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STATE OF NEVADA
Sagebrush Ecosystem Program

SAGEBRUSH ECOSYSTEM COUNCIL
STAFF REPORT
MEETING DATE: November 18, 2013

DATE: November 12, 2013
TO: Sagebrush Ecosystem Council Members
FROM: Sagebrush Ecosystem Technical Team
Telephone: 775-684-8600
THROUGH: Tim Rubald, Program Manager
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SUBJECT: Discussion and possible consideration of proposed Best Management Practices / Required Design Features to be Included in the Revision of the State Plan/ EIS Alternative

SUMMARY

This item presents proposed Best Management Practices (BMPs)/ Required Design Features (RDFs) that pertain to the “minimize” policy to be included in revisions of the 2012 State Plan and State EIS Alternative. The purpose of this item is to provide greater detail and specificity on the “minimize” policy in order for the BLM to analyze the State Alternative and to provide a greater likelihood for the State Alternative to, at least in part, be selected as the preferred alternative.

PREVIOUS ACTION

July 30, 2013. The Council adopted the Sagebrush Ecosystem Strategic Detailed Timeline, which included revision of the State Plan/ EIS Alternative.

October 10, 2013. The Council directed the SETT to develop Best Management Practices (BMPs) for the “minimize” policy for Council consideration.

DISCUSSION

In order to develop the State’s sage-grouse BMPs/ RDFs list, the SETT first reviewed those developed in the National Technical Team (NTT) Report and the BLM’s EIS Alternative (now available to the public in Alternative D of the DEIS). The BLM’s EIS Alternative included (1) the BMPs developed in the NTT Report, some of which were modified by the BLM, and (2) additional RDFs that were listed in no particular order. The SETT used the BLM’s EIS Alternative RDFs as the starting point for the State’s EIS Alternative RDFs, reorganized the RDFs by BLM program area, and then provided

track changes to modify, add, and delete RDFs as needed. The State's EIS Alternative RDFs (in the form of track changes to the BLM's RDFs) are provided in Attachment 1.

FISCAL IMPACT

There is no fiscal impact at this time.

RECOMMENDATION

Staff recommends the SEC approves the proposed RDFs/ BMPs or provide direction to staff on how to revise it.

POSSIBLE MOTION

Should the Council agree with the staff recommendations, a possible motion would be:
“Motion to approve the proposed RDFs/BMPs for inclusion in the State Plan and State EIS Alternative.”

Attachments:

1. Proposed State Of Nevada Required Design Features/ Best Management Practices (to be included as Appendix A of the Revised State Plan)

mf: TR

Appendix A: Required Design Features/ Best Management Practices

Mineral Resources

Fluid Minerals RDFs

Roads - PPMA

- *Do not construct new roads when there are existing roads that could be used or upgraded to meet the need.*
- Design roads to an appropriate standard, no higher than necessary, to accommodate their intended purpose.
- Locate roads to avoid important areas and habitats.
- Coordinate road construction and use among ROW or SUA holders.
- *Where possible, avoid constructing roads within riparian areas and ephemeral drainages.*
- Construct road crossings at right angles to ephemeral drainages and stream crossings.
- Establish speed limits on BLM and Forest Service-managed roads to reduce vehicle/wildlife collisions or design roads to be driven at slower speeds.
- Establish trip restrictions (Lyon and Anderson 2003) or minimization through use of telemetry and remote well control (e.g., Supervisory Control and Data Acquisition).
- Do not issue ROWs or SUAs to counties on newly constructed energy development roads, unless for a temporary use consistent with all other terms and conditions included in this document.
- Restrict vehicle traffic to only authorized users on newly constructed routes (using signage, gates, etc.)
- Use dust abatement on roads and pads.
- Close and rehabilitate duplicate roads.
- Cluster disturbances, operations (fracture stimulation, liquids gathering, etc.), and facilities.

Operations - PPMA

- Use directional and horizontal drilling to reduce surface disturbance.
- Place infrastructure in already disturbed locations ~~where the habitat has not been fully restored.~~
- Apply a phased development approach with concurrent reclamation.

