

Chapter 2:
In Alternative C:

Alternative C would be implemented utilizing an adaptive management process where appropriate and applicable. Appendix N explains adaptive management approach to be employed in implementation of the alternative.

Chapter 4:

The goal of AM is to better achieve desired outcomes (i.e. objectives) through changes or modifications in management action(s). Without developing Specific, Measurable, Achievable, Realistic, and Time sensitive (SMART) desired outcomes and specified indicators, the AM process described in Appendix X cannot be implemented.

In order to be able to use the AM process during implementation of the RMP, Standards for Public Land Health (Standards) are being adopted as the system-level or RMP-level desired outcomes. In addition, each Standard contains indicators which are evaluated during the land health assessment process to determine the landscape health of a particular watershed or area. Thus, these indicators are also being adopted as the system-level or RMP-level indicators to measure whether an outcome or objective is being reached. Together, standards and their indicators are SMART, thus the AM process can be employed during plan implementation when a proposed project meets the conditions of the AM filter.

The RMP also contains goals and objectives for each resource or use which will have to be utilized in developing a project-level AM Plan. While these goals and objectives are more qualitative, they must still be utilized and achieved for each AM project.

Thus, for the purposes of this analysis, the RMP will not analyze the effects of implementing the AM process as described in Appendix N. The RMP will formally adopt the AM process so that it can be used during plan implementation. The effects of each AM project would be analyzed in site-specific NEPA documents in order to determine whether the proposed project would achieve the desired outcomes.

Appendix N: The Adaptive Management Process for Implementation of Alternative **B**, **C**, and **D**

This appendix describes the AM process BLM will employ in implementing Alternatives **B**, **C**, and **D**. The purpose of including an AM framework in this RMP is to authorize the use of AM at the plan implementation stage.

1. Background:

The National Research Council defines adaptive management (AM) as follows:

Adaptive management [is a decision process that] promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances

scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a 'trial and error' process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits. Its true measure is in how well it helps meet environmental, social, and economic goals, increases scientific knowledge, and reduces tensions among stakeholders.

In September 2003, the National Environmental Policy Act (NEPA) Task Force issued a report to the Council of Environmental Quality (CEQ) entitled "Modernizing NEPA Implementation." Employing AM approaches is one NEPA implementation practice that the Task Force encourages to improve NEPA. Also in 2003, the Office of Environmental Policy Review issued OEPC ESM03-6 providing initial guidance to all Interior agencies on implementing AM practices in NEPA compliance. However, this guidance does not provide specifics on process and procedures for integrating AM into the NEPA process. The Land Use Planning Handbook (H-1601-1) also references AM and states that when policies and procedures are developed, they will be incorporated into the handbook. The Department of the Interior is currently working on an AM Guidebook for implementing AM in department NEPA documents. The LS RMP was selected as a DOI pilot project for integration of AM. Although many BLM RMPs contain aspects of an AM framework, no RMP to date has fully integrated AM. The Moffat County Commissioners, a Cooperating Agency for this RMP revision, have been strong advocates of integrating an AM framework into this RMP/EIS.

There are several important terms that are frequently used in any AM strategy. These are outcome, indicator, and trigger point.

An outcome, which is also referred to as a desired outcome, can be thought of as a resource objective. Outcomes must be specific, measurable, achievable, realistic and time sensitive.

An indicator is used to measure whether an outcome or resource objective is being reached. They should be able to measure long-term as well as short-term changes. Examples of indicators include percent cover of bare ground.

A trigger point is a predetermined value of an indicator that 'triggers' thought and/or action. Trigger points can also be thought of as critical minimums or thresholds. Examples of trigger points include greater than 50% bare ground.

There are a number of reasons for adopting an AM approach to decision-making. Among them are:

1. To enhance ability to achieve plan outcomes
2. To get the most out of the NEPA/Planning process
3. To provide plan flexibility
4. To validate impact predictions, ensure mitigation is effective, adapt for unintended consequences

Ultimately, the plan resource objectives are paramount. AM policies and procedures must enhance BLM's ability to achieve outcomes. The rigid nature of traditional prescriptive plan decisions is not the most effective means of achieving desired outcomes in all cases. In the traditional process, should the prescriptive actions not lead to the desired outcomes, additional analysis, new decisions and plan amendments are required. However, when the NEPA process and BLM planning process are effectively used and mechanisms are built into the decision to validate impact predictions, ensure mitigation is effective, adapt for unintended consequences, the plan will have the flexibility to enhance the ability to achieve plan outcomes.

There are certain inherent risks involved in any AM strategy resulting from failures while learning how to best meet outcomes. BLM must gauge these risks when approving AM projects. If the risk is too great, the BLM may choose not to proceed with AM. However, in a traditional process, there is also a risk that prescriptions are not accomplishing their intended effect. In addition, in an AM process, when a problem is discovered, the BLM would often make real-time changes.

The discussion in this appendix is based upon the following assumptions.

1. The underlying objective in adopting AM is to better achieve desired outcomes by supporting changes or modifications in management actions.
2. The key to achieving that underlying objective is outcome or performance based decisions.
3. The key to performance-based decisions is clearly defined, measurable performance standards.
4. Measuring performance standards requires a firm commitment to long term monitoring.

