced differences between people and individual actions are seen as having individual consequences.

> come to see either that a particular belief is less dominant among their cultural peers than they had imagined or that cultural peers who deviate from the dominant belief are not censured as severely as they had anticipated, participants are likely to revise their view about the social cost—or more accurately the social meaning of changing their mind.
>
> When egalitarians and solidarists are exposed to the message that nuclear power can reduce global warming, they are likely to perceive nuclear power to be less dangerous. The affirmation of their identity associated with recognition of the global warming threat reduces a cognitive impediment to accepting information that they have long resisted about nuclear safety. In these examples, we have assumed scientific consensus that both air pollution and global warming are serious environmental threats and that nuclear power is reasonably safe. But in conditions of scientific uncertainty, the same strategy of cultural-identity affirmation could be used to make a culturally diverse public receptive to whatever empirical information might eventually emerge in support of policies that advance society's shared interests (Kahan et al. 2006 p. 37-42).

Traditional scientific framing reduces the meaning of risk to being shaped mostly in terms of defining an empirically adequate risk assessment method or an empirically acceptable level of risk, thereby avoiding the larger social context and doing little to reduce the public's concerns over an objectively set risk level (Wynne 1992, 1996). This can be addressed through acknowledging the assumptions (social as well as mathematical) upon which predictions of risk are based and to open the debate on risk to include wider social concerns.

The term "risk" has technical and social understandings, but the two are separated in terms of analysis, with the technical interpretation reducing "risk to an objective construct that is quite simply a function of probability and consequence" (Renn 1992; see also Royal Society 1992 cited in Snary 2004). Jasanoff (2002) argues that it is critical to consider how citizens attach normative weight to their experiences of risk, and that risk is framed within the social and political, to wit: what is at stake and who feels threatened. Wynne's position is that purely scientific framing excludes the wider social concerns about risk (1996). Because the public addresses questions of risk that are "social" in nature, they go beyond asking questions about toxicological analysis or fault tree results and question the general overall risk impacts to their community. Views that do not address scientific analyses or predictions about the consequences of the project may be treated as irrelevant or misinformed. Risk communication is meant to narrow the gap

between the traditional technical interpretation of risk and the social and political framing that occurs within a community.

Snary (2004) provides an overview of some of the early risk studies: in 1969, Starr (in Snary 2004) conducted a study to determine "How safe is safe enough" and found that acceptable levels of risk are influenced by (1) the level of benefits; (2) whether the risk is voluntary or not; and (3), the number of people who are exposed to the risk. In 1985, Slovic et al. (in Snary 2004) suggested that the public tends to exaggerate risks seen as safe by the experts and to underestimate more familiar risks. Specifically, Slovic et al. found that the public prefers more intensive regulation of risks on unfamiliar and dreaded subjects such as nuclear power and herbicides, and very little extra regulation of risks on subjects that were familiar and less threatening, such as alcohol control and automobile safety. Further, the cultural theorist Douglas proposed in 1966 and 1978 (in Snary 2004) that risk is defined by the cultural factors that are common to specific groups and not by scientific findings at all. Snary (2004) argues that regulatory planners must recognize that public concern about environmental risks is, in many cases, mistakenly characterized as NIMBYism[13] when in fact these concerns are fundamentally related to cultural and social factors.

Klinke and Renn (2002) suggest that the manner in which risk is communicated should take into account three variables: (a) the type of management strategy employed to analyze the risk; (b) the nature of the risk and whether it is uncertain, ambiguous, or simply complex; and (c) the type of discourse under which the risk is classified. This will be explained in detail below. For the management strategies, they identify three possible approaches in evaluating risk:

(1) **risk-based management:** includes numerical, quantitative thresholds, standards, and exposure limits.

(2) **precaution-based management:** focuses on reducing the impact of development activities through the application of the precautionary principle; examples might include developing an organizational structure for handling uncertain risks, constant monitoring, use of Best Available Control Technology (BACT) or As Low As Reasonably Achievable (ALARA) methodology.

(3) **deliberative-based management:** establishes management standards that have come out of a deliberative rule making process, mediation, or roundtable deliberative processes.

[13] NIMBY stands for "Not In My Backyard." When used as a noun, it connotes a level of local stakeholder opposition based not on valid social or environmental concerns, but from a general distrust of change in any form.

Klinke and Renn define uncertainty as a situation of being unclear about factual statements, whereas ambiguity is defined as a situation of contested views about the desirability or severity of a given hazard. Complexity refers to a more straightforward scientific assessment of a level of impact. They argue that it is essential to distinguish the type of discourse that is needed to resolve the issue at question. Three types of discourse are identified: (1) epistemological discourse, (2) participatory discourse, and (3) reflective discourse. These, combined with one or more management strategies and the "type" of uncertainty, determine the best deliberative process for communicating and resolving issues that contain significant risk factors with stakeholders. Although scientific input is a necessary component of deliberative actions aimed at resolving ambiguities, these deliberative elements reduce uncertainty and resolve ambiguities in the public realm.

Epistemological discourse refers to a description of a scenario after experts debate the factual assessments of that scenario; its goal is to achieve a consistent definition and explanation and to clarify dissenting views among experts. An example might be the United Nations Framework Convention on Climate Change and the procedures it has used to release reports among 250 scientists on climate change. Where there is a strong perception among stakeholders that uncertainty of the risk is high, a "consensus conference" can bring together scientists to resolve the question of risk; this has been done by compiling data, presenting various scientific arguments articulating different science camps, deliberating among these camps, and then presenting the findings to the public.

Reflective discourse addresses the tradeoffs between too little and too much precaution and is used mainly as a means to decide on risk-prone or risk-averse approaches. Because these questions do not have a scientific answer, a reflective discourse is recommended for major stakeholder groups and policy makers to address how much uncertainty is acceptable given the opportunity presented. In the case of a discussion on the potential for oil spill impacts, a reflective discourse asks the question "is taking the risk worth the benefit" or "how safe is safe enough" (Klinke and Renn 1999, 2002). This process is sometimes coupled with policy advisory committees. Negotiated rule making, mediation, and roundtables are used for getting to the desired purpose of a reflective discourse.[14]

[14] The Department of Veterans Affairs (DVA) established a participatory discourse as part of an EIS review to provide the public with an opportunity to better understand the various environmental issues relating to the development of a military cemetery. In doing so, the DVA established an "open house" in a meeting room for the public, whereby eight stations were set up; each detailed a different environmental issue addressed within the EIS—separate stations included a biological resource station, cultural resource station, land impacts station, and so on. Experts were available at each station to talk one-on-one with stakeholders; and stakeholders could visit any or all of the stations. Individuals were encouraged to provide written or oral comments on a particular subject within the DEIS after visiting a station and no formal presentations were given.

Participatory discourse is designed to resolve differences about values between stakeholder groups and policy makers. Participatory discourse procedures such as joint fact finding (described in detail in Section 4), citizen advisory panels, as well as more novel procedures may be utilized. Participatory discourse is appropriate to use mainly in cases where solutions must be found that are compatible with the interests and values of the people affected and decision makers hope to resolve conflicts among the stakeholders and the project proposed. Criteria with regard to societal change, community way of life, technological developments, and environmental justice are topics typically covered in participatory discourse.

Klinke and Renn (1999, 2001) believe that certain issue typologies cannot be resolved if they are being addressed in the wrong type of discourse. What they call "knowledge questions," for example, whether methods scientists might use to determine risk for humans after transferring data from animal research are appropriate, cannot be answered through participatory discourse. Most scientific presentations during an EIS public comment period would fall under the category of epistemological discourse. If expert or staff presentations are meant to explain risk and gain stakeholder support, stakeholders inherently have both scientific and value-based concerns. Klinke and Renn argue that value conflicts cannot be resolved through epistemological discourse; it therefore requires parallel discourses to address those aspects within an EIS that treat the scientific complexities of risk with one approach and the ambiguity and uncertainty of risk in a different discourse activity.

They further argue that risk-based management relies mostly on epistemological discourse and is best used if there is relatively little uncertainty left and the risks are well known. When a significant amount of uncertainty exists among stakeholders, a risk-based strategy becomes counterproductive and a precautionary management approach is recommended along with a reflective discourse. Finally, deliberative-based management depends on participatory discourse. Klinke and Renn are clear that it is not enough for risk regulators to show they are open to public concerns or even that the issues brought forth by the public have been addressed. The risk evaluation itself must invite public involvement and new forms of deliberation should be added.

Debates surround both how risk is analyzed, whether it is possible to conduct a truly "objective" analysis of risk, and the legitimate role of risk analysis for regulatory decision making. Arguments have been made for and against involving the public in defining risk levels, with technical experts arguing this could be problematic at best and disastrous at worse because jockeying for press coverage and stakeholder biases will misguide public perceptions, leading to poor decision making. On the other hand, social scientists argue

that communities affected by the potential harm from a development should have a say at determining the level of risk judged to be tolerable (Klinke and Renn 2002; Lynn 1990; Webler and Tuler 1999; Leonard and Zeckhauser 1986).

The NRC released a report several years ago advocating a combined assessment-public dialogue process known as an "analytic-deliberative" approach (Stern and Fineberg 1996). This approach combines scientific expertise with the values that stakeholders bring to the process and includes peer review as a means to verify understanding and a deliberative process, which infers equality among participants and is conducted in a manner that intends to resolve conflicts in consensual ways. However, Breyer (1993), Coglianese (1999), and Rossi (1997) have all questioned the practicality of this approach. The most typical argument is that public preferences do not match the real interests of the public, and the decision will, in effect, be guided by biases, limited experience, and misinformation (Klinke and Renn 2002). What procedures have been tested to incorporate the social and cultural values of the public as risk analysis is being conducted? A change in the production of knowledge has moved scientific expertise and risk analysis into a new position that demands a social contract between science and society (Nowotny et al. 2001 cited in Webster 2004). As faith in expert systems has declined, policymaking has yet to embrace the type of public engagement with science that is required to establish a legitimate and socially robust management of risks in the eyes of the public. Whereas much of the risk discourse in the past focused on a "lay vs. expert" approach, there is increasing interest in refining an approach that brings a social framing of risk into science-risk-policy analysis and where risk is constructed to allow the analyst to understand how risk is differentiated by meaning, context, and significance. As Webster (2004) states, "…the greater number of social hoops science has to jump through the more reliable and socially resilient its knowledge claims will become. This requires that science and its side effects survive a social rather than simply methodological falsificationism (*sic*)."

2.3.2 Linguistic and Communication Style Barriers

Linguistic barriers may preclude effective participation in the NEPA process by certain segments of the public, including some populations that may also be low-income, minority, or tribal populations (CEQ 1997b) and therefore of special interest due to the considerations of environmental justice under Executive Order 12898. Scollon and Scollon 2007 (1980) note that, "People from different ethnic groups often have different ways of communicating. In face-to-face communication these differences in language, communicative style, or ways of speaking can become cumulative and even result in discrimination against ethnic and other minorities."

While Alaska Natives are now urged to voice their opinions by participating directly and through representatives in innumerable committees, surveys, and public meetings, the English language supplies the conceptual categories and the vocabulary used to frame the debate and the decision-making process (Morrow and Hensel 1992). Yet, communicating in their native language is a strongly valued cultural characteristic among many Alaska Natives (Sampson 2002). For example, many adults and elders among the North Slope Iñupiat continue to speak Iñupiaq as a first language (NRC 2003). Iñupiaq is particularly important because of its vocabulary for identifying environmental conditions of ice and snow as well as the characteristics of animals and their behavior (Nelson 1969). Wohlforth (2004) notes that one cannot attain the full benefit of Iñupiaq by simply incorporating individual words into English as technical jargon. The very structure of Iñupiaq helps deal with situations in a unique environment and the traditional language has a broader cultural value as well. As Worl et al. (1981:75) state, "In times of stress and indecision about certain changes, in times where rhetoric is used to reify values, in times when claims to leadership must be validated, the Iñupiat, particularly the older, more conservative members of the community turn to the use of Iñupiaq as a central issue."

It is common for agencies to provide for non-English translations, both written and oral, during public hearings and scoping meetings. However, the use of interpreters may prove problematic in practice where close translation does not always occur. For example, an elder may give an extended verbal testimony in Iñupiaq, which will be translated to something that is only a few seconds long, such as, "She favors Alternative 3" (EDAW 2005). In these cases, local interpreters are clearly screening out a great deal of information; what is being screened and the reason for the screening remain unknown to the English speakers present.

Even the meaning of English words or phrases may vary across ethnic groups. For example, the meaning of "yes" may vary from "maybe, I'll consider it" to "definitely so," with many shades in between (DuPraw and Axner 1997).

Speech patterns that have a unique timing/rhythm can also create communication difficulties. For instance, non-Natives often find speech patterns a barrier when listening to Alaska Natives speak English. Many Alaska Native cultures speak with great articulation and what appears to non-Native speakers as substantive pauses (Walker 2002). Non-Natives may consider a lengthy pause as the opportunity to interject their own thoughts and opinions, the result being that the Alaska Native speaker may feel that they are continually being interrupted (Scollon and Scollon 2007 [1980]).

Styles of communication are often an intimate part of what is being communicated (Morrow and Hensel 1992). Sometimes the most informative Alaska Native speakers use different styles than western communicators (e.g., styles that are more indirect and sometimes in the form of a story or lesson) (EDAW 2005). For example, the lengthy narratives that Yupik elders tell at public meetings often detail current situations, viewpoints, ethno-historical knowledge, and appeals to values in the form of indirect parables (Morrow and Hensel 1992). The underlying message of these parables can be overlooked by those unfamiliar with this communication style.

DuPraw and Axner (1997) also note the importance of nonverbal communication. Nonverbal communication includes variables such as facial expressions, gestures, seating arrangements, meeting locations, sense of time, and personal space. All of these variables can transmit messages (which may or may not be intentional) that affect how individuals and groups interact and relate to one another.

The social relationship between people engaged in a dialogue can influence attitudes toward information disclosure. For some ethnic groups it is not appropriate to be frank about emotions, about the reasons behind a conflict or a misunderstanding, or about personal information, especially when communicating with strangers (DuPraw and Axner 1997). For example, Scollon and Scollon (2007 [1980]) contrast Athabaskans and non-Natives as follows:

> Athabaskans, on the other hand, enjoy talking with people they know well who share their point of view. In situations where they do not know each other, even in cases where parents and children have been separated for some time, they prefer not to talk much until they know where they stand with each other. They have a high degree of respect for each other's individuality, which they demonstrate by not talking too much or asking too many questions. In this way they preserve their own individual point of view. Athabaskans value getting to know each other by observing people's actions. English speakers value conversation as a way of getting to know people.

Attitudes toward conflict in general can also affect communication styles. For example, among some individuals and ethnic groups conflict and confrontation are considered a positive action, while others see them as something to be avoided at almost all costs (DuPraw and Axner 1997).

As noted by Scollon and Scollon (2007 [1980]) in the following excerpt, the complexity of linguistic and communication style barriers defy simple solutions:

> Because of the complexity of world communication, we also cannot expect a solution based on everyone's learning everyone else's communicative system or style of politeness. Even within Alaska the degree of complexity is too great for this type of solution. The only viable solution that we can advance is the cultivation of an international, interethnic, intercultural communicative style of deference politeness. We must assume at the foundation that communication is difficult and problematical, that we must minimize our impositions on others, that we must leave others the option of not acting on our impositions or acting as they choose, and that we can make only minimal assumptions about the wants, needs, relevancies, and priorities of others. The only common ground on which interethnic communication can be based without discrimination is recognition of the value of difference and a respect for it.

2.3.3 Institutional Barriers

Creating a true partnership with the community involves more than holding a hearing and making documents available (CEQ 1997a). Effective public involvement in the NEPA process demands long-term, background communication with the public about technical topics (EDAW 2005). Militating against federal agency efforts to implement this level of communication are funding constraints and staffing issues. The cost to prepare NEPA-related documents is increasing at a significant rate (House Task Force 2005). Dreher (2005) notes that every study of NEPA implementation has highlighted problems of inadequate federal agency financial and staff resources. As the federal government has reduced budgets and shifted priorities, it has become increasingly important for agencies to fulfill their NEPA compliance activities in a more timely and cost-efficient manner. Moreover, NEPA has consistently been derided for creating what appears to some critics as an "endless agency decision process" (House Task Force 2005; McMorris 2005).

The time, effort, and expense involved in promoting effective public participation are especially high in Alaska because of the long distances between communities and difficult travel logistics. Given the costs and often tight schedules associated with NEPA efforts, federal agencies tend to go in and out of communities quickly for meetings (EDAW 2005). The reliance on such approaches to public involvement in Alaska and elsewhere has been widely criticized. For example, Wondolleck and Yaffee (1994) note that, while public hearings satisfy legal requirements and provide the appearance of a

public forum, there is often little evidence that they satisfy the affected public's need to feel that their concerns have been truly heard. Similarly, Creighton (1999:253-254) argues that too many agencies "get wrapped around the NEPA requirements when they should be treating NEPA requirements as bare minimums." In brief, procedural compliance does not necessarily mean effective public involvement (Solomon et al. 2000).

In addition, there is a public concern that most comment periods do not give stakeholders sufficient time to educate themselves on the issues and prepare adequate responses, particularly in areas of the country where there is a large federal presence and many NEPA activities (CEQ 2003). For example, consider that residents of the North Slope and other interested parties were given less than 2 months to review the Liberty Development and Production Plan DEIS (MMS 2001). The document consisted of three volumes and nearly 1,500 pages.[15] Furthermore, the format of many public hearings limits the length of time for testimony. The communication style of Alaska Natives may involve lengthy narratives. However, public testimony implicitly disallows this approach, in that a scoping meeting conducted in the preparation of an EIS is typically restricted to a few minutes per speaker.

Compounding the above problems, many villagers, particularly in the smaller communities throughout Alaska, wear multiple hats in terms of participating in community activities; the demand on their time is substantial. Walker (2002) notes that, besides jobs and subsistence activities, there are significant activities related to kinship obligations and tribal obligations. In addition, there is a diversity of boards and other formal organizations to attend to. Some villages have a city council, a tribal council, school boards, and subsistence boards. There are also activities and demands associated with the regional corporation and village corporations established under the Alaska Native Claims Settlement Act. Competing with these various entities for villagers' time is a continuous stream of federal agency activities. For example, a minimum of 13 NEPA-related public meetings were scheduled in the North Slope community of Nuiqsut (population about 400) between 1995 and 2004.

In addition to imposing high time costs on the public, closely scheduled public meetings and hearings for different projects may also create confusion among potential public participants. In the fall of 2005, for instance, meetings were scheduled in North Slope communities for the proposed Five-year Plan for the OCS Oil and Gas Leasing Program, the Beaufort Sea Multiple Lease Sale, and the Beaufort Sea Environmental Assessment.

Advances in information technologies are being used by federal agencies to provide increased access to information and enhance public participation (CEQ 2003). However,

[15] Cambridge Scientific Abstracts noted that in 2000, the average FEIS was 742 pages (House Task Force 2005).

focusing on electronic communication (website, e-mail, etc.) is problematic for the North Slope and other rural areas of Alaska (EDAW 2005). One rural resident summed up the difficulty of keeping the dispersed rural population involved when he commented on what he didn't like about the draft public involvement procedure of the Alaska Department of Transportation and Public Facilities: "… the assumption that rural Alaskans have access to fax machines, phones and computers. Most of us don't have running water and some don't have electricity" (Federal Highway Administration 2003). Because the expertise and technological capabilities of participants in the NEPA process can vary widely, CEQ (2003) concluded that electronic distribution of information and documents and use of other information technology tools is no substitution for traditional public involvement mechanisms, such as scoping meetings and hardcopy document publication and distribution.

According to Brown (2005), communication barriers have also been created by federal agencies going overboard to prevent what they believe to be *ex parte* communication. This refers to any written or verbal communication initiated outside of a regularly noticed public comment period between an official with decision-making authority and one or more of the parties concerning subject material that is under consideration by that official. Brown argued that "this approach is leaving stakeholders out of the NEPA process for extended periods while the analysis is underway. … This eliminates a healthy and productive dialogue between the agency and stakeholders which sometimes extends into many months, and sometimes years." While it is difficult to judge how pervasive this risk-adverse attitude is within a particular federal agency, and in the federal government in general, the fear of making mistakes in procedure and fiscal areas is identified consistently as a major barrier for doing something different (Collaboration Action Team 2005). An ever increasing and complex tangle of authorities (laws, executive orders, and court decisions), contract and procurement procedures, and inflexible budgets may combine to form a series of real and perceived barriers to increased communication.

Federal Advisory Committee Act

One way in which federal agencies can legally engage in ongoing communications with stakeholders outside the NEPA process is to organize advisory committees under the Federal Advisory Committee Act (FACA) of 1972.[16] FACA-chartered advisory committees are a vehicle for involving various groups outside of government in environmental

[16] FACA committees can be created by the President, Congress, or federal departments or agencies and must meet these basic requirements: (1) must be open to the public and the public must be permitted to present their views; (2) all meeting minutes and reports must be available for public access; (3) the public must be notified of meetings by advertisement in the Federal Register; and (4) committee membership must be balanced by points of view (U.S. Environmental Protection Agency 2005).

decision making (Long and Beierle 1999). FACA was meant to counter the undue influence of special interests on public policymaking by balancing the membership of federal advisory committees. Moreover, the advisory committees that FACA governs can encourage public interaction with federal agencies in arriving at decisions. FACA-chartered advisory committees are not intended to substitute for the normal NEPA public participation process, but rather to supplement it. FACA's aim is to reach agreement that the federal agency can then use to propose a rule—this is known as a "negotiated rulemaking" process and is considered a collaborative approach (Peyser 2005). However, while FACA was designed to increase stakeholder input, agency staff feel overburdened and fearful of the process and, as a result, staff tend to shy away from establishing FACA committees (Moote and McClaran 1997).

Creighton (1999) argues that the procedural requirements for establishing, operating, and overseeing these federal advisory committees have limited use as a tool that agencies can employ to engage the public:

> [FACA] is a perfect example of the law of unintended consequences. FACA was designed to eliminate a number of standing advisory committees that were seen as highly wasteful payoffs to political supporters. But the act made it extremely difficult for federal agencies to establish advisory committees that served a useful public purpose. It can still be done, but it requires months to obtain the needed approvals, and once the approvals are obtained, FACA requires extensive continuing documentation.

These procedural requirements make it difficult for groups outside of government to become advisory committees. Ambiguities in FACA law, ironically, have had a "chilling effect" on public participation in environmental decision making. Specifically, FACA uses a top-down approach in which federal agencies approve the committee and its membership and the agency retains the authority to convene and adjourn meetings. This reduces legitimacy in the eyes of the stakeholders. The chartering process is also difficult and can take a long time, as, for example, was the case of the Blue Mountains Natural Resources Institute Advisory Committee, established through FACA. It took 5 years for its membership to be approved. FACA itself was not designed to increase public participation; rather, it was designed to reduce the pressure of special interest groups by creating more balanced advisory committees and to limit the quantity of federal advisory committees and control their expenditures. Functionally, FACA imposes constraints for agencies in terms of public participation initiatives (Long and Beierle 1999).

Under FACA, any time a federal agency intends to establish, control, or manage a group that gives advice, if there is one member who is not a federal, tribal, state, or local government employee, the agency must comply with FACA and the related administrative guidelines developed by the General Services Administration. Thus, federal agency officials may consult freely with various stakeholder representatives, either individually or as a group, as long as there is no effort to solicit group-based opinion or advice concerning the agency's policy or management. For example, agency officials might convene a town hall-type meeting to share information and solicit individual opinions on a current issue of public concern. As long as the officials do not ask for a group vote or consensus on the issue, this does not raise FACA concerns. In practice, however, agency officials sometimes choose not to interact with interest groups out of confusion over what FACA requires and a fear of being sued for violating the law (Mills et al. 2007 [2004]).

In fact, scholars have referred to these concerns as "FACA-phobia," fear by agency staff that agencies may be sued because the advisory group may not meet the requirements of FACA and the Administrative Procedure Act (APA). This fear results in some agencies avoiding all participatory efforts that are not chartered under FACA, with some agencies going so far as to believe the APA restricts all agency interaction with nonfederal bodies (Long and Beierle 1999; Moote and McClaran 1997). This is particularly profound for localized, site-specific committees because the procedural requirements and costs associated with those requirements may be too high. One example is the U.S. Forest Service (USFS), which has pulled away from non-FACA chartered efforts as a result of litigation, which charged the Northwest Forest Management Plan of violating FACA (Long and Bierele 1999).

Additionally, because federal advisory committee membership is chosen by the supporting federal agency, the critical discourse on FACA warns that establishing trust between the public and the participants in the committee becomes difficult because the general public tends to regard such committees with skepticism. Thus, neither the procedures that create FACAs nor the makeup of the FACA itself helps to assuage these public concerns.

Nevertheless, a number of agencies have made significant progress in overcoming the problems associated with implementing FACA as well as other institutional constraints to effective public/agency communication; a number of case studies of agency solutions are presented in Section 4. It is also important to note that NEPA analyses and documents for proposed federal actions in Alaska are unique in that they entail a more extensive public participation component than may be the case elsewhere. One reason for this high level

of public involvement is that federal actions in Alaska that trigger a NEPA environmental review often potentially affect both Alaska Native (minority) and rural populations, and thus invoke environmental justice and "subsistence" considerations under Executive Order 12898 and the Alaska National Interest Lands Conservation Act (ANILCA) of 1980, respectively.

These environmental justice and ANILCA analyses typically necessitate information collection by federal agency staff in the potentially affected communities. These "boots on the ground" serve a double function—they not only amass the information necessary for defensible environmental justice and ANILCA analyses, but they also tend to collect public comments from a wide range of community residents on various issues of local interest. These comments are documented in the project administrative record in various ways, some more formal than others. This documentation serves to increase both the number of people whose views are represented in the project record (since many are contacted by field staff who would not have attended a formal project meeting) as well as (at least potentially) the breadth of issues documented. These community visits also provide agency staff opportunities to answer questions about the proposed federal action (or direct residents to those who can answer those questions) and thus serve a general information distribution, or project liaison, function. While this may not be as satisfying to the public as direct and personal contact with a decision maker, it nonetheless seems to facilitate the transmission of public concerns to the attention of those decision makers. The relative success of this mechanism depends on the ability of the agency staff performing these tasks and the adequacy of the staff resources (budget and time) available.

2.3.4 Sociocultural Barriers

Barriers to communication in the NEPA process may also derive from differences in sociocultural systems. The importance of sociocultural systems in the NEPA process was recognized in the first report of the National Research Council Committee to Review the Outer Continental Shelf Environmental Studies Program:

> People conceive of possible impacts and perceive of their probabilities in terms of *their* environment as *they* experience it and not necessarily an environment constructed of features selected by an objective analyst. Because human socioeconomic systems are social and symbolic, people in different environments or milieus can have different views of those environments that are equally realistic. Because these views are real, they have real consequences (emphasis in original) (NRC 1989).

The values that inform environmental choices can include considerations of morality, equity, justice, and honor; ideas about sovereignty and property; and aesthetic values and conceptions of what constitute quality of life. These values come into play during the process of risk communication and have an influence on the outcome of this process.

Risk communication refers to a social process by which people become informed about hazards and can participate in decision making about risk issues, and where that participation (in both directions) influences outcome (Rohrman 2007 [2000-2002]). Agencies that communicate about risks to potentially impacted communities benefit from understanding that culture contributes to the spiritual and intrinsic values that stakeholders accord to potentially damaged resources. Russell et al. notes that "culture plays an important role in threat assessment and risk perception." It is the "instrumental, spiritual, and intrinsic values accorded the damaged resources" that are determinants in how risk is perceived and measured. This plays out in how Alaska Native communities, non-Native communities, and government agencies perceive risk and is consistent with other cross-cultural studies on public attitudes toward risk that emphasize "the tendency of individuals to adopt risk perceptions that reflect and reinforce their cultural worldviews" (Russell et al. 2001). Recognizing these differences in risk perceptions and the role that culture plays in shaping stakeholder worldviews about risk allows one to devise appropriate risk-communication strategies. As Rohrmann states:

> Informing and communicating about risks is more likely to succeed when treated as a two-way process, when participants are seen as legitimate partners, and when people's attitudes and "worldviews" regarding environment and technology are respected. This is particularly true in the case of risk controversies. Acceptance of risks is not an information/education issue … in order to be successful risk communication most likely needs to be treated as an interactive process [that creates credibility and maintains social trust] (Rohrman 2007 [2000-2002]).

It follows that analysts and decision makers must assume that the views of an environment held by those living in it are realistic even if community views differ from those of the "outsiders" (NRC 1992). The Socioeconomics Panel established by the Committee to Review the Outer Continental Shelf Environmental Studies Program describes the predictable consequence of agencies' failure to give full and respectful treatment to local conceptions, perceptions, and apprehensions:

> … the potentially affected groups begin to make politically charged claims about one another. Federal agency officials tend not to be passive

> observers in this; they are among the most active participants in the process. In particular, agency staff members often are tempted to argue that the critics of agency policies are "emotional" or "misinformed" (Hance et al. 1988). These characterizations fail to acknowledge salient socioeconomic effects—and create new ones as well. They are "guaranteed to raise the level of hostility between community members and agency representatives and ultimately stand in the way of a successful resolution of the problem" (Hance et al. 1988). Such challenges can lead people to be resistant in principle to matters they might otherwise be willing to consider more dispassionately. This is all the more acute because the federal agencies' apparent failure to understand the public's concerns challenges communities' fundamental perceptions of reality. Furthermore, it is possible that for a community to have its reality disregarded by a powerful authority is profoundly alienating; it leaves no common ground on which the community and the authority can stand (NRC 1992:24-5).

In the past, the failure of federal agencies to take seriously or to consider respectfully citizens' concerns has led to widespread citizen alienation and anger, to political and legal action, and even to threats of violence (NRC 1992).

With regard to risk, while neither scientific nor public language assessment of risks can derail national energy policy decisions, communication on the subject can be improved such that the public has a better, clearer understanding of why and how decisions are being made. Risk communication campaigns need to address cultural factors because of large cross-cultural differences in risk perception (Earle and Cvetkovich 1997; Rohrmann and Renn 2000; Steg and Sievers 2000; Vaughan 1995). Communication barriers may stem from different views about nature—biological and physical—and the ways in which humans regard nature, including the equitable distribution of its resources (NRC 1992).

Sociocultural differences between Alaska Natives and non-Natives are often framed in simple terms as a conflict between "Western science" and "traditional knowledge" (for example, see Nighswander and Peacock [1999:206] and Stoffle et al. [1991] on environmental risk assessment). However, this simple distinction may trivialize Native understandings of science as well as of the local environments in which they gain their livelihoods. Native knowledge of their local environment is extensive. Natives also recognize that many observations about those environments made by scientists are correct. In a longitudinal study by Jorgensen (1995b) among large samples of Native and non-Native residents affected by the *Exxon Valdez* oil spill, it was established that Natives were engaged in complex subsistence organizations while non-Natives were not so

engaged, and that Natives knew vastly more than non-Natives about their local environments. It was also established that one-third of Natives recognized the expertise and knowledge of scientists as equal to if not greater than Native knowledge of their environments.[17] Natives did not reject scientific knowledge but rather regarded it as similar to their own empirically warranted knowledge. The Western science/Native knowledge similarities and differences were much more thoughtfully assessed by Natives than by non-Natives (Jorgensen 1995a).

