Appendix A: Summaries of Public Meetings

This appendix provides summaries of public meetings held in conjunction with the preparation of the Oil and Gas Technical Report. These meetings include community meetings held between March and August 2006 in Nuiqsut, Barrow, Anchorage, Atqasuk, and Wainwright; meetings of the Infrastructure and Dismantlement, Removal & Restoration focus groups in September 2006; and a Traditional Knowledge Workshop in Anchorage during September 2007.

Nuiqsut Community Meeting Notes
March 13, 2006

Introduction
A community meeting was held in Nuiqsut, as the first of three public meetings to begin the planning process for the Oil and Gas Technical Report. Thirty-four people signed in for the meeting, Dan Forster, Deputy Director of Planning provided introductions and opening remarks. Delbert Rexford provided simultaneous translation from English to Inupiaq. Jon Isaacs from URS led the meeting and Joan Kluwe recorded public comments. The meeting began at approximately 7:30pm and ended at approximately 10:45pm.

The meeting provided a brief overview of the project, beginning with the relationship of this project to the Comprehensive Plan and Title 19 Land Use Regulations. This project is building
upon issues raised in the Comprehensive Plan revision process. Many of the issues raised in the Comprehensive Plan were also identified in the National Academy of Sciences (NAS) Report on the cumulative effects of oil and gas activities on the North Slope and the General Accounting Office (GAO) Report regarding requirements for restoring lands after oil production ceases. It was noted that there are both positive and negative impacts of oil and gas development; the community and the Borough are interested in minimizing negative impacts and promoting positive impacts.

An overview of the project goals was provided. The goals were identified in the grant, provided by National Petroleum Reserve – Alaska (NPRA) Impact Funds. The preliminary issues identified in the grant were introduced and the remainder of the meeting focused on these issue topics. Participants discussed the issues and brainstormed solutions to potentially be developed further or implemented.

Abandoned Infrastructure and Unrestored Landscapes

- **Government Oversight and Coordination**
  - Government agencies should have early involvement with the lease sale purchasers to establish plans for Dismantlement, Removal, and Restoration (DRR)
  - Require adequate funds be set aside for clean-up
  - Identify agencies responsible for requiring facility upgrades
  - Agencies that own pipeline rights of way should require facility repairs and upgrades
  - Debris from early exploration and development era is starting to erode out of the land and needs to be cleaned up
  - Convey to government agencies that local people do not feel like they have been heard; people express concerns about effects and then the effects do happen

- **Aging Infrastructure**
  - Ancient facilities need to be upgraded; aging infrastructure needs to be repaired
  - Pressure and leak detection systems need to be improved
  - Increase visual inspections of pipelines

- **Implement Best Available Technology**
  - Need buried pipelines to make caribou migration to the coast easier; more caribou corridors are needed on existing pipelines
  - Review new technology for future developments to reduce impacts, for example: pipelines within the road prisms, directional drilling for river crossings, buried pipe within a pipe systems
• **Reuse Facilities and Infrastructure**
  ◦ Assess infrastructure for other uses, for example warehouse used for whaling activities
  ◦ Reuse and recycle materials from development sites in the local communities
  ◦ Sample gravel before reuse to ensure that it is not contaminated and will not cause other environmental problems

• **Other Suggestions**
  ◦ Give zoning powers to the city or form a zoning commission to review the permits that come forward from industry
  ◦ Upgrade airport to make the city more attractive as an industrial hub

**Off-Road Travel**

• **Tundra Travel and Seismic Exploration**
  ◦ Avoid multiple passes over the same track to reduce impacts to vegetation
  ◦ Slow down on opening tundra travel – do a better job of assessing the impacts before they approve permits for travel
  ◦ Review and reassess tundra travel dates in the vicinity of the activity
  ◦ Seismic lines potentially impact village travel between villages
  ◦ Increased horsepower and weight of the vehicles that are being used are more damaging to the tundra

• **Monitoring Practices**
  ◦ Improve monitoring – lack of oversight of industrial activities
  ◦ Concentrated use areas need to be assessed and monitored, including staging areas

**Local/Community Involvement**

• Local monitors with understanding of traditional knowledge decreases impacts; lighter snowmachines decrease impacts on the tundra

• Provide community travel routes across the seismic routes

**Communication and Community Coordination**

• Improved communications are needed – daily reports to the community of current activities

• During concentrated community use times restrict tundra travel and other outside uses that are not urgent
• Reduce air travel over the river to decrease conflicts with hunters
• There are summer and winter issues with tundra travel – caribou, waterfowl, moose hunting; review timing with communities
• Summer studies and associated logistics interfere with subsistence activities; need better coordination of research and identification of acceptable transportation corridors and times
• Coordinate research designs with local communities and other research projects; cumulative impacts are not being considered and researchers are not receptive to changing their research to avoid community impacts
• Research design often over-emphasizes the best interests of industry

Lack of Comprehensive Planning

• Coordination with Villages
  ○ Incorporate community conflict resolution processes in a timely manner
  ○ Remind industry of community concerns
  ○ The North Slope Borough needs to participate with community meetings related to development; participation has declined due to budget reductions
  ○ Establish individual conflict avoidance agreements with local entities
  ○ Open local offices to have more frequent contacts with local people and better respond to emergencies in the area.
  ○ Develop combined yearly calendar with the community: exploration, transportation, development, etc.
  ○ Increase community involvement in design and planning of facilities, conflict resolution assessment
  ○ Educate new players about what’s required and community concerns
  ○ More visits by elected officials to Nuiqst

• Look at the “Big Picture”
  ○ Project by project budgeting does not encourage looking at big picture impacts and planning

• Use of Traditional Knowledge
  ○ Balance traditional knowledge and western science – site location for infrastructure, better ways of mitigating
  ○ Changing currents near West Dock – there are more shallows, seals and ciscos are being displaced. More sand is being deposited on the west side of West Dock. These concerns were voiced to MMS and now they are happening.
New players need to begin to work with the community as soon as possible, including the importance of traditional and local knowledge

**Lessons Learned**
- Incorporate lessons learned from prior development projects
- Need assessments of past plans for delinquencies and incorporate into this planning process
- Incorporate comments from prior joint meeting and other prior meetings that are relevant to this planning effort
- Assess design variations – what’s worked, what hasn’t worked

**Other Suggestions**
- Increase local control and local decision making processes
- Break assessment process into areas to assist in quantifying impacts
- Develop a stress monitoring level – guide for regional development
- Enforce regulatory measures – routine exemptions should not occur to shortcut the planning process
- Send community representatives to lobby the federal government; more community involvement with Borough lobbying efforts
- Monitor salt water intakes at West Dock – do they have adequate screens to prevent fish entrapment

**Cumulative Impacts**

**Monitoring Practices**
- Air quality monitoring in the Prudhoe Bay area is not adequate
- Air quality standards may not accurately account for petroleum distillates; include tracers
- Assess air monitoring stations for design flaws and incorporate qualifiers into the study, e.g., presence of local sand dunes and appropriate location of monitoring stations
- When the temperature is less than –20, the nozzle clogs and doesn’t properly monitor air quality; local techs have been informed
- Monitor lake withdrawals for ice road development; some years there is a low level of precipitation for recharge

**Social Impacts**
- Mitigate impacts; provide mitigation funds
Consult with affected villages
- Address health issues associated with oil and gas development
- Assess testimony from 1980s TLUI and changes in Nuiqsut traditional use

• Communication
  - Improve communications with ConocoPhillips and other industry

Other Discussions

There were several other discussion items that emerged during the meeting that elaborated upon the above suggestions, raised further questions, or illustrated topics that are very important to the community. The following items are a summary of these discussions:

- Offshore studies need to be conducted, particularly regarding ice movement. There is a lot of offshore activity beginning in the Beaufort Sea.
- Many studies are done by correspondence, instead of with a hands-on feel. Federal agencies need to open local offices, with local employees.
- We have to go to Barrow for information. Opening offices here would give information to the community more readily. We need people working on development projects to work more closely with the community.
- This is 30 year old stuff! Why are we talking about this now? Everyone says there will be no impact but there are impacts. The state and federal governments should step up and take responsibility for these issues.
- Nuiqsut is not being used as a staging area for development. We should be more of the industrial center. We have all of the impacts from development, we should get some of the economic benefits. The hub should not be Alpine.
- We need to take advantage of the best available technology, such as pipe-in-a-pipe, thicker pipes, etc. to detect and contain spills. We need better monitoring and more frequent monitoring. Subsistence monitors should be more widely used.
- There should be an impact mitigation fund set aside for Dismantlement, Removal, & Restoration (DRR) activities. It should come from lease royalties.
- The Borough should implement Mr. Eben Hopson’s intention to protect his people and their traditional way of life.
- Get Nuiqsut testimonies from the Minerals Management Service (MMS)
- The Traditional Land Use Inventory (TLUI) from the 1980s has important subsistence use maps.

Two elders spoke eloquently, encouraging the community to continue to live in the traditional Inupiat way and to persevere amidst hardships. The elders noted many changes in the area
within their lifetimes. It was suggested that the Borough incorporate concepts from these discussions in the Oil and Gas Technical Report. During the course of developing this report we look forward to expanding upon these ideas. We invite anyone present for these discussions to provide additional details that we have not yet been able to document. This is a brief synopsis of these discussions that was translated to English.

Ruth Nukapigak, Elder: Long ago the state took over. The Inupiat people had to move to Barrow and Inupiat land is being called state and BLM land. The state and federal governments are always trying to take Inupiat land. There have been many changes throughout this area. We need to look at the Alpine development and all of the developments individually and together to see the impacts. Many things have changed here. The pipeline affects caribou migration. Alpine continues to build more pipelines, which affect our subsistence way of life. There have been many hardships, but we must continue to live the Inupiat way.

Sarah Kunaknana, Elder: I was born on Cross Island in 1921. My father and other Barrow families moved there to hunt whales. My father landed a whale there in 1921. I am a welcomed member of this community. We should never get discouraged. I applied for a Native allotment at North Dock in Prudhoe Bay long ago. I never gave up because that is where I grew up. Industry removed our old sod house and ice cellar, but we still did not give up. Eventually we prevailed. I encourage the young people to persevere to prevail. Future generations will continue to subsistence hunt, despite hardships and discouraging situations with the state and federal government.

Barrow Workshop Notes
March 15, 2006

Introduction

A workshop of representatives of stakeholder groups within the North Slope Borough was held in Barrow, as the second of three public meetings to begin the planning process for the North Slope Borough Oil and Gas Technical Report. Representatives from all of the villages and from many of the tribal and corporate organizations were able to attend. Twenty-nine people signed in for the workshop, including four North Slope Borough staff from the planning and law departments. Dan Forster, Deputy Director of Planning opened the meeting. Jon Isaacs and Joan Kluwe from URS facilitated the workshop.

The meeting provided an overview of the project, including the goals and objectives for the oil and gas technical report that were identified in the grant, provided by National Petroleum
Reserve – Alaska (NPRA) Impact Funds. This project is building upon issues raised in the Comprehensive Plan revision process, completed in October 2005. Many of the issues raised in the Comprehensive Plan were also identified in the National Academy of Sciences (NAS) Report on the cumulative effects of oil and gas activities on the North Slope and the General Accounting Office (GAO) Report regarding requirements for restoring lands after oil production ceases. It was noted from participants that there are both positive and negative impacts from oil development identified in the NAS report, and not to lose sight of the former.

The issues identified in prior planning and research efforts, combined with the prospects for future development on the North Slope prompted the Borough to pursue this planning project. There was a brief discussion of planned and potential oil and gas development for the North Slope, such as NPRA; offshore leases; state lands, including the existing development at Prudhoe Bay and potential activities in the foothills region; potential for future development in the Arctic National Wildlife Refuge, and a potential gas pipeline.

The Oil and Gas Technical Report will be used by the Borough to highlight long-standing issues, request participation from state and federal agencies to address the issues, and to work with local residents and external stakeholders to identify solutions. The Borough intends to proceed with a positive, proactive approach to problems and solutions, to recognize what is working well, and to use the collective experience and knowledge of stakeholders to identify potential solutions to specific issues.

The document will assist the Planning Department in administering permits and provide guidance to industry and agencies working on the North Slope. The report will also assist with the revision process for the Borough’s Title 19 Land Use Regulations. The final report will be presented to the Planning Commission for acceptance/approval. The report could be adopted by the Assembly as an amendment to the Comprehensive Plan.

A number of questions were asked by attendees regarding the purpose and intent of the project and how it might be used.

The remainder of the workshop focused on the broad issue topics identified in the presentation. Participants were broken into two large groups facilitated by Jon Isaacs and Joan Kluwe, which discussed the issues and brainstormed solutions to potentially be developed further or implemented. In order to keep on the workshop schedule, the issue topics were divided between the two groups.

**Cumulative Impacts**

- **Caribou Migration**
  - Plan industrial activities to avoid disruption of caribou migration (also apply this to tourism and guiding activities).
• Look at caribou migration routes when locating roads and pipelines, locating caribou crossings, and using directional drilling to avoid or minimize impacts.¹

• **Noise and Traffic Impacts Offshore**
  - Look at Alaska Eskimo Whaling Commission (AEWC) recommendations for offshore areas and industrial activities.
  - Coordinate movement and timing of vessels, schedule seasonal activities to avoid whales and subsistence activities during the right season.
  - Is there new technology available to reduce sounds and noise impacts?
  - The Minerals Management Service and Alaska Department of Natural Resources need to better coordinate activities; consider a coordinated review each year.