- Place liquid gathering facilities outside of priority areas. Have no tanks at well locations within priority habitat areas to minimize truck traffic and perching and nesting sites for ravens and raptors.
- Pipelines must be under or immediately adjacent to the road (Bui et al. 2010).
- Use remote monitoring techniques for production facilities and develop a plan to reduce the frequency of vehicle use (Lyon and Anderson 2003).
- Restrict the construction of tall facilities and fences to the minimum number and amount needed.
- Site and/or minimize linear ROWs or SUAs to reduce disturbance to sagebrush habitats.
- Place new utility developments (power lines, pipelines, etc.) and transportation routes in existing utility or transportation corridors.
- Bury distribution power lines.
- Co-locate power lines, flow lines, and small pipelines under or immediately adjacent to existing roads (Bui et al. 2010).
- Design or site permanent structures which create movement (e.g., pump jack) to minimize impacts to ~~sage-grouse~~GRSG.
- Cover (e.g., fine mesh netting or use other effective techniques) all drilling and production pits and tanks regardless of size to reduce GRSG mortality.
- Equip tanks and other above-ground facilities with structures or devices that discourage nesting of raptors and corvids.
- Control the spread and effects of non-native plant species (Evangelista et al. 2011) (e.g., by washing vehicles and equipment, *minimize unnecessary surface disturbance*).
- Use only closed-loop systems for drilling operations and no reserve pits.
- Restrict pit and impoundment construction to reduce or eliminate threats from West Nile virus (Doherty 2007).
- Remove or re-inject produced water to reduce habitat for mosquitoes that vector West Nile virus. If surface disposal of produced water continues, use the following steps for reservoir design to limit favorable mosquito habitat:
 - Overbuild size of ponds for muddy and non-vegetated shorelines.
 - Build steep shorelines to decrease vegetation and increase wave actions.
 - Avoid flooding terrestrial vegetation in flat terrain or low lying areas.
 - Construct dams or impoundments that restrict down slope seepage or overflow.

- Line the channel where discharge water flows into the pond with crushed rock.
 - Construct spillway with steep sides and line it with crushed rock.
 - Treat waters with larvicides to reduce mosquito production where water occurs on the surface.
- Limit noise to less than 10 decibels above ambient measures (20-24 dBA) at sunrise at the perimeter of a lek during active lek season (Patricelli et al. 2010, Blickley et al. In preparation).
 - Require noise shields when drilling during the lek, nesting, brood-rearing, or wintering season.
 - Fit transmission towers with anti-perch devices (Lammers and Collopy 2007).
 - Require GRSG-safe fences (*e.g. marked fences*).
 - Locate new compressor stations outside priority habitats and design them to reduce noise that may be directed towards priority habitat.
 - Clean up refuse (Bui et al. 2011).
 - Locate man camps outside of priority habitats.

Reclamation — PPMA and PGMA

- Include objectives for ensuring habitat restoration to meet GRSG habitat needs in reclamation practices/sites (Pyke 2011). Address post reclamation management in reclamation plan such that goals and objectives are to protect and improve GRSG habitat needs.
- Maximize the area of interim reclamation on long-term access roads and well pads, including reshaping, topsoiling and revegetating cut-and-fill slopes.
- Restore disturbed areas at final reclamation to the pre-disturbance landforms and desired plant community.
- Irrigate interim reclamation if necessary for establishing seedlings more quickly.
- Utilize mulching techniques to expedite reclamation and to protect soils.

Roads - PGMA

- Design roads to an appropriate standard no higher than necessary to accommodate their intended purpose.
- *Do not construct new roads when there are existing roads that could be used or upgraded to meet the need.*
- *Where possible, avoid constructing roads within riparian areas and ephemeral drainages.*

- Do not issue ROWs or SUAs to counties on energy development roads, unless for a temporary use consistent with all other terms and conditions included in this document.
- Establish speed limits to reduce vehicle/wildlife collisions or design roads to be driven at slower speeds.
- Coordinate road construction and use among ROW or SUA holders.
- Construct road crossings at right angles to ephemeral drainages and stream crossings.
- Use dust abatement practices on roads and pads.
- Close and reclaim duplicate roads by restoring original landform and establishing desired vegetation.

Operations – PGMA

- Cluster disturbances, operations (fracturing stimulation, liquids gathering, etc.), and facilities.
- Use directional and horizontal drilling to reduce surface disturbance.
- Clean up refuse (Bui et al. 2010).
- Restrict the construction of tall facilities and fences to the minimum number and amount needed.
- Cover (e.g., fine mesh netting or use other effective techniques) all drilling and production pits and tanks regardless of size to reduce GRSG mortality.
- Equip tanks and other above-ground facilities with structures or devices that discourage nesting by raptors or corvids.
- Use remote monitoring techniques for production facilities and develop a plan to reduce vehicular traffic frequency of vehicle use.
- Control the spread and effects from non-native plant species. (e.g., by washing vehicles and equipment.)
- Restrict pit and impoundment construction to reduce or eliminate augmenting threats from West Nile virus (Dougherty 2007). [See this table's BMP Section A: West Nile Virus.](#)

Locatable Minerals BMPs

Roads – PPMA and PGMA

- Design roads to an appropriate standard no higher than necessary to accommodate their intended purposes.
- Locate roads to avoid important areas and habitats.
- Coordinate road construction and use among ROW or SUA holders.

- Construct road crossing at right angles to ephemeral drainages and stream crossings.
- Establish speed limits on BLM and Forