

APPENDIX 17—PRELIMINARY ADAPTIVE MANAGEMENT IMPLEMENTATION STRATEGY

This appendix outlines the adaptive management implementation strategy for the Jack Morrow Hills Coordinated Activity Plan (JMH CAP) planning area. Adaptive management is defined as a systematic process for continually improving management policies and practices by learning from the outcomes of actions over time. It employs management programs that are designed to continually compare selected policies or practices and is an integrated method for addressing uncertainty that focuses on implementing actions, thoroughly monitoring results, and modifying actions when warranted. It recognizes that the complex interrelationships of physical, biological, and social components of the ecosystem and how they would react to land management practices are often not fully understood when land-use management plans are developed.

There are generally six steps involved in the adaptive management process: planning (assess problem), design, implementation, monitoring, evaluation, and adjustments, as necessary. Planning involves the greatest amount of time, investment, and resources. During the planning stage, the scope of the management problem and management objectives and actions are defined, key indicators for each management objective are identified, and a management plan and monitoring program are designed. Once the planning stage has been completed, the program is implemented and monitored using protocol developed in the planning stage. Evaluation of monitoring data occurs after the allotted time period or if indicators reflect significant changes prior to the allotted time period. Results of monitoring are documented and communicated to appropriate parties, and management objectives and actions are modified based on results, if necessary.

The Bureau of Land Management (BLM) Rock Springs Field Office (RSFO) has initiated the planning stage of the adaptive management implementation strategy through development of a Preferred Alternative for the JMH CAP. Initial discussions among the BLM team have identified the basic approach to allowing activities within the planning area, a draft list of indicators to be used to monitor resources. Additional refinement of the monitoring plan will occur after public review of the supplemental draft environmental impact statement (EIS) and the final EIS and completing the record of decision for the JMH CAP.

PURPOSE AND NEED

The JMH CAP supplemental draft EIS contains a detailed description of the speculative nature of use, exploration, and development in the planning area (Appendix 13). Based on the limited use, exploration, and development that has taken place to date, it is impossible to predict how future development will proceed. In particular, the extent and nature of mineral reserves in the planning area are unknown and are expected to remain so for several years. All agree that there is a great deal of uncertainty about future development. Because of this uncertainty, a number of assumptions were necessary to predict the impacts associated with future development. Those assumptions may or may not be correct.

There is also equal uncertainty regarding how the environment will react to future development in the planning area. For instance, will an area of 2 miles around nesting Greater Sage-Grouse prevent nest abandonment in all cases? How will big game respond to new development? Will a combination of actions or activities affect wildlife habitat use and if so, to what extent? How can we provide answers to these questions?

The uncertainties as to where and at what level development will proceed, as well as uncertainties associated with the environmental sciences used to predict impacts, suggest that the one-time determination of impacts that is included in the supplemental draft EIS may not be appropriate for this project. However, a carefully prepared and thoroughly evaluated adaptive management strategy may be suitable for dealing with these uncertainties. Such a strategy would provide a mechanism for continuously modifying management practices to allow continued use, exploration, and development while continuing to protect the environment.

OBJECTIVES AND GOALS

The main objective of the JMH CAP adaptive management strategy is to allow flexibility for multiple use activities and sustained yield, while meeting the JMH CAP management objectives. These management objectives, in summary, are—

- For Land and Water Resources Management, the planning area would be managed to maintain or enhance land and water resources using ecological principles and science-based performance criteria.
- For Heritage Resources Management, the planning area would be managed to protect important heritage resources (cultural, historic, archaeological, and unique geological features) while allowing for educational research and appropriate interpretive uses.
- For Travel-Access-Realty Management, the planning area would be managed to accommodate access needs for approved public land uses and to manage access where appropriate to protect other resource values.
- For Recreation Resources Management, the planning area would be managed to accommodate opportunities for recreational resources while protecting other resource values and minimizing conflicts with other resource uses.
- For Mineral and Alternative Energy Resources Management, the planning area would be managed to provide opportunities for mineral extraction and energy development while protecting other resource values.
- For Visual Resources Management, the planning area would be managed to maintain or improve scenic value and overall visual quality by managing impacts of human activities and other intrusions on the visual landscape.
- For Special Management Areas Management, the planning area would be managed to protect unique resource values of Special Management Areas.