2. The AM Process:

There are two tiers of an AM framework that are equally important to implementing AM on the ground: a system-level framework and a project-level framework. The system-level framework, which is described in this appendix, is needed to assess larger, more long-term changes in the landscape. The project-level approach is needed to ensure specific outcomes are being met for individual projects and would be more site-specific and focus on meeting local objectives. *Figure 1* shows how the project-level process (the inner loop) interfaces with the system-level approach (the outer loop).

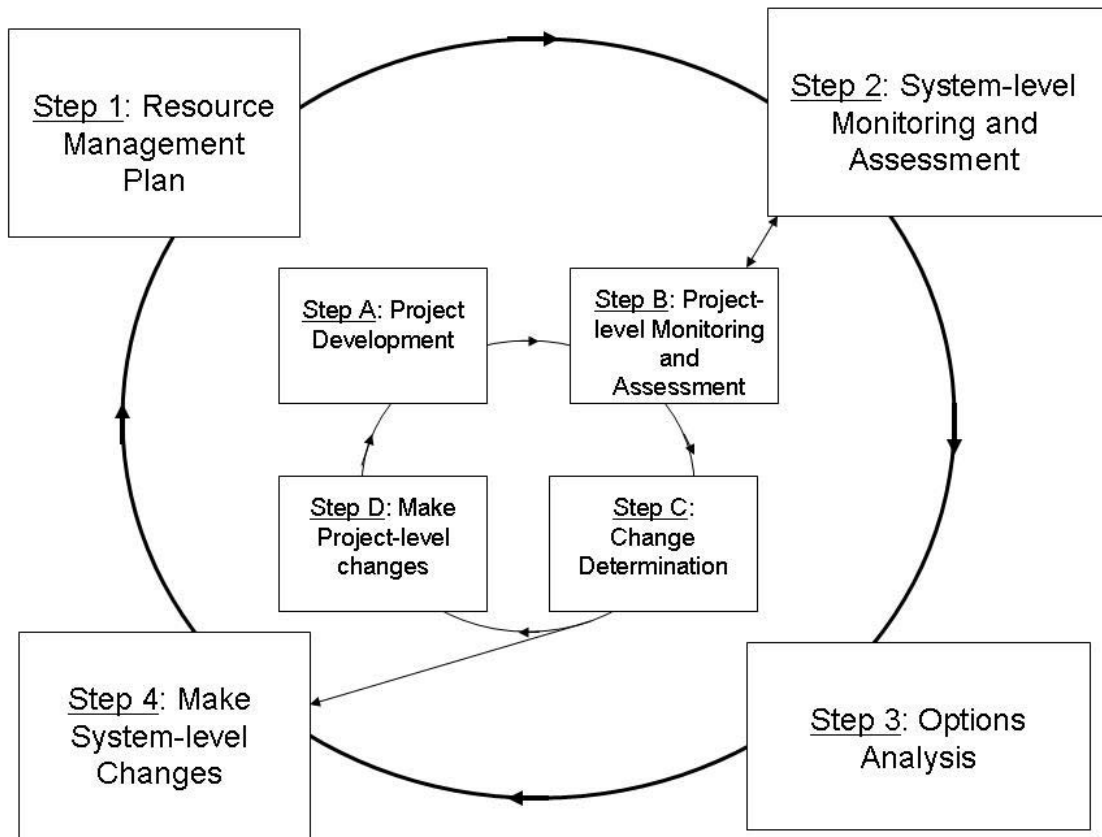


Figure 1: Integrating the System-level and Project-level AM Approaches

2.1 The System-level AM Approach:

The system-level AM process would be an inclusive public process. DOI and BLM guidance on AM states the importance of implanting AM collaboratively. A balanced multi-stakeholder group could participate in the process in an advisory capacity. Collaboration would be encouraged, but would not a requirement for a project to move forward if there were no such group available or the group did not choose to participate. Input on technical or scientific issues would need to come from participants with technical backgrounds. There will be timelines set for making recommendations that would not be exceeded. This would prevent long stalemates. The specific role of the public would be detailed during the creation of the Assessment Guidance Document (AGD) or Proposed RMP/Final EIS.

Step 1: Resource Management Plan. The RMP authorizes the use of AM during plan implementation. In addition, the RMP contains management prescriptions. These prescriptions will act as a fallback for the AM process. See Section 2.5 of this appendix for a description of when the fallback prescription would be employed.

Step 2: System-level Monitoring and Assessment: Standards for Public Land Health (Standards) will act as the system-level outcomes for the AM process. Standards include indicators which are evaluated to determine landscape health assessment status. Standards describe conditions of public land health, and relate to all uses of the public lands. Standards are applied on a landscape scale and relate to the potential of the landscape. The Standards are described in Appendix A. The goals and objectives of the RMP, which are components of Standards, are also an important element and progress towards meeting these goals will be evaluated during the system-level assessment process.

Using Standards as the system-level indicators is advantageous for several reasons. First, the Landscape Health Assessment process is familiar to the BLM, resource users, and the public. Second, this monitoring and assessment protocol is realistically implementable and affordable to the Bureau. Additionally, the Standards and Guidelines process is already considered by many to be an adaptive process, where BLM changes management based on new information. This AM system-level approach would expand on the currently existing Standards assessment process. Finally, LSFO is scheduled to complete the Landscape Health Assessment process for all 16 watersheds in the planning area by 2009, which will provide a baseline for which to compare trends, an important element in an AM framework.

