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1. Updates, supersedes, or rescinds:

Secretarial Order (SO) 3360 rescinded Handbook H-1794-1. SO 3398 revoked SO 3360. This Handbook is being reinstated with editorial and formatting updates; no substantive updates were made to this Handbook. Handbook H-1794-1 reiterates and expands upon the policy guidance in Manual Section MS-1794 for the Bureau of Land Management.

2. Explanation of Materials Transmitted:

Secretarial Order 3398 revoked SO 3360. IM 2019-018 issued on December 6, 2018 under SO 3360 was then rescinded by IM 2021-038 on July 12, 2021 because it was inconsistent with policy direction in SO 3398 and is superseded by reinstatement of this Handbook H-1794-1. This release of the Handbook supersedes the initial release (1-1783) of H-1794-1.

3. Reports Required:

None

4. Delegations of Authority Updated:

None

5. Filing Instructions: File as directed below.

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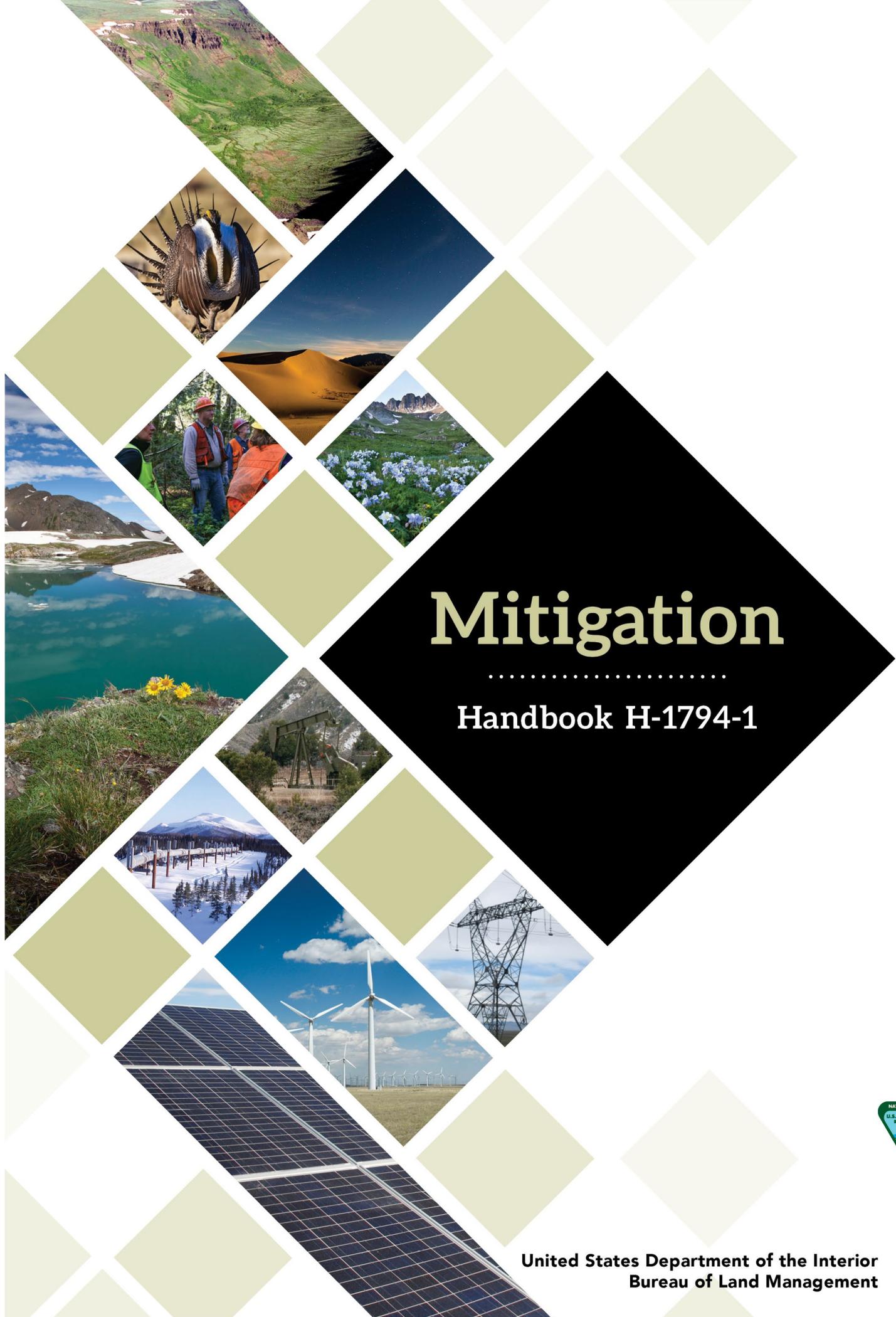
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A blue ink signature of David Jenkins.

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9/22/21



# Mitigation

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Handbook H-1794-1



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## CHAPTER 1. INTRODUCTION

The Bureau of Land Management (BLM) has a responsibility under the Federal Land Policy and Management Act (FLPMA) to manage the public lands for multiple use and sustained yield, except where otherwise provided by law. The effective use of mitigation allows the BLM to support a wide variety of resources and land uses across the landscape. Mitigation of the impacts from land uses ensures that the varied resources of the public's land continue to provide values, services, and functions. Mitigation is what sustains the public's land for present and future generations.

The BLM seeks to implement an approach to public land management that includes up-front identification of:

- low-conflict areas for development that avoid impacts;
- best management practices to minimize impacts during construction, operation, and reclamation;
- compensatory mitigation measures and sites to address residual effects that warrant additional mitigation; and
- areas that are too special to develop and deserve protection.

With this policy, it is our expectation that development can proceed in a more efficient manner while safeguarding the resources that the public has entrusted the BLM to manage.

### 1.1. Purpose

The broad purpose of this Mitigation Handbook is to elaborate on and provide additional clarity to the policy guidance identified in the BLM Mitigation Manual Section (MS-1794). Together, the Mitigation Manual Section and Handbook support the Bureau of Land Management's (BLM) multiple use and sustained yield mission by providing policies to:

- A. Implement consistent principles and procedures for mitigation in the BLM's authorization of public land uses.
- B. Consider mitigation well in advance of making decisions about anticipated public land uses by identifying opportunities for mitigation in mitigation strategies and incorporating mitigation into land use plans and programmatic or large geographic-scale NEPA analyses.
- C. Apply mitigation to address reasonably foreseeable impacts to resources (and their values, services, and/or functions)<sup>1</sup> from public land uses.

More specifically, this policy directs the BLM to take a consistent and deliberate approach when identifying, considering, and, as appropriate, requiring mitigation, to address impacts to resources from public land uses. One foundation of this policy's approach is that the BLM should consider mitigation in advance of making decisions about anticipated public land uses,

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<sup>1</sup> For brevity, in this policy, the term "resources (and their values, services, and/or functions)" is also referred to in this handbook simply as "resources."

most prominently by developing mitigation strategies and identifying mitigation standards. Mitigation standards (identified in law, land use plans, and other decision documents) will guide the application of the mitigation hierarchy (Handbook Chapter 2.1.A and 2.2) for public land uses (e.g., how much mitigation and for which resources), and the mitigation strategies will provide recommendations/decisions for implementing the mitigation hierarchy (e.g., the what, where, and how for mitigation measures). Another foundation of this policy is that the BLM, when evaluating impacts to resources and considering appropriate mitigation for addressing those impacts, should do so in the context of the existing and anticipated conditions and trends of those resources, at all relevant scales, from the site-level to the landscape.

When considering appropriate mitigation, the BLM will also take into consideration any limitations on its decision-making authority. This handbook generally focuses on decisions where the BLM has broad discretion, including the discretion to deny public land authorizations. There are other instances where the agency's discretion is more limited (e.g., decisions made related to land uses conducted under the Mining Law or decisions related to existing leases and contracts). In such cases, the BLM will apply this policy, consistent with applicable law.

When reviewing proposed public land uses through the NEPA process, the BLM will ensure conformance with mitigation standards, incorporate appropriate aspects of applicable mitigation strategies, assess the impacts from proposed public land uses to the baseline conditions of resources, identify and consider appropriate and practicable avoidance and minimization measures, and identify and consider appropriate compensation for some or all residual effects (using the criteria established in this policy). The BLM will identify any required mitigation in the decision documents associated with the NEPA analysis and include any required mitigation in the land use authorization. Finally, the BLM should ensure that monitoring and adaptive management of mitigation measures is conducted in order to achieve durable mitigation outcomes.

## **1.2. Quick Reference Guide to the Handbook**

This Mitigation Handbook (H-1794-1) is a part of the Mitigation Manual Section (M-1794) and carries the same authority. Chapter 2 of this Mitigation Handbook reiterates and expands upon the policy identified in the Mitigation Manual. Chapters 3-6 of the Handbook provide additional detail on the policy identified in the Mitigation Manual.

The Mitigation Manual Section and Handbook relate to and should be used in conjunction with the program-specific manual sections, handbooks, and other policies, including forthcoming, program-specific, step-down policies on mitigation.

The Mitigation Manual Section and Handbook also relate to and should be used in conjunction with the Land Use Planning Handbook (H-1601-1) and the National Environmental Policy Act (NEPA) Handbook (H-1790-1), among other policies.

## CHAPTER 2. MITIGATION PRINCIPLES AND PROCEDURES

### 2.1. Principles for Mitigation in the BLM

When evaluating the mitigation of impacts to resources (and their values, services, and/or functions), consistent with applicable law, the BLM will consider the full mitigation hierarchy, described below, and implement mitigation, as appropriate, at all relevant scales, while incorporating best management practices. Effective mitigation is durable, defined by outcomes, implemented and monitored for effectiveness, considered within an adaptive management framework, reported upon, managed by a responsible party, guided by the best available science, and developed through effective, early, and frequent communication with the public land user, cooperating agencies, and other stakeholders, including the public.

#### A. Mitigation

The BLM will identify, consider, and, as appropriate, require mitigation to address reasonably foreseeable impacts to resources from public land uses (BLM-proposed and externally proposed (i.e., proposed by a party outside of the BLM)).

1. The Council on Environmental Quality (CEQ) has defined mitigation in its regulations at 40 CFR 1508.1 to include:
  - avoiding the impacts by not taking a certain action or parts of an action,
  - minimizing impacts by limiting the degree or magnitude of the action and its implementation,
  - rectifying the impact by repairing, rehabilitating, or restoring the affected environment,
  - reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, and
  - compensating for the impact by replacing or providing substitute resources or environments (see Handbook Chapter 3).

Collectively, the five aspects of mitigation (avoid, minimize, rectify, reduce/eliminate, compensate) are referred to as the mitigation hierarchy because they are generally applied in a hierarchical manner (Handbook Chapter 2.2). All five aspects of mitigation can, as a practical matter, be summarized as avoidance, minimization, and compensation. In this handbook, when referring to mitigation, the full five-prong mitigation hierarchy is implied.

2. Mitigation addresses the adverse direct and indirect impacts to the baseline conditions of resources (including consideration of the quantity, quality, and characteristics of those resources) from public land uses. The assessment of cumulative impacts provides a broader context for understanding the direct and indirect impacts. When assessing impacts of authorizing a public land use, the BLM should use, as appropriate, consistent and transparent methods and consider the full life-cycle of a public land use. Whenever possible, the same or compatible methods, including

metrics, as used to identify resource objectives (e.g., in a land use plan) should be used to measure the reasonably foreseeable impacts (as compared to baseline conditions) of a proposed public land use, and should be used to design and monitor mitigation measures.

3. The BLM identifies and considers mitigation to address impacts to resources in NEPA analyses for proposed public land uses, and, as appropriate, requires mitigation to address impacts to resources in the associated decision documents and land use authorizations (Handbook Chapter 6 and Handbook Chapter 7). The BLM will identify, consider, and, as appropriate, require mitigation, to address reasonably foreseeable impacts, whether or not the impacts are “significant” (as defined by 40 CFR 1508.1). The BLM has authority to require appropriate mitigation under a variety of authorities, including FLPMA (Manual Section 1.3).
4. The BLM will, through the land use planning process, for resources that are considered important, scarce, sensitive, or have a protective legal mandate, identify mitigation standards. As appropriate and through application of the mitigation hierarchy, mitigation standards should seek to achieve a no net loss or net benefit outcome for such resources. In some cases, mitigation standards are identified in law and therefore should be incorporated into land use plans, as appropriate. When identified in a land use plan, the BLM will adhere to these or more protective mitigation standards for any applicable public land use, consistent with the law(s) under which BLM authorizes the land use (Handbook Chapter 5.1.A).

If a mitigation standard has not yet been identified in a land use plan, the BLM may identify mitigation standards for resources that are considered important, scarce, sensitive, or have a protective legal mandate, as appropriate, in other decision documents supported by appropriate NEPA analysis.

The BLM may also identify mitigation standards for resources that are considered important, scarce, sensitive, or have a protective legal mandate in mitigation strategies (Handbook Chapter 4.4), if mitigation standards have not already been identified by the BLM for those resources. If the mitigation strategy is not incorporated in a decision document, supported by adequate NEPA analysis, then the BLM should consider the findings and recommendations that are contained in the mitigation strategy through future decision-making processes.

5. The need for, type of, and amount of avoidance, minimization, rectification, and reduction or elimination over time should be based on applicable mitigation standards, what is appropriate and practicable, and should also include other considerations, such as the resource’s importance, scarcity, or sensitivity, at all relevant scales, and whether the resource for which adverse impacts will be mitigated has legal, regulatory, land use plan, or policy protections that limit or prevent certain types of impacts (Handbook Chapter 3).

Existing legal authorities contain additional protections for some resources that are of such irreplaceable character that minimization and compensatory mitigation measures may not be adequate or appropriate, and therefore avoidance is the only appropriate form of mitigation, consistent with applicable law. The BLM will seek to avoid, to the greatest extent practicable, reasonably foreseeable impacts to the National Park System, National Wildlife Refuge System, National Landscape Conservation System (National Conservation Lands), Areas of Critical Environmental Concern, and other special status areas (Handbook Chapter 3.1.D).

6. The need for compensatory mitigation should be based on applicable mitigation standards, and what is appropriate for each individual proposed public land use, taking into consideration applicable law, policies, land use plans, and mitigation strategies (Handbook Chapter 3.5.B). In general, the BLM should seek to identify compensatory mitigation measures that will appropriately mitigate the reasonably foreseeable residual effects that warrant compensatory mitigation, after first considering and applying, as appropriate, the first four mitigation approaches in the five-prong mitigation hierarchy, and achieve the maximum benefit to the impacted resources within the context of the conditions and trends of those resources, at all relevant scales. All compensatory mitigation obligations should be commensurate with the impacts from the public land uses (Handbook Chapter 3.5.F.1). Additionally, the BLM's general preference is to achieve compensatory mitigation outcomes in advance of public land uses' impacts (Handbook Chapter 3.5.F.2).

## **B. Landscape-Scale Approach**

Mitigation should be considered and implemented on a landscape-scale. A landscape-scale approach considers baseline conditions, reasonably foreseeable impacts, including impacts that extend beyond the BLM's administrative boundaries, and the application of the mitigation hierarchy in the context of the conditions and trends of resources, at all relevant scales, consistent with applicable law.

1. A landscape-scale approach facilitates the mitigation of impacts to resources within the relevant geographic area of those resources, however narrow or broad.
2. Application of the mitigation hierarchy at a landscape-scale may involve multiple stakeholders and tradeoffs among a broad range of resources.
3. The BLM should consider the management responsibilities and interests of other Federal agencies, Tribal, State, and/or local governments with the relevant landscape.
4. A landscape-scale approach paired with the mitigation hierarchy process allows for the identification of the most appropriate combination of mitigation measures across all relevant scales to provide the maximum benefit to the impacted resources. For example, in cooperation with other land managers, this could include development of common reclamation and restoration standards, or landscape-wide surface disturbance

limitations to reduce impacts to wide-ranging species and their migratory routes and seasonal habitat.

5. A landscape-scale approach also allows for identification of the most effective compensatory mitigation sites without implying a preference for siting compensatory mitigation closer to or farther away from the impacted site or implying a preference for Federally managed lands. The lack of preference for Federally managed lands in siting compensatory mitigation is due, in some instances, to the BLM's interest in benefiting specific impacted public land resources.

The maximum benefit to the impacted resource might be achieved at a compensatory mitigation site either geographically close or geographically far from the impacted site, so long as the mitigation at that site has a reasonable relationship to benefiting the public land resources where the resource impact is expected to occur or is occurring. The site that provides the maximum benefit to the public land resources does not need to be near the site where the resource impact occurred. Compensatory mitigation measures sited on non-BLM-managed lands, which may include lands managed by other land management agencies, will require the consent of the landowner or manager.

For example, this could include identifying a compensatory mitigation site near the impacted site for a locally important species, such as a scarce and locally endemic plant, that may decline due to the impact of the public land use. Or it may include identifying a compensatory mitigation site far from the site of the public land use and potentially on non-public lands (with a willing landowner), where the species may have a more pressing ecological need (such as scarce breeding grounds), as long as a reasonable relationship is maintained between the impacts of the public land use and the compensatory mitigation measure(s) implemented at that site.

6. Compensatory mitigation may be appropriate even if the compensatory mitigation measures are sited outside the boundaries of the lease, grant, mining plan of operations, etc., as long as a reasonable relationship is maintained between the impacts of the public land use and the compensatory mitigation measure(s) being implemented at that site. The use of compensatory mitigation does not mean that BLM may approve public land uses that cause unnecessary or undue degradation to the public lands (see Handbook Chapter 2.5.C).
7. The BLM may also develop landscape-scale mitigation strategies (Handbook Chapter 4), in addition to implementing the landscape approach in land use plans (Handbook Chapter 5) and when authorizing public land uses (Handbook Chapter 6 and Handbook Chapter 7).

### **C. Best Management Practices**

As applicable to mitigation, best management practices (BMPs) are state-of-the-art, efficient, appropriate, and practicable mitigation measures for avoiding, minimizing,

rectifying, and reducing or eliminating impacts over time. The BLM should identify, consider, and, as appropriate, require the use of BMPs to address reasonably foreseeable impacts to resources, rather than routinely relying on past practices. Depending on the public land use, BLM may seek an applicant's voluntary commitment to follow BMPs or require BMPs as a condition of authorization if allowed under existing legal authority.

#### **D. Durability**

The BLM should identify, consider, and, as appropriate, require mitigation that is durable, i.e., it will be effective for the duration of the impacts resulting from the associated public land use.

