From:	Jeri_Wood@fws.gov
To:	Julie_Reeves@fws.gov
Cc:	Lynn_Gemlo@fws.gov; Tyler_Abbott@fws.gov
Subject:	Re: Gateway West FEIS - draft outline sage grouse mitigation plan
Date:	Wednesday, October 31, 2012 8:25:20 AM
Attachments:	Appendix C_Part2.pdf

Julie - I took a look at it but it hasn't changed much since the last version. I will look at it again however. Jeri

****
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May your trails be crooked, winding, lonesome, and dangerous, leading to the most amazing view. May your mountains rise into and above the clouds. - E Abbey
****

Julie Reeves/R6/FWS/DOI

Julie Reeves/R6/FWS/DOI 10/30/2012 02:17 PM	To Jeri Wood/ESBO/R1/FWS/DOI@FWS, Tyler Abbott/R6/FWS/DOI@FWS, Lynn Gemlo/R6/FWS/DOI@FWS cc Subject Gateway West FEIS - draft outline sage grouse mitigation plan

Hi, Jeri, Tyler, and Lynn,

Have you reviewed Appendix C-3, the "Greater Sage-grouse Avoidance, Minimization, and Mitigation Measures" section, of the admin FEIS for Gateway West? I apologize for not finding this part of the document sooner.

Could you please take a quick look and see if this draft outline is beginning to address our recommendations for a mitigation plan following the results of the HEA? Any comments you could provide would be helpful.

Thanks a ton!
(See attached file: Appendix C_Part2.pdf)

~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
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We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect. ~Aldo Leopold, A Sand County Almanac

Appendix C-3
Greater Sage-grouse Avoidance, Minimization, and Mitigation Measures

Gateway West Transmission Line Project: Detailed Outline for Offsite Compensatory Mitigation to Offset Project Impacts to Greater Sage-grouse

Prepared by:

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

and

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June 15, 2012

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1. Introduction

1.1. Project Overview

Idaho Power Company and Rocky Mountain Power (Companies) propose to construct and operate approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The Project includes ground-disturbing activities associated with the construction of above-ground, single-circuit transmission lines involving, access roads, multi-purpose yards, fly yards, pulling sites as well as associated substations, communication sites, and electrical supply distribution lines. The Project is designed/sited to avoid greater sage-grouse (*Centrocercus urophasianus*)leks and adhere to lek buffers and use designated energy corridors. Portions of the Project will cross suitable habitat for greater sage-grouse. As a result, the Companies, in close coordination with the Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), Wyoming Game and Fish Department (WGFD), and Idaho Department of Fish and Game (IDFG) have developed a mitigation strategy to compensate for the unavoidable impact to sage-grouse habitat that may occur as a result of Project construction and operation.

1.2. Companies' Mitigation Goals

The Companies' mitigation goals include:

- identify mitigation opportunities that reduce or remove threats under the five listing factors used by the USFWS to assess the status of Endangered Species Act (ESA)-listed and candidate species,
- compliance with Wyoming Executive Order 2011-5 and other state regulatory mechanisms, and
- address primary and secondary threats identified in Idaho Executive Order 2012-02 and recommendations of the State of Idaho and the Idaho Task Force that may ultimately be adopted through regulatory mechanisms.

1.3. Mitigation Purpose

1.3.1. Mitigation Strategy for Known Impacts

Current literature identifies habitat loss/fragmentation (e.g., fire in Idaho) poses the greatest threat to sage-grouse however, the literature also indicates that conversion, noise, and human activity may also pose impacts to greater sage-grouse (refer to the Final Habitat Equivalency Analysis [HEA] report). Knowledge of the impacts of transmission structures and other tall structures on the landscape is currently lacking (Utah Wildlife in Need 2010). The Companies' mitigation strategy is to compensate for known impacts to greater sage-grouse that could occur as a result of Project construction and operation. This mitigation strategy is guided by the following:

- Sage-grouse habitat quality and quantity varies across the landscape. To ensure that habitat variability is fully captured, the HEA used a quantitative habitat metric to model the direct loss of habitat that would result from construction and operation of the Project.

- Sage-grouse habitat services lost or impacted due to the construction and operations of the Project will be replaced by either preserving at-risk habitat services or enhancing degraded habitat services through one or more methods either modeled during the HEA effort or approved by an Oversight Committee (see Section 2.4).
- Offsite compensatory mitigation projects will be defined in suitable locations as close to the Project area as possible in order to benefit the sage-grouse populations being impacted by project construction and operations but may also be directed to habitats where mitigation has greater value in providing long term benefit to sage-grouse.
- Mitigation projects that are approved and funded will result in:
    - Habitat conservation or protection in at-risk areas
    - an increase in long-term habitat availability, and/or
    - an increase in habitat quality
- The Companies will fund a program of maintenance and monitoring for each compensatory mitigation project to determine the effectiveness of the mitigation and provide guidance for future projects. Funding for maintenance and monitoring has been incorporated in the HEA and is therefore inherently part of the compensatory mitigation to be proposed.

2. Compensatory Mitigation for Gateway West

2.1. Approach to Determine Mitigation Obligation

2.1.1. Framework for Sage-grouse Impacts Analysis for Interstate Transmission Lines

The Companies have been actively working with agency personnel (refer to Appendix A for a list) to satisfy the requirements of the Framework for Sage-grouse Impacts Analysis for Interstate Transmission Lines (November 22, 2010, last revised October 22, 2011), Attachment 3.