Hensel (1996) provides an example of how communication barriers result from sociocultural differences between Yupik speakers and non-Native regulators. The context of the problem is an attempt to reconcile Yupik ideology with a Western scientific approach to fisheries management. The former links the availability of salmon and other naturally occurring resources to Yupik adherence to moral standards that dictate how these resources should be harvested, processed, and shared. The government regulations are devoid of moral precepts and supernatural beliefs.

> In the end, what happens is that the non-Natives keep saying that "There are no fish," and the Yupiit keep saying "Don't say that there are no fish." Everyone is confused. Presumably the non-Natives wonder why the Yupiit who are co-managing the resource in this organization are undercutting the effectiveness of the presentation. The Yupiit wonder how grown men can be so careless with their speech, and so willing to declare publicly that they (and everyone else) are morally bankrupt. The disjunction is amplified because the Yupik speakers' strategies are mapped onto their second language. Undoubtedly some markers that could potentially help clarify the

[17] In the study, 52 questions pertaining to knowledge of, management of, and consequences of oil-related activities to the environment were posed in 1989 and 1991 to 388 residents of the *Exxon Valdez* spill area (69 percent non-Natives and 31 percent Natives). Natives and non-Natives differed on all 52 questions, significantly on 79 percent of them. As to who among Natives, scientists, and scientists and Natives (co-equal) possessed more knowledge of land mammals, fish, sea mammals, and invertebrates in their local environments, in 1989, about 16 percent of Natives thought scientists and 42 percent thought Natives and scientists equally possessed the greatest amount of knowledge; among non-Natives 43 percent thought scientists and 43 percent thought Natives and scientists possessed the greatest amount of knowledge. The recognition of Native knowledge by non-Natives in 1989 was surprising. In 1991, proportions changed significantly: 7 percent of Natives thought scientists and 32 percent thought Natives and scientists possessed the greatest amount of knowledge. Among non-Natives, 49 percent thought scientists and 38 percent thought Natives and scientists possessed the greatest amount of knowledge. The differences between 1989 and 1991 correlated closely with opinions about who should manage naturally occurring resources. In 1989, a majority of Natives thought Native organizations should manage resources, while in 1991, Natives thought Natives or some combination of Natives and federal agencies should control resources. In 1989, over 80 percent of non-Natives thought state or state and federal agencies should manage most resources, while in 1991, fewer thought the federal government should manage, opting for state over all other management options. Natives thought they would get better treatment from federal regulators than did non-Natives.

> situation, such as possible deference markers used with the Commissioner, are lost. However, many of these disjunctions stem from such fundamental differences in worldview that they would be very difficult to clarify, much less resolve, even with expert translation (Hensel 1996:177).

Hensel suggests that communication debacles like this, particularly in resource management meetings, harden ethnic stereotypes and increase the likelihood of more acute communication problems in future interactions between Alaska Natives and non-Natives. In a similar vein, Morrow and Hensel (1992:45-6) assert that the explanations of natural phenomena offered by Alaska Natives "are variously unknown to scientists, dismissed, regarded as charming but irrelevant metaphors, or seen as obstacles to be overcome. ... Efforts then focus on educating Natives, a stance liable to be interpreted as paternalistic."

It is also important to note that Natives are quick to adopt new technologies for subsistence and commercial activities, and they are quick to integrate information about their environments based on empirical observations, whether from scientists or nonscientists.[18] Although many Natives believe that all things biological and physical are animate and interactive with humans, Natives are consummate observers of their environment, a necessity given their dependence on naturally occurring resources and the physical environments in which they occur. Native uses of their local environments are affected by government regulations. Disagreements appear when Natives think that regulations are based on faulty or misinterpreted data, or data that do not apparently take into account their observations and experiences.

Another example of Alaska Native frustration with communication barriers was expressed by Maggie Ahmaogak (1999:20-2), Executive Director of the Alaska Eskimo Whaling Commission (AEWC), at an agency-sponsored meeting devoted especially to

[18] See Richard K. Nelson 1981 Harvest of the Sea: Coastal Subsistence in Modern Wainwright. A Report for the North Slope Borough Coastal Management Program: Barrow (p. 111); Joseph G. Jorgensen 1990 Oil Age Eskimos. University of California Press: Berkeley (pp. 68-9); Ann Fienup-Riordan 2005 Wise Words of the Yupik People. University of Nebraska Press; Lincoln, Little and Robbins 1984 Effects of Renewable Resource Harvest Disruptions on Socioeconomic and Sociocultural Systems: St. Lawrence Island; Alaska OCS Social and Economic Studies Program Technical Report 89, Alaska Outer Continental Shelf Region, Minerals Management Service: Anchorage; Harry Luton 1985 Effects of Renewable Resource Harvest Disruptions on Socioeconomic and Sociocultural Systems: Chukchi Sea, Alaska OCS Social and Economic Studies Program Technical Report 91, Alaska Outer Continental Shelf Region, Minerals Management Service: Anchorage; Joseph G. Jorgensen and Jean A. Maxwell 1984 Effects of Renewable Resource Harvest Disruptions on Socioeconomic and Sociocultural Systems: Norton Sound, Alaska OCS Social and Economic Studies Program Technical Report 90, Alaska Outer Continental Shelf Region, Minerals Management Service: Anchorage.

increasing the communication and understanding between and among the agency and its stakeholder publics:

> Twenty-two years ago, the Federal Government refused to listen to our people on issues related to the size and health of the bowhead whale population. Yet today, after the millions of dollars the North Slope Borough has had to spend on this, they must acknowledge that our Whaling Captains were right all along. Again, seven years ago, we were ignored [when we told the National Marine Fisheries Service and ARCO Alaska that seismic noise caused the bowhead whale migration to deflect off shore] and again millions of dollars were spent to find that, again, our Whaling Captains were right. Despite this history, when we speak today on issues related to bowhead whale behavior, we continue to be scoffed at or ignored. I ask you, how successful would a bowhead whale subsistence hunter be if he did not have an intimate knowledge of the whale's behavior? ... It appears to us that the MMS has begun to pay a little bit more attention to this information and to the "traditional knowledge" of our people. However, overall Federal agencies have a very long way to go in understanding the true depth of our people's knowledge of the Arctic, based on countless generations of direct experience.

This example suggests that the significant issue is often less an incompatibility between science and traditional knowledge *per se* than it is differences in opinion about the knowledge on which resource management regulations are based. Disagreements appear when Natives think that regulations are based on faulty or misinterpreted data.

As for assessments of environmental risks, in Alaska as in the Lower 48, non-Natives overestimate the risks of low-probability high-intensity events such as the *Exxon Valdez* oil spill, while Natives do not. Moreover, commodity valuation takes precedent in the non-Native (not scientists) definitions of the environment and resources within the environment, whereas instrumental use, cultural, and spiritual valuation takes precedence in the Native definition of environment (Jorgensen 1995b).

Differences in responses to the *Exxon Valdez* oil spill demonstrated the significance of regulatory bodies to environmental policies more than differences in scientific and Native knowledge of the area and resources, biological and physical, affected by the spill. Natives and scientists recognize environments as comprising many interacting components, and both Natives and scientists are specific in identifying species, their habitats, their behaviors, and the recurring factors that influence them, and are able to

figure out, by observation, the consequences of exogenous factors, such as oil spills, drilling, and transportation noises, that affect them.

Walker (2002:9-10) suggests that sociocultural barriers to meaningful communication can only be removed through a concerted effort to understanding the varied values and justifications behind alternative points of view:

> [Sociocultural] differences are often not recognized and this can lead to problems throughout the assessment process. A better understanding of these differences is needed in order to learn how the groups communicate more effectively.
>
> To have any chance at all of succeeding, people can't rely on what we commonly refer to as communication as the dictionary defines communication as "transmitting information": but just exchanging information won't work because there has to be useful context to put it in.
>
> ... "Organizations that attempt to substitute increased communication for increased collaboration will learn the hard way that there is a tremendous difference. ... Cresting a shared understanding is simply a different task than exchanging information. It's the difference between being deeply involved in a conversation and lecturing to a group. The words are different, the tone is different, the attitude is different, and the tools are different. Collaboration takes communication back to its roots. The act of collaboration is an act of shared creation and/or shared discovery" (Schrage 1990).
>
> ... Effective communicators seek to understand another's views before seeking to be understood (Covey 1995). An essential step to closing the communication gap with others is to learn more about others and how they view the world.

2.3.5 Political Barriers

Political obstacles to effective communication can only be understood in the broad context of societal power relationships. Of particular significance to this study are power imbalances that emerged between Alaska Natives and the federal government over the past 100 years. As a result of these unequal power relations, Natives were excluded from

the external decision-making processes affecting their social institutions and resources (Morrow and Hensel 1992).

While a historical account of the political and economic relations between Alaska Natives and the federal government is far beyond the scope of this report, the following capsule version by Jorgensen (1995b) provides a useful background for a discussion of the political dimension of communication barriers:

> Slowly but surely, after the Seward Purchase, the federal government established hegemony over natives, depriving them of the sovereign political power and the control of resources on which their lives were based, expropriated native land and resources, dominated native lives, and provided federal dole to them. With each expropriation, the federal government developed a little more of Alaska's infrastructure, either for the nation's defense or to accommodate the commerce that would accompany the next boom (fish, oil) or the commerce that had triggered the most recent boom (gold). Infrastructure was developed to accommodate business enterprises that beckoned nonnatives from the lower forty-eight and elsewhere in the world—people selling their labor, corporations extracting and processing resources. Until 1971, natives were given the dole. After 1971, they were mandated to create undercapitalized, for-profit, shareholder corporations.

The Native corporations, together with 44 million acres and nearly $1 billion, were compensation for the extinguishment of all aboriginal claims to lands and any aboriginal hunting and fishing rights in Alaska. Some analysts conclude that the implicit assumption of this settlement was that subsistence practices would decline as Natives moved into the modern cash economy (Korsmo 1994). Still, many Alaska Natives continued to practice a mixed economy, where wage earning provided cash for subsistence hunting and fishing technology. The 1980 ANILCA essentially mandated a preference for rural subsistence uses on federal lands in Alaska and required the state to provide a similar priority if the state desired to retain overall management of the resources used. A dual management system has resulted because the state and federal governments do not agree on who has priority consumptive use of the resources.

Today, Alaska Native communities differ with respect to their level of empowerment and ability to determine their own economic and political future. However, they all share a history of expropriation and domination and a legacy of mistrust stemming from management policies in territorial days through the state-federal conflicts of the

implementation of the ANILCA that continue to influence their relations with the state and federal government. Native relations with the federal subsistence managers (DOI, with the U.S. Fish and Wildlife Service [USFWS] as the lead agency) have improved, at least in part due to the participation of subsistence users in Subsistence Regional Advisory Councils. However, these improved Native-federal government relations have not necessarily transferred over to other resource management responsibilities of the DOI. This may be especially true for MMS, which has only offshore responsibilities and therefore is not subject to the provisions of the ANILCA and has no role in the federal subsistence management system (although the agency needs to comply with the subsistence protection provisions of the federal Endangered Species Act and Marine Mammal Protection Act). The following excerpt from the NRC (1992:93) describes the possible consequences of these political, economic, and social considerations in the specific context of OCS development under MMS management:

> Communities can take projected OCS developments to endanger something that may seem even vaguer and more general than fundamental values. They can refer to whatever it is as their "way of life," or they might use the slightly more complicated term, "culture." At the heart of a "culture" or "way of life" are symbolically mediated and socially constructed sets of assumptions about the nature of the world and its inhabitants, and they are realized and maintained through customary action. Among certain Native Americans [(]and the inhabitants of coastal Alaska are prominent in this regard[)], the customary actions through which indigenous culture is maintained and reproduced are in the main those surrounding subsistence activities. This is to say that hunting and fishing are of importance not only, or even any longer primarily, as the way to obtain food and fur. They are the main means by which Eskimo, Aleut, and other indigenous cultures are kept alive, and perceived threats to them will be bitterly resented and resisted.

When issues are escalated to this level of "high principle" they are no longer objective items of dispute that can be resolved through the establishment of fact or through the logic of costs and benefits (NRC 1992).

As noted in the discussion of sociocultural barriers to communication, the matters at issue also change when a community perceives that its concerns are ignored by analysts and decision makers. According to the CEQ (1997a:43), "NGOs and citizens still view the NEPA process as a one-way communication process, skeptical that their input is being effectively incorporated into agency decision making and hypothesizing that their

involvement is often solicited too late in the process, after decisions regarding actions and alternatives have been made." When the public participation process appears to have no direct connections to decisions, stakeholders may perceive public participation as mere window dressing (Creighton 1999). As indicated in the following passage from the NRC (1992:90-1), the public distrust created or reinforced by the NEPA process can have far-reaching political and economic implications:

> It is well to emphasize here that maintenance of credibility can be a serious problem for both transmitters and channels, and the loss of credibility can be a consequence of these actors' responses to events. For instance, OCS EISs that an affected public takes to be inadequate or misleading can discredit their source, which can be interpreted to be MMS, DOI as a whole, the federal government as a whole, or even the party or person occupying the White House. Furthermore, there are grounds for believing that ill effects are perceived to be both more likely and more severe when information sources are distrusted. Such perceptions can lead people to oppose even a project that could benefit them.

Suspicion of the motives of the highest levels of government becomes even more deeply entrenched when agencies define the problems being addressed so narrowly that the public does not get to participate in the broader issue that is really of interest (Creighton 1999). In general, the NEPA process is seldom used by government agencies as part of strategic planning (U.S. Institute for Environmental Conflict Resolution 2001). One MMS staff member suggested that the agency could do a better job of communicating about the situation where national interests and local interests may not align:

> The public receives no feedback on why decisions are made. We never effectively communicate to the public why a lease sale may happen even when they do not want it. We do not give a rationale from comprehensive national energy policy or convince them that even though it may not be in what they feel is their best interest, it is clearly in the best interests of the nation as a whole (EDAW 2005).

The "tiering" process described in the CEQ NEPA regulations is, in part, a simple way to look at access to the locus of power. Tiering is a staged approach to NEPA. Broad agency actions are addressed in initial (Tier 1) or systems level NEPA documents.[19] For example,

[19] Tier 1 NEPA analyses almost always require the preparation of an EIS because larger-scale decisions often have larger-scale impacts, and courts are more likely to deem them "major federal actions." Typically, a "programmatic" EIS is prepared to evaluate the environmental impacts of broad agency actions.

these analyses may include the development of agency programs or the establishment of national policies that set the stage for site-specific actions to follow. These site-specific proposals and impacts are analyzed in subsequent NEPA documents. Tier 1 NEPA documents are less frequent than site-specific ones while framing the issues of subsequent NEPA documents tiered to them. In most cases the "purpose and need" statements in site-specific NEPA documents are drawn from the higher level EISs. Yet, public comment on the "purpose and need" from the more general EIS is often deemed outside the scope of the site-specific document.

The draft proposed 5-year plan for OCS oil and gas leasing program for the nation and associated DEIS is the most abstract and general document the public is asked to review. MMS officials at the Alaska OCS Region do not exercise decision-making power over national energy policy in the plan, although they make decisions on the implementation of those policies on the OCS and can communicate and negotiate with stakeholders on implementation issues. From the start, stakeholders must understand the role of MMS in the decision-making process and recognize at which level the information they provide to research contractors and the comments that they make on NEPA documents will be evaluated. In the end, a federal agency will have the accountability and liability for making the decisions and taking actions. Public stakeholders often make comments and recommendations and then get frustrated when their input is not accepted because they do not understand the other factors at play (Mills et al. 2007 [2004]).

A sense of frustration and disenfranchisement from decisions being made regarding the management of public lands can be especially strong if local stakeholders are members of a group, such as Alaska Natives, that has had an adversarial relationship with the federal agency in the past. The perceived lack of opportunities to meaningfully shape or challenge resource use decisions may cause some stakeholders to withdraw from public participation in the NEPA process. On Lease Sale 170, for example, the Barrow Association of Whaling Captains boycotted the public meeting that was held for the DEIS (Ahmaogak, G. 1999). Yet, as the following statement by George Ahmaogak (1999:27), then mayor of the NSB, suggests, any such withdrawal is likely to be temporary:

> We have learned a lot. We have come a long way. We are still going to be vigilant to whatever is going to happen in the future. We will be there to make public comment. Whenever we need to protect our interests we will be there. We are all connected, coordinated, and we communicate often. We are a tightly knit organization.

As reflected in the following finding of the NRC (2003:139), the Iñupiat and other Alaska Natives will continue to be engaged in the NEPA process because they are acutely aware that subsistence resources need to be protected in order to maintain the activities that help ensure cultural continuity:

> They also see vastly increased time, effort, and funding necessary to respond politically and administratively to the ever-multiplying number of projects proposed in their own back yards. Alaska Natives told the committee that anxiety over increasing offshore and onshore oil and gas activity is widespread in North Slope communities ... They ... are faced with the need to attend industry-related meetings and hearings, and review documents, because they believe that decisions will be made that can significantly affect their daily lives and those of generations to come.

In a recent discussion of NEPA and tribal issues, Merv Tano (2005), President, International Institute for Indigenous Resource Management, encouraged an examination of ways to use NEPA not only as a shield, but also as a sword to advance tribal interests. He suggested that NEPA should be viewed "not as a process," but as the way to achieve "development that is culturally appropriate, economically sustainable, environmentally sound, and supportive of the tribes' political integrity and the tribes' social fabric." Some federal agencies have perceived other stakeholder groups as having similar activist motivations. For example, a common USFS perception is that public hearings on proposed timber sales in the Tongass National Forest have essentially been co-opted by "environmental groups" as platforms to present their views. These views may not be related to specifics of the timber sales; often they address issues of policy well beyond the scope of the proposal under consideration.

Cleary this unified, organized, and determined pursuit of stakeholder interests has a downside from a federal agency perspective, as it may lead to a polarization of viewpoints and dampen open communication. For example, one MMS staff member suggested that at times:

> on the North Slope the general populace tends to sit back and leave it to the political leaders to comment and actively participate. This can be frustrating. [The North Slope Borough's] political agenda permeates the dialogue process (EDAW 2005).

Political realities may limit the ability of federal agencies to strengthen trust and credibility through enhanced public participation in the NEPA process. The NRC (1992:37)

notes these limitations with respect to negotiating mitigation measures, the aim of which is to bring the estimated values of impact variables to within an acceptable range:

> Any viable mitigation strategy must … seek to create conditions that are conducive to public acceptance. Foremost among these is active public and community involvement in the assessment process itself. Such involvement raises public expectations of respectful and equal treatment, however. The condition of meaningful participation is genuine sharing of decision power between proponents of a proposed action and those who will bear its effects.
>
> However, power sharing as a mitigation strategy far exceeds the current formal authority of public agencies. The conditions of meaningful participation lie outside agency control and rest instead with the larger political system.

The only realistic recourse of federal agencies is to acknowledge that communication and public participation in the NEPA process has been, and will continue to be, inextricably embedded in the larger context of political economic relations. This acceptance would not preclude agencies from continuing to move toward the one overarching, critical goal identified by the CEQ NEPA Task Force (Greczmiel 2005): to strengthen the NEPA process and the trust among all interested and affected parties.

2.4 MODELS OF PUBLIC PARTICIPATION

As discussed in the previous sections, NEPA provides various entry points for public participation; however, various types of barriers may limit the potential for meaningful public engagement within federal decision making. Each federal agency has discretion, to some degree, in how they can enhance communication with the public, as long as they stay within NEPA guidelines and meet the minimum requirements. To explore how two-way written dialogue between stakeholders and MMS can be improved, this section draws on case studies of public involvement models that expand upon the traditional model of public hearings and public comment to seek input adopted by relevant federal agencies for environmental decision making. In reality, these models of public participation would accompany the newsletters developed as part of this study and are presented here as examples of a range of possible future steps.

The first part of this section examines and critiques consensus-based models of public engagement carried out by two federal agencies that have a comparatively long history of

experimenting with various forms of public participation—USFS and the National Park Service (NPS). The alternative approaches to public involvement that have been explored by these agencies can be considered consensus-based approaches, which Peyser (2005) defines as follows:

> Consensus building is a process by which stakeholders with a broad range of interests come together for a dialogue aimed at collaborative problem-solving. This dialogue is managed by a neutral facilitator and usually involves multiple parties and covers multiple issues. The goal of consensus building is to reach agreement on a plan that meets the high-priority interests of all parties involved, is based on sound scientific and technical information, and is politically acceptable and implementable.

Consensus building is employed to settle conflicts that involve multiple parties and sometimes multiple issues. The approach seeks to transform adversarial interactions into a cooperative search for information and solutions that all of the parties involved can accept. As shown in the case studies presented here, the consensus-based approaches adopted by USFS and NPS have significantly expanded public involvement beyond the minimum guidelines set forth in the CEQ NEPA regulations. However, these public participation models may still make a distinct separation between the scientific study and public participation.

The second part of this section examines joint fact finding (JFF), a consensus-based process specifically focused on the scientific and technical questions of environmental decision making. To illustrate the JFF concept, case studies of public involvement approaches by the U.S. Army Corps of Engineers (USACE)/State of Massachusetts (Cape Wind proposal), USFWS, and Bureau of Land Management (BLM) are described below.

The third part of this section discusses the integrated management (IM) approach. Similar to the consensus-based and JFF methods presented, an IM approach minimizes conflict among the stakeholders but emphasizes multiple uses, the interrelationships among resource users, and the environments they affect. Two case studies are presented for the IM model, one from Canada's Oceans Strategy and another from the highly structured fishery management process created by the 1976 Fishery Conservation and Management Act (known as the Magnuson-Stevens Act).

The fourth part of this section describes the Regional Citizen Advisory Council structure, mandated by the Oil Pollution Act of 1990 (OPA), which falls squarely between a JFF model and an IM model. The JFF element comes into play because of the model's

emphasis on scientific and technical dialogue in decision making, The IM model emphasizes a consensus-based and conflict-resolution approach among stakeholders, emphasizing the multiple-use resource dependency that is relevant to oil and gas issues in Alaska. Regional Citizen Advisory Councils are reviewed for relevance to the North Slope, and for the lessons learned from existing systems in Prince William Sound and in the Cook Inlet.

The final part of this section addresses risk management models of communication. This section presents models that would not be considered collaborative, JFF, or IM approaches, yet are included because they have relevance to the MMS due to the risk involved in the issue and because these are examples where federal agencies followed the letter of the law under NEPA with regard to public engagement, but failed to gain support.

This chapter considers whether the different mandates amongst federal agencies contribute to an explanation of different public agency models. Because each federal agency has a specific mission, this mission may direct and influence how specific federal agencies design their public engagement processes. This mission, by its very nature, requires a significant and continuous level of interaction with the public. In the case of NPS, its mission is to conserve significant natural and cultural resources and provide access to many of these resources through recreation and tourism. USFS under the Department of Agriculture has a mandate that focuses on multiple uses "to consume, replenish, or replace what exists" so the method of communicating with the public tends to follow the cycles of timber harvesting, recreation, grazing, and other resource uses on USFS land. Similarly, NMFS under the Department of Commerce has a mission to foster economically viable sustainable resource use within the long-term biological constraints of the resources. Public participation for fisheries seems to have been developed around these goals. MMS within the DOI was established out of the Outer Continental Shelf Lands Act (OCSLAA) as amended in 1978. The mission of MMS is:

> to manage the mineral resources on the Nation's Outer Continental Shelf (OCS) in an environmentally sound and safe manner and to collect, verify, and distribute, in a timely fashion, mineral revenues generated from federal (onshore and offshore) and Native American lands. The OCSLAA requires that OCS management consider the economic, social, and environmental values of the renewable and nonrenewable resources contained in the Outer Continental Shelf, and the potential impact of oil and gas exploration on other resource values of the marine, coastal, and human environments" (43 U.S.C. 1344).

Whether this mission helped to shape the manner in which MMS pursues public engagement is unclear, but understanding these differences may be a start toward explaining the differences amongst these public participation processes.

While the emphasis of the models discussed in this section fits within the framework of two-way written dialogue, this review is not limited to critiques on written procedures alone; it also covers studies conducted on public hearings and participation processes. Little has been written specifically about written two-way dialogue in contrast to the broader topic of "public participation," which has been extensively studied. Additionally, written dialogue can improve or decline as a result of other types of interactivity that include public hearings, small group meetings, participatory processes, and government-to-government negotiations, to name a few. Because the written communication literature is sparse, we will focus on models of public participation that include the various forms of communication, as identified above, but we will analyze those various techniques as they apply to MMS, and the EIS written communication process under NEPA.

2.4.1 Consensus-based Approaches

Case Studies: USFS Public Participation Programs

USFS has employed a number of participatory approaches over time, some of which were seen as being successful, others of which were not viewed as effective at avoiding conflict. A few cases and examples of USFS public participation procedures and styles are presented below.

USFS was one of the most aggressive agencies with active public participation programs during the 1970s (Creighton 1999; Steelman 2001). Starting in 1970, USFS wrote a policy guide on involving the public in the development of programs and resource management decisions. In 1972, USFS created the "Inform and Involve" program to educate the public about the various scientific, socioeconomic, and environmental issues regarding land and resource management and to include the public "constructively" in giving comments, opinions, and information to guide resource management decisions (Schectman 1978). The 1976 National Forest Management Act mandated that the public be included in the "development, revision, and review" of the Land and Resource Management Plans (usually called "Forest Plans") that USFS is required to make for each national forest every 10 to 15 years (Foster 2003). The Act also allowed for public involvement in land planning (Moote and McClaran 1997).

For more than three decades, USFS has also used an appeals process to further increase public participation in national forest management. USFS is required to take appeals of Forest Plans and of projects implementing Forest Plans, such as timber sales, habitat enhancement projects, or restoration treatments. The appeals process has been cited as a good tool for calling attention to resources that may have been overlooked by USFS officials (Little 2003). However, after the wildfires that ravaged the western United States in 2003, this form of public involvement underwent formal review (Little 2003; Foster 2003), and congressional debate ensued regarding the elimination of the appeals process. USFS officials raised concerns that the appeals process slowed down forest thinning projects, resulting in more wildfires; however, independent research by Cortner et al. (2003) suggested these concerns were misplaced.

Nevertheless, the Bush Administration proposed new legislation in 2003 to exempt fuels reduction, post-fire rehabilitation, and restoration projects from appeals, leaving litigation as the only way to challenge a project that was ready for implementation. The legislation also advocated removal of the review of project alternatives and the ability to appeal them. The proponents of the legislation argued that it would encourage early public participation. USFS, which produces more environmental reports than any other federal agency, also proposed reducing the number of environmental assessments and EISs produced, thereby also reducing the amount of public participation (Foster 2003). The legislation was passed in November 2003 as the Healthy Forest Restoration Act, and it directed USFS to devise a new appeals process that limits appeals to written comments made during the planning stage. The legislation also reduced the types of USFS actions that were subject to NEPA requirements.

According to USFS, successful public participation requires the compilation of scientifically credible management plans and alternatives before they can respond adequately to public needs (Jorgensen 2000). It also requires transparency and even though this approach is costly, allaying public distrust is viewed as a sufficient justification for the additional expense.

In 1999, the USFS Committee of Scientists' Recommendations for National Forest Planning Report was released in an attempt to address the barriers of efficient natural resource planning (Lachapelle et al. 2003). This committee, made up mostly of academics from outside USFS, developed a key recommendation that is particularly relevant to other applications. They stated that "while the scientific community can help estimate the risk associated with different management strategies, decisions about an acceptable level of risk are value-based, not science-based, decisions" (Jorgensen 2000).

A case in which USFS conducted a successful public involvement effort in the eyes of the participants involved the Cispus Adaptive Management Area (AMA). The Cispus AMA was established in 1994 under the Northwest Forest Plan, along with nine other AMAs in order to test ecological and social management methods, produce more collaboration with citizens, and increase public participation. USFS held six public workshops over 3 months in a local school library (Graham 2004). The format of the workshops included presentations by USFS staff, USFS staff responding individually to open-ended worksheet questions, and small group discussions, which resulted in main issues of the small group discussions presented to the larger group. The workshops were facilitated by a local USFS planner, and all local agency staff and district rangers participated in the workshops. In addition, a newsletter was published and distributed to the participants and those on the AMA mailing list (Graham 2004). The process was open and stressed the importance of public involvement. Issues, stakeholders, industry interests, and their relationships to one another were mapped out visually for the group. Furthermore, the USFS agency staff explained the legal background of the AMA and the parameters for the public's participation to ensure the public understood agency limitations (Graham 2004). Placing greater emphasis and increased resources into a process that takes time to explain the legal and administrative limitations under NEPA could similarly prove beneficial for both agency and stakeholders. Such a process would specifically include examples of the types of written comments that can be helpful to agency staff and those that could lead to shifts in language or stipulations.

In another USFS case, Steelman (2001) analyzes the Monongahela National Forest (MNF) in West Virginia and its public participation process. The MNF case began with the traditional approach to public participation, but after a large amount of controversy during the public comment period, a collaborative approach was employed instead. According to Steelman (2001), the handling of the MNF situation used a combination of "participatory democracy" and "elite democracy." Participatory democracy is defined as having continuous public participation with an active public and in which the decision-making power rests with the public. Democracy is intrinsic to the process, and bureaucratic representation is looked at in a skeptical light. Participation is mostly local, and the public is regarded as knowledgeable and perceptive (Steelman 2001). In contrast, elite democracy has only periodic or limited opportunities for public involvement and the public tends to be passive. Decision-making power rests with elites, and democracy is seen as a means to an end. The bureaucracy is regarded as trustworthy and skilled, whereas the public is seen as apathetic and easily swayed. The main concerns are efficiency and scientific rationality, and public participation takes the form of voting and ratifying leadership (Steelman 2001).

There were three phases of the MNF planning process—the Draft Plan development from 1979 to 1984, the public comment process from 1984 to 1985, and the Draft Plan revision from 1985 to 1986 (Steelman 2001). During the Draft Plan development phase, the MNF staff held scoping sessions with the public and also met with constituents such as the timber industry and the West Virginia Department of Natural Resources (WVDNR) who had been working with the MNF staff in managing the area. When the Draft Plan was completed and released, a Notice of Availability was published, and the Forest Supervisor and Planner hand delivered a copy to the West Virginia Sierra Club (WVSC). During the public comment phase, the WVSC and the WVDNR were the most active stakeholders. They analyzed the 1,000-page Draft Plan, and the WVDNR published a summary of their interpretation of the plan and distributed it to state newspapers and hunt clubs (Steelman 2001:76). The WVSC requested an extension of the public comment period by 90 days during which WVSC volunteers finished analyzing the Draft Plan and gave presentations to environmental groups and other groups in West Virginia. Thousands of public comments were received by the MNF staff. The timber industry was not active during this phase because it believed its interests were protected.

Because of the large volume of public comments received, the MNF staff decided to open the final revision phase of the planning process to the WVDNR and WVSC, the main opponents of the plan, as well as to other highly concerned interest groups (Steelman 2001). The MNF staff held six redrafting sessions in order to make a plan in conjunction with these interest groups that were acceptable to all of them. The timber industry also began to be involved again.

Steelman (2001) determined that during the first phase of the planning process—the creation of the Draft Plan—the MNF used an elite model of policymaking according to the definition and characteristics given above. For example, the nine scoping meetings held by USFS were mainly for collecting technical data, and, according to a WVDNR employee, USFS was not particularly receptive to the concerns or contributions of the WVDNR. The second phase was characterized by a somewhat more participatory model. The MNF staff held 61 public meetings during the public comment period and set up a toll-free number to receive comments by phone. The comment period was also extended after USFS received requests for extension from Senator Robert Byrd. The USFS planning staff found utility in both the scientifically based comments as well as those that demonstrated the opinions of the public. Both types of comments were considered "facts" that the agency needed to be responsive to. The third phase was also dominated by a participatory model. Notices of the redrafting sessions were sent out to approximately 5,000 people on the USFS mailing list, and participants were given materials and allowed to give suggestions for the agenda. MNF staff also gave tours of the forest, and USFS met

separately with the WVDNR and other groups. Additionally, MNF staff used consensus-based decision making to revise the plan by finalizing the decisions that the participants agreed on. Nevertheless, only those who had a good understanding of the standards, guidelines, and technical details of the plan could effectively participate.