1. Durability includes three types of considerations for mitigation measures and for compensatory mitigation sites: resource, administrative, and financial.
  - a. Resource considerations for durability include, but are not limited to, ensuring that mitigation measures and/or compensatory mitigation sites achieve and maintain their required outcomes, including being resilient to changing circumstances (e.g., climate change, fire, invasive species), for the duration of the impacts.

*Example: If a mitigation obligation includes minimizing the contrast of an oil and gas production facility with the surrounding landscape by painting the facilities shale green, then the BLM should ensure through compliance inspections that the paint color is maintained and does not deteriorate due to staining or fading during the life of the facility.*
  - b. Administrative considerations for durability include, but are not limited to, restricting incompatible uses on mitigation sites (e.g., through the use of a conservation easement on private land), or permitting land uses that are supportive of the mitigation sites (e.g., additional restoration projects), through permit terms and conditions, land use planning, or legal designations.
  - c. Financial considerations for durability include, but are not limited to, ensuring there will be financing sufficient to maintain, monitor, and adaptively manage mitigation measures and/or compensatory mitigation sites for the duration of the impacts from the public land use (Handbook Chapter 7.2).
2. The duration of the impact is the time that resource impacts (including direct and indirect effects) from a public land use persist, even if this time period extends beyond the expiration of the public land use. The duration of *some* impacts may be in perpetuity, such as the construction of a new transmission line or a county road. The BLM should use the best available science to estimate the duration of the impact. For compensatory mitigation measures and sites, the BLM should consider the duration of the residual effects to be at least until the residual effects have been restored.

*Example: An oil and gas development plan will result in the loss of 275 acres of important wildlife habitat, even after the consideration and application of the first four aspects of the mitigation hierarchy. Through the NEPA analysis and in the decision document, the BLM determines that the restoration of 275 acres of wildlife habitat would be required as compensatory mitigation. These residual effects are expected to last 50 years before the public land user achieves full restoration of the affected habitat, and therefore, the benefits of the restoration of the habitat should also be in place and effective for at least 50 years.*

3. As appropriate, the BLM should ensure that the responsible party is obligated to maintain the mitigation's durability and correct any loss of durability (i.e., a reversal), unless the outcome is not achieved due to a force majeure event. If the loss of durability is not corrected, the BLM will take appropriate follow-up actions, including enforcement actions, consistent with applicable law and as provided for in applicable regulations (see Handbook Chapter 7.3).
4. Details about tools to achieve (degrees of) durability for compensatory mitigation sites on BLM-managed lands and private lands are described in Appendix 1.

#### **E. Mitigation Measures' Outcomes and Performance Standards**

When developing mitigation measures, the BLM should establish clearly defined and measurable outcomes for those measures through regulation, land use planning, or in another decision document, as appropriate, although it may also be necessary to establish minimum actions (i.e., outputs) that the responsible party must take to achieve those outcomes. The BLM should also develop performance standards through regulations, land use planning, or in another decision document, as appropriate, as part of the mitigation requirements that the BLM will use to monitor and assess the effectiveness of compensatory mitigation measures.

1. Mitigation measures should be defined by outcomes and may also include specific outputs.

*Example (minimization): A new road will result in substantial soil erosion. Through the NEPA analysis and in the decision document, the BLM determines that the minimization of soil erosion would be required. The outcome of a minimization measure for addressing soil erosion might be that erosion features are equal to or less than those on surrounding undisturbed areas and erosion control is sufficient so that water naturally infiltrates into the soil and no gullying, headcutting, slumping, and deep or excessive rills (greater than 3 inches) occur (an outcome). This may be supplemented by the requirement that the permit holder roughen the surface and apply mulch to the impacted site (an output that the local BLM office recognizes as a minimum action necessary for achieving the required outcome).*

*Example (compensatory mitigation): A new road will result in the loss of a scarce desert riparian area, even after the consideration and application of the first four aspects of the mitigation hierarchy. Through the NEPA analysis and in the decision document, the BLM determines that the restoration of a nearby degraded desert riparian area would be required as compensatory mitigation because restoring the offsite degraded riparian area would address the loss of desert riparian area from the new road. The outcome of the compensatory mitigation would be to restore the degraded desert riparian area to the applicable ecological site potential (an outcome). This may be in addition to identifying the seeding or planting of specific desert riparian plants (an output).*

- a. Mitigation measures' outcomes should support the applicable land use plan's resource objectives, and/or the objectives of other Federal agencies, Tribal, State and/or local governments, consistent with applicable law.
  - b. In general, the BLM should anticipate the need to adapt the mitigation measures to meet the required mitigation outcomes by analyzing different adaptive scenarios in the NEPA analysis for those mitigation measures. For externally proposed public land uses, the BLM should ensure that adaptive, outcome-based mitigation is adequately described in the land use authorization (Handbook Chapter 7).
2. The BLM should use performance standards to monitor and assess the effectiveness of the mitigation measure in achieving the required outcome. The BLM should use the same or compatible methods, including metrics, that it used to identify resource objectives (e.g., in a land use plan) and/or that it used to measure the reasonably foreseeable impacts (as compared to baseline conditions) of a proposed public land use (Handbook Chapter 2.1.A.2), when designing these performance standards to be able to best measure the effectiveness of the mitigation measures for those impacts.

*Example: If the compensatory mitigation measure is for the responsible party to restore 24 acres of functioning nesting habitat, then the compensatory mitigation measure's performance standard should be defined by the specific ecological attributes that will indicate that the nesting habitat in those 24 acres is restored and functioning. The performance standard should also include a specific timeframe for achieving the functioning habitat.*

#### **F. Implementation (Compliance) and Effectiveness Monitoring**

The BLM should ensure that mitigation measures are implemented (i.e., complied with) and monitored for effectiveness, as provided for in land use authorizations, and consistent with applicable law and regulation.<sup>2</sup>

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<sup>2</sup> For additional guidance on monitoring and mitigation, please refer to: Executive Office of the President, Council on Environmental Quality's *Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact* January 14, 2011.

For some land uses, applicable regulations provide that the BLM may require the public land user to monitor the effectiveness of its compliance with applicable mitigation measures. For example, the BLM's regulations require operators who file a mining plan of operations under 43 CFR 3809 to include a proposed plan for monitoring the effect of their mining operations. The applicable regulation, 43 CFR 3809.401(b)(4), requires operators to design monitoring plans to demonstrate compliance with the plan of operations (which would include any mitigation measures required under the plan), provide early detection of potential problems, and supply information to assist in directing corrective action, if necessary.

In other instances, the BLM may have the discretion to require a public land user to monitor the effectiveness of mitigation measures without express regulatory provisions. Under other circumstances, the BLM may have to conduct the monitoring (e.g., an existing lease where neither applicable regulations nor the terms of the lease provide for monitoring). If the BLM has questions about how to provide for monitoring, it should consult with the Office of the Solicitor.

The BLM will take appropriate follow-up actions, including enforcement actions, consistent with applicable law and as provided for in applicable regulations, as necessary, if the mitigation measures are not implemented as designed or if the mitigation measures are not effective in achieving the required mitigation outcomes, based on effectiveness monitoring (see Handbook Chapter 7.3), unless the outcome is not achieved due to a force majeure event.

1. Implementation (Compliance). The BLM should conduct regular compliance inspections for the duration of the land use authorization to verify that mitigation measures are being implemented as required in the land use authorization.
2. Effectiveness Monitoring. Consistent with applicable law, the BLM should verify that the public land user is achieving the required outcomes and/or implementing the appropriate adaptive management measures.
  - a. Consistent with applicable law, the BLM should apply the rule of reason when identifying the type, extent, and duration of effectiveness monitoring for mitigation measures, as guided by the degree of uncertainty associated with a mitigation measure, the amount and type of the mitigation measure, and the potential need for adaptive management.
    - i. While effectiveness monitoring may cease when a mitigation measure's outcome has been achieved, in some cases, effectiveness monitoring may be necessary for the duration of the impacts from the public land use.
    - ii. In some cases, especially where reasonably foreseeable impacts have landscape-scale implications, effectiveness monitoring may be necessary at

fine-, mid-, and broad-scales in order to ensure that a mitigation measure's outcome is being achieved.

- b. As mentioned in the first paragraph of this section, the BLM should ensure that mitigation measures are implemented and monitored for effectiveness, as provided for in land use authorizations, and consistent with applicable law and regulation. Where a responsible party uses a third-party compensatory mitigation mechanism to fulfill a compensatory mitigation requirement, it is acceptable for the responsible party to transfer monitoring responsibilities to the third party. (Handbook Chapter 3.5.I).

When making decisions regarding applications for land uses for which BLM has limited discretion, if there are no applicable regulations or applicable terms and conditions in an existing land use authorization that require mitigation effectiveness monitoring, the BLM will conduct the effectiveness monitoring to assess whether the public land user is complying with the mitigation measures that BLM has required, unless the BLM develops a written agreement with another entity to conduct the effectiveness monitoring.

- c. Whenever appropriate, effectiveness monitoring should be designed around the same or compatible methods, including metrics, that it used to identify resource objectives (e.g., in a land use plan), measure the reasonably foreseeable impacts (as compared to baseline conditions) of a proposed public land use (Handbook Chapter 2.1.A.2), and/or define the mitigation measure's outcome and performance standards (Handbook Chapter 2.1.E).
- d. Whenever appropriate, the BLM should incorporate effectiveness monitoring into existing monitoring programs and sampling grids managed by the BLM or other entities to increase the utility and rigor of these data. Similarly, whenever appropriate, effectiveness monitoring should comply with BLM-adopted, standardized, monitoring protocols (e.g., *BLM Core Terrestrial Indicators and Methods (Technical Note 440)*<sup>3</sup>). In this case, these monitoring data should be incorporated into the appropriate databases, etc.

## G. Adaptive Management<sup>4</sup>

1. The BLM should use the best available science, implemented mitigation measures, and associated effectiveness monitoring to implement, or require the responsible party to implement, consistent with applicable law, adaptive management of mitigation measures to reduce uncertainty and achieve the required mitigation outcomes. The BLM should also use these lessons learned to guide and improve the development and implementation of future mitigation measures.

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<sup>3</sup> <https://aim.landscapetoolbox.org/wp-content/uploads/2015/09/TN440-BLM-Core-Terrestrial-Indicators-and-Methods.pdf>

<sup>4</sup> For additional guidance on adaptive management, please refer to DOI's adaptive management technical and applications guide (TechGuide-WebOptimized-2.pdf (doi.gov)).

2. Additionally, in a land use plan or land use authorization, the BLM may implement an adaptive management framework where specific thresholds for the level of acceptable impacts are identified, as well as specific mitigation measures that will be implemented if the level of acceptable impacts is exceeded.

## **H. Reporting**

1. Depending on the amount and type of the mitigation measures, the BLM in a land use authorization should require the responsible party to prepare and submit periodic reports to the appropriate BLM office on the implementation and effectiveness of the mitigation measures, consistent with applicable law, including the Paperwork Reduction Act.
2. The BLM is responsible for reviewing monitoring reports to ensure that the public land user is complying with the terms and conditions of the associated land use authorization. The BLM will use these reports to help determine if the responsible party needs to complete any necessary corrective actions in order to achieve the required mitigation outcomes.
3. As appropriate, monitoring reports may consist of written summaries, geospatial data layers (with metadata) of the mitigation measures, digital photos (with appropriate geospatial information), and implementation and effectiveness monitoring data in order to verify that mitigation measures are being implemented as required in the land use authorization and that the required outcomes are being achieved.
4. The BLM will make aspects of the monitoring reports available to the public, while redacting or withholding sensitive or confidential information, consistent with applicable laws and policies.
5. The applicable BLM's authorized officer should submit any compensatory mitigation monitoring reports, after review by the applicable BLM office, to the BLM National Operations Center, which will verify the reports meet the appropriate data standard and store them in a centralized, searchable repository.

## **I. Responsible Parties**

1. When mitigation obligations are included in a land use authorization, the BLM will identify a responsible party in the land use authorization that is accountable for fulfilling all aspects of mitigation obligations, including but not limited to, ensuring the durability and effectiveness of mitigation measures, achieving mitigation measures' outcomes, and complying with monitoring, adaptive management, and reporting requirements.
2. If mitigation measures are ineffective, as determined by effectiveness monitoring, the BLM will work with the responsible party to identify appropriate actions for achieving

the required mitigation outcomes and for complying with the terms and conditions of applicable land use authorizations. The BLM will take appropriate follow-up actions, including enforcement actions, consistent with applicable law and as provided for in applicable regulations, as necessary, if the mitigation measures were not implemented as designed or if the mitigation measures have not been effective in achieving the required mitigation outcomes, based on effectiveness monitoring (see Handbook Chapter 7.3), unless the outcome is not achieved due to a force majeure event.

## **J. Best Available Science**

1. The BLM will use the best available science<sup>5</sup> (e.g., peer reviewed research and methods, monitoring data and modeling results, well-documented case studies, etc.), including the principles and practices identified in *Advancing Science in the BLM: An Implementation Strategy*<sup>6</sup>, to inform the identification and analysis of reasonably foreseeable impacts and mitigation for those impacts and achieve effective mitigation outcomes.
2. For compensatory mitigation obligations, it may be appropriate to include scientific studies or inventories that can aid in determining the appropriate type, duration, and amount of compensation. Generally, scientific studies or inventories, on their own, should not be considered compensation as they do not replace or provide substitute resources or environments.

## **K. Communication**

1. The BLM should employ effective, early, and frequent communication about the identification, analysis, and implementation of mitigation with the public land user, cooperating agencies, and other stakeholders, including the public. This communication includes extending opportunities to participate in the development of mitigation strategies and land use plans, and to provide input on the analysis for proposed public land uses.
2. Effective communication regarding the identification and analysis of mitigation measures is essential to proactively address disagreements and generate broad support for mitigation.
3. Coordination with other Federal agencies, Tribal, State and/or local governments can help to ensure that mitigation is efficient, effective, durable, additional, non-duplicative, and mitigates impacts that extend beyond the BLM's administrative boundaries.

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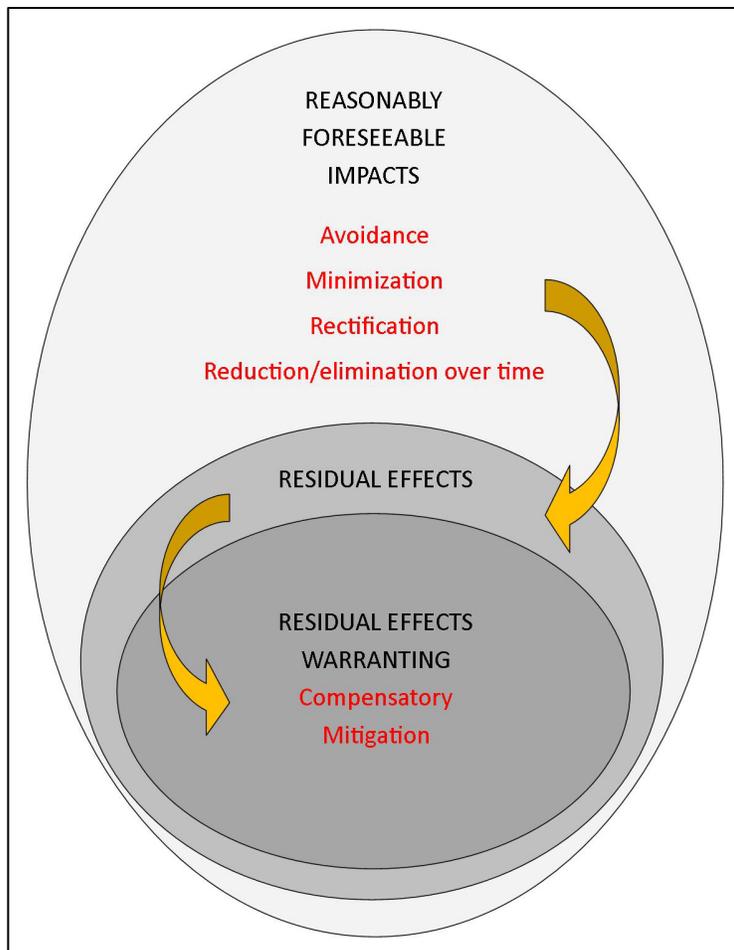
<sup>5</sup> The phrases “best available science” or “best available data” are often referred to as BLM policy for the information contained in agency documents (BLM Information Quality Act Guidelines, Undated April 2, 2018). BLM policy that data comprise high quality information is consistent with Office of Management and Budget guidance for Federal agencies in implementing Information Quality Act requirements that data be of high objectivity, integrity, and utility for agency decision-making.

<sup>6</sup> <https://www.blm.gov/documents/national-office/public-room/blm-strategic-plan/advancing-science-blm-implementation-strategy>

## **2.2. Implementing the Mitigation Hierarchy**

The BLM will implement the mitigation hierarchy when identifying, considering, and, as appropriate, requiring mitigation, to address reasonably foreseeable impacts to resources (see Figure 1.1). The BLM's aim is to apply the mitigation hierarchy in the manner that achieves the maximum benefit to the impacted resource, consistent with applicable law. First, the BLM will seek to require the public land user to avoid impacts, consistent with applicable law (e.g., by altering project design, location, or timing); then the BLM will seek to require the public land user to minimize impacts (e.g., through project modifications, permit conditions, interim and final reclamation, etc.); and, generally, only if those approaches are insufficient to fully mitigate the impacts from a proposed public land use, will the BLM seek to require the public land user to compensate for some or all of the remaining impacts from the proposed public land use (i.e., residual effects), based on the criteria identified in Handbook Chapter 3.5.B. In limited situations, specific circumstances may exist that warrant deviating from this sequence, such as when seeking to achieve the maximum benefit to impacted resources or when constrained by the terms and conditions of existing land use authorizations or applicable law. In limited instances, the BLM might determine that the impacts (including residual effects) of public land uses may be acceptable and will not require mitigation, based on the criteria identified in Handbook Chapter 3.

In many cases, the five aspects of the mitigation hierarchy will overlap. For example, consistent with lease terms and conditions, interim reclamation of a producing oil and gas well may be considered a form of either minimizing or reducing/eliminating impacts over time. Final reclamation, on the other hand, is a form of rectification, but could be considered compensation when an operator performs final reclamation and restoration of orphaned oil and gas well locations and access roads (i.e., locations that no longer have a responsible party) in order to obtain permits for additional new wells and roads in an area that has a surface disturbance limitation/cap in the land use plan, consistent with lease terms and conditions.