However, there are several reasons using Standards might be problematic. Standards are mostly qualitative, as illustrated by the indicators listed for each Standard in Appendix A. In addition, Standards are somewhat subjective and could be assessed differently by different BLM interdisciplinary teams. This raises several issues related to measurability, repeatability and consistency. These potential issues can be avoided by the further development of the Standards assessment process. Each Standard would need additional detailed direction concerning the specific assessment techniques and protocols to be used, measurable thresholds assigned to each indicator, and other information to ensure consistency and accountability in application. To insure action was taken before it was too late to correct a problem, the indicators would need to be crafted to measure both long-term and short-term changes. An example of an assessment process which is well defined and measurable is the Proper Functioning Condition (PFC) assessment process. Best available technical and scientific information will be used during refinement of the indicators and during the assessment process. In 2005 the DOI and Department of Agriculture published a guidebook called *Interpreting Indicators or Rangeland Health*, which takes a step in the direction of better facilitating consistent application of rangeland health assessment process. This additional level of detail would be developed for each indicator during the creation of the AGD.

In addition to issues concerning measurability, Standards fall short in assessing certain impacts, including cumulative effects of adaptive management. One area where the Standards do not currently sufficiently measure effects and would need to be developed further is disturbance to wildlife, although Standards could be adjusted to measure this as well. To measure cumulative effects, BLM would need to take a broader look at the landscape in addition to individual watersheds. One possible way to assess cumulative impacts would be to use digital photos or satellite imagery to assess habitat fragmentation. Integration of these new measurements into Standards would be done during the creation of the AGD. Additionally, because resource objectives are also an important element of an AM process, they would need to be rewritten in

the AGD to be quantifiable so progress towards meeting the objectives is measured during the system-level assessment.

This process is intended to work within the current Standards and Guidelines process and will not conflict with any aspect of this policy. Watersheds would continue to be assessed as per BLM policy. However, to detect changes in the larger landscape in time to take corrective action, selected indicators would be assessed at 5-year intervals instead of 10-year intervals. This does entail a significant increase in funding needed for monitoring. Landscape Health Assessments are open to the public, and continuing to involve the public in the assessment process would be important for a successful AM strategy.

Watersheds would be prioritized for assessment within the 5-year cycle. In determining if a watershed is meeting Standards, a series of sites are selected by the BLM ID Team. These sites are selected to represent all the ecotypes within the watershed. After all site assessments are performed and compiled along with additional information, a determination is made by the Field Manager whether the landscape as a whole meets Standards. Failure to comply with a standard in an isolated area will not necessarily mean the area being assessed is failing to meet Standards, unless the isolated area is of significant ecological importance. However, if a representative number of sites within a landscape fail any one Standard, the entire watershed could fail. The rangeland form used by LSFO for site assessments, which illustrates the indicators assessed at each site, is attached to this appendix.

After each watershed assessment, a Landscape Health Assessment is generated, which will detail the conclusions of that particular assessment. If the watershed is meeting Standards, the report will not culminate in an immediate management change. However, if it is determined that the watershed is not meeting Standards, BLM would not wait to make management changes. Instead, the process would proceed to Step 3: Options Analysis. It is at this stage where appropriate changes in management will be determined.

At the end the 5-year Landscape Health Assessment cycle, BLM staff will prepare a technical document called a System-level Assessment Report that presents an assessment of whether Standards are being achieved over the planning area. The assessment will also consider whether the goals and objectives of the plan are being achieved at the landscape level. This report includes summaries of all Watershed Assessment Reports and will also include a cumulative assessment. In addition to the scheduled 5-year review, Landscape Health Assessments will be referenced during the Project-level assessment process, as outlined below.

Placed into an AM context using the terminology defined above, Standards would be the system-level outcomes. The example below using Standard 1 (Upland soils) as one set of outcomes illustrates how this would work:

Landscape: Douglas Mountain

Outcomes for that area:

Standard 1:

A. Upland soils exhibit infiltration and permeability rates that are appropriate for the soil type, climate, land form, and geological processes.

B. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor, and minimizes surface runoff.

Indicators to measure whether Standard 1 is being reached:

- Expression of rills, soil pedestals is minimal.
- Evidence of actively-eroding gullies (incised channels) is minimal.
- Canopy and ground cover are appropriate.
- There is litter accumulating in place and is not sorted by normal overland water flow.
- There is appropriate organic matter in soil.
- There is diversity of plant species with a variety of root depths.
- Upland swales have vegetation cover or density greater than that of adjacent uplands.
- There are vigorous, desirable plants.

Trigger point: Adaptive management would be triggered when the outcomes (Standards) are not met. For example, if upland soils did not exhibit acceptable infiltration and permeability rates or if soil infiltration did not allow for accumulation of soil moisture, the assessment site would not meet Standard 1. If the ID Team determined that there were a representative amount of sites within the watershed not meeting Standard 1, the watershed as a whole would not meet Standard 1 and options for change would be considered.