This will be accomplished through maintaining biological integrity, such as measured by Wyoming Standards for Healthy Rangelands, through a dynamic adjustment process; satisfying needs for adequate wildlife habitat and use of that habitat (crucial winter range, calving/fawning, migration corridors, etc.); protecting other sensitive resources; and maintaining public health and safety. The adaptive management strategy would comply with the intent of the Federal Land Policy and Management Act (FLPMA) by providing a combination of balanced and diverse resource uses and taking into account the long-term needs of future generations for renewable and nonrenewable resources (see definitions of multiple use and sustained yield).

Overall goals of the strategy are to develop a resource monitoring plan which, among other things—

- Determines the effectiveness of management decisions.
- Adapts management of the area to achieve the stated goals and objectives.
- Determines the effects of development on resources.
- Ensures that nonmineral-related BLM decisions (such as grazing and recreation) in the area are coordinated with mineral-related development.
- Provides a timely response to unnecessary/undue environmental change.
- Accurately monitors and predicts cumulative impacts through BLM maintenance of a Geographic Information System (GIS) including all activities (natural gas, recreation, grazing, etc.) on federal and nonfederal lands and how they are affecting resources.
- Allows for public participation through public meetings, mailing and Internet postings.
- Provides guidance for monitoring (surveys) on which the need to initiate Section 7 consultation with the U.S. Fish and Wildlife Service will be determined.

APPROACH

The overall approach to the adaptive management strategy is to remove existing lease suspensions over portions of the planning area, and in some cases, allow new leases on portions of the planning area, both within and outside of sensitive areas (Map A17-1). Initial selection of portions of the planning area to remove or hold suspensions would take into consideration factors affecting the planning area such as current industry development and exploration interest, sensitive wildlife habitat such as birthing areas and crucial winter ranges, wildlife migration patterns, archaeological resources, topography, and recreation resources. Monitoring of the planning area for specific resource indicators and public participation will then provide the information to allow for identification of future areas for removal of existing lease suspensions and/or for new leasing. BLM will also accept industry development and/or exploration proposals for the entire planning area to evaluate on a case-by-case basis.

BLM has the jurisdiction under 43 CFR 3103.4-4 to continue to hold existing leases in suspension or consider new suspensions as existing suspensions expire, as part of the adaptive management strategy. Leases will be held until indicators show acceptable effects or a positive response of resources to development in areas that have been opened to development (see Monitoring and Evaluation, and Additional Steps Prior to Implementation sections in this Appendix). Timing implications for those leases that remain in suspension are unknown; however, indicators will be reviewed on an annual basis and decisions made accordingly.

MANAGEMENT ACTIONS

A strategy to implement the adaptive management approach has been drafted. This strategy considers the needs and opportunities for future development and activities, particularly for oil and gas. It is anticipated that oil and gas activity will occur in the short term; therefore, the initial

implementation strategy focuses on timing and sequencing of oil and gas development activity. Other activities will follow the same process.

The first step in the strategy involves dividing the Jack Morrow Hills planning area into three types of areas. These areas may not be geographically contiguous. One area would be open to activity, including activity on existing leases, as well as new leasing and development. A second area would be open to activity on existing leases, with new leasing based on adaptive management information. New leases would not be issued in the short term. As information from ongoing activity is gathered, areas would be identified for leasing consideration with appropriate mitigation. This mitigation would take into consideration the data acquired through monitoring, and the guidance, goals, and objectives in the JMH CAP. Other activities that match the strategy for the adaptive management implementation in this area could be allowed. The third area would have neither activity nor new leasing until adaptive management information has been gathered and indicates that these activities can occur without unacceptable impacts (Map A17-1). Other activities that follow the strategy for the adaptive management implementation in this area could be allowed. These three areas were identified taking into consideration the goals and objectives for the JMH CAP, resource conflicts, public comment and input, current resource information, and estimation of effects.

Initially, under the adaptive management implementation strategy, some suspended leases in the planning area would be reinstated; others would remain in suspension, or new suspensions would be implemented. Lifting of lease suspensions and nominations for new leases within the planning area would be considered on a case-by-case basis using the adaptive management strategy. As leases expire within the entire planning area, they would be considered for subsequent lease offerings on a case-by-case basis when monitoring of resource indicators under the adaptive management strategy shows they can be offered for lease.