The Framework specifies the use of a HEA, an economics model, to scale mitigation for the loss of habitat services. Habitat services include those ecosystem features (i.e., physical site-specific characteristics of an ecosystem) and ecosystem functions (i.e., biophysical processes that occur within an ecosystem) that support, in this case, greater sage-grouse populations.

The HEA for the Project produced an estimate of the permanent and interim loss of sage-grouse habitat services as a result of vegetation loss, noise, and human presence anticipated with project construction and operation. Once BLM has identified a preferred alternative, the HEA can be used to identify the sum total of modeled habitat services lost. The HEA also modeled feasible mitigation project types and incorporated their typical costs. The Companies will use the HEA-generated sum of modeled habitat services lost and develop a proposed set of mitigation projects, whose total habitat services gained can also be summed. The Companies can then use the estimated mitigation project cost for each project type to develop an estimated total cost for the entire Project's compensatory mitigation obligations (see Section 3.0). The suggested project mix and sum of habitat services provided by the mitigation project types will offset the sum of modeled habitat services lost, as specified in the HEA.

2.1.2. U.S. Fish and Wildlife Service Mitigation Recommendations

The USFWS Wyoming Office provided the Companies with recommendations regarding the development and implementation of a mitigation plan to address Project impacts on sage-grouse and its habitat (attached as Appendix B). Per these recommendations, the Companies will:

- Use the HEA's estimation of permanent and interim loss of habitat services to determine how many habitat services must be gained by a suite of projects. The sum of habitat services gained from mitigation projects selected will provide an estimate of how much compensatory mitigation will be offered by the Companies.
- Once the preferred alternative is selected and the ROD is issued, the Companies will select and submit to BLM a proposed set of projects (project mix), the sum of whose habitat services gained will equal the sum of the habitat services modeled as lost from the Project.
- Focus the majority of mitigation (project mix) on conservation of habitat, specifically on projects that protect habitat, enhance or maintain quality of habitat, and reduce fragmentation. Components of habitat conservation include preservation through easements, enhancements (such as juniper removal), and restoration. These habitat conservation projects may then be supplemented by a smaller portion of projects such as fence-marking or others.
- Develop an approach to ensure mitigation is implemented in a collaborative manner by establishing an "Oversight Committee" (see Section 2.4) that will support the in-lieu fee administrator (Section 3.1.4) and be composed of biologists working for BLM, USFWS, IDFG, and WGFD. The role of this team is to provide guidance and biological advice concerning the accomplishment of successful mitigation on the ground.

Additionally, the USFWS provided specific recommendations to ensure successful completion of mitigation projects that contribute to sage-grouse habitat conservation. Within these recommendations, the USFWS emphasizes the need to consider each mitigation site individually and provide a clear justification regarding the value of the treatment at that site. The Companies will establish mechanisms for receiving, reviewing and selecting proposals for projects through coordinated efforts between the Oversight Committee (that has been assembled for each state or regional area) and in-lieu fee administrator. Each proposed project will meet the intent of the mitigation, which is to protect, enhance, or maintain habitat quality for sage-grouse in order to receive funding. No projects will be funded that do not meet one of those goals.

2.1.3. Changes to the Plan

Given the dynamic nature of the current regulatory environment for sage-grouse, the Companies expect that there may continue to be changes in sage-grouse policies and guidance between submittal of this detailed outline, the final mitigation plan and final selection and implementation of mitigation projects. The Companies will consider new information as it becomes available and revise the Mitigation Plan if appropriate.

2.2. Siting Compensatory Mitigation Projects

Compensatory mitigation projects will be sited in the same state where the impact will occur and will be located using the following priorities:

First Priority: Projects will be located in polygons of Key Habitats/Core Areas (i.e., Preliminary Priority Habitats) that are intersected by the Project. Projects may be located in polygons of Key Habitat/Core (i.e., Preliminary Priority Habitats) that are *not* intersected by the Project but are within the region (e.g., Western Association of Fish and Wildlife Agencies' management zones) where the Oversight Committee agrees.

Second Priority: Projects may be located in areas outside of Key Habitat/Core (i.e., Preliminary Priority Habitats) where the Oversight Committee agrees that habitat connectivity may be restored.

The overarching goal and priority for siting mitigation projects is to locate projects where the greatest benefit to sage-grouse will be realized. The priorities stated above are a general rule for project siting, however, projects may be located elsewhere if the Oversight Committee (see Section 2.4) identifies specific opportunities that will provide a greater benefit to sage-grouse than those in the impacted region. Refer to Section 3.1.2 for additional discussion of mitigation project placement.

2.3. Timing for Financing of Mitigation Projects

There are three factors that influence the timing of financing and execution of mitigation projects. First, the best available estimates of disturbance of known habitat can only be made after the BLM establishes the preferred alternative for the Project and the Companies complete the design engineering for each segment based on that preferred alternative. Second, the Companies can only finance mitigation for a permitted project—that is, the mitigation investment can only be made after a permit is issued. While the Companies are willing to commit to making an appropriate investment if the permit is issued, mitigation funding would occur only after permits are in hand. Third, the Companies cannot know in advance what projects will be available in the timeframe between the issuance of permits and the desired start of construction. Flexibility is therefore required in the identification and financing of mitigation projects.