• **Science and Traditional Knowledge**
  - Listen to and act on what people say (not just listen then ignore); agency follow-through is needed to act on what people really said.
  - Choose the right forum to make traditional knowledge work; have experts talking to experts and agree that there is mutual interest in exchanging knowledge.
  - Speeding things up and doing them quickly does not match local process for decision-making and discussions within the community.
  - Involve the key players and pick the right forum, don’t leave people out. For example, the Northstar traditional knowledge (TK) process seemed to work.

• **Offshore Development**
  - Use local observers on offshore seismic vessels and allow them to make a thorough report to communities.
  - Promote onshore development before exploring offshore.
  - Can directional drilling technology be extended to reach further offshore from land?
  - Critical habitat for offshore species should be identified and protected, potentially excluding them from development.
  - Consider a moratorium or deferral for offshore development; it is being done in other parts of the state and country.
  - Are community impact funds being proposed by MMS adequate? Once they are shared among communities it doesn’t seem like much. Put more money in.

• **Onshore Development**
  - Aircraft use: research studies during the summer are themselves affecting the animals. Can there be more flexibility in the timing of studies?
  - Is there less noisy technology; can remote sensing be used more?

¹: It is recognized that caribou have wide variation in their migration patterns.
○ Use more local residents in research studies.

**Social Impacts**

○ Social impacts are not adequately studied; establish a social conditions baseline and then look at social statistics after development.

○ Can we go back in time, look at past social statistics, look for trends and identify where impacts occurred?

○ Acknowledge that there are both positive and negative impacts, that standard of living has improved due to oil and gas development.

○ Compare the North Slope standard of living and statistics to areas of northern Canada where there has been no development and conditions may be bleak.

○ Review previous studies for findings and projections.

○ Recognize the adverse social impacts of declining revenue.

○ Can there be mitigation funds for social impacts?

○ How can costs and solutions for social impacts be shared? Idea of funding a local youth treatment center compared to sending kids outside. Can affected villages get a share of the profit to use for social impacts?

**Subsistence Impacts**

○ Find ways to help the affected subsistence users; subsistence funds are not available.

○ Finish work and implement the existing programs for impact mitigations funds.

○ Resolve the issue of providing impact mitigation to the Borough vs. directly to each affected community; there are problems and advantages with both approaches.

○ Can development avoid the main subsistence and travel routes? Get the communities to identify the important routes.

○ During the Alpine project, local people tried to get industry and agencies to look at the big picture to locate facilities to avoid subsistence areas, but were not successful in many cases due to the extra costs involved.

**Seismic Impacts**

○ There is a need for a comprehensive impact study.

**Enforcement of Existing Regulations**

○ More funding is needed to enforce Borough Title 19 and CMP regulations.

○ Title 19 needs to be enforced in the field with more staff time.

○ Can a tribal tax be created and can it be used for enforcement?

○ All organizations within the community need to come together and create an
enforcement plan.
○ Make sure that BLM and MMS are following, policing, and monitoring their impact regulations.

• Coordination with Villages
○ There is not enough lead time for villages to plan and provide comments on activities.
○ Coming to a village with the planning done (not involving them) and giving them a month to comment before the activity takes place is not adequate.
○ There needs to be earlier community involvement in project planning phases; local government should receive more information earlier in the process and get the communities involved earlier.
○ Local communities need to know what oil and gas has been found as early as possible in order to plan for it. What can be released to affected villages to help their planning activities? (During Alpine, ARCO provided advanced information to ASRC and Kuukpik as land owners, but they signed confidentially agreements.)
○ Does local comment really mean anything? We have been commenting for years and what becomes of it?

Lack of Comprehensive Planning

• Coordination with Villages
○ Develop a list of all organizations (corporations, cities, tribes, regional groups) for information sharing. Don’t just send the information to the Borough.
○ The Borough, Regional Corporations, and others that provide funds to communities need to communicate better with those communities about what is available. Corporations that provide funds should directly notify the communities about the availability of grants.
○ Government agencies and industry should establish local offices so information can be shared with communities more effectively.
○ Industry, federal, and state governments need to incorporate traditional knowledge.
○ Involve communities in good neighbor policies to ensure local concerns are addressed. AEWC and NSB act independently.
○ Industry bases decisions on money, instead of traditional knowledge and village comments — listen to the local people.
○ Sometimes our comments are changed (when they are quoted or incorporated in documents); keep the original wording and intent.
Protecting subsistence, providing jobs, and protecting health are the most important priorities. Agencies need to come together and agree on the importance of our livelihood.

We are asking for consideration of our concerns and guaranteed safeguards before jeopardizing a way of life by adversely impacting our food supply.

- **Local Decision-Making**
  - Communities need to identify and map important subsistence resources in advance of development – increase opportunities for local decision-making.
  - Identify our access corridors before development occurs.
  - Communities need to document traditional knowledge so it is better used.
  - Community leaders should come together to look at potential future locations for pipelines and infrastructure. Communities need to agree because we all rely on similar resources.
  - Review transportation routes to minimize impacts on subsistence camps, cabins, and villages.
  - Improve intra-village coordination so we speak with one voice.

- **Other Suggestions**
  - Develop baseline studies for subsistence species in advance of development for ALL communities; include land mammals, birds, marine mammals, fish, etc.
  - Have joint meetings with all of the players: MMS, BLM, state, industry. The agencies need to coordinate better between themselves.
  - Industry needs to continue to support workforce development and workforce readiness programs. It’s an on-going need in the Borough.
  - Every community competes for the same funds; just divide the funds equally between the communities.
  - Make a central place to store information so it doesn’t get lost and efforts are not duplicated.

**Off-Road Travel**

- **Tundra Travel and Seismic Exploration**
  - Existing regulations: 12 inches of frost and 6 inches of snow are required prior to tundra travel.
  - Climate change is affecting the amount and timing of snow cover.
  - What are the requirements for moving camps?
  - Will current regulations handle potential changes in equipment?
○ Need a visual inspector for tundra travel areas after the season is over.
○ There is a problem of defining damage from tundra travel – how it is defined and who defines it. This needs to be worked on and agreed to.
○ UAF currently does work on defining damage to tundra.
○ There needs to be consistent training of observers and monitors.
○ There are panels with local resident representation that make decisions regarding tundra travel and subsistence: involve the monitors in the panels and provide more time to review information and make decisions.
○ Review the present vs. past miles of seismic line; you will find that you are getting a lot more information and a lot less damage.
○ Check the practices for avoiding areas of willow when conducting seismic activity; these are particularly important habitat areas along river banks.

• Ice Roads
  ○ The process for selecting lakes for ice road construction seems to be working well.
  ○ Are the effects of ice roads on the tundra being monitored? If so, who is doing it?
  ○ The process of coordinating location of ice roads with allotment owners seems to be working well – should it be made mandatory and include subsistence users?
  ○ Identify any historic winter community travel routes and protect them when locating ice roads.
  ○ Villages and industry should work together to identify acceptable security and law enforcement measures on ice roads.
  ○ Local use of ice roads should be negotiated between villages and industry; co-management and monitoring should be shared.
  ○ Address hunter access and rules of use of ice roads; hunters currently voluntarily use hunting restrictions.
  ○ Existing practice of breaking up ice roads at river crossings before breakup seems to be working.

Abandoned Infrastructure and Unrestored Landscapes
  • Communication and Coordination with Villages/Local Entities
    ○ Improve communication with communities about status of on-going Dismantlement, Removal, and Restoration (DR&R) projects. Have FULL DISCLOSURE. For example, in Point Lay they only disclosed results from the area they worked in, but they did not mention that there are other known areas that still need clean-up. (Note this is a general concern about DR&R; this was not an oil and gas site, but a military
installation.)

⚬ Develop a Memorandum of Agreement (MOA) with industry, federal government, and tribal governments in each village for DR&R processes.

⚬ Provide updates at the annual Prudhoe closure meeting — involve corporations in this meeting to potentially provide more local jobs.

⚬ Inform communities after project is complete — provide report to local communities.

⚬ Work with local corporations to have local hire for DR&R. Have more local hire for 8a set-asides.

• **Clean-up Assurances**
  ⚬ Require bonding or some kind of financial guarantee for DR&R to have proof it will occur.
  ⚬ Have a mandatory requirement for adequate funding for DR&R.
  ⚬ Require mandatory village consultation for DR&R.
  ⚬ Require mandatory removal of known human health hazards.
  ⚬ Clean up stuff that has been left behind, for example Skull Cliff, Valley of 10,000 Drums (near Barrow), and areas near Anaktuvuk Pass. (Note: Comments included clean up needs from military and other activities.)
  ⚬ When lands are transferred to local communities, clean up should be complete and indemnify local entities of clean-up liability for past contamination.

**Research and Data Gaps**

• **General Coordination**
  ⚬ Get all of the organizations conducting studies together to share information and avoid data gaps.
  ⚬ Information and study results are spread out and not centralized.
  ⚬ There needs to be an easily accessible centralized study location.
  ⚬ One requirement that works is UIC’s requirement that researchers hold a town meeting when the study is done to present the results.

• **General Study Needs**
  ⚬ Prior to development, there needs to be baseline studies of subsistence use, harvests and use areas, including hard numbers and times of year.
  ⚬ Look at historic data and numbers to see what change has occurred to date, in addition to current baseline studies.
  ⚬ Monitor change each year to understand what changes have occurred, and then change regulations accordingly.
• Traditional Knowledge
  ◦ Incorporate Traditional Knowledge into research design and studies, such as weather, ice, and currents.
  ◦ Identify trends and changes based on Traditional Knowledge.

• Specific Research Needs
  ◦ There is a lack of baseline studies for environmental and social characteristics.
  ◦ There needs to be a baseline study of social statistics and impact analysis (animals get studied more than people).
  ◦ More research and proof is needed that industry can clean up an offshore spill when ice is present.
  ◦ Studies are needed of the effects of new species appearing on the slope due to climate change.
  ◦ Review and synthesize past data and studies of offshore activity effects on marine mammals.
  ◦ Are there studies of effects on marine mammals of offshore activities and seismic exploration specifically that can be used? The Borough and the Alaska Eskimo Whaling Commission are studying the effects of seismic exploration on marine mammals.
  ◦ Study the importance of whale feeding areas near Point Hope and Barrow.
  ◦ Global warming studies need to look at the effects on subsistence and fish and wildlife used for subsistence.
  ◦ Study the offshore current patterns, location, and movements, both surface and subsurface – how many miles offshore, where do the current change (important to understand potential oil spill impacts)?
  ◦ What is happening with geologic processes, earthquakes? [This comment was made in regard to a recent earthquake centered near Kaktovik.]
  ◦ There should be studies and projects of coastal and river erosion (specific mention of the Colville River.
  ◦ There are changes in storm timing and intensity; the North Slope gets the equivalent of Category II hurricanes.
  ◦ Are there historic studies that have documented village subsistence patterns done the in the 1980s by the Inupiat Heritage and Language Commission (IHLC)?

Off-Site Impacts
  • Coordination with Villages
• Improve coordination for seismic activity timing and whaling activities. Conflict Avoidance Agreements (CAA) need to be coordinated with the local communities.
• Involve the Borough Wildlife Department with communities so they understand local concerns.

• Socioeconomic Mitigation
  • Industry should subsidize fuel for hunting, as costs have increased with increased travel for subsistence activities.
  • Provide natural gas to communities.
  • Support cultural institutions, cultural education, and language preservation.
  • Support alcohol prevention and drug prevention programs to decrease social impacts.
  • Provide impact funds at a local level to combat social issues. Funds could go directly to regional entities such as ICAS, ASNA, or tribal entities (not to the State) to provide support to North Slope communities.

• Beneficial Impacts
  • Facilities can provide food, fuel and shelter to subsistence hunters.
  • Jobs are provided from development.
  • Industry can assist with emergencies: industry sometimes assists with people that are injured or in bad weather emergencies.

• Research
  • Improve monitoring; develop emissions tracers and continue/expand fuel tracers to track the source of impacts.
  • Complete baseline studies to monitor impacts.
  • Industry studies are mistrusted – industry needs to provide funds for unbiased monitors. The North Slope Borough or tribal organizations should be funded to do the monitoring and research.
  • Monitor off-site impacts to caribou, vegetation, fish-bearing rivers and lakes. Conduct baseline studies so monitoring information is useful.
  • Monitor water supplies and ice to ensure safety of drinking water.

• Other Suggestions
• Reduce the footprint of development and increase shared services.
• Animals that migrate can carry contaminants far away.

Other Discussions
There were several other discussion items that emerged during the meeting that elaborated
upon the above suggestions, raised further questions, or illustrated important topics. The following items are a summary of these discussions:

• There are many positive findings in the NAS report as well as negative impacts.

• What are the best practices used for DR&R funding and implementation in other areas where oil and gas are produced?

• How many parallel efforts are there for DR&R? Does anyone have general oversight for DR&R?

• Can the Borough require bonding for DR&R?

• We need adequate mapping:
  o maps of contaminated sites
  o abandoned well locations
  o development locations.

• Wainwright and Anaktuvuk Pass have had active involvement in compiling important subsistence information. These communities were proactive in documenting important subsistence use areas. Nuiqsut also has Nuiqsut Paisanich, which documents important cultural information and subsistence information for the community. The community is very interested in updating the document.