Step 3: Options Analysis: Assessing options for corrective change at the system-level would commence if an individual watershed is not meeting Standards, following the 5-year System-level Assessment Report or if a project-level assessment indicated a larger problem in the landscape or a faulty prescription in the RMP. Standards for Public Land Health would represent the “floor,” or threshold levels at which BLM must take corrective actions to address any problems. Under current policy, if a watershed is not meeting standards due to livestock grazing, BLM is already required to make a change designed to bring the watershed back into compliance within one year. Under this AM approach, regardless of the cause, a change in management would be made.

Using Standards represents a common sense approach to AM. As in any Landscape Health Assessment process, a series of questions would be asked. In the interdisciplinary team’s professional conclusion, why is the watershed not meeting Standards? What is the cause? What actions should be taken to remedy the problem? BLM will change management depending on how these questions are answered. As shown by a connecting line in Figure 1, the system-level and project-level assessments must be considered together in order to determine causation and potential solutions. As part of the System-level Assessment Report, in conjunction with other agencies and a multi-stakeholder group, BLM will develop alternative actions that could be taken to correct the problem. Depending on the problems and solutions identified, this change may or may not entail discontinuing AM at the implementation level in that watershed under similar circumstances.

Step 4: Making System-level Changes:

Failing to meet system-level outcomes (Standards) would entail an assessment of the problem and a change in management. The assessment and options analysis processes are described above. At this stage, depending on observations and options for changing management in the System-level Assessment Report and Landscape Health Assessments, changes could need to be made at the system level.

System-level changes could be made to one or several documents, including the Assessment Guidance Document (AGD) or the RMP. See Section 2.3.2 of this appendix for a discussion of what components of an AM process the ROD and AGD would contain. One reason AM was originally attractive to the BLM is it presents a possible means to change management without undergoing a costly RMP amendment process. Although it will not always be possible, it would be more advantageous and cost-saving to the Bureau to avoid amending the land use plan and instead make changes to the AGD.

Examples of system-level changes that might need to be made include a new, different or refined description of what constitutes a healthy landscape, or changing land use allocations in the RMP if it was learned through AM that a use is no longer appropriate in an area.

If any AM projects within the watershed were determined to be contributing to the watershed not meeting Standards, changes would be made to the individual projects. See Step D in the Project-level process below.

2.2 The Project-level AM Approach:

It is somewhat easier to conceptualize AM at this level as opposed to a broad system-level. When a project is identified, specific information critical to an efficient and effective AM process is known. Such information includes the proposed use, the characteristics of the landscape and ecosystem in which the project is proposed, which indicators best measure the outcomes, and exactly what monitoring is needed to measure indicators. Of course, these specific elements of a project-level AM plan differ widely, depending on the project, making it impossible to define those elements in the RMP. Therefore, this appendix cannot forecast and identify these elements, but instead attempts to explain the process for doing so at the time the project is initiated. Impacts to resources and values from individual AM projects would be disclosed in project-level NEPA documents. A step-by-step description of the process is illustrated in Figure 2 and described below.