2.4. Oversight Committee

As described in the USFWS recommendations for mitigation approaches, an Oversight Committee consisting of agency biologists and other state and federal advisors, will be created to provide guidance to the in-lieu fee administering entity (see Section 3.1.4.) on the utilization of mitigation funds provided by the Companies. The Companies expect that both local and landscape level perspectives will be represented on the Oversight Committee, and that membership may shift as needed to consider local experts in each state or region. This will likely include local sage-grouse working groups, experts in the fields of mitigation, sage-grouse ecology, or other applicable disciplines. Committee members should be

familiar with the Project area to help select mitigation projects locations and approve projects proposed by entities for use of mitigation funds.

The purposes of the Oversight Committee are to:

- Provide guidance to the in-lieu fee administering entity by:
    - Identifying and selecting mitigation projects;
    - Reviewing and approving projects proposed by other entities (proposals for use of mitigation funds);
- Employ experts as needed to determine the habitat services replacement value of project types not modeled in the HEA;
- Review proposed projects for compliance with the intent of the Framework and existing regulation and policy regarding compensatory mitigation;
- Validate the success of mitigation projects and their effectiveness at the local or landscape level; and
- Provide monitoring and oversight of project implementation and review of project monitoring results.

A selected committee member/entity will be identified who will be responsible for facilitating communications among Oversight Committee members and scheduling necessary review meetings to discuss mitigation projects and monitoring results. The roles and responsibilities of agency representatives, and other Oversight Committee members will vary by mitigation project type and location. Once final mitigation projects are identified, participants, roles and responsibilities within the Oversight Committee will be determined and assigned. Further detail will be presented in the final mitigation proposal regarding the Oversight Committee and mitigation project selection criteria.

3. Compensatory Mitigation Plan

3.1. Direct and Indirect Loss of Habitat Services Modeled in HEA

The avoidance (routing and siting criteria) and minimization measures (environmental protection measures and plans) undertaken by the Companies and discussed in the DEIS for the Project substantially avoid known impacts to greater sage-grouse and minimize impacts to their habitat. However, even with these measures in place, there are residual unavoidable impacts to habitat from the construction and operation of the Project. This Plan describes the Companies' plan to compensate for those impacts, as modeled in the HEA, by providing adequate funding (see Section 2.1.1 regarding discussion on "project mix" and Section 3.1.1) for one or more projects that the agencies agree replace habitat services lost due to the Project.

3.1.1. Mitigation Scaling

The HEA quantified the permanent and interim loss of habitat services resulting from ground-disturbing activities, construction related traffic and noise, and the footprint of the physical structures as defined

by a habitat services metric (Table 7, HEA, Attachment 1). The HEA used the same habitat services metric to quantify the habitat services to be gained by implementing different types of habitat improvement measures (measured in service-acre-years). The habitat improvement measures, summarized in Table 8 of the HEA, Attachment 1, that were selected by the interagency HEA Technical Advisory Team to model in the HEA are:

- fence marking or removal;
- sagebrush restoration and enhancement;
- juniper removal;
- seeding of a forb and bunchgrass understory; and
- purchase of conservation easements.

The analysis also produced a cost per service-acre-year gained for each habitat improvement measure based on the average cost of project implementation in Wyoming and Idaho (HEA Table 8, Attachment 1).

Compensatory mitigation will be applied to offset the modeled sage-grouse habitat service losses so that there is no net loss as a result of project construction and operation. Per the recommendations of the USFWS, the majority of conservation will focus on the conservation of habitat, specifically on projects that enhance or maintain quality of habitat and reduce fragmentation. The majority of the mitigation package will consist of habitat conservation easements (at 100% baseline habitat service level credit), sagebrush restoration and enhancement, which includes juniper removal, and fence marking or removal.

The Companies commit to selecting a set of projects that fully replace the habitat services lost, based on the preferred alternative when it is selected by the BLM. These portions will be identified as percentages of the overall mitigation package and will be applied to the total habitat services lost and multiplied by the cost per service acre gained by each conservation measure to estimate the mitigation dollars allocated to each measure, and then summed across measures to estimate the total compensatory mitigation obligations (mitigation funding to be provided by the Companies). After the Companies compensatory mitigation obligations are met (mitigation funding is provided to be managed by in-lieu fee administrator), the breakdown of mitigation project types (project mix) at the time of implementation is subject to change (under guidance of the Oversight Committee and in-lieu fee administrator) depending upon project availability and project benefit to sage-grouse and their habitat. However, the mitigation funding provided is fixed.

An example of how mitigation will be portioned among project types to offset the total habitat-service-acre-years lost in a hypothetical project segment is provided in Appendix C.

3.1.2. Mitigation Project Types

Descriptions of the mitigation project types modeled in the HEA are provided below. These projects are consistent with recommendations provided by the USFWS. The Companies are not limited to these

project types for mitigation credit. Table 7 in the HEA (Attachment 1) presents total habitat services lost which could be replaced by the following mitigation project types.