• Communities were brought in to document subsistence information in the 1980s. People felt that the Planning Department should have this information, but sometimes the information is lost over time. Even if the historic base information can be located and used, the information needs to be updated, to document the changes and the current needs of the communities.

Anchorage Workshop Notes
March 17, 2006

Introduction
A workshop was held in Anchorage, as the third of three public meetings to begin the process for the Oil and Gas Technical Report. Representatives from federal and state agencies, industry, and non-governmental organizations were able to attend. Thirty-six people signed in for the workshop, including three North Slope Borough staff from the planning, wildlife, and law departments. Dan Forster, Deputy Director of Planning opened the meeting. Jon Isaacs and Joan Kluwe from URS facilitated the workshop.

The meeting provided an overview of the goals for the report, which were identified in the
grant, provided by National Petroleum Reserve – Alaska (NPRA) Impact Funds. This project is building upon issues raised in the Comprehensive Plan revision process, which was completed in October 2005. Many of the issues raised in the Comprehensive Plan were also identified in the National Academy of Sciences (NAS) Report on the cumulative effects of oil and gas activities on the North Slope and the General Accounting Office (GAO) Report regarding requirements for restoring lands after oil production ceases. It was noted that there are positive and negative impacts identified in the NAS report.

There was a brief discussion of planned and potential oil and gas development for the North Slope, such as NPRA; offshore leases; state lands, including the existing development at Prudhoe Bay and potential activities in the foothills region; potential for future development in the Arctic National Wildlife Refuge, and a potential gas pipeline. The issues identified in prior planning and research efforts and the prospects for future development on the North Slope (particularly within NPRA) prompted the Borough to pursue this planning project.

The Oil and Gas Technical Report will be used by the Borough to highlight long-standing issues, request participation from state and federal agencies to address the issues, and to work with local residents and external stakeholders to identify solutions. The Borough intends to proceed with a positive, proactive approach to problems and solutions, to recognize what is working well, and to use the collective experience and knowledge of stakeholders to identify potential solutions to identified issues.

The document will assist the Planning Department in administering permits and provide guidance to industry and agencies working on the North Slope. The report will also assist with the revision process for the Borough’s Title 19 Land Use Regulations. The final report will be presented to the Planning Commission for acceptance/approval. The report could be adopted by the Assembly as an amendment to the Comprehensive Plan.

Discussion of Project Overview

Questions from participants regarding the overview were addressed at this point, as well as general comments and discussion on the issues, and the focus of this project. This discussion is summarized below.

- What is the role of the economist (listed in the grant application) for this project?
  - The proposal envisioned the economist to assist with cost/benefit analyses or to determine the economic implications of suggestions to address the issues. However, the team is still being developed, pending the outcome of these initial workshops.

- Who is the planning team; who is the policy group? Who are we going to interact with?
  - The North Slope Borough Mayor’s Office and the Planning Department are the key
administrators of the grant. URS is under contract to the Borough to assist with preparation of this report. Our office has an array of disciplines at the Borough’s disposal, including engineers, biologists, and planners. We would subcontract with other disciplines, such as the economist.

- Is this going to be a gap analysis? What is it going to be?
  - The project will evolve, based on the guidance of the Borough, the concerns of the stakeholders, and the information gathered in these initial meetings. The project is intended to be used by the Borough Planning Department to assist in permit administration.

- This project should consider a long-term perspective, a 100-year timeframe for habitat and resource protection.

- The federal and state governments have not addressed subsistence displacement. The areas sold off in leases have a major effect on subsistence. How do you have a more equal access plan? In Prudhoe, there is no hunting, no trespassing, which curtails subsistence activities. There is no strategy for protected areas on the North Slope; we need to set aside areas for benchmarks and other uses. What are the social impacts? This is an important question. We need to look at how to address it in this report. The first Borough comprehensive plan addressed oil and gas, but the effects were limited then. The effects are now spreading. Many reports have identified the lack of comprehensive planning and the social impacts. Research is needed on social impacts. A recent MMS environmental document had one paragraph regarding social impacts. This is clearly insufficient. The Northstar project identified unemployment and other social problems. The conditions are the same. Research is still needed. We still have social impacts, and we still need information on how to more adequately address them. The cumulative effects of oil and gas and the need for comprehensive planning have been stated many times. There is a spider web [of roads and pipelines] in Prudhoe due to lack of comprehensive planning. The North Slope Science Initiative (NSSI) is important in addressing these questions, but key players are missing. The federal and/or state governments need to step up to assume their roles in this situation. We don’t need a new mad dash of activity as new areas are opened for exploration and development. We need organization to conduct oil and gas business. There are nine offshore permits that the Alaska Eskimo Whaling Commission (AEWC) is negotiating. The offshore activity is increasing tremendously.

- Local community use of oil and gas resources could be a positive impact of oil and gas development. The positive impacts of development should be noted.

- The US Fish and Wildlife Service (FWS) has a comprehensive plan for the Alaska National Wildlife Refuge (ANWR), with a focus on subsistence resources. They have an advisory role in other plans and have been attempting to bring a comprehensive overview to oil and gas development and infrastructure planning to the table.
• Land use planning on a large scale needs to focus on benefits to villages. They have a high dependency on subsistence resources, yet are experiencing displacement. They have to travel farther for subsistence activities. No one subsidizes gas to communities—even with increased displacement and expenses. This should be addressed early—in the leasing stage. The local people are the minority of minorities—we need equal access to oil and gas.

• Nuiqsut is inundated with development. Look at the area already impacted near Nuiqsut and use that area for economic development. Isolating the community from economic development hurts them even more. The community needs to be involved with development plans to be able to gain economically. The community is already experiencing negative impacts to subsistence, our way of life, how the area looks and feels. The community should have more of the positive benefits of development, including economic development. Using the community as a hub for development is a change from the perspective of not long ago. We have to put the fear of a pipeline aside and look at where we want it—south of Teshekpuk, or north along the coastline.

• We are in an information age, and that is part of our challenge. There is a lot of information coming from different directions and we need to know how we can meaningfully comment on different plans and projects. Half of the work is finding out what is going on. There needs to be a transparent process.

• We need to look at areas that were developed without enough knowledge, enough planning, or forethought. The NSB has a huge “bank account” of sorts—geographically, and over time. How quickly do resources need to be liquidated to generate cash for the area? It doesn’t need to happen all at once; we should be looking at the long-term cash flow for the area. Rehabilitation, correcting past mistakes is very difficult.

The remainder of the workshop focused on the broad issue topics identified in the grant. Participants discussed the issues and brainstormed solutions to potentially be developed further or implemented. There were several groups that addressed each topic; the composition of the groups varied throughout the day. The notes are organized by group responses, indicated by roman numerals.

**Lack of Comprehensive Planning**

There is no over-all comprehensive plan developed by all agencies and entities on the North Slope. Decisions are often made on a case-by-case basis, by multiple jurisdictions, without a comprehensive strategy, and without all parties feeling adequately involved in decision making. The amount of impact has not been adequately anticipated.

What can be done to address the lack of comprehensive planning? Who should take the lead? Should more be done at the leasing and exploration stage? If not then, when? What are the alternatives?
Group 1:
• Identify transportation and utility corridors, the infrastructure needed (for all energy, e.g., alternative energy sources like wind turbines). Where are good locations?
• Develop an energy comprehensive plan.
• Identify local community needs; e.g., provide gas to local communities.
• Access (communities and industry)
  ◦ The ease of access impacts the cost of living in the community.
  ◦ There are multiple jurisdictions without a good history of working together. The Coastal Management Planning process is an example of a process that tied players together on a topic.
  ◦ Groups could enter into a binding arbitration with one document that weaves them all together.

Group 2
• What would a comprehensive oil and gas plan look like? What are the barriers to developing one?
• The Borough has a comprehensive plan, but where are the state and others in developing plans?
• A clearinghouse is needed to integrate the myriad plans for the North Slope.
• Conflicting jurisdictions are barriers; a structured forum is needed to address these issues. What kind of forum is in place right now? What is the authority for achieving the comprehensive plan?
• An overarching plan must address major land use goals and then tier down rather than taking existing plans and stitching them together to tier up.
• Could the California desert comprehensive planning process be a model? It was mandated by Congress, however, the economic stakes were not as high as on the North Slope.
• Comprehensive planning efforts would not be any good without a 5-year moratorium on leasing to bring all parties to the table.
• A management oversight group could be developed; the NSSI concept could be expanded.
• What areas is it okay to develop oil and gas? Oil is where you find it, even without jurisdictional issues, oil companies go where the oil is.
• Reclamation – There is lack of standards for when you walk away from a site.
  ◦ Villages could inherit big liabilities when they accept/take over industrial sites.
There are conflicting legal requirements and gaps for restoration and reclamation. Federal, state and local entities need to agree upon standards.

- Comprehensive plans should look at the tradeoffs in funds spent. Is it more cost effective to reclaim or mitigate?
- Is it possible for landowners to come up with overall goals?
- Economic pressures (e.g. high cost of energy) make it hard to plan.
- There is lack of [specific/personal] benefits to communities under the current system; local communities need to benefit from development.

**Group 3**

- Oil and gas leases are coming from primary subsistence use areas; Environmental Impact Statements do not adequately identify and mitigate impacts to subsistence.

- Industry and local communities have different requirements.
  - Industry needs:
    - Prescriptive requirements
    - Certainty
  - Local community needs:
    - Accommodation
    - Qualitative concerns
      - Attention to local values

- Plans need to:
  - Be broad
  - Provide fiscal means to ensure mitigation measures are undertaken
  - Provide priorities
  - Structure how financial burden is shared with industry\(^2\)

- Local access to fuel is a continuing problem. The communities should be given free fuel. There are impacts to subsistence and people have to travel farther to engage in subsistence activities. Residents do not feel that they benefit from industry being there. However, industry is not a utility company. Industry takes a big risk in exploration and development, but they should be responsible for impacts too. How should the responsibility be apportioned among industry players? Local residents are displaced and subsistence resources are impacted.

- The climate is changing. Permafrost is thawing, wildlife populations are moving. There

\(^2\): These are sensitive issues, with broad implications.
are science and cultural issues. Who should do the research? Who should pay?

- There are two huge hurdles to overcome. The North Slope is geographically challenging. It’s a huge area. In what time frame should it be developed?

- Cumulative effects are overtaking Nuiqsut. Residents have to find new primary subsistence use areas. The federal and state governments are not mitigating impacts to subsistence. They are encouraging development without an adequate look at cumulative effects.

- NPRA impact funds are being used for monitoring and planning, not mitigating direct effects to subsistence activities.

- High fuel costs increase subsistence travel, but there are no jobs to provide cash in the rural communities.

**Group 4**

- There is a big issue of determining the future of development on a project-by-project basis versus taking a big picture approach.

- Ideas from Nuiqsut included:
  - An agency bulletin board with a calendar and map for development projects going on,
  - An industry fair or agency/industry fair – a time in the villages to have all of the information at once for proposed development,
  - Information on lease sale planning, so people can see the whole package.
  - What needs to be communicated? There need to be discussions on temporal and spatial and infrastructure development, such as subsistence hunting seasons and areas in relation to infrastructure development.
  - There is a need to coordinate better. There is a need for agency presence on the North Slope, including various Interior Department agencies, a full-time office in Nuiqsut, and there should be an interagency office in Barrow. That’s a gap.
  - How permits are submitted is an issue.
  - The amount of impact is not correctly anticipated. Projects are not fully designed when they are put out for review. Proponents need to get community input before the project is too locked into how it’s done.
  - There is a need to act on the information that is heard in the communities about the issues that are raised, for example, the location of the proposed Colville River Bridge.
  - Deferral areas – There needs to be coordination on what this concept means. What is it?
  - There was a suggestion for the concept of an industry fair in the NPRA context.
• The Alaska Oil and Gas Association (AOGA) does a kickoff meeting in August for what is likely on the horizon. Locals need to know where to go for subsistence activities month by month. Where is the infrastructure now? This is the starting point for cumulative impacts, but we need to add on what is planned and what is coming.

• There needs to be coordination between leasing areas and deferral areas. We have to fight this battle every time. Instead of fighting, it would be more productive if we could move on to other topics.

• When working together with industry, the good and the bad needs to be remembered and factored into future decisions. There needs to be true partnerships when we (North Slope residents) need help, for example the threat to retaining NPRA impact funds. Industry should step up and support us on this. We (local residents) have to continually fight for our share of the pie. There is no incentive to say yes to NPRA projects if industry does not support us.

• Industry needs to understand their cultural insensitivity. Look at the location. This is our subsistence area. Industry needs to take this to heart.

• There needs to be a long-term view. Future generations are being impacted. We (local residents) have worked with industry for years, but it is different now. We need to come back to the table to agree how we will minimize impacts. The shortest route, the most economical route, overrides community alternatives. The Inupiat courtesy is that we do not hunt around infrastructure. Industry is not required to be culturally sensitive.

• When industry gets a permit, local residents have to go into forced assimilation mode. We have to look at how is this affecting us and we have to decide how we can adapt. Please take this to heart.

**Group 5**

• How can transportation infrastructure be comprehensively planned?

• There are offshore noise impacts. What are alternatives to reduce noise impacts from barging or seismic activities? We need additional research to address this issue.