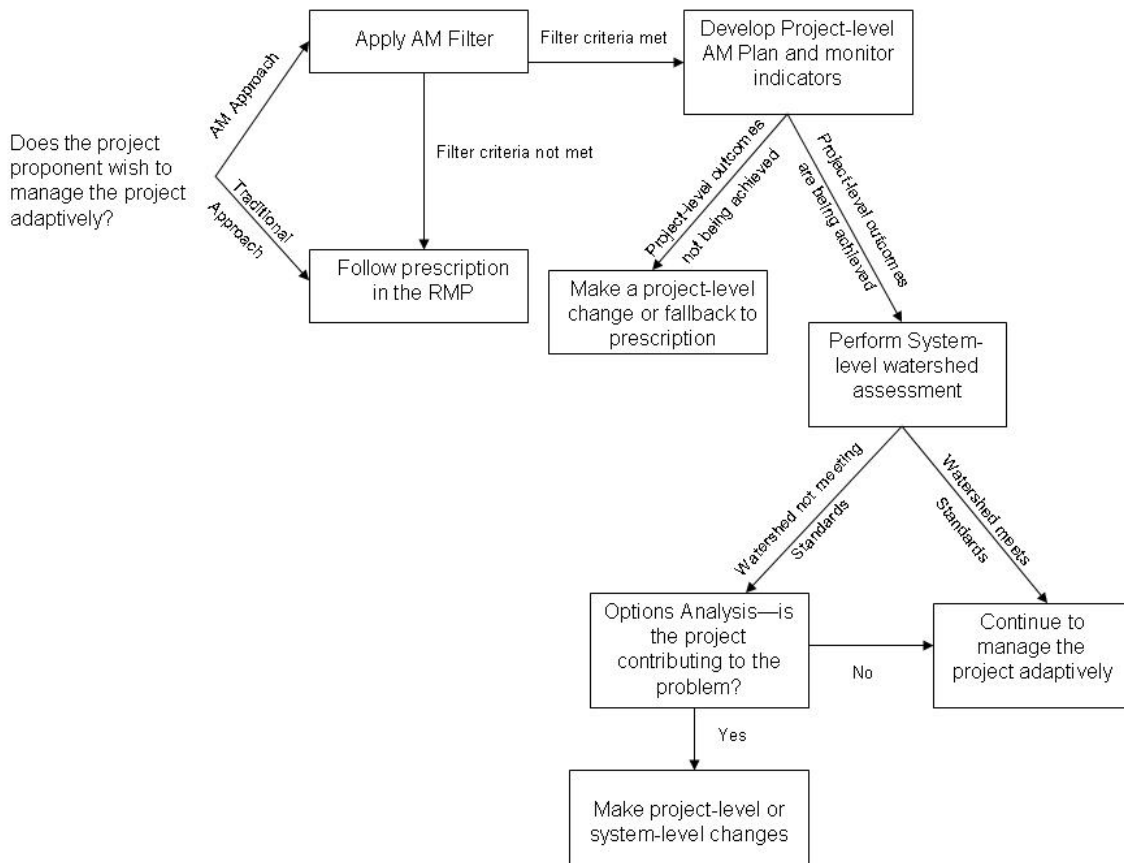


Figure 2: Project-level flow chart

Step A: Project Development: While system-level assessments would be performed at either scheduled increments (5-years) or after defined events (a watershed not meeting Standards), employing AM at the implementation level is optional. When a project is proposed for BLM approval, the project proponent has the discretion to either abide by the appropriate prescriptions in the RMP or to manage the project adaptively. However, in order to be authorized to use AM, the proposed project must meet the criteria in the AM Filter described below to gauge its suitability to an AM approach. If a project has no applicant or when the project is initiated by the BLM (such as a transportation plan), the BLM will determine its appropriateness for AM and decide whether the project will be managed adaptively, with input from an available multi-stakeholder working group. In this sense, a “project” is a BLM activity or implementation decision which requires appropriate site-specific planning and NEPA analysis (e.g., a range permit renewal, an Application for Permit to Drill (APD), a transportation plan).

A screen will be used to determine a project’s suitability for AM. Not all projects lend themselves to AM decision-making. The policies and procedures for employing AM must define clear criteria outlining on which decisions or projects AM may be employed. This “filter” should be employed at each step of the NEPA/planning process to ensure that the criteria are being met.

The AM Filter:

AM decision-making should be limited to those situations where all of the following conditions are met. Where all of these conditions are not met, proposed decisions should be changed, reconsidered or modified to satisfy traditional planning requirements to most effectively manage the public lands.

1. The action is consistent with allowable uses in that area, as defined in the RMP.
2. The decision is outcome/performance based and defined by performance standards.

The key to AM is outcome or performance based decisions. If the decisions cannot be written as an outcome or performance based decision with clearly defined and measurable performance standards, then AM should not be employed.

3. The actions to achieve the outcome can be adapted based upon monitoring or other new information.

If there are not alternative actions to achieve the outcome based plan decision then AM should not be employed.

4. The effects of the action are unknown or uncertain due to incomplete information about resource conditions or development scenarios or potentially changing or new practices and treatments.

For example, limited experience in assessing impacts of development of coal bed methane fields or limited baseline air quality information in an area where actions may affect air quality.

5. There are firm funding and workload priority commitments to conduct monitoring.

Effective implementation of AM is heavily dependent upon a long-term commitment to detailed monitoring. Without monitoring of performance standards, performance based decisions are meaningless. AM should not be employed without defining how those commitments will be honored. Absent funding and resources to honor the monitoring commitment, proposed decisions should be changed, reconsidered or modified; or plan decisions should be written with traditional prescriptive decisions as a fallback to most effectively manage the public lands. Funding for monitoring does not necessarily have to come solely from the BLM.

6. BLM decisions control the outcome.

AM should only be considered in situations where management actions resulting from BLM decisions have effective control over the outcome. For example, in the situation where BLM manages a small acreage surrounded by private land and the plan applies only to BLM managed lands, the management actions on the private lands more than likely have a controlling influence on the outcome on the public lands; therefore, AM should not be employed.

AM could be employed at the project level if all of these conditions are met.

If a project proponent wishes to use AM and the project meets the criteria in the AM Filter, a Project-level AM Plan must be developed by the BLM with input from the project proponent. A Project-level AM Plan will contain the following elements:

- Specific, measurable outcomes to be reached for the project.
- Indicators used to measure whether outcomes are being reached.
- Defined trigger points that initiate a change in management.
- A disclosure of the potential risks involved in the project, as well as any mitigative measures to be taken to offset risk. Off-site mitigation or other creative benefits to resources could also be built into the plan.
- A specific monitoring and assessment plan. The monitoring plan will describe frequency of monitoring, assessment protocols (must be consistent with current BLM policy), participants in the monitoring and assessment activities, and who will pay for the monitoring.

Step B: Project-level Monitoring and Assessment: The project is monitored and data are assessed in accordance with the Project-level AM Plan. Monitoring data are collected, analyzed and interpreted as prescribed in the Project-level AM Plan and a Project-level Assessment Report is prepared. Volunteers or other public land users may provide additional monitoring information. Communication with the public during the monitoring phase, including public disclosure of the monitoring results, will be in accordance with the provisions prescribed in the RMP and the Project-level AM Plan.

Remember, as the AM Filter stipulates, a commitment to monitoring must be made. If the money is not available to monitor the project, or if funding is discontinued, the AM project would be stopped and the fallback prescription would be employed. BLM partners—including agencies, companies or organizations—can contribute to monitoring and assessment costs and multi-party monitoring will be encouraged.