Fence Marking and Removal

Based on Christiansen (2009) it has been demonstrated that each mile of fence within 2 miles of leks kills up to 53 greater sage-grouse per year. This threat can be eliminated by removing fences or significantly reduced by increasing the visibility of fences. Christiansen (2009) estimated a 70% reduction in mortalities could be expected along marked sections of fence. Stevens (2011) similarly predicted that marking fences with vinyl reflectors (flight diverters) reduced collision rates by up to 74%.

To eliminate the threat of collisions, fences would be removed or marked with flight diverters similar to those used in the Christiansen (2009), Wolfe (2009), and Stevens (2011) studies to increase fence visibility to greater sage-grouse. Fences will be removed where possible. Where removal is not possible, two flight diverters would be installed between each fence span (4 m post-to-post). Priority areas for fence removal and/or marking would be:

- Sections of fence known to cause sage-grouse collisions,
- Fences within 2 km (1.2 mi) of leks (Braun 2006; Stevens 2011) or other high risk area,
- Fences in areas with low slope and terrain ruggedness (Stevens 2011), and
- Fence segments bounded by steel t-posts with spans greater than 4 m (Stevens 2011).

Once fences have been removed or marked, local annual mortality due to fence collisions will be substantially reduced. As described in Section 2.2, all mitigation projects will be sited in the same state where the impact occurred and in a manner consistent with the priorities identified in the BLM's IM 2008-204.

The HEA calculated that 51,634 service-acre-years would be created for every mile of fence marked (with annual maintenance) or fence removed over the lifetime of the project. The Companies anticipate that this component will represent no more than 25% of the total habitat services gained when calculating the overall mitigation projects.

Sagebrush Restoration and Enhancement

Sagebrush restoration and enhancement creates new habitat for sage-grouse and can be used to create corridors between existing patches of sagebrush patches to produce larger patches of contiguous habitat. As described in Section 1.3, habitat for sage-grouse consists of a mosaic of plant communities dominated by sagebrush and a diverse grass and forb understory across the landscape (Wyoming Greater Sage-grouse Conservation Plan. 2003). This conservation measure increases the quality and quantity of habitat within the landscape, contributing to the long-term survival and success of the greater sage-grouse.

New habitat for sage-grouse would be created by establishing sagebrush and understory grasses and forbs in disturbed areas (e.g., roads, unreclaimed pipeline corridors, well pads, burned areas, etc.). Treatment for mitigation credit is not planned for areas of Project disturbance, which will be restored as described in the plan of development, but in other pre-existing areas of disturbance. Sagebrush can be

seeded, planted as seedlings, or transplanted (i.e., containerized stems). Because seeded sagebrush takes a long time to grow to a size that provides habitat for sage-grouse, the HEA determined that planting containerized stems was the most economical option. Sagebrush restoration and enhancement projects will include understory (grass and forb) treatments.

Where possible, projects will be placed strategically to decrease habitat fragmentation by connecting existing occupied habitats. All treatments will include monitoring plans and funding to conduct monitoring. Criteria that define "restoration" and "success" will be developed in coordination with the Oversight Committee.

Stripping of topsoil will be avoided in potential restoration areas, as it decreases the likelihood of treatment success. Any topsoil that is stripped will be stored properly in order to maintain biological viability of soil microbes that are necessary for sagebrush survival and growth. Soil structure should be maintained if it is stripped, and should be maintained when placed back within restoration areas prior to seeding or planting.

The value of sagebrush restoration depends on the method used; methods that result in faster plant establishment have higher value. The HEA calculated that for every acre of disturbance seeded with sagebrush and bunchgrass, 1,751 service-acre-years would be created over the lifetime of the project. For every acre of disturbance planted with containerized sagebrush stems and seeded with bunchgrass, 4,556 service-acre-years would be created. For every acre of disturbance planted with sagebrush seedlings and seeded with bunchgrass, 1,935 service-acre-years would be created. Because of the uncertain and delayed success rate and relatively high cost, the Companies do not anticipate selecting a substantial proportion of seeding or planting projects unless a cost-effective partnership opportunity arises that meets the approval of the Oversight Committee. The Companies anticipate that this component will represent no more than 5% of the total habitat services gained when calculating the overall mitigation projects.

Juniper Removal

Fire suppression and other post-settlement conditions have allowed western juniper to spread into areas previously dominated by grasses, forbs, and shrubs. Miller et al. (2005) reports that many areas have experienced an estimated 10-fold increase in juniper over the last 130 years. The expansion of juniper and other conifer species reduces habitat for sage-grouse and other sagebrush obligate species that depend on large patches of sagebrush-dominated vegetation. Sagebrush cover decreases with juniper encroachment as the vegetation transitions into woodland.

Most juniper communities are still in a state of transition. Miller et al. (2005) characterized three stages of woodland succession:

- Phase I (early) – trees are present but shrubs and herbs are the dominant vegetation that influence ecological processes (hydrologic, nutrient, and energy cycles) on the site;
- Phase II (mid) – trees are co-dominant with shrubs and herbs and all three vegetation layers influence ecological processes on the site;

- Phase III (late) – trees are the dominant vegetation and the primary plant layer influencing ecological processes on the site.

Sites in Phase I or II successional stages often retain a significant understory of sagebrush (i.e., grasses and forbs), so removal of Phase I or II can produce immediate habitat benefits for sage-grouse (NRCS 2010; USFWS recommendations).

