

Calculating a Compensatory Mitigation Fee

Northeastern National Petroleum Reserve in Alaska – Regional Mitigation Strategy

One option the BLM offers for satisfying compensatory mitigation requirements is to pay a compensatory mitigation fee. Once the fee is paid, the BLM assumes responsibility for ensuring that the desired outcomes of compensatory mitigation are achieved.

The Northeastern National Petroleum Reserve in Alaska (NPR-A) Regional Mitigation Strategy (RMS) will include guidelines for calculating a mitigation fee that is adequate to fund the implementation, monitoring, and management of mitigation actions that offset the unavoidable adverse impacts of oil and gas development that warrant compensatory mitigation for the duration of the impacts.

This paper explains how the BLM has used compensatory mitigation fees in other areas and proposes ideas for how mitigation fees could be calculated for future development in the northeastern NPR-A.

Example: Using a Compensatory Mitigation Fee for Solar Development

In the regional mitigation strategies for solar development on public lands in the American southwest, the BLM based the compensatory mitigation fee on the estimated cost of implementing and sustaining mitigation actions for as long as the impacts last. In this case, an important unavoidable impact warranting mitigation from the development was loss of vegetation that provided habitat for wildlife – so the mitigation fee focused on the cost of preserving or reestablishing vegetation. For example:

- For restoring a disturbed area to compensate for the loss of vegetation from solar development, the mitigation fee was calculated to pay the estimated costs for:
 - Preparing and seeding an area of equal (or greater) functional habitat with native seed
 - Monitoring success of re-vegetation
 - Protecting the area from further disturbance (such as: restrictions on incompatible uses, public education, fencing) for the duration of the impacts
- For acquiring and providing long-term preservation of land with intent to compensate for the loss of vegetation from solar development, the mitigation fee was calculated to pay the estimated costs for:
 - Obtaining title or rights to a parcel of equal (or greater) functional habitat
 - Monitoring
 - Protecting the area from further disturbance (such as: new designations, restrictions on incompatible uses, public education, fencing)
- For both restoration and acquisition/preservation costs, administration fees and contingency fees (e.g., in case re-vegetation is unsuccessful due to external forces such as fire, wind, or lack of precipitation at a critical stage in the revegetation process) are added.

Proposed Approaches: Calculating Mitigation Fees for the Northeastern NPR-A RMS

The types of unavoidable adverse impacts warranting mitigation that are expected with oil and gas development in the northeastern NPR-A are quite different than those from solar development presented in the example, so the approach to calculating a compensatory mitigation fee must also be different – and must be customized for this RMS. Preliminarily, unavoidable adverse impacts that may warrant mitigation (and thus must be addressed through the mitigation fee) include impacts to: subsistence activities, the sociocultural environment, and environmental justice.

Possible approaches to calculating mitigation fees by impact type are described below.

Impacts on Subsistence Activities

Impacts:

- *Loss of subsistence use areas:* Traditional subsistence use areas are altered by the presence of infrastructure. Although development in these areas is expected to have a small impact on wildlife habitat and behavior, the areas are avoided by hunters for safety, cultural, and other reasons. Thus, hunters must find new and alternative subsistence use areas, which usually requires them to travel further from their homes, may increase competition with other local hunters, and may reduce the likelihood of harvest success.
- *Access to subsistence use areas:* Infrastructure presents impediments to the free movement of hunters. Crossing roads can be a challenge for hunters on snow machines hauling trailers. Further, changes to surface water drainage patterns and disturbance of soils can result in increased sedimentation in water ways used for access and subsistence hunting/fishing. As a result, hunters must alter their traditional access routes to 'go around' infrastructure and/or avoid water ways that have become impassable due to siltation.

Further consequences:

- Both impacts require hunters to expend more time and incur more costs (for fuel and maintenance) to obtain the same quantity of meat. The impacts also present additional personal risk to hunters that are required to be farther away from their homes, for longer, in a harsh environment.