Step C: Change Determination: A change in management is triggered at the project level when a project is not meeting the agreed-upon outcomes for that project. After the appropriate monitoring is carried out as prescribed in the Project-level AM Plan, the monitoring data are evaluated against the outcomes established in that specific plan. After a time period specified in the Project-level AM Plan, a Project-level Assessment Report is developed by the BLM with input from the multi-stakeholder group. Similar to the system-level approach, a series of questions need to be explored based on the observations in the Project-level Assessment Report. Were thresholds exceeded? Is the outcome being achieved? Is adaptive management triggered?

What is the cause for not achieving the outcome? What is the appropriate action to take to achieve the outcome? Is supplemental NEPA required? These questions are addressed in the Project-level Assessment Report, prepared by the BLM with input from other agencies and a multi-stakeholder group, if available. Along with the observations from the assessment, this report will propose alternative actions that could be taken to correct the problem. Communication and consultation with the public during the evaluation phase in accordance with the monitoring plan is essential.

Closing the loop, or learning from past experience is a critical aspect of AM. Some actions are reversible, so change can be made to the project to correct any potential problems. For example, if a livestock permittee were to not achieve outcomes for the condition of vegetation on the allotment one season, changes could be made to the Project-level AM Plan or livestock grazing permit to remedy the problem the next grazing season. However, other BLM permitted actions are irreversible. For example, a natural gas operator opts into an adaptive management plan for a gas well in sage grouse winter range. Outcomes are designed to measure disturbance to birds. If these outcomes are not met, obviously it is too late to move the well. Instead, the BLM would be committed to learning from this experience and would not authorize another project in a similar circumstance. This conclusion would be drawn in the Project-level Assessment Report.

Step D: Make Project-level changes: After the BLM decides on a course of action from the Project-level Assessment Report, changes may need to be made to the individual project. This could be accomplished through making changes to the Project-level AM Plan. However, as illustrated by the divergent arrows following the Change Determination box in Figure 1, changes may also need to be made to the system-level approach or system-level documents (the RMP or Assessment Guidance Document). Making changes at the project level could include altering any of the four elements of a Project-level AM Plan, including requiring stricter or less stringent outcomes, changing indicators or trigger points if science proved them to be inappropriate, monitoring at a greater frequency, or discontinuing AM and falling back to the prescription in the RMP or other relevant document (i.e. livestock grazing permit or transportation plan).

To the degree that changes to an outcome have been analyzed in the original NEPA document, no additional NEPA should be required. If those changes have not been previously analyzed, supplemental NEPA will be required. The BLM would ask, is the new proposed action expected to be consistent with achieving the identified outcome? If it is, no new NEPA may be required. The BLM interdisciplinary team would review the action, determine if NEPA is required, and document it in the existing project file.

2.3 AM Documents

This appendix has referenced several reports that would need to be developed at different stages of the AM process, both at the system level and project level. This section summarizes when these reports would be prepared and what they would contain. In addition, this section describes which components of the AM framework would be included in subsequent planning documents.

2.3.1 AM Reports

Figure 3 illustrates which reports would be generated in conjunction with the Steps outlined in Figure 1.

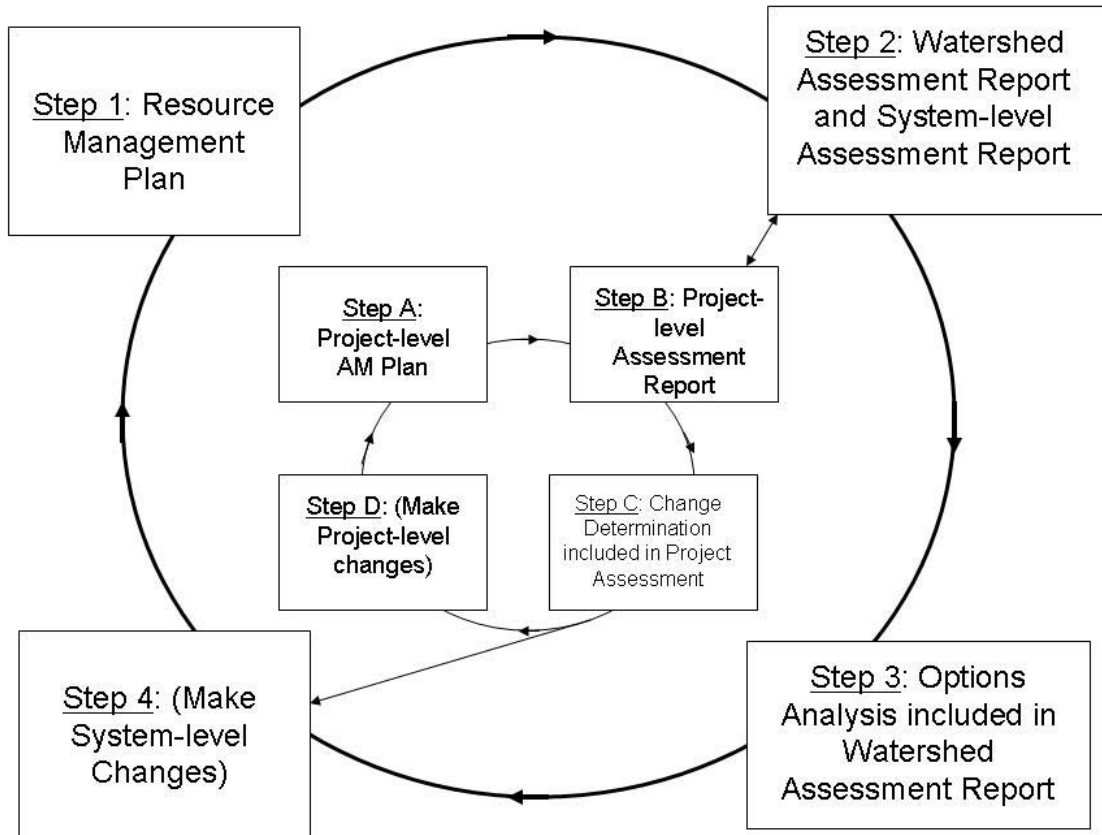


Figure 3: Reports to be generated in conjunction with system-level and project-level steps.

System-level reports:

Step 1: The RMP is the document which authorizes the use of AM at the project level and describes the system-level and project-level processes. It also contains the fallback prescriptions.

Step 2: There are two documents generated in this stage. A Landscape Health Assessment is drafted after an individual watershed is assessed. If it is determined that the watershed is not meeting standards, corrective changes may need to be made. However, if the individual watershed is meeting Standards, no immediate management changes are made, but the results of the assessment are taken into account in the 5-year System-level Assessment Report.

A System-level Assessment Report is prepared after a full 5-year cycle of watershed assessments. This landscape-scale assessment includes an analysis of cumulative effects over the landscape.

Step 3: Landscape Health Assessments and the 5-year System-level Assessment Report include alternative actions that could be taken to achieve the system-level outcomes (Standards).

Step 4: Changes are made at the system level. This could include making changes to the AGD or the RMP.

Project-level reports:

Step A: A Project-level AM Plan is drafted for any project that meets the criteria in the AM Filter. Elements of a Project-level AM Plan are described in Section 2.2.

Step B: A Project-level Assessment Report is prepared at intervals dictated by the Project-level AM Plan. A Project-level Assessment Report evaluates if project-level outcomes are being achieved.

Step C: A Project-level Assessment Report will outline possible actions that would be taken to achieve project-level outcomes.

Step D: Changes are made at the project level. This could include making changes to the Project-level AM Plan or other implementation-level planning document (e.g., livestock grazing permit or transportation plan).

All AM reports would be public documents. Input from other agencies and a multi-stakeholder group is important in creating these documents. Documents that contain a decision which has not yet been analyzed would require NEPA analysis if that decision is expected to lead to a new outcome or objective.

2.4 Situations where Change is Triggered

This section summarizes situations in which management change could be triggered. Possible alternatives for management change are outlined at the system level in either a Landscape Health Assessment or a 5-year System-level Assessment Report or at the project level in a Project-level Assessment Report. A change in the system-level framework could be prompted under the following situations:

- A system-level assessment indicates the watershed is not meeting Standards. The BLM, with input from the multi-stakeholder group, determine that a change in management is needed to correct the problem in the watershed or larger landscape.
- An individual project, or a series of similar projects, indicates a problem in the system-level documents (RMP or AGD). For example, in learning from individual projects, it is determined that a prescription in the RMP is inappropriate (either too stringent or not stringent enough).

A change at the project-level would be triggered under the following circumstances:

- The project-level outcomes, which are specified in a Project-level AM Plan are not being met.
- The only available solution or the best suited solution to correct a problem observed at the system-level is to change management to individual projects.

2.5 Employing the Fallback Prescription

The concept of being able to fall back to a prescription is an important element of a successful AM framework for several reasons. First, lease stipulations—one kind of prescription—for oil and gas leases need to be placed on the lease at the time of purchase—stipulations cannot be added later. Secondly, prescriptions need to be in place if monitoring is not possible, since AM does not work without monitoring. Finally, some partners have expressed a need to choose whether to manage a project adaptively or to simply abide by the prescriptions.

This appendix has described a number of situations where the fallback prescription would be employed. A list of potential situations where a fallback to prescriptions might be warranted follows:

1. The project proponent or BLM choose not to employ AM for a project.
2. The project does not meet all the criteria in the AM Filter.
3. Resources are initially identified for monitoring, therefore the project meets the criteria in the AM Filter. However, at a later point the funds are not available to continue the agree-upon monitoring and assessment.
4. A project-level assessment indicates that project-level outcomes are not being met and there is no acceptable change to correct the problem besides discontinuing the AM approach for that project.
5. A system-level assessment indicates a larger problem in the landscape and there are no acceptable change options identified to correct the problem besides discontinuing certain AM projects.

The intent is not that these prescriptions conflict with an AM framework. As described in the project-level framework, as long as criteria in the AM Filter are met, certain prescriptions can be temporarily ‘waived’ in favor of adopting performance based outcomes for that project.

2.4 Hypothetical Scenarios

To assist in understanding the AM process described in this appendix, several hypothetical AM scenarios are described below.