Juniper/conifer removal projects used for mitigation will focus primarily on the early successive stages of conifer/juniper stands (i.e., Phase I or Phase II juniper) with no cheatgrass component. Removal of juniper/conifer will be done by mechanical means without the use of fire or chemicals:

- Phase I juniper/conifer will be treated by having a field crew walk from tree-to-tree, cutting them into pieces and scattering them on-site (lop and scatter).
- Phase II juniper/conifer will be treated by using a masticator, a large mechanical device that goes from tree-to-tree and demolishes the tree with whirling blades; debris is then left on site (mastication).

All juniper/conifer removal projects will include understory treatment, where needed, and vegetation monitoring until the understory vegetation is established. Locations of removal projects will be selected by the Companies with guidance from the Oversight Committee so that each treatment site provides value to the local sage-grouse population.

The value of juniper/conifer removal in the HEA depended on the successional stage of juniper removed (i.e., Phase I, Phase II, or Phase III juniper). The HEA calculated that 1,108 service-acre-years are created for every acre of Phase I juniper treated, 1,481 service-acre-years for every acre of Phase II juniper treated, and 1,751 service-acre-years for every acre of Phase III juniper treated with understory seeding over the lifetime of the project. Juniper The Companies anticipate that this component will represent approximately 30% of the total habitat services gained when calculating the overall mitigation projects.

Seeding of a Forb and Bunchgrass Understory

Bunchgrasses, as opposed to rhizomatous grasses, are recognized as an important component of sage-grouse nesting and brood-rearing habitats (Connelly et al. 2000; Crawford et al. 2004). The structure and abundance of bunchgrasses influence the quality of a sagebrush/bunchgrass community site for nesting sage-grouse. Tall, dense, residual grass in nesting habitat improves hatching success by providing cover for incubating females (Cagney et al. 2009). Herbaceous cover may provide scent, visual, and physical barriers to potential predators (DeLong et al. 1995, as cited in Connelly et al. 2000). In addition to providing cover from predators, forbs are an important food source for sage-grouse broods.

Sage-grouse nesting and brood-rearing habitat is improved by seeding native bunchgrasses and forbs into existing sagebrush stands or into adjacent disturbance, increasing nest and brood success. Understory seeding project sites will be selected by the Companies in coordination with the Oversight Committee to maximize the benefit of these projects for sage-grouse. Objectives for these projects and criteria for success will be developed in coordination with the Oversight Committee.

The HEA calculated that 56 service-acre-years are created for every acre of sage-brush vegetation that is overseeded with bunchgrass over the lifetime of the project. A greater number of service-acre-years are created when areas of disturbance (i.e., no vegetation) are seeded with bunchgrass: 282 per acre seeded over the lifetime of the project. Because of the low habitat services gained, the uncertain and delayed success rate, and relatively high cost, the Companies do not anticipate using forb and bunchgrass understory seeding projects unless a cost-effective partnership opportunity arises that meets the approval of the Oversight Committee. The Companies anticipate that this component will represent no more than 5% of the total habitat services gained when calculating the overall mitigation projects.

Purchase of Conservation Easements

Conservation easements may be purchased and managed to remove the threats of specific land uses to sage-grouse. The purchase of easements can prevent future sage-grouse habitat destruction or degradation near urban areas or oil and gas development. With appropriate management, conservation easements can reduce fragmentation in species core areas and key habitats.

Conservation easements purchased for mitigation will be used in a strategic way with focus on areas/locations of highest demonstrable need leading to a reduction in habitat fragmentation. Conservation easements will be developed by the Companies in coordination with the Oversight Committee. Specific locations of conservation easements will depend on availability of easements for purchase. The Companies anticipate that this component will represent approximately 35% of the total habitat services gained when calculating the overall mitigation projects.

The HEA calculated that, on average, 747 service-acre-years would be created per acre of conservation easement purchased, assuming the easement is maintained over the life of the project. This total does not include the value of any subsequent habitat improvements to the property and assumes the Companies receive 100% credit for the baseline habitat-service level of the property.

3.1.3. Specific Mitigation Projects

Specific projects will be selected by the Oversight Committee in coordination with the in-lieu fee administrator as project applications/proposals are received or following the recommendations and guidelines provided by the states, BLM, and USFWS. They may be located on either public or private land. Although only five mitigation measures are modeled, utilization of the compensatory mitigation funding provided by the Companies is not bound to only those project types. However, other project types must be recognized by the Oversight Committee as providing sage-grouse population or habitat benefits.

Minimum Mitigation Project Criteria

The benefit of potential mitigation projects to sage-grouse will vary by type and location. The Oversight Committee will consider the criteria and strategy set forth in Sections 1.4, 1.5 and 2.2 of this plan in addition to the following priorities when selecting projects for implementation:

1. Implement activities to protect and maintain existing occupied habitats.

   a. Enhance existing occupied habitats.
2. Implement activities to conserve potential habitat and populations
   a. Enhance potential habitat that adjoins known habitat so that it can support sage-grouse, thereby increasing habitat patch size and overall habitat availability.
   b. Create vegetative corridors to reconnect occupied habitats and decrease habitat fragmentation.
   c. Restore degraded habitats that could support greater sage-grouse use.
3. Potential mitigation sites will be evaluated to determine their current state, the type of mitigation project that would be most beneficial, and the potential for that project to meet the success criteria defined by the Oversight Committee. Projects that confer the greatest potential benefit to sage-grouse and have a high probability of success will be given priority.