• There should be onshore annual meetings to discuss cumulative effects (similar to offshore).

• Build on the annual AOGA meeting; make it more useful to all.

• What are the most important areas to local communities? Map out conservation and subsistence reserves. Some of this is done already (e.g., rezones). The entire North Slope is designated as a reserve; there needs to be a better definition of the NSB conservation areas.

• Too much time is spent battling each other rather than looking for solutions to work together.
○ It seems to become an issue of gaining leverage over each other; each party is trying to get what they want.

○ What is the tipping point when North Slope communities say no more development?

• Is subsistence the primary driver for decisions?
  ○ Healthcare, education, jobs/training are important too. How do they all coexist?

• What is the best manner to handle multi-jurisdictional issues? How can we be effective?
  ○ Work groups could be formed for each issue using an incident command structure with technical experts (e.g., in spill response—all entities come together, but there is still a lead agency).

Group 6
• What would the North Slope look like if a comprehensive plan were done years ago? What would industry have proposed then with a scenario of oil priced at $55 per barrel? Looking to the future, what would it look like at $100 per barrel?

<table>
<thead>
<tr>
<th>WHAT’S WORKING</th>
<th>WHAT’S NOT WORKING</th>
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</table>
| • Willingness to support research and monitoring; some topics will take a long time to answer  
  • North Slope Science Initiative (NSSI)  
  • Agency/industry efforts to seek community input and representation | • In the Beaufort and Chukchi seas there will be seismic activities and Coast Guard research activities all summer long  
  • There is a lack of coordination between these entities the communities  
  • Decrease the exploration “footprint” |

Solutions:
• There should be a requirement or mechanism to induce participation and coordination  
• An information clearinghouse is needed, such as a web-based database for what’s happening

<table>
<thead>
<tr>
<th>BUT…</th>
<th>Applicant Responsibility</th>
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</table>
| There is a disconnect between community participation/public comment and decision outcomes.  
  • Huge issues are addressed in a single paragraph in the NEPA document  
  • The decision is unsatisfactory  
  • A mechanism is needed to make things happen: regulatory or economic incentives | e.g., Cumulative Effects  
  • A cumulative effects consistency plan is needed.  
  • Long-term landscape goals  
  • Mechanism to ensure compliance with the plan |
Cumulative Effects

There have been many effects identified from oil and gas development, both positive and negative. Are federal and state analyses of the effects adequate to date? If not, what more is needed? How can cumulative effects be more adequately identified and mitigated?

Group 1

- What are the standards for analysis? There is an incremental approach to cumulative effects analysis (e.g., my project contributes only 1/10 of 1%…therefore my project’s cumulative impacts are inconsequential).
- When is the impact too much? What are the thresholds/tipping points?
- There is a need for independent development of standards/criteria for cumulative effects analysis (by National Academy of Sciences?) that agencies must meet.
- Socioeconomic considerations—are communities comfortable their concerns are being addressed over the long-term?
  - There is no framework for decision-making. Levels of acceptable change (LAC) need to be established by NSB, communities, and agencies. We need to have discussions about when enough is enough.
- Climate change is clearly happening
  - Impacts are greater in Alaska than in the Lower 48, and greater in the Arctic/coastal communities than in the rest of Alaska. Better modeling and predictive ability should guide infrastructure decisions and a comprehensive plan.
- Road development and access
  - There is a need for a strategic approach/comprehensive plan with a framework for decision-making. It should define mutually agreeable guiding principles that address the needs of all stakeholders.
- Wildlife populations
  - There is scientific uncertainty in determining populations, including significant lag times between a development activity and an observable change in population.
    - What is our ability to measure?
    - How can we deal with the lack of certainty?
    - What is the ability of a population to recover, particularly what is the ability of a small population to sustain impact?
Group 2
- The topic of cumulative effects is too broad. A clear definition of costs and benefits is needed, particularly in regard to specific issues such as health, caribou, gravel, etc.
- If we start with the NAS study, how do we move forward from here?
- How do we improve development so that we do not reach a tipping point?
- If you set a standard today, will others be satisfied 50 years from now?
- Empower an agency to take the lead in managing cumulative effects.
- What are the data points to be captured? Define which data points need to be captured to evaluate cumulative effects.
- Prioritize issues, including the effects of the development footprint on subsistence use areas, and the effects of infrastructure on fish and hydrology.

Group 3
- With the topic of climate change as an example of cumulative effects, how does this influence how agencies deal with project permitting and leasing? Is there consistency in addressing climate change?
- How are physical land changes handled, including erosion, coastline setbacks, and water resources/hydrological impacts? How may design/integrity of project be affected?
- At permitting, agencies must take into account recent trends.
- Establish centralized gravel sources
- How do agencies get the best information—current information—into the permitting process, including traditional environmental knowledge and the best available scientific knowledge and assessments?
- Climate change puts pressure on industry to operate in the non-winter environment or with a much shorter season.
- Quotas (whales) could change (up or down) due to climate change impacts.
- Trends—science has not caught up with traditional knowledge (TK). A TK clearinghouse/repository of knowledge is needed so TK is not lost as time passes.
  - Meaningful involvement is needed at all stages of planning and development to incorporate the traditional knowledge.

Group 4
- We have moved into development projects without the precautionary principle, without knowing what the impacts will be, and that there will be no harm. Is it advantageous to set aside critical areas until an analysis of cumulative effects is completed?
• Cumulative effects are abundant. There needs to be shared responsibility for responding to cumulative effects. There is displacement of caribou and subsistence activities. We need tools to address the costs of cumulative effects. We need ways to study the effects of mitigation (e.g., providing fuel). We need to do more than just study—we need to implement. One key is to mitigate cumulative effects. Mitigation measures may not go far enough (especially to address displacement).

• There have been huge technical advances in petroleum industry to decrease cumulative effects (e.g., smaller footprints). The gold standard for moving forward with development (or not) is NEPA. Cumulative effects analysis is a part of NEPA, but it is so difficult to address.

Group 5
• We all have our cumulative effects processes. What are the cumulative effects of the different processes?! The cumulative impact to local communities is a lot of meetings. There are many different processes for the same action. There is a desire to merge processes but still meet individual agency/project requirements and schedules. How can we make our individual processes dovetail better?

• There is a snowball effect to communities. There is a lack of follow-up after a project has been approved, cumulative effects are identified, and mitigation is proposed. Have decisions that were made been implemented? Social impacts from changes to subsistence need to be considered. Funding for impact analysis is lacking for state actions.

• There is a difference between cumulative effects day-to-day vs. long-term, including following the end of oil and gas production. What will communities be left with to deal with cumulative impacts? Social impacts need to be considered, including cumulative effects on culture.

• A model for mitigating impacts is NPRA impact fund, but no similar mechanism exists on state lands. Who else could provide impact analyses and provide funding?

• Action thresholds should be developed, an adaptive process with trigger mechanisms for making changes. Local communities should have input on thresholds so they do not have to starve for a year first (due to impacts). Identify region wide thresholds and a range of actions based on thresholds.

Group 6

• Balance positive and negative effects. Identify both and balance as though balancing a checkbook; account for the effects. Establish a cost/benefit ratio to internalize associated costs from effects. Take subsistence impacts for example.
  ◦ Identify the effect on subsistence use(s)/activities by other use(s)/activities.
○ Provide alternative economic opportunities for communities to address displacement from subsistence, such as training for employment. However, much training requires travel to Anchorage or other locations away from family and culture.

Research and Data Gaps

The following questions were posed to help focus discussion.

• What are the key research gaps?
• What are the research priorities
• Who should fill the gaps?

Group 1

<table>
<thead>
<tr>
<th>Research topic</th>
<th>Who should address</th>
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<tbody>
<tr>
<td>• Subsistence resource studies</td>
<td>• Subsistence users and wildlife biologists should be involved in the research</td>
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<tr>
<td></td>
<td>• Conduct an annual meeting with experts, NSB Wildlife Department, and a steering group for studies</td>
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<tr>
<td>• Oil spill response in broken ice</td>
<td>• Industry lead with agency oversight</td>
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<tr>
<td>• Marine acoustic studies</td>
<td>• Industry and agencies with NSSI</td>
</tr>
<tr>
<td>• Leak detection</td>
<td>• Industry and agencies</td>
</tr>
<tr>
<td>• Socioeconomic effects of sprawling infrastructure</td>
<td>• A lead was not defined, but research should include input from the tribes.</td>
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</tbody>
</table>

• Technology has changed since oil and gas development began on the North Slope.

• Industry should not necessarily do studies, but fund them. Agencies should also provide funding.

Group 2

• NSSI is very important in determining gaps and funding priorities. Obtaining funding is a key issue. There is a great deal of biological and ecological data (for onshore resources) held by separate groups. It would be good to have one group look at all the data (such as NSSI) and make inferences.

• What can we learn from Canada regarding integrating traditional knowledge with science? What is the limitation of western science to integrate traditional knowledge; how do we translate this to western science?
  ○ TK needs to be recognized as more than opinion.
  ○ Government/industry needs access to NSB traditional knowledge data.
○ How should traditional knowledge be gathered? Via individual interviews? The most frequently used method in the NEPA process, though not necessarily the most effective method, is public meetings.

• The marine environment will require more complex studies.
• We need to consider how technology can change (e.g., air guns).
• How do we balance sensitivity of traditional knowledge with public information? For dealing with Freedom of Information Act (FOIA) requests—the EPA had consultants gather information instead of the agency. The agency did not own the data and it was able to be kept confidential. The information was provided to EPA in summarized form, so the information provided by individuals was not identifiable.
• A key role of NSSI is to determine research gaps, and then more forward with the research.
• Key research sensitivities include the acknowledgement of confidentiality of data and circumpolar research ethics.

Group 3
• Key research topics include:
  ○ Broken ice
  ○ Social Impacts—There is a need to identify limits of acceptable change.
  ○ Fish in nearshore waters; there has been a 10-year standoff on population effects in nearshore waters.
  ○ For large river hydroelectric projects, there are digital elevation data gaps.
  ○ Oil spills in marine waters—We should operate via the precautionary principle. We must insist on the greatest prevention methods.
  ○ Zone of influence—Predators in oil fields are increasing, including arctic foxes and gulls. We do not have a handle on indirect effects of the increase in predators; what is the zone of influence?

Group 4
• Key research topics include:
  ○ Subsistence—Quantify subsistence uses to enable local communities to document and better communicate uses to outsiders.
  ○ Variability in natural processes, with and without human influences.
  ○ Cultural differences

3: Key topic for further breakout group
Incorporation of cultural differences in the use of technologies
Broken ice oil spill research
*Health effects of change on the human body from subsistence to non-subsistence lifestyle (subsistence diet).*
Competition with nonlocal users for resources
Air and water quality—small to large scale
Cumulative effects of damage to tundra

Note: Research topics in italics were identified as priorities by the group.

- Institutions responsible for research include land managing agencies and industry.

Group 5
- The burden for research should be on the agency offering the lease sale, not just the producers. Decisions are made to lease for public benefit.
- Money is needed up front to do research.
- Not all gaps in knowledge can be filled by research in advance of the field activity, where actual experience is gained.
- New baseline data is needed for the offshore continental shelf (OCS). Existing data are now about 30 years old. There is a probability of increases for offshore leasing and production.
- Baseline data on subsistence harvests is needed for all seasons, including the timing, geography, and travel distances.
- We must ask questions about how the information being gathered related to the decisions to be made. There is a need for information down to the individual level (e.g., increased fuel use impact). Who is actually affected? Whose harvest patterns have changed? Funds need to get to the right people

Abandoned Infrastructure and Unrestored Landscapes

Key questions to focus discussion for this topic:

- TIMING: At what point should specific plans and funds be committed?
- WHO should be involved in decisions and WHEN?
- CHALLENGES: What are the challenges of addressing DR&R?
Group 1

- Timing – DRR proposal should be identified within the initial scope of the project. The process relies on continued development through communication with stakeholders. There should be continued reassessment of present and future needs.

- Who – The local community, land managers, industry, and government agencies (regulatory) should be involved in the process.

- Challenges
  - Uncertain responsibility for industry
  - More specific financial liabilities
  - Change in science and technology
  - Predicting the future

- DNR was the lead agency for a DR&R plan effort in approximately 1993 or 1994. The State, Army Corps of Engineers, and AOGA developed the draft plan but it was never finalized, due to lawsuits over taxes.

Group 2

- Timing of decisions and funding – The community should have early opportunities for input to facility locations—when they are planned and permitted—to the extent possible in view of possible downstream use. Community coordination and input should continue at intervals through the life of the project.

- Bonding—Evaluate existing state and federal bonding requirements for desirable consistency and requirement terms.
  - Establish an additional funding mechanism during times of high profits for future DRR needs. It could be established by company or by unit.

- Who should make decisions and at what point? There should be early community involvement at the project proposal stage, as well as periodic reviews over the life of the project. At the conclusion of the project, there should be a final review of the plans. For example, the DRR review could be held every 5 years, hosted by community with input by all players including industry, agencies, and non-governmental organizations (NGOs).