Existing lease suspensions will end with the signing of the record of decisions for the JMH CAP. Where it has been determined, through the adaptive management implementation strategy, that it is not timely to allow activity on some existing leases with suspensions, new suspensions will be put in place.

At anytime, activity proposals could be submitted for any portion of the JMH CAP area, with proposed mitigation to address the issues and sensitive resource needs. Each proposal would be evaluated on a case-by-case basis taking into consideration the adaptive management strategy and information and data received through monitoring. If goals and objectives could be met, and adverse impacts could be avoided or mitigated, the proposal could be allowed. If goals and objectives could not be met, and adverse impacts could not be avoided or mitigated, the activity would be deferred until the resource indicators determine it could occur.

The Green River Resource Management Plan (RMP) (BLM 1997) provided the direction for preparing the JMH CAP. The record of decision for the RMP, deferred some decisions in the JMH CAP area. The Green River RMP stated—

“The fluid mineral leasing decisions and some locatable mineral decisions are deferred in a ‘core’ area, involving the eastern portion of the Greater Sand Dunes Area of Critical Environmental Concern (ACEC) (not including any parts of the Buffalo Hump or Sand Dunes Wilderness Study Areas - WSAs - because WSAs are closed to mineral leasing by Congressional mandate), the entire Steamboat Mountain ACEC, and the area of overlapping crucial big game habitats surrounding and adjacent to the Greater Sand Dunes and Steamboat Mountain ACECs.

Approximately 80,000 acres are involved with this core area (Map 1). Because more site specific and detailed information is needed to make the fluid mineral and locatable mineral decisions for the core area, these decisions will be deferred in this core area until a coordinated activity plan (CAP) covering the area is completed.

Specifically, the decisions of, if and where fluid mineral leasing (i.e., oil, gas, geothermal, coalbed methane) will be allowed in the core area, and the conditional requirements of any allowable fluid mineral leasing in the core area, are deferred until completion of the activity plan. Accordingly, no leases for federally-owned fluid minerals will be issued in the core area until completion of the activity plan. Additionally, determining where withdrawals from mineral location (i.e., filing of mining claims) and related mining activities will be pursued is also deferred in the core area until completion of the activity plan.

Decisions on the retention or revocation of existing withdrawals in the core area, as presented in the Green River RMP, will not be deferred and are effective with this record of decision. While completing the activity plan, those parts of the core area not covered by withdrawals will remain open to mineral location. The other land use plan decisions for the core area, as presented in the Green River RMP, are also not deferred and are also effective with this record of decision.

Because of the numerous and complicated land and resource use interrelationships and the need to address cumulative effects concerning the deferred decisions for the core area, the entire area to be addressed by the site specific activity plan will involve about 622,000 acres, surrounding and including the core area. The objective of this activity planning effort will be to determine the appropriate level and methods of all the combined uses possible that are mutually compatible and that provide for the important resource concerns in the area, such as sustainability of crucial big game habitat, air and water quality, scenic quality, vegetative cover and soil stability, recreational activities, livestock grazing and range improvement activities, mineral development and other important resource concerns. The CAP will provide more specific management direction for the activity planning area to prevent or address potential conflicts among or resulting from these uses.”

Thus the JMH CAP will provide for amendment to the Green River RMP. As the adaptive management process proceeds, additional amendments or modifications to the Green River RMP may occur as more information is gathered (1610.4 and 1610.5).

RESOURCE INDICATORS

Adaptive management resource indicators are the key to the entire strategy because they are the measurable attributes that foster future decisionmaking. The BLM JMH CAP team in a series of steps developed resource indicators. The first step was a brainstorming session that provided a preliminary list of resource indicators to evaluate under more stringent criteria. The team then refined this list through the development of the Preferred Alternative, which would provide the basis for activity in the planning area.

The following table lists resource indicators to be used in the adaptive management strategy and details information each resource indicator will provide. Resource indicators are tied to leasing, phased development, wildlife, transportation, recreation use, and rangeland health (Standards and Guides, proper functioning condition [PFC], Department of Environmental Quality [DEQ]

standards). Additional information such as roads (location, number, design), utilities, pipelines, and well sites will be collected to support management decisions relative to resource indicators.

