Chapter 6: Way Forward

The intent of this report is to provide guidance for future oil and gas activities in NPR-A. The issues analyzed in Chapter 4 and the recommendations in Chapter 5 focus on seven oil and gas subject areas: communication and coordination, tundra travel, roads, pipelines, gravel islands, and dismantlement, removal and restoration (DR&R). This chapter addresses implementation of the recommendations. It also includes a discussion of issues outside the scope of this report.

6.1 Implementation

The recommendations in Chapter 5 are intended to provide guidance to agencies and industry and to encourage further discussion. The recommendations address actions that agencies and industry can take through changes to statutes and regulations, through land use planning and during project planning and review. An opportunity exists for the Borough to address some of the outstanding issues through an update to the Borough’s Title 19 Zoning code. This code has not received a major update since 1990.
While this report has focused on NPR-A, the Borough supports efforts to develop a North Slope-wide approach for addressing persistent issues. Increased discourse is needed during land use planning, oil and gas leasing, and project permitting. Such an approach will require agencies and industry to find new ways to work together, sometimes outside of their management areas and jurisdictions. When working together, it will be necessary to analyze lessons learned and future opportunities to develop common approaches where it makes sense to do so. Increased dialogue can be accomplished through individual topic-specific meetings and through more formal meetings, workshops and conferences.

6.2 Issues Outside of the Scope of this Report

The Technical Report was originally intended to be a comprehensive effort that covered all aspects of future oil and gas activities in the NPR-A. As explained in Chapter 1, the scope of the report was narrowed to seven topics to make the project more manageable. This section addresses a number of issues that while outside the scope of the final Technical Report, merit a brief discussion. These issues include cumulative impacts, research gaps, and needs for additional utilities to support NPR-A development.

**Cumulative Impacts:** The 2003 National Academy of Science report on *Cumulative Environmental Effects of Oil and Gas Activities on Alaska’s North Slope* provided one of the driving forces for initiation of the *Oil and Gas Technical Report*. The project Technical Team, however, excluded an in-depth coverage cumulative impact issues from this report because of the magnitude of this topic. Cumulative impacts remain a significant concern of NSB residents, and they often raise this subject during public meetings.

Consideration of cumulative impacts involves a review of impacts from past and future oil and gas activities as well as other activities that could add additional impacts when combined with those of an individual project. Other activities in the Arctic are growing, including increasing shipping across the Northern Sea Route and the Northwest Passage, expanding tourism, and new interest in fisheries. Climate change is affecting plant and animal communities, and future changes will add to cumulative impacts by combining with impacts from human activities, including long distance transport of pollutants.

Cumulative impacts are difficult to inventory and analyze. They can be additive by simply combining with the impacts of an individual project, or they can be synergistic, where they interact to cause greater effects than the sum of individual impacts. Cumulative impacts also include local, direct effects as well as indirect impacts that occur farther away in time or distance.

The 2002 National Academy of Science report on cumulative impacts related to oil and gas provided the last major effort to analyze impacts on the North Slope. A project initiated by
the University of Alaska and funded the National Science Foundation in 2013 will address cumulative effects of Arctic oil development in the context of sustainability. Other studies may be needed to update the 2002 study.

Other efforts will improve how cumulative impacts are addressed on the North Slope, including continued analyses of impacts during environmental analyses and project reviews, improved tracking of projects by location, and more interagency discussions through workshops and conferences on this topic.

- **Research Gaps:** While research has been addressed peripherally, the *Technical Report* did not address the need to fill research gaps. Work among the agencies and industry is warranted to ensure that adequate emphasis is placed to complete studies that will fill information gaps, including needed baseline data for areas of the NPR-A that may be developed. The North Slope Science Initiative goes a long way to coordinate discussions on research, inventory and monitoring needs on the North Slope. Efforts of this interagency effort should continue.

**Utility Needs in NPR-A:** As development expands into the NPR-A new services will be needed. This development is outside of the area covered by Service Area 10. Expansion of development westward into the NPR-A brings with it a number of utility issues that need to be addressed in the near future. Water supplies, waste management, power distribution, and material site development are all critical to support oil and gas development activities.

**Local Economic Opportunities:** Providing local benefits from oil and gas activities is an important concern for the NSB. Provision of utilities is one area that also fits with local economic development. Implementation of development nodes along the Dalton Highway and the Spur Road are also potential economic development projects that the NSB can partner with industry. Each new project affords further opportunities for local businesses to train local labor to suit demand. This is a topic that has been discussed in many forums, but since it is outside the scope of this report, further exploration of economic development opportunities should be addressed in a separate study.

**Impacts of Vessel Traffic:** Increased oil and gas exploration and development in the NPR-A will require additional vessel traffic, including use of barges to deliver materials. An increase in vessel traffic will produce more noise which has the potential to impact bowhead whales, other marine species, and subsistence activities. In addition, new ports constructed along the NPR-A coast would have similar impacts.

**Wetlands Mitigation:** Compensatory wetlands mitigation provides an opportunity to avoid or minimize damage to wetlands or to compensate for damage to wetlands by providing offsite mitigation (EPA 2013). Compensatory mitigation often involves the restoration of degraded wetlands to mitigate the adverse effects of a project on wetlands. The beneficial functions of wetlands include improving water quality, providing fish and wildlife habitat, storing...
floodwaters (including freshwater and storm surges from marine waters), and recharging natural drinking water storage systems.

Section 404 of the Clean Water Act addresses regulation of activities that affect wetlands. A joint effort by EPA and ACOE in 2008 updated regulations for the 404(b)(1) Guidelines to include comprehensive standards for the three types of compensatory mitigation for unavoidable impacts to wetlands: Permittee-responsible mitigation, mitigation banking, and in-lieu fee mitigation banking.

The NSB has used municipal lands in cooperation with the oil and gas developers for wetland mitigation. The Arctic Slope Regional Corporation (ASRC) has also recently established a Wetland Mitigation Bank (ASRC 2012). The NSB is uniquely positioned to work with state and federal agencies to expand its role in mitigation banking.

6.3 Conclusion

The Oil and Gas Technical Report provides information that will be useful to the NSB, state and federal agencies, industry, and local residents as they work together to guide future development in the NPR-A and across the North Slope. While chapters 1-4 provide background information provided, Chapter 4 provides an analysis of seven oil and gas subject areas that are of importance to the residents of the NSB. Chapter 5 includes guidelines and recommendations to address issues related to those topic areas that have not been adequately addressed. Those recommendations address actions that can be taken by the NSB, including changes to the Borough’s Title 19 zoning code. The recommendations will also provide a basis for future collaboration among the Borough, state and federal agencies, local residents, and other stakeholders.