Possible approaches to estimating costs to be covered by a mitigation fee:

- How much more does it cost, in terms of equipment, fuel, work-time lost, and other costs (above the current baseline), to obtain the same quantity (current baseline) of subsistence foods?
- How much more time (above the current baseline) does it take to obtain the same quantity (current baseline) of subsistence foods, and how would that additional time be valued?
- Is there additional risk involved in subsistence activities, due to the development? If so, how would that additional risk be valued? If there are specific mitigation actions that could reduce the risk, what are the costs of those actions?

Possible compensatory mitigation actions:

- Compensate hunters for added expenses and additional time required.
- Fund ways to counter added risk (such as creating or improving access, search and rescue capabilities, improved communications, providing emergency equipment).

Sociocultural/Environmental Justice Impacts: Inupiaq Culture

Impacts:

- Presence of oil and gas infrastructure (for example visual impacts, noise impacts).
- Increase in non-native people in the area.

Further consequences:

- Decrease in the quality of the cultural environment.
- Decrease in the number of people living a subsistence lifestyle (note that subsistence impacts also affect sociocultural resources and environmental justice).

Possible approaches to estimating costs to be covered by a mitigation fee:

Note that the cost of decreases in quality of cultural experience and number of people living a subsistence lifestyle cannot be estimated. In this case, the compensatory mitigation fee would be based on the cost of the mitigation action rather than on the impact.

- Estimate costs of designing, constructing, operating, and maintaining a cultural center for the life of the impacts.

Possible compensatory mitigation actions:

- Construct, operate, and maintain cultural center(s).
- Fund programs designed to preserve the history and cultural of the Inupiat people and pass it on to future generations.

Additional Sociocultural/Environmental Justice Impacts

Impacts:

- Development and permitting processes create stress in individuals and discord among residents.
- Increased demand for goods and services causes inflation.
- Employment and entrepreneurial opportunities (can be a positive impact but can also be a source of community discord – disparate distribution of wealth).

Possible approaches to estimating costs to be covered by a mitigation fee:

- Estimate costs associated with retaining assistance to help the community evaluate development proposals.
- Estimate costs of designing, constructing, operating, and maintaining facilities that improve the quality of community life for the life of the impacts.

Possible compensatory mitigation actions:

- Fund experts and locally-connected people to evaluate development proposals, permitting plans, and research activities.
- Fund facilities (such as playgrounds, recreational facilities) and programs (educational and entrepreneurial) to improve the quality of life and economic opportunity in the community.

Impacts on Terrestrial Mammals (e.g., caribou)¹

Impacts:

- Infrastructure could interfere with migration, leading to decreased herd size and lowered herd population health.
- Only needed if future analyses identify impacts warranting mitigation

Possible approaches to estimating costs to be covered by a mitigation fee:

- Estimate costs of engineered solutions for blocked migration paths

Possible compensatory mitigation actions:

- Engineered solutions

Other Compensatory Mitigation Fee Considerations

Similar to compensatory mitigation fees that have been derived for solar development, fees for oil and gas development in the northeastern NPR-A should include contingency and administration components. Additionally, the cost of monitoring of mitigation action effectiveness needs to be included. Such monitoring will allow for adaptive management if it reveals that a mitigation action is not achieving the desired outcomes.

Certain impacts already require or may require compensatory mitigation under other laws. These include impacts on wetlands (under the Clean Water Act Section 404), and impacts on threatened and endangered species (under the Endangered Species Act). These compensatory mitigation fees are separate from the fees considered in this RMS. However, it may be possible to leverage the fees from these other sources to maximize benefits to natural and sociocultural resources.

¹ While the GMT1 SEIS found that the impacts to terrestrial mammals is not significant enough to warrant compensatory mitigation, this may not be the case for future oil and gas development projects and/or the cumulative impact associated with multiple projects. It is therefore included here as an example of how associated fees might be calculated.