**Figure 1.1.** Implementing the Mitigation Hierarchy.

**2.3. Advance Consideration of Mitigation: Mitigation Strategies**

Mitigation strategies identify, consider, and communicate potential mitigation needs and mitigation measures in a geographic area, at relevant scales, well in advance of anticipated public land uses (BLM-proposed and externally proposed). The BLM should prepare mitigation strategies where the condition of resources (including their values, services, and/or functions) is declining or has a reasonable potential to decline and new impacts to those resources are reasonably foreseeable, or where resources would otherwise benefit from advance consideration of landscape-scale mitigation. Effective mitigation strategies are created and maintained by fully engaging stakeholders in the process. Mitigation strategies will help to increase the effectiveness, consistency, and transparency of mitigation by shifting away from a reactive and permit-by-permit approach to a more efficient, proactive model that identifies mitigation standards (if they do not already exist) and pre-identifies and pre-considers mitigation measures. Mitigation strategies will assist the BLM to better anticipate reasonably foreseeable impacts, strategically apply the mitigation hierarchy, and generate better outcomes for impacted resources. Mitigation strategies may be developed within a NEPA analysis or developed independently to inform future NEPA analysis and/or decision-making.

## **2.4. Advance Consideration of Mitigation: Land Use Planning (interim)**

*[This section on mitigation in land use planning is interim policy and will be superseded by relevant updates to the BLM's land use planning handbook.]*

The land use planning process provides one method for identifying, considering, and, as appropriate, requiring mitigation well in advance of anticipated public land uses. Additionally, the land use planning process provides an opportunity to incorporate relevant components of a mitigation strategy into a land use plan (Handbook Chapter 4). The land use plan can identify resource objectives and associated mitigation standards, land use allocations, and management actions to facilitate the application of appropriate mitigation for public land uses. Also, to support the implementation of durable compensatory mitigation measures on BLM-managed lands, the BLM can support or identify compensatory mitigation sites with land use allocations that limit or exclude incompatible uses of those sites, consistent with applicable law.

During the land use planning process, consistent with applicable law, the BLM will consider and, as appropriate, include in the land use plan:

- A.** Scientifically informed and measurable land use plan objectives for resources, which include mitigation standards for resources that are considered important, scarce, sensitive, or have a protective legal mandate (e.g., no net loss, net benefit).
- B.** Land use allocations that limit or exclude certain uses (e.g., right-of-way exclusion areas, closures or constraints to fluid mineral leasing) or concentrate certain uses in defined areas (e.g., solar energy zones) or corridors (e.g., right-of-way corridors) in order to avoid and minimize impacts to resources from public land uses. The land use planning process may not be used as a substitute for a withdrawal to close lands to the operation of the Mining Law.
- C.** Management actions (e.g., best management practices) that help to support the land use plan's resource objectives, including applicable mitigation standards.
- D.** Land use allocations that support or identify compensatory mitigation sites on BLM-managed lands and limit or exclude incompatible uses of those sites. Compensatory mitigation sites may be located within formal designations, such as Areas of Critical Environmental Concern (ACEC) or units of the National Conservation Lands, or may be located within general geographic areas without a formal designation where incompatible uses are excluded or restricted.

## **2.5. Mitigation of Public Land Uses**

The BLM will identify, consider, and, as appropriate, require mitigation to address reasonably foreseeable impacts to resources through NEPA analyses and within associated decision documents and land use authorizations. The BLM should ensure that mitigation measures have clearly defined and measurable outcomes and are implemented and monitored for effectiveness.

### **A. NEPA for Public Land Uses**

Through the NEPA analysis process, the BLM will, to the greatest extent possible, identify and consider the effectiveness of mitigation to address reasonably foreseeable impacts (both significant and non-significant) to resources (and their values, services, and/or functions) from proposed public land uses (BLM-proposed and externally proposed). The BLM will identify any required mitigation in the decision document(s) associated with the NEPA analysis and include any required mitigation in the land use authorization(s).

Mitigation should not be an afterthought; mitigation should be considered early and throughout the NEPA analysis process (e.g., scoping, proposed action, alternatives, environmental effects). For example, for BLM-proposed public land uses, the BLM should incorporate appropriate mitigation into the proposed project's design as an integral component of the proposed action (i.e., project design features). Or, for externally proposed public land uses, the BLM should encourage applicants to propose appropriate mitigation for their public land use. Where they exist and are relevant, mitigation strategies will be used to inform the NEPA analyses for applicable proposed public land uses.

### **B. Denying Proposed Public Land Uses**

Consistent with applicable law, the BLM generally has broad discretion to grant, grant with modifications, or deny a proposed public land use. Even where the agency has determined that a project proponent has a legal right to conduct the public land use, the BLM often has a degree of discretion on where and how public land uses may occur. Among the reasons that the BLM might deny a discretionary public land use are the inability to mitigate effectively the reasonably foreseeable impacts from a proposed public land use, an applicant's refusal to accept appropriate mitigation requirements, or if the action would violate a law, violate a regulation, violate a policy, or would not conform to a land use plan. Consistent with applicable law, the BLM may decline to authorize discretionary public land uses, including when the impacted resources are too important, scarce, or sensitive to withstand impacts or have legal, regulatory, land use plan, or policy protections that limit or prevent certain types of impacts, even after the implementation of mitigation. Consistent with applicable law, the BLM may also use its discretion to deny public land uses if impacts are expected to extend beyond the BLM's administrative boundaries and negatively affect the management responsibilities of other entities (e.g., units of the National Park System, State Parks) or impact resources managed by those entities that are too important, scarce, or sensitive to withstand those impacts or have legal, regulatory, land use plan, or policy protections that limit or prevent certain types of impacts.

### **C. Unnecessary or Undue Degradation**

The BLM cannot authorize a public land use that would result in unnecessary or undue degradation to the public lands (FLPMA § 302(b), 43 USC § 1732(b)). Proposed public

land uses that are expected to cause unnecessary or undue degradation will either be denied or modified (via avoidance, minimization, rectification, and reduction/elimination over time) such that the reasonably foreseeable impacts will not cause unnecessary or undue degradation. In limited circumstances, compensatory mitigation can mitigate for impacts that would—in the absence of such compensatory mitigation—constitute unnecessary or undue degradation.

## 2.6. Policy Limitations

Limitations on the use of this policy include the following:

### A. Previously Approved Land Use Authorizations

For land use authorizations approved by the BLM prior to the issuance of this policy, this policy applies only to the extent consistent with the land use authorization (Handbook Chapter 2.6.C). If a land use authorization is being renewed or amended, refer to Handbook Chapter 2.6.B.

### B. Renewal or Amendment of Land Use Authorizations

The BLM may require additional mitigation measures, as appropriate and consistent with applicable law, during the renewal or amendment process for land use authorizations that the BLM approved prior to the issuance of this policy to address reasonably foreseeable impacts that have developed since the BLM authorized the public land use or that would cease but for the renewal or amendment of that authorization. Mitigation may not be required to address impacts from the original land use authorization that are no longer present or were adequately mitigated at the time the original land use authorization was approved.

*Example: A 30-year road right-of-way grant is about to expire. The original construction of the road and its ongoing use under the grant has lessened the value of mule deer winter habitat that existed prior to the road's construction and operation. The area near the road is no longer functional mule deer wildlife habitat. The BLM approves the right-of-way renewal for an additional 30 years and requires additional mitigation measures to reduce ongoing mule deer winter roadkill associated with the road and identified at the time of the right-of-way renewal. The BLM further requires compensatory mitigation for the ongoing loss of mule deer habitat, which would have been reclaimed and restored within 10 years, but for the renewal of the right-of-way.*

*Example: A right-of-way is up for renewal for a high-voltage transmission line that crosses important habitat for a sensitive ground-dwelling bird and has led to increased predation and mortality. But for renewal of the right-of-way authorization, the line would be decommissioned and the predation pressure would cease. The BLM renews the right-of-way*

*authorization contingent on a package of minimization and compensation measures that decrease available perches and protect important habitat elsewhere. The BLM does not apply mitigation for the noise and dust disturbance associated with the original construction of the line.*

### **C. Valid Existing Rights and Limited Discretion Decisions**

This policy applies to a different extent where the BLM's discretion to deny or regulate a proposed public land use is more limited, such as with mining plans of operations, existing leases, existing contracts, or statutorily mandated actions like legislated land exchanges or sales. Nonetheless, the application of mitigation may be appropriate. In these instances, the BLM will still identify and consider the effectiveness of appropriate mitigation measures in its NEPA analyses, including compensatory mitigation; however, any mitigation requirements in the decision should be consistent with the regulations governing mining plans of operations, the terms and conditions of existing leases and existing contracts, or the applicable legislation. For example, if an oil and gas lease has issued with standard lease terms and conditions, the BLM should ensure that any additional and appropriate mitigation measures required for a permit to drill are reasonable and consistent with those lease terms and conditions.

*Example: An applicant submits a mining plan of operations under 43 CFR Subpart 3809. The BLM may not approve the proposed plan of operations if the impacts identified in the NEPA process constitute unnecessary or undue degradation; consequently, the agency may require application of the full mitigation hierarchy to ensure that the proposed operations will not cause unnecessary or undue degradation. If the impacts identified in the NEPA process do not constitute unnecessary or undue degradation, the BLM should still apply the full mitigation hierarchy to identify appropriate mitigation, including compensatory mitigation; however, BLM's ability to require the operator to perform mitigation in these circumstances is more limited. If there are any questions regarding the appropriateness of mitigation measures, consult the Mining Law Administration Program Lead in the relevant State Office.*

*Example: An applicant submits a field-wide oil and gas development plan covering valid oil and gas leases that would result in impacts to important resources, as identified through NEPA analysis. The BLM may require application of the full mitigation hierarchy, including compensatory mitigation (at a compensatory mitigation site off of the lease through a separate land use authorization) to address the impacts, so long as that requirement is consistent with the terms and conditions of the lease.*

### **D. Land Use Authorizations on Split Estate Lands**

This policy applies to land use authorizations where the subsurface estate is owned by the United States, but the surface is owned by a different entity or person (i.e., split estate

lands). The BLM generally has the authority to regulate the public land uses that involve federally owned mineral estate by requiring mitigation measures to address reasonably foreseeable impacts, including impacts to the surface estate. The BLM must consider the views of the surface owner(s) prior to its decision, consistent with applicable laws and policies.

If siting compensatory mitigation on split estate lands, the BLM will ensure that the willing landowner consents and that the site will receive adequate administration, durability, monitoring, reporting, funding, and that BLM is provided reasonable access to the compensatory mitigation site(s) for oversight purposes for the duration of the impacts from the public land use.

#### **E. Operations Authorized by the Mining Law of 1872**

The BLM should apply this mitigation policy on a case-by-case basis, consistent with the BLM's authority under the Mining Law, when authorizing operations under 43 CFR subparts 3809 or 3715. The BLM will follow the policy in this handbook if the mitigation is necessary to comply with the performance standards in 43 CFR 3809.420, including paragraph (a)(4) (“You must take mitigation measures specified by BLM to protect public lands.”), or otherwise to prevent unnecessary or undue degradation. If there are any questions regarding the appropriateness of such measures, consult the Mining Law Administration Program Lead in the relevant State Office.

The BLM may also identify additional mitigation measures to address potential impacts of approving the plan of operations that may not necessarily rise to the level of constituting unnecessary or undue degradation, including mitigation sited outside the plan of operations boundary. These mitigation measures may be incorporated in the plan of operations decision with the agreement of the operator, along with any mitigation proposed by the operator. Even though these mitigation measures would not be required to prevent unnecessary or undue degradation, they are enforceable if included in the plan of operations decision with the operator's consent.

All mitigation measures should receive appropriate environmental analysis. For additional guidance regarding types of mitigation that may be required for these types of operations, consult the BLM's Surface Management Handbook, H-3809-1.

#### **F. Additional Mitigation Obligations**

Mitigation obligations identified through implementation of this policy may supplement, but do not replace, mitigation obligations that may be required by or result from formal consultation with other agencies or entities under statutes, such as the Endangered Species Act, National Historic Preservation Act, the Clean Water Act, or the Clean Air Act, regulations, or policies.

## **2.7. File and Records Maintenance**

- A.** All records should be maintained in the appropriate case file and comply with any applicable BLM corporate data standards. In addition to the case file, the following records, once submitted by the applicable BLM office, should also be maintained by the National Operations Center:
  - 1.** Compensatory mitigation monitoring reports.
  - 2.** The geospatial area impacted by the public land use and that of compensatory mitigation measures and sites, with metadata describing the associated public land use (e.g., case file number) and the duration that the measure and site should be durable.
  - 3.** The geospatial area of mitigation strategies.
- B.** All geospatial data, including maps and geospatial layers, shall comply with national geospatial standards, will be compatible with BLM corporate data standards such as those for the Cadastral National Spatial Data Infrastructure (CadNSDI), PLSS Data Set, and the Land Status System (LR2000).

## CHAPTER 3. THE MITIGATION HIERARCHY

The BLM will implement the five-prong mitigation hierarchy when identifying, considering, and, as appropriate, requiring mitigation, to address reasonably foreseeable impacts to resources. The BLM's aim is to apply the mitigation hierarchy in the manner that achieves the maximum benefit to the impacted resource, consistent with applicable law. First, the BLM will seek to require the public land user to avoid impacts (e.g., by altering project design, location, or timing), consistent with applicable law; then the BLM will seek to require the public land user to minimize impacts (e.g., through project modifications, permit conditions, interim and final reclamation, etc.); and, generally, only if those approaches are insufficient to fully mitigate the impacts from a proposed public land use, will the BLM seek to require the public land user to compensate for some or all of the remaining impacts from the proposed public land use (i.e., residual effects), based on the criteria identified in Handbook Chapter 3.5.B. In limited situations, specific circumstances may exist that warrant deviating from this sequence, such as when seeking to achieve the maximum benefit to impacted resources or when constrained by the terms and conditions of existing land use authorizations or applicable law. In some instances, the BLM might determine that the impacts (including residual effects) of public land uses may be acceptable and will not require mitigation, based on the criteria identified below.

### 3.1. Avoidance

Requiring impacts from public lands uses to be avoided altogether by not taking a certain action or parts of an action, to the extent allowed by law or the terms of existing land use authorizations.

- A. As the first and preferred form of mitigation in the mitigation hierarchy, the BLM will identify, consider, and, as appropriate, require avoidance to address reasonably foreseeable impacts to resources from public land uses.
- B. The need for, type of, and amount of avoidance should be based on applicable mitigation standards, what is appropriate and practicable, and should also include considerations, such as the resource's importance, scarcity, or sensitivity, at all relevant scales, and whether the resource for which adverse impacts will be mitigated has legal, regulatory, land use plan, or policy protections that limit or prevent certain types of impacts
- C. The BLM will identify, consider, and, as appropriate, require avoidance, at all relevant scales.
  1. Site-specific avoidance is usually identified through the project-specific environmental review process and includes, but is not limited to, best management practices (BMPs), such as modifying the proposed public land use to avoid reasonably foreseeable impacts to resources over space (e.g., cultural resource sites, critical hydrological features, sensitive plant species habitat, visual resources, steep slopes) and time (e.g., during springtime breeding activities, the period of ceremonial use of a sacred site).

2. When considering avoidance at the landscape-scale, the BLM should take into account the conditions and trends of the potentially impacted resources within the relevant landscape of that resource (e.g., migration pathways, seasonal habitats, historic trails, scenic landscapes, nighttime dark skies, air quality), typically through the land use planning process or through a programmatic or large geographic-scale NEPA analysis (as informed by applicable mitigation strategies). Landscape-scale avoidance may include, but is not limited to, right-of-way avoidance and exclusion areas, no surface occupancy requirements/limitations for certain types of development, closing areas to certain types of development, and the designation of areas for conservation (e.g., priority habitat), as well as for concentrated development (e.g., solar energy zones, right-of-way corridors), which focus impacts in one area to avoid impacts dispersed across the landscape.
- D.** Existing legal authorities contain additional protections for some resources that are of such irreplaceable character that minimization and compensatory mitigation measures may not be adequate or appropriate, and therefore avoidance is the appropriate form of mitigation, consistent with applicable law. The BLM will seek to avoid, to the greatest extent practicable, reasonably foreseeable impacts to the National Park System, National Wildlife Refuge System, National Landscape Conservation System (National Conservation Lands), Areas of Critical Environmental Concern, and other special status areas.

### **3.2. Minimization**

Requiring the impacts from public lands uses to be minimized by limiting the degree or magnitude of the action and its implementation.

- A.** The BLM will identify, consider, and, as appropriate, require minimization to address those reasonably foreseeable impacts to resources from public land uses that cannot be avoided.
- B.** The need for, type of, and amount of minimization should be based on applicable mitigation standards, what is appropriate and practicable, and should also include other considerations, such as the resource's importance, scarcity, or sensitivity, at all relevant scales, and whether the resource for which adverse impacts will be mitigated has legal, regulatory, land use plan, or policy protections that limit or prevent certain types of impacts.
- C.** The BLM will identify, consider, and, as appropriate, require minimization, at all relevant scales.
  1. Site-specific minimization includes those mitigation measures identified in law, policies, land use plans, and project-level NEPA analysis that are designed to reduce the level of impact from a specific type of public land use.

*Examples: reducing the density of oil and gas well pads; interim reclamation; painting facilities a natural background color, reducing the surface area covered by facilities, and screening facilities from view; fitting rights-of-way to the landscape, rather than constructing roads and utility corridors in straight lines across the landscape regardless of the topography or visual impact; restricting public access to tribal sacred sites during identified and routine periods of tribal use; etc.*

2. When considering minimization at the landscape-scale, the BLM should take into account the conditions and trends of the potentially impacted resources with the relevant landscape of that resource (e.g., migration pathways, seasonal habitats, historic trails, scenic landscapes, nighttime dark skies, air quality), typically through the land use planning process or through a programmatic or large geographic-scale NEPA analysis (as informed by applicable mitigation strategies). Landscape-scale minimization may include, but is not limited to, mineral leasing stipulations or allocations in a land use plan, concentrating development in certain areas, landscape-scale disturbance limitations (to the extent allowed by law for certain public land uses), or management actions that minimize impacts of allowed uses.

*Examples: shared use of common infrastructure; landscape-wide disturbance caps (e.g., 3 percent disturbance cap in greater sage-grouse habitat (to the extent allowed by law for certain public land uses)); designation of areas for concentrated development (also a form of landscape-scale avoidance); co-locating infrastructure crossings of National Trails outside of high potential segments; etc.*

### **3.3. Rectification**

Requiring impacts from public lands uses to be rectified by repairing, rehabilitating, or restoring the affected environment (40 CFR 1508.1).