3.1.4. In lieu fees

The State of Wyoming, the State of Idaho (still under consideration), and the BLM provide a potential option for the Companies to employ an in-lieu fee approach to mitigation. The Companies can pay mitigation fees into accounts (managed by an in-lieu fee administrator) that will fund projects that will benefit sage-grouse and their habitats. Refer to Section 2.2 for general/minimum criteria for selection of mitigation projects that would utilize in-lieu fees.

As previously stated, the Companies will provide in-lieu fees to be utilized by projects proposed by other entities if they meet the required criteria. The habitat services gained by the in-lieu fee projects will be added to the services gained by any projects funded by the Companies to total the habitat services modeled as lost through construction and operation of the Project.

The Companies will work with the Oversight Committee to identify the appropriate organizations to receive and manage in-lieu fees (in-lieu fee administrator) in each state, as well as to set standards for the projects funded by those fees.

In-lieu Fee Administration

In Idaho, the Idaho SAC framework that describes the general outline for a sage-grouse compensatory mitigation program in Idaho is still in development. This program includes an “in-lieu fee” approach to compensatory mitigation through which a project developer would pay funds into an account managed by the mitigation program for performance of mitigation actions that provide measureable benefits for sage-grouse and their habitats within Idaho. The Companies will incorporate details from the SAC framework into this mitigation plan once it is finalized.

In Wyoming, entities such as the Wyoming Wildlife and Natural Resource Trust (WWNRT) have been identified as a potential organization that could receive and manage in-lieu fees for the Project. The WWNRT is an independent state agency governed by a nine-member citizen board appointed by the Governor and works closely with the WGFD and Wyoming state government. Opportunities with other entities such as the Intermountain West Joint Venture will be explored.

Requests for in-lieu funds (compensatory mitigation funding provided by Companies) must specify, at a minimum, the following:

- Objectives of the project, including specifically how the project will improve habitat for greater sage-grouse at the proposed location with specific and measurable success criteria.
- Discussion and documentation that the group requesting the in-lieu funds can successfully implement the mitigation project.
- Maps and descriptions of the geographic area of the mitigation project, including baseline habitat quality for sage-grouse and surrounding land uses. Maps should identify whether the project will be in a state-identified greater sage-grouse habitat (Core in Wyoming, Key/Restoration in Idaho).
- Detailed written specifications and work descriptions, including: timing and sequence, methods for establishing or enhancing vegetation, plans to control invasive plant species, erosion control measures, long-term maintenance, monitoring and reporting requirements, etc.
- Performance standards, including an adaptive management plan if performance standards are not met.

4. Monitoring and maintenance

For direct impacts, monitoring the success of mitigation measures and maintaining each measure to ensure continued success are important elements of the Companies' mitigation strategy. The HEA incorporated monitoring and maintenance costs. Each project that is selected for mitigation will require a monitoring and mitigation entity. This role could be filled by agencies, private landowners, NGOs, managers of conservation easements, environmental or reclamation contractors, the entity applying for funding or other appropriate monitoring entities.

The final monitoring and maintenance approach for each mitigation project will be formalized in a monitoring and maintenance strategy that will be reviewed annually, or as necessary, by the Oversight Committee with involvement of the monitoring entity. Monitoring duration will vary for each mitigation project type. Results of monitoring will be provided to the Oversight Committee. Frequencies of these reports may vary between project types and will be determined by the Oversight Committee. The monitoring and maintenance strategy will also include success criteria for each project and project type. Examples of success criteria might include:

- Increase in desired vegetation characteristics in a treated or enhanced area when compared to a suitable control area (trending towards desirable vegetation structure and composition with measurable goals)
- Adherence to conservation easement contract terms
- Removal of stated acreage of encroaching juniper stands
- Miles of fence marked

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Appendix A: Key Participants in Gateway West HEA

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Appendix B: U.S. Fish and Wildlife Service Recommendations on Mitigation for Impacts to Greater Sage-grouse Associated With the Gateway West Interstate Transmission Line

The U.S. Fish and Wildlife Service (Service) provides the following recommendations regarding development and implementation of a mitigation plan to address impacts of Gateway West Interstate Transmission Line on the Greater Sage-grouse and its habitat. These recommendations should not be construed as approval for any mitigation plan, nor do they shift the responsibility of successful mitigation for project-related impacts from the project proponent. Rather, these recommendations provided to the project proponents are guidelines that the Service believes will increase the likelihood that mitigation will succeed in off-setting project-related impacts to Sage-grouse habitat.

General Approach

1) The Habitat Equivalency Analysis (HEA) will provide a dollar figure estimate of cost to replace habitat services lost, on a one-to-one mitigation ratio basis. We recommend that the Project Proponent use that cost estimate to provide a general allocation of how it will be spent on mitigation in terms of specific actions or projects proposed for implementation. For example, a general breakdown should be provided regarding the amount of money going toward conservation easements, habitat enhancement projects, fence marking, research, etc.

The Service recommends that the majority of mitigation focus on conservation of habitat—projects that enhance or maintain quality of habitat and reduce fragmentation. Components of habitat conservation include preservation through easements, enhancements, and restoration. These habitat conservation projects may then be supplemented by a smaller portion of projects such as fence-marking, focused research in designated areas following specific guidelines, water developments, or others.