Steelman (2001) emphasizes that the MNF case involved both participatory and elite policymaking models and was still considered a success. He gives a caveat that this is not to suggest that an elite model should dominate any parts of the decision-making process. He notes that it was difficult for the MNF staff to get the public involved during the initial stages of the process because the public tends not to participate if there is nothing specific (yet) to comment on. Thus, the use of an elite model to help formulate or guide the Draft Plan may have been reasonable in this situation because the MNF staff used it as a starting point in the absence of "substantive participation from the public" but continued to remain open to a participatory framework throughout the planning process. Steelman suggests that the process was successful because the MNF staff and the public considered both technical and societal information in making the plan. The goal was a process in which the "public" and "technical experts" informed each other. Steelman cautions that there is no one single approach that works best in all situations and that the aim should not just be increasing public participation for the sake of public participation alone, but the use of public participation as a "policy tool."

Despite the success of the MNF case, USFS has been criticized for having inadequate public participation practices in other circumstances. Studies in the late 1980s and early 1990s showed that USFS was criticized for limiting its public participation programs to giving information to "target groups," thereby preventing others from participating. The USFS was also criticized for restricting the public's access to its planning processes by using "formal" public participation methods or one-way communication such as in the form of hearings or written communication (Moote and McClaran 1997). A study by Wondolleck (Moote and McClaran 1997) concluded that when the USFS decision-making process relied on "professional expertise to assess values and make the inevitable judgmental tradeoffs," the result was a lack of trust and a lack of satisfaction among interest groups, which led to appeals and lawsuits.

In 1988, USFS embarked on a large sale of New England forestland. Due to overwhelming stakeholder concern over the sale, the Northern Forest Lands Council was established by Congress to provide direction on the sale and to listen to an extensive array of competing stakeholders including landowners, timber industry, academia, and environmentalists, among others. Studies were done, advisory committees were established, and impact assessments were published, but it was the "listening sessions" that particularly captured

public attention, drawing over 800 participants. These listening sessions are described as public forums designed "to promote an unhurried, unpressured, and nonconfrontational atmosphere" where "interests feel comfortable and secure in sharing their thoughts" (Webler et al. 2001). Further, the majority of the stakeholders, according to Webler, were satisfied with the process.

A case from California, however, provides a counterpoint, as stakeholders on all sides felt the opposite of what was experienced with the Northern Forest Lands Council process. Private and nonprofit stakeholders were so disgruntled, expressing deep resentment that USFS essentially ignored their concerns, that they essentially banded together and bypassed the agency by developing a collaborative process amongst themselves. This process, steered by a coalition that became commonly known as the Quincy Library Group (QLG), involved the planning in adjacent Plumas, Lassen, and Tahoe National Forests in California (Liz Claiborne and Art Ortenberg Foundation 2001) and incorporated the interests of the timber industry, environmental organizations, and the local community.

By way of background, in 1983, USFS began writing the draft management plan for Plumas National Forest. Local organizations such as the Friends of Plumas Wilderness and the headquarters chapter of the Sierra Club hired a forest-planning consultant to review the draft plan, and they presented a "conservationist alternative" to the USFS plan in 1986 with the help of the National Resources Defense Council. USFS rejected this alternative as well as the timber industry's proposed alternative and the Plumas County alternative. By the early 1990s, the timber industry in the area was on the decline, and unemployment rose.

In 1992, a Plumas County supervisor, the director of Sierra Pacific (a large local timber employer), and Friends of Plumas Wilderness began to meet at the Quincy Library to revive the alternative forest management plans from 1986 as the contemporary USFS plan was unsatisfactory to all of these stakeholders. The QLG developed a proposal that focused on economic, social, and cultural well-being, and received the support of the community. The cornerstone of the plan presented stakeholders' desired visions for the forest.

Although the QLG achieved its goal and created a stakeholder collaborative, this case was not seen as a successful agency-stakeholder collaboration because, while it united long-time adversaries (including the timber industry and conservation groups), the federal agency was not a participatory stakeholder. However, the group did present the plan to USFS, and after they felt they had exhausted all attempts to engage USFS, the QLG took

its plan to Washington. Eventually, the plan became enshrined through legislative rather than administrative means as the Herger-Feinstein Quincy Library Group Forest Recovery Act, which was signed by President Clinton in 1998 and implemented by USFS as a 5-year pilot project (Liz Claiborne and Art Ortenberg Foundation 2001).

While successful on some levels, the QLG had its critics. The Workshop on Collaborative Resource Management identified a significant problem in the process; USFS was not part of the collaborative. Stakeholders essentially circumvented USFS completely, obtaining support and approval of their plan through Congress and the Administration. The agency required to carry out the plan was an outsider to the process.

Case Study: Alaska Department of Transportation Public Outreach

A useful case study may also be found in the experience of the Alaska Department of Transportation (ADOT). In 1996, ADOT began revising its public outreach based upon requirements in the Intermodal Surface Transportation Efficiency Act. ADOT itself had concluded that its "dialogue" was often one-way communication between the agency and the public. To resolve this problem, ADOT set out to develop a public information planning process and did so through the extensive distribution of newsletters. Other aspects of their planning process included the use of newspaper advertisements, radio, press releases, brochures, and public meetings. ADOT specifically targeted rural Alaskans, sending posters to 200 village post offices and sponsoring a televised call-in program in the villages, where ADOT staff and the Planning Director would respond to real-time inquiries from the public.

The process began with ADOT asking Alaskans what they believed were the most critical transportation issues they would like to see addressed within the next 20 years. ADOT also requested input on how they (the public) would like to be involved. Brochures with mail-back postcards were sent out with these questions. A short survey was subsequently distributed by newsletter to more than 2,000 Alaskans and asked for comments on existing involvement programs. All comments were published on the agency website and were incorporated into a report as well (Federal Highway Administration 2003).

Over 500 people participated within 6 months. Participants received copies of all newsletters, comments, and announcements, and ADOT kept participants involved and updated throughout the entire process. The public's comments were also reviewed and posted on the website. A draft plan was developed, which included responses to written comments received.

ADOT's outreach efforts to involve rural residents and Alaska Natives led them to receive a sizeable number of comments from remote areas. After receiving over 300 written comments on the draft report, ADOT created a website for the plan, a toll-free phone line, and a fax line for exchanging comments and information. The public particularly expressed support for a televised call-in program and newsletters that reached rural areas (Federal Highway Administration 2003) and use of traditional public meetings. Five objectives were formulated for future outreach efforts: promote an early role for the public, engage the public in developing the participation plan, identify and involve those traditionally underserved, use a combination of involvement techniques to meet the diverse needs of the public, and provide explicit consideration and response to public input (Federal Highway Administration 2003). This process was then put to the test on the State of Alaska's long-range transportation plan known as Vision 2020.

The newsletter served as the main mode of outreach for Vision 2020. Issues raised by the public were addressed in detail in specialized newsletters, creating a sense of accessibility for the public. As a result, Vision 2020 was continually altered in response to the public's suggestions. For instance, rural Alaskans suggested using a radio call-in show rather than a televised call-in show for the Vision 2020 plan. ADOT asserts that the newsletter was the most successful form of outreach for reaching a wide audience.

ADOT also learned that the public is more apt to participate in planning public involvement processes if they believe the agency is responsive (Federal Highway Administration 2003). The use of media such as mail, phone, and internet also helped to reach those who were too busy to attend meetings or who were located in remote areas. However, comments received during the Vision 2020 planning demonstrated that the public is more interested in being involved at the project level and has less interest in planning and programming.

Case Studies: NPS Participatory Programs

NPS, like USFS, also felt an early need to increase public participation in its decision-making processes. Creighton (1999) lists NPS among the agencies that had "active public participation efforts" in the 1970s. After the enactment of NEPA, NPS modified its management policies to allow for effective public participation in important management decisions. The 1975 Principles of Public Involvement for National Park Service Planners and Managers stated that:

> The public is demanding direct involvement in site specific decisions of public agencies. Those that have ignored this demand have had

> management decisions reversed, become tied up in long expensive court suits, and have found it necessary to redo lengthy and expensive planning efforts. Agencies have responded to this demand by establishing procedures to involve the public which go beyond the legislative and political process which has been the traditional form of public input (cited in Schectman 1978:624).

The NPS Director's Order 75A on Civic Engagement and Public Involvement states,

> [As] we welcome and encourage public participation in our parks and programs, we must also welcome and encourage public participation in our thinking about the future of the resources held in trust for them, and in our planning and decision-making ... this ... means we do more than meet the minimum legal requirements for public involvement in our decisions and activities. It means a regular, natural and sustained level of interaction with people, both from within and outside NPS (cited in Webler et al. 2004:92-93).

Webler et al. (2004) describe the Boston Harbor Island Partnership as an NPS public involvement initiative that achieved success. The Boston Harbor Islands National Recreation Area (BHINRA) was established in 1996 and presents a substantial management challenge as all of the 34 islands are either privately owned or owned by the City of Boston or State of Massachusetts rather than by NPS. The BHINRA is managed by the Boston Harbor Islands Partnership, and an advisory council of stakeholders advises the Partnership and brings stakeholders into the management process. The members of the advisory council and Partnership were appointed by the Secretary of the Interior under FACA. The council's members are drawn from different interest groups, including business groups, environmental organizations, local municipalities, Native American interests, Congressional districts, and the Metropolitan Area Planning Council. To develop the first management plan for the BHINRA, the Partnership, advisory council, and the general public worked in a collaborative process over 5 years.

According to Webler et al., the participants in the BHINRA planning process had varying views of what constitutes a good public participation model. For example, some participants emphasized the social aspects of collaboration, while others emphasized the gathering of information and science, and still others emphasized meeting the needs and goals of NPS. These three main perspectives placed different values on the importance of consensus, but most of the participants agreed that having all the main stakeholders involved, having clear goals, and having sufficient administrative support are essential.

Particularly in this situation, where NPS did not own any of the land, the role of the stakeholders was critical to ensuring that plans go through.

Participants in the BHINRA planning process placed little importance on "acknowledging and exploring uncertainty," making sure that participants can handle difficult technical issues, and discussing the values behind the participants' views about the issues. Webler et al. noted that this may be because the BHINRA process participants already knew each other well. Webler et al. concluded that it is important for those designing public participation programs to ensure that the organizers understand what the participants themselves agree or disagree on regarding the best way of going about public participation. The authors emphasize that the BHINRA participation process was successful because it "emerged out of the local culture ... It was not an exercise in fulfilling some 'imported' process design. The process was developed with the participants, based on their previous experiences." Additionally, while the process catered to the needs of NPS to develop a mission statement, the needs of NPS did not dominate the process.

In contrast to the BHINRA process example, Schectman (1978) has discussed a series of National Park management cases that strained public relations. These cases dealt with management plans to reduce the population of burros introduced to national park areas in the western United States. NPS and other management officials determined that immediate action was needed to control populations of burros not native to the areas that were damaging wildlife and Native American artifacts. The only alternative determined feasible by the management officials was direct population reduction by killing (shooting) the animals. The reduction plans were assumed to have no significant impacts; consequently, no EISs were prepared. The result was that the public responded with outrage, and NPS eventually was forced to stop the reduction programs or conduct EISs in order to avoid litigation.

In an analysis of the views of federal resource managers, Schectman found that they had a number of concerns regarding the public's involvement. They viewed the public as sentimental, short of factual information critical to resource management, and having little valuable input to give. They also believed that there should be a limit on when public input can be given in the decision-making process. Many disliked the public hearing format because they felt it represented only the views of special interest groups. Some managers preferred individual and informal formats of public participation to exchange information such as small workshops, advisory committees, and daily interaction with people and organizations. An overriding criticism was that the public hindered and delayed essential daily management activities and increased costs with the requirements

of EISs. Schectman concluded that, although public involvement is good because it provides resource managers with information on the public's values and preferences regarding the resource, promotes interaction, and increases trust, it can also become ritualistic and can be a form of co-optation in which a decision has already been made by the agency but hearings are held solely for the purpose of satisfying requirements and avoiding legal repercussions from the public. In these circumstances, the costs of public involvement can exceed its benefits. Schectman advocated sustained public interaction with resource managers through frequent meetings in order to make the public more familiar with management and the situations at hand.

2.4.2 Joint Fact Finding

JFF is a consensus-based process by which stakeholders work with scientists and decision makers to frame, scope, review, and incorporate scientific information into policy decisions. Peyser (2005) argues that one shortfall of the formal NEPA process is that, although agencies solicit public input at various points, they do not involve stakeholders in a meaningful way in the scientific work associated with environmental decision making. In particular, agencies give the public only a small role in framing scientific studies and no role in research interpretation or incorporation of science into decision making. Further, agencies' attempts to involve stakeholders in technical questions, while well intentioned, are seldom designed in such a way as to maximize legitimacy of the process or credibility of the science used to craft the plan or policy.

> Joint fact-finding offers a way of bridging the conversation between those engaged in the policy question: "where do we want to go?" and those who have insights regarding "what do we know that might help us decide." Building these bridges can advance better decisions and reduce conflict.
>
> Joint fact-finding is about process—and process can be as important as substance in assembling and communicating information relevant to land management decisions. Some recent research has linked the "ability to hear" and the "inclination to listen" to the nature of the decision process. For example, in reviewing decisions to site hazardous facilities, some researchers have found that decision sequence and setting matter. If local authorities first select a site and then present the public with scientific and engineering information on its suitability, conflict, data battles, and stalemate often ensue.

> If, instead, local authorities first describe the need for a facility along with the desired features of a site, and then engage interested constituents in evaluating options, the relevant science and engineering information often become the focus of deliberations.
>
> *P. Lynn Scarlett, Assistant Secretary, Office of Policy, Management and Budget, Presented to the USGS*

JFF attempts to address the problems identified in Peyser's assessment by including stakeholders early in the development and design of research questions, as well as the carrying out and monitoring of those research questions. Stakeholders are involved in choosing experts to conduct the research, they participate in monitoring the research and analyzing the results, they choose an action plan based on the results, and they modify the action plan after its implementation. In short, the JFF model "is a process by which stakeholders work with scientists and decision makers to frame, review, and incorporate scientific information into policy decisions" (Peyser 2005:41).

The basic premise of JFF is that scientific dialogue and public agency credibility will increase by including stakeholders that inherently come into the process with value-based interests and judgments about scientific inquiry. Credibility is further enhanced through the JFF process if stakeholders are included in framing the scientific study and choosing the scientists and experts. Agency staff may even consider stakeholder participation in the research design and monitoring.

JFF incorporates the use of capacity-building activities to equip stakeholders for technical discussions and a neutral facilitator chosen in conjunction with stakeholders. JFF increases scientific dialogue where scientific uncertainty, conflict, or even points of agreement are clarified as information is shared between experts, stakeholders, and decision makers and if jointly written documents, agreements, and tools are used. Key principles to JFF include:

- capacity-building activities or discussions with the participants about the main technical issues with the goal of increasing the understanding of technical issues in order to allow the participants to partake more fully in the decision-making process;
- involvement of stakeholders in the selection of a neutral facilitator for the process, particularly where the agency is not well trusted;

- openness regarding the use of scientific results in the choice of policies or project alternatives; and
- involvement of experts in discussions of the policy implications of the scientific results of the research.

Once a JFF process has convened, a timeline is established for the research and participants to identify the sources of controversy and scientific questions that need to be addressed. Participants then jointly decide what experts will be needed to aid in tackling these questions. A JFF committee participates in scoping the scientific questions while continuing to keep the policy questions in mind. Simultaneously, scientists and experts engage in capacity building to educate the participants. A study of the scientific questions is then conducted, which involves the knowledge, observations, and expertise of stakeholders and locals. This follows with an evaluation of the study results and their meaning as well as a review of the assumptions and uncertainties of the study. Some have suggested that injecting adaptive management into JFF would bring monitoring and evaluation into the process. The results are then communicated to constituencies and policy makers.

Case Study: USACE Joint Fact Finding

JFF is a common model used primarily in science-intensive policy disputes. The most relevant and most recent case study of JFF is the proposed Cape Wind project on Cape Cod. In 2001, in response to state initiatives to promote renewable energy development, Cape Wind Associates, a Massachusetts energy company, proposed the first large-scale offshore wind energy farm in the United States. Cape Wind would place 130 wind turbines, spaced six to nine football fields apart, in the heavily used waters of Nantucket Sound between Cape Cod, Martha's Vineyard, and Nantucket. A total of 24 square miles, this site was chosen because of its unique combination of attributes needed to support offshore turbines, given current technology (Watson 2004). The project was located outside the 3-mile state limit in federal waters of the OCS.

Initially, because the United States has no regulatory process for reviewing offshore wind projects, and MMS purview was not commonly interpreted as extending to commercial uses outside of minerals, USACE was given jurisdiction over the project. However, in 2005, as part of the renewal of the Energy Policy Act, jurisdiction was changed and MMS was directed by Congress to design a lease structure for offshore wind projects. MMS is now the lead agency for permitting and review of the project, having taken over regulatory responsibility from USACE. A DEIS was released by USACE in November 2004.

The DEIS was challenged by the opponents of the project, as well as by the U.S. Environmental Protection Agency. It is still going through review.

This project has been controversial on multiple fronts. It is in a highly desirable tourist location and summer vacation area, as well as a well-known recreational fishing and boating area, and the waters along Cape Cod have previously been considered off-limits for any development activity. This, combined with the fact that an offshore wind farm has never been built in the United States, and that a regulatory structure was not in place, created uncertainty that led to concern. As Cape Cod's economy is heavily dependent upon its desirability as a tourist destination, the project met vehement opposition.

With general interest in transitioning to more renewable energy and the environmental community supporting increased clean power generation, however, the project also received enthusiastic support. After many months of unproductive public debate, including expert testimony on both sides and well-funded public relations campaigns supporting and opposing the project, the Massachusetts Technology Collaborative (MTC), a quasi-state agency that administers the state's Renewable Energy Trust Fund, established a JFF process to "cut through the hyperbole that characterized the early debate regarding Cape Wind's proposal and develop a shared baseline of reliable information" (Watson 2004). MTC's goal was to provide scientifically sound, unbiased, and reliable information to stakeholders in a neutral setting, with the intent of fostering two-way dialogue to determine whether the project would be permitted or denied based on the legitimate technical assessment of facts (Watson 2004).

Because MTC's interest was fundamentally grounded in building the state's renewable energy sector, they had an institutional self-interest to ensure that the first offshore wind project in the United States did not create unacceptable impacts nor lack support from the general public. They recognized that the future of renewables required a review process that is transparent and considered by the public to be fair and rigorous. MTC wished to develop a neutral forum for local interest groups, regulators, and scientific and technical experts to exchange factual and technically accurate information.

To accomplish this, a JFF stakeholder process was established with a third-party independent facilitator. The three major players that had to agree to participate included Cape Wind, the opposition organization known as "The Alliance to Protect Nantucket Sound" (Alliance), and USACE. Each of these entities expressed deep reservations about participating. The Alliance was concerned that MTC would be biased toward building the wind farm, that they would be "out-gunned," and that MTC's bias would permeate the stakeholder process. USACE was concerned that meetings would get out of control,

compromise the regulatory process, and result in criticism from all sides. Cape Wind felt the process was duplicative of the NEPA process and they were concerned that the scope of work for the EIS and the permitting time-frame would become greatly expanded. Cape Wind was also concerned about stakeholder access to regulators through this process. Despite their reservations, however, all three agreed to participate (Watson 2004). Other stakeholders voiced concerns that some perspectives would be left out. To address this problem, MTC conducted dozens of interviews to ensure that as many interests would be represented as possible.

The goals set for the JFF process included (1) achieve a better shared understanding of the Cape Wind project's benefits and environmental impacts, (2) explain the regulatory process the project would go through, (3) develop a clear understanding for each side of the other party's position, (4) identify areas of factual and philosophical agreement among stakeholders, and (5) prepare the parties to enable them to review the materials presented in the EIS and to effectively participate in the NEPA process.

There were key differences that marked the manner in which Cape Wind's public engagement process differed from other more typical stakeholder forums. According to Watson's analysis:

1. Professional facilitators were hired to design and manage the meetings.
2. MTC developed an Offshore Wind Outreach Team, which worked with the facilitators on logistics and organization of the meetings.
3. MTC leaders sat at the table with stakeholders and actively participated, but they did not lead the discussions.
4. The stakeholder JFF process was set up as a parallel process to USACE regulatory proceedings but it was not a component of it. The timeline fit within the expected release of the DEIS, establishing end-dates and regulatory relevance for the stakeholder process because the entire process was established to aid stakeholders in reviewing the EIS.
5. Stakeholders understood from the beginning that they were not expected to come to a consensus on the project.

The JFF was designed as a two-tiered structure, with community stakeholders as the main participants and the resource agency and regulatory representatives as secondary players; answering questions and providing information. Ground rules were established prior to the first meeting; a website was designed to communicate to the participants on a

regular basis, and a series of six all-day sessions was designed to be held over 6 months. During the day-long sessions, expert panels presented information to the stakeholder group; these six topics were:

1. Benefits and potential impacts from offshore wind development
2. Electricity supply, reliability, pricing, and air impacts; impacts to avian flight and marine habitat
3. More on impacts, and offshore wind farm technologies
4. Visual impacts and alternative sites
5. Federal decision-making process, economic impacts, and climate change impacts
6. USACE screening of alternative sites and wrap-up

As part of the JFF process, presentations were provided that drew upon the experience of other countries. A compact disk (CD) was provided that compiled all the presentations and background materials; this CD has been "sought after by groups across the country as an important introduction to some of the fundamental topics relevant to offshore wind development" (Watson 2004). While the system was far from perfect, stakeholders ranked the overall value of the process as 7.9 out of a possible 10 points, based upon a survey conducted by Raab Associates, the facilitators of the JFF meetings. Although the process may not have changed the minds of some, the quality of the process and detailed analysis that was presented, along with access to dialogue with the experts, were praised by a majority of the participants. Critiques of the process centered on the fact that meetings were too structured to allow for a free exchange of ideas and that the issues covered in the meetings were covered too briefly and deserved a more thorough treatment.

Case Studies: Other Federal Joint Fact Finding Efforts

Peyser (2005) presents a number of other case studies of the JFF approach to public involvement. One case study involved the Guadalupe River Flood Control Project in the city of San Jose, Santa Clara County, California. In 1996, a citizens' suit was filed by the Guadalupe-Coyote Resource Conservation District (GCRCD), a group that advised San Jose landowners on best management practices for their land and resources. The suit claimed that the mitigation measures prescribed in the 1992 certification of the Downtown Guadalupe Flood Control Project were not being followed, but the suit proposed negotiation in place of litigation.

In 1997, USFWS, together with the California Department of Fish and Game and the City of San Jose, formed a collaborative group, inviting the GCRCD to participate as a stakeholder. Participants were involved in choosing neutral parties to facilitate the process, and stakeholders could nominate experts to their "Technical Fact-Finding Subcommittee" to assess project alternatives. The collaborative group reached an agreement, drafted a dispute resolution memorandum, and recommended a project alternative that would result in the same amount of flood control as the existing project but that also preserved fish habitat. The collaborative group had all the components of JFF listed above, and the result was that participants in the collaborative process were largely satisfied with its outcome, its transparency, and the level of input they were able to give.

A second JFF case study provided by Peyser focused on the Cascade-Siskiyou National Monument Livestock Impact Grazing Study prepared by BLM. The Cascade-Siskiyou National Monument is a 52,940-acre patch of federal land east of Ashland, Oregon, that feeds about 543 cow-calf pairs each summer on grazing leases that existed before the area was declared a national monument in 2000. The BLM study, which examined the impacts of grazing on biological resources, first used the traditional approach of public participation, including receiving comments from interested parties and meeting with affected stakeholders. BLM had the draft study peer reviewed, but public involvement was not required because the study was a monitoring project and not a management plan. After the comment period, which had been extended multiple times, BLM established a "Livestock Study Working Group" to "build trust and confidence in the grazing study and to prevent future conflicts from developing" (Peyser 2005:60). The Working Group was designed to review the BLM study as well as the peer-review critique provided for the BLM study—this was a unique addition. The BLM Working Group case brought up concerns over what is acceptable format for a third-party peer-review study, and whether nonwestern scientific styles (i.e., traditional knowledge) could be employed by some stakeholders as critical forms of scientific knowledge within the scope of a peer review. This is particularly important where small communities and local NGOs may not have the resources to provide studies in a format otherwise considered by federal agencies as acceptable.

The Working Group also employed a JFF procedure of public participation to receive input from the public and made recommendations to BLM about the study. Components of JFF that were utilized in this case included development of recommendations by consensus; however, critique of this process centered on the fact that many essential components of JFF were not included, stakeholder involvement was limited, and there was also a lack of transparency regarding how the results of the Working Group study

would be used by BLM to make the final decisions. Most notably, the Working Group was instructed to assess only scientific questions and not other management issues pertinent to the case. These factors may account for the lower level of stakeholder satisfaction as compared to the Guadalupe River Flood Control Project example.

2.4.3 Advantages and Disadvantages of Consensus-based Approaches and Joint Fact Finding

This section explores ways some federal agencies have attempted to improve public engagement both within and outside the NEPA context. The advantages of these public participation models include the following: they can improve relationships between decision makers and other groups, they tend to address the concerns of stakeholders more directly, scientists are given more credibility from the stakeholders, and resource-poor stakeholders gain access to information and can share their expertise (Peyser 2005). Additionally, the number of comments and changes to the final rule or management plan may be fewer; the interests and needs of all parties, including agencies, may be met better; and the level of trust may increase.

One complication with the consensus-based approaches in general is that they can be time-consuming for the stakeholders and federal agency involved (Peyser 2005). Consensus building involves a longer timeframe than most other forms of decision making. Difficult decisions on significant issues require patience, time, and participation. It may be necessary to break down big decisions into "mini-agreements" to help build group trust and lay the foundation for major decisions (NPS 2002).

Consensus-building processes can be overwhelming for agencies if the resources needed to conduct the process are underestimated, and agency staff may not have the skills to mediate controversial issues if no facilitator is involved (U.S. Institute for Environmental Conflict Resolution 2001). While increased public participation is intended to reduce conflict among federal agencies and stakeholders, this lack of guidance may create a fear of litigation that paradoxically tends to discourage procedures that enhance public participation. Reiterating the critique of FACA (Section 3), Long and Beierle (1999) allude to other potential complications of public participation processes in the context of FACA, but which have broader relevance. They warn that increasing trust in an agency with advisory committees presents a challenge because there may be a lack of trust between the general public and the participants in the committees. Agencies may experience difficulties in maintaining stakeholder balance (U.S. Institute for Environmental Conflict Resolution 2001). The consequence is that the committees may be regarded with skepticism by the general public.

In addition, some participants in advisory boards and committees may not feel that the process contributes to trust in the agency. Long and Beierle (1999) suggest four questions that agencies should consider when attempting to design processes that increase trust:

- Do the participants have the ability to define issues, question technical experts, dispute evidence, and shape the agenda?
- Do the participants feel that the agency is devoting enough resources to the committee, including educational materials?
- Are the participants working with officials who have decision-making power rather than just junior staff? Working with administrative officials may help participants feel that the agency is taking them seriously.
- Are explanations given when the agency decides not to adopt the committee's recommendations?

Another complication with the consensus-based approaches is that they remove some decision-making authority from decision makers; this may lead to the use of more "conservative" science (Peyser 2005). The consensus-building process can be overwhelming for agencies if the resources needed to conduct the process are underestimated, and agency staff may not have training or skills to mediate controversial issues if resources are such that a facilitator is not included.

Finally, in certain situations, consensus building will not be effective or will fail entirely despite best efforts at the table (Peyser 2005). For instance, this may occur when the issues involve deep-rooted value differences, very high stakes, or win-lose confrontations. These characteristics occur in many environmental disputes that involve allocation or alteration of scarce resources (NPS 2002). In addition, there are many external forces that can complicate a consensus-based process. For example, a stakeholder's constituency may not agree to sign on; the lead agency may be pressured by elected officials; stakeholders or nonparticipants may exert political influence in other arenas; or stakeholder groups may be involved in an ongoing conflict about another issue, thus straining their working relationship (Peyser 2005). However, it is important to keep in mind that consensus building does not mean that everyone agrees that a decision is optimal. It means a decision is reached that everyone can live with; in other words, the decision addresses stakeholders' most important issues (NPS 2002).

2.4.4 Integrated Management Approaches

IM resembles the consensus-based and JFF methods but its process is more directly focused on multiple uses. In Canada, IM has been widely utilized by Fisheries and Oceans Canada (DFO) to establish plans under Canada's Oceans Act. IM was used to establish the Canada Integrated Management Framework, a marine resource management plan that incorporated Aboriginal hunting rights, fishing, conservation, and industrial and extractive industries; it was also used in the Eastern Scotian Shelf Integrated Management (ESSIM) Initiative, a collaborative ocean management and planning process. An example of IM in the United States is the process utilized by NMFS under the Magnuson-Stevens Act.

IM attempts to minimize conflict among various users and is defined as an ongoing and continuous process that "acknowledges the interrelationships that exist among different uses and the environments they potentially affect" and allows for contributions of Native and coastal communities in providing sound traditional knowledge and local expertise.

Case Study: Canadian Oceans Act

Under the Canadian Oceans Act, the principles of IM included ecosystem-based management, sustainable development, the precautionary principles, conservation, and shared responsibility among governments; key stakeholders in the process were Aboriginal and coastal communities as well as industrial and extractive industries (Canada 2002).

The IM approach creates advisory bodies (IM bodies) made up of stakeholders to assist in sharing and collecting information and consulting with stakeholders. IM bodies also engage in advising, designing, implementing, and monitoring management plans for oceans and coasts in conjunction with regulatory agencies, particularly when ocean and coastal impacts are high. IM involves the formation of agreements regarding oceans management plans and the delegation of responsibilities, obligations, and powers among partners and participants. DFO or a governmental agency serves as a facilitator throughout the planning process (Canada 2002).

DFO stresses the importance of the role of citizens, stakeholders, and the public, including ocean interests such as industry and environmental groups, in the management of Canada's oceans and coasts; in particular, it emphasizes the contributions of Aboriginal and coastal communities in providing sound traditional knowledge and on-the-ground

expertise, which forms part of the basis for the principles of the strategy. IM assumes a strong commitment to citizen involvement (Canada 2002) and includes:

- Federal authorities whose main responsibilities include offshore waters regulations such as trade and health issues, transportation, pollution, and resource management.
- Provincial, territorial, and regional authorities whose main responsibilities include managing land use and land-based activities with marine impacts.
- Aboriginal societies who have legal rights to be involved in decisions that may impact their treaties and rights.
- Industries; resource users; local, national, and international nongovernmental organizations; and academia, scientists, and researchers to help define management areas, disperse information on the ecosystems and state of the oceans, design monitoring activities, and integrate scientific, traditional, and social knowledge from a wide range of sources.