- A. The BLM will identify, consider, and, as appropriate, require rectification to address those reasonably foreseeable impacts to resources from public land uses that cannot be avoided or minimized.
- B. The need for, type of, and amount of rectification should be based on applicable mitigation standards, what is appropriate and practicable, and should also include other considerations, such as the resource's importance, scarcity, or sensitivity, at all relevant scales, and whether the resource for which adverse impacts will be mitigated has legal, regulatory, land use plan, or policy protections that limit or prevent certain types of impacts.

*Example: Reclaiming an oil and gas well pad and access road after the well has been plugged so that the landform and ecosystem function will be restored.*

*Example: Repairing a rock art panel damaged by dust from heavy truck traffic from an authorized public land use through professional restoration techniques.*

*Example: Rehabilitating a stream impacted by the installation of a pipeline to restore natural stability and riparian systems.*

- C. When requiring rectification, the BLM should ensure impacts are rectified as soon as practicable after the onset of impacts. In some cases, such as for final reclamation, rectification of impacts will occur using a phased approach prior to the termination of the land use authorization.

### **3.4. Reduce or Eliminate Over Time**

Requiring impacts from public lands uses to be reduced or eliminated over time by preservation and maintenance operations during the life of the public land use.

- A. The BLM will identify, consider, and, as appropriate, require the reduction or elimination of impacts over time to address those reasonably foreseeable impacts to resources from public land uses that cannot be avoided, minimized, or rectified.
- B. The need for, type of, and amount of reduction or elimination of impacts over time should be based on applicable mitigation standards, what is appropriate and practicable, and should also include other considerations, such as the resource's importance, scarcity, or sensitivity, at all relevant scales, and whether the resource for which adverse impacts will be mitigated has legal, regulatory, land use plan, or policy protections that limit or prevent certain types of impacts.

*Example: For the duration of an access road's period of operation, ensure that the public land user conducts interim reclamation along the road to reduce the width of the disturbed area (after the initial construction's disturbance) and partially restores the vegetation over time.*

- C. When reduction or elimination of impacts over time is required, the BLM should ensure impacts are reduced or eliminated as soon as practicable after the onset of impacts.

### **3.5. Compensation**

After considering and applying the first four aspects of the mitigation hierarchy, the BLM will, as appropriate, require that public land users compensate for certain types of residual impacts on the public lands by replacing or providing substitute resources or environments, through restoration, establishment, enhancement, and/or preservation of resources.

The BLM may include these requirements in land use authorizations for which BLM has broad discretion under the law. As mentioned in the Introduction, to the extent that BLM has limited discretion for certain types of land use authorizations, such as those related to uses under the

Mining Law or decisions related to existing leases and contracts, the BLM's ability to require those public land users to conduct certain types of compensatory mitigation may be limited by applicable law.

### **A. Compensatory Mitigation**

The BLM will identify, consider, and, as appropriate, require compensatory mitigation, based on the criteria identified in Handbook Chapter 3.5.B, to address the reasonably foreseeable residual effects to resources from public land uses.

When BLM is planning to take an action itself that would impact the public lands, the BLM should strive to design that land use to avoid residual effects that warrant compensatory mitigation.

By applying the criteria in Handbook Chapter 3.5.B, after applying the first four aspects of the mitigation hierarchy, the BLM will identify the extent to which residual effects warrant compensatory mitigation.

### **B. The Need for Compensatory Mitigation**

Consistent with applicable law, the need for compensatory mitigation should be based on applicable mitigation standards, what is appropriate, and the potential for any of the following:

1. **Laws and/or Policies.** Residual effects that inhibit achieving compliance with laws and/or policies, if compensatory mitigation were not required. When considering compensatory mitigation for residual effects, the BLM should also take into consideration the management responsibilities of other Federal agencies, Tribal, State and/or local governments and how the laws or policies of these entities could be inhibited by the residual effects.

*Example: A pipeline will impact the outstandingly remarkable scenic values of a river designated under the Wild and Scenic Rivers Act. In addition to identifying mitigation related to the first four aspects of the mitigation hierarchy, the BLM identifies through the NEPA process and in the decision document the residual effects to the river that warrant compensatory mitigation in order for the public land user to comply with the Wild and Scenic River Act. An appropriate form of compensatory mitigation may include removing existing infrastructure at other locations within the river's corridor to protect and enhance the outstandingly remarkable scenic values of the river.*

*Example: A large wind energy development project will impact the clear views and spirit travel that a local tribe believes are essential to cultural continuity. In addition to identifying mitigation related to the first four aspects of the mitigation hierarchy, the BLM identifies through the NEPA*

*process, consultation under Section 106 of the National Historic Preservation Act (NHPA), and in the decision document the residual effects (“indirect effects” under NHPA) to the tribal values that warrant (compensatory) mitigation in order for the public land user to comply with the NHPA. An appropriate form of compensatory mitigation (“alternative mitigation” under NHPA), in consultation with the applicable tribes, may include acquiring permanent, legal access to another sacred site, which is currently closed to access.*

*Example: A re-alignment of a county road for safety purposes will impact the habitat of black-tailed prairie dogs, which is a BLM special status species (but not a species listed, or a candidate for listing, under the Endangered Species Act). In addition to identifying mitigation related to the first four aspects of the mitigation hierarchy, the BLM identifies through the NEPA process and in the decision document the residual effects to the habitat that warrant compensatory mitigation in order for the public land use to comply with BLM’s policy on special status species. An appropriate form of compensatory mitigation may include closing and restoring other county or BLM roads in or adjacent to black-tailed prairie dog habitat.*

2. Land Use Plan Objectives. Residual effects that inhibit achieving applicable land use plan’s resource objectives, including any applicable mitigation standards, if compensatory mitigation were not required. When considering compensatory mitigation for residual effects, the BLM should also take into consideration the management responsibilities and interests of other Federal agencies, Tribal, State and/or local governments.

*Example: A proposed transmission line will impact a Special Recreation Management Area (SRMA). In addition to identifying mitigation related to the first four aspects of the mitigation hierarchy, the BLM identifies through the NEPA process and in the decision document the residual effects to the SRMA that warrant compensatory mitigation in order to achieve the SRMA’s land use plan objectives. An appropriate form of compensatory mitigation may include relocating or constructing a new trailhead and parking area farther from the transmission line.*

If a land use plan amendment is being considered to accommodate residual effects that are incompatible with the existing land use plan, compensatory mitigation may still be appropriate to address the resource impacts.

*Example: A solar energy development will impact an area with a Class II visual resource management objective. In addition to identifying mitigation related to the first four aspects of the mitigation hierarchy, the BLM identifies through the NEPA process and in the decision document the residual effects to the visual resources that warrant compensatory*

*mitigation, which are impacts that also necessitated a plan amendment. Appropriate forms of compensatory mitigation may include reducing visual impacts within a landscape of the same or higher scenic quality by reducing the visual contrast of existing power and transmission lines, transformer stations, and associated maintenance road, removing abandoned power poles, and/or reclaiming abandoned or redundant access roads.*

3. Mitigation Strategy. Residual effects to resources that are considered important, scarce, sensitive, or have a protective legal mandate that have been previously identified in a mitigation strategy as warranting compensatory mitigation.

*Example: The Dry Lake Solar Energy Zone Mitigation Strategy identified a scarce type of native vegetation that will continue its decline as a result of new surface disturbance for solar energy development and therefore recommended compensatory mitigation for future residual effects to that vegetation. For solar energy development in the Dry Lake Solar Energy Zone that will impact the scarce vegetation type, in addition to identifying mitigation related to the first four aspects of the mitigation hierarchy, through the NEPA process the BLM considers the mitigation strategy's recommendation and identifies in the decision document the residual effects to the native vegetation that warrant compensatory mitigation. Appropriate forms of compensatory mitigation may include invasive species control, buying out grazing allotments, purchasing conservation easements on private lands for areas at risk from development, or enhancing wildfire preparation and suppression capabilities in that vegetation type.*

4. NEPA Process. Residual effects to resources that are considered important, scarce, sensitive, or have a protective legal mandate that are identified through a NEPA process as warranting compensatory mitigation.

*Example: A new gravel pit will impact the main access trail to an area of local importance for hunting, fishing, and other day use activities. In addition to identifying mitigation related to the first four aspects of the mitigation hierarchy, the BLM identifies through the NEPA process and in the decision document the residual effects to the trail that warrant compensatory mitigation. An appropriate form of compensatory mitigation may include the construction of a new day use parking area and new access trail that would bring day users in from another direction, farther from the gravel pit.*

If the BLM requires a public land user to rectify or eliminate impacts from a public land use at some point in the distant future (e.g., reclaiming an abandoned oil well 40 years from now followed by successful ecosystem restoration 15 years after that), it does not eliminate the need to identify, consider, and, as appropriate, require

compensation for residual effects that will occur in the interim before reclamation and restoration are complete.

The BLM should consider the four criteria in this section to determine if residual impacts warrant any compensatory mitigation, and if so, the extent to which those residual impacts warrant compensatory mitigation. In other words, when deciding whether compensatory mitigation is warranted, the BLM should consider the extent to which residual impacts should be mitigated to facilitate compliance with law, policy, or land use plan objectives; or to protect resources that are considered important, scarce, sensitive, or have a protective legal mandate, as identified in a mitigation strategy or through the NEPA process.

### C. Residual Effects Not Warranting Compensation

The BLM should generally not require compensatory mitigation for impacts from a proposed public land use to address residual effects to another authorized public land uses (e.g., residual effects to authorized livestock grazing, rights-of-way, solid minerals development, oil and gas development).

*Example: A new oil and gas development project will reduce available vegetation, which is also used as cattle forage in a grazing allotment. The BLM identifies through the NEPA analyses and in the decision document the appropriate avoidance and minimization measures, but residual effects remain. The BLM would not identify compensatory mitigation for the loss of cattle forage, and the subsequent reduction in available animal unit months, as residual effects to another authorized public land use (in this case, grazing) do not warrant compensatory mitigation.*

However, there are two exceptions to this policy, as follows.

1. The BLM will make every effort to avoid authorizing public land uses that reduce the effectiveness of compensatory mitigation sites and restoration projects (i.e., a reversal). In the rare circumstance where the BLM authorizes such a land use, the BLM will apply the mitigation hierarchy, including compensatory mitigation, as appropriate, to address those impacts.
2. It may be appropriate for the BLM to require compensatory mitigation for residual effects to recreational facilities primarily maintained for the direct recreational use of the general public (e.g., a hiking trail system, campsites, boat launch) or for residual effects to authorized range improvements (e.g., fencing).

*Example: Residual effects from construction of a new road through an existing hiking trail system that is available for use by the general public may require compensatory mitigation, such as relocating the trail crossing to a safer area with better sight distance, or installing a new trailhead, as*

*the hiking trail system is a public land use that is primarily maintained for the use of the general public.*

#### **D. Compensatory Mitigation Standard**

When the BLM determines that compensatory mitigation is warranted for addressing a residual effect to a resource, the BLM will seek to apply a no net loss standard, consistent with applicable law, if that resource is important, scarce, sensitive, has a protective legal mandate, or whenever doing so is consistent with established resource objectives. The BLM can implement other mitigation standards, such as achieving net benefit, consistent with applicable law, when the BLM determines such standards are required to achieve resource objectives (Handbook Chapter 5.1.A).

#### **E. The Types of Compensatory Mitigation**

The BLM recognizes four types of compensatory mitigation measures: restoration, establishment, enhancement, and preservation. The BLM should identify the compensatory mitigation measures that will appropriately mitigate the reasonably foreseeable residual effects that warrant compensatory mitigation and achieve the maximum benefit to the impacted resources within the context of the conditions and trends of those resources, at all relevant scales. The BLM will generally consider appropriate the use of mitigation banks, mitigation exchanges, mitigation funds (also known as in-lieu fee programs), and public land user-responsible compensatory mitigation measures to carry out these types of compensatory mitigation, as discussed in Handbook Chapter 3.5.I.

#### **F. Key Attributes of Compensatory Mitigation**

All compensatory mitigation obligations should be commensurate with the reasonably foreseeable residual effects from public land uses that warrant compensation and that compensatory mitigation measures demonstrate the appropriate level of timeliness and are additional.

1. Commensurate. The BLM should ensure that any compensatory mitigation obligation is commensurate with the reasonably foreseeable residual effects from public land uses that warrant compensation (i.e., a compensatory mitigation obligation, to be commensurate, should be reasonably related and proportional to the reasonably foreseeable residual effects from a public land use that warrants compensatory mitigation).
  - a. The type of compensatory mitigation should have a reasonable relationship to the reasonably foreseeable residual effects of the public land use that warrant compensation in order to be considered commensurate. The BLM should evaluate the types of compensatory mitigation measures based on their ability to provide the maximum benefit to the impacted resources.

*Example: An oil and gas development project will result in the loss of 650 acres of important desert bighorn sheep summer habitat, even after the consideration and application of the first four aspects of the mitigation hierarchy. Through the NEPA analysis and in the decision document, the BLM determines that the restoration of 650 acres of degraded desert bighorn sheep summer habitat in another part of the population's range would be required as compensatory mitigation.*

- b. The amount of compensatory mitigation should be proportional to the reasonably foreseeable residual effects of the public land use that warrant compensation in order to be considered commensurate. Proportionality necessitates that the amount of compensatory mitigation is approximately equivalent with the reasonably foreseeable residual effects of the public land use that warrant compensation (including consideration of direct and indirect residual effects).

*Example: A new road has one acre of direct surface impact, but BLM calculates that the road's traffic, noise, and dust creates 10 acres of indirect residual effects in the form of lost habitat, even after the consideration and application of the first four aspects of the mitigation hierarchy. Therefore, one acre of direct surface impact from the construction and use of the new road would be proportional to 10 acres of habitat restoration at another location.*

Proportionality includes factors such as the quality of the resource (at both the impacted site and compensatory mitigation sites), the degree to which the resource is important, scarce, or sensitive, or requires protection (via legal, regulatory, policy, or land use plans), the timeliness of the compensatory mitigation measure, the risk of a measure's failure, and any applicable mitigation standard. In some cases, an impact that affects a relatively small area may be considered proportional to a relatively large area of compensatory mitigation due to these types of factors, or vice versa.

- c. Compensatory mitigation measures should simultaneously be both commensurate with the residual effects and achieve the maximum benefit for the impacted resources. Determining what is commensurate is achieved by carefully identifying the type of and amount of required compensatory mitigation. Determining the maximum benefit is often achieved by carefully identifying the type, siting, and/or timing of the compensatory mitigation measure, with special consideration to any known limiting factors for the impacted resources.

*Example: A new road in a narrow valley will result in the loss of 20 acres of intact riparian vegetation, even after the consideration and application of the first four aspects of the mitigation hierarchy. Through the NEPA analysis and in the decision document, the BLM determines that the restoration of 20 acres of*

*riparian vegetation would be required as compensatory mitigation. While there are many places along the river near the new road in need of riparian restoration, the compensatory mitigation measures will be sited in areas farther away in the same watershed, where the last remaining degraded riparian acres in an important riparian corridor could be restored and the maximum benefit to the watershed's riparian resources could be achieved.*

- d. Whenever compensatory mitigation is required, the BLM should clearly describe in the NEPA analysis and decision document(s) how compensatory mitigation measures are commensurate with the reasonably foreseeable residual effects and achieve the maximum benefit to the impacted resources.
2. Timeliness. The BLM should ensure that compensatory mitigation measures demonstrate the appropriate level of timeliness.
    - a. In developing compensatory mitigation measures' outcomes, the BLM should include timeliness requirements (i.e., description of *when* the measures' outcomes will be achieved).
    - b. The BLM's general preference is to achieve compensatory mitigation measures' outcomes in advance of impacts from a public land use (e.g., by the public land user purchasing credits from a mitigation bank, if appropriate). The implementation of this preference will depend on the quantity, quality, and characteristics of the impacted resource, urgency of the compensatory mitigation needs and the amount and type of the compensatory mitigation measures.

To provide a degree of certainty to the applicant of a land use authorization, it may be appropriate for the BLM to approve a public land use contingent on the public land user achieving the outcomes of the compensatory mitigation measures. Once the outcomes have been achieved, the BLM could then issue a Notice to Proceed (or a similar notice).

*Example: An oil and gas development project will cause residual effects that warrant compensatory mitigation to a mule deer migration corridor and result in increased mule deer highway and winter mortality. To compensate for this residual effect, prior to actual development, the public land user purchases conservation easements on private land within the migration corridor near the highway, and removes livestock, obstructing fences, and out-buildings in order to create a clear mule deer crossing corridor, and funds the state highway department to place automated deer crossing signs, thereby reducing animal/vehicle collisions.*

- c. In other cases, the BLM may allow for the residual effects of a public land use to precede the achievement of a compensatory mitigation measure's outcome if the

quantity, quality, and characteristics of the impacted resource can withstand such a delay. In this case, the BLM may need to account for the increased uncertainty and the time-value of delayed benefits when determining the compensatory mitigation obligation (Handbook Chapter 3.5.G).

- d. In some cases, it may be appropriate for the public land user to compensate for the reasonably foreseeable slow decline of a resource due to a public land use by phasing in compensatory mitigation measures. In these cases, the compensatory mitigation outcomes should be timed to match the decline in the affected resource.
    - i. If an applicant seeks to implement and receive credit for compensatory mitigation measures performed in advance of the submission of a public land use proposal or prior to the BLM's analysis of the proposed public land use, the BLM (and/or another Federal agency or a State agency) and the applicant should develop a written agreement that documents that the credits are being generated for the purpose of compensating for a future impact and the measures are being designed and implemented in a manner consistent with this handbook. Any credits generated in accordance with these types of agreements should be included as part of the proposed action and analyzed by the BLM in the NEPA process. These agreements should document the Standards for Compensatory Mitigation Mechanisms, as describe in Handbook Chapter 3.5.I.1.
    - ii. The BLM manages many types of resources, many of which may require a different method for calculating the credit values to be used in these agreements. The BLM expects to issue program-specific guidance that outlines valuation tools for determining the amount of credit that a public land user may obtain from certain types of compensatory mitigation. Until that guidance is issued, BLM offices should coordinate, as appropriate, with each other, other Federal agencies, Tribal, State, and/or local governments to act as consistently as possible in developing these agreements with public land users.
3. **Additionality.** The BLM should ensure that any compensatory mitigation that it requires demonstrates additionality (i.e., a compensatory mitigation measure that is demonstrably new and would not have occurred without the compensatory mitigation measure).
- a. **Financial additionality:** The BLM should ensure that compensatory mitigation measures are in addition to any existing projects funded or foreseeably expected to be funded, that benefit the same resources in the same way at the same sites.
    - i. Compensatory mitigation measures on Federal land will demonstrably augment, rather than duplicate, similar projects funded or foreseeably expected to be funded by Federal appropriations, including those projects identified in the BLM's annual work plan. However, the identification of a

similar project in a land use plan or a strategy document does not necessarily mean that a compensatory mitigation action is not additional.

*Example: In a land use plan, the BLM has identified 129,000 acres in need of habitat restoration; however, Congress has not appropriated sufficient funds to the BLM to perform all of this restoration. As a result, it would be considered “additional” if a public land user implemented appropriately commensurate compensatory mitigation measures that restored some of the habitat that BLM could not restore.*

- ii. Compensatory mitigation measures on non-Federal land will demonstrably augment, rather than duplicate, similar projects funded or foreseeably expected to be funded by Federal, Tribal, State, and/or local governments, and/or private entities.
- b. Resource additionality: The BLM should ensure that compensatory mitigation measures are demonstrably new and would not have occurred without the compensatory mitigation measure.
- c. The BLM should not consider new compensatory mitigation obligations associated with a new land use authorization to be additional if they duplicate existing compensatory mitigation obligations associated with an existing land use authorization, even if the existing compensation mitigation obligations have not yet been implemented.

## **G. The Amount of Compensatory Mitigation**

Determining the need for compensatory mitigation (Handbook Chapter 3.5.B) is a prerequisite for determining the appropriate amount of compensatory mitigation.

The BLM should determine the amount of compensatory mitigation that is commensurate to the residual effects that warrant compensatory mitigation and that is consistent with any applicable mitigation standard. The BLM should be transparent and provide a clear rationale for the amount of compensatory mitigation in the NEPA analysis and decision document(s).

The following process should be used as a framework to determine the amount of compensatory mitigation.

1. *Determining the Magnitude of the Impacts to the Resource:* After determining that residual effects to a resource warrant compensatory mitigation, the BLM needs to determine the magnitude of those impacts. To do so, the BLM needs to determine:

- a. The baseline condition and trend of the resource, in terms of quantity, quality, and characteristics, at the impacted site.<sup>7</sup> The BLM should consider if the current quantity, quality, and characteristics of the resource is at a desired condition (e.g., ideal habitat size, at its ecological potential, fulfilling a key role), and if the trend in the quantity, quality, and characteristics of the resource is improving, declining, or maintaining. This analysis will likely require consideration of the condition and trend at the site of the impact and within the relevant landscape of the resource.
- b. The amount of change to the baseline condition and trend due to the residual effects from the public land use, in terms of quantity, quality, and characteristics (after consideration and implementation of the first four aspects of the mitigation hierarchy). The BLM should determine how much change from baseline there will be in the quantity, quality, and characteristics of the resource due to the residual effects, and how that change will affect achieving the desired condition and trend of the resource. These changes may be realized at the site and/or across the landscape (e.g., will a change in quality at the site cause a detectable change in quality across the landscape?).

This analysis should consider both the direct and indirect impacts. Direct impacts typically consider the footprint of the land use authorization. Indirect impacts vary widely by the type of public land use and the type of resource, but generally are most intense near the impact site and gradually decrease as the distance from the impact site increases.

2. *Determining the Magnitude of the Benefits Needed to Adhere to the Mitigation Standard:* The BLM should compare the magnitude of the impacts to the resource, as determined in Step 1, to any applicable mitigation standard for the resource, in order to determine the magnitude of the benefits to the resource that is needed to be achieved through compensatory mitigation. For example, if there is a no net loss mitigation standard established in the land use plan for the resource, the magnitude of the impacts to the resource should equal the magnitude of the benefits to the resource from compensatory mitigation measures.

If no mitigation standard yet exists for the resource, the BLM should use this step in the process to consider the project-specific mitigation standard for the resource (through the decision document supported by appropriate NEPA analysis). It is BLM policy to seek to apply a no net loss standard, consistent with applicable law, if that resource is important, scarce, sensitive, has a protective legal mandate, or whenever doing so is consistent with established resource objectives, as described in Handbook Chapter 3.5.D. The BLM can implement other mitigation standards, such as achieving net benefit, consistent with applicable law, when the BLM determines such standards are required to achieve resource objectives.

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<sup>7</sup> In some cases, the quantity, quality, and characteristics of a resource can be addressed in a single metric (e.g., functional acres)

In any case, the magnitude of the benefits to the resource should be commensurate with the magnitude of the impacts to the resource that warranted compensatory mitigation.

3. *Determining the Amount of Compensatory Mitigation Needed to Achieve the Magnitude of the Benefits:* The BLM needs to determine the amount of compensatory mitigation necessary in order to achieve the appropriate magnitude of the benefits to the resource, as determined in Step 2. The amount necessary to achieve the appropriate benefit is dependent on the compensatory mitigation type (Handbook Chapter 3.5.E, e.g., preservation or restoration) and the compensatory mitigation site (Handbook Chapter 3.5.H)

Compensatory mitigation types and compensatory mitigation sites can achieve various amounts of benefits to the resource with various amounts of effort. For example, a small amount of a much-needed compensatory mitigation measure at a critically-important compensatory mitigation site can produce more resource benefit than a large amount of a low-value compensatory mitigation measure at a low-importance compensatory mitigation site.

To identify the achievable benefits from compensatory mitigation types at compensatory mitigation sites, the BLM needs to determine:

- a. The baseline condition and trend of the resource, in terms of quantity, quality, and characteristics, at the compensatory mitigation site. The BLM should consider if the current quantity, quality, and characteristics of the resource is at a desired condition (e.g., ideal habitat size; at its ecological potential; fulfilling a key role), and if the trend in the quantity, quality, and characteristics of the resource is improving, declining, or maintaining. This analysis will likely require consideration of the condition and trend at the compensatory mitigation site and within the relevant landscape of the resource.
- b. The amount of change to the baseline condition and trend due to the compensatory mitigation measures, in terms of quantity, quality, and characteristics (after consideration and implementation of the first four aspects of the mitigation hierarchy). The BLM should determine how much change from baseline there will be in the quantity, quality, and characteristics of the resource due to the compensatory mitigation measures, and how that change will provide a benefit to the desired condition and trend of the resource. These changes may be realized at the site and/or across the landscape (e.g., will a change in quality at the site cause a detectable change in quality across the landscape?).

In this step, the BLM should consider the type of compensatory mitigation measures that will be implemented, as this will affect the amount of change to the baseline condition and trend that can be realized. This step will determine the amount of compensatory mitigation necessary at the site in order to achieve the appropriate magnitude of the benefits to the resource.

The same methods, including metrics, used to describe the magnitude of impacts to the resource (as compared to baseline conditions) from the public land use should be used to describe the magnitude of benefits to the resource (as compared to baseline conditions) from compensatory mitigation measures (e.g., "functional acres" impacted, and "functional acres" benefitted).

4. *Considering Risk:* The BLM should consider the risk of mitigation ineffectiveness, or the loss of durability, when determining the amount of compensatory mitigation, including consideration of the risk from foreseeable changing circumstances (e.g., climate change, fire, invasive species). It is a best practice to gain understanding of this risk through analysis in the NEPA process. It may be possible to account for this risk by carefully designing compensatory mitigation measures or by the use of credit reserves, where additional mitigation measures are conducted, but held in reserve and used only if a compensatory mitigation measure fails.
5. *Considering Timeliness:* The BLM may determine that it should adjust the amount of compensatory mitigation to account for any lack of timeliness with the compensatory mitigation measures.
6. *Considering the use of Mitigation Banks, Mitigation Exchanges, and Mitigation Funds:* Appropriate compensatory mitigation mechanisms are described in Handbook Chapter 3.5.I. When a public land user is relying on three of the four appropriate mechanisms (mitigation banks, mitigation exchanges, and mitigation funds) to fulfill a need for compensatory mitigation, the BLM may need to take additional steps to ensure that the amount of compensatory mitigation required is equivalent to the amount of compensatory mitigation provided by the compensatory mitigation mechanism.
  - a. *Mitigation Banks and Mitigation Exchanges:* When a public land user purchases credits from the responsible party of a mitigation bank or a mitigation exchange to fulfill the need for compensatory mitigation of residual effects, the BLM should verify that the credits are equivalent to the required compensatory mitigation obligation. The BLM should review crediting methodologies adopted by the mitigation banks and mitigation exchanges to help make this equivalency determination. Credit valuation and crediting methodologies may differ depending on the type of bank or exchange and how the managers of those banks or exchanges, or the relevant regulatory agency, are determining credit value.
  - b. *Mitigation Funds:* When a public land user makes a financial contribution to a mitigation fund to fulfill the need for compensatory mitigation of residual effects, the BLM should convert each required compensatory mitigation measure into monetary terms in order to determine the appropriate contribution to the fund (i.e., how much does it cost to perform such measures?).

This determination should be based on full cost accounting and include, as appropriate, expenses such as fund administration, land acquisition, durability measures, project planning and design, materials, labor, monitoring, and reporting. This determination should also take into account contingency costs to account for uncertainties and risk, any necessary financial assurances, and long-term management for the duration of the impacts.

The BLM should review funding methodologies adopted by mitigation funds to help make this funding determination. For non-market/ecosystem services-based compensatory mitigation measures, methods may exist to estimate the economic/monetary value of the compensatory mitigation measure (e.g., benefit transfer, revealed preference, contingent valuation, avoided cost, etc.).<sup>8</sup>

## H. Compensatory Mitigation Sites

To the extent allowed by law, including existing regulations, the BLM should ensure that activities conducted to comply with compensatory mitigation measures are located on compensatory mitigation sites where the maximum benefit to the impacted resource can feasibly be achieved and maintained and that will provide for the appropriate types and amount of compensatory mitigation measures. Compensatory mitigation sites can be identified in advance of anticipated public land uses in land use plans (Handbook Chapter 5.1.C) and/or mitigation strategies (Handbook Chapter 4.4.I) or can be identified through the NEPA process for proposed public land uses (Handbook Chapter 6.7).

1. The BLM should identify a compensatory mitigation site without implying a preference for siting it closer to or farther from the impacted site, as long as a reasonable relationship is maintained between the impacts of the public land use and the compensatory mitigation measure(s) being implemented at that site. It should also be determined without implying a preference for Federally managed lands. If sited on BLM-managed lands, the BLM should consider other potential uses of that land that are incompatible with the compensatory mitigation site. If sited on non-BLM-managed lands, the BLM will require the consent of the landowner or manager.
  - a. For management of a compensatory mitigation site on BLM-managed lands, the BLM will ensure, in coordination with the responsible party for the compensatory mitigation measure, that the site will receive adequate administration, durability, monitoring, adaptive management, reporting, and funding for the duration of the impacts from the public land use.
  - b. For management of a compensatory mitigation site on non-BLM-managed lands, the BLM should document the landowner's or manager's consent through a written agreement between applicable parties that outlines the terms and conditions of the arrangement, including how the BLM or other entity will gain access to conduct monitoring.

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<sup>8</sup> Federal Resource Management and Ecosystem Services Guidebook; <https://nespguidebook.com/>

2. The BLM should assess and document the baseline condition of compensatory mitigation sites to determine the site's potential for achieving benefits to the resources. The baseline condition should include consideration of the conditions and trends of resources, in terms of quantity, quality, and characteristics, and the bio-physical aspects of the site that support the resources (e.g., soil conditions), at all relevant scales. Understanding the baseline conditions of the relevant resources at a compensatory mitigation site is important to ensure that the site has the potential to achieve the required outcome(s). The foreseeable change in baseline condition and the potential to achieve the required outcome(s) should be primary factors in selecting compensatory mitigation sites.
3. In many cases, the maximum benefit can be found where there is potential to leverage other conservation-related projects funded by Federal or non-Federal entities. The principles of additionality still apply (Handbook Chapter 3.5.F.3).

*Example: An ideal compensatory mitigation site is included within a BLM-identified Healthy Lands Focal Area, where Federal and non-Federal funds are being used to create healthy landscapes through a variety of restoration and preservation projects. As Healthy Lands Focal Areas encompass large landscapes, in most cases, additionality can be demonstrated for compensatory mitigation measures, as the compensatory mitigation funds can be used to supplement (not replace) the other funds being invested in creating the healthy landscape.*

4. Multiple compensatory mitigation sites may be appropriate for a single public land use to accommodate the variety of resources with residual effects.
5. Compensatory mitigation sites may provide opportunities for spatially overlapping compensatory mitigation measures.
  - a. A single compensatory mitigation site may provide opportunities for a public land user to mitigate the residual effects under multiple compensatory mitigation measures.

*Example: A high-voltage transmission line project will result in the degradation of 480 acres of priority Greater sage-grouse habitat and the loss of the historic visual setting along 6 miles of a National Historic Trail, even after the consideration and application of the first four aspects of the mitigation hierarchy. Through the NEPA analysis and in the decision document, the BLM determines that enhancement of 960 acres of Greater sage-grouse habitat and the restoration of 6 miles of historic visual setting along the National Historic Trail would be required as compensatory mitigation. To reduce the overall cost of compensatory mitigation and increase the value of the*

*compensatory mitigation measure, a compensatory mitigation site was selected along a high potential segment of the National Historic Trail (with a similar type of historic setting to the impacted site) and was in a priority habitat management area of Greater sage-grouse habitat. The compensatory mitigation measures included removing abandoned power lines, which provided a benefit to the greater sage-grouse (lower predation risks) and improved and protected the National Historic Trail's historic setting.*

- b. For compensatory mitigation obligations met through mitigation banks and mitigation exchanges, the BLM should be aware of the similar, but distinct concepts of “credit bundling” and “credit stacking”.
- i. *Credit bundling* is when a compensatory mitigation credit representing a measure that benefited multiple overlapping resources at a single compensatory mitigation site is sold by a mitigation bank or mitigation exchange to a public land user as single combined credit. The BLM should be aware that a public land user under a compensatory mitigation obligation to the BLM may be able to purchase a single credit from a mitigation bank or mitigation exchange to meet its compensatory mitigation obligation for several impacted resources, if the credit is associated with a measure that benefitted each of the impacted resources.

*Example: If a public land user is required to conduct compensatory mitigation for impacts to 10 acres of sagebrush and 10 acres of sagebrush-obligate bird habitat, they may purchase 10 combined credits from a mitigation bank that represent 10 acres of restoration that improved both sagebrush and sagebrush-obligate bird habitat.*

- ii. *Credit stacking* is when a compensatory mitigation credit representing a measure that benefited multiple overlapping resources is sold by a mitigation bank or mitigation exchange to a public land user as separate and distinct credits. The BLM should not view credits that a public land user has obtained through credit stacking to be used to fulfill compensatory mitigation obligations, as this practice raises concerns regarding additionality, in that the same credit (i.e., the same compensatory mitigation measures) could be sold multiple times (i.e., double dipping).

*Example: If a public land user is required to conduct compensatory mitigation for impacts to 10 acres of sagebrush and 10 acres of sagebrush-obligate bird habitat, they may not purchase 10 combined credits from a mitigation bank, if the bank has already sold the sagebrush aspects or the sagebrush-obligate bird aspects of those 10 credits to another entity. In this example, each*

*of the 10 combined credits generated by this bank can be sold as combined credits, sagebrush-only credits, or bird-only credits. Once sold, the credits cannot be sold again.*

## **I. Compensatory Mitigation Mechanisms**

Among the compensatory mitigation mechanisms that the BLM will generally consider appropriate, consistent with applicable law are: mitigation banks,<sup>9</sup> mitigation exchanges, mitigation funds (also known as in-lieu fee programs), and public land user-responsible compensatory mitigation measures.

*Example: A large wind energy development project will result in the degradation of 235 acres of a sensitive plant species habitat, even after the consideration and application of the first four aspects of the mitigation hierarchy. Through the NEPA analysis and in the decision document, the BLM determines that the restoration of 235 acres of this plant species' habitat would be required as compensatory mitigation. To fulfill this compensatory mitigation requirement, the public land user could purchase credits from a mitigation bank or mitigation exchange, in which the credits were generated by restoring this plant species' habitat at a vital offsite location.*

While it is permissible for the BLM to hold mitigation funds, the BLM is discouraged from doing so due to increased workloads on BLM staff and BLM overhead rates. If the BLM does hold mitigation funds, the full costs to hold the funds should be included when determining the amount of compensatory mitigation, generally consistent with applicable cost recovery authorities. Refer to Appendix 2 for additional policies and procedures regarding the BLM's management of mitigation funds.

In the case where the BLM is not the manager of the mitigation fund, the BLM will not assume, by agreement or otherwise, control over the use of such funds. This includes direct control, such as by the controlling vote in a decision-making group, or constructive control, such as by having the power to veto an expenditure decision. Consistent with applicable law, however, the BLM may participate in decisions as to their use, so long as the BLM does not have ultimate decision-making authority. The purpose of this restriction is to ensure that such funds are not determined to be Federal funds and thereby subject to Federal rules governing their expenditure. The BLM retains the ability to ensure that required mitigation obligations are implemented and effective.

- 1. Standards for Compensatory Mitigation Mechanisms.** The BLM should hold all compensatory mitigation mechanisms, if used to meet a compensatory mitigation

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<sup>9</sup> Historically, mitigation banks and mitigation funds have focused on compensatory mitigation associated with the Clean Water Act and the Endangered Species Act. Examples of these compensatory mitigation mechanisms, including documentation, siting, and reports, can be viewed on the Regulatory In-lieu Fee and Bank Information Tracking System (RIBITS), managed by the U.S. Army Corps of Engineers. <https://ribits.ops.usace.army.mil/ords/f?p=107:2:.....>

obligation required by the BLM, to high and equivalent standards. Consistent with applicable law, the BLM should verify and document that the responsible party for a compensatory mitigation mechanism has:

- a. Established and described clearly defined and measurable *outcomes* and *performance standards* for the compensatory mitigation measures, including the types and amounts of resources that will be restored, established, enhanced, and/or preserved, and described how these outcomes will contribute to achieving established resources objectives.
- b. Described the factors considered during the *site selection* process, including how the sites will address landscape-scale needs.
- c. Ensured and described how the *durability* of the compensatory mitigation measures and sites will be maintained.
- d. Assessed and documented the *baseline conditions* of the compensatory mitigation sites, with consideration to the conditions and trends of resources at all relevant scales.
- e. Implemented adaptive management, including a comprehensive *monitoring* program, which considers the conditions and trends of resources at all relevant scales, to assess the effectiveness of compensatory mitigation measures and identify any need for management changes to achieve the required mitigation outcomes. As described in Handbook Chapter 2.1.F, whenever possible, effectiveness monitoring should be designed around the same or compatible methods, including metrics, as used to identify resource objectives (e.g., in a land use plan), measure impacts, and/or define mitigation measures' outcomes, and should be incorporated into existing monitoring programs and sampling grids.
- f. Developed and implemented a *plan* for compensatory mitigation measure(s) and site(s) that describes:
  - i. Specifications for implementing the compensatory mitigation measures (e.g., timing, method, source materials, specific geographic area, etc.).
  - ii. The schedule and plan to maintain compensatory mitigation measures for the duration of the impacts.
  - iii. Any adaptive management triggers, if necessary, in order to achieve the required outcomes of the compensatory mitigation measures.
  - iv. The accounting, tracking, and reporting of measures/funds/credits.

- g. Demonstrated financial solvency sufficient to cover all compensatory mitigation obligations (including durability, monitoring, adaptive management, and reporting) for the duration of the impact from the associated public land use(s).

While each of these standards should be required, regardless of the compensatory mitigation mechanism, the degree of detail to be used in describing how a compensatory mitigation mechanism is meeting each of these standards should be determined in relation to the amount and type of compensatory mitigation measures.

2. **Approval of Compensatory Mitigation Mechanisms.** A written agreement should be in place between the responsible party (i.e., the entity accountable for fulfilling all aspects of mitigation obligations) for a compensatory mitigation mechanism, the BLM (and/or another Federal or State agency), and any other applicable parties, which documents the standards described above. The agreement should outline the terms and conditions of the arrangement, including how the BLM or another entity will conduct monitoring.
3. **Determining the Compensatory Mitigation Mechanism for a Compensatory Mitigation Obligation.** The BLM will discuss compensatory mitigation mechanism options with the land use authorization's applicant. Public land users who have compensatory mitigation obligations may meet those obligations via a compensatory mitigation mechanism certified or approved by BLM (or certified by another Federal or State agency if the compensatory mitigation mechanism is designed in a manner consistent with this policy). The BLM will determine the appropriate mechanism(s), taking into account the preferences of the applicant and the standards and preferences described in this policy. In order for the BLM to approve the use of a compensatory mitigation mechanism to satisfy compensatory mitigation obligations:
  - a. The compensatory mitigation measures performed by the compensatory mitigation mechanism must have a reasonable relationship to the reasonably foreseeable residual effects from the public land use (Handbook Chapter 3.5.F.1).
  - b. The compensatory mitigation measures performed by the compensatory mitigation mechanism should be the type of measure(s), sited in the appropriate location(s), that will achieve the maximum benefit for the impacted resources, within the context of the conditions and trends of resources, at all relevant scales, on public or private lands (with a written agreement with the willing landowner).

The BLM's general preference is to achieve compensatory mitigation outcomes in advance of the impacts of a public land use (Handbook Chapter 3.5.F.2), which may affect how the BLM will consider compensatory mitigation mechanism(s) that are proposed to be used to satisfy compensatory mitigation obligations. Additionally, compensatory mitigation mechanisms used to satisfy compensatory mitigation obligations must appropriately account for the risk of failure of compensatory mitigation measures (Handbook Chapter 3.5.G.4).

4. Consistent with applicable law, policies, and land use plans, the BLM may authorize (e.g., by issuing a lease, a right-of-way, etc.) the use of BLM-managed lands as the site for a compensatory mitigation mechanism. Any type of compensatory mitigation mechanism may be implemented on BLM-managed lands, even if the compensatory mitigation measures will be used to mitigate residual effects from public land uses occurring on non-BLM-managed lands. In this case the BLM should take appropriate administrative actions to ensure the durability of the site(s) (Appendix 1).

## CHAPTER 4. MITIGATION STRATEGIES

Mitigation strategies identify, consider, and communicate potential mitigation needs and mitigation measures in a geographic area, at relevant scales, well in advance of anticipated public land uses (BLM-proposed and externally proposed). The BLM should prepare mitigation strategies where the condition of resources (including their values, services, and/or functions) is declining or has a reasonable potential to decline and new impacts to those resources are reasonably foreseeable, or where resources would otherwise benefit from advance consideration of landscape-scale mitigation. Effective mitigation strategies are created and maintained by fully engaging stakeholders in the process. Mitigation strategies will help to increase the effectiveness, consistency, and transparency of mitigation by shifting away from a reactive and permit-by-permit approach to a more efficient, proactive model that identifies mitigation standards (if they do not already exist) and pre-identifies and pre-considers mitigation measures. Mitigation strategies will assist the BLM to better anticipate reasonably foreseeable impacts, strategically apply the mitigation hierarchy, and generate better outcomes for impacted resources.

As discussed in Handbook Chapter 4.5, mitigation strategies may be developed: (1) through the NEPA process to inform a programmatic or large geographic-scale analysis; or (2) independent of the NEPA process and any proposed action or decision (and used to inform future decision-making processes).

### 4.1. Benefits of Mitigation Strategies

Mitigation strategies are developed well in advance of the need to implement mitigation, within a transparent and meaningful stakeholder engagement process, and based on the best available science. The benefits of mitigation strategies include:

- A. Facilitating meaningful, strategic, transparent, and deliberative engagement from all stakeholders on how best to achieve the sustained yield of the resources in a geographic area, especially when a potential exists for substantial and/or controversial impacts;
- B. Reaching across administrative boundaries (e.g., BLM Field/District Offices, other Federal/State/Tribal land management jurisdictions, County/State boundaries) and providing opportunities for consistent and strategic application across a geographic area;
- C. Helping increase permitting efficiency and financial certainty for land use authorization applicants by pre-identifying and pre-evaluating potential mitigation measures;
- D. Strategically identifying mitigation measures and their associated compensatory mitigation sites across a geographic area to provide opportunities to achieve maximum benefits for impacted resources; and
- E. Enhancing the ability of Federal agencies, Tribal, State and/or local governments, as well as private entities to invest in more effective and larger-scale mitigation efforts to achieve multiple resource objectives through transparent prioritization of investments and pooling of resources.

## 4.2. Scope of Mitigation Strategies

The BLM should develop mitigation strategies that encompass one of the following three scopes:

- A. All Resources and Uses: A mitigation strategy that considers all or most of the foreseeable public land uses and associated reasonably foreseeable impacts to resources in a geographic area. This type of mitigation strategy may be particularly helpful in informing a future land use plan amendment or revision (Handbook Chapter 5.2).

*Example: A mitigation strategy that considers all of the reasonably foreseeable impacts to resources (e.g., wildlife, plants, air quality, cultural, visual) expected from all the foreseeable public land uses (e.g., oil and gas, rights-of-way, mining, recreation) in a geographic area.*

- B. Public Land Use Based: A mitigation strategy that considers a single or limited set of foreseeable public land uses and associated reasonably foreseeable impacts to resources in a geographic area.

*Example: A mitigation strategy developed for a BLM solar energy zone, which considers the reasonably foreseeable impacts to resources expected from the solar energy development in that zone.*

- C. Resource Based: A mitigation strategy that considers a single or limited set of resources, which are expected to be impacted by a variety of foreseeable public land uses.

*Example: A mitigation strategy developed for a greater sage-grouse management zone, which considers all of the reasonably foreseeable impacts to greater sage-grouse habitat from all of the foreseeable public land uses in that management zone.*

## 4.3. Geographic Area of Mitigation Strategies

The BLM should define the geographic area of a mitigation strategy to include the relevant landscape necessary to sustain the relevant resources. This geographic area should be as narrow or as broad as necessary to sustain or otherwise achieve established resource objectives and to effectively mitigate for foreseeable impacts. The BLM should define the geographic area for mitigation strategies with consideration to (not in priority order):

- A. The scientifically informed distribution of the resources that will be foreseeably impacted by the public land uses considered in the mitigation strategy (e.g., watersheds, airsheds, species' ranges, rare plant distributions, cultural landscapes, viewsheds, etc.).
- B. The geographic extent of public land uses (e.g., oil and gas formations, coal basins, solar energy zones, transmission corridors, recreation areas, etc.).

- C. Previously defined geographic areas (e.g., EPA’s ecoregions, habitat management zones, critical habitat, etc.).
- D. Existing geo-socio-political geographic areas (e.g., BLM planning areas, individual US State boundaries, southwestern US States, Pacific Coast counties).
- E. Existing mitigation programs (e.g., State-managed compensatory mitigation programs).

#### **4.4. Components of Mitigation Strategies**

The BLM should include in mitigation strategies, at minimum, a description of the following components. Many of these components are related to similar components of the NEPA analysis process (e.g., affected environment, environmental consequences) and therefore some components of a Mitigation Strategy may be able to inform some components of a NEPA analysis.

- A. A description of the public land uses expected in the geographic area of the mitigation strategy and resources that are considered important, scarce, sensitive, or have a protective legal mandate that may be reasonably foreseeably impacted by those public land uses (within the scope of the mitigation strategy).
- B. A description of the applicable resource objectives (e.g., BLM’s land use plan objectives, a State agency’s resource objectives, etc.), at all relevant scales, including any mitigation standards that exist for these resources.

If a mitigation standard does not yet exist for a focal resource, a mitigation strategy should identify a mitigation standard for that resource (which may be a recommendation or a decision, depending on if the strategy has been analyzed through the NEPA process and has an associated decision document; see Handbook Chapter 4.5). If the mitigation strategy is not incorporated in a decision document, supported by adequate NEPA analysis, then the BLM should consider the findings and recommendations in the mitigation strategy through future decision-making processes.

- C. A description of baseline conditions and trends of these resources, at all relevant scales, including how the conditions and trends are expected to change due to the reasonably foreseeable impacts of public land uses and other changing circumstances (e.g., climate change, fire, invasive species).
- D. A description of mitigation measures to avoid, minimize, rectify, and/or reduce/eliminate over time the reasonably foreseeable impacts to these resources, which may include referencing relevant land use plans that include these types of mitigation measures.
- E. A description of the types of reasonably foreseeable residual effects to these resources that might be expected.

- F.** A description of the potential need for compensatory mitigation by assessing the reasonably foreseeable residual effects that may warrant compensatory mitigation (with consideration of the criteria identified in Handbook Chapter 3.5.B).
- G.** An evaluation and prioritization of the types of compensatory mitigation measures that are likely appropriate for the reasonably foreseeable residual effects that warrant compensatory mitigation, including clearly defined and measurable outcomes for those types of measures. When conducting this analysis, the BLM should consider the types of compensatory mitigation measures previously identified in land use plans and/or relevant and existing conservation strategies.
- H.** A recommended or required amount of compensatory mitigation measures needed to mitigate for the likely reasonably foreseeable residual effects that warrant compensatory mitigation, with respect to the mitigation standards (if they exist) for the impacted resources.

If the extent of the reasonably foreseeable residual effects is unknown at the time of the mitigation strategy's development, it is important to provide formulaic and/or scalable measures (e.g., compensatory mitigation measures per acre of impact) that can be used to determine the amount of compensatory mitigation when the residual effects become calculable.

- I.** An evaluation and prioritization of compensatory mitigation sites that will maximize the benefit for the resources that will likely have residual effects that may warrant compensation, including considerations of each site's ability to provide benefits to multiple resources, importance in the geographic area, durability, and additionality. When conducting this analysis, the BLM should consider compensatory mitigation sites previously identified in land use plans and/or relevant and existing conservation strategies.

In some cases, the evaluation and prioritization of the types of compensatory mitigation measures (Handbook Chapter 4.4.G) and this section may be merged to reduce repetition (e.g., where evaluation of compensatory mitigation measures is dependent on the siting of those measures).

- J.** A description of appropriate compensatory mitigation mechanisms in the geographic area (e.g., mitigation banks, mitigation exchanges, mitigation funds, public land user-responsible compensatory mitigation measures).

In some cases, the evaluation and prioritization of compensatory mitigation sites (Handbook Chapter 4.4.I) and this section may be merged to reduce repetition (e.g., where mitigation banks exist and are both a priority compensatory mitigation site and an appropriate compensatory mitigation mechanism).

- K.** A description of how equivalency will be determined between compensatory mitigation mechanisms.

1. It may be appropriate to convert the identified amount of compensatory mitigation measures (Handbook Chapter 4.4.H) into a quantity of credits to facilitate the use of mitigation banks and mitigation exchanges. Similarly, it may be appropriate to convert the compensatory measures into monetary terms to facilitate the use of mitigation funds. The BLM should review methodologies developed by the mitigation banks, mitigation exchanges, mitigation funds, and/or other experts to help make this conversion.

Credit valuation and crediting methodologies may differ depending on the type of bank or exchange and how the managers of those banks or exchanges, or the relevant regulatory agency, are determining credit value. The BLM manages many types of resources, many of which may require a different method for calculating the credit values. The BLM expects to issue program-specific guidance that outlines valuation tools for determining the amount of credit that a public land user may obtain from certain types of compensatory mitigation. Until that guidance is issued, BLM offices should coordinate, as appropriate, with each other, other Federal agencies, Tribal, State, and/or local governments to act as consistently as possible in making determinations about the quantity of credits.

2. As a mitigation strategy may be active for several years, any credit or monetary determinations should be reviewed and updated over time, as necessary.
- L. A description of actions necessary to achieve durability of, and to monitor, adapt (if necessary), and report on, mitigation.

#### **4.5. Mitigation Strategies: Recommendations and Decisions**

The BLM may develop and consider a mitigation strategy in one of two ways: (1) through the NEPA process to inform a programmatic or large geographic-scale analysis; or (2) independent of the NEPA process and any proposed action or decision. When developing a mitigation strategy, whether within or independent of the NEPA process, the BLM should fully engage its stakeholders, consistent with the Federal Advisory Committee Act (FACA) and other applicable law, including the public and affected Federal agencies, Tribal, State and/or local governments.

- A. A mitigation strategy, or key components of a mitigation strategy, may be developed and analyzed through a NEPA process, such as within a programmatic or large geographic-scale NEPA analysis (e.g., a geographically large oil/gas field development EA/EIS). In this case, appropriate mitigation from the mitigation strategy should be incorporated into the resulting decision document(s).
- B. A mitigation strategy may be developed independent of a NEPA analysis and associated decision document(s). Mitigation strategies developed in this manner will result in mitigation findings and recommendations, not agency decisions, and the BLM should use those findings and recommendations to inform future decision-making processes.

For this type of mitigation strategy, the BLM should analyze relevant aspects of mitigation strategies in at least one alternative of the NEPA analyses for relevant land use planning or proposed public land uses. The resulting decision document(s) associated with the NEPA analysis may or may not include the mitigation strategy's recommendations.

- C. A mitigation strategy should be reviewed and updated over time and based on the best available science.

#### **4.6. Utilizing Existing Conservation and Restoration Strategies**

Existing conservation and restoration strategies, from existing efforts and partnerships, including those produced by other Federal agencies, Tribal, State and/or local governments, often include many components of mitigation strategies, as described in Handbook Chapter 4.4. For example, a conservation strategy developed by a multi-stakeholder group for a rare plant species, which identifies restoration focal areas for the species, may be useful to incorporate into a mitigation strategy's discussion of compensatory mitigation sites. The BLM should strive, as appropriate, to incorporate or be consistent with these existing strategies when developing new mitigation strategies.

## CHAPTER 5. MITIGATION IN LAND USE PLANNING (INTERIM)

*[This section on mitigation in land use planning is interim policy and will be superseded by relevant updates to the BLM's land use planning handbook.]*

The land use planning process provides one method for identifying, considering, and, as appropriate, requiring mitigation well in advance of anticipated public land uses. Additionally, the land use planning process provides an opportunity to incorporate relevant components of a mitigation strategy into a land use plan (Handbook Chapter 4). The land use plan can identify resource objectives and associated mitigation standards, land use allocations, and management actions to facilitate the application of appropriate mitigation for public land uses. Also, to support the implementation of durable compensatory mitigation measures on BLM-managed lands, the BLM can support or identify compensatory mitigation sites with land use allocations that limit or exclude incompatible uses of those sites, consistent with applicable law.

During the land use planning process, consistent with applicable law, the BLM will consider and, as appropriate, include in the land use plan:

- A. Scientifically informed and measurable land use plan objectives for resources, which include mitigation standards for resources that are considered important, scarce, sensitive, or have a protective legal mandate (e.g., no net loss, net benefit).
- B. Land use allocations that limit or exclude certain uses (e.g., right-of-way exclusion areas, closures or constraints to fluid mineral leasing) or concentrate certain uses in defined areas or corridors (e.g., right-of-way corridors) in order to avoid and minimize impacts to resources from public land uses. The land use planning process may not be used as a substitute for a withdrawal to close lands to the operation of the Mining Law.
- C. Management actions (e.g., best management practices) that help to support the land use plan's resource objectives, including applicable mitigation standards.
- D. Land use allocations that support or identify compensatory mitigation sites on BLM-managed lands and limit or exclude incompatible uses of those sites. Compensatory mitigation sites may be located within formal designations, such as Areas of Critical Environmental Concern (ACEC) or units of the National Conservation Lands, or may be located within general geographic areas without a formal designation where incompatible uses are excluded or restricted.

### 5.1. Mitigation in Land Use Plans

During land use plan revisions, and in some cases, land use plan amendments, the BLM should identify mitigation standards, incorporate the mitigation hierarchy, and identify compensatory mitigation sites.

#### A. Mitigation Standards

Mitigation standards are a description of the extent to which mitigation will be applied in order to support achieving resource objectives (e.g., no net loss, net benefit). In land use plans, mitigation standards will be identified as one component of a land use plan's resource objectives for resources that are considered important, scarce, sensitive, or have a protective legal mandate, in order help to describe the desired resource conditions at all relevant scales. As appropriate and through application of the mitigation hierarchy, mitigation standards should seek to achieve a no net loss or net benefit outcome for such resources.

In developing the land use plan objective's mitigation standard, the BLM should include considerations such as legal, regulatory, or policy protections that limit or prevent certain types of impacts. The mitigation standard could apply throughout the planning area and/or in specific geographic sub-areas. When identified in a land use plan, the BLM will adhere to these or more protective mitigation standards for any applicable public land use, consistent with the law(s) under which BLM authorizes the land use.

*Example (net benefit): A land use plan's resource objective identifies a mitigation standard of "net benefit" for a scenic river's outstandingly remarkable values due to the National Wild and Scenic Rivers Act's "protect and enhance" legislative mandate. As a result, any reasonably foreseeable residual effects to the river's outstandingly remarkable values should be avoided and/or compensated to a level that would improve upon the baseline conditions of the scenic river's values.*

*Example (no net loss): A land use plan's resource objective identifies a mitigation standard of "no net loss" for critical mule deer winter habitat. As a result, any reasonably foreseeable residual effects to the habitat that should be avoided and/or compensated to a level that would result in no negative change to baseline conditions of critical mule deer winter habitat.*

When mitigation standards apply to a specific resource (i.e., rather than a specific geographic location) the BLM should take a landscape-scale approach to meeting the resource mitigation standard. This may involve siting compensatory mitigation measures outside of the planning area if that is where the compensatory mitigation will provide the maximum benefit to the impacted resource.

## **B. The Mitigation Hierarchy in Land Use Plans**

The BLM may use the land use plan to identify, analyze, and require mitigation well in advance of anticipated public land uses.

1. *Avoidance, Minimization, Rectification, and Reduction/Elimination over Time:* During the land use planning process, the BLM should identify land use allocations and management actions to avoid, minimize, rectify, and reduce/eliminate reasonably

foreseeable impacts. For example, the BLM may avoid or exclude incompatible public land uses in certain geographic areas (e.g., to protect conservation areas within the landscape), concentrate impact public land uses in certain areas (e.g., a solar energy zone) or corridors (e.g., a rights-of-way corridor), or limit surface disturbance in certain habitats. The BLM may also identify leasing stipulations, typical best management practices, reclamation standards, etc. that would apply to relevant public land uses in the planning area.

*Example: To avoid reasonably foreseeable impacts to scarce winter wildlife habitat, the BLM may identify special oil and gas lease stipulations (e.g., timing limitations (temporal avoidance), no surface occupancy (spatial avoidance)).*

*Example: To minimize reasonably foreseeable impacts to scenic landscapes, the BLM may identify areas in the land use plan where more protective visual resource management classes (e.g., Class II) will apply and therefore special permit requirements will apply (e.g., visual best management practices).*

- 2. Compensatory Mitigation:** During the land use planning process, the BLM should identify and consider the anticipated need for compensatory mitigation to address reasonably foreseeable impacts to resources (that are important, scarce, sensitive, or have legal, regulatory, or policy protections that limit or prevent certain types of impacts) from anticipated public land uses. This may include, for example, identifying required compensatory mitigation to address impacts to a specific resource or identifying the need to condition leases or permits with compensatory mitigation obligations.

*Example: To compensate for reasonably foreseeable residual effects to a species of milk-vetch on BLM California's list of special status plants, the BLM may identify the need for compensatory mitigation in oil and gas leasing stipulations in a land use plan, if a lease (and its eventual development) will impact that species.*

### **C. Compensatory Mitigation Sites**

During land use planning, the BLM should consider supporting and/or establishing compensatory mitigation sites on BLM-managed lands and identifying land use allocations and management actions that provide for the durability of those sites. Compensatory mitigation sites should be selected based on need and consider the foreseeable residual effects in the planning area that may warrant compensatory mitigation. Compensatory mitigation sites should also be selected to minimize conflicts with other available and conflicting public land uses (e.g., recreation, grazing, energy development).

1. The establishment of a compensatory mitigation site on BLM-managed lands is not a land use planning designation. A compensatory mitigation site is a general geographic area that has been provided an enhanced degree of durability in the land use plan that is suitable for ensuring compensatory mitigation measures performed at the site remain durable. Compensatory mitigation sites may be located within formal designations, such as ACEC or units of the National Conservation Lands, or may be located within general geographic areas without a formal designation where incompatible uses are excluded or restricted.
2. Not all compensatory mitigation sites need to be established in a land use plan; rather, a land use plan is one tool to help enhance the durability of compensatory mitigation sites. Other tools exist to ensure the durability of compensatory mitigation sites (Appendix 1).
3. Compensatory mitigation sites on BLM-managed lands can be used to site compensatory mitigation measures associated with all four types of compensatory mitigation mechanisms.

## **5.2. Mitigation Strategies and Land Use Planning**

If appropriate, when amending and/or revising a land use plan, the BLM may consider and incorporate relevant components of a mitigation strategy. Additionally, the agency may commit in a land use plan revision or amendment to developing a mitigation strategy subsequent to the land use plan revision or amendment (see Handbook Chapter 4.5 for a discussion of mitigation strategies and NEPA analysis). Details about mitigation strategies are included in Handbook Chapter 4.

## CHAPTER 6. MITIGATION IN NEPA ANALYSES FOR PUBLIC LAND USES

Through the NEPA analysis process, the BLM will, to the greatest extent possible, identify and consider the effectiveness of mitigation to address reasonably foreseeable impacts (both significant and non-significant) to resources (and their values, services, and/or functions) from proposed public land uses (BLM-proposed and externally proposed).<sup>10</sup> The BLM will identify any required mitigation in the decision document(s) associated with the NEPA analysis and include any required mitigation in the land use authorization(s).

Mitigation should not be an afterthought; mitigation should be considered early and throughout the NEPA analysis process (e.g., scoping, proposed action, alternatives, environmental effects). For example, for BLM-proposed public land uses, the BLM should incorporate appropriate mitigation into the proposed project's design as an integral component of the proposed action (i.e., project design features). Or, for externally proposed public land uses, the BLM should encourage applicants to propose appropriate mitigation for their public land use.

Proactively proposed mitigation, particularly best management practices, can lead to better resource outcomes and in some cases reduce the reasonably foreseeable impacts of a public land use to below “significance” (as defined by 40 CFR 1508.1) or other potentially relevant statutory or regulatory thresholds. In conducting its analysis through the NEPA process, the BLM should include other appropriate mitigation measures as part of any other reasonable alternatives. Mitigation measures included in the proposed action and/or any other reasonable alternatives should be evaluated through the analysis of environmental effects.

Where they exist and are relevant, mitigation strategies will be used to inform the NEPA analyses for applicable proposed public land uses.

### 6.1. Preliminary Application Review Meetings

At preliminary application review meetings for proposed public land uses, the BLM should discuss with potential land use authorization applicants any foreseeable and appropriate mitigation obligations, including existing mitigation obligations associated with the land use plan or previous NEPA analysis, pertinent aspects of the mitigation hierarchy (e.g., BMPs), any potential effectiveness monitoring for mitigation measures, and any existing and applicable mitigation strategies. The BLM should invite other potentially affected Federal agencies, Tribal, State and/or local governments to participate in pre-application meetings to ensure issues and concerns can be given full consideration early in the process.

### 6.2. Existing Mitigation Strategies

If there is a relevant mitigation strategy that addresses a newly proposed public land use, the BLM should analyze the relevant mitigation recommendations from that mitigation strategy in at least one alternative of the NEPA analysis associated with the proposed public land use. If the

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<sup>10</sup> For additional guidance on NEPA and mitigation, please refer to: Executive Office of the President, Council on Environmental Quality's *Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact* January 14, 2011.

Strategy has been previously considered through the NEPA process, it is a best practice to tier to the earlier NEPA document, incorporating the relevant portions by reference. Any new or unique circumstances warranting updating or modification of the tiered mitigation should also be considered within the NEPA analysis for the newly proposed public land use.

### **6.3. Existing Mitigation Agreements**

If there are existing mitigation-related agreements, such as a programmatic agreement with a State or Tribal Historic Preservation Officer, a programmatic Fish and Wildlife Service Habitat Conservation Plan, or an approved mitigation plan for a US Army Corps of Engineers permit, the BLM should consider the terms and conditions of these agreements that pertain to a proposed public land use through the NEPA process, as appropriate.

### **6.4. Consultation, Conferencing, and Coordinating**

The BLM should consider through the NEPA process the mitigation obligations that may result from formal consultation or conferencing with other agencies or entities under statutes, such as the Endangered Species Act, the National Historic Preservation Act, the Clean Water Act, or the Clean Air Act, regulations, or policies. The BLM should also coordinate with other Federal agencies, Tribal, State and/or local governments that have resources at risk of reasonably foreseeable impacts from proposed public land uses.

### **6.5. Connected Actions on Non-Federal Lands**

The BLM may need to identify and consider mitigation, through the NEPA process, that would address reasonably foreseeable impacts to resources from non-Federal land uses that are considered connected actions to a proposed public land use, depending on the specific details of the connected actions.

The BLM's authority to require mitigation, in a decision document and land use authorization, for impacts to resources from public land uses on non-Federal land also depends on the specific details of the connected actions and any such determination warrants consultation with the Office of the Solicitor.

Mitigation measures identified and considered by the BLM in the NEPA process for impacts to resources from a connected action on non-Federal managed lands may include mitigation measures that would be carried out by other Federal, Tribal, State, and/or local governments, and can serve to alert those entities of appropriate mitigation measures. In describing mitigation under the authority of another agency, the BLM must discuss in the NEPA analysis the probability of the other agency implementing the mitigation measures.

### **6.6. Mitigation and Findings of No Significant Impact**

When preparing an Environmental Assessment (EA), mitigation (including compensation) can be implemented to reduce the reasonably foreseeable impacts of the proposed public land use below the threshold of significance, and thus, an Environmental Impact Statement (EIS) would

not be required. When mitigation is implemented in order to reach a FONSI, the BLM's decision document(s) must clearly identify the specific mitigation and monitoring commitments necessary to reduce the reasonably foreseeable impacts to such a level.

## **6.7. Addressing Mitigation through the NEPA Process**

To address mitigation needs for a proposed public land use (BLM-proposed or externally proposed), the BLM should include the following in the NEPA analysis:

### **A. Federal Register Notices (for EISs)**

When publishing Notices of Intent in the Federal Register, the BLM should seek comment on potential issues, impacts, and the possible need for mitigation. When publishing Notices of Availability in the Federal Register, the BLM should include a description, if applicable, of key mitigation measures included in the proposed action and/or other reasonable alternatives.

### **B. Scoping (for EISs)**

When conducting scoping for a proposed public land use (BLM-proposed or externally proposed), the BLM should solicit internal and external input to help identify potential impacts and recommend mitigation measures to address those impacts.

### **C. Purpose and Need**

The BLM's purpose and need statement should include identifying and analyzing appropriate mitigation to address impacts from the public land use.

### **D. Proposed Action**

In the description of the proposed action, the BLM should describe or reference and summarize the mitigation measures (e.g., best management practices) included in the proposed action (which are also known as ameliorative design elements or design features<sup>11</sup> or applicant committed mitigation measures). If compensatory mitigation is proposed, the additional level of detail described in Handbook Chapter 6.6.F should be included. In this description, the BLM should reference and discuss applicable mitigation standards.

### **E. Other Reasonable Alternatives**

For the other reasonable alternatives, if any, the BLM should include and describe appropriate mitigation, including any compensatory mitigation being considered (Handbook Chapter 6.6.F), as an integrated and detailed part of the description of the alternative. To do so may require refinement of the alternative following the

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<sup>11</sup> BLM National Environmental Policy Act Handbook (H-1790-1).

completion of the impact analysis (Handbook Chapter 6.6.G). In this description, the BLM should reference and discuss applicable mitigation standards.

If a mitigation standard does not yet exist for a resource that is considered important, scarce, sensitive, or has a protective legal mandate, the BLM should identify and consider appropriate mitigation standards for that resource (e.g., no net loss, net benefit) in alternatives in the NEPA analysis.

## **F. Compensatory Mitigation in Proposed Action and Reasonable Alternatives**

For compensatory mitigation measures analyzed in the proposed action and/or other reasonable alternatives, the BLM should:

1. Describe the potential type of and amount of compensatory mitigation that is appropriate for mitigating the reasonably foreseeable residual effects that warrant compensatory mitigation, including description of the compensatory mitigation's relationship to applicable mitigation standards for the impacted resources.
2. Describe the compensatory mitigation measures, sites, and mechanisms necessary for meeting the compensatory mitigation obligation, including durability, monitoring, adaptive management, and reporting requirements (Handbook Chapters: 3.5.E, 3.5.H, 3.5.I, 2.1.D, 2.1.F, and 2.1.H).

In most cases, the analysis should specifically address, in an appropriate level of detail, the compensatory mitigation measures, sites, and mechanisms. However, in some cases, it may be infeasible to identify specific mitigation details at the time of the NEPA analysis (e.g., exact projects will be determined in partnership with a mitigation fund in a post-ROD process) or illegal or otherwise unacceptable to release this information (e.g., under government-to-government consultation). In these cases, it is important to specify the anticipated compensatory mitigation measures and to describe why more specific information cannot be disclosed.

## **G. Environmental Consequences**

In the Environmental Consequences section, the BLM should:

1. Describe how any of the first four aspects of the mitigation hierarchy (avoidance, minimization, rectification, and reduction or elimination of the impacts) included in the proposed action and/or other reasonable alternatives will be applied to address the reasonably foreseeable impacts from the proposed public land use, at all relevant scales, and support conformance with applicable mitigation standards (e.g., how avoidance of a specific resource will result in no impacts to that resource). If mitigation is not included for some impacts (e.g., those impacts are acceptable), the BLM will provide rationale for this determination in the analysis.

2. Describe the reasonably foreseeable residual effects that will remain, if any, after application of any aspects of the first four aspects of the mitigation hierarchy included in the proposed action and /or other reasonable alternatives.
3. If compensatory mitigation is included in the proposed action or a reasonable alternative, describe how the compensatory mitigation measures will appropriately mitigate the reasonably foreseeable residual effects that warrant compensatory mitigation, at all relevant scales, and support conformance with applicable mitigation standards. If compensatory mitigation is not included for some residual effects (e.g., those residual effects are acceptable), the BLM will provide rationale for this determination in the analysis.
4. Describe any remaining residual effects not addressed (or not addressed entirely) by compensatory mitigation.
5. Any reasonably foreseeable impacts associated with the mitigation measures must also be included in this analysis.

## H. Decision Document

In the decision document(s) for a public land use, the BLM may approve, deny, or approve with additional mitigation the proposed public land use (BLM-proposed or externally proposed).

1. If approving the proposed public land use (with or without modifications), clearly identify in the decision document(s) the required mitigation measures (i.e., the mitigation obligation) with rationale from and reference to the associated NEPA analysis. Additionally, present any applicable mitigation monitoring (Handbook Chapter 2.1.F) and enforcement program (Handbook Chapter 7.3) for the selected alternative.

For externally proposed public land uses (e.g., a rights-of-way application), the BLM must incorporate any mitigation obligations from the decision document(s) into the land use authorization (e.g., lease, grant, permit, etc.) via stipulations, terms and conditions, conditions of approval, etc., so that they become requirements of the land use authorization (Handbook Chapter 7).

2. If denying the proposed public land use, provide an explanation for the denial (Handbook Chapter 2.5.B). For externally proposed public land uses, include appropriate appeal rights for the land use authorization's applicant to appeal a denial to the BLM's State Director, the Interior Board of Land Appeals, or directly to Federal district court, depending on the circumstances and as provided in applicable regulations.

## **CHAPTER 7. MITIGATION IN LAND USE AUTHORIZATIONS**

For externally proposed public land uses (e.g., a rights-of-way application), the BLM will incorporate any mitigation obligations from the decision document(s) into the land use authorization(s) (e.g., lease, grant, permit, etc.) via stipulations, terms and conditions, conditions of approval, etc., so that they become requirements of the land use authorization. Any mitigation obligations incorporated into the land use authorization must be supported by the NEPA analysis (Handbook Chapter 6).

### **7.1. Mitigation in Land Use Authorizations**

The land use authorization will include each mitigation measure and the mitigation measures' required outcome (Handbook Chapter 2.1.E). The authorization should also include any compensatory mitigation measures' performance standards and responsible parties. The BLM will also include a description of any durability, monitoring, adaptive management, and reporting requirements. It may be useful to develop a table to communicate this information if there are numerous mitigation measures.

### **7.2. Financial Assurances**

To guarantee the implementation and effectiveness of the mitigation obligations, the BLM may require financial assurances, consistent with applicable law. The BLM should consult with the Office of the Solicitor to determine if the BLM has regulatory authority to require financial assurances for mitigation obligations; if so, the Office of the Solicitor should also be consulted to determine the appropriate type and amount of financial assurances.

### **7.3. Enforcing Mitigation Obligations**

The BLM is responsible for enforcing the mitigation obligations identified in the land use authorization, consistent with applicable law and only as provided for in applicable regulations.

- A. Implementation/Compliance Enforcement.** If the public land user fails to comply, in whole or in part, with mitigation obligations in accordance with the land use authorization, the BLM may, consistent with applicable law and as provided for in applicable regulations, suspend or terminate the authorization or the holder may forfeit or relinquish the authorization. If operations have already begun, but mitigation has not been undertaken in accordance with the authorization, the BLM may initiate an appropriate enforcement action, consistent with applicable law and as provided for in applicable regulations, such as an Incident of Noncompliance, Notice of Noncompliance, Noncompliance Order, or a Stop Order, giving the public land user a specific period of time to come into compliance, consistent with applicable law and as provided for in applicable regulations. In some programs, the BLM may have authority to pursue penalties for violations. The BLM may also draw upon the performance bond or another financial instrument, if one was required or exists (Handbook Chapter 7.2).

- B. Effectiveness Enforcement.** If mitigation measures are failing, as determined by effectiveness monitoring, the BLM will work with the responsible party to identify appropriate actions for achieving the required mitigation outcomes and for complying with the terms and conditions of applicable land use authorizations. The BLM will take appropriate follow-up actions, including enforcement actions, consistent with applicable law and as provided for in applicable regulations, as necessary, if the mitigation measures were not implemented as designed or if the mitigation measures have not been effective in achieving the required mitigation outcomes, based on effectiveness monitoring, unless the outcome is not achieved due to a force majeure event.

**GLOSSARY****-A-**

*Adaptive management.* A system of management practices based on clearly identified outcomes and monitoring to determine whether management actions are meeting required outcomes; and, if not, facilitating management changes that will best ensure that outcomes are met or re-evaluated. Adaptive management recognizes that knowledge about natural resource systems is sometimes uncertain.

*Additionality.* A compensatory mitigation measure that is demonstrably new and would not have occurred without the compensatory mitigation measure.

*Advance compensatory mitigation measures.* Compensatory mitigation measures that achieve their defined outcome(s) in advance of impacts from a public land use.

*Appropriate.* Necessary for and effective at achieving the outcome and consistent with applicable law.

*Avoidance.* Avoiding the impact altogether by not taking a certain action or parts of an action (40 CFR 1508.1).

**-B-**

*Baseline.* The pre-existing condition of a resource, at all relevant scales, which can be quantified by an appropriate metric(s). During environmental reviews, the baseline is considered the affected environment that exists absent the project's implementation, and is used to compare predictions of the effects of the proposed action or a reasonable range of alternatives.

*Best management practices (BMPs).* State-of-the-art, efficient, appropriate, and practicable mitigation measures for avoiding, minimizing, rectifying, and reducing or eliminating impacts over time.

*BLM-proposed public land uses.* Public land uses proposed by the BLM to further its land management responsibilities under FLPMA (e.g., stewardship and timber sale contracts, development of facilities at Special Recreation Management Areas, land treatments).