2) The HEA provides a standardized basis for a one-to-one ratio for habitat services lost/ habitat services mitigated. However, the following biological factors may provide justification for adjusting the minimal mitigation ratio beyond one-to-one.

(a) According to the best available science on the relative value of Sage-grouse populations, some local populations may contribute more to long-term species viability than others, justifying higher mitigation ratios. Such populations are located in: southwestern ID, central and northwestern NV, eastern OR, and WY populations contribute most to the long-term viability of the species;

(b) Regarding individual birds contributing to populations, hens have a much higher biological value than males;

(c) Localized habitats of high ecological value such as (but not limited to) those serving key functions in demographic, genetic, or seasonal connectivity, important wintering areas, or leks;

(d) Time lags for mitigation success such that habitat services in treatment areas are not immediately available to Sage-grouse.

3) The project proponent should follow specific recommendations listed below when implementing mitigation projects to ensure successful completion of such projects that contribute to Sage-grouse habitat conservation.

4) Mitigation will be implemented in a collaborative manner by working with members of an "oversight team" composed of biologists working for BLM, Service, Idaho Department of Fish and Game, and Wyoming Game and Fish Department. The role of this team is to provide guidance and biological advice concerning the accomplishment of successful mitigation on the ground.

SPECIFIC RECOMMENDATIONS- The following list is not exhaustive, and includes only projects that have been suggested as potential mitigation to date. Recommendations on other project types offered as mitigation will be made on a case by case basis as needed, and must be coordinated with oversight team (number 4 above).

Fence marking

At this time, there are only preliminary data that suggest the beneficial effects of fence marking on Sage-grouse. These data suggest that fence marking can be effective in specific problem areas within Sage-grouse habitat. So, while we support the use of fence marking on a limited and site-specific basis, fence marking should not be central focus of mitigation.

Sage-grouse habitat restoration

While restoration of sagebrush/Sage-grouse habitat can be accomplished with seeding and transplanting, all habitat restoration treatments must include consideration of understory (grass and forb) treatments. All restorations must have a short- and long-term follow-up treatment and monitoring plan to ensure success, and must be accompanied by adequate funding for implementation of these monitoring plans. Criteria that define “restoration” and “success” should be developed in coordination with the oversight team.

If top soil must be stripped from potential restoration areas, likelihood of success will be much lower and, therefore, should be avoided. All topsoil that is stripped must be stored properly in order to maintain biological viability of soil microbes that are necessary for sagebrush survival and growth. Soil structure should be maintained if it is stripped, and should be maintained when placed back within restoration areas prior to seeding or planting.

Conifer/juniper removal

There has been little scientific evidence (one study to our knowledge) that definitively shows positive response of Sage-grouse habitat to conifer/juniper removal. Evidence suggests that if removal occurs during the early growth stage of plants—that is, in an earlier stage of ecological succession within the conifer/juniper stand with little to now cheatgrass component—treatment will be more effective as the habitat is less likely to have been ecologically altered. While we are aware that NRCS did a study in 2011, no data from this study is currently available. There should be a clear justification regarding the value of such a treatment within any given conifer/juniper removal site in terms of beneficial effects to Sage-grouse habitat. Such treatments also should include a plan for active understory treatment to develop suitable habitat.

If conifer/juniper removal is done, all such treatment should be mechanical and without the use of fire to preclude loss of sagebrush. Slash removal also should be done without use of fire.

Grass/forb enhancement
All grass/forb restoration and/or enhancement should use native plant species. The primary objective of all such treatments must be on Sage-grouse habitat; i.e., there must be a demonstrable need on a site-specific basis concerning benefits to Sage-grouse habitat. While use of such enhancement sites may include other wildlife and livestock, all such uses remain as secondary priorities only, and should not drive any such restoration/enhancement mitigation projects.
Details of "enhancement", and criteria for success, should be developed in coordination with oversight team.

Fire reduction
Use of fire breaks for fire reduction should only be used in a focused, site-specific manner only. Fire reduction through the use of fire breaks should only be used in high fire risk areas, and not universally applied across the project area. The value of fire reduction through fuel breaks should be clearly demonstrated on any site where this treatment is being considered as mitigation. While fire breaks may include use of non-native vegetation, such non-natives are only justified in areas where the risk of fire is demonstrably high, and where native vegetation would compromise the value of the fire break. All fire breaks should be designed minimize habitat fragmentation, taking into consideration contours and characteristics of the natural landscape, and a review of other habitat fragmentation activities on the landscape. The density of firebreaks should not result in habitat fragmentation that negatively affects Sage-grouse.

Conservation easements
Conservation easements with appropriate management can reduce fragmentation in core areas. Easements should be used in a strategic way with focus on areas/locations of highest demonstrable need leading to a reduction in habitat fragmentation, and should be developed in coordination with the oversight team.

Water Development
Water developments are not necessarily good for Sage-grouse, and water development in areas where naturally-occurring water has not historically existed is not recommended. Any water development should have a clear need-based, site-specific justification in terms of benefits to local Sage-grouse, and should be accompanied by a plan to protect naturally-occurring wetland and riparian habitats. Certain types of developments may be more beneficial and appropriate for areas than others: for example, fencing off wetland or wet meadow habitat and replacing with upland water developments to keep livestock out of sensitive habitats susceptible to disturbance. Creating ponds and open water, on the other hand, could be more detrimental than beneficial if they facilitate mosquito reproduction and the spread of West Nile Virus. Thus, all water development projects need to be thought through in terms of site-specific needs for local Sage-grouse and clearly show how they benefit those birds, and coordinated with oversight team.