In cases in which treaties or Aboriginal rights are defined under a settled land claim or where claims to land and marine resources are unresolved, IM through co-management is developed using governance bodies established by land claims agreements. The steps of the IM process include defining and assessing a management area, engaging affected interests, developing an IM plan using consensus-based methods, and finally, obtaining endorsement of the plan from decision-making authorities, requiring committee participants to go back to their governing boards and/or constituencies. During the Beaufort Sea Integrated Management Planning Initiative, for example, participants were involved in scoping and planning the initiative itself. This IM plan is a co-management system established in conjunction with the Inuvialuit of the Western Arctic, the Government of Canada, and the Government of the Northwest Territories. Similarly, the ESSIM Initiative established a forum to facilitate collaborative management among interests such as fisheries; offshore oil, gas, and minerals development; conservation; and First Nations. Another IM plan is the West Coast Vancouver Island Aquatic Management Board. Designed to give the public a larger role in decision making and oceans management issues, the Board advises DFO; local knowledge is incorporated into the IM plan and contributed by local stakeholders.

Case Study: Magnuson-Stevens Act Regional Fishery Management Councils

Fisheries occurring in the U.S. Exclusive Economic Zone are regulated by the U.S. Department of Commerce, which delegates management responsibility to NMFS. Through the Magnuson-Stevens Act, NMFS delegates part of its authority to develop fishery management plans to eight regional fishery management councils (Councils). Each Council consists of voting and nonvoting members, including the regional director of NMFS, representatives of state fisheries agencies, representatives of commercial and recreational fishing interests, and other "individuals who, by reason of their occupational or other experience, scientific expertise, or training, are knowledgeable regarding the conservation and management, or the commercial or recreational harvest, of the fishery resources of the geographical area concerned" (Magnuson-Stevens Act Sec. 302(b)(2)(A)).

In creating the Councils, Congress sought to establish a process that would "enable the States, the fishing industry, consumer and environmental organizations, and other interested persons to participate in, and advise on, the establishment and administration of [fishery management] plans" (Magnuson-Stevens Act Sec. 2 (b)(5)(A)).

There are three points of entry for public participation in the decision-making process on fisheries regulations: (a) the Council itself, (2) the Scientific and Statistical Committee (SSC), a committee composed of federal and state scientific agency staff and scientific experts from academia, and (3) the advisory panel (AP) committee, a stakeholder committee of the Council. Members of the SSC and the AP are appointed by the Council. The Council provides a framework for these committees, but acts as third-party independent reviewer from agency staff and contractors hired to conduct the analysis. These procedural layers act to balance the potential inconsistencies that could come about because NMFS is charged with fostering an economically viable and sustainable commercial fishery as well as ensuring protection of the fishery resource.

To help ensure that this purpose is met, several procedural requirements, *in toto*, have become known as the "Council process." Each Council is required to establish an SSC to assist in the development, collection, and evaluation of scientific information; representing a cross section of academia and regulatory agency science. Each Council is also required to establish other advisory panels which, while they do not have voting authority, they do provide direct input from stakeholders. The goal of the SSC is to make sure the best science is presented to the Council and, subsequently, goes out to the public on behalf of the Council. Although the SSC also takes in public input, public comments to the SSC are limited to science and statistics. The SSC reviews the work of technical teams and outside analysts to ensure that management decisions are informed

by the best available science. An SSC may employ subcommittees for focused work on specific issues (e.g., review analytical methods that form the basis of species stock size estimates) and to address general issues such as bycatch, overcapacity, harvesting policies, and the use of marine protected areas in fishery management. General political input or policy statements are not permitted. Again, these workgroups are science based and are not policy oriented.

On the other hand, the AP provides an entry point for public participation during the development of proposed actions and allows the public to address a wide variety of subjects, including the effects of fishery management measures on local economies, social structure of fishing communities, environmental issues, conflicts between fishery user groups, enforcement issues, industry operations, and market conditions. Advisory panels are usually composed of experienced and knowledgeable members of the public such as recreational and commercial fisherman, law enforcement personnel, conservationists, fish processors, seafood dealers, and academic or research scientists knowledgeable about a specific fishery or biological subject. Councils vary in the extent and manner in which they use advisory panels.

This process has been successful, in that it has generally met the Magnuson-Stevens Act conservation goal of maintaining fish stocks while ensuring sustainable fisheries (although notable exceptions such as the New England cod fishery have experienced overfishing and economic collapse).

2.4.5 Regional Citizen Advisory Councils

Regional Citizen Advisory Councils (RCACs), established and mandated in the OPA following the *Exxon Valdez* oil spill, fall squarely between two public participation models—the JFF model and the IM model. RCACs are envisioned as citizen advisory councils that support a long-term partnership between industry, government, and affected communities.

The OPA encompasses all aspects of the North Slope crude oil transportation system through Prince William Sound and the Gulf of Alaska. It provides that nonprofit organizations can be certified as the designated RCAC. To be certified, an organization must meet the requirements and intent set out by the OPA; the U.S. Coast Guard recertifies the organization annually. The OPA RCAC provision states:

> Only when local citizens are involved in the process will the trust develop that is necessary to change the present system from confrontation to consensus (OPA 1990).

The OPA mandated Alyeska to fund an RCAC and to involve local citizens "in the process of preparing, adopting, and revising oil spill contingency plans" (Section 5002 of OPA). Though it only mandates funding and designation of RCACs in two locations in Alaska, the intent of the OPA was that similar citizens' committees should be established in other major crude oil terminals in the United States to facilitate public input toward improvements in the transportation of crude oil. The RCAC provision in the OPA was to:

> Provide a voice to the people and communities at risk from oil transportation through Prince William Sound, the Gulf of Alaska, and Lower Cook Inlet regions of Alaska. The guiding rationale is that citizens with the most at risk … should have a say in decision that could affect them (Devens 2006).

As such, the OPA created two RCACs and set up a mechanism by which other RCACs can be established. The two mandated by the OPA are based in Prince William Sound and the Cook Inlet. These RCACs are annually and permanently funded. In the case of Prince William Sound (PWS), the Alyeska Pipeline Services provides an annual allocation of $2 million to the PWS RCAC. For Cook Inlet (CI), the Cook Inlet Pipeline Company, a similar consortium between Phillips, Unocal, Kenai Pipeline, and others, funds the CI RCAC annually at $600,000. Although these two regions were the only ones specifically identified in the OPA, the OPA RCAC provision spurred other similar citizen advisory councils outside the State of Alaska.

RCACs present a stakeholder model that is focused on resolving conflict through scientific and technical approaches to decision making. To a limited degree, this approach is similar to the USFWS and BLM examples described in the previous section. IM, as described above, focuses on minimizing conflicts among stakeholders and acknowledging the dependency of its stakeholders on the resource for multiple uses. Addressing the interrelationships among resource users, the environment, and the community at large is critical to successful IM approaches. RCACs have acted as a conduit for the larger communities affected by oil and gas development and transportation, resulting in increased trust between government, industry, and the local communities. However, this has taken time to achieve.

Case Study: Prince William Sound RCAC

Washington State proposed a citizen's oversight committee that would use $8 million of $13.5 million in fines paid by the company deemed financially responsible for the Olympic pipeline explosion in 1999. The money would be set up in an endowment that would be drawn upon to annually fund the operation of a citizen advisory council modeled after the Alaska RCACs. The purpose of the "Pipeline Safety Trust" would be to provide oversight of pipeline safety and to establish a national center for information on pipelines. Richard Steiner has written about RCACs throughout the world, and in particular, Alaska (Steiner 2003). He opines that gubernatorial appointment is not the best method for appointment because a body that is meant to be independent of political influence must be appointed by the member organizations rather than the governor or federal administration.

The PWS RCAC is an independent nonprofit organization aimed to promote environmentally safe operation of Alyeska Pipeline's Valdez Marine Terminal and its oil tankers. It monitors the Alyeska Valdez terminal and tanker operations, conducts independent research, and advises industry and government on ways to prevent oil spills and respond effectively if spills do occur. The PWS RCAC is also charged with increasing public awareness and improving environmental protection capabilities for actual and potential environmental impacts of the terminal and tanker operations, providing "a voice for communities affected by oil industry decisions in Prince William Sound, the Gulf of Alaska, and Cook Inlet" (PWS RCAC 2007). It increases public awareness of these and other aspects of Alyeska's operations, including environmental protection capabilities and actual and potential environmental impacts of the terminal and tanker operations.

The PWS RCAC includes representatives from the Alaska Native communities in the area, municipalities, the two boroughs, commercial fishing organizations, and the tourist industry. Nineteen individuals serve on the PWS RCAC Board and 30 additional individuals serve on various committees, advising the Board on key topics related to oil transportation, shipping, spill prevention, and so on. Government and industry have nonvoting rights and participate in the meetings.

Technical committees advise the PWS RCAC Board. These committees address very particular areas of interest in the region. There are four committees that include oil spill prevention and response, terminal operations and environmental monitoring, port operations and vessel traffic systems, and science. The "science" topic is covered by a "Scientific Advisory Committee" made up of scientists from many different fields. The other committees are made up of citizens from the region. Through this process, the PWS

RCAC has independently obtained federal funding for equipment that provides weather monitoring. They have also published collateral material to educate citizens on technological issues related to oil production and transportation, partnered with industry to jointly fund studies, and conducted pilot studies with the cooperation of USFWS and the national Sea Grant program.

Independently funded research has led to policy shifts and changes in safety monitoring and training procedures. Scientific studies are conducted to provide evidence and direction to the RCAC. These studies determine actual or potential risks, document levels of pollution and biological effects, and provide a better understanding of new technologies available for production-related activities and cleanup activities. These studies help the committee with decision making on key policy and programmatic issues. Through this research, the PWS RCAC has played a more direct and critical role in contingency planning, marine fire safety and training, tanker escort systems, tanker vapor controls, and ice radar detection.

Case Study: Cook Inlet RCAC

The CI RCAC monitors for environmental impacts; conducts studies on wind and water currents used for oil spill prevention or response; identifies highly sensitive areas; monitors drills and testing of contingency plans; monitors developments in prevention, containment, response, and cleanup technology; and reviews port organization, operation, incidents, and adequacy of oil vessel transportation systems. The committees established by the CI RCAC participate in and monitor oil spill drills that test the effectiveness of the responsible parties, research other projects to determine how to decrease response time during a discharge, and identify worst-case scenarios and problems such as pipeline integrity issues before a problem occurs. Coastal mapping and surveys are posted on the web and entered into a larger database for researchers and spill responders to use, along with satellite imagery and mapping for cleanup and monitoring. The CI RCAC has 13 board members and additional nonvoting members, and three committees that feed information to the RCAC board. These three committees include environmental monitoring; prevention, response, operations and safety; and protocol. The CI RCAC has six staff members serving the organization. The organization is made up of four municipalities in the Cook Inlet; two boroughs; the City of Anchorage; individuals representing commercial fishing, recreation, aquaculture, and environmental interests; Alaska Native organizations; and business and economic development organizations. Nonvoting members include representatives from federal and state agencies such as the U.S. Coast Guard, MMS, and NOAA, among others.

Unique and thought to be a fairly successful model of industry and citizen partnership, the two RCACs must follow the intent of the OPA in order to maintain certification. Through a contract with Alyeska, for example, the PWS RCAC provides "services" to Alyeska, which include providing Alyeska with local and regional public input, and advising Alyeska and the local residents on terminal and tanker operations. They are also charged with monitoring terminal and tanker operations, and sponsoring and conducting independent research and environmental monitoring on a variety of oil spill, prevention, tanker transport, and related environmental matters.

Requisite Elements of Success

Literature has pointed to four requisite elements of RCAC success. Its credibility to function independently, to be sought for input from regulators and industry, while gaining significant levels of trust in the communities it serves is largely due to a unique set of components other public participation models do not have (Steiner 2003; Devens 2006; Robinson 2006). These elements are:

(a) Independence from government, industry, and specific stakeholders

(b) Possession of a long-term well-funded commitment from Alyeska (as long as the oil flows through the pipeline)

(c) Ability to facilitate and conduct its own independent research

(d) Direct and high level of access to pipeline terminal facilities

Importantly, both RCACs act as conduits for the larger communities, resulting in increased trust between government, industry, and the local communities. This was not always the case. Significant improvements in communication between Alyeska and the PWS RCAC occurred in 1995, when the two established a communication protocol to deal with significant disagreements and to handle sensitive and controversial issues. This protocol established an approach to resolve differences with industry and established a process whereby efforts to resolve conflicts with the industry are done through regular meetings, work sessions, and a "No Surprise" policy. This acts to promote consensus and time-sensitive communication by establishing a commitment on both sides to keeping the other informed and updated. Though it has not been a panacea, it has significantly improved public-industry communication and moved issues toward resolution more easily.

In reviewing the keys to success as communicated by the Executive Director of the RCAC in a presentation he conducted, a few are particularly relevant to consider for the North

Slope. First, the protocol established between industry and the RCAC provided a procedure for communication and mediation. The protocol resulted in increased cooperation and a way to resolve differences and significantly reduced the "dueling press-conference" approach that often accompanies resolution of public policy conflicts. Second, trust and respect between parties develop on some issues and break down on other issues, sometimes in the same forum, and this must be addressed from the outset. Third, changes in personnel in industry and government contribute to this breakdown in trust, as new faces get involved and new relationships must be forged. Regular, ongoing, informal meetings help to bridge these difficulties and encourage frank conversations between the parties. Fourth, though Alyeska is required to fund the RCAC, the level of funding is renegotiated every 3 years. Suggestions have arisen to establish a third party to determine the level of funding to ensure independence and reduce the potential for undue pressure on RCAC decision makers. Finally, expectations of the RCAC board members and directors should be clearly communicated and the role of the advisory committees should be clear. The Executive Director of the PWS RCAC stated in a case study presented to the 32nd Annual Michigan Conference of Political Scientists: "In our case, it has taken laws, a well constructed contract, public support, dedicated staff and volunteers, and a secure source of funding to make it work" (Devens 2006).

In 2002, Richard G. Steiner proposed to the U.S. Commission on Ocean Policy the establishment of regional advisory committees in sensitive U.S. coastal areas modeled after the PWS RCAC. He identified the Oil Spill Liability Trust Fund as a source of potential funding for these newly established RCACs. Steiner argues that:

> Transparency is a necessary but not sufficient component of informed public participation in democracy. To have an active voice, the public, or at least a representative body of the public, needs to have a legitimate and formalized role (Steiner 2003:72).

Steiner has written extensively on RCAC history and process, establishing a set of recommendations for success from the experiences in Alaska and has concluded that many of the lessons learned in the PWS RCAC process are actually counter to conventional models and practice of public participation, though they have worked in the PWS RCAC and CI RCAC context very well. Of the extensive list of lessons identified by Steiner, those that are particularly pertinent to the North Slope context are included below:

- Citizens are more effective if they have formal relationships with those who make decisions. The contract between the PWS RCAC and Alyeska formalized a

relationship between the pipeline and the RCAC, but not with the owner companies that contribute to Alyeska or shippers.

- Confidentiality versus public access became an issue early on between the RCAC and industry. To maintain credibility, the RCAC had to have transparency and meetings had to be open to the public. This issue was addressed in the contract developed between Alyeska and the RCAC, which included a clause acknowledging actual and perceived independence and transparency as key to public credibility. The RCACs undergo annual financial audits, available to the public. The U.S. Coast Guard (as federal liaison) and Alyeska have the right to conduct financial audits of the RCAC as well. These build structural impediments to either undue influence or corruption.
- Cooperation, rather than confrontation, has led to greater success in resolving conflicts than prior efforts centered on public criticism.
- Trust and mutual respect can develop on some issues and break down on others, and can be maintained by regular informal meetings.
- The RCAC, unlike most citizen advisory groups, has the resources with which they can hire technical consults and to commission independent research, enhancing the RCAC's credibility and level of participation.
- The contract established between the PWS RCAC and Alyeska contains a clause by which the RCAC's independence is protected, and though a citizens' group receives industry funding, generally the PWS RCAC is thought to represent the public interests.
- A "communication protocol" developed between industry and the PWS RCAC established communications and mediation procedures and allowed the parties to handle sensitive and controversial issues and to establish a better relationship toward resolving disputes.
- A small board is more efficient and easier to manage than a larger board. The PWS RCAC has 19 board members; boards with 8 to 10 members are recommended as ideal.
- The RCAC has a staff position dedicated to community liaison, they publish a quarterly newsletter that feeds technical communication to the public at large, and each board member is charged to act as liaison between the RCAC and their group or community. Outreach must be a fundamental component to feed information back to the diverse areas in a region.

- Advisory groups should be mandated by state or federal statute. The law that established the RCACs ensures continuity, regardless of political or industry personnel changes.

2.4.6 Risk Management Approaches

This section presents models that would not be considered collaborative, JFF, or IM approaches, yet are included because they have relevance to MMS due to the risk involved in the issue and because these are examples where federal agencies followed the letter of the law under NEPA with regard to public engagement, but failed to gain support. As stated earlier, risk communication refers to a social process by which people become informed about hazards, are influenced toward behavioral changes, and can participate in decision making about risk issues (Rohrman 2007 [2000-2002]). Risk communication campaigns need to address cultural factors because of large cross-cultural differences in risk perception (Earle and Cvetkovich 1997; Rohrmann and Renn 2000; Steg and Sievers 2000; Vaughan 1995). These models may help MMS avoid similar mistakes; these experiences can be utilized to determine what worked and what did not and to consider how similar mistakes might be avoided in a North Slope context.

The models below provide examples of cases where scientific risk analysis resulted in national level decision making with local level risks. In the first case, extensive scientific review of the best technology with the least risk led the U.S. Army to choose incineration to dispose of chemical waste. These models point to a predominant view within risk literature—that despite what the science might identify as low risk, public perception of risk depends upon the extent to which exposure to the issue is involuntary (Shepherd and Bowler 1997). In the incineration case, the public received no localized benefit and perceived the risk of continued storage and the risk of incineration as one in the same. The subsequent case of the ordnance cleanup, however, had direct localized benefits in which that interest was shared by the federal agency and the community.

Case Studies: U.S. Army Risk Management Approaches

In the late 1970s, the U.S. Army began an EIS process to determine appropriate sites to dispose of the national stockpile of chemical weapons by the year 1994. The Army chose a technology for disposal based upon a scientific assessment conducted by the National Academy of Sciences in the late 1960s. Scoping meetings ensued, and in response to the public's concerns about risk, the Army pledged to conduct additional technical and scientific analyses. Since the disposal technology was predetermined, the public began to view the process as a pro forma exercise where they had no real ability to influence the

EIS. As a result, the EIS was challenged in court and Congress extended the original disposal date from 1994 to 2004. Due to the delay, disposal costs rose by $7 billion (Shepherd and Bowler 1997). Though the Army followed the requirements for public participation under NEPA, that process was not sufficient to assuage the public's concerns over the risk of hazardous waste disposal.

Shepherd and Bowler analyzed this case by measuring the public participation strategies that the Army pursued against specific criteria: was the public process suited to the people who would ultimately be affected by the decision, did conflicts get resolved in a productive manner, and did they employ a deliberative democratic process. They found that the Army was banking on the fact that the risks (to the community) associated with storing chemical waste were scientifically *greater than* the risks of disposal, and that if the public understood these risks accordingly, they would also support the military's position. Shepherd and Bowler also found that more could have been done to explain the safety of the technology through a more consistent process of building relationships in the communities affected. The public would have liked the military to present alternatives other than incineration. The public was "less willing to accept risks imposed upon them because they were not involved in the decision-making process." Though in this case, NEPA created procedures that resulted in entry points for comments from the public, federal interaction was perceived by the public as insincere and was dismissed by the community. Improvements would have come in the form of including citizen participation outside the regular procedural channels and very early on in the decision-making process itself. People felt the project was done to them, rather than established with them.

Risk literature indicates that risk perception depends on the extent to which the exposure is involuntary (Fischhoff et al. 1978 and Slovic 1987 cited in Shepherd and Bowler 1997). The public did not view cooperation on this issue as being in their best interest. In this case, the Army followed all NEPA procedures. They funded independent studies and established public review/comment opportunities. However, because the technology was not adequately explained to the public and the Army saw the choice of incineration for disposal as a decision made early on and not subject to review, the public became frustrated and disenfranchised, and resorted to challenging the decision in court.

In contrast, in 1993 unexploded ordnance from the First World War was found in a dense residential area known as Spring Valley, in Washington, D.C. The Army developed "Operation Safe Removal" and began an intensive public involvement response plan (PIRP).

The PIRP sought to facilitate a knowledgeable public and to resolve issues of public interest and concern. The public's concerns were primarily personal safety, property values, dangerous munitions in the neighborhood, lack of knowledge about previous military operations in the area, and disruption of their lives. The Army developed a simple yet effective communication system with 13,000 residents, conducting over 80 public meetings, sending monthly newsletters, making phone calls, and conducting site visits to the residents' homes. The neighborhood was split into nine zones and a resident within each zone was assigned to be a "zone captain" to allow for direct communication with the Army's project manager.

Weekly meetings were held, where citizens would identify concerns and bring them to the attention of the project manager as well as provide an opportunity for the Army to disseminate information to the citizens. Community-based advisory committees played a role in shaping and designing the military response, which included reviewing evaluations, reviewing remediation techniques, risks from the munitions, and so on. The citizens, in the end, were supportive of the remediation approach chosen by the military.

One should be careful how to interpret these two contrasting cases. The success of one over the other cannot be assumed to be because the public participation process alone was better or more inclusive; rather, one must look at the relationship between the issue at hand, the local interest, and the national interest.

Where local and national interests coalesce, where it is within the interest of the community to cooperate—as is the case with the fisheries management councils and the ordnance removal example—the public will be more apt to participate and be willing to be involved. In the case of mineral extraction, where the national interest may have overriding considerations over the local interests, cooperation sought by the federal agency must be accompanied by strong incentives for local participation if the agency hopes to engage the public.

2.5 CONCLUSION

A survey of the literature suggests that, while fundamentally required by NEPA, public participation processes manifest differently throughout the country. The differences largely depend on the internal policies of the agency leading the project, level of interest present in stakeholder groups, historical level of trust between different involved parties, and established political powers of all involved. Despite efforts to the contrary, the resulting public participation programs lead many people to feel disenfranchised by the process, resulting in the perception that their comments are ignored. Communication

between federal entities and the public can be strained by a number of barriers, including the pervasive use of technical language in NEPA documents, linguistic and communicative differences, institutional challenges including reduced budgets, sociocultural misunderstandings, and political power struggles. Complex public participation problems regularly experience two or more of these barriers.

Different agencies have developed strategies to overcome these barriers, but with varied results. Strategies have included consensus-based approaches, including JFF, which give local stakeholders the opportunity to frame, scope, review, and submit scientific information to policy makers. Other strategies have included the formation of integrated management agreements and RCACs, both of which give local stakeholders the opportunity to inform policy decisions at an early stage and support independent scientific research that may shape project alternatives.

Through an examination of historical barriers and public participation solutions, a number of strategies show promise for the current technical dialogue project on the North Slope. For example, dissemination of information is most likely to be successful through printed newsletters, with digital distribution of information through email and television less accessible for many rural Alaskans. Previous experience suggests that the language in these newsletters should not be overly technical and should take into account traditional knowledge, where appropriate. Finally, some agencies have experienced increased communication success by having a third party manage the collection of scientific information and organizing the public participation process, which can create a more tempered cooperation between all parties involved. This has proven especially valuable in cases where the stakeholder groups and federal entities in question have an adversarial history.

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CHAPTER 3.0
CONTENT ANALYSIS

3.1 INTRODUCTION

One approach to identifying and isolating key public concerns is the analysis of public testimony. An analysis of comments gathered through the public testimony process can suggest the range and relative importance of themes present in the community. The following analysis attempts to discuss the identification of salient themes present in the testimonies, as well as discussing the possible patterns in variation seen over time and between communities.

3.2 SUMMARY OF RESULTS

For this task, the research team analyzed six collections of comments elicited during the course of oil and gas lease sales, spanning a total of approximately 30 years. Four of these derived from public testimony taken from public hearings and written comments during the lease sale NEPA process. Two consisted of compendia of semi-directed interviews seeking to confirm the key concerns expressed during public testimony up to the time of those interviews. In conducting a content-analysis, the research team found the topical areas of most consistent concern over time to be sociocultural effects, comments about natural conditions likely to be challenging to development, and direct effects upon wildlife. The degree to which these comments were present varied from one collection of comments to another, but the most constant comments present throughout all testimonies were concerned with the effects upon wildlife and comments about natural conditions.

The analysis presented here is in terms of the percentage of comments that address each topic and, as such, an increase for one topic must be balanced by decreases for one or more others. This analytical technique tends to overrepresent the importance of comments from smaller datasets and can largely obfuscate total response numbers for a single category. It should also be noted that there are essentially only five unique data sources, since one of the collections (Technical Report 85 [TR85]) is a synthesis of interview responses and a second collection (Technical Report 85A [TR85A]) contains the full transcripts. The semi-directed nature of the interviews in TR85A also introduces a slight bias into this current analysis, since the results of the interviews are different from the undirected public scoping comments. Despite this, a few patterns do emerge from the data.

As mentioned above, comments about sociocultural concerns, wildlife, and natural conditions are consistently present over time, with slight variations over time. Wildlife concerns oscillated around 13 percent of all comments, with the value for 2002 and 1979 being almost equal to each other (and the long-term average). Comments on natural conditions have averaged 4 percent, in a range spanning about 1.3 percent. Sociocultural concerns peaked in 1986 and have trended down since then, with the 2002 value somewhat below that of 1979 (with the overall average about the same as the 1979 value). The only topical area to increase in percentage in a relatively simple way is "concern with the source of potential effects." It was lowest in 1979 and has ranged from 10 to 11.6 percent in all other years. Concerns with the decision-making process itself, aspects of the document (e.g., errors, complexity), and technology (especially ability to clean up oil spills) have increased since 1979 in less simple ways and will be discussed below. Comments concerning direct effects on habitat have decreased in percentage since 1979. Comments concerning cultural values have also decreased in percentage since 1979, although this may represent a growing familiarity with decision-making documents on the part of the respondents. Comments about effects on the human use of affected resources (primarily subsistence uses) also display a more complex pattern, which needs to be discussed in relation to other categories of topics.

3.3 METHODOLOGY

The content analysis presented in this chapter is based on the systematic coding of public testimony from a selection of hearing transcripts and written comments. The sheer mass of existing public testimony on oil and gas development precluded the inclusion of all such testimony in the analysis. Rather than sample from all such testimony, an approach was devised to choose from a limited number of projects for which significant public testimony was elicited, spaced through time as evenly as possible and supplement this body of information with an analysis of related technical reports. For the North Slope, hearings during the NEPA process and written comments came from four such projects and two technical reports. Those chosen were:

1. Federal/State Beaufort lease sale of 1979
2. Beaufort lease sale 97 (1986)
3. Beaufort lease sale 144 (1995)
4. Beaufort lease sale 186 (2002)
5. Technical Report 85 (TR85): A Description of the Socioeconomics of the North Slope Borough
6. Technical Report 85A (TR85A): A Description of the Socioeconomics of the North Slope Borough. Appendix: Transcripts of Selected Iñupiat Interviews

The interviews from MMS TR85 and TR85A were logical documents to include, as they represent the first attempt to analyze public testimony in regard to Alaskan oil and gas development.[20] The methodology used for TR85 and TR85A, summarized in Chapter 7 of TR85 (pp 181-250), was used as a basis for our study. The demographic characteristics of respondents for TR85 are similar to the characteristics of respondents recorded in the public scoping comments. The overall goal of the project itself is also similar to the goals of this current study. However, local experiences with oil and gas development (as well as that of the regulating agencies) had a greater time depth for much in the material in our analysis, and a careful consideration of the trends and patterns in the TR85 and TR85A documents can illuminate differences between the two studies.[21] A short comparison of the TR85 study with ours is briefly summarized in Section 3.4 below.

The four bodies of lease sale testimony the research team considered were about as evenly spaced in time as could be desired, with the inclusion of the first hearing that took place, for the joint federal-state sale in 1979, and later hearings for sales in 1986, 1995, and 2002. While the composition of the participants/testifiers varied from case to case, one constant for all five hearings (or in the case of TR85, interviews) is that the hearings were conducted in Nuiqsut, Kaktovik, and Barrow. The majority of testimony in the five aggregated cases (78 percent) was from residents of these three communities, and in no single case was this total less than 58 percent. The number of individuals giving testimony varied from a low of 20 total interviewees for TR85 to a high of 85 people giving testimony for the 1979 public hearings for lease sale BF. The other three leases sales have a narrow range of 31 to 35 testifiers.

Some individuals may have testified only for one sale, although "community representatives" tend to have testified at several. Thus, an individual could possibly be represented in (and counted as a testifier for) as many as all five, or only one sale. Any

[20] Categories developed for TR85 and TR85A were used to help formulate the topical categories for this study. Although there is no direct correspondence between the 10 topical categories in the two technical studies and the 11 categories developed for this study, they are roughly equivalent; though they may be labeled slightly differently. Still, both groups of categories combine elements in different ways. Part of this may be the differences in the bodies of comments considered. TR85 is a fairly early document with a larger body of comments, but these comments covered a much shorter period of time. Much more of the testimony was either written or the result of at least a partially directed interview than the other four datasets considered.

[21] This includes differences in topical focus or emphasis between the analysis for TR85 and this study. That is, only one of public hearings used in this analysis had taken place when the interviews for TR85 were conducted, and these interviews were intended to "verify" the concerns that had been identified in North Slope public testimony up to that point. That this resulted in at least semi-directed interviews is evident from the percentage of comments related to "subsistence food." The coding of the four public hearings has no such comments for the hearings of 1986 and 1995, and a low percentage (less than .5 percent) for 2002. About 3.75 percent of the 1979 comments were about subsistence food. For the TR85A interviews, however, about 6.5 percent of the coded comments were about subsistence food. While subsistence food remains an important expression of cultural values, it appears that in public testimony other images were more commonly used during the public hearings examined after 1979.

single individual or group was only counted once for each round of hearings associated with each lease sale—even if he or she testified in more than one locale or place. A single individual often provided a great number of comments relating to many different topics, with a greater or lesser degree of repetition.

One member of the research team with experience with contemporary Alaska Native resource issues, oil and gas development, and the NEPA process was tasked to inductively code the testimony and written comments from the five information sources (with TR85 and TR85A combined). The coder had conducted research on the North Slope since 1982 and had used North Slope public testimony as one source of data in a range of previous projects. Because of this depth of experience, the coder was capable of sensitivity regarding the written record and how Iñupiat concerns can become misrepresented in text.

For the purposes of analysis, testimony for each individual testifier was reduced to a single count for each code, no matter how many times the individual gave comments within that code. Items of testimony that were submitted with multiple names or in the name of an organization were only counted as single items (and not multiplied by the number of signatures or membership of the organization). Upon development of a full suite of codes, a single research team member applied the codes systematically to the texts. A total of 11 primary codes resulted from this effort, with multiple sub-codes present for each primary code (Table 3-1). The application of these 11 primary codes to the five texts produced a unit-of-analysis-by-variable matrix. Results of the coding were compared to similar prior studies and were found to be reasonably comparable. This underlying dataset provided the research team the ability to explore trends concerning the importance of each code (signified by its absolute or relative volume) over time or by geography.

For the purposes of this project, testimony from agencies, environmental groups, and industrial stakeholders was excluded. There were two main reasons or justifications for this. First, this category of testimony tended to be quite dense, technical, and repetitious in its detail. Primarily written, these comments also tended to be much more voluminous than verbal comments and required time beyond the scope of effort for this project for the full development and enumeration of comments. Second, while the technical dialogue project is concerned with these stakeholder groups, it is more concerned with the resident populations of potentially affected areas. Some written testimony has been included from groups representing these areas (most notably the NSB and the AEWC), but by far most of the testimony is from hearings as the projects were going through the NEPA process and are therefore verbal; most of the accompanying written testimony merely elaborates what others relate verbally.