- Challenges for implementation:
  - Involvement in every permit by a large number of stakeholders is not feasible; a coordinated approach would be needed.
  - Would the local government be the logical host, such as for the comprehensive plan?
Group 3

- What is industry currently doing? What is the estimate for the end of life for these fields?
- There is no money in a fund for DRR, but the financial obligation is posted to the financial books and reported annually, on a corporate-wide basis for each firm.
- There are no clear regulations around the issue.
- What does the North Slope Borough or communities want to stay in place; what facilities or infrastructure would be of future use to them?
- Is someone going to be around to pay for DRR and do the clean up? Will the funds be there? When will it be done?
- There are current DRR activities occurring across the slope.
  - Pads are being closed. The new energy bill allows royalty relief for sites to be cleaned up.
  - Jim Chatham oversees the orphan sites program (BLM). There are ongoing efforts to clean up mud pits on old sites.
  - Tundra restoration is happening.
- Who should be involved? Currently the Alaska Department of Natural Resources, Bureau of Land Management, Corps of Engineers, and North Slope Borough are working on various aspects of DRR.
- Who else should be involved?
- Questions that need to be asked include:
  - If we shut it down today, what would you want us to get rid of?
  - What should we do with it?

Group 4

- New projects vs. existing infrastructure: in the past, there were no clear DRR guidelines. Hopefully we will learn from that and change.
  - Funds in escrow/bonding are pitifully inadequate, but parent companies are financially liable.
  - Develop and adopt more meaningful standards, company guidelines.
- State vs. BLM (NPRA) standards for roads, pads, pipes, and other infrastructure.
- Reserve pit cleanup (example of success).
- Should a developed site be restored to original condition? Or would the act of removal/restoration cause further damage?
• Are there other examples out there (from Canada, other industries) where industry, communities, and government work together for DRR?

• Funding is a huge problem. “It’s a big dang deal and a big dang piggy bank is needed.” When oil is gone, then what?
  ○ Need to have commitments signed up front
  ○ Sequential removal of infrastructure—As infrastructure is built and we move from one place to another, continue ongoing DRR as activity changes.
  ○ An ongoing program for future monitoring and studies is needed. The tundra restores slowly.
  ○ Can DRR balance cumulative effects? Should below ground facilities (pipelines) be left in ground at the end of production, due to the greater installation expense and the disturbance to remove?

Group 5
• DRR needs to be identified in an early stage, so if a facility will be left behind the impacts can be evaluated with the overall impacts of the project.

• The financial plan for removal, etc. should be in place when the development plan is approved, but the government has authority through national bonding processes.

• When land/facilities are transferred to communities, there are also surface use issues.

• At the leasing stage it’s not appropriate for setting aside funds and fiscal plans to resolve these questions. The appropriate point is when a development plan is approved.

• Are bonding requirements sufficient?

• DRR for the Trans-Alaska Pipeline System (TAPS) – Aleyska is supposed to take it out of their tariffs, but they didn’t show the financial liability in their balance sheets. State regulations are vague or non-existent for DRR. Local ordinances may be needed.

Offroad Travel
Questions asked to focus discussion for this topic:

• What is working well?

• Key concern areas and ideas for solutions.

• Responses to new regulations

Group 1
• What is working well?
  ○ The ADNR decision to divide the state lands into four regions.
The current approach is more quantitative for determining openings.
PSI of tires has decreased.
New technology is on the horizon.
Water use definitions and use volumes are better developed.

- Key concern areas and ideas for solutions
  - BLM uses one method and ADNR another. The new method closes the gap.
  - What are the cumulative impacts of building ice road across the same routes? Is more research needed on this topic?
  - What are the impacts to fish and ice aggregate on the surface from water withdrawal?

- Responses to new regulations
  - Working well.
    - Need uniformity across geographic boundaries.

Group 2
- What is being done well?
  - ADNR changes.
  - Some site-specific testing, (e.g., one test on drop survey with seismic program) but mitigation needs broader study.
  - The four geographic areas.
  - Predictability for mobilizing operations; (can consider mobilizing in 10 days).

- Challenges
  - Foothills tussocks (different/serious impacts)
  - Climate change—The effective winter season affects industry’s ability to have predictability. There is greater variability in weather, including earlier deep snow and open water in rivers, creating less predictability for operations.
  - There are time frame constraints due to climate change. May need more facilities or barge traffic, vs. winter travel for access, due to change in winter season. 90 days is a bigger constraint.
  - Better technology, e.g., the “Arctic Fox” is a lighter and more mobile rig.
  - Duplicative or speculative roads (“bridge to nowhere”).
  - There are no gravel sources in NPRA.
  - In the Arctic refuge, foothills area, there are no water sources, but roads are
needed.
○ Offshore operations have more open water time and more impacts to whales/wildlife.
○ How will oil be transported from offshore development? Will tankers be considered for oil delivery (Chukchi, Beaufort offshore)?

**Group 3**
- What is working well
  ○ Ice roads used.
  ○ TEK—using local contractors/residents to locate facilities. They know where to go, when, etc.
  ○ Improved spill prevention techniques for rigs.
  ○ DOE/ADNR study seems to be working—but we need to improve/build on it, including using TEK. It is good to have scientific evidence, but verify with local residents.
- Concerns
  ○ Need more consideration of historical sites.
  ○ Seismic work is harder to clear for sensitive sites, etc.
  ○ River crossings and risk that some vehicles break through—need to use local knowledge and lessons learned.
  ○ Regarding trail clearances, there is incidental use by others, not just planned activities (e.g., access from haul road).
  ○ “De minimus” use/activities—there is a lack of measurable standards.
  ○ Impacts to uses of trap lines etc. due to seismic activities.
  ○ Need feedback mechanism for adverse impacts (e.g. subsistence). There should be real time information to guide activities (e.g., where seismic activities are ongoing).
  ○ Prior to field seismic activities, have a way to consult with local residents for TEK, advice, etc. Use local knowledge to decrease impacts. Subsistence representatives have worked well to monitor activities and identify previously undocumented sites. A system is in place for the NPRA, what about state lands?
  ○ There is a lack of scientific data to support water withdrawal decisions.

**Group 4**
- What works well?
  ○ When constructed properly—ice roads.
• Using local knowledge—if following instructions.

Key concerns

• Cumulative impacts to the tundra.
• Ability to construct ice roads in the foothills due to lack of water and topography.
• Monitoring key routes—what are the impacts?
• Climate change and change to tundra/permafrost
• Responses to new regulations
• ADNR’s new measurements?

Group 5

• No new additions to other groups’ input

• Concerns include:
  • Standardization
  • Water withdrawal impacts to fish
  • In the 1002 area there is steeper terrain and less water, making ice road construction more challenging.

• New ADNR approach allowing longer travel season in winter is positive for industry. We need to explore alternatives to gravel for exploration activities.

Off-Site Impacts

Due to time constraints and discussions included under the cumulative effects topic, this issue was not discussed in detail at the Anchorage workshop.

CLOSING COMMENTS/SUGGESTIONS FOR NEXT STEPS

• As product takes shape, interest will increase
• Pull people back together to work on next steps
• Need feedback mechanism so we know how things change
• Remember Kaktovik!
• Drop jurisdictional issues—how can we all work together to make it work?
• Incorporate good science/recent information
• Would like to see comment overlap from the various meetings
• How does the Borough plan to use the document?
Introduction
A community meeting was held in Atqasuk. Dan Forster, Deputy Director of Planning provided introductions and opening remarks. Jon Isaacs from URS led the meeting and Joan Kluwe recorded public comments. The meeting was held on August 28, 2006 and began at approximately 2:15pm and ended at approximately 3:15pm.

The meeting provided a brief overview of the project, beginning with the relationship of this project to the Comprehensive Plan and Title 19 Land Use Regulations. This project is building upon issues raised in the Comprehensive Plan revision process. Many of the issues raised in the Comprehensive Plan were also identified in the National Academy of Sciences (NAS) Report on the cumulative effects of oil and gas activities on the North Slope and the General Accounting Office (GAO) Report regarding requirements for restoring lands after oil production ceases. It was noted that there are both positive and negative impacts of oil and gas development; the community and the Borough are interested in minimizing negative impacts and promoting positive impacts.

An overview of the project goals was provided. The goals were identified in the grant, provided by National Petroleum Reserve – Alaska (NPRA) Impact Funds. The preliminary issues identified in the grant were introduced and the remainder of the meeting focused on these issue topics. Participants discussed the issues and brainstormed solutions to potentially be developed further or implemented.

• Key Concerns
  ○ Aircraft displacement/harassment of caribou
  ○ Seismic operations could impact lakes with fish
  ○ Potential for future public access to industry roads

• Suggestions and Solutions
  ○ Conduct research early in the spring to avoid harassment impacts to caribou
  ○ Planning department coordination with permit tees for helicopter operations
  ○ Remove all buildings/facilities after oil/gas operations cease
  ○ Local access to industry roads, but not public access
  ○ Continue/expand subsistence monitoring program for industry activities
Other Discussion

There were several other discussion items that emerged during the meeting that elaborated upon the above suggestions, raised further questions, or illustrated topics that are very important to the community. The following items are a summary of these discussions:

- How to increase benefits to Atqasuk from oil and gas development?
- How to avoid problems?
- What are the ideas and solutions?
- Caribou go further away; we need to go farther to hunt.
- Aircraft harassment to caribou.
- Conduct research early in the spring to avoid impacts.
- How far are seismic operations from lakes populated by fish?
- Many helicopters harass wildlife and hunters. Planning has contacted permittees for helicopters and will have a community meeting.
- Remove all buildings from oil and gas development (at the end of operations).
- It’s ok to leave roads open for local access, but not open for state and public access.
- Support subsistence monitoring program concepts.
- Hold evening meetings in Atqasuk, as people are at work during the day.

Wainwright Community Meeting Notes
August 29, 2006

Introduction

A community meeting was held in Wainwright. Dan Forster, Deputy Director of Planning provided introductions and opening remarks. Jon Isaacs from URS led the meeting and Joan Kluwe recorded public comments. The meeting began at approximately 7:30pm.

The meeting provided a brief overview of the project, beginning with the relationship of this project to the Comprehensive Plan and Title 19 Land Use Regulations. This project is building upon issues raised in the Comprehensive Plan revision process. Many of the issues raised in the Comprehensive Plan were also identified in the National Academy of Sciences (NAS) Report on the cumulative effects of oil and gas activities on the North Slope and the General Accounting Office (GAO) Report regarding requirements for restoring lands after oil production ceases. It was noted that there are both positive and negative impacts of oil and gas
development; the community and the Borough are interested in minimizing negative impacts and promoting positive impacts.

An overview of the project goals was provided. The goals were identified in the grant, provided by National Petroleum Reserve – Alaska (NPRA) Impact Funds. The preliminary issues identified in the grant were introduced and the remainder of the meeting focused on these issue topics. Participants discussed the issues and brainstormed solutions to potentially be developed further or implemented.

**Summary of Key Concerns**

- Baseline studies are needed in Wainwright before development occurs
- The community wants to learn from the experience of Nuiqsut residents
- There are concerns about potential impacts to caribou from development
- We don’t want to see “No Trespassing” signs in areas that we have traditionally used
- There needs to be greater local control over NPRA impact fund grants, rather than state control of the program

**Suggestions and Solutions**

- Build upon (subsistence) information that has been compiled before, rather than “reinventing the wheel”
- Hold small focus group meetings in the community to get more detailed comments; include students, hunters, elders, women, etc.
- Host community meetings with Nuiqsut residents to learn from their experience
- The community needs to document its comments and concerns and provide them to agencies and industry
- Improve tundra travel requirements to decrease damage
- Bury or elevate pipelines to decrease impacts to caribou migratory corridors
- The Borough should identify broad socioeconomic cumulative effects to demonstrate that all communities have direct impacts of NPRA/oil and gas activities
- Develop fund for mitigation and litigation needs
- Hold joint meetings three or four times per year in the community with industry and agencies

**Other Discussion**

There were several other discussion items that emerged during the meeting that elaborated
upon the above suggestions, raised further questions, or illustrated topics that are very important to the community. The following items are a summary of these discussions:

- Tundra travel monitoring needs to be improved. How much snow/ice is required before tundra is open for travel? What fines are assessed? The Borough needs to be stronger in enforcing regulation and permit stipulations. How can industry fund more Borough enforcement?

- Put in permanent roads to pipelines and facilities. Examine caribou migratory routes now. Put pipe in roadbed to decrease caribou migration impacts. Look ahead and plan ahead to decrease impacts.

- Baseline studies are needed. Most have been to Barrow and Nuiqsut. What studies are important to the community?

- There is an on-going fight for control over impact funds. The State controls them, but we need local control without the State picking on us. How can the villages be better integrated with NPRA grant requests?

- For NPRA impact funds the Borough should identify cumulative effects for socioeconomic and show direct impacts to all communities.

- Wainwright residents need to communicate directly with people from Nuiqsut to better understand impacts. We should have roundtables in each community with Nuiqsut residents. Villages need to work together to decrease the impacts to the communities.

- Buffer zones on rivers are needed to decrease impacts to fish.

- Keep development away from fish bearing lakes.

- The Wainwright trilateral letter (from the city, tribe, and corporation) to Borough/Federal Government/State spurred Wainwright to be put on a 10 year deferral. Taqulik has a copy.

- Look at the information that has been collected before. Everyone reinvents the wheel and it is a waste of money.

- Money for litigation purposes is needed in case of spills/contaminants. A mitigation and litigation fund needs to be established.

- Wainwright needs to be included in caribou studies. We should also be included in work related to the Western Arctic herd.