Herbicide Treatments
Any treatment of Sage-grouse habitat by herbicides must include a detailed, site-specific justification with clearly articulated objectives showing benefits to the Sage-grouse.

Larvicide Treatment
Use of larvicides could be considered in areas at high risk for West Nile virus.

Prescribed burning

Not recommended as mitigation.

[Prescribed burning must be approached very cautiously and conservatively, and only used on a strictly localized basis after analysis clearly shows a real need and benefit to Sage-grouse. For example, there may be some high elevation, mountain big sagebrush habitats in need of native grass and/or forb understory development. Generally, burning within Sage-grouse habitat is not supported by the Service, requiring a detailed site-specific analysis and justification regarding demonstrable benefits to Sage-grouse.]

Appendix C: Hypothetical Example of Scaling Mitigation

A hypothetical example of project scaling is provided to illustrate the process of balancing habitat-service losses with habitat-service gains from habitat conservation projects within the framework of the HEA. The Companies cannot commit to specific projects until the BLM has chosen a preferred alternative, design engineering has been completed, and the Project schedule has been finalized.

In the hypothetical Segment X, a total of 528,294 service-acre-years were lost in the analysis area over the lifetime of the project. This is the mean loss among the actual project segments based on the HEA. Within 18 km of the transmission line, there are opportunities for all of the conservation measures described in Table 6 of the HEA. As described in Section 3.1.1 of this plan, projects selected will focus on the conservation of habitat, specifically on projects that enhance or maintain quality of habitat and reduce fragmentation. Habitat conservation easements (at 100% baseline habitat service level credit) will make up the majority of the mitigation package, followed by sagebrush restoration and enhancement, including juniper removal. To a lesser degree, the remaining portion of the package will be split among fence marking and removal, and understory seeding for planning purposes.

The Companies and Oversight Committee worked together to allocate conservation projects in a way that is most beneficial to the sage-grouse habitat quality in Segment X (see Table D.1). In practice, the percentages allocated to each conservation measure would differ among segments to account for differences in project availability and to allow the Oversight Committee to select the most beneficial project types for a specific segment. Project sizes are calculated by dividing the habitat services to be replaced by a measure (Table D.1) by the habitat services created by that measure over the lifetime of the project. The HEA assumed that funding for mitigation projects would be provided in the first year of construction with projects completed 1-5 years after funding is received. If mitigation funding were provided later, the total mitigation package would increase.

The costs to implement each of the conservation measures can be most accurately calculated by multiplying the number of habitat services to be replaced by this measure by the cost per services gained. The cost to mitigate Segment X for direct and indirect impacts that were modeled in the HEA would be $653,763 (Table D.2). If suitable projects cannot be found to satisfy the project sizes specified in Table D.1, the remaining funds may be allocated to a different conservation measure.

Table D.1. Habitat conservation projects selected to offset impacts modeled in the HEA for Hypothetical Segment X.

Conservation Measure	General Method	Percent of Total Mitigation for Segment X	Habitat Services to Be Replaced by this Measure (service-acre-years)	Project Sizes Needed to Offset Loss
Fence removal and marking with flight diverters	Fence marking within 2 km of leks	5%	26,415	1 mile
Sagebrush restoration and improvement projects	Planting seedlings and seeding bunchgrass understory	20%	105,659	55 acres
Juniper/conifer removal	Cut-pile-cover or mastication of Phase II[2] juniper	20%	105,659	71 acres
Bunchgrass seeding projects	Seeding disturbed habitat to create grassland	5%	26,415	94 acres
Conservation easements	Land purchase 100 % service credit	50%	264,147	354 acres

Table D.2. Budget to implement projects selected for mitigation in Hypothetical Segment X.

Conservation Measure	General Method	Project Sizes Needed to Offset Loss	Estimated Cost to Implement Measure* (from Project HEA Report [SWCA 2012])	Estimated Project Costs
Fence removal and marking with flight diverters	Fence marking within 2 km of leks	1 mile	$1,400/mile for initial installation (materials, labor, and estimated indirect costs) plus $300/mile every year for maintenance (materials and labor)	$17,170
Sagebrush restoration and improvement projects	Planting seedlings and seeding bunchgrass understory	55 acres	$4,200/acre to grow and plant seedlings at one per 5 m^2 (materials and labor + 50% indirect costs)	$229,279
Juniper/conifer removal	Cut-pile-cover or mastication of Phase II^2 juniper	71 acres	$650/acre (materials, labor, and estimated indirect costs)	$46,490
Bunchgrass seeding projects	Seeding disturbed habitat to create grassland	94 acres	$1,200/acre (materials, labor, and indirect costs)	$112,527
Conservation easements	Land purchase 100 % service credit	354 acres	$580/acre average purchase price + $2,500/year for maintenance	$248,298
Total				$653,763

* Cost of implementation includes a 50% markup for indirect costs, which include contract writing, supervision, clearances, monitoring, inspections, and vehicle costs.