

Framework and Action Plan for developing a Regional Mitigation Plan for the Dry Lake Solar Energy Zone (SEZ)

The Goal of Regional Mitigation Planning for Solar Energy Zones (SEZs)

The BLM approach to mitigation is to first avoid and then minimize the impacts of solar energy development on public lands. Avoidance is achieved by siting projects so as to avoid conflicts. Minimization is achieved through design features (that is, required mitigation measures) and best management practices. However, not all the impacts associated with solar energy development can be eliminated by avoidance and minimization. Unavoidable adverse impacts will occur. The Solar Programmatic Environmental Impact Statement (PEIS) states (A.2.5.2.2):

For those impacts that cannot be avoided or minimized, the BLM will consider the implementation of measures to offset (or mitigate) impacts with the goal of ensuring viability of resources over time. To accomplish this goal in a streamlined and standardized way for SEZs, the BLM proposes to establish regional mitigation plans.

Goal of the Dry Lake SEZ Regional Mitigation Plan Pilot Project:

- Develop a Regional Mitigation Plan for the Dry Lake SEZ and use the lessons learned to produce guidance for the development of regional mitigation plans for all the remaining SEZs.

Deliverables:

- Dry Lake SEZ Regional Mitigation Plan
- Guidance for Developing Solar Regional Mitigation Plans for the remaining SEZs

Proposed Framework and Action Plan

- Proposed Framework
 - The proposed content of the Regional Mitigation Plan for the Dry Lake Solar Energy Zone and how the various components relate to each other
- Proposed Action Plan
 - How the BLM plans to develop the Regional Mitigation Plan for the Dry Lake Solar Energy Zone

Proposed Framework for the Regional Mitigation Plan for the Dry Lake SEZ

The proposed framework for the Regional Mitigation Plan for the Dry Lake Solar Energy Zone is derived from two frameworks presented in the Solar PEIS:

- *Framework for Developing Regional Mitigation Plans* (Appendix A.2.5)
- *Framework for Developing a Monitoring and Adaptive Management Plan for the BLM's Solar Energy Zones* (Appendix A.2.5).

The *Framework for Developing Regional Mitigation Plans* includes the following elements:

1. A transparent and legally defensible stakeholder engagement process.
2. A baseline upon which unavoidable impacts are assessed
3. Assessment and quantification of unavoidable impacts.
4. Mitigation obligations or costs for individual projects.
5. A structure to hold and apply mitigation investments
6. Regional objectives regarding where and how mitigation investments will be made.
7. Monitoring and adaptive management

A more detailed description of each of these elements is provided in attachment 1.

The *Framework for Developing a Monitoring and Adaptive Management Plan for the BLM's Solar Energy Zones* serves as the basis for a *Long-Term Solar Monitoring and Adaptive Management Plan (LTMP)*, and will be referred to hereafter in this document as the 'LTMP Framework'. The component parts of the LTMP Framework are:

1. Frame the Issue
2. Understand the System
3. Develop Objectives
4. Assemble Background/Existing Information
5. Develop Monitoring and Sampling Schema
6. Create and Finalize Monitoring Plan
7. Implement Data Collection and Management
8. Analyze and Report
9. Adaptive Management Loop

The LTMP Framework is an iterative process and is described in more detail in attachment 2.

In addition to the 'monitoring and adaptive management' element in the *Framework for Developing Regional Mitigation Plans*, the two frameworks are linked in several key places (described in attachment 3). For this reason, one of the goals of the pilot is to integrate the two frameworks. The following is the proposed outline for the content of the Regional Mitigation Plan for the Dry Lake SEZ.

Outline of the Regional Mitigation Plan for the Dry Lake Solar Energy Zone

1. What are the unavoidable impacts?

- a. What assumptions are made about the development of the SEZ?
- b. What are the unavoidable impacts associated with the development of the Dry Lake SEZ?
- c. What is the region of influence for each impact?