Table 3-1
Content Analysis Codes/Topics/Categories

Subject of Comment (major in CAPs)	Subject of Comment (major in CAPs)
SOURCE of Disruption or effect Noise Oil Spill Pipeline Money/Cash Regulation Industry Cumulative Other	WILDLIFE Resource Effects Damage to or decline in population Behavioral changes
HUMAN USE Resource Effects Commercial Fishing Sport Fishing Tourism or Recreation Public Infrastructure/Services Subsistence	HABITAT Resource Effects Damage to or decline in habitat Damage to human use areas (general)
Cultural VALUES/Protection Environmental Justice Uncertain comment/cannot predict Conflict Avoidance Agreement Fishing gear conflicts Cost/Benefit analysis Opinion stated, no reason given	SOCIOCULTURAL Employment/Subsistence Offshore development/subsistence Onshore/Offshore comparison Restriction of access to use areas Time demands on local pop. Or leaders Adequate/Inadequate mitigation Impact assistance funds/bonding Employment opportunities Cost of living Cultural values (local vs. industry) Migrants/Transients
EIS Document Too long and complex Alternatives too narrow Errors of fact or analysis Does not include all relevant science Statements not in line with traditional knowledge	PROCESS “They” never listen/can’t stop oil Need for traditional knowledge/collaboration Sovereignty/Gov’t to Gov’t relations Miscommunication Lack of notice or time Tiering Process improper or illegal National energy policy/politics International multinational agreements
NATURE (Natural Conditions) Ice Currents Wind Weather	TECHNOLOGY/Technical Technology deficient Need to demonstrate technology works No demonstrated cleanup technology Models
Native FOOD Not enough Decline in quality Sharing	

Table 3-2 provides a summary of the number of persons submitting comments for each lease sale (or interviewed for TR85), the number of comments isolated and coded, the reduction of these coded comments to a single count for each individual for each sale (or TR85), and the average number of topics commented on by each person for each sale or TR85. Table 3-2 also presents this information reorganized to summarize the same information by community of residence for the primary communities represented—Barrow, Kaktovik, Nuiqsut, and the "other" (but still primarily northern Alaskan) communities.

Table 3-2
Number of Respondents

Body of Comments	Persons[1]	Comments Coded[2]	"Reduced" Comments[3]	Topics per Person
BF (1979)	85	1010	410	4.8
TR85A (1982)	35	263	122	6.1
LS97 (1986)	20	321	147	4.2
LS144 (1995)	40	336	177	4.4
LS186 (2002)	52	608	200	3.8
TOTAL	232	2538	1056	4.6
Barrow Total	84	1301	437	5.2
Kaktovik Total	42	408	206	4.9
Nuiqsut Total	54	437	233	4.3
NS-3 named com.[4]	52	392	180	3.5
NS Total[5]	232	2538	1056	4.6
Kruse et al. 1983				
NS Total[6]	158	923 "mentions"	5.8	

[1] "Persons" equals the count of each individual or entity providing testimony for each of the five bodies of testimony analyzed. Thus any entity may be represented in these counts up to five times, as some entities submitted comments to more than one body of testimony. Collective testimony was counted as one entity.

[2] Testimonies often included comments on several topics, and one comment could itself be classified into several topic categories—categories are not necessarily mutually exclusive. Some testifiers provided several comments within the same topical category(ies).

[3] For the purposes of analysis, "duplicate" topical comments for a single testifying entity were not counted. This in essence reduced the number of comments coded to the number of topics addressed by individual testifying entities.

[4] "NS-3 named com." Equals all comments except those from the residents of Barrow, Kaktovik, and Nuiqsut.

[5] "NS Total" actually includes a limited number of individuals residing in non-Arctic Alaskan communities.

[6] Information for this line from Kruse et al. 1983, page 188.

Table 3-3 presents a summary of the comments, in terms of percentage, categorized by the codes of Table 3-1, in the same organizational format as Table 3-2. This information is the basis for any and all graphics contained in this section.

Table 3-3
Summary of Public Testimony Categorization, 1979-2002, by Lease Sale and Community of Residence

Body of Comments	Source	Wildlife	Habitat	Human Use	Socio-cultural	Values	Process	Document	Nature	Technology	Food	Total
BF (1979)	7.1%	12.9%	6.1%	8.5%	14.1%	16.1%	13.7%	7.8%	4.1%	5.9%	3.7%	100.0%
TR85A (1982)	11.5%	9.0%	0.8%	13.1%	17.2%	18.0%	10.7%	1.6%	7.4%	4.1%	6.6%	100.0%
LS97 (1986)	11.6%	15.0%	1.4%	12.2%	15.6%	9.5%	11.6%	16.3%	3.4%	3.4%	0.0%	100.0%
LS144 (1995)	10.2%	11.3%	0.0%	9.6%	14.7%	10.2%	16.4%	13.0%	4.5%	10.2%	0.0%	100.0%
LS186 (2002)	11.0%	13.0%	3.5%	7.0%	12.0%	12.0%	15.0%	13.0%	4.5%	8.5%	0.5%	100.0%
TOTAL	9.5%	12.5%	3.3%	9.5%	14.4%	13.6%	13.7%	10.1%	4.5%	6.5%	2.3%	100.0%
Barrow Total	8.9%	12.6%	3.0%	9.2%	14.0%	11.4%	14.4%	13.0%	4.3%	6.6%	2.5%	100.0%
Kaktovik Total	11.7%	14.1%	1.5%	10.7%	12.6%	13.1%	12.1%	7.8%	5.8%	6.8%	3.9%	100.0%
Nuiqsut Total	8.2%	10.3%	3.4%	12.4%	18.0%	18.0%	12.9%	4.7%	6.0%	4.7%	1.3%	100.0%
NS-3 named com.	10.0%	13.3%	6.1%	5.0%	12.8%	13.9%	15.0%	12.8%	1.7%	8.3%	1.1%	100.0%
NS Total	9.5%	12.5%	3.3%	9.5%	14.4%	13.6%	13.7%	10.1%	4.5%	6.5%	2.3%	100.0%

Note: see Table 3-1 for a fuller explication of topical categories

3.4 RESULTS: VARIATION OVER TIME

The revelation of changes or trends over time through the comparison of coded results can be conducted through a number of different strategies, including complex statistical analysis. These analyses, however, do not necessarily produce significant, accessible results and a simpler approach is sometimes more appropriate. One simple approach is to examine differences in the percentage values between the "Total" or "Average" case and each of the specific cases. Comparisons can also be made between cases, looking at "body of testimony" or "community." Where differences seem to be relatively large, possible explanatory factors can then be suggested.

While the dataset may be skewed by the inclusion of the TR85 interviews, as discussed above, some general phenomena can be described. First, it seems that direct concern over the accuracy and usability of decision-making (NEPA) documents may have peaked (relative to other comments) in the 1980s, but remains a significant issue for all lease sales. It would be hoped that the documents have improved over time in this regard, and specific documents may draw more attention in this area than others, but clear communication of analysis and conclusions (and to some degree even description of "facts on the ground") remains a problem. Similarly, concern with the public participation process, including both the impediments to significant local participation as well as the burdens imposed by such participation, has been a significant issue from the first testimony and remains one through the present. Public testimony on the limits of technology, and especially the ability to clean up oil in broken ice conditions, peaked after the *Exxon Valdez* oil spill but was present at lower levels before the *Exxon Valdez* oil spill event and remains at higher than pre-*Exxon Valdez* oil spill event levels. Thus, it is fairly clear that public testimony does reflect current events and experiences, and is not merely a recycling of past testimony. There may be some evidence that statements relating to social and other human-use effects are increasing in frequency relative to those concerning direct effects on nonhuman resources, but the two are so intimately related in Iñupiat testimony that it is difficult to evaluate this possibility.

As summarized above, topics that have been consistent components of public testimony have been those concerned with effects upon wildlife, sociocultural effects, and natural conditions that may make development difficult and risky. Concern with the source of potential effects has also been consistent, but more frequently mentioned after the 1979 testimony (Figure 3-1). This could possibly reflect the direct lack of experience that Iñupiat had with development and the EIS process in 1979, and the lesson that the current EIS process values specific comments more than general ones. Comments related to effects on habitat seem to have declined since 1979, but these comments were likely phrased in more general terms than as specific comments (Figure 3-2). In later public hearings many

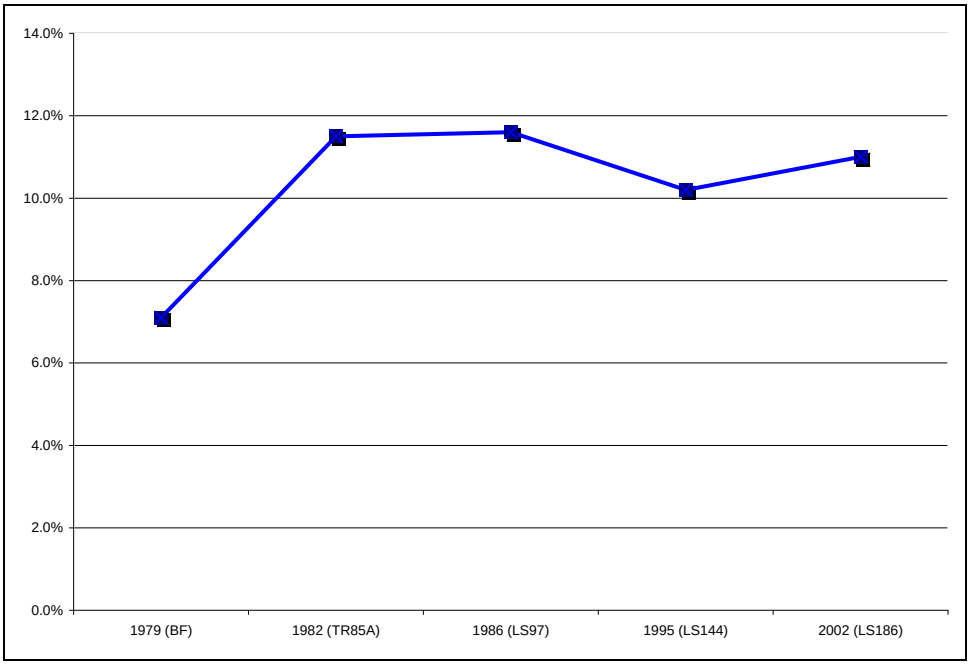


Figure 3-1. Public Comments Relating to Source of Effects over Time

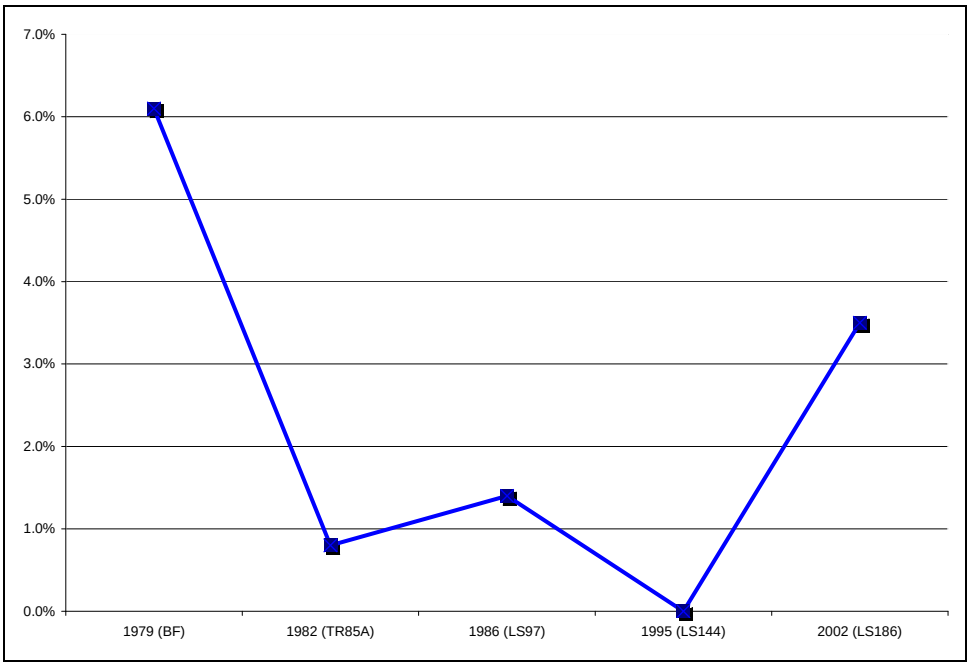


Figure 3-2. Public Comments Relating to Habitat over Time

of the "habitat-related" comments were coded in other categories, as they were more specifically focused on the effects those habitat impacts produced (e.g., fewer subsistence resources, less healthy subsistence resources, poorer human health, etc.). The frequency with which comments in this category are mentioned has varied greatly from one sale hearing to another, and this seems to reflect an evolution in the sorts of comments made.[22]

More complex patterns of variability are exhibited for the other topical categories. For example, "cultural values" comments were highest in percentage in 1979, when they were more generally expressed, and lowest in 1986. They gradually increased for 1995 and 2002, although not to the 1979 level. Again, this appears to reflect a trend toward more specific comments (although many are still more general in form).

Comments on technology (and especially the limitations of technology) also demonstrate the same pattern of variability over time as those with process (Figure 3-3). This variation, however, can likely be directly related to historical experience. "Technology" comments were 5.9 percent in 1979, 3.4 percent in 1986, 10.2 percent in 1995, and 8.5 percent in 2002. The 1979 level perhaps reflects a general population concern, whereas the reduction in 1986 could reflect the increase of comments in other categories and the lack of any stimulus to elicit technology comments. Once the *Exxon Valdez* oil spill occurred, however, technology (and especially oil spill) comments increased dramatically. Although the frequency of such comments has declined somewhat in later hearings, they are made at a higher rate than in 1979 and this rate is consistently elevated. Given the increased prominence of offshore exploration and development, and the extreme risk Iñupiat perceive in such development, it is not likely that this category of comment will decrease in frequency unless adequate technology to effectively clean up oil spills in mixed ice conditions is demonstrated. Even then, other technology limitations will probably still be evident.

Comments on the adequacy and complexity of decision-making documents were evident in 1979, at about 7.8 percent of all comments, but increased to 16.3 percent in 1986 (Figure 3-4). This could reflect the increased frustration of Iñupiat with these documents after several rounds of such documents. Such comments have since settled at about 12 percent of all comments—greater than the 1979 level but less than the 1986 level. This change could reflect a number of changes, including the longer use of such documents and more agency familiarity, recognition that they have certain strengths and weaknesses, and the need to make comments in other, more pressing, areas.

[22] "Subsistence food" is another category for which this has been true, and has been lacking (at least under the current coding) for some hearings altogether.

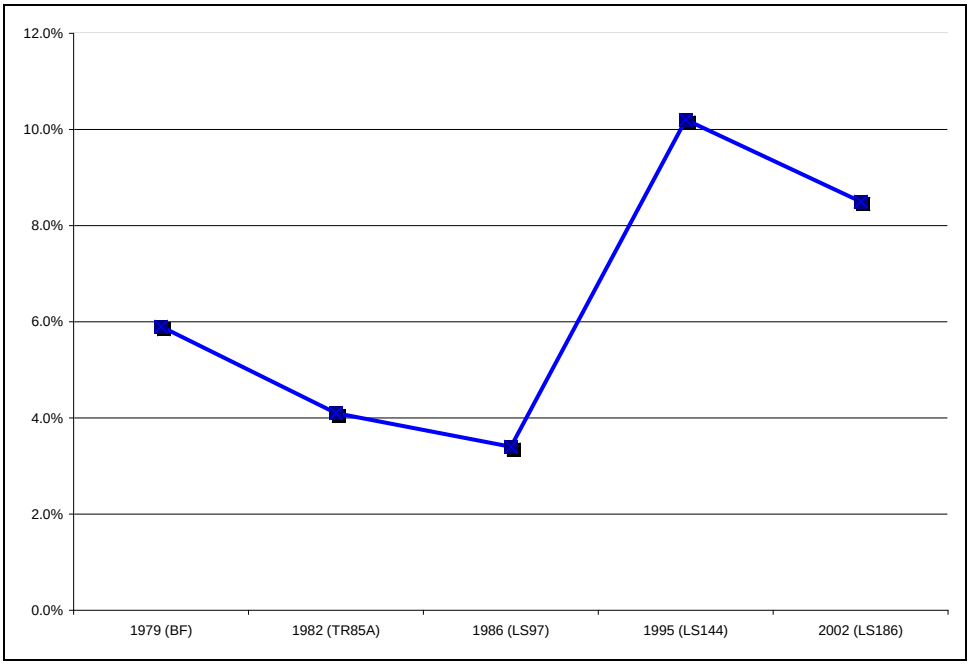


Figure 3-3. Public Comments Relating to Technology over Time

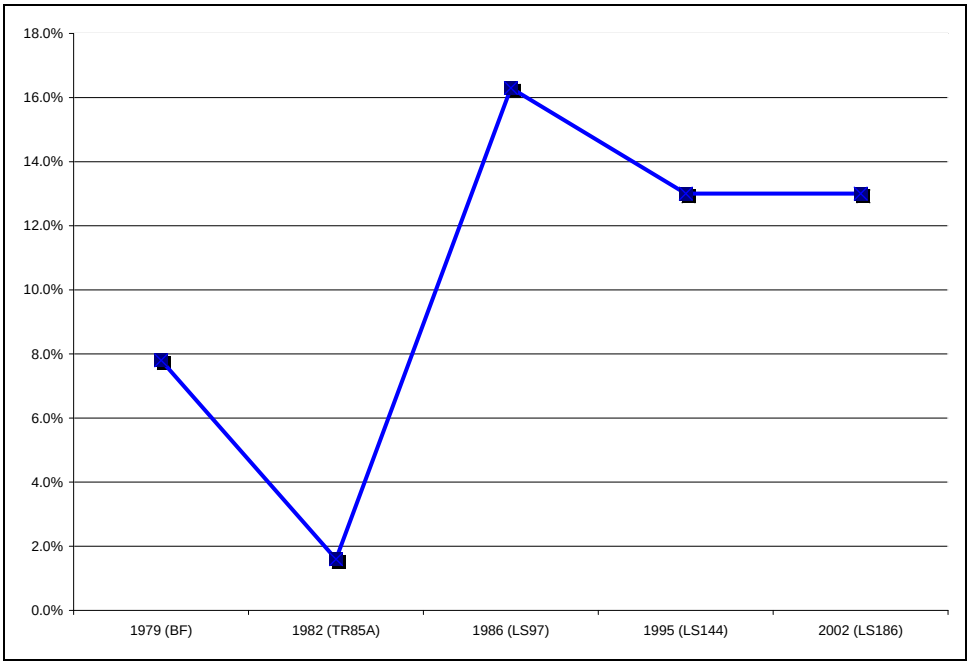


Figure 3-4. Public Comments Relating to Documents over Time

Comments on the public participation process have been consistently frequent, but the relative number has varied over time from about 11 to 16 percent of all comments (Figure 3-5). There are few obvious factors to explain this, although a future detailed analysis of those individuals who choose to testify for any given hearing may provide some answers.

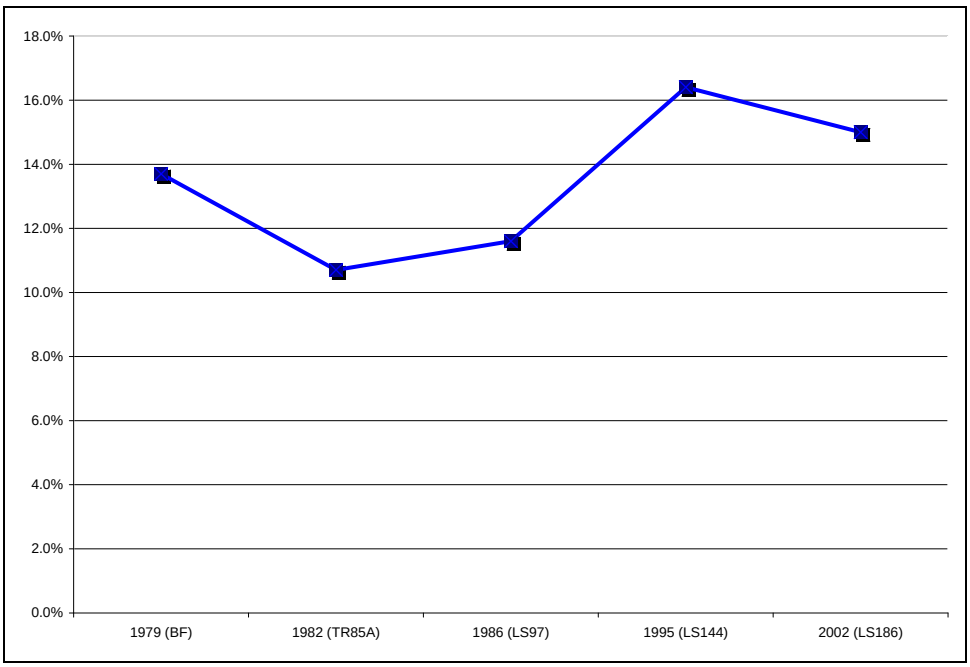


Figure 3-5. Public Comments Relating to Process over Time

Finally, the pattern of variability for "human use" comments appears counterintuitive. Our coding has the frequency of these comments peaking in 1986 and decreasing since then to below the 1979 level (Figure 3-6). It is quite possible that the continued primacy of this category is masked by our coding of what could be "human use" comments as "wildlife" comments. Testimony increasingly packages comments about subsistence in terms of effects upon the abundance, distribution, and behavior of subsistence resources over time, lending our systematic coding technique to classify these comments as "wildlife" more frequently as the comments become more inclusive over time. It is difficult if not impossible to differentiate between those meant primarily as comments upon biological effects and those meant as comments on human use effects. Coding them consistently as both categories seems counterproductive and a potential bias to the analysis. The explicit meaning of most of these comments is biological. However, most also implicitly address the issue of human use effects as well.

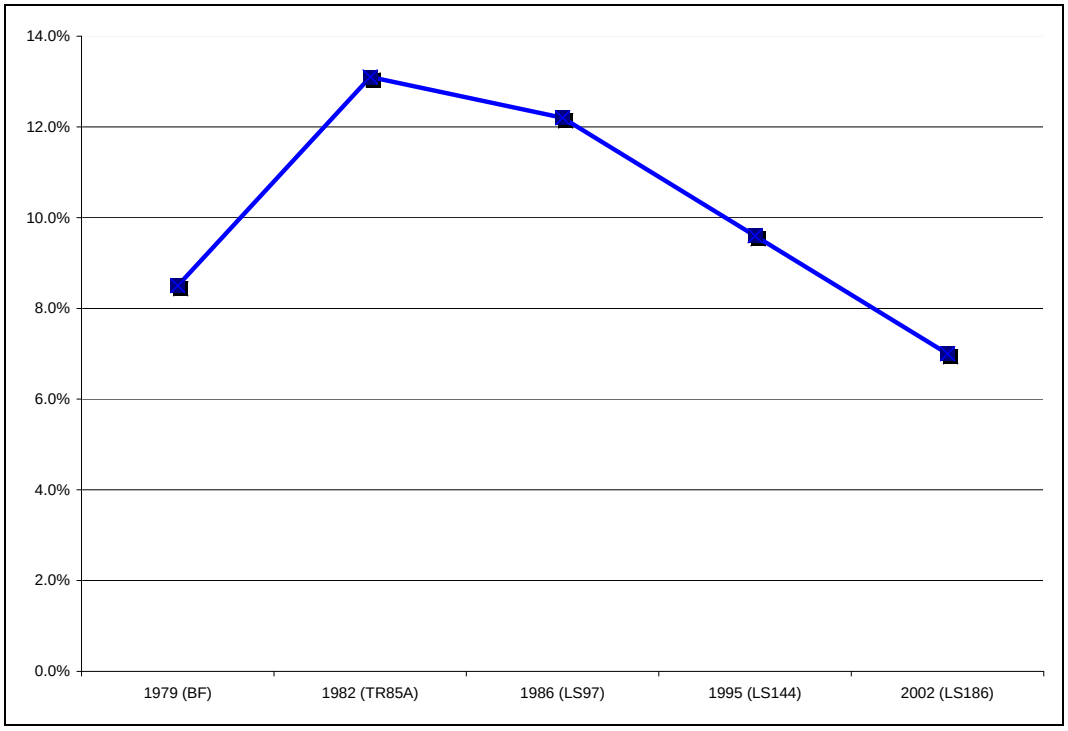


Figure 3-6. Public Comments Relating to Human Use over Time

3.5 RESULTS: VARIATION BETWEEN COMMUNITIES

In terms of differences among the communities of residence of those who offered testimony, Figure 3-7 demonstrates some of the more striking differences. Nuiqsut testifiers have the highest percentage of comments related to values and direct effects on wildlife, which is probably related to Nuiqsut being the Iñupiat community most directly affected by oil development. While all North Slope communities exhibit a high concern for the inadequacies of the process and the documents that are a part of it, the most concern for these issues is raised by residents of Barrow and those who live "off-slope." Since Barrow is the hub community for the North Slope and much official business takes place in Anchorage or other "off-slope" communities, this pattern is also fairly transparent: Those most concerned with the process and the more detailed critique of NEPA documents live in Barrow or "off-slope." Most of the written testimony is generated from Barrow and "off-slope" and may be accompanied by an oral summary, while most of the testimony from Nuiqsut and Kaktovik residents is presented only orally.

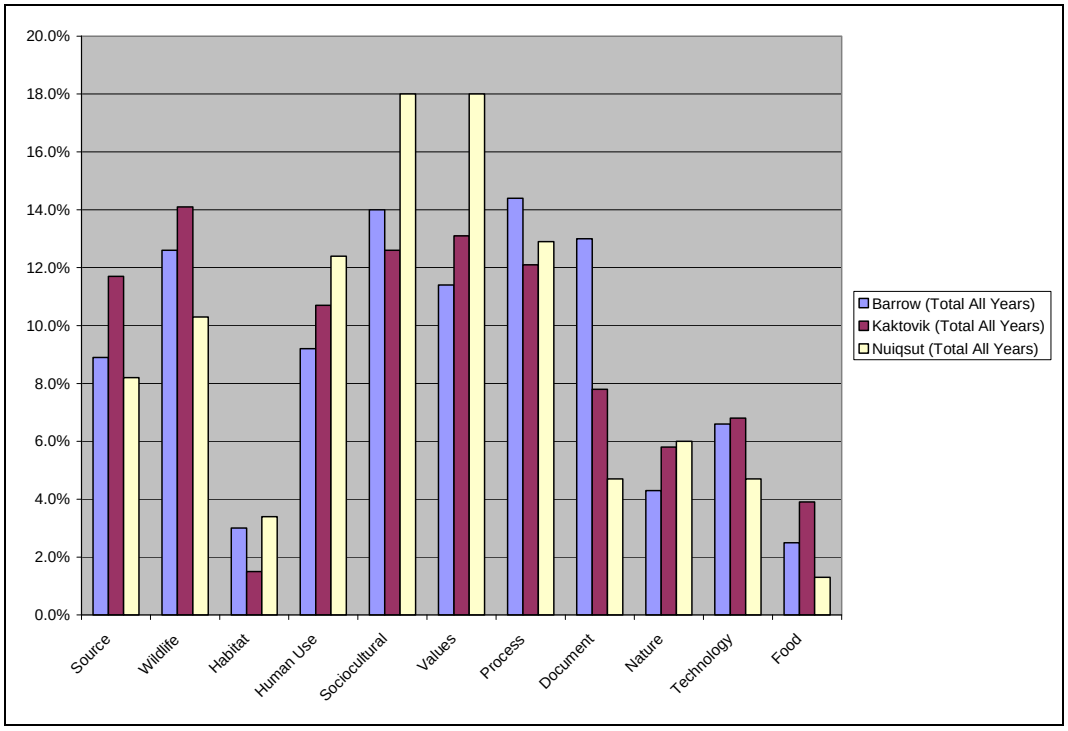
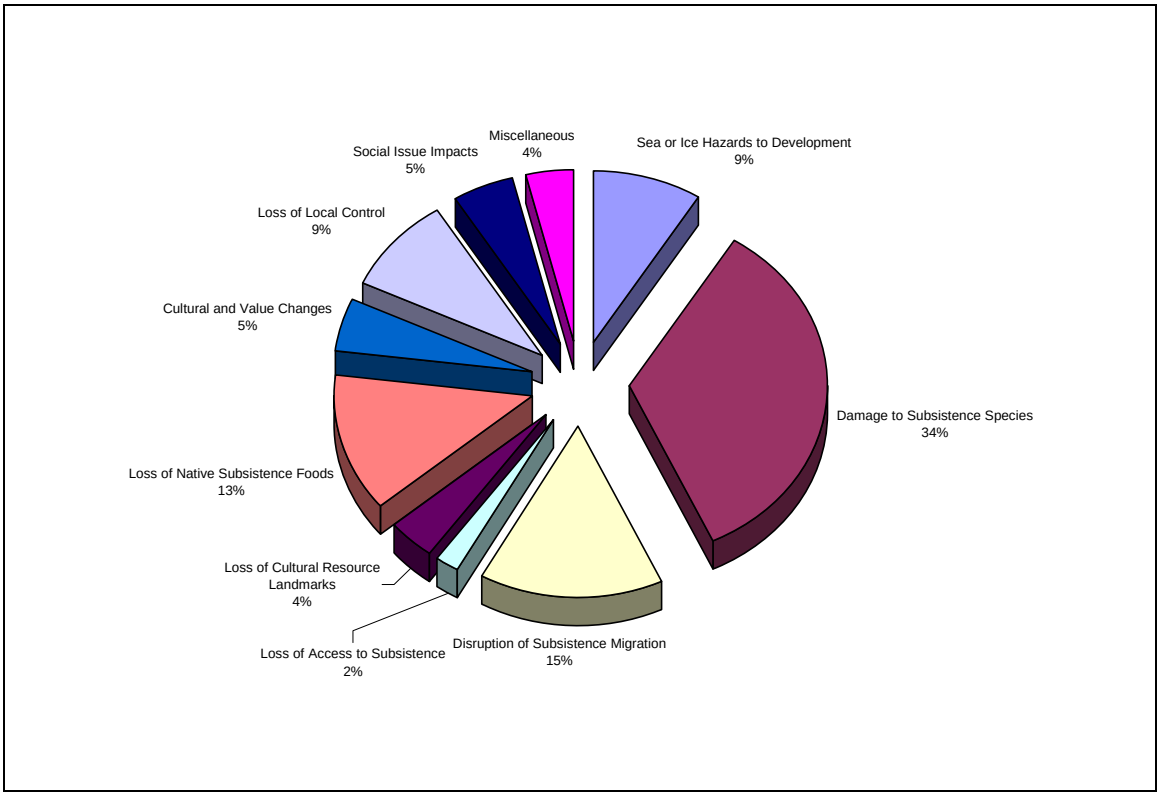


Figure 3-7. North Slope Public Testimony Topics by Place of Residence, 1979-2002

3.6 COMPARISON TO TR85

Figure 3-8 presents an exploded pie chart generated for the MMS OCS Study #2007-062 (EDAW 2008) and based on Kruse et al. (1983). It notes that about 65 percent of all comments concern threats to subsistence activities (the categories "damage to subsistence species," "loss of native subsistence foods," and "disruption of subsistence migration." It could be argued that at least parts of other categories ("values" and "cultural resources") could also be added to this total, as many of the comments in the bodies of testimony analyzed for this document that fell within those categories concerned subsistence activities, as well.



Source: Kruse et al. 1983

Figure 3-8. Content Analysis of NSB Public Testimony 1971-1982

Figure 3-9 is a similar diagram generated for the bodies of testimony coded for this document. A rough estimate is that up to 55 percent of the comments coded for this report concerned effects on subsistence activities (those about "wildlife," "habitat," "human uses," and "food," including the partial categories of "sociocultural" and "values").

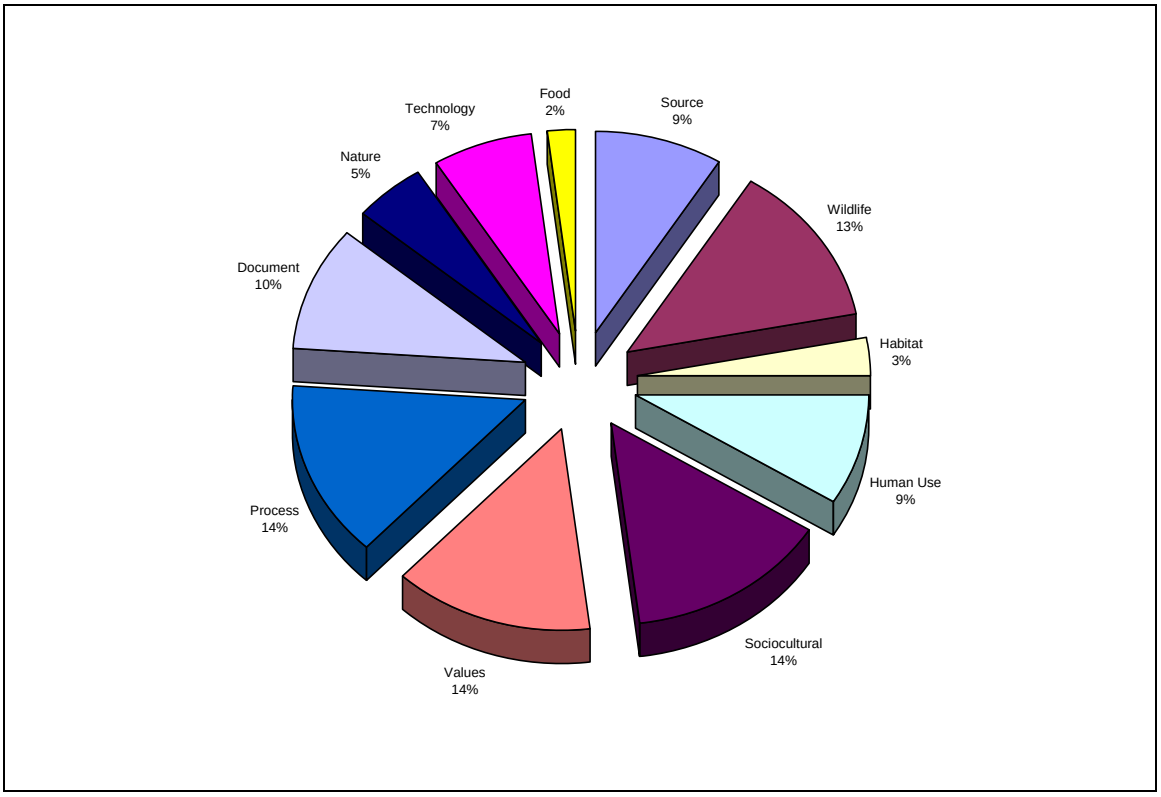


Figure 3-9. Content Analysis of NSB Public Testimony 1979-2002

It should also be noted that much of the testimony coded for Kruse et al. 1983 was either in an interview, a legal deposition context, or in response to specific issues in the still relatively new area of oil and gas development. This is in opposition to the primary body of testimony coded for this document, which was direct public testimony in a public forum. This difference in aims and structure explains some of the differences between Figures 3-8 and 3-9. As discussed above, the much higher frequency with which native food was mentioned for Kruse et al. 1983 than for the public testimony used in this project is probably a direct function of the semi-directed interview context of Kruse et al. 1983. The issue did not lessen in importance or saliency, but simply was not used as much as an "iconic" issue in later testimony. These concerns may have been stated more generally and coded more as a "value" or "sociocultural" comment than as one directly related to native food. Another example can be seen in the recorded concerns with the accuracy and complexity of the documents used as the basis for decision making (and public hearings) increasing greatly over time, perhaps as people became more familiar with the process and frustrated with the documents. A different category, "direct effects upon habitat," appears relatively infrequently in the TR85A interviews, even though they

were a prominent part of the 1979 public testimony, and probably reflects that this topic was not a focus for these interviews.

This may also reflect a coding difference, which is always a potential for difference between different studies. For example, the fewer number of direct comments about subsistence effects in our analysis, when compared to TR85, may reflect fundamental differences in coding between the two projects. Our category of "wildlife" comments combines the Kruse et al. categories of "damage to subsistence species" (when the comment was actually about biological effects, and not about the human use component of that damage) and "disruption of subsistence migration," and was coded with much less frequency than for TR85. Some of these comments may also have been coded as "human use" effects as well. For this project, "human use" and "sociocultural" were much more frequently coded in our analysis than was the category "social impact issues" for Kruse et al. These differences may also be partially due to the addition of several topical categories significant for the coding used for our document, but absent in TR85. Since percentages must sum to 100 percent, the addition of more categories can have the effect of reducing the percentage of all other categories. This phenomenon may be especially significant to this project and perhaps warrants further investigation.

While the Iñupiat had been dealing with oil and gas development for a significant period of time by 1983, they had not had a great deal of experience reviewing complex documents and participating in the formal NEPA process when Kruse et al. conducted the research for TR85. It is doubtful whether 50 percent of the testimony coded for TR85 was "NEPA" testimony, and certainly a minority could be considered "oil and gas NEPA testimony." Conversely, the bodies of testimony used for this document, while not as voluminous as that for TR85, were all elicited as part of the NEPA process for federal oil and gas development. MMS (or BLM before it became MMS) was a prominent agency participant in this testimony, whereas the testimony used for TR85 was directed to a more heterogeneous agency audience.

One consequence of the increase of Iñupiat experience in the process, and the increased familiarity with the responsible agency, seems to have been a rise in the absolute number and relative percentage of comments in at least two major areas: the quality of NEPA documents, and the perceived shortcomings in the consultation process. Ten percent of the comments in our analysis, mostly negative, are concerned with the quality of the NEPA document(s) in question. This is in contrast to Kruse et al., which had no comments related to this topic. Additionally, 14 percent of comments in our analysis, again mostly negative, were concerned with the "loss of local control" category in TR85. Comments on the potential effects of development on people (health, employment, social pathologies)

and their use of or access to resources (as opposed to more direct effects on natural renewable resources themselves), were also more frequent in our body of testimony than coded for TR85.

While it was not practical to apply the Kruse et al. coding methodology to attempt a fully direct comparison between the two bodies of testimony, the research team was able to compare our results with those of Kruse et al. using the measure of "topical categories per testifier"—the last column of Table 3-2. The content analysis presented here uses 11 major categories while Kruse et al. used 10, so that the numbers in this analysis may be expected to be somewhat larger. It is thus at least mildly surprising that this measure is very close for the overall testimony of the Kruse et al. study and our own recoding of the interviews conducted specifically for this 1983 study. "Topical categories per interviewee" for Kruse et al. are considerably higher than the "topical categories per testifier" for the other bodies of testimony that were coded, suggesting further that the TR85 material was different in nature from those other bodies of testimony. Thus, the TR85 material used for this analysis was from semi-directed interviews, whereas the other material was public hearing testimony (primarily oral, but some written as well).[23]

It seems that the TR85 interviews may have differed significantly in nature from the public hearing testimony considered, in that several of the topical categories have extreme values. Of the five bodies of testimony coded, the TR85 interviews had the highest percentage values for four: "values," "sociocultural," "food," and "nature" (natural forces); and the lowest percentage values for "document" and "process" (although the value for "process" was still relatively high). The value for "habitat" was also relatively low. These differences are consistent with the semi-directed nature of the TR85 interviews and explain at least some of the possible skewing seen in the collective data. Figure 3-10 displays the percentage of topic present in each dataset, including TR85.

[23] These interviews were each considerably longer than the oral testimony for most individuals during public hearings. The interviews did not approach the density and length of some of the written comments reviewed but not coded for this project, but did exhibit some of the characteristics of written testimony.

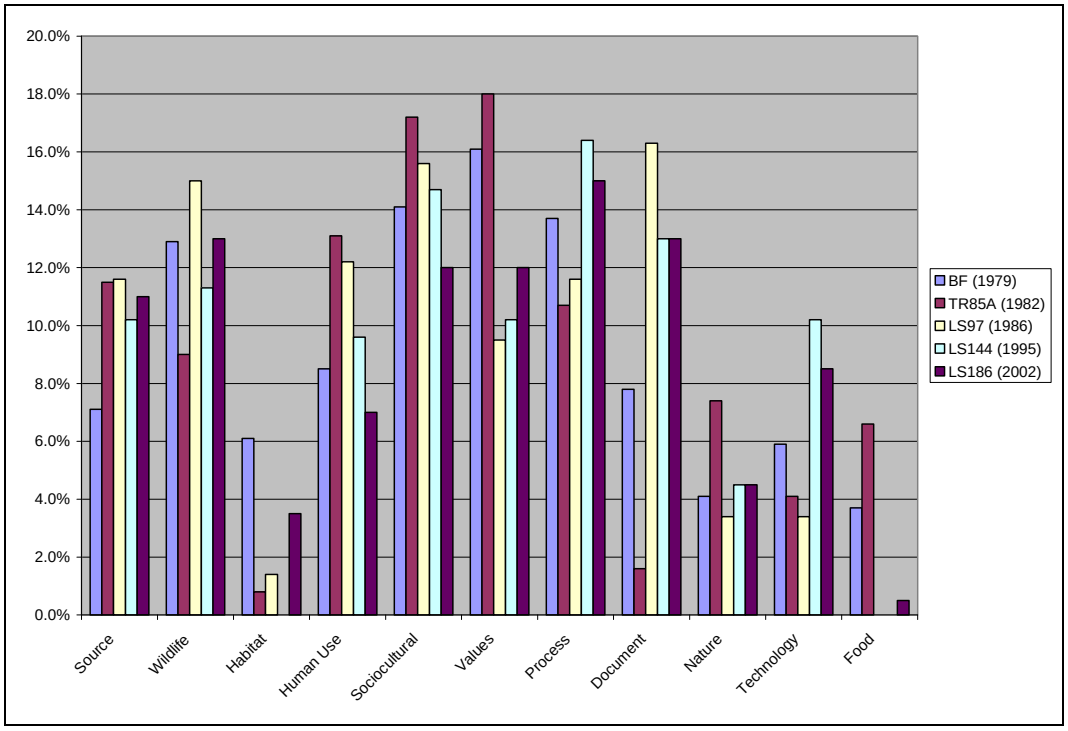


Figure 3-10. Percentage of Topics in NSB Public Testimony Datasets

3.7 CONCLUSIONS

The topical areas of most consistent concern appear to "sociocultural" effects and "values," along with making the "process" work better and a very strong concern for effects upon "wildlife." They add up to about 54 percent of all comments, on average. A second tier of importance, as measured by frequency of comment, consists of concern for the effects upon human uses of resources (primarily subsistence), the adequacy of documents prepared for and during the process, and the sources of anticipated effects. While comments on the adequacy of technology are lower in relative frequency, it is also clear that there is a widespread concern about the threat to resources posed by oil spills, and a general consensus that no adequate technology exists to clean up oil spills in broken ice conditions.

Changes seen in the relative proportion themes over time seem to reflect two major occurrences on the North Slope: a growing familiarity with governmental decision-making documents, and the *Exxon Valdez* oil spill in 1989. In 1979, public testimony was more general, with comments more focused on "habitat-related" changes than on focused habitat effects produced. Comments related to "cultural values," too, have tended to get more specific over time as respondents have become more familiar with

the types of comments addressed through the EIS process. Finally, the percentage of comments about the process itself has increased over time as more people become familiar, and more disenchanted, with the process. These comments are most common from respondents in Barrow and off-slope, where more governmental business takes place and political concerns are at the fore.

The *Exxon Valdez* oil spill seems to have provoked more interest in technology, especially the ability for oil companies to respond to spills in open water and mixed-ice conditions. These comments seem to be most prevalent among Iñupiat who perceive development to increase the risk of environmental degradation from oil spills. These environmental concerns are most prevalent in Nuiqsut, where respondents' are most likely directly affected by potential oil development.

These trends are transparent despite the possibly skewed dataset, which includes information from semi-directed interviews in TR85. Responses from TR85 were coded differently and had responses focused on a narrower range of issues. Still, the information present in TR85 supports the major trends seen in the analysis of the remaining four testimonies.

CHAPTER 4.0
LINGUISTIC PATTERNS

4.1 INTRODUCTION

This chapter summarizes central issues regarding the linguistic and communicative patterns of MMS documents relevant to technical dialogue on the North Slope and the development of the newsletters presented in Chapter 6. This section attempts to identify patterns and issues specific to communications between MMS and the communities of the NSB and Cook Inlet (Beaufort Sales 186, 195, 202; CI 191, 199).

4.2 SUMMARY OF RESULTS

There are inconsistencies in communication among stakeholders in the lease sale process, which works against the stated goal of MMS and DOI to practice consensus-based management through open dialogue among stakeholders. Effective community technical dialogue is not optimized by the MMS process as it is currently established. These problems in communication exist because of divergent assumptions about the goals of the communication process and the most effective strategies for achieving these goals held by MMS and within the communities.

Some stakeholders (principally MMS acting under the OCS Lands Act of 1953, but also acting under legal framework of NEPA and current policies of DOI) voice the position that the lease sale process is encompassed within (natural and social) scientific research discourses. Political discourse is treated by these stakeholders as either falling outside of this process or as having already been concluded. The process is conceived as one of carrying out the requirements and fulfilling the responsibilities of a government agency.

For other participants in this process, the dialogue between MMS (and therefore the U.S. government) and other stakeholders is conducted within a broad political discourse and public debate about U.S. energy development, consumption, and their consequences for Arctic Coastal communities, the Nation as a whole, and the world. These stakeholders mostly voice strong opposition to any sale of leases in the Beaufort (and Chukchi) Sea.

It should be noted that a record of direct involvement by energy development corporations is largely absent from the public process presented in these documents, despite being principal stakeholders in the actions of this process. This is mostly due to

sampling bias, as energy development corporations regularly participate in other public forums.

4.3 METHODOLOGY

This summary and the more specific points in this chapter are based on a linguistic (discourse) analysis of language as it is used in the publicly posted documents concerning the Beaufort Sea Planning Area Lease Sales 186, 195, and 202 with a corroborating analysis of Cook Inlet Sales 191 and 199. All of the documents posted on the MMS website concerning these sales focusing on the Beaufort Sea lease sales were studied from the opening news release of September 19, 2001, to the bid recap and analysis on Sale 195 posted on March 30, 2005. There are several thousand pages of public documents in this dataset, which includes the DEIS, the Oil Spill Risk Analysis (OSRA) reports, the FEIS, and the EA for Sale 195 as well as transcripts of public testimony and the MMS responses to that testimony and written testimony in the EA for Sale 195.

The central concern of the analysis was to examine the ways in which actions of different social actors were enabled or inhibited by the linguistic (discursive or rhetorical) structure of the documents of the multiple sale process. The analysis included studies of the ways in which action is represented in these documents through framing, summarization, and synchronization.

This analysis also examined each document as a document type (such as Federal Register notice, news release, or leasing activities information memo). Each document type was examined from the point of view of its function, the producer-receiver positions (who is writing to whom to enable or inhibit what kinds of actions), and the discourses that were used within the document (such as the discourse of law, of government bureaucracy, science, traditional knowledge).

The discourses themselves were analyzed for legitimate participants (e.g., a scientist in scientific discourse, or a lawyer in legal discourse), agency, lexicogrammar, structure of argumentation, genres, and modes. They were further analyzed to see when and where discourses were blended, bent, or eclipsed and by whom (e.g., when a nonscientist makes a scientific claim or when a member of the public makes a legal claim). Finally, this analysis also examined the use of both language and other communicative modes (such as typography, fonts, design, or images) to set up the truth or reality basis for arguments.

In contrast to other chapters in this report, the linguistic analysis presented here sets aside the contents of the documents as such. The analysis is not concerned with the actual political positions taken by participants, matters of scientific substance concerning offshore oil and gas extraction, or subsistence whaling, for example. Each of these, however, would merit further study, especially a critical discourse analysis of the ways in which social actors are represented and the rhetorical presentation of motives and causation. The goal of this analysis, however, is to shed light on the process of participatory democratic public discourse and not to advocate a position in support of any of the stakeholders' positions.

4.4 RESULTS: OVERALL FINDINGS

A linguistic-discourse analysis of all of the posted public documents (and only of those documents) through the conclusion of Sale 195 shows that, on the whole, all participants "bend" and "blend" discourse and language to suit the rhetorical needs of their own goals. While this "bending" of discourses is inherent in the nature of language use, when it is exercised from a position of power such as that held by MMS, it can be construed as displaying a noncandid approach to the public trust; it can seem as if a decision has already been made. When the "bending" is exercised from a position of weakness such as that held by the Arctic communities or by environmentalist opposition groups, it can be construed either as ignorance of the public consultative process or as hostile or uncooperative action.

This analysis does not support the idea that members of the public are naïve in their conceptualization of the multiple sale process, especially as it pertains to seeking their input. It does support the claim, however, that the NEPA process is not simply or merely viewed by stakeholders as a mechanism of receiving scientific information but, rather, that the NEPA process is being used by various stakeholders to restrict or narrow the public discourse concerning broader national and social goals and policies. This occurs by restricting the discourse to scientific responses to the enabling documents, such as the DEIS, OSRA reports, FEIS, and EA.

This analysis does not find any wrongdoing on the part of the producers of any of the documents examined. It is clear that a significant challenge results from busy office staff working with a very large number of complex documents under both governmental time pressures and legal regulations. On the contrary, this analysis shows that some of the communication problems that have been examined arise directly from the intent to make the process as open and transparent as possible within the constraints of nondisclosure of proprietary information. By making all of the documents available to all potentially

interested parties, the functional status in relationship to specific audiences has been obscured.

Further, while many participants in this technical dialogue are personally established within different cultural and linguistic heritages, this analysis finds little evidence that the problems addressed in this analysis arise from specific cultural differences in language or communication style among the participants and stakeholders. Differences across discourses (politics, law, science, government) are as significant as differences between these discourses and Alaskan communities.

4.5 RESULTS: SPECIFIC FINDINGS

In addition to the overall findings presented above, the linguistic analysis conducted for this study uncovered a number of specific issues in public communication patterns including those concerning technical dialogue, specific framing devices, interactions between different technical discourses, document genres, inconsistencies in presentation, and "missing discourses," which are conversations and comments that are not officially present in the official record, but clearly influence the public record. Each specific issue is accompanied by a hypothesis. In some cases, these hypotheses informed the newsletter development (Chapter 6). In other cases, the hypotheses are presented in this chapter to provide ideas for future research.

4.5.1 Technical Dialogue

- MMS has tended to take a narrow view that technical dialogue is a subset of NEPA-required governmental/community discourse and should have a narrow focus. The community, however, tends to adopt a broader view that technical dialogue is set within a frame of U.S. national (and even international) politics and should have a much grander focus. These two concepts tend to result in confusion as to the true purpose of technical dialogue. It is hypothesized that explicit discussion of this issue would not likely burden MMS or the community during already existing discussion formats, but it would make clear where technical dialogue is working at cross-purposes.
- MMS seems to express its position in the technical dialogue process as being constrained in carrying out the requirements of its congressional mandate within the constraints of NEPA rules. Conversely, MMS is a primary agency of the U.S. government that visits local communities and engages in public discussion with community members. The expression of relatively little power by MMS is largely

perceived as inconsistent with the actions of MMS (e.g., large travel budgets, large scientific research budgets, power to influence the preparation of EISs, ability to make recommendations to the Secretary of the Interior), which are seen by community members as demonstrating considerable power. The current behavior of community members commenting on national socioeconomic and political issues may be suggestive of community members exploiting this ambiguity of MMS's power.

4.5.2 Summarizing and Framing

- Language in the lease sale process can either describe a past action or be considered an action in itself, depending on how the language is framed. For example, the Federal Register actually calls for information (in a legally constrained way), while a news release only summarizes that the call for information has been issued. The differences in function of these two communication forums can lead to some confusion as each relies on greater or lesser amounts of summarization, simplification, and selection. It is hypothesized that news releases are oversimplified and create a source of confusion by comparison with clear delineations in the Federal Register.

- Summarizing is an inevitable process in all language forms, but the process is especially present in informal written genres (e.g., news releases) or spoken language (e.g., public hearings). Summarizing omits and/or simplifies complexities, however, which can be crucial to the decision-making process. For example, "We have three sales…" is different from, "The multi-sale process is tentatively scheduled…", which conveys a different degree of certainty about how fully determined the process is at the time. Excessive or inappropriate summarization can lead the public to believe that decisions are foregone conclusions. It is hypothesized that a Federal Register notice will produce more open perceptions of the decision-making process than a corresponding news release.

- The framing of spoken language and/or the format and design of written language tends to suggest how the audience is to receive the message, and rarely the content of the core message. For example, "The purpose of the EIS is to…" and "Let me tell you in a nutshell the way an EIS works…" give very different impressions of how the listener is to respond to the speaker. Document font, too, can influence an audience, with a document in courier typeface suggesting a transcript of a spoken language, but one in formally printed Times Roman can indicate an official government policy, rule, notice, or regulation. Moreover, a

uniform format (including font) across a range of documents is implicitly understood as if they all have the same information and meaning. These framing clues are not usually explicit, are largely conventional, and are easily understood within a group—but are often misinterpreted by nongroup members. This issue can be complicated by a group's rejection of conventional framing cues when made by out-group people or nonmembers. A nonmember adopting a group's framing cues can sometimes be interpreted as mocking or being insulting. It is hypothesized that statements made within a group's conventional framing cues will be more acceptable when perceived as being made by an in-group member, but will be less acceptable when perceived as being made by an out-group member.

- The life cycles of projects, actions, decisions, and documents are not uniform and can be confusing to stakeholders not involved on a constant basis. MMS is perceived by stakeholders as synchronizing multiple actions or distinct projects within one process. For example, any one lease sale can be perceived as just another part of a larger lease sale that has been going on for years, even if NEPA considers the actions to be separate. Currently, an EIS for a multiple sale process is perceived by the community to have the same life-cycle as a single sale. A multiple sale process implies commitment to the full three-sale process, which community stakeholders perceive as undermining the claim that each sale will include a feasible "no-sale" option. It is hypothesized that any beneficial efficiency gained by a tiering approach is lost in the confusion and acceptance of the sub-tier process.

4.5.3 Interactions between Different Technical Discourses

- Different technical discourses form the organization of the majority of project communication. These different technical discourses are considered social languages, as opposed to national or cultural languages (e.g., English, Spanish, or Iñupiaq). National or cultural languages are organized with a grammar, sounds, letters, and syntax. Technical discourses (which can occur in any national/cultural language), are organized around:
    - Rules for participation (i.e., Who is authorized to speak within the technical discourse?)
    - Principles of agency (i.e., Are the views expressed within the technical discourse understood to be of the individual speaking or of a different entitiy?)

- Lexicogrammar (i.e., Are there special ways of speaking within the technical discourse? Special jargon, vocabulary, or definitions?)
- Rules of argumentation (i.e., What constitutes a false statement in the technical discourse?)
- Special genres (i.e., In what format does the technical discourse communicate? Research reports? Blog posts? Oral narratives?)
- Modes (i.e., Is the technical discourse in speech? In writing? Accompanied by song or images?)

The differences between technical discourses (such as the discourse of biological science and the discourse of oil extraction engineering) lead those within the technical discourse to claim that lay citizens do not understand their message. Incomplete knowledge and/or misuse of the above aspects for any individual technical discourse is interpreted as disinterest. It is hypothesized that members of distinct technical discourses can improve communication by making these organizational tenets clear and participating directly in the other's discourse.

- Linguistic analysis suggests that there is a struggle for control in the several discourses present in the analyzed documents. Federal law asserts that the responsibility of MMS is to hold sales and to couch the process in terms of scientific discourse (e.g., NEPA). The shaping of federal law and the NEPA process, however, are set within contemporary political, environmental, and subsistence discourses. During technical dialogue, MMS tends to take the position that only scientific discourse is appropriate. Community stakeholders, however, can take the position that a political discourse is appropriate. It is hypothesized that MMS and community stakeholders find agreement by explicitly discussing the appropriate kind of discourse needed during the technical dialogue process.
- Instances are present in the literature of some participants using science to advance political goals, or using politics to exert pressure on science. Other participants bend both politics and science for environmental purposes. While such rhetorical incorporation of one discourse within another is a common communicative strategy, this "blending and bending" is more present within some certain technical discourses than in others. For technical discourses with rigid rules of participation, this behavior can create conflict. For example, scientific statements made by scientists are perceived by nonscientists as vague, ambiguous, and uncertain. In the most extreme cases, scientific statements can be interpreted as being evasive, misleading, or deceitful. Conversely, statements about scientific matters made by nonscientists are perceived by scientists as

inexact, exaggerated, alarmist, or simply inadmissible because the speakers lack the credentials to make the statements. The linguistic analysis found that scientists regularly reserve for themselves the right to make judgments about degrees of certainty and risk, for example, and dismiss discourse that appears to be politically motivated. Nonscientists perceived scientific discourse as high-handed rhetoric in the service of presupposed conclusions. It is hypothesized that perceptions of the reliability of statements vary both on the basis of how data are presented (including uncertainty of variables) and the individual's authority to make a statement within the technical discourse.

4.5.4 Document Genres

- There are six distinct document types—or genres—that form the core documents of this analysis:
    - Notices in the Federal Register
    - MMS-originated news releases
    - Leasing Activities Information (LAI) memos
    - EISs (including DEISs, FEISs, OSRA reports, and EAs)
    - Transcripts of public testimony in response to DEISs
    - MMS website

  From the point of view of framing and design, the six types are clearly distinct. The Federal Register is printed in the Government Printing Office format, MMS news releases and LAI memos are both in consistent formats, EISs and other environmental documents follow NEPA guidelines closely, transcripts are in common Courier-type format with signed verifications, and the website for the Alaska Region is subsumed to the MMS overall format and design. Still, there are significant differences in function that leave each document type open to misinterpretation. This misinterpretation is rarely concerned with the content of the document, but most often is related to the following: Who is saying what to whom? Who is required to act on this document? Who is seeing it as a spectator or secondary viewer? It is hypothesized that changes in genre will change comprehension of who is saying what to whom.

- Ambiguities arise from the lack of clarity as to who is the "writer" and who is the "reader" of the documents. Writer positions can include:

- "The Principal" – The person responsible for the content.
- "The Author" – The person who produced the exact wordings.
- "The Animator" – The person who physically produced the document.

Reader positions can include:

- "The Principal" – The person enabled or required to act concerning the content.
- "The Interpreter" – The person providing the reading.
- "The Handler" – The person who handles and transports the documents.
- "The Bystander" – The person who has the right to read or comment but is not enabled to take the action afforded to the Principal.

Posting all documents relating to the multiple sale process on the MMS website invited the interpretation that any reader is a Principal, when the documents themselves clearly state which stakeholders are truly the Principal reader. Even within genres, the identifications of Principal and Bystander are ambiguous and contradictory. By placing all documents together in a uniform web page format, the different levels of ambiguity can create confusion among community stakeholders. It is hypothesized that changing the placement of documents on the MMS website may alleviate some of this ambiguity.

4.5.5 Inconsistencies in Presentation

- The design features of documents and web pages on the MMS website signal primarily the organization of sources, and to some extent, their organizational function. The MMS website has a uniform color and typeface scheme, and postings are generally chronological. A hierarchical function structure is present on the left side of the website. Leasing activities are near the top. In the middle are more perennial kinds of information (e.g., maps). The bottom of the site includes links to other websites or contact information. The chronological postings, however, do not indicate functional (or audience) distinctions. Inconsistent postings also create confusion. For example, news releases are sometimes posted on the MMS general news site, while others are posted within a specific sale. Federal Register notices, too, are sometimes posted in multiple locations. The analysis found that it can be difficult to find relevant documents in spite of apparent sequential postings. The design uniformity of the website also obscures substantial functional differences, including the above-mentioned Principal and

Bystander roles. It is hypothesized that functionally distinct web pages and documents are more easily understood when the design makes these distinctions visible, through different colors, fonts, or images. It is also hypothesized that the grouping of documents by function (as opposed to chronological sequence) is more important for comprehension.

4.5.6 Missing Discourses

- The documents that make up this technical dialogue are almost strictly textual. This emphasis on text inhibits the representation of other discourses that are not based in text. Scientific, legal, and bureaucratic technical discourses are strongly based on text. Due to this foundation, technical dialogue tends to exclude oral discourses (unless they are included through being transcribed). These oral discourses are important in the lease sale process, however, and include:
    - Off-record, oral conversations and discussions within stakeholder groups.
    - Off-record, oral conversations and discussions between stakeholder groups (e.g., government-to-government discussions or "industry input").
    - Open and publicly available non-text-based traditional knowledge (e.g., stories, songs, dances, nonverbal coordination among whaling crews and in hunting parties, etc.).
    - Open and publicly available non-text-based events in the subsistence/ cultural life in the communities (e.g., birthday celebrations, school graduations, potlucks, etc.).

  The priority of science, law, and government technical discourses in these lease sale documents may lead some participants to believe that there is nothing missing. This has the effect of silencing other substantial technical discourses or, at a minimum, the contexts in which these discourses function.

4.6 CONCLUSIONS

This analysis supports three general recommendations regarding improvements MMS can make to its technical dialogue:

(1) MMS should more closely and explicitly establish its level of responsibility for a project. MMS should be open to variation in the level of dialogue with public

stakeholders based upon the needs of a particular project, with the ability to either narrow or widen the scope of its dialogues as a project dictates.

MMS should narrow the level of technical dialogue by making it fully explicit when and where it is seeking to meet the legal requirements of the NEPA process. This effort is now being made, particularly in public hearings, but this analysis suggests that further means should be developed with the communities and on the MMS website, for example, to make it clear what process is legally required of MMS and of public participants, and how much MMS is able to participate in an extended technical dialogue process.

Conversely, MMS should also broaden the topics of technical dialogue by establishing avenues for public discussion of broader sociopolitical issues. In many ways, this broadening is already being successfully conducted. Topics include national energy policy development, community impact mitigation and support, global climate change, environmental justice, and wilderness preservation. The results of these discussions should be accurately reported to both the Director of MMS and to the Secretary of the Interior.

(2) Project stakeholders should be asked to assist and participate in this larger discourse regarding broader sociopolitical issues, framing questions, issues, and concerns explicitly as a larger concern within the public outreach process. Opposition (or support) of a project on sociopolitical grounds should be presented as such, not embedded within a frame of scientific argumentation. This requires, of course, that MMS broadens the topics of technical dialogue by establishing avenues for public discussion of broader sociopolitical views.

(3) The voices of absent stakeholders (such as the energy industry and the State of Alaska) should be brought explicitly into the public consultative process. Under the current structure, the linguistic analysis suggests that these stakeholders are perceived as having an unbalanced, undocumented, but powerful and unchallenged position in the dialogue concerning environmental risks and the quality of the human environment.