- Hold joint meetings 3 or 4 times a year to decrease impacts.

- Caribou are very important to Inupiat people. Find ways to raise pipelines or bury them to decrease impacts to caribou migration.

- We don’t want to see No Trespassing signs where we used to go hunting.

- The community needs to document its own comments and agencies need to work
communities provide comments to agencies.

• Meetings need to be held in the community, not in Barrow, so the whole community can be involved.

• Many of the issues in Nuiqsut are pertinent here (Wainwright).

• Hold smaller focus groups with students, hunters, elders, etc. to produce more/better information and different perspectives.

• Make computer copies so everyone can read the proposals and reports.

• Provide an interpreter for age specific groups. Elders can’t always understand English.

• What do government agencies/industry expect of village residents? This would help us to better answer needs. What do you want us to do, where, and when?

Dismantle, Removal & Restoration Focus Group
September 27, 2006 Meeting Notes

Attendees:
Bessie O’Rourke – North Slope Borough, Law Department
Dale Stotts – Ukpeagvik Inupiat Corporation
Dan Forster – North Slope Borough, Planning Department
Daniel Hartung – Minerals Management Service
Gary Schultz – Alaska Department of Natural Resources, Coastal Management
Jason Chartan – ConocoPhillips Alaska
Marilyn Crocket – Alaska Oil and Gas Association
Mike McAnulty – British Petroleum, Remediation Management
Shane Walker – Alaska Dept. of Natural Resources, State Pipeline Coordinator’s Office
Tom Lohman – North Slope Borough, Wildlife Department

The session was facilitated by Jon Isaacs and Joan Kluwe of URS Corporation.

A PowerPoint presentation used during the session was distributed on September 28 to the attendees as well as representatives of organizations that were not able to attend the session.

The previous workshops held last spring identified three topics for further discussion and collaboration: comprehensive planning, particularly in respect to infrastructure development; abandoned infrastructure and unrestored landscapes, particularly in respect to dismantlement, removal, and restoration (DRR) planning; and traditional knowledge, particularly in respect to better incorporation of traditional knowledge into project planning and design.

This focus group session will focus on DRR planning. The comprehensive planning for infrastructure session was held yesterday, September 26. The final session on traditional
knowledge will be held on the North Slope, likely in Barrow, after the fall whaling season has ended.

**Session Goals:**
- Develop recommendations for DRR planning.
- Maintain a solution-oriented focus.
- Build on existing principles for DRR.
- Develop potential scenarios for DRR planning on the North Slope.

**Issue Overview:**
The issue of abandoned infrastructure and unrestored landscapes was included in the National Petroleum Reserve – Alaska (NPRA) Impact Fund Grant for this project, in large part due to the findings presented in the 2002 report by the General Accounting Office (GAO), *Alaska’s North Slope: Requirements for Restoring Lands after Oil Production Ceases*. In summary, the report’s conclusions included several findings:

- Existing North Slope oil industry activities are subject to general restoration requirements.
- Dismantlement, removal, and restoration are likely to be costly.
- Existing financial assurances are insufficient to fund the potential cost of dismantlement, removal, and restoration on state-owned lands.
- Future oil industry activities on federal lands are subject to uncertain requirements and financial assurances.

Key points identified in the spring workshops regarding this topic included:

- Improve communication with communities regarding status of ongoing DRR efforts.
- While there has been progress made on cleaning up some of the “legacy sites,” there is concern that this could happen again, as it has happened with military sites and other projects in the area.
- There is concern regarding availability of adequate financial resources for DRR.
- Develop DRR plans early in the project planning stage and update over the life of the project.

During visits with communities and other stakeholders, several concerns were identified regarding DRR planning on the North Slope:

- DRR has been an historic problem, although agencies and industry are working cooperatively to address old sites.
• Existing requirements are ambiguous.
• There is concern that the process is not transparent; are there clear standards and adequate funds available?
• What happens when a property is transferred?
• How will the associated issue of deferred maintenance be addressed, particularly if property is transferred?
• Decisions for DRR requirements are often delayed, as facility life is extended.
• There is interest in potential reuse of facilities by communities.
• Jurisdictional issues – who has authority for DRR and how is coordination with local communities accomplished?
• There is potential for long-lasting environmental effects if DRR is not effectively executed.

Discussion during Introductory Comments:
The Bureau of Land Management (BLM) did a study of reserve pits in the NPRA in the late 1980s. There should also be some information available regarding abandoned sites.

Is the triggering of a dismantlement, removal, and restoration (DRR) plan as important as when it is required? Are there time parameters for performance?

How clean is clean enough? Plans need to address fish and wildlife, subsistence, and human health. The combination of certainty and flexibility is important. The requirements must accommodate changes in technology and changing finances.

Should priorities be set up for the “limited pool of money” for legacy site cleanup? Remediation prioritization of the legacy sites is a village concern; residents would like to be involved in setting priorities for what is done first. Communities are concerned about agency commitment to cleaning up the sites. There have been comments that the communities are not understanding agency priorities and plans. The state feels that the worst sites (“poster child sites”) are being addressed.

Should the focus for DRR in the Borough be Prudhoe Bay and major infrastructure? Examples from military and Husky Oil sites were mentioned. All DRR projects are subject to budget constraints, and there is concern that promises made to communities will change.

Some lands eligible for village corporation selection are not accessible due to past contamination issues (e.g., former military installations). For example, an entity may want to leave a facility in-situ and have the corporation accept the site as is, potentially contaminated. Corporations do not want to take on the liability.
Does the Department of Defense (DOD) own the lands occupied by its facilities, which effects the timing and extent of cleanup required? It varies. BLM owns the land in some cases, and DOD in some cases. Industry does not own the land and may be subject to a different standard of DRR. Legacy sites and current industry sites are separate situations. Many of the big problems are on state lands. Has the state assessed legacy sites and what is needed on their lands?

Smaller ongoing projects on the slope have conducted gravel removal associated with complying with Corps of Engineers’ “no net loss” programs. How can these activities and similar practices be captured in a document and communicated? A few years ago, the West Sak drill site was reconfigured. Part of the new development plan included removal of the outdated elements of the site and debris.

This plan should address facility recycling, yet allow flexibility in the means of recycling.

Asbestos has been a problem in older facilities.

The state does not require much DRR planning at the oil field permitting stage. However, Deadhorse has a higher level of bonding and inspection requirements based on experience with facilities. ConocoPhillips has a $500,000 statewide bond for DRR, but one pad in Deadhorse may have a $600,000 bond. The state wants to avoid being stuck with high cleanup costs.

Happy Valley and Franklin Bluffs were listed as notable problem sites.

DRR plans are incorporating habitat enhancement and mitigation.

The state may require advance restoration plans for gravel pits, however, pad restoration plans tend to be developed when they are being decommissioned.

Consider alternative DRR programs from other areas of the country, for example, the rigs to reef programs in the Gulf of Mexico.

What is being done with wetland restoration in Louisiana?

The standard for oil field cleanup on state lands is generally to the satisfaction of the Commissioner. The Department of Natural Resources (DNR) has tried several times to develop standards. Randy Kanady of ConocoPhillips Alaska has developed a draft plan; however, discussions of the standards have typically stalled due to lack agreement. Some of the stumbling blocks included differences for dealing with sites close to road systems versus remote sites. DRR is currently dealt with on a case by case basis on state lands.

Different types of closures, for facilities and leases, are applicant driven. The state may not have clear triggers for when closure or a closure plan is required.

With common facilities, what happens when 1 of 5 pipes is no longer used?
Is there a need for certainty and process, phasing?

Existing policy papers on DRR may only address policies of what is adequate, not the timing or process.

Companies have cost estimates for DRR for facilities in Alaska. However, details of DRR costs estimated by industry are generally considered proprietary information. Industry representatives also commented that they could do a better job communicating to the public regarding what they are doing regarding DRR. Randy Kanady is involved in the costing and assumptions for DRR for ConocoPhillips Alaska and may have additional information that could be helpful for understanding the processes.

Industry would like to know in advance of DRR what facilities the Borough would be interested in. Discussions on these topics would be valuable for long range planning. Are there alternative uses for facilities?

Does the Minerals Management Service (MMS) require decommissioning of facilities and returning sites to the natural condition? MMS is interested in gathering information and determining what to incorporate into their upfront procedures. MMS in Alaska has primarily been involved in lease sales and exploration. They have produced National Environmental Policy Act (NEPA) documents and approved operations plans, but have not yet focused on the DRR stage of development.

WHAT DO WE WANT TO ACCOMPLISH IN PLANNING FOR DRR?

- A formal DRR plan that is flexible and can be modified, address how things will be addressed if a field is transferred.
- It would be helpful for industry to know what the community might want to do with facilities.
- Capture the knowledge we have today on this topic, current procedures, and make it available to all parties. Develop a report as compendium.
- Need a better understanding of what the costs would be, the certainty of adequate funds being available, and the financial instruments that would be used to ensure funding will be available.
- Structure/mechanism/process for DRR that is mutually understood, certain, and predictable when industry exits.
- Require some documentation that a company has resources for DRR. The statewide bonds seem insufficient.
- Can we set a priority list of what should be cleaned up first, perhaps the most likely and imminent sources of contamination? Develop a framework, guiding principles,
performance based goals, and structure that provides certainty. Be able to revisit and revise priorities.

• Would being able to leave underground pipes in place be an incentive for burial versus requiring above ground facilities to be removed? Industry would want to have to be certainty that there would not be a change in requirements.

• Define existing public process and need for DRR decisions, including consultation procedures with other entities (state, Borough, tribes, communities).

• Consider mechanisms such as Memoranda of Understanding (MOU).

• Can we site facilities with future reuse in mind?

WHAT DO WE WANT TO AVOID IN PLANNING FOR DRR?

• Repeating the legacy site situation.

• Avoid insular decision making and look out for local entities and their concerns.

• Focusing on the easy solutions as priorities.

• Overlapping or conflicting requirements; want consistency and coordination.

• Can we have a single point of contact with good consultation? This could be an element of MOUs.

• Avoid uncertainty with financial requirements and availability of resources. When a merger occurs, assets and liabilities are transferred and the Securities and Exchange Commission (SEC) covers the merger. However, with a simple property transfer, financial requirements depend on the situation. Property on state lands cannot be assigned without the blessing of DNR. When a property is transferred, most often the original company will retain some liability for future discovery of contamination.

• Should the Borough have a parallel DRR process to protect its interests? When will an MOU or consultation work?

• Avoid prescriptive requirements today when changes in technology, field life, and reuse require flexibility. Don’t tie people’s hands; be flexible. Consider alternative DRR programs, such as the Rigs to Reef Programs.

• Avoid unnecessarily tying up capital. DNR is leaning more towards a letter of credit vs. a bond.

WHAT ARE THE OBSTACLES TO PLANNING FOR DRR?

• Changes in technology, field life, and proprietary information should all be taken into account.

• Lack of transparency in the process is an issue.
• Is there a way to get a sense of the magnitude of the costs? The Borough would like to have a sense of the fiscal adequacy of mechanisms for DRR. Would knowing the costs help with economic development, such as for corporations to plan for upcoming contracts? Cost information, options, pros and cons may make it easier for a regulator in accepting solutions and options, and assessing economic feasibility of options. Could there be confidentially agreements to preserve proprietary information?

WHAT ARE THE OPPORTUNITIES FOR DRR PLANNING?
• The process needs to be discussed at all stages, from lease sales to operation plans.
• Develop a consistent approach. Need consistency between companies and agencies, need some guidelines and content requirements.
• Can MOUs be used to address roles/consultation rights and when DRR is revisited?
• When a site is ready for closure, then the plan is prepared based on current available technology.
• A Natural Resources Defense Council (NRDC) lawsuit set up production pit DRR requirements. A charter agreement on production also addressed production pit closures.
• Current exploration reserve pit closure is submitted to agencies for review and comment. A meeting will be held on October 25 to discuss exploration site closure on state lands. Industry takes the lead for the meeting, with agencies attending.
• Are restoration advisory boards (RAB) an existing mechanism to deal with closure remediation DRR issues? They deal with BLM and DOD remediation issues. However, there is not a RAB in every community and they do not have area-wide jurisdiction.
• The US Army Corps of Engineers’ (COE) jurisdiction is focused on wetlands restoration and gravel removal. General guidelines are that sites are restored to the satisfaction of the Alaska District Colonel.

WHAT ARE DRR PLANNING CRITERIA?
• DNR is developing criteria for reuse and approval of gravel pads.
• Start with a list of facilities that would be available for reuse. What is desirable for reuse? There may be practical limitations on what can be reused. What can be predicted, given the dynamics of oil development?
• Company restoration plans address site contamination and make removal or leave-in-place decisions accordingly.
• The Borough wants enough lead time to review plans to come up with appropriate recommendations.
• DRR plans should address when to solicit interest in reuse or salvage, and allow
adequate lead time for incorporating proposals.

• We need to assess how much material will be removed and how much material can be disposed on-site/in a landfill. There is a need for a 5 year forecast to be sure adequate landfill space is available. Can we have a process that forecasts disposal demand; develop a waste stream forecast?

• Reports and requirements should differentiate between legacy sites, short term pad/exploration site closures, and long-term big facility closures.

• Consultation – Should companies contact Native corporations and villages for reuse interest and business opportunities prior to preparing a plan and submitting it to agencies?