2. Which impacts should the BLM mitigate?

- a. Which impacts represent significant threats to the resilience and/or sustainability of the ecological, social, and cultural systems in the region?
 - i. What are the relevant ecological, social, and cultural systems in the region?
 - ii. What are the current trends in the resilience and/or sustainability of the relevant ecological, social, economic, and cultural systems in the region?
 - iii. What roles do the resources impacted by development of the SEZ play in the resilience and/or sustainability of the relevant ecological, social, economic, and cultural systems in the region?
 - iv. How significant are the impacts of development in the SEZ on the resilience and/or sustainability of the relevant ecological, social, and cultural systems in the region?
- b. To what degree can the impacts be mitigated?

3. What are the mitigation objectives?

- a. What constitutes success in mitigating the impacts associated with development of the SEZ?

4. What mitigation projects/actions will be undertaken to off-set the selected impacts?

- a. What mitigation projects/actions off-set the impacts and by how much?
- b. What will various mitigation projects/actions cost?
- c. Is there an overarching mitigation action strategy that can increase efficiency and/or effectiveness?
 - i. How will the BLM cooperate with other agencies and entities to implement mitigation actions that have the biggest bang for the buck?

5. How will the mitigation actions be funded?

- a. Mitigation fee?
 - i. How much and on what basis?
 - ii. How collected, held, and accounted for?
 - iii. How will funds be allocated to projects/actions?
- b. What other mitigation obligations are required of developers?

- 6. How will we know if the mitigations actions have achieved the desired objectives?**
- a. How will we monitor and assess success?
 - b. What will the BLM do if mitigations actions are not achieving their desired objectives?

Action Plan: How we plan to develop the Regional Mitigation Plan for the Dry Lake SEZ

The following diagram depicts the preliminary ‘action plan’ for the development of a Regional Mitigation Plan for the Dry Lake SEZ. Generally, each component of the action plan will be completed by the BLM to support development of preliminary elements of the Regional Mitigation Plan (for example, a preliminary list of mitigation objectives). As they are completed, preliminary products will be posted on the project Web site and presented to stakeholder workshops for review and revision. The BLM will seek consensus on each component in the stakeholder workshops. All stakeholder workshops are open to the public. Following the workshops, the BLM will post the final version on the project Web site.

Project Web site:

http://www.blm.gov/nv/st/en/fo/lvfo/blm_programs/energy/dry_lake_solar_energy.html