*Broad-scale monitoring.* Monitoring conducted across the geographic extent (e.g., an ecoregion) of the focal resources, at a coarse resolution.

**-C-**

*Characteristics.* The specific attributes of a resource that may be particularly unique, important, or essential for maintaining that resource (e.g., a specific habitat type or portion of a landscape that is essential to survival during a specific season of the year, or limiting in the lifecycle of the species, or essential for migration).

*Commensurate.* A compensatory mitigation obligation that is reasonably related and proportional to the reasonably foreseeable residual effects from a public land use that warrants compensatory mitigation.

*Compensatory mitigation.* Compensating for the remaining impacts after all appropriate and practicable avoidance and minimization measures have been applied, by replacing or providing substitute resources or environments through the restoration, establishment, enhancement, or preservation of resources and their values, services and functions (40 CFR 1508.1).

*Compensatory mitigation measure.* An action that results in the restoration, establishment, enhancement, and/or preservation of resources in order to address a residual effect to a resource from a public land use that warrants compensatory mitigation.

*Compensatory mitigation mechanism.* A type of an arrangement where resources are restored, established, enhanced, and/or preserved (all of which may lead to accrual of credits) for the purpose of compensating for residual effects to resources from public land uses that warrant mitigation (which qualify as accrual of debits), and may include mitigation banks, mitigation exchanges, mitigation funds (also known as in-lieu fee programs), and public land user-responsible compensatory mitigation measures.

*Compensatory mitigation site.* The areas where compensatory mitigation measures are located.

*Credit.* A unit of measurement representing the restoration, establishment, enhancement, and/or preservation of resources by a compensatory mitigation measure.

**-D-**

*Debit.* A unit of measurement representing an impact from a public land use.

*Decision document.* A formal agency decision, such as a Decision Record or Record of Decision associated with a NEPA document, or other program-specific decision documentation.

*Durability.* The maintenance of the effectiveness of a mitigation measure and/or a compensatory mitigation site for the duration of the impacts from the associated public land use, including resource, administrative, and financial considerations.

*Duration of the impact.* The time that resource impacts (both direct and indirect effects) from a public land use persist, even if this time period extends beyond the expiration of the public land use. The duration of some impacts may be in perpetuity.

**-E-**

*Effectiveness monitoring.* Verifying that mitigation is achieving the required outcomes.

*Effects.* The adverse direct, indirect, and cumulative impacts from a public land use; effects and impacts as used in this policy are synonymous.

*Enhancement.* An increase or improvement in quality, value, or extent.

*Establishment.* Introduction or re-introduction of a resource at a site.

*Externally proposed public land uses.* Public land uses proposed by a member of the public to the BLM for approval (via grants, leases, permits, licenses, and similar authorizations) and if authorized by the BLM would allow the public land user (i.e., a project applicant) to occupy, use, develop, or traverse BLM-managed surface or mineral estate.

-F-

*Fine-scale monitoring.* Monitoring conducted across the geographic extent of a mitigation measure and/or a compensatory mitigation site.

*Force majeure.* An event that cannot be reasonably anticipated or controlled, such as natural disasters outside of a predicted range of disturbance, etc.

-I-

*Impacts.* The adverse direct, indirect, and cumulative effects from a public land use; effects and impacts as used in this policy are synonymous.

*Important.* Resources that the BLM has determined to warrant special consideration, consistent with applicable law.

*Irreplaceable resources.* Those resources recognized through existing legal authorities as requiring particular protection from impacts and that because of their high value or function and unique character, cannot be restored or replaced.

-L-

*Land use authorizations.* A BLM approval for a public land use, which was proposed by a member of the public.

*Landscape.* A geographic area encompassing an interacting mosaic of ecosystems and human systems that is characterized by a set of common management concerns. The landscape is not defined by the size of the area, but rather by the interacting elements that are relevant and meaningful in a management context. The term “landscape” may include water-centric scales, such as watersheds, if they represent the appropriate landscape-scale.

-M-

*Mid-scale monitoring.* Similar to broad-scale monitoring, but conducted across a smaller geographic extent (e.g., a watershed) at a finer resolution.

*Minimization.* Minimizing impacts by limiting the degree or magnitude of the action and its implementation (40 CFR 1508.1).

*Mitigation.* Includes, avoiding the impact altogether by not taking a certain action or parts of an action; minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and, compensating for the impact by replacing or providing substitute resources or environments (40 CFR 1508.1).

*Mitigation bank.* An arrangement where actions to restore, establish, enhance, and/or preserve resources (all of which may lead to accrual of credits) are conducted in a defined geographic area(s) for the purpose of eventually compensating for residual effects to resources from public land uses (which qualify as accrual of debits). In general, a mitigation bank's responsible party sells compensatory mitigation credits to public land users, whose obligation to provide compensatory mitigation is then transferred to the mitigation bank's responsible party.

*Mitigation exchanges.* An arrangement where actions to restore, establish, enhance, and/or preserve resources (all of which may lead to accrual of credits) are conducted in a defined geographic area, by several willing and applicable landowners acting independently, for the purpose of eventually compensating for residual effects to resources from public land uses (which qualify as accrual of debits). In general, a mitigation exchange's responsible party facilitates the sales of compensatory mitigation credits from those landowners who accrued the credits to public land users, whose obligation to provide compensatory mitigation is then transferred to the mitigation exchange's responsible party.

*Mitigation fund (i.e., an in-lieu fee fund).* An arrangement where actions to restore, establish, enhance, and/or preserve resources (all of which may lead to accrual of credits) are conducted in a defined geographic area, by pooling and spending monetary funds from a single or multiple public land users, for the purpose of compensating for residual effects to resources from public land uses (which qualify as accrual of debits). In general, a mitigation fund's responsible party accepts funds for compensatory mitigation from public land users, whose obligation to provide compensatory mitigation is then transferred to the mitigation fund's responsible party.

*Mitigation hierarchy.* The process and order for identifying, considering, and, as appropriate, requiring mitigation, generally by first avoiding impacts, then minimizing, rectifying, and reducing or eliminating impacts over time, and then compensating for some or all of the remaining impacts (i.e., residual effects).

*Mitigation obligation.* The types of and amount of mitigation required by the BLM to mitigate reasonably foreseeable impacts to resources from a public land use.

*Mitigation standard.* A description of the extent to which mitigation will be applied in order to support achieving resource objectives (e.g., no net loss, net benefit). Mitigation standards may be identified in law, land use plans, and other decision documents supported by appropriate NEPA analysis.

*Mitigation strategy.* A document that identifies, evaluates, and communicates potential mitigation needs and mitigation measures in a geographic area, at relevant scales, well in advance of anticipated public land uses.

*Multiple use.* The management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output. (FLPMA § 103 (c), 43 USC 1702(c)).

-N-

*National Conservation Lands.* A subset of BLM-managed lands that includes Wilderness Areas, Wilderness Study Areas, National Monuments, National Conservation Areas, National Scenic and Historic Trails, Wild and Scenic Rivers, and other similar conservation designations; also known as the National Landscape Conservation System (P. L. 111-11 § 2002).

*NEPA process/analysis.* Analysis prepared pursuant to the National Environmental Policy Act, such as a planning- or project-level environmental assessment (EA) or environmental impact statement (EIS).

*Net benefit.* When mitigation results in an improvement above baseline conditions.

*No net loss.* When mitigation results in no negative change to baseline conditions (e.g., fully offset or balanced).

-O-

*Objective.* A description of a desired outcome for a resource.

*Outcome.* A clearly defined and measurable result that reflects the desired condition of a resource.

*Output.* The type and/or amount of actions or work to benefit a resource.

-P-

*Performance standard.* Observable or measurable metrics that are used to determine if outcomes are met, and often include defined timeframes.

*Practicable.* Available and capable of being done after taking into consideration existing technology, logistics, and cost in light of a mitigation measure's beneficial value and the overall purpose, scope, and scale of a public land use.

*Preservation.* The removal of a threat to, or preventing the decline of, resources. Preservation may include the application of new protective designations on previously unprotected land or the relinquishment or restraint of a lawful use that adversely impacts resources.

*Public land.* Any land and interest in land owned by the United States within the several States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership, except (1) lands located on the Outer Continental Shelf; and (2) lands held for the benefit of Indians, Aleuts, and Eskimos. (FLPMA § 103 (e), 43 USC 1702(e)).

*Public land use.* The occupancy, use, development, or traversing of BLM-managed surface or mineral estate; may be BLM-proposed or externally proposed.

*Public land user.* A person who has an approved land use authorization.

*Public land user-responsible compensatory mitigation measures.* Actions to restore, establish, enhance, and/or preserve resources (all of which may lead to accrual of credits) by a public land user for the purpose of compensating for residual effects to resources from their public land uses (which qualify as accrual of debits); also referred to as permittee-responsible compensatory mitigation.

-R-

*Reasonably related.* To be demonstrably and rationally linked in terms of resource quantity, quality, and characteristics, as guided by the best available science.

*Rectification.* Rectifying the impact by repairing, rehabilitating, or restoring the affected environment (40 CFR 1508.1).

*Reduction or elimination over time.* Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the public land use (modified from 40 CFR 1508.1).

*Relevant scales.* The geographic area of interest for a resource or a land use, which may include areas as narrow as the site or as broad as a landscape.

*Residual effects.* Any adverse reasonably foreseeable effects that are expected to remain after consideration and application of the first four aspects in the mitigation hierarchy; also referred to as unavoidable impacts. Residual effects include those adverse impacts that will persist until the outcome of a mitigation measure is achieved at some point in the future.

*Resources.* See Resources (and their values, services, and/or functions).

*Resources (and their values, services, and/or functions).* Resources are natural, social, or cultural objects or qualities; resource values are the importance, worth, or usefulness of resources; resource services are the benefits people derive from resources; and resource functions are the physical, chemical, and/or biological processes that involve resources. (For the purposes of this policy, “resources” generally exclude leasable, salable, and locatable minerals.) For brevity, in this policy, the term “resources (and their values, services, and/or functions)” is also referred to in this handbook simply as “resources.”

*Responsible party.* The entity accountable for fulfilling all aspects of mitigation obligations, including, but not limited to, ensuring the durability and effectiveness of mitigation measures, achieving mitigation measures’ outcomes, and complying with monitoring, adaptive management, and reporting requirements. The responsible party may be the public land user, the BLM, a third party, or a combination.

*Restoration.* The process of assisting the recovery of a resource (including its values, services, and/or functions) that has been degraded, damaged, or destroyed to the condition that would have existed if the resource had not been degraded, damaged, or destroyed.

*Reversal.* The loss of durability or effectiveness of a mitigation measure and/or a compensatory mitigation site.

-S-

*Scarce.* Resources that are not plentiful or abundant, and may include resources that are experiencing a downward trend in condition.

*Sensitive.* Resources that are delicate and vulnerable to adverse change, such as resources that lack resilience to changing circumstances.

*Sustained yield.* The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use (FLPMA § 103 (h), 43 USC 1702(h)).

-T-

*Timeliness.* The lack of a time lag between the impact to the resources and the achievement of the outcomes of the associated mitigation measures.

-W-

*Written agreement.* A legal document signed by an authorized officer of the BLM and any other applicable parties that outlines the terms and conditions of an arrangement between parties.

## APPENDIX 1. TOOLS FOR ENSURING THE DURABILITY OF COMPENSATORY MITIGATION SITES

Durability is the maintenance of the effectiveness of a mitigation measure and/or a compensatory mitigation site for the duration of the impacts from public lands uses (BLM-proposed and externally proposed), including resource, administrative, and financial considerations. Tools to enhance site durability, where it does not already exist, will vary depending on the particular characteristics of a compensatory mitigation site (e.g., land ownership, current management prescriptions).

- A. *BLM-Managed Lands:*** On BLM-managed lands the most durable compensatory mitigation sites for conducting compensatory mitigation measures are those sites in the National Conservation Lands due to these lands' protected status in law. On other BLM-managed lands, the BLM may be able to offer a degree of durability that may be short of the near full durability provided by lands in the National Conservation Lands.

For compensatory mitigation sites on BLM-managed land, appropriate actions should be taken to ensure that those sites are durable. Some durability actions may include one or a combination of the following:

1. Secretarial withdrawals under the authority of FLPMA § 204 (43 USC 1714) to curtail or limit the operation of some or all of the public land laws (such as a withdrawal from mineral entry under the mining laws) at the site.

The voluntary relinquishment of a mining claim by a mining claimant, or a voluntary agreement from a mining claimant to cease operations or not start operations, could provide additional durability to the site for the duration of the Secretarial withdrawal.

2. The lease or conveyance of public land, under the authority of the Recreation and Public Purposes Act (43 USC 869 et seq.), to a Federal, state, or local government, or non-profit organization, for a public purpose that provides for the durability of the site.
3. Identification of a protective land use plan allocation for the site, including land use restrictions that provide, consistent with applicable law, for the durability of the site (via the authority granted in FLPMA § 202; e.g., exclusion area; no surface occupancy; limitations on the amount of disturbance; established protection measures, such as required Best Management Practices; Area of Critical Environmental Concern; Research Natural Areas).

The use of land use planning to provide a layer of durability is encouraged; however, it is important to recognize that future land use plan amendments (e.g., project-level land use plan amendments) and/or revisions to the land use plan have the potential to change the durability of compensatory mitigation sites.

4. The issuance of a land use authorization (e.g., leases or easements) to a member of the public for purposes of conservation for the site (via the authority granted in FLPMA Title III and/or Title V).
5. The modification or relinquishment of an existing lease, with the consent of the lessee, to remove this (potential) incompatible uses from the site for the duration of the impact.

*Example (layering of durability tools): To provide for the durability of compensatory mitigation sites associated with residual effects from oil and gas wells and related infrastructure on BLM-managed lands, in an area with a valid existing oil and gas lease, the lessee agrees to a modification or relinquishment of the lease within the compensatory mitigation site. Additionally, the BLM amends its land use plan to exclude other incompatible uses in the area of the compensatory mitigation site (e.g., oil and gas leasing, transmission line rights-of-way, off-road vehicle use, closing the compensatory mitigation site to disposal), and the Secretary withdraws the compensatory mitigation site from mineral entry. The lease modification or relinquishment will reduce or prevent surface disturbance allowable under the lease, the land use plan amendment will restrict the most conflicting public land uses, and the withdrawal will prevent location and entry under the United States mining laws, subject to valid existing rights, and from applications and offers under the mineral leasing law. Together, these three actions ensure the durability of the compensatory mitigation site.*

- B. Private Lands:** For compensatory mitigation sites on private lands, durability tools may include legal conservation easements, other deed restrictions, habitat management agreements, etc. and may only be implemented with the consent of the landowner.

## **APPENDIX 2. THE BLM’S MANAGEMENT OF COMPENSATORY MITIGATION FUNDS**

Subject to the requirements described below, the BLM may accept an offer of monies from a public land user to fund specific compensatory mitigation measures, either on or off BLM-managed lands. The BLM may also accept an offer of monies from individual, public land users and may pool those funds towards completion of larger, collective compensatory mitigation measures. This is especially efficient for compensating for the residual effects to similar resources from multiple public land uses, when it is not feasible or efficient to require individual, public land users to manage their own compensatory mitigation measures or sites.

The BLM may use monetary contributions for implementing compensatory mitigation measures and the management of compensatory mitigation sites, including the associated administrative costs, durability, monitoring, adaptive management, and reporting. In order to qualify, the funds collected should be identified for specific types of compensatory mitigation measures (e.g., habitat restoration for a species that would be impacted by the public land use). The decision document should be as specific as possible regarding what types of compensatory mitigation measures will be funded in order to address the residual effects that were determined to warrant compensatory mitigation.

The BLM’s process for accepting and managing mitigation contributions is as follows:

- A. *On BLM-Managed Lands:*** BLM’s authority to accept an offer of monies for specific compensatory mitigation measures at compensatory mitigation sites on BLM-managed lands comes from:
  1. FLPMA Section 307(b), which provides the authority to enter into contracts and cooperative agreements, and FLPMA Section 307(c), which provides the authority to accept contributions or donations of money for management and protection of the public lands.
  2. The Wyden Amendment, 16 U.S.C. 1011, which provides the authority to expend contributed funds on activities limited to those involving the protection, restoration, and enhancement of fish and wildlife habitat and other resources or for the reduction of risk of natural disaster where public safety is threatened that also benefit resources on public lands within the watershed.
- B. *On non-BLM-Managed Lands:*** Before accepting money intended for expenditure on non-BLM lands (including other Federal, Tribal, State, or private lands, with the consent of the landowner), BLM managers should consult with the Solicitor’s Office and the National Operations Center to confirm that they have sufficient authority to accept and expend funds in the proposed manner. The BLM’s authority to accept an offer of monies to fund BLM’s performance of specific compensatory measures at compensatory mitigation sites on non-BLM-managed lands comes from the Wyden Amendment (16 U.S.C. 1011), which provides the authority to expend contributed funds on activities limited to those involving the protection, restoration, and enhancement of fish and

wildlife habitat and other resources or for the reduction of risk of natural disaster where public safety is threatened that also benefit resources on public lands within the watershed.

- C. For the BLM to accept compensatory mitigation funds, a written agreement must exist between the BLM and the entity contributing the funds (e.g., the public land user). This agreement should be consistent with applicable law and describe the:
1. Authorities to enter into the agreement.
  2. Amount of funding that the BLM is accepting.
  3. Resource outcomes that will be achieved with the funds.
  4. Specific types of compensatory mitigation measure(s) that may be undertaken with the funds, including a discussion of how durability will be ensured.
  5. Timelines for expending the funds to implement the compensatory mitigation measure(s).
  6. Adequacy of funds for the specific compensatory mitigation measures(s), including a discussion of how additionality will be ensured.
  7. Project codes for tracking accepted and expended funds (especially in the case of multiple contributors).
  8. Administrative fees.
  9. Disposition or refund of excess funds, if any.
  10. Reporting requirements.
  11. Rules and requirements for agency cooperators.
  12. Assent of all parties, including the applicable BLM State Director.

Additional written agreements may be necessary to expend the compensatory mitigation funds, such as with the landowner(s) where the compensatory mitigation measure will occur (if not on BLM-managed lands) or with an applicable regulatory agency (e.g., US Fish and Wildlife Service, State agencies).

- D. The BLM must carefully and transparently manage compensatory mitigation funds by:
1. Properly recording the acceptance of funds for compensatory mitigation measures on Form 4120-9 (“Proffer of Monetary Contributions”) and depositing the funds into the

appropriate 7100 account (usually 7122) for expending on the compensatory mitigation measure.

2. Assigning specific project codes to the compensatory mitigation fund accounts to track the contributions and subsequent expenditures.