These resource indicators may be further defined based on public comment received on the supplemental draft EIS.

Table A17-1. Resource Indicators

Resource Indicator	Information Resource Indicator Provides
Elk distribution	Integrity of key habitats and migratory corridors (amount of continuous land between important habitats)
Elk numbers (total and cow/calf ratio)	Health and security of herd
Mule deer distribution	Integrity of key habitats and migratory corridors (amount of continuous land between important habitats)
Mule deer numbers (total and doe/fawn ratio)	Health and security of herd
Sage-grouse lek use (presence/absence)	If disturbance has possibly caused lek abandonment
Standards for Healthy Rangelands*	Change in rangeland and watershed health (+/-)
Roads and trails creation	Change watershed health (+/-), habitat fragmentation, migratory corridor integrity (amount of continuous land between important habitats)
Road density	Change watershed health (+/-), habitat fragmentation, migratory corridor integrity (amount of continuous land between important habitats)
Changes in stability of dunes	Habitat loss/gain, watershed health, habitat use/fragmentation/expansion, soil stability
Disruptive activity and surface disturbance	Change in erosion potential, habitat fragmentation/integrity, migratory corridor integrity (amount of continuous land between important habitats), soil stability, watershed health
Recreation use (surveys, traffic counts)	Amount of visitors, activity and type of use, location of use (when, where).

*Each of the six rangeland standards contains specific indicators (USDI, Bureau of Land Management, Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming, August 12, 1997). See Appendix 10, Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management.

See Appendix 9, Reclamation and Monitoring

Consideration will be given to those occurrences outside BLM's control such as environment (weather, drought), outside agency jurisdiction/laws, socioeconomic (politics, local economics, level of interest), topography/lay of the land, location of heritage resources (site specific), location of mineral resources, and technology.

Source: Working paper, n.d. "Draft Interim Management Guidelines for the Greater Sage-Grouse and Sagebrush-Steppe Ecosystems for BLM-Administered Public Lands in Wyoming." 64 pp. USDI-BLM, Oregon Department of Fish and Wildlife, USFWS, USDA-Forest Service, and Oregon Department of State Lands.

MONITORING AND EVALUATION

Council on Environmental Quality (CEQ) regulations provide for appropriate application of continual monitoring and assessment. Section 102(2)(B) of the National Environmental Policy Act (NEPA) calls for "*methods...which will insure that presently unquantified environmental amenities and values may be given appropriate consideration.*" CEQ regulations (40 CFR 1505.2(c); 1505.3(c) and (d)) state "*a monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation*" and that agencies "*may provide for monitoring to assure that their decisions are carried out and should do so in important cases.*" The lead agency must "*upon request, inform cooperating or commenting agencies on progress in carrying out mitigation measures which they have proposed and which were adopted by the agency making the decision.*" And, "*upon request, make available to the public the results of relevant monitoring.*"