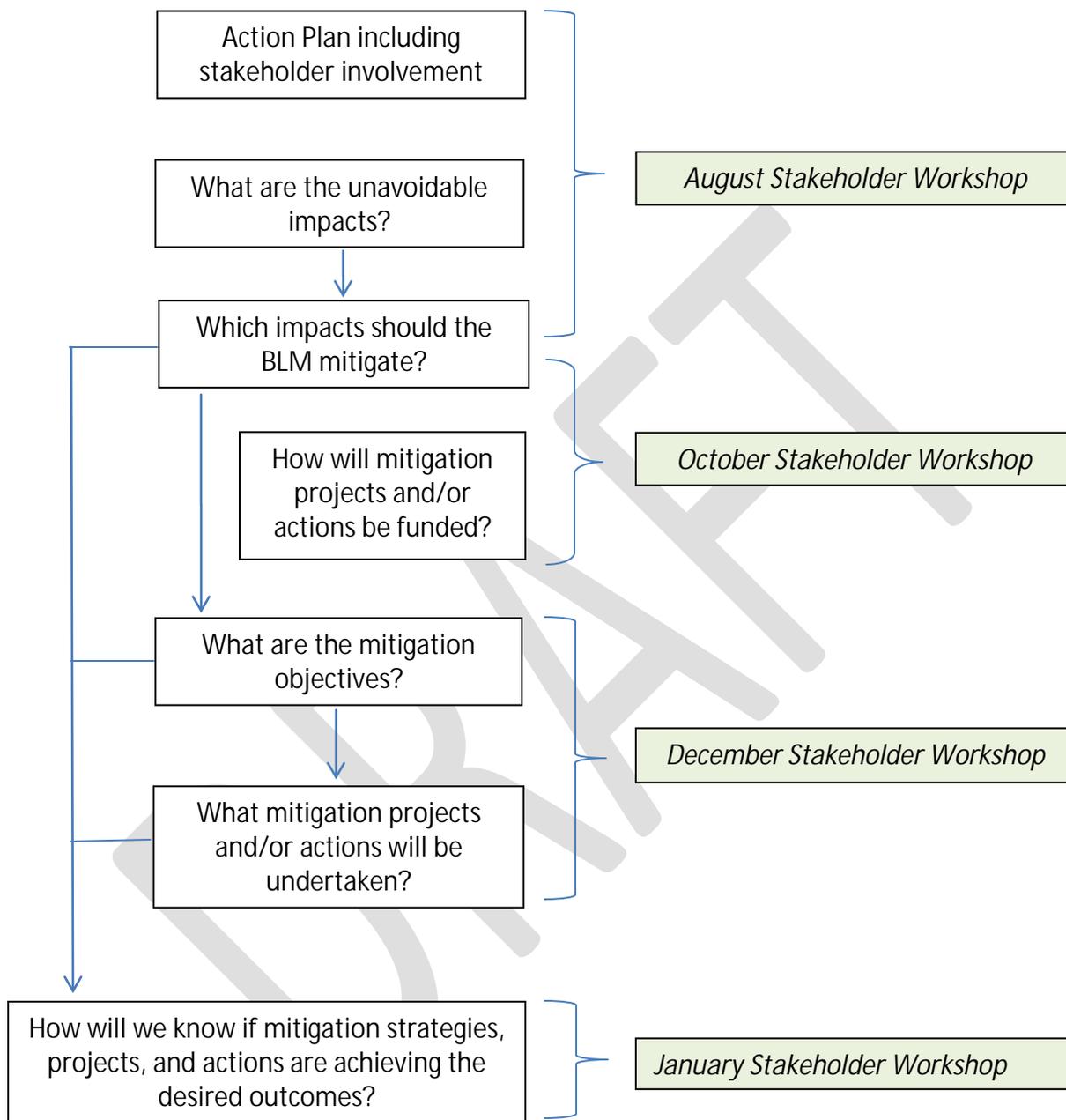


Figure 1
Action Plan Diagram

In many cases, intensive efforts are required to produce preliminary products. For example, identifying and understanding the relationship between impacts in the Dry Lake SEZ and the relevant ecological, social, economic, and cultural systems will require literature searches to locate and extract information, and the creation and use of models. Generally, such activities will be carried out by BLM directed work-groups made up of BLM staff, contractors, and, where feasible, interested stakeholders. The interim products created by these work groups will be posted for review on the project Web site. Where sufficient interest exists, certain of the interim products may be presented for review and revision at planned or additional stakeholder workshops.

Lessons-Learned and Guidance

A small, independent ‘lessons-learned’ team will observe, document, query participants for their perceptions, and reflect on each step of the action plan and each deliverable. This team will address such questions as:

- Which methodologies or mechanisms best suit BLM’s needs to assess impacts and translate impacts into dollars?
- What are the best examples of third-party fiduciary structures to manage and deliver mitigation investments?
- What is the array of “tools” available to the BLM to accomplish mitigation on the ground, including a mechanism to ensure enduring protection for mitigation actions on public lands?
- How can the pooling of dollars for mitigation and monitoring in SEZs help reduce overall costs to developers?
- What are the best methods to integrate regional mitigation plans into the Solar LTMP?

The ‘lessons learned’ team will use the information gained in the Dry Lake SEZ Pilot to derive guidance for the development of regional mitigation plans for the remaining SEZs. The development of this guidance is planned for the first quarter of calendar year 2013, and will be conducted in an open and collaborative manner. Stakeholders will again be invited to participate in workshops to review and revise preliminary iteration of the guidance, participate in sub-groups where feasible, and review interim products posted on the project Web site. A more detailed schedule for this phase of the project will be released before the end of calendar year 2012.