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CHAPTER 5.0
MMS STAFF INTERVIEWS

5.1 INTRODUCTION

This chapter summarizes the various issues regarding technical communication and risk communication raised by MMS staff during interviews conducted with key persons. These interviews were meant to act as another source of information from which issues affecting technical dialogue could be identified, one based on lessons learned by individuals intimately involved in the process, often for many years. Once issues were identified, the newsletters could be developed in such a way to respond to these issues and reduce the type and level of challenges shared by MMS staff.

5.2 SUMMARY OF RESULTS

A number of general comments were elicited from interviewees, including the perception that communicating technical risk to anyone is difficult, even if cultural obstacles are not present. These challenges can develop from misunderstandings arising from summarized documents (as discussed in Chapter 4), but also from instances where documents are not summarized and highly technical language is included by necessity. Upon the North Slope, technical dialogue is largely shaped by the presence of the Scientific Advisory Committee by making interaction more cooperative. Translation issues can be a challenge, however, as well as limits on the amount of time MMS staff can spend in the local community answering questions (or plainly interacting with community members).

5.3 METHODOLOGY

EDAW staff met with MMS staff for one-on-one interviews from June 15 to June 16, 2005. The interviews were open ended and semistructured, focusing on identified challenges with technical dialogue in a general manner, as well as focused questions concerning challenges on the North Slope. Key themes emerging from the range of interviews were identified and summarized. Issues identified were grouped according to larger categories (seen below).

It should be noted that the purpose of these interviews was not to produce a dataset to be analyzed with any pronounced scientific rigor, but rather they were envisioned as an exploratory data-gathering exercise to inform the newsletter development. The issues and challenges identified by the MMS staff members were triangulated with the results of

the literature review (Chapter 2), the content analysis (Chapter 3), and the linguistic analysis (Chapter 4) to provide a type of "reality check" on the hypotheses and identified issues that were beginning to form in the study.

5.4 RESULTS: OVERALL FINDINGS

5.4.1 Comprehension Challenges and Technical Complexity

Interviews suggested that communicating technical risk to anyone is difficult, even in forums where cultural obstacles are absent. It was mentioned that certain ideas or concepts are not easily written for a lay audience. In some cases, effectively writing technically accurate information at a level that is comprehensible to a lay audience is difficult for technical professionals. These challenges are present specifically in summary documents, which present scientific interpretations for a lay audience in mind. For some technical aspects, such as noise level analysis, the presentation of information is considered to be impossible to simplify beyond its technical details.

In addition to these technical challenges, communicating risk (and terms of uncertainty) is also a difficult concept. Interviewees suggested that, generally, people do not understand why there is uncertainty when they believe there should be certainty. In the past, difficult concepts and risk assessments have been identified and discussed through maps and graphics. More recently, however, cost-saving measures in MMS have reduced the number of maps and graphics used in technical dialogue. This has resulted in a collection of large data tables in rarely used appendices as the conduit of technical information. Due to this change in data presentation, technical information has become more difficult to present to a lay audience. Interviewees do mention that this shift has been noticed in recent years and that more graphics are being developed and used. This return to more visual materials has been tempered, however, by the reluctance to develop what was called, "a bulls-eye graphic," which shows an example or hypothetical scenario that can be easily taken out of context.

Beyond these challenges with summarization and presentation, interviewees also spoke about the challenges associated with the amount of time necessary to understand the specific issues of the community. Long-term background communication with the local community members about technical topics is typically needed before answering resident-specific questions. The knowledge needed to answer these questions is difficult to build, however, as a continuity of relationships is realized to be important. Staff changes were identified by interviewees as being problematic, with key members of projects on all sides either transitioning to different roles or leaving the project entirely.

Interviewees noted that MMS tends to send people quickly into the local community to conduct meetings, but budget constraints require the trips to be short, with little time for outside relationship building. The government-to-government consultations tend to require longer stays in the local community by MMS staff, and these instances were noted by interviewees as being positive for the overall process.

5.4.2 Partisanship and Differences in Perspectives

Interviewees noted that there is a differing perspective on the acceptability of risk, depending on stakeholder group. In general, the public tends to become concerned with any probability of spills, even if the risk is statistically low, especially if the potential consequences of a spill are high. When communicating with environmental groups, this reaction can be problematic because environmental groups tend to take the most extreme end of a range of risks and apply it out of context, according to MMS staff.

Technical dialogue tends to occur under two scenarios: (1) when the public wants technical detail; and (2) when the public does not want a lease sale. In the first instance, technical dialogue is productive because the public is engaged and interested in the technical details. In the second instance, technical dialogue is less productive because a "middle ground" is typically not present, according to interviewees.

Interviewees noted that cross-cultural communication can be an issue in some contexts. Among Alaska Natives, the use of English as a second language can be magnified by cultural differences, creating a process during which information is not efficiently shared. For example, translation services are employed at all public hearings and they are typically used at scoping meetings. The quality of the translation services has been problematic, however. It was noted that elders will give an extended verbal testimony in Iñupiaq, which will be translated into something that is a simple statement, such as, "She favors Alternative 3." Despite these issues, interviewees noted that communication does focus extensively on marine mammal biological issues and subsistence concerns. It is believed that these concerns are more extensive and focused due in part to multi-agency involvement (i.e., NMFS).

5.4.3 NEPA and Public Meetings

Interviewees mentioned that, for the public and institutions to participate in the NEPA process, resources (e.g., money for travel) are needed, but resources are not necessarily provided. This places MMS staff in an awkward situation of asking for participation, but not providing the means to facilitate this participation.

For those members of the community who do participate, there also seems to be a misunderstanding as to what level of involvement is needed (or warranted) at a specific point in the NEPA process. For example, interviewees mentioned that scoping meetings are conceived by MMS to be "listening" forums where project information is shared with the community. Typically, however, the local community members have questions about the project (and potential impacts) and expect answers from technical staff. The purpose of the scoping meeting is unclear, according to MMS staff, and confusion ensues. This confusion is experienced throughout the NEPA process because participants are generally unclear as to what types of participation are expected at any given point in the process.

The level of involvement is cited as a frustration for MMS staff, too, sharing that NEPA is considered an awkward process and that the presentational style associated with public scoping meetings (with the team sitting in the front of a small audience) forces unnatural behavior. Interaction is limited, and the interaction that does occur typically takes place informally after the meeting.

When public comments are shared and interaction does occur, it is common for strong personalities to monopolize time and "grandstand." According to interviewees, this behavior can unduly influence subsequent public input. In other regions, a "round robin" style of interaction is used, and interviewees suggested that this format may have future application in the Alaska region.

Previous public meetings in Alaska have suggested that local community members appreciate having both technical staff (who can answer technical questions in face-to-face conversations) and the NEPA coordinator and/or upper management present in the villages. The involvement of the NEPA coordinator or upper management stems from the request of the community to have a "decision maker" present. Due to logistical and fiscal concerns, it is typical only for the NEPA coordinator to travel, which reduces the involvement of technical staff. Interviewees mentioned that this choice in involvement is unique to the Alaska region, as entire teams typically travel to project sites in other MMS areas (e.g., Gulf of Mexico).

When multiple scoping meetings and hearings occur in a community within a short period (or they overlap), confusion is said to occur within the community. Participants regularly confuse levels of input already provided, or where input is additionally needed.

Once a NEPA document is published, the confusion continues, according to interviewees. NEPA documents are considered to be unreadable and are written almost entirely for

legal defensibility. The legal lens through which NEPA documents are developed also limits the kind of statements MMS can make during public meetings discussing the document. To MMS, NEPA documents are considered "option papers" that describe the relative impacts of a process. Conversely, the public interprets NEPA documents as decision-making documents.

5.4.4 Newsletters and Other Written Communication Methods

On the subject of newsletters and other written communication with involved communities, interviewees noted that the public received no feedback on why decisions are made. In their opinion, MMS never effectively communicates to the public why a lease sale may happen, even when the community does not want it. The rationale internal to MMS, including national energy policy, is not adequately expressed and efforts to convince affected communities that a lease sale is made for the greater interests of the nation are not made. It is the opinion of some MMS staffers that communicating with the public may be easier if the community understood the entire energy development process and policy and where their involvement is needed. In some regions, third-party liaisons have assisted in transmitting information on the behalf of MMS, which has helped the dialogue process, according to interviewees, but this arrangement has not been used in the Alaska region.

The subject of information overload was also cited by MMS staff members interviewed. This overload can happen for both the public and the MMS staff responsible for responding to questions and requests. In regard to information overload among the general public, MMS staff noted that other regions have created newsletters that were either directly mailed to residents or otherwise widely distributed. Depending on the frequency of these newsletters, the public became confused as to how (or whether) to respond. More recently, however, regional websites have been developed to replace these mass mailings. Interviewees noted that these websites are updated infrequently. In regard to information overload among MMS staff, interviewees noted that the widespread use of email has become a burden on those staffers charged with responding to issues and concerns. For example, of the nearly 5,000 emails received concerning a Beaufort multi-sale, most were modified or unmodified copies of environmental group emails from outside Alaska. Only 2 percent of the emails were from Alaska, and only 4 (of the total 5,000) were from the North Slope.

On the subject of newsletters and their applicability in Alaska, MMS staff expressed concerns that it may be a challenge to get residents to read them. Interviewees suggested that the newsletters needed to be "eye-catching," graphically creative, short, and crisp. If

translated, the newsletters also needed to take into account the multitude of local dialects present in the small communities throughout the region.

5.4.5 MMS Staffing and Administrative Issues

In addition to issues concerning the public and MMS involvement, interviewees also noted challenges and issues internal to MMS that affect the larger public involvement process. MMS staff members with whom the research team spoke mentioned that the current staffing levels and workload issues at MMS have created an impediment to technical dialogue. Interviewees mentioned that educational opportunities internal to MMS (e.g., guest speakers, presentations by other disciplines) commonly occurred and served to "cross-train" individuals who participate in technical dialogue. Workload pressures have reduced participation in these educational activities, affecting individual ability to be informed about other issue areas. This training can affect the level of scholarship in industry studies, too, as noted by some MMS staff. For example, after receiving training, MMS staff were able to provide comments to a study provided by an energy company that improved the level of detail presented. This action helped MMS gain some credibility in the mind of the general public but is increasingly difficult to reproduce because of limited time for education and training.

Finally, interviewees said that the dialogue process changes with transitions in administration. These frequent changes can affect the internal efficiency of MMS.

5.5 RESULTS: SPECIFIC FINDINGS

In addition to the more generalized findings above, which are focused on the Alaska region as a whole, interviewees were asked to discuss issues and concerns specific to public involvement and dialogue on the North Slope. This section presents a summary of those issues that were identified concerning technical communication methods, language and translation issues, and overall participation.

5.5.1 Technical Communication Methods and Processes

Interviewees discussed that the nature of technical communication on the North Slope is unique in Alaska due to the institution of the Scientific Advisory Council (SAC). According to MMS staff, the SAC tends to create more peer-to-peer communication than agency-public communication. The NSB mayor's office is also involved on the North Slope, which provides another source of direction. The NSB is unique as it can afford to pay for the SAC. Thus, technical dialogue has been quite interactive and has resulted in the

development of different solutions. In the past, meetings between SAC and MMS were contentious, but they have become increasingly more collaborative over the years.

Logistically, MMS staff said that rushed communication in the North Slope is not efficient. This includes flying MMS staff to the North Slope for a day to have a meeting and/or to talk with members of a community. In general, this process tends not to attract much local involvement and is not cost efficient. The lack of time in the community also affects MMS general understanding of comments. It was noted that the most informative speakers from the public sometimes use more indirect commenting styles that can include a story or a traditional lesson. Understanding the true meaning of the comment can take a level of cultural understanding that is not usually attainable from spending a day in the community on an infrequent basis. MMS staff suggested that agency participants in meetings should stay a week in the community. Participating in local culturally significant events, even in cases when lease sale communication is not occurring, was viewed by interviewees as an important way to establish relationships.

Interviewees mentioned that the methods of communicating risk had changed over time. For example, spill rates from the Gulf of Mexico had been used in the past to provide ranges of possible spill risk. More recently, however, fault tree techniques are used to account for and communicate arctic effects. In addition to these changes, two-way technical dialogue can be viewed as difficult by MMS staff due to cultural issues such as whaling. For example, the NSB is very sensitive about firmly identifying whaling areas because they do not want to be seen as putting a boundary on this traditional use. This strategy has resulted in the MMS not being able to incorporate whaling areas into models, and the ambiguity of impacts to whaling can be a source of conflict.

Increasingly, written correspondence has been solicited by MMS via email and other written forms of communication have been posted on the MMS website. Interviewees suggested that expecting residents of the North Slope to use electronic forms of communication (i.e., websites, email) is unfair and ethnocentric. The written forms of communication that do get submitted to MMS are also typically formalized and without local context.

5.5.2 Language and Translation Issues

MMS staff mentioned that difficulties can arise with North Slope residents for whom English is a second language. Many North Slope residents can be considered fluent in English, but the language in technical documents can present a problem even for the most fluent residents. In the past, newsletters had been translated into Iñupiaq, but this

practice had fallen out of use because it was perceived to be not worth the effort, according to MMS staff. Translations of executive summaries and other summaries (e.g., on the NEPA process in general) have been viewed as relatively successful. However, MMS staff noted that it has been a problem getting authors of technical sections to reduce jargon while retaining technical accuracy.

As mentioned above, translation services are provided at public hearings and most scoping meetings. The ability of the interpreters to translate comments or questions from Iñupiaq to English has historically been an issue, however, according to MMS staff. For example, an extended verbal testimony may be translated as a simple phrase of only a few seconds, and MMS staff interviewed believe that important concerns may be silenced through this process.

5.5.3 Participation, Influence, and the Public

MMS staff reported that they see a difference in the type of participation on the North Slope, compared to other areas in Alaska, due to the strength of the Mayor's Office and the relative amount of unification the NSB and other regional structures bring to dialogue. In many ways, according to interviewees, dialogue tends to involve one political entity in one cultural context. In one sense, this is seen as convenient by MMS staff, as comments can be streamlined by the NSB and clear concerns can be discussed. This participation by the NSB and local political bodies can be viewed as frustrating, however, because the general populace tends to leave commenting to political leaders and in rare occasions actively participate. Thus, local political agendas can permeate the dialogue process. When the general public does participate, it is usually in the context of impacts to subsistence resources, but even local residents may have hidden political motivations that can cloud the process.

Interviewees noted that the AEWC has had a positive influence on technical dialogue on the North Slope, including meetings concerning bowhead whaling and sealing.

5.6 CONCLUSIONS

Information gained from the interviews with MMS staff members generally corroborated information gained through the literature review, content analysis, and linguistic analysis. In general, interviewees discussed confusion in the local communities arising from the use of technical language in documents and presentations. In an effort to prevent this confusion, summaries tend to be written but these summaries sometimes err by oversimplifying complex issues, creating even more confusion. Different discourses used

by the full range of stakeholders tend to create more confusion, with traditional stories told by local community members having reduced significance due to reduced familiarity of MMS staff with the local culture. Conversely, scientific discourses, even for North Slope residents fluent in English, are difficult to understand for many of the same reasons.

The NEPA process in general is considered awkward due to unclear expectations on both sides. Communication associated with the NEPA process is perceived as being too formal, not connected with the local community, and, at times, not representative of the general feelings of the general public. The benefits of the SAC, Mayor's Office, AEWC, and NSB being actively involved has produced a number of benefits, but because of the active involvement by these entities the general public does not seem to participate fully. This reduced participation seems to be exacerbated by the increasing use of electronic formats to transmit and receive comments/questions (e.g., email and the MMS website), in addition to poor translation services at public hearings and scoping meetings.

Internal issues at MMS have also affected technical dialogue on the North Slope, including staffing and workload issues that have reduced the amount of cross-training and educational opportunities in other issue areas. Budget limitations also restrict the amount of time MMS staff spends on the North Slope, typically only providing short trips associated with individual meetings. In many cases, only a select few are chosen to attend. Interviewees suggested that longer, more frequent engagement with the local community (even when lease sales are not occurring) may result in a network of more established relationships, which in turn may improve technical dialogue. The costs associated with this more active participation strategy has been difficult for MMS staff to justify, however, and is not typically conducted. In those instances where relationships do form, staff turnover (on both sides) can jeopardize the situation.

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CHAPTER 6.0
NEWSLETTER DEVELOPMENT

6.1 INTRODUCTION

This chapter summarizes the development of newsletters and the results of the focus group sessions with Barrow residents concerning the adequacy of the newsletters to convey important technical information. The newsletters were developed after the completion of the literature review, content analysis, linguistic analysis, and interviews with MMS staff. Thus, the newsletters were developed to address many of the issues identified in those other tasks. These include the increased use of graphics, images, and graphs to communicate key ideas. Also, the newsletters aimed to clarify the purpose of technical dialogue and define the roles of all stakeholders involved in an effort to reduce ambiguity.

This section begins with a description of how the newsletters were developed and the individual topics presented in each. The section continues with a summary of the focus group sessions and a description of the input used to redesign the newsletter. The last section presents the results of the final focus group, which provided feedback on the redesigned newsletter. Examples of the newsletters are included in Appendix A.

6.2 NEWSLETTER DEVELOPMENT: OFFSHORE PERSPECTIVES

Following the completion of the literature review, content analysis, linguistic analysis, and MMS interviews, the research team developed a series of newsletters. These included three *Offshore Perspectives* newsletters, containing selected public comments/questions and MMS responses from the former Federal Lease Sale EIS documents. Respective *Offshore Perspectives* newsletters addressed the following topics: the environment and platform engineering; oil spill modeling, response, and cleanup; and mitigation and community impact assistance. Each newsletter was developed to provide information as engagingly as possible, using full-color printing, bold fonts and colors, and photographs of the local environment and surrounding community. Each newsletter is described below.

6.2.1 Offshore Perspectives: The Environment and Platform Engineering

Offshore Perspectives: The Environment and Platform Engineering explores comments relating to the potential for an oil platform to malfunction, resulting in an oil spill, or other potential offshore engineering safety issues that would harm marine mammals and/or the

North Slope environment as a whole. Specific comments addressed in the issue include Alaska's environmental sensitivity, potential impacts to marine life and the marine ecosystem, the challenges associated with spill cleanup in broken ice conditions, and the possible need for drilling restrictions.

6.2.2 Offshore Perspectives: Oil Spill Modeling, Response and Cleanup

Offshore Perspectives: Oil Spill Modeling, Response and Cleanup explores comments related to understanding the risks involved with OCS activity, through modeling and real-world experience, and technologies used to detect and clean up potential oil spills. Specific comments addressed in the issue include the risk of oil spills to sensitive Alaskan habitats, the potential impacts of oil spills on wildlife, the role of traditional knowledge in OCS facility planning and design, and the possibility of a devastating oil spill based on modeling results.

6.2.3 Offshore Perspectives: Mitigation and Community Impact Assistance

Offshore Perspectives: Mitigation and Community Impact Assistance explores the perceived lack of benefits to local communities near OCS activity and the mitigation measures in place to address the potential effects of a spill. Specific comments addressing the issue include other impacts to the surrounding environment beyond oil spills, and the priority given to OCS activity in the Beaufort Sea above other places in the contiguous United States.

6.3 NEWSLETTER DEVELOPMENT: OFFSHORE OUTLOOK

In addition to the *Offshore Perspectives*, a series of four *Offshore Outlook* newsletters were developed with the intention to communicate information in a less formal, more in depth, and more approachable manner. Topics in these newsletters were chosen based upon previous research in North Slope communities (identified in the literature review), identification of issues that repeatedly arose in the EIS public comments over the past 30 years (identified in the content analysis), and input from MMS staff (per interviews). Four topics were chosen for inclusion: the environment and platform engineering, oil spill response and cleanup, oil spill modeling, and mitigation and community impact assistance. The *Offshore Outlook* newsletters are described below.

6.3.1 Offshore Outlook: Focus on Production Facility Engineering

Offshore Outlook: Focus on Production Facility Engineering explores the steps taken by production facilities to reduce the possibility of an oil spill. It summarizes the types of

production facilities that may be built in the Arctic, including gravel islands, mobile concrete island drilling systems, and steel drilling caissons. The newsletter also describes the protective measures in place at these facilities meant to protect against spills, including erosion control engineering, safety training, leak detection and location systems, and enforcement of compliance with federal regulations.

6.3.2 Offshore Outlook: Focus on Oil Spill Response and Cleanup

Offshore Outlook: Focus on Oil Spill Response and Cleanup explores the types of measures taken by MMS to control oil spills, putting a priority on early detection, rapid response, containment, and efficient cleanup operations. The newsletter begins with a discussion of spill detection and the successful demonstrations of spill/leak detection systems that can diagnose a leak to within 50 feet. The newsletter then provides a timeline of spill response and the description of cleanup strategies that can be employed in solid ice, broken ice, and open water.

6.3.3 Offshore Outlook: Focus on Oil Spill Modeling

Offshore Outlook: Focus on Oil Spill Modeling explains the basic method by which MMS models and analyzes the chance that one or more large oil spills may eventually occur because of a lease sale in the Arctic Ocean. The newsletter begins with a discussion of MMS models in general and continues by describing the historical assumptions used in oil spill modeling. The newsletter shows how spills can occur at the pipeline or platform level, and that a number of issues can result in an oil spill at each location, including corrosion, impacts with vessels, mechanical or structural failure, natural disasters, and environmental phenomena related specifically to the Arctic, including upheaval bucking, ice force, and low temperatures. A discussion of modeling limitations is also presented.

6.3.4 Offshore Outlook: Focus on Mitigation and Impact Assistance

Offshore Outlook: Focus on Mitigation and Impact Assistance explains how the MMS conceives and fulfills its role to monitor and mitigate potential adverse impacts from offshore oil development in the Beaufort Sea in an effort to avoid, minimize, eliminate, or rectify adverse impacts to the community, or to fairly compensate the community for those impacts. The newsletter explains the national benefits of domestic oil production and mitigation funds given to the states from the federal government to offset impacts associated with oil production. A discussion of subsistence whaling protection measures is also presented in the newsletter, with AEWC stipulations presented that limit OCS activities in an effort to protect whales and whaling.

6.4 FOCUS GROUP METHODOLOGY

The Barrow community was used as the test base for the North Slope focus group research. The use of control panels provided validation of focus group responses and a mechanism to account for changes, if any, in values and opinions over time due to events or activities occurring temporally. A series of three focus groups and two control panels (to the focus groups) were established to test the efficacy of the newsletters to communicate technical information in a clear manner. The purpose of the study was, foremost, to test whether newsletters could serve to explain difficult technical concepts about offshore oil and gas development in a manner that responds to common questions and concerns in straightforward language that serves the North Slope residents. Furthermore, it was hoped that in testing these newsletters, it could be determined how best they could be used to bridge communication gaps between the federal agency and the public, to improve technical communication between the two, and to provide recommendations to the MMS on the best way to use newsletters, if at all.

Three *Offshore Perspectives* newsletters and four *Offshore Outlook* newsletters were created and presented to Focus Groups I and II. As a result of comments and input from focus group participants, the four *Offshore Outlook* newsletters were revised to reflect input, resulting in the reformulation of three of the newsletters and the removal of the fourth from further study. The research team established a protocol for all questions, which was reviewed and approved by MMS staff. Questions and responses were recorded in minutes after each focus group and panel session. The focus group team consisted of a lead researcher (Barbara Bamberger, EDAW/Northern Economics), an assistant researcher (Nancy Mundy, Northern Economics), a community liaison (Matilda Adams), and a statistical anthropologist/analyst (Joe Jorgensen), who worked with the team to establish the protocol and questions for all workshops. MMS staff observed the first focus group session in January 2007.

The purpose of presenting the *Offshore Perspectives* series was to identify how responses to written comments are perceived by the public, to determine whether improvements can be made in the manner in which EIS responses to public comments are presented, and to influence the content of newsletters that will be used in further research to determine whether newsletters may provide information to address some of the concerns voiced by stakeholders. It was believed that if MMS is to learn whether stakeholders harbor criticisms of MMS responses to their questions, stakeholders must be asked to share their opinions about MMS responses. The presentation of the *Offshore Outlook* newsletters was to learn whether it is possible to provide information while averting criticisms, despite the possibility that criticisms persist from earlier MMS responses to public comments.

6.4.1 Focus Group Questioning Protocol

The protocol developed for the focus group sessions outlined the process by which research team members would facilitate discussion of the *Offshore Perspectives* and *Offshore Outlook* newsletters. It set forth a strategy where the two different newsletters would be presented to the focus groups in two separate sessions to avoid respondent fatigue. The protocol also put forth the process for collecting demographic and response data through the use of open-ended questions tailored to each newsletter. For example, questions concerning the *Offshore Outlook: Focus on Production Facility Engineering* newsletter asked if the information provided helped the reader understand how oil production facilities can be built in shallow and deep water, if engineering measures provide reasonable safety against damage caused by physical forces, and whether gravel islands are adequate bases on which to position drill rigs in shallow water, among other questions.

The protocol developed for the focus group process can be found in Appendix B, including the open-ended questions formulated for each *Offshore Perspectives* and *Offshore Outlook* newsletter.

6.4.2 Fieldwork

The research team traveled to Barrow, Alaska, on three separate occasions during 2007. The three focus group sessions were held from January 16 through 20, 2007, April 10 through 14, 2007, and September 24 through 27, 2007. The team spent 3 to 5 field days in the community meeting with focus group participants and preparing and conducting the focus groups and control panels. The first focus group consisted of two separate parts held over 2 days with the same participants.

Prior to each focus group, research team leaders would visit planned focus group participants in their homes and/or offices to provide briefings on the purpose of the focus groups, to preview the newsletters with each participant, and to request they review the newsletters prior to the focus group meeting. This process helped to ensure a higher level of commitment toward participation.

Between the second and third focus group sessions, the newsletters were rewritten and redesigned based upon input received during Focus Groups I and II, conducted in January and April, respectively. These reformulated newsletters were tested on Focus Group III as well as tested against the old newsletters in the control panel workshops. Research team members conducted control panel workshops during April and September

fieldwork. Responses from these sessions were used to determine whether focus group participant comments were consistent over time or whether their comments may have been skewed. Skewed comments could have been attributable to the study itself or as a result of external influences. If the focus group responses and the control panel responses were similar, then the responses from the focus group participants were considered by the research team to be validated. If there were variations in responses, this would indicate to the research team a problem with the test questions and focus group responses would be considered invalid. For this project, the research team found that all focus group responses were valid.

6.4.3 Selection of Focus Group Participants

The participants chosen for all three focus groups were from Barrow, except for one participant from Nuiqsut who worked/lived partially in Barrow. Participants had a variety of backgrounds representing various socioeconomic and ethnic groups living in Barrow. Education levels of participants varied from an 8th grade education to those with college/graduate degrees. Respected subsistence hunters, oil response team members, teachers, government workers, and public and private sector employees were part of the focus groups. Participants were not randomly chosen. Each focus group consisted of 10 participants, and each control panel included 5 participants. In instances where 10 focus group participants could not be reconvened for the second half of a 2-day focus group session, the research team met with the remaining focus group members in subgroups, conducting the same question and answer series.

The success of the focus group effort can be attributed in part to the use of a well-connected and respected local key informant who recruited focus group participants and managed all local arrangements. Focus group participants were paid $40 for their participation. Each focus group session lasted between 2.5 and 3 hours. Research team members triangulated the responses by comparing individually recorded notes and synthesizing responses into a coherent summary.

6.5 RESULTS: FOCUS GROUP I

Focus Group I consisted of two sessions. In the first session, Focus Group I reviewed the *Offshore Perspectives* newsletters. The format of the newsletter presented concerns distilled from EISs and related responses from MMS. This session of Focus Group I was designed to obtain input and responses as to whether the Barrow participants believed that these responses adequately addressed specific concerns. This interaction led to a

discussion regarding whether written public comments and dialogue between the agency and Barrow residents were perceived as adequate.

The second session of Focus Group I used the questions outlined in the protocol to gather input on the *Offshore Outlook* newsletters.

The statements presented below in the specific findings should be considered *in vivo* concerns/issues/suggestions, meaning that the comments are typically presented in this section as they were presented in the focus group by the participants themselves. Comments are expressions of opinion and should not necessarily be construed as matters of fact.

6.5.1 Results: Specific Findings

The first focus group was aggressive and responded to most of the questions with negativity and anger, generally directed toward MMS. Although the focus group process itself provided an opportunity to explain that the intent of the study was to form recommendations for MMS to change their technical dialogue process with Alaskan coastal communities, the group remained skeptical. Regardless, all Focus Group I members participated fully and communicated that they agreed that any opportunity to communicate the importance of participation was valuable enough to merit the time they were spending in the focus group sessions. It is possible that, because an MMS representative was present at the first meeting, participants spent a relatively large amount of time expressing their general discontent at the MMS communication process.

Offshore Perspectives: The Environment and Platform Engineering

- Comparisons in which threats to Arctic and Gulf of Mexico oil extraction and transportation are characterized as similar are inappropriate if not non sequiturs.
- It is discouraging when meaningful public comments are responded to inadequately or are dismissed without comment.
- MMS must be more transparent in its dealings with community members.
- MMS must increase its sensitivity to other cultures.
- MMS responses do not correlate directly to questions posed in public comments.
- MMS employees insulate themselves by regulatory processes and do not spend enough time in the villages.
- Continued engagement is required with the follow-up round of EIS comments.

Offshore Perspectives: Oil Spill Modeling, Response and Cleanup

- The chances of an oil spill described as "not likely" is not an adequate response.
- Liaison officers are not commonly seen in the village.
- Traditional knowledge can inform responses to EIS comments and questions.
- MMS responses to public comments are too general.
- MMS responses can be confusing, even to residents who are well informed and knowledgeable about technical issues.
- There is no explanation as to how spills will be cleaned up instances where weather conditions are life threatening.

Offshore Perspectives: Mitigation and Community Impact Assistance

- An 8 to 10 percent chance of a spill is too big of a risk. A 2 percent chance of a spill affecting sensitive species is not realistic for the Arctic.
- A spill can never be fully cleaned up.
- The oil spill studies cited are not legitimate because they lack third party verification.
- Spill models based on data from the Gulf of Mexico are spurious because they have no bearing in the Arctic.
- Studies should incorporate traditional knowledge about local conditions.
- Put cleanup technology in the context of spills that have actually occurred. Examples of tests in controlled conditions have little relevance to the Arctic.
- Shift emphasis away from personnel safety training and on verification of monitoring technology accuracy.
- Visual aids are needed to show where spills would spread in the Arctic.

Offshore Outlook: Focus on Production Facility Engineering

- A map should be added to show where drilling is planned.
- Bring local voices into the newsletter through their comments/questions.
- Bring traditional knowledge into the newsletter.
- Define acronyms and terms fully.
- Comments from the EIS should be integrated with the facts in the newsletter.

- Provide schedule detailing safety precautions (e.g., what are the requirements for the smart pig, how often must it be used, etc.)
- Examples need to include relevant detail for the North Slope.
- More information on deep water facilities should be included.
- A statement about the federal government's mission and national priorities should be included.
- Details about drilling near Kaktovik should be included.
- MMS should also disseminate information via radio; Iñupiat have a verbal tradition and hearing information is better than reading it.