Scenario #1 Project-level outcomes are being achieved, but system-level monitoring concludes the watershed is not meeting Standards.

A livestock grazing permittee approaches the BLM with the need for some flexibility in seasons of use. The project is run through the AM Filter and meets each criterion. A Project-level AM Plan is developed and the grazing AM project is approved. The Project-level AM Plan details

outcomes to achieve, indicators, and a schedule for monitoring. For the first two years, the permittee met the outcomes and the AM process continues.

During the third year of the project, an assessment of that watershed is performed. The Landscape Health Assessment indicates that the watershed is not meeting standards for Standard 1: upland soils and Standard 2: riparian health. The BLM ID team, with available advisory group input, determines that the problem is due to increased OHV use in the area. This triggers Step 3 in the system-level approach, Options Analysis. The Project-level Assessment Report outlines several management options to alleviate the impacts from OHV use.

Employing a common sense approach to Standards, the grazing AM project would be allowed to continue, since project-level outcomes were being met and the larger problems in the watershed were not due to livestock grazing. The project would be allowed to continue, as long as the specific project-level outcomes are met and subsequent system-level watershed assessment would not indicate livestock grazing was the reason the watershed was not meeting standards.

Scenario #2: System-level assessments indicate that a watershed is meeting Standards, but project-level outcomes are not being achieved.

A livestock grazing permittee approaches the BLM with the need for some flexibility in seasons of use. The project is run through the AM Filter and meets each criterion. A Project-level AM Plan is developed and the grazing AM project is approved. The Project-level AM Plan details outcomes to achieve, indicators, and a schedule for monitoring. For the first year, the permittee is meeting the outcomes and the AM process continues.

During the second year of the project, an assessment of the watershed is performed. The Landscape Health Assessment indicates that the watershed is meeting Standards. The Landscape Health Assessment is filed for later integration into the System-level Assessment Document to be developed 4 years later.

During the second year of the livestock grazing AM project, monitoring indicates that the permittee is not meeting the agreed upon outcomes. This is detailed in the Project-level Assessment Report, which triggers the next step in the project-level process: Change Determination. Possible course of action to rectify the problem are written into the Project-level Assessment Report in coordination with the multi-stakeholder group, which takes into account trends over the larger landscape. Is drought contributing to the permittee not achieving the outcomes? What about wildlife use? If other issues are not a factor, BLM could determine that the AM project must cease and the fallback prescription, in this case the terms and conditions dictated in the livestock grazing permit, would be enforced. However, even if a situation were not the fault of the permittee, such as drought, BLM may still need to take action, including employing the fallback prescription if necessary.

Scenario #3a: An oil and gas example

A gas company proposes to drill a well in big game winter range. A specific Project-level AM Plan is drawn up that contains multiple outcomes that must be achieved relative to disturbance to the animals and maintaining certain aspects of the habitat. Other factors are taken into

consideration before allowing the project to proceed, such as anticipated severity of the winter, the importance of that particular area to wildlife, and even possibly a commitment to do off-site mitigation to enhance big game habitat in other areas. BLM consults with CDOW biologists, who buy-off on the plan. Once the plan is agreed to by the operator and BLM, the BLM grants a one-time exception to the big game winter range timing stipulation. The well is drilled and all requirements of the Project-level AM Plan are met.

The watershed in which the well lies is assessed and it is determined that it is meeting Standards. The next year the same company comes to the BLM with another APD and asks for the big game winter range stipulation to be excepted again. Upon consultation with CDOW and the available multi-stakeholder group, the BLM could again allow winter drilling, as long as the operator is meeting the outcomes and subsequent system-level watershed assessment would not indicate gas development was contributing substantially to the watershed not meeting Standards.

Scenario #3b: BLM incorporating learning

Similar to Scenario #3a, a gas company and BLM agree upon a Project-level AM Plan to drill during the big game winter range timing stipulation. However, in this scenario, the specific outcomes for that project are not being met. Monitoring data in the Project-level Assessment Report show that drilling the well effected big game or big game habitat. BLM must now ‘learn’ this information by integrating it into the AM process. The BLM would document that the agency would not grant an exception to the big game winter range stipulation again in similar circumstances. The report would detail the context in which this project was developed so the same mistake would not be repeated.

Scenario #4: Cumulative effects

Five years after the ROD is signed, the BLM performs a System-level Assessment. Landscape Health Assessments for each of the 16 watersheds are compiled and summarized. A cumulative analysis is carried out as part of the assessment. Together with its partners and available multi-stakeholder group, the BLM examines cumulative effects such as habitat fragmentation over the landscape by looking at route densities and wildlife movement patterns. BLM finds that big game is being negatively impacted by habitat fragmentation. These observations are recorded in a 5-year System-level Assessment Report.

The BLM and other interests then begin working on solutions to address the issues raised in the cumulative analysis. The BLM proposes several courses of action to correct the problem. Some recommendations might aim to change management at the project level (such as recommending Conditions of Approval that would reduce fragmentation), while other solutions might entail changing decisions in the RMP or the AGD.

Proposed approach: Appendix E will revert to a traditional Exception, Waiver, Modification appendix. Appendix F will remain as a way to trigger activity-level planning. This AM appendix will be combined with the implementation and monitoring appendix for Alternatives B, C, and D.