Attachment 1
Framework for Regional Mitigation Plans for SEZs

1. A transparent and legally defensible stakeholder engagement process.
2. A baseline upon which unavoidable impacts are assessed
 - a. Baseline conditions in the SEZ
 - i. Potential sources: Solar PEIS, BLM Rapid Ecosystem Assessments, BLM Resource Management Plans, Habitat Conservation Plans and Biological Opinions, other Federal, state, and local plans and assessments
 - ii. Possible attributes (not inclusive):
 1. Ecological status of the landscapes to be developed
 2. Habitat quality and level of intactness
 3. Species occurrences, population status, and viability
 4. Presence/absence and abundance of rare, sensitive, endemic, threatened, or endangered species
 5. Status of aquatic, surface water, and ground water resources
 6. Location of wildlife migratory corridors
 7. Connectivity of habitats
 8. Ecological trends
3. A methodology to assess and quantify unavoidable impacts.
 - a. Including biological, ecological, cultural, scenic, and socio-economic impacts
 - b. Consideration given to cumulative impacts and temporal nature of impacts
4. A method to determine mitigation obligations or costs for individual projects.
 - a. Assign a monetary value to impacts
 - b. Possible considerations:
 - i. Average costs for land protection
 - ii. Funding for on-going management needs
 - iii. Administrative costs
 - iv. Performance bonding
5. A structure to hold and apply mitigation investments
 - a. Consideration of third-parties
6. Regional objectives regarding where and how mitigation investments will be made
 - a. Geographic scale for regional planning: 2-3 million acres
 - b. Priority given to sites that present the best options for successful mitigation and conservation benefits
 - c. Proximity to site is not a limiting factor
 - d. Strategies may include: acquiring protecting, and/or restoring areas or resources with one of more of the following attributes:
7. Monitoring and adaptive management
 - a. Providing input to the long-term monitoring plan and adaptive management strategy specific to monitoring the effectiveness of regional mitigation strategies

Attachment 2
Framework for Developing a Long-term Monitoring and Adaptive Management Plan (LTMP) for the BLM's Solar Energy Zones

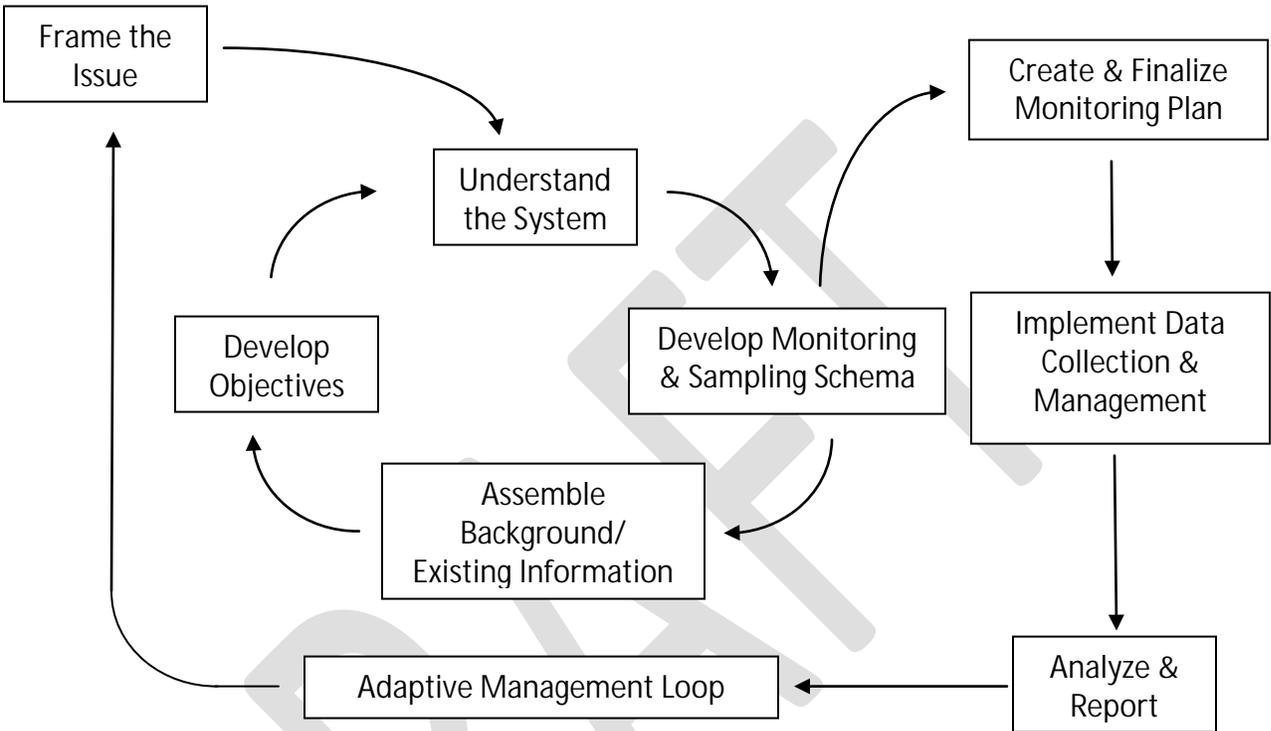


Figure 2
Framework for Developing a Monitoring and Adaptive Management Plan for the BLM's Solar Energy Zones