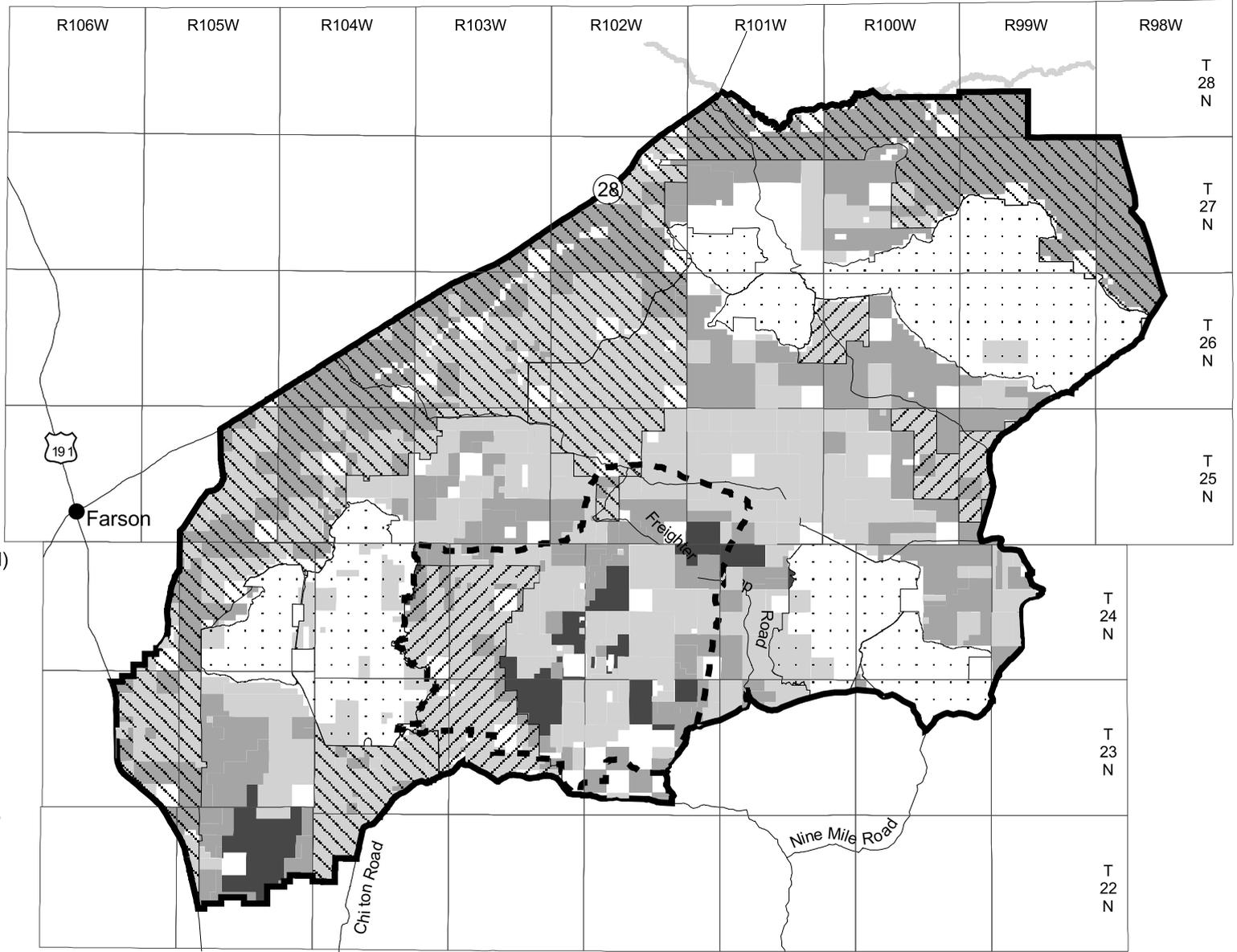
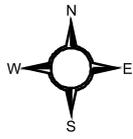
A specific monitoring plan will be developed for each resource indicator to determine effects of development and associated actions on habitat and uses by native wildlife, public health and safety, and other resources as identified in the adaptive management strategy. Consideration will be given to those occurrences outside BLM's control such as environment (weather, drought), outside agency jurisdiction/laws, socioeconomics (politics, local economics, level of interest), topography/lay of the land, location of heritage resources (site specific), location of mineral resources, and technology.

The BLM team will review monitoring results once a year and adjustments made to management decisions within the planning area, if necessary. All results and decisions relative to management of the planning area will be open to public review and comment. BLM, however, remains the ultimate decisionmaking authority.

ADDITIONAL STEPS PRIOR TO IMPLEMENTATION

Prior to implementation of the JMH CAP adaptive management strategy, the BLM team will complete the following items:

1. Identify the sequence of areas to remove existing lease suspensions over time based on public comment and industry interest
2. Clarify and finalize list of resource indicators based on public comment
3. Develop specific monitoring plans for each resource indicator
4. Determine vehicle(s) by which supportive information for resource indicators will be collected
5. Develop decision tree for adaptive management based on resource indicator results
6. Develop public participation plan for the adaptive management strategy.



Implementation

- Open to Leasing and Development
- No New Leases (Development of Existing Leases Allowed)

Preferred Alternative Leasing

- Open to New Leases
- No Surface Occupancy
- Closed Surface Use
- Resource Management Plan
- Closed to New Leases
- Wilderness Study Areas
- Existing Leases
- Core Area
- JMH Boundary

Map A17 - 1

Preferred Alternative

**Adaptive Management
Implementation**