SCHEDULE/NEXT STEPS

The focus groups are expected to conclude in October. We expect to develop a draft plan by the end of the year, with review by the Borough in January 2007. In February the draft plan would be presented for public review; workshops will be planned to present the draft plan, invite comments, and address questions. An “Oil and Gas Summit” will be held in Barrow, where the draft plan will be discussed. The draft plan would also be presented to the Planning Commission for review and comment. Comments would be incorporated to prepare a final document for presentation to the Assembly and the public.

Infrastructure Planning Focus Group
September 26, 2006 Meeting Notes

Attendees:

Ben Green – Alaska Department of Natural Resources, Coastal Management
Bessie O’Rourke – North Slope Borough, Law Department
Dale Stotts – Ukpeagvik Inupiat Corporation
Dan Forster – North Slope Borough, Planning Department
Dave Howell – Bureau of Land Management
Eleanor Huffines – Wilderness Society
Jason Chartan – Conoco Phillips
Jim Zelenak – US Fish and Wildlife Service
Johnny Aiken – North Slope Borough, Planning Department
Julie Lina – Pioneer Natural Resources
Kurt Parkan – The Nature Conservancy
Larry Bright – US Fish and Wildlife Service
Marilyn Crocket – Alaska Oil and Gas Association
Pat Purchot – Audubon
Patty Miller – Alaska Department of Transportation & Public Facilities
Shane Walker – Alaska Dept. of Natural Resources, State Pipeline Coordinator’s Office
Tom Lohman – North Slope Borough, Wildlife Department

The session was facilitated by Jon Isaacs and Joan Kluwe of URS Corporation.

A PowerPoint presentation used during the session was distributed on September 28 to the attendees as well as representatives of organizations that were not able to attend the session.

The previous workshops held last spring identified three topics for further discussion and collaboration: comprehensive planning, particularly in respect to infrastructure development; abandoned infrastructure and unrestored landscapes, particularly in respect to dismantlement, removal, and restoration (DRR) planning; and traditional knowledge, particularly in respect to better incorporation of traditional knowledge into project planning and design.

This focus group session will focus on comprehensive infrastructure planning. The DRR session will be held tomorrow, September 27. The final session on traditional knowledge will be held on the North Slope, likely in Barrow, after the fall whaling season has ended.

There was discussion that a fourth focus group should perhaps be considered for cumulative effects. The infrastructure planning session is expected to address this topic to some extent, but the Borough will take the topic under consideration.

**Session Goals:**

- Develop recommendations for infrastructure planning.
- Maintain a solution-oriented focus.
- Identify key players for collaborative planning.
- Build on existing principles for infrastructure development.
- Develop potential scenarios for infrastructure planning collaboration on the North Slope

**Issue Overview:**

Oil and gas infrastructure on the North Slope was originally concentrated in the Prudhoe Bay area. Development gradually expanded from there, most notably to the west, including the Kuparuk area and Alpine, extending into the Colville River Delta. Road and facility development has changed with technology over the years, but nonetheless has resulted in a “spider-web” of infrastructure stretching across the landscape. With exploration continuing in many areas of the National Petroleum Reserve – Alaska (NPRA), the Borough is interested in discussing approaches to comprehensive planning for infrastructure to minimize effects to subsistence uses and wildlife and without detriment hopefully enhance efficiency for oil development.
Three key points identified in the spring workshops regarding this topic included:

- Improved communication is needed and greater coordination between agencies, communities, and industry.
- A lack of focus on the big picture for planning results in piecemeal development, uncoordinated infrastructure, and multiple community meetings.
- Develop transportation and utility corridors with animal migration and subsistence uses in mind.

**Opening Questions and Discussion:**

*How will the focus groups take advantage of the North Slope Science Initiative (NSSI), particularly with regard to research needed for comprehensive planning?*

The Borough is a strong advocate for the NSSI and continues to coordinate with ongoing technical groups and strategic planning sessions. The Borough intends to continue such coordination with the NSSI.

*How will the Borough use the oil and gas plan?*

Companies are getting more insular in how they work with agencies and each other. This plan will hopefully help with communication, facilitate working arrangements, and better utilize existing regulations. For example, the Borough feels that federal agencies have failed on human health impact assessments. This document may help to provide additional guidance on the existing requirement for federal agencies to conduct human health impact assessments. For example, the plan could identify the framework or elements that agencies could use for some health impact assessment issues.

*Will specific changes be made to Title 19 as a result of this planning process?*

Title 19 is still in the revision process, and this project may inform the revision of Title 19. We wish to develop a regulatory environment that encompasses suggestions that have been made. We prefer to manage through incentives rather than regulations.

The potential outcomes of this process include guidelines, criteria, and costs. If there are higher costs, how will it be handled? The timing is a concern – what will be the impacts for the first company in, or the last company out? There may need to be consideration of options such as royalty relief, development of a cooperative product transportation entity such as for the Trans Alaska Pipeline System (TAPS), etc.

**General questions posed by the group:**

- Where can we come together to share information, versus the situation of proprietary
information where all players cannot be part of the discussion?

- What are reasonable expectations/thresholds for impacts?
- What is acceptable impact?

Science must be at the table during these discussions; there is a continuing need for scientific research. We need basic data for many native species, breeding habitats, migratory timing, and population inventories – particularly for lesser known species. Many species take years to respond to cause/effect, therefore scientific research also needs a long-term perspective. A source for basic data is the resource development industry; data are supplied by industry prior to development, in addition to agency surveys. Scientific research that is conducted over a long period of time and project monitoring have similar goals, but they are not always coordinated efforts.

There is a need for scientific monitoring. A plan is needed for monitoring, but we are never going to know everything about the North Slope ecosystem. If we wait until we have all possible mapping at a fine detail, facilities will progress without the science. We need to use the information that we have to guide decisions, before more infrastructure is developed. We need to define guiding principles to make the decisions along the way.

In addition to science, we need consensus on how to operate without all of the data. What is precautionary management? How do we operate without all of the data that we need? If we wait until we have all of the data that we need, it will be too late because development will proceed anyway.

Industry wants to know where they can go, what they can do. They want certainty and want to know how they can contribute to the decision making and research processes. From a management point of view, we need to come to grips with the concept of precautionary management: how to move forward without all of the answers.

Discussion Related to Specific Questions in the PowerPoint Presentation:

**MECHANISMS FOR INFRASTRUCTURE PLANNING**

- Area-wide planning (NPRA Management Plans, North Slope Borough Comprehensive Plan, Alaska Department of Natural Resources Area Plans, Department of Transportation Resource/Regional Transportation Plans, Coastal Management Plans, etc.)
- Lease Sale Notice/Lease Sale Environmental Impact Statements
- Rezoning, Development Master Plans
- Unitization
- Individual Project Approval/Permits/Compliance Documents under the National Environmental Policy Act (NEPA)
• Oil Spill Contingency Plans

Many of these elements are disconnected. We go through all of this planning, and then infrastructure is just sited on a project by project basis. We need some agreed-upon principles to guide planning. But, how do you tell the first company that they have to allow others to use the processing facilities? How does that company deal with the increased costs of planning for that future growth, and who is responsible for those costs? Can you design something that will be flexible and have room for expansion? Can we make the pad the right size at the outset, rather than making repeated enlargements?

Coastal management plans are developed at the statewide and district levels. There is a statewide standard for shared facilities, which often gets overlooked in the review process. How do we proceed with sharing space on pads and vertical support members (VSM)? Cost recovery processes need to be considered for individual competitive companies to share pads and space. The State does not appear to have enforcement to require competing companies to share facilities, so projects continue to be concurrently developed.

*Onshore activities may be a base of support for offshore activities.* If offshore development is to occur, identifying staging areas for offshore activities early in the process is a key to successful development. For example some of the abandoned DEW line sites could be converted to staging areas/development hubs for exploration or development. Thus, facility design and location for onshore activities is influenced not only by the onshore proposals, but offshore as well.

*There is a mistrust of industry in many of the North Slope communities.* Alpine was initially billed as the “Gateway to NPRA,” but was then changed to a stand-alone project. However, the project expanded, more in line with the initial prediction. The infrastructure planned for the stand-alone project and the impacts were exceeded in just a few years.

*Predictability vs. flexibility: Industry always needs some flexibility.* Is there some bigger planning framework to determine a place that industry cannot go? To decrease infrastructure impacts, there could possibly be a system providing greater regulatory flexibility for new projects, but not for subsequent projects, to provide more streamlined infrastructure development.

*What follows the focus group processes today and tomorrow?* How does our input fit in? We’ll take what we hear today for incorporation into the draft plan, which will be presented in public sessions. The draft plan is expected to have recommendations, guidelines, and process suggestions.

The intrinsic value of development and the intrinsic value of refuge needs to be considered in regional planning.
We need to incorporate “lessons learned” from other areas of the country and the world. Industry and agencies should identify suggested cases for consideration.

**WHAT DO WE WANT TO ACCOMPLISH IN REGIONAL PLANNING FOR INFRASTRUCTURE?**

- Identify potential staging areas for use by multiple developers.
- Identify areas that should not be developed or that could be reached by directional drilling. There may be two separate evaluations of no leasing or no surface facilities.
- Formal participation/consultation by key stakeholders in implementing a Record of Decision (ROD); Required Operating Procedures (ROPs) have area-wide application, including for non-leased areas.
- Better understanding of the exception clause for economic impact.
- Utilize existing oversight groups to involve stakeholders in decision processes, e.g., the Bureau of Land Management (BLM) Restoration Advisory Council (RAC) and Subsistence Advisory Panel (SAP). Assess potential stakeholder involvement mechanism
- Identify stakeholders. Who is at the table, and who needs to be there?
- As infrastructure is being developed, we need mechanisms for adequate monitoring to assess cumulative impacts and assess adequacy of regulations.
- Assess results of previous years’ monitoring to inform decisions for subsequent years (e.g. Open Water Meeting as a potential model).
- Certainty – we need to be able to know that a lease that is purchased will be able to be developed, and that restrictions will not be added to inhibit development.
- What do you do in the absence of good information? Be conservative.
- How to deal with proprietary information in regional planning.
- Develop/utilize regional assessments for baseline information (e.g., The Ecoregion Assessments developed by The Nature Conservancy)
- Better estimates of cumulative impact assessments, including social/human health and physical impacts.
- Develop a set of acceptable standards to be part of the planning process, prioritize standards, applications to permit conditions, and project re-design across jurisdictions and their permits and approvals.
- Accommodate other regulatory requirements, such as lease rights relative to the NEPA process and Endangered Species Act (ESA) requirements
- Need for monitoring and subsequent adjustment of management and conditions of
permit approval.

• Need for identification of development standards and common methods to implement standards.
• Mutual understanding and commitment to move forward.
• Common thread – existing laws and regulations that apply across boundaries.

WHAT DO PARTICIPANTS WISH TO AVOID IN PLANNING FOR INFRASTRUCTURE?

• Too narrow of a focus. Keep the focus on broad North Slope issues, rather than a single area.
• How does adjacent infrastructure fit with what is in NPRA?
• Duplication of regulations and conflicting jurisdictions for infrastructure development.

Participants felt that the discussion should move to the obstacles for planning and that would inherently identify what to avoid in a regional planning process.

WHAT ARE THE OBSTACLES TO REGIONAL INFRASTRUCTURE PLANNING?

• Lack of good baseline scientific information, such as impacts of climate change.
• Competitive issues in industry and liability issues related to using a pad/facility that someone else has used. For example, there would be concerns regarding preexisting contamination.
• Assigning value to alternate uses for land (e.g., refugia); identifying the value of trade-off decisions.
• Conflicting guidance and regulations within and across agencies.
• Timing – what time period are we planning for?
• Lack of drilling data. There is speculation on reservoirs, but where is drilling likely to occur?
• Timing of lease performance periods and internal return on investment.
• Simultaneous planning for dismantlement, removal, and restoration (DRR).
• The useful life of facilities change. New technology has frequently extended the life of facilities.
• There is a need to plan comprehensively, however information is exposed incrementally. How can we better balance information flow?
• Politics/legislative/economic environment and regulatory change.
• There is a long-term vision for the future in the Borough, as well as a tendency to focus
on the near-term. Are we focusing on the short term at the expense of the long term?

- Practicability of updating plans and the associated costs.
- Costs of doing the studies. There is an economic component to what we can learn.
- Burden of proof and standard of proof: Where does the onus lie in terms of proving that the development will have x effects. What is reasonable?
- Who pays? Who is responsible? Industry is concerned about who participates in a given project.
- The ability of the affected communities to have their position heard and acted upon.
- Other stakeholder interests. For example, common use/ownership of facilities. If public funds are used for planning and construction for roads/infrastructure, what are the implications for future public access/use?
- Obstacles for engaging in regional planning include funding sources, legislative mandates for particular agencies, the timeframe in which planning processes are made to occur, and the availability (or lack thereof) of meaningful processes for participation.
- Participating in planning process but not standing by the results.
- Limitations of technology. There is a need for concurrent planning for contingency situations, such as the recovery of oil from broken ice conditions (offshore), pipeline maintenance/corrosion, and natural disasters and other unexpected events.
- Unforeseen changes in technology that makes some formerly uneconomic fields profitable; there are infrastructure limitations to reach those fields.
- What is economically feasible is a moving target.
- Limitations of staff resources for communities and other stakeholders.
- Lessons learned from other relevant applications, including places where there are shared facilities. Can we learn how to be flexible based on other experiences?