Component Parts of the LTMP Framework:

1. Frame the Issue
 - a. Identify management questions (including stakeholder involvement)
 - b. Define study areas and determine scale of effort (national, regional, local)
 - c. Review regulatory requirements (FLPMA, RMPs, standards, etc.)
2. Understand the System
 - a. Review existing literature and models
 - b. List key ecological components, interactions, and processes essential for system sustainability
 - c. List drivers related to system functioning
 - d. Review relevant local/traditional knowledge
 - e. Review Assessment, Inventory and Monitoring (AIM) Conceptual Models

- f. Create Regionally specific conceptual model; adapt/add detail related to listed processes, drivers, and needs to the AIM model
3. Develop Objectives
 - a. List regulatory requirements and program needs, including land health fundamentals and standards
 - b. Consider key ecological elements (defined by the conceptual model), management questions, and regulatory requirements to ensure core indicators and methods fulfill needs
 - c. Add specific, measurable, achievable, relevant, and time sensitive (SMART) indicators as necessary
 - d. Develop SMART monitoring objectives related to core and supplemental indicators
4. Assemble Background/Existing Information
 - a. Review and assemble existing research to support supplemental indicators and methods
 - b. Identify related, existing, and legacy monitoring efforts
 - c. Identify and assemble existing reference/base data (e.g. to support sample stratification)
5. Develop Monitoring and Sampling Schema
 - a. Refine study area
 - b. Identify potential data collection approaches for selected indicators
 - c. Choose sample design, stratification, and intensity
 - d. Generate unbiased sample points
6. Create and Finalize Monitoring Plan
 - a. Define and document protocol decision rules for replacing sample points, locating and laying out plots, and collecting and recording data
 - b. Optimize data collection (field and/or remote sensing)
 - c. Finalize/approve monitoring plan
 - d. Develop/approve monitoring implementation plan
7. Implement Data Collection and Management
 - a. Implement monitoring plan and collect data
 - b. Perform quality assessment/quality control and data stewardship
 - c. Upload data to national monitoring database
 - d. Review, approve, and replicate to production database
8. Analyze and Report
 - a. Analyze/evaluate data against monitoring objectives and/or land health standards
 - b. Communicate results as appropriate
 - c. Complete annual reports
9. Adaptive Management Loop
 - a. Analyze monitoring results in annual reports against resource objectives and conceptual models
 - b. Adapt activities, models, and monitoring plan as necessary
 - c. Incorporate lessons learned into future activities and management actions

Attachment 3

Links between the Framework for Solar Regional Mitigation Plans and the LTMP Framework

Regarding the second Regional Mitigation Plan element – ‘baseline data’, the Solar PEIS (Appendix A, Section A.2.5.3.2) states:

Data collected through the BLM’s proposed Solar Long-Term Solar Monitoring and Adaptive Management Plan (LTMP) and annual reports from that process are expected to be instrumental in understanding baseline conditions for SEZs.

Regarding the third Regional Mitigation Plan element – ‘a methodology to assess and quantify unavoidable impacts’ –step two of the LTMP framework establishes an ‘understanding of the system’ and will provide the basis for assessing and quantifying unavoidable impacts.

Regarding the sixth Regional Mitigation Plan element – ‘regional objectives’ – the Solar PEIS (Appendix A, Section A.2.5.3.6) states:

Regional objectives will also be informed by the output from BLM’s proposed Solar LTMP regarding the level of success of previously implemented mitigation actions

Regarding the last Regional Mitigation Plan element – ‘monitoring and adaptive management’ – the Solar PEIS (Appendix A, Section A.2.5.2.2) states:

As part of the proposed Solar Energy Program, the Solar LTMP will be used to evaluate the effectiveness of mitigation strategies employed through regional mitigation plans.