Offshore Outlook: Focus on Oil Spill Response and Cleanup

- It is unclear how oil spill response will be affected by ice conditions, currents, wind direction, inclement weather, or time of year.
- Information as to details of the contingency plan, including response time, leadership responsibilities, and use of resources should be included.
- Engineering must address the specific environmental conditions of the North Slope.
- Oil spill response descriptions that include successes and failures would add greater legitimacy and depth.
- Local traditional knowledge should be included in the cited studies.
- Solid ice conditions do not occur in Barrow.
- Cleanup methods identified are nearshore and do not apply to the North Slope, which is offshore and in deep water.
- In place burning just transfers pollutants from the ocean to the air, creating a different environmental hazard that could affect Russia, Canada, and Greenland.
- Dispersants used during in place burning are not proven in the Arctic.
- Discussions of technologies should describe their capability and their application to an offshore Arctic context.
- Industry jargon should be defined.
- Newsletter should be translated into Iñupiaq.

Offshore Outlook: Focus on Oil Spill Modeling

- Understanding oil spill risk is the most important aspect to be presented.
- Models are untrustworthy because they are not based upon experience and are not specific to the North Slope.
- Fault trees need to be specific to the North Slope.
- Differences in modeling methodologies should be clear between models run for the Chukchi and Beaufort.
- Title of newsletter should be changed to "Understanding Oil Spill Risk."
- The word "model" should be altogether avoided.
- Specify how the North Slope Borough would be involved in the cleanup process.
- Industry jargon should be defined.
- Newsletters should be translated into Iñupiaq.

Offshore Outlook: Focus on Mitigation and Impact Assistance

- The mission of the MMS should be consistently described, particularly its use of deferrals.
- The newsletter should explain all six stipulations.
- Impacts of a spill should include considerations for all species upon which the community is dependent (seals, caribou, etc.), not just whales.
- Foreign boat operators do not know local conditions.
- There is no benefit to the community from oil exploration.
- It is doubtful that the MMS will act on their claims.
- The Conflict Avoidance Agreement is not strong enough to ensure safety.
- The process by which mitigation funds get to the local community should be explained.
- A map of areas that may be affected by a spill should be included.
- Local input should be included into the newsletter.
- An admission of uncertainty would increase legitimacy.
- A monetary value should be assigned to possible impacts.

6.6 RESULTS: FOCUS GROUP II

Key themes distilled from those responses shared during Focus Group II included the need for newsletter translation; application and citation of more current studies; more use of maps, graphs, and photos (which is more in line with Iñupiat verbal tradition); and the need for greater transparency between MMS and the North Slope. A major recommendation that came out of Focus Group II was to establish a formal request to MMS and BLM to conduct workshops, coupled with newsletters, on oil spill response plans offshore and within the National Petroleum Reserve in Alaska (NPRA). The purpose of these workshops would be to specifically explain the relationship between local agencies, oil spill response organizations, and the process by which response occurs.

Other issues noted by the focus group respondents included a need for clarity as to where the Coast Guard is stationed and from where they will be deployed in the case of a spill. The role of local police and fire, LCMF Engineering,[24] Alaska Clean Seas, State of Alaska, and other agencies was also unclear. Focus group respondents had substantial interest in how local agencies were involved, with respondents suggesting that if they understood who was involved locally, they might be more comfortable with MMS responses to some community concerns.

6.6.1 Results: Focus Group II Control Panel

A subset of Focus Group I participants were invited back to participate in a "control" panel held in conjunction with Focus Group II. The purpose of the control panel was to determine whether external forces had shaped community opinion in the 3 months between the first focus group session and the second focus group session. It was the belief of the research team that this period provided enough time for respondents in the first control panel workshop to perhaps forget the specific details of their initial responses during Focus Group I and for the research team to ask the same questions a second time. Responses from Focus Group I were compared with the responses from the same people in the control panel. The purpose of this exercise was to determine whether initial responses during the first focus group had changed over the course of the 3 months. If the responses were not consistent, this would have signaled that external factors such as a lawsuit, oil spill, or political campaign may have influenced the type of responses given during Focus Group II. The research team found, however, that the control panel's comments were consistent with their comments during Focus Group I. Therefore, the

[24] LCMF Engineering is a wholly owned subsidiary of the Ukpeagvik Iñupiat Corporation. LCMF Engineering is the primary contractor for development, infrastructure, and environmental projects on the North Slope. The firm also tends to serve as a community and tribal liaison for clients with limited experience in the region.

research team felt confident that no external factors had influenced the responses in Focus Group II and that the range of responses from both focus groups could be aggregated soundly to inform revision of the newsletters.

Focus Group II comments for recommended newsletter changes are listed below, as are recommendations from the control panel. Three key findings emerged from this effort, however. First, participants expressed concern over the manner in which two-way communication was being attempted through the newsletters. They commented that, to really conduct a dialogue, the agency cannot communicate solely from a piece of paper; a parallel process must ensue whereby the newsletters feed into local informal meetings that use the newsletters as a study guide. Since a large proportion of the Barrow population listens to the radio daily, participants strongly suggested that MMS establish a monthly or quarterly radio program and use that vehicle as a low-cost way to further discuss the content of the newsletter.

The second finding was the overall difficulty all respondents had with the formatting and content of *Offshore Outlook: Focus on Oil Spill Modeling.* The consensus during Focus Group I, the Control Panel with the same respondents, and Focus Group II was that the newsletter was difficult to read and the content needed to be more visual. Respondents also requested that a hypothetical spill scenario be added to that newsletter in a graphic form that would demonstrate exactly what response coordination takes place in the event of a spill. Specific comments included the request for a delineated chain of command, appropriate actions, and responsible parties likely to be involved. A timeline was also requested that would display how long actions would take in the event of a spill.

Finally, comments suggested that each newsletter present a single theme. Comments related to this request tended to arise during discussion of *Offshore Outlook: Focus on Mitigation and Impact Assistance.* Specifically, respondents requested separation of the "National Mission" section and the "National Benefits" section from the rest of the newsletter to maintain the newsletter's focus on mitigation. The overall recommendation was that *Offshore Outlook: Focus on Mitigation and Impact Assistance* should be focused on mitigation, with the possibility of some tangentially related information included regarding the feasibility of directional drilling and its relevance on local revenues.

6.6.2 Results: Specific Findings

In addition to the key themes mentioned above, there were a number of specific suggestions for the *Offshore Outlook* newsletters to improve readability, visual appeal, and content. The following sections list general formatting suggestions to enhance

appeal, overall structural and content-related suggestions to be applied to each newsletter, and specific content-related suggestions for each individual newsletter.

Formatting

- Acknowledge the past via quotes, bullet points, and comments from past EISs.
- Acknowledge the cultural context of communication by reformatting newsletters to better fit the verbal history of the Iñupiat culture (i.e., more visual, more graphic, less text based).
- Acknowledge the people by incorporating local voices, local traditional knowledge, and adding local relevant news.
- Format sections with an introductory question such as "What is mitigation and how does it affect oil and gas development on the North Slope?" to engage the reader.
- Add definitions for uncommon acronyms or technical concepts.
- Add a list of included topics as an introduction.
- Add more internet citations so people can research and obtain more information on their own.

Structural Comments Applicable to All Newsletters

- Acknowledge the need for continuity by providing clear processual steps in the examples.
- References to oil exploration in the Gulf of Mexico are not relevant and should be removed; a comparison with environmental conditions more similar to the North Slope should be found.
- The fact that the newsletters are specific to the Beaufort Sea should be made clear.
- Keep the Chukchi and Beaufort Sea newsletters separate.

Offshore Outlook: Focus on Production Facility Engineering

- Explain abbreviations present in document, including those in diagrams and other graphics.
- Define what a "caisson" is.
- Diagrams should be combined and made to be the same scale.

- Add images of gravel islands and deep water drilling platforms to show the scale and purpose of one versus another.
- Explain how ships interact with deep water drilling platforms.
- Include a map showing where spills will go based on ocean, currents, and wind.
- Show what steps MMS requires to clean up a spill if one occurs.
- Demonstrate comparability between platforms in other countries that have a greater environmental similarity to the North Slope (e.g, Norway, Russia, etc.).
- Address how the engineering addresses the unique aspects of Arctic ice conditions.

Offshore Outlook: Focus on Oil Spill Response and Cleanup

- Add a timeline that shows all the steps in a typical spill cleanup effort.
- Discuss oil spill testing during the winter months.
- A description of the latest technologies and cleanup methods should be included.

Offshore Outlook: Focus on Oil Spill Modeling

- Make the example more relevant to the North Slope by citing a similar Arctic environment (e.g., Norway, Canada, Russia, etc.).
- Change the formatting so that graphics do not result in awkward text layouts.
- Simplify the fault tree diagrams and remove items that do not apply to the North Slope.
- Clarify whether the diagram "Large Pipeline Spill" applies to shallow or deep water contexts, or both.
- Describe a hypothesized scenario and the responses MMS and the NSB would have regarding different events along the fault tree, including the level of response at certain benchmarks on a timeline.
- Explain in detail what modeling is and how it works, but with less text and more graphics.

Offshore Outlook: Focus on Mitigation and Impact Assistance

- The role of MMS in mitigation of impacts is not prominent.

- The "National Mission" and "National Benefits" sections do not seem relevant to the mitigation discussion and could be made into their own newsletter.
- Address how MMS or the State will distribute funds from directional drilling.
- Introduce readers to new sections by titling them with simple questions (e.g., "What is modeling in the oil industry?").
- Remove the word "mitigation" in the phrase, "agency mitigation strategies."
- Remove the word "unreasonable" in the Stipulations section.
- The Stipulations section should describe all six stipulations if they are relevant.
- Release the newsletters along with outreach activities on the radio. This can include a Question-and-Answer format show on KBRW, or a simple introduction to the newsletters. A weekly outreach effort via radio for three weeks may be sufficient.
- Explain mitigation, the benefits (i.e., revenue) of offshore exploration, and the benefits of directional drilling more clearly under the Benefits section.

6.7 OFFSHORE OUTLOOK RECONFIGURATION

Following the conclusion of Focus Group I and Focus Group II, the research team incorporated the key suggestions recorded during the focus group process to the fullest extent possible. These included suggestions related to the overall visual appeal of the newsletters, as well as the specific content. The general format was improved based on focus group responses by making the topic heading bolder and changing the front page to better explain the sequence of the newsletters and the relationship between the different profiled topics. Quotes from North Slope residents were also included throughout the newsletters to personalize the content and situate the discussion near the Arctic. The newsletters were further improved visually through the use of photographs from the local community, images from oil companies illustrating key concepts and engineering strategies, and from MMS.

Information identified as extraneous to the newsletters was removed in many cases, including the extensive "Notes" section. Also, in direct response to focus group participants who felt that Gulf of Mexico oil exploration had no bearing on OCS activities in the Arctic, references to exploration in the Gulf of Mexico were removed. The introductory sections for each *Offshore Outlook* were also reduced, including "Understanding Production Facility Engineering," "Understanding Oil Spill Response and Cleanup," and "Understanding Mitigation and Impact Assistance Strategies." Finally, the term "mitigation" was largely removed from the newsletters.

Critical content as identified by the focus group participants was expanded, including the description of experience and examples from real-world events, language specific to Arctic conditions and the North Slope, and citations for interested individuals to find resources online. Greater parity between the description of shallow water and deep water facilities was added to *Offshore Outlook: Focus on Production Facility Engineering*, and an incident timeline was added to *Offshore Outlook: Focus on Oil Spill Response and Cleanup.* Key concepts dealing with oil spill modeling were also added to this newsletter. The added information to *Offshore Outlook: Focus on Oil Spill Response and Cleanup* resulted in the creation of a "pull-out" page folded into the newsletter. In *Offshore Outlook: Focus on Mitigation and Impact Assistance*, the description of funds was rewritten to be more inclusive and clearer, stressing benefits to the community.

Finally, *Offshore Outlook: Focus on Oil Spill Modeling* was removed from future focus group testing, and key material was incorporated into *Offshore Outlook: Focus on Oil Spill Response and Cleanup*. The research team found that the *Offshore Outlook* detailing oil spill modeling was the least visual of all the newsletters and was clearly the least compelling of the four *Offshore Outlooks* developed. It should be noted that much of the feedback from the focus groups concerning the content in this newsletter was focused on gathering information specific to the North Slope and the technical nature of the modeling effort itself (e.g., key model assumptions, applicability to the Arctic, inclusion of accurate current and wind vectors, etc.). The research team found that, to address these comments adequately, a substantial out-of-scope coordination effort between MMS, interested oil companies, and the research team would be necessary, including highly technical discussions with spill modelers. The removal of *Offshore Outlook: Focus on Oil Spill Modeling* had the added benefit of narrowing the scope of future focus group discussions while still communicating key features of oil spill modeling.

Copies of each redesigned *Offshore Outlook* newsletter are included in Appendix B.

6.8 RESULTS: FOCUS GROUP III

Focus Group III, which provided feedback on the newly redesigned *Offshore Outlook* newsletters, presented logistical challenges to the research team due to less upfront preparation time. As stated above, research team leaders would visit planned focus group members prior to the event to brief the participant in the process and to preview the newsletters with each participant. This process worked successfully during the fieldwork associated with Focus Groups I and II, resulting in adequate sampling groups ($n \geq 10$) for both sessions. The research team was not able to conduct a similar level of preparation prior to Focus Group III, however, and the turnout was markedly lower than in the prior

two focus group sessions and the ultimate number of participants was too small for the required sample.

To rectify the situation, the research team decided to recruit more participants for a second session of Focus Group III. These participants were members of the community who had not been originally able to attend the first Focus Group III session. This strategy was ultimately successful for achieving a sufficient sample in attendance, but dominant personalities in this session tended to orchestrate the views of other participants and participation was uneven. This phenomenon concerned the research team, that responses recorded during the second Focus Group III session were not reflective of the full range of participants.

To preserve the integrity of the entire focus group process, the research team decided to disregard the responses from the first two Focus Group III sessions and organize a third session. The third Focus Group III session was held the following day with an entirely new set of participants. This new set of participants formed a sufficient representative sample and none of them had participated in any of the previous focus group sessions.[25]

Participants of the three independent Focus Group III sessions were generally positive about the contents of the new newsletters and expressed praise to MMS that it was, "about time they did something like this." It is important to note that Focus Group III participants were not informed by the research team that the newsletters they were reviewing had been reformulated based upon input from community members involved with Focus Group I and Focus Group II. This is particularly important, as it demonstrates that Focus Group III independently came to the conclusion that they were generally pleased with the structure, design, and content of the newsletters without the explicit knowledge that fellow members of the community influenced the content and design of those newsletters.[26] It is assumed that providing an overview of the Focus Group I and Focus Group II responses to Focus Group III participants would have positively biased Focus Group III responses favorably toward the new newsletters.

Focus Group III participants particularly pointed out the graphs and photographs were helpful. One participant raised a concern over the fact that there were photographs of the Barrow community involved with cultural activities such as Nalukatuk, as he perceived

[25] Interestingly, responses to the new newsletters in all three Focus Group III sessions were similar—even the group that included dominant participants. Due to this similarity in response, comments from all three Focus Group III sessions are discussed here.

[26] It is entirely possible that community members from Barrow discussed the various focus group sessions privately, but information regarding a subsequent redesign based on Focus Group I and II responses was not explicitly shared with Focus Group I and II session respondents, nor was information regarding any past redesign shared with Focus Group III session respondents.

these images as, "MMS was trying to sell oil leases with pictures of our culture." The majority of Focus Group III participants, however, were pleased with the photographs.

6.8.1 Results: Focus Group III Control Panel

Two control panel sessions during the Focus Group III fieldwork effort were conducted to obtain the requisite number of five participants. The necessity for two different control panels was based on participant schedules, as half the participants could meet on September 24, and the other half could meet only on September 25. Research team members asked the same questions to both groups and responses were consolidated to determine consistency between the two control panel groups.

The control panels were attended by a combination of participants from Focus Group I and Focus Group II sessions. The purpose of the control panels was to review and comment upon the new and improved newsletters presented. Responses were generally favorable. They appreciated the smaller print and responded enthusiastically to the glossary, graphs, additional content, and structural changes made to the newsletters.

The first panel reviewed the rewritten and redesigned newsletters and generally felt that the layout was vastly improved as it was more reader-friendly at first glance. There was some level of appreciation for the fact that photographs of local people (including the Mayor) were in the newsletters and the emphasis on the local community was noticed. The newsletter concerned with community assistance included information on the Permanent Fund, which gained a positive reaction. Other positive comments included the perception that the authors of the newsletters seemed to demonstrate knowledge about the local community, which made it more effective in their view. Similarly, respondents liked the way the newsletters built upon each other "as a story," rather than as stand-alone documents. Linkages that developed after reading multiple newsletters, one after another, provided a more understandable image of what the MMS mission is and what OCS activity means for the North Slope. One final criticism leveled by the control panel was that the Beaufort Sea and Chukchi Sea topics should be separated in future newsletters due to different subregional interests and environmental conditions. For example, a Beaufort Sea *Outlook* would be geared toward Barrow, Kaktovik, and Nuiqsut, while the Chukchi Sea *Outlook* would be geared toward Barrow, Point Hope, Wainwright, Pt. Lay, St. Lawrence Island, and possibly Kivalina.

6.8.2 Results: Specific Findings

In addition to the key themes mentioned above, there were a number of specific final suggestions for the *Offshore Outlook* newsletters to improve readability, visual appeal, and content. The following sections list general formatting suggestions to enhance appeal, the response to the redesign, and specific content-related suggestions for each individual newsletter.

General Formatting

- Effective communication involves more than stand-alone newsletters and should be accompanied by a commitment to review and discuss the content of the newsletters with the targeted audience.
- The content guide on the first page provides a good visual guide to the content inside.
- More maps and graphics should be included as the community prepares for hearings.
- The News section should include items and deadlines specific to oil and gas development.
- Include a clear mission statement for MMS that describes a commitment to protect resources.
- Quotes and images selected for inclusion should be carefully chosen to display an understanding of the internal dynamics and politics of the North Slope. For example, a quote from a controversial source, even if it is reflective of larger community interests, may not be appreciated.
- The audience should be identified as the "Residents of the North Slope," to differentiate the audience from the NSB or other government entity.

Response to Redesign

- The attempt to address concerns is appreciated, even when those concerns are not completely reflected within the newsletters.
- The addition of graphics, visuals, and images used to explain difficult concepts creates more visual appeal.
- The tone of the revised newsletters appears to be more objective than the prior newsletters.

- The content is easier to understand and perceived to be more honest.
- Utilizing local quotes in the newsletters demonstrates knowledge of details about the community and makes the newsletters more effective.

Offshore Outlook: Focus on Production Facility Engineering

- The acknowledgement of possible systematic failure is appreciated.
- Language acknowledging concerns or questions about "technology issues" improves the legitimacy of the newsletter as a learning tool.
- Newsletters must be accompanied by other methods of communication prior to new lease sales and EISs.
- Beaufort Sea and Chukchi Sea topics should be separated into distinct newsletters. A Beaufort Sea newsletter should be geared toward Barrow, Kaktovik, and Nuiqsut. A Chukchi Sea newsletter should be geared toward Barrow, Point Hope, Wainwright, Pt. Lay, St. Lawrence Island, and possibly Kivalina.
- Newsletters should include case studies that can be applied to real world situations. Respondents requested actual case studies to compare to "real world situations."
- Detail should be included describing how the oil and gas industry will guarantee the integrity of their infrastructure.
- Instances of engineering or technology failing should be included, as well as information regarding technological improvements that can prevent future failures.
- The cumulative impacts of OCS development need to be considered in the newsletters.
- MMS should discuss notable improvements with examples and case studies.

Offshore Outlook: Focus on Oil Spill Response and Cleanup

- Response tactics are too optimistic and more real-world examples are needed.
- The additional pages show that extra effort was made to include necessary information.
- The description of the response plan and the responsibilities of the various agencies is clearly written and valuable.

- The proximity of oil spill response agencies to possible spill areas, and how these stations may change over time, should be described.
- Traditional knowledge concerning environmental conditions and biological factors should be included.
- The federal, state, and local government entities with responsibility and oversight of OCS spill response should be identified with specific roles described.

Offshore Outlook: Community Impacts and Benefits (previously Focus on Mitigation and Impact Assistance)

- Diagram showing 0-3, 3-6, and 6+ mile areas is helpful, but areas of drilling should be identified.
- Current legal cases and other topical OCS events should be included in the news section.

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CHAPTER 7.0
CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

This section presents a range of conclusions and recommendations to improve technical dialogue between MMS and local communities on the North Slope. These recommendations are based largely upon the feedback of Barrow residents who were participants in the various focus group sessions discussed in Chapter 6. These recommendations are also influenced by the literature review, content analysis, and linguistic analysis presented in this report.

It should be noted that an original intention of this study was to produce a quantitative statistical analysis of responses from focus group members. Reponses were to be analyzed according to different demographic characteristics, work experience, cultural affiliation, and other variables. While the focus group sessions provided rich qualitative data (as presented in Chapter 6), which have been distilled into key recommendations (as presented below), these sessions did not result in a dataset upon which statistical analysis could be conducted. Overall, the number of participants was too small to provide an adequate sample of the community, even though every focus group had a minimum number of 10 participants. The selection of focus group participants was also not random, as participants were drawn from a pool of interested individuals with experience in the NEPA process. The participants were from a wide range of socioeconomic, educational, and employment backgrounds, but the distribution was not designed to be representative of the North Slope (or Barrow). Finally, the communal nature of the focus groups resulted in an uneven distribution of responses from focus group members. For example, if one member made a statement, it was not uncommon for other focus group members to agree in principle, but quantifying the level of agreement/response was not possible at the time.

Regardless, the synthesis of qualitative comments from the focus groups (in combination with visible trends in the literature review, content analysis, linguistic analysis, and MMS staff interviews) provides a range of actionable recommendations and conclusions meant to improve technical dialogue. These recommendations range from general approaches to technical dialogue as a multi-media event, to specific comments concerning the design and development of future written communications. Of course, these recommendations may need additional study to produce specific communication plans (e.g., the legality of an RCAC on the North Slope), but the following section does provide a firm foundation

upon which MMS can begin to improve technical dialogue in Barrow and, by extension, in other parts of the North Slope.

7.2 CONCLUSIONS AND RECOMMENDATIONS

Newsletters are best used when they are seen as a study guide or a starting point for further, deeper discussions, whether they be in person or in some other verbal form (i.e., over the radio[27]). Verbal communication must accompany the newsletters for them to transmit their message efficiently. The newsletters can be effective in initiating communication with residents of Barrow; however, if the newsletters are distributed without follow-up communication—either through a radio forum or through in-person meetings—the newsletters cannot be expected to enhance written technical dialogue during the EIS process or provide for a more informed public. Two-way dialogue is a culturally meaningful strategy for the dissemination of important information and the Iñupiat culture is one of verbal and visual communication. Focus group participants suggest that newsletters alone do not provide enough information to sufficiently inform the public, and newsletters are unlikely to change many minds by themselves. Coupling newsletters with an ongoing verbal dialogue about such issues, however, is suggested to provide a sufficient foundation from which the public will be able to formulate public comments and is a critical component toward improving technical dialogue between the MMS and Alaskan coastal communities.

The reason for this pairing is simple. First, newsletters without either a follow-up meeting or radio program threaten to be perceived as continuous one-way dialogue; the status quo. Second, participants were less interested in reading newsletters individually; however, when reading the newsletters as part of a group, they discussed the newsletters actively. Third, two-way, ongoing dialogue occurred most successfully in smaller group meetings that used the newsletters as the basis for conversation. Repetition through meetings with the same participants over time, particularly through the control panels, demonstrated that focus group participants "warmed-up" to newsletter topics as they became more familiar with the details found in the newsletters. Those participants who reviewed the first set of newsletters and then the revised newsletters clearly understood the contents more thoroughly than those who had an opportunity to see only the first or the second round of newsletters. Additionally, these participants tended to move from a defensive posturing to one of discussion, particularly when other known and respected community members working on oil and gas-related activities (such as oil spill response)

[27] Focus group participants suggested that local radio may be a cost-effective strategy for this verbal communication, as many households have their radio on for long periods during the day and the practice of getting local information via radio is well established.

were also participating in the meetings. **It is recommended that a verbal component be created in conjunction with any future newsletters**. **Specifically, a series of newsletters that are released quarterly in combination with ongoing public workshops to discuss with community members the topic/content addressed within the newsletter would appear most likely to be effective.**

Examples from the literature suggest that technical language can be a barrier to effective communication (Section 2.3.1). Specific to this project, aspects influencing the success of the written newsletters to transmit technical information related to the use of the English language were also identified. The research team found that there was a substantial number of individuals who could not read English well enough to engage with the newsletters fully (even when technical jargon was minimized), although they could understand many of the graphics, charts, and maps. While translating the newsletters into Iñupiaq could be helpful, making the creation (and dissemination) of important graphics a high priority during the development of the newsletters is suggested. The positive reaction to the creation of the "pull-out" as a result of the *Offshore Outlook: Focus on Oil Spill Response and Cleanup* redesign was especially well received as focus group participants appreciated the extra information and thought that the one-page insert made a good informative piece to take home and pass along to others not present in the focus group. **It is recommended that future newsletters be designed with graphics, maps, and charts to demonstrate key points. Graphics should be developed with possible secondary distribution in mind, with the high likelihood that this secondary distribution will engage with community members for whom English is not their primary language.**

Other specific recommendations are concerned with the content of newsletters. Focus group participants reacted favorably to the redesigned newsletters that included more detailed information about engineering techniques and different oil spill detection and control technologies. **It is recommended that details be further enhanced about the types of oil rigs, how oil will be transported from the rig to its eventual place of distribution, and how the environment (including sensitive wildlife) will be protected at each step of the process.**

The discussion of oil exploration engineering/technology approaches used in warmer environments (i.e., the Gulf of Mexico), despite its possible successful application in Arctic environments, is perceived as agency ignorance as to the environmental forces present on the North Slope and it negatively affects the legitimacy of the entire document. **It is recommended that engineering examples, technologies, and**

images used in the newsletters be specific to the Arctic region—even if these examples come from foreign countries.

The tone of the newsletters is equally important. The first round of newsletters was not perceived as newsletters, per se, but rather was perceived as biased with a tone that was "removed from the North Slope." This attitude shifted as the newsletters were revised and took on a more "reader-friendly" tone. However, the newsletters tested were viewed as information pieces from an agency and participants believed that a "proper" newsletter should have actual real-time news relevant to the community. Where the newsletters are fully "localized," the newsletters were better received. Focus group participants desired specificity with regard to where drilling activities were proposed, including maps with details on how far the drilling would be from the shore of their community and/or identification of locations and depths on maps in real terms. A regional approach was not desired by many of the focus group participants. A regional newsletter, in this case, could be an area that incorporates the North Slope at large. For many of the participants, Prudhoe Bay was not perceived as having the same conditions as the Chukchi Sea or the Beaufort Sea off Barrow. Participants did express an interest in learning about Prudhoe Bay, however, and how the area has been relatively successful in its drilling, with regard to the small number of impacts reported. **It is recommended that newsletters be made sensitive to local interests as much as possible and that they avoid a wide, regional perspective.**

The research team found that legal cases that were ongoing during the testing of the various newsletters may have influenced responses to particular topics. For example, focus group participants perceived the recent court rejection of Shell Oil's proposed exploration as an indicator that the voice of the community was being heard, and likely strengthened negative perceptions within an existing ambiguous view of MMS. While the degree to which responses were affected by this bias is unknown, it illustrates an important consideration necessary for the development of future newsletters: That technical information is never communicated in a vacuum. **It is recommended that newsletters include and engage directly with OCS events as they happen, perhaps using these events (e.g., court decisions, spill drills) as concrete examples illustrating key concepts.**

Focus group participants suggested that newsletters should include more comments from other federal agencies, including how other agencies are involved with OCS activities and how OCS activities may benefit other agencies. Other comments suggest that third-party reviews of those oil industry studies cited in the newsletters should be conducted, with conclusions of third-party studies eventually included in future

newsletters. Finally, focus group participants regularly stressed that local traditional knowledge should be included in the newsletters, particularly as knowledge of the environment relates to engineering and cleanup methodologies. It is suggested that local knowledge should be taken into consideration when weighing threats to OCS exploration and drilling. This local traditional knowledge can include information regarding environmental and biological phenomena that has been transmitted for generations. One example of traditional knowledge that was cited in the focus group sessions concerned rates and patterns of erosion on the North Slope. For some focus group participants, knowledge about erosion that had been transmitted for generations did not seem to be considered in the newsletters, particularly in the presentation of gravel island technology.

While seemingly disparate, the above three comments are generally concerned with the collection and communication of opinions from outside the industry. Without the inclusion of this information, the newsletters could be perceived as propaganda closely controlled by biased interests. **It is recommended that MMS includes outside opinions from agencies, organizations, and elders that community members trust to add legitimacy to the newsletter content.**

RCACs, in a form that may be designed for the North Slope, are likely to be the most relevant and effective public participation model. RCACs were devised as part of the OPA and are currently used in Prince William Sound and in the Cook Inlet. RCACs present a stakeholder model that focuses on facilitating technical dialogue specific to scientific and technical aspects related to decision-making processes. Under the OPA, Congress set up a mechanism that envisioned citizen advisory councils as a way to support a long-term partnership between industry, government, and the coastal communities of Alaska. The OPA encompasses all aspects of the North Slope crude oil transportation system through Prince William Sound and the Gulf of Alaska. As such, the OPA created two RCACs and set up a mechanism by which other RCACs can be established. The two mandated by the OPA are based in Prince William Sound and the Cook Inlet. These RCACs are permanently funded by annual allocations. In the case of Prince William Sound, the Alyeska Pipeline Services provides an annual allocation of $2 million to the PWS RCAC. For Cook Inlet, the Cook Inlet Pipeline Company (a similar consortium between Phillips, Unocal, Kenai Pipeline, and others) funds the CI RCAC annually at $600,000. Although these two regions were the only areas specifically identified in the OPA, the OPA RCAC provision spurred other similar citizen advisory councils outside Alaska, most notably in Maine and California. In all cases, RCACs have acted as a conduit for the communities affected by oil and gas development and transportation to participate in the process and exchange important information with federal agencies and involved oil companies, resulting in increased trust between government, industry, and the local communities.

Both RCACs conduct public forums to elicit citizen perspective, monitor oil spill prevention plans, consult with industry regulators on oil transportation-related matters, and conduct significant public outreach. Specifically, the RCACs keep the public apprised of issues related to oil production and transport, spill prevention/cleanup, levels of readiness, and available local capacity to prevent and respond to spills, and help to explain difficult technical issues. The RCACs do this through community visits, quarterly newsletters, and reports. The RCACs publish reports specifically geared toward the general public on a variety of oil-related issues such as tanker safety, and oil spill prevention and response. Though the parties may not always agree, Prince William Sound RCAC members report that serious consideration is given to their perspective by federal regulators and industry.

RCACs bring more to the process than improved avenues of communication, however. Through technical dialogue facilitated by RCACs, industry representatives, and government staff, changes have been made in oil transportation operations that have improved transportation safety in Alaskan waters and have enhanced training and scientific knowledge on a number of fronts. From the perspective of improving technical dialogue alone, discussions among RCAC members have resulted in a series of studies, which improved knowledge on oil spill response systems, emission vapor controls, tanker escorts, and marine fire training.

This engagement has the result of making many of the details of OCS activity clearer, thereby reducing unfounded fears. For example, as focus group participants became more aware of the capability of oil spill cleanup techniques from a fellow participant from the local community personally involved in spill response, the more the focus group participants trusted the information in the newsletter. **It is recommended that the possibility of establishing an RCAC or similar body on the North Slope be explored.**

CHAPTER 8.0
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