WHAT ARE OPPORTUNITIES FOR REGIONAL INFRASTRUCTURE PLANNING?

- What mechanisms/forums are best?
- What are timing considerations?
- How are jurisdictional requirements addressed?
  - There seemed to general consensus that existing mechanisms and organizations should be evaluated before creating a new structure and organization.
  - Political and economic opportunities are ever changing and influence infrastructure planning opportunities, or ways to do things differently.
  - What would you want to do to get ready to take advantage of these opportunities?
• Look at current regulatory regimes with opportunities to insert emphasis on long-range planning.
• What is the timeframe for long-range planning that we are considering?
• The product under development is a technical report, put into place with the right process and principles will take on a life of its own. It will be looked at and updated over time.
• The plan will need representatives from other entities to enable plan implementation.
• What processes are in place?
• The oversight group from NSSI is functioning; however, there are no industry groups on the NSSI oversight group. The science and technical group has industry representatives, but not conservation groups.
• RACs exist for BLM projects in NPRA.
• NSSI has funding challenges. Any infrastructure planning oversight group needs to consider resources available to be effective; how will it be supported?
• Develop an MOU to commit agencies within existing legislative mandates to take into account this technical report and to implement within their legal frameworks. Need also participation from industry groups.
• Is it possible to use NPRA impact funds or portions of lease revenue to fund stakeholder groups? Can the funds be applied for this purpose? Would it cause undue competition for the funds? Can existing RAC representatives or NSSI representatives be used for this purpose to decrease the number of committees formed?
• Develop an MOU between the stakeholders that would be implemented by NSSI. Each entity would need to align itself with the agreement.

• Other long-term plans underway:
  • MMS 5-year oil and gas leasing program (2007-2012) is out for review
  • The State Best Interest Findings are updated every 10 years (with annual calls for new information). The Borough has supported the area wide leasing concept.
  • Existing groups should take on the concept of infrastructure planning. For example, the RAC could take the topic once per year – where are we in terms of NPRA development, are we adhering to the ROPs and stipulations that have been outlined? Use a RAC to draw upon stakeholder communities and be an advisor to the BLM.
INFRASTRUCTURE LOCATION CRITERIA MAY INCLUDE:

- Designate a primary infrastructure corridor to minimize impacts to subsistence resources and habitats and subsistence activities.
- Promote co-location and consolidation of facilities.
- Promote roadless design; encourage use of ice roads and pads for exploration access and drilling.
- Facility design to minimize impacts on wildlife and subsistence activities.
  - Individual project planning vs. lease sales. The broader lease sales need to discuss offshore impacts as well. The connectivity/bigger picture needs to be considered. There are gaps between the lease sale stage and the individual project stage.
  - Adaptive management is not well understood. It’s difficult to permit one project, but then based on experiences from that project, to not permit a similar second project.
  - Precautionary management – we will be moving ahead/making decisions without all of the information that we will need.
  - Leasing decisions/deferrals: compare MMS, state, BLM for different standards and commitments. Potential for greater standardization in stipulations, requirements, time for development, right to develop. Encourage standardization for adjacent jurisdictions.
  - Landscape level planning needs to occur prior to a lease sale to clarify parameters for exploration/development.

POTENTIAL TOOLS FOR INFRASTRUCTURE PLANNING

- Identify areas of high development potential (with stakeholder participation)
- Identify high value areas (habitat, subsistence use, physical). Develop the toolbox to address the values (deferral, development with conditions, technological solutions, etc.)
  - Identify minimum standards required for protecting values, technological solutions for addressing issues, conditions for development. With technology changes, consider performance based measures to incorporate new advances.
- Extending timeframes for lease development
- Public ownership, subsidies of common facilities
- Multiple use corridors
- Shared facilities – what facilities lend themselves to sharing, hierarchy of sharing capacity versus rights of way with multiple pipelines, support facilities (docks, roads, airports, utilities)
  - Areas such as air strips, docks, and staging areas may lend to greater ease
of sharing. Potential for conversion of old military sites for shared facilities or development nodes.

- Technology options (pipe in road prism)
- Location of development nodes
- TAPS style pipeline company for common carrier “spine” pipelines
  - Develop mechanism for coordination.
  - Identify questions and issues, guiding principles; a concept to be developed, including elements needed for industry.
  - Whitehorse Symposium: Yukon Oil and Gas – Northwest Territories Oil and Gas Planning. The next symposium will be in Yellowknife, and maybe the following one would be scheduled in Alaska. Last year’s focus was on reducing footprint of development.
  - DOT has inventory of airfield sites, part of the industrial roads projects
  - Incorporate industrial road/pipeline corridor plans
  - Colville River Delta Alpine Satellite EIS has a “full field development scenario” – projects for eastern ½ of NE NPRA

**ARENAS TO MOVE FORWARD WITH COORDINATED INFRASTRUCTURE PLANNING**

- Data/Research – define priorities, peer review, work with NSSI
  - NSSI – one of the missions is to determine where we are going to need information in the long-term/short-term. Assemble existing data and prioritize future research needs, not dealing with social issues or global warming issues.
  - Could be instrumental in a gap analysis – what information needs remain? Both baseline information and data needed for planning and regulatory/monitoring requirements.
  - Peer review – in terms of monitoring requirements and reports – need to define what is required and when it needs to occur.

- Standards/stipulations, monitoring techniques (review committee of federal, state, and local governments; adopt common criteria during plan development and updates)
- Coordination/communication improvements
- Long range planning (adopt common criteria, components for long-range plans)
- Implementation through existing plans and NEPA documents
- Define/adjust concepts of adaptive and precautionary management
• Explore modifying regulatory framework to encourage shared facilities
  ○ Outline hierarchy of facility sharing — some facilities may lend to greater ease of sharing.
  ○ Practical questions of constructing facilities that could accommodate (speculative) future shared use.

**SCHEDULE/NEXT STEPS**
The focus groups are expected to conclude in October. We expect to develop a draft plan by the end of the year, with review by the Borough in January 2007. In February the draft plan would be presented for public review; workshops will be planned to present the draft plan, invite comments, and address questions. An “Oil and Gas Summit” will be held in Barrow, where the draft plan will be discussed. The draft plan would also be presented to the Planning Commission for review and comment. Comments would be incorporated to prepare a final document for presentation to the Assembly and the public.

**Traditional Knowledge Workshop Summary**
September 6, 2007
The North Slope Borough held a one-day workshop in Anchorage on September 6, 2007 to address the topic of improving incorporation of Traditional Knowledge (TK) into resource management decisions and project planning and design. The intent of the session was not to discuss specific examples of TK, but to focus on how this body of knowledge can be better understood and integrated into management decisions and resource development projects. Representatives from the North Slope Borough, some North Slope villages, state and federal agencies, industry, and non-governmental organizations participated in the session. The appendix to this report includes a session agenda, copy of the sign-in sheet, and copies of the presentations.

Johnny Aiken, Director of Planning and Community Services, welcomed participants and provided opening remarks. He stated that this workshop will provide information for the development of the North Slope Borough Oil and Gas Plan, as well as assist with implementation of the North Slope Borough Comprehensive Plan and the update of the Title 19 Land Management Regulations. Mr. Aiken also focused on the desire to learn from prior efforts, both successes and failures, to reduce impacts to local residents and natural resources and support better development projects. He emphasized the constructive outcomes of programs such as the subsistence representatives and marine mammal observers, and the Borough’s desire to continue to develop productive working relationships.
Jon Isaacs of URS Corporation presented an overview of the purposes of the workshop, including the project origins and session goals. In development of the Comprehensive Plan, Borough residents identified incorporating TK into project planning and design as a priority in land management. As North Slope lease sales and exploration efforts have increased in recent years, the Borough pursued the grant to develop the Oil and Gas Plan. An objective identified in the grant included improving the use of TK.

The goals of the workshop included:

- Improve the acceptance and incorporation of TK in resource management and development decisions
- Identify opportunities and obstacles for use of TK
- Provide case studies on use of TK, highlighting where it has been successful, where it has not, and why
- Improve the dialogue between agencies, communities, and industry
- Provide stakeholder guidance to the upcoming Mayor’s summit and Borough Oil and Gas Plan
- Address Oil and Gas Plan Stakeholder needs, such as discussing guidelines and addressing issues

Taylor Brelsford of URS Corporation presented an overview of the origins of incorporating TK in arctic environmental management and the types of TK research, documentation, and implementation that have been undertaken. He summarized several efforts to develop methodologies and supplied references for widely accepted guidelines. Mr. Brelsford also compared several methods, providing a useful reference framework that contrasted time, cost, topical depth, and data collection effort. His presentation included an overview of several recent TK research efforts and applications of TK to project development.

Gordon Brower, North Slope Borough Land Management Administrator, discussed several examples where the North Slope Borough Planning Department has applied TK, particularly in permitting. Three projects were highlighted: Meltwater, Alpine Satellites, and Oooguruk. Two programs were also discussed, including the Subsistence Representative Program and Land Management Orientation. The presentation focused on how traditional and contemporary local knowledge was integrated into project planning and design to address local concerns and to improve industry projects. Mr. Brower summarized the presentation by stating, “Incorporating Traditional Knowledge into project planning benefits communities, natural resources, and industry. It decreases impacts, improves design, decreases conflicts, and improves collaboration with communities.”

In the last session of the morning, an interactive discussion focused on management
challenges and benefits to using TK. The session was introduced by raising issues regarding
the use of TK, such as validity, methods, interpretation, application, presentation, and
acknowledgement. Benefits that have been previously raised include: reduced environmental
and social impacts, more complete knowledge, better project design, decreased operations
and maintenance costs, and the concept of social license to operate. Notes of the participant
discussion are included in the appendix; a summary of the discussion was presented in the
final session of the day (also included in the appendix). The afternoon session included five
presentations of project examples that incorporated TK in a variety of ways. PowerPoint
presentations are included in the appendix.

1. Hajo Eicken of the University of Alaska Fairbanks discussed the Barrow Sea Ice
Symposium and the collaboration between residents with traditional and contemporary
local knowledge and western scientists. The symposium focused on a series of case
studies of important sea ice events over the past 50 years. Iñupiat elders and whalers
came together with geophysical scientists to share observations and understandings
of the events. The goal of the work was to better understand both large and small
scale forces that influence sea ice. Both the Iñupiat experts and the scientists felt that
the collaborative effort was highly successful. Recommendations for future efforts
included outreach to include young Iñupiat whalers/hunters and young scientists,
communication or involvement with a broad spectrum of users of sea ice information,
and greater coordination in follow up work (such as making presentations or
composing papers).

2. Robert Suydam of the North Slope Borough Department of Wildlife
Management gave a presentation on bowhead whale studies that integrated TK
and western science. He discussed the evolution of the bowhead studies, from the
well-known studies to demonstrate the validity of the Iñupiat estimates of bowhead
populations to current projects that assess bowhead distributions and behaviors
related to industrial sounds. Mr. Suydam emphasized that mutual respect, trust, and
communication were critical to effectively integrating TK and western science.

3. Jon Isaacs of URS discussed how TK was incorporated into the Northstar Offshore
Development Environmental Impact Statement for the first petroleum development
facility in the Beaufort Sea. The EIS team was requested to review the prior 10 years
of public testimony, to identify TK applicable to the EIS, and incorporate the comments
into the document. A TK survey was then developed and applied in Nuiqsut and
Barrow to solicit TK related to the affected environment, environmental consequences,
and project design. TK was extensively integrated into the EIS, and BP engineers used
input to modify the project design, protecting against storms and ice override, as well
as modifying colors, lighting, and noise. In the end, the managing agencies were able
to meet their legal commitments and the local communities were pleased with the
effort.

4. **Dee Williams and Mike Burwell of the Minerals Management Service** (MMS) presented the agency’s programmatic approach to TK. The agency is actively involved in expanding the use of TK and local knowledge. They described how TK is used to influence decision making processes and provided examples of recent TK studies. The agency has been encouraged to continue their efforts and build upon them. Suggestions included improving use of intermediaries, communication skills, intercultural awareness. MMS acknowledged the importance of TK, its broad links to other Native issues, and the potential for TK to expand the collective understanding of natural systems. MMS emphasized that agencies must strive for better communication and consultation, including forming effective partnerships with Native communities and developing formal mechanisms for sharing power and decision making.

5. **Robert Suydam of the North Slope Borough Department of Wildlife Management** provided an overview of the Alaska Beluga Whale Committee, which was formed to maintain healthy populations of beluga whales in Alaska waters, provide for adequate subsistence harvest, and protect hunting privileges for Alaskan subsistence hunters. Hunters, regional representatives, biologists, and agency managers make up the co-management body. They collaboratively work to establish goals and objectives, priorities for research and monitoring, and address concerns. However, hunting issues are addressed exclusively by the hunters. The committee has carried out a variety of studies, combining TK, shore-based surveys, aerial surveys, molecular genetic studies, satellite linked tagging studies, and other methods. Mr. Suydam again emphasized that mutual respect, trust, and communication were critical to effectively integrating TK and western science.

The closing session presented a summary of the comments shared during the discussion on management challenges and benefits to using TK, formulated into a potential list of action items. This brief presentation was followed by further discussion of action items, suggestions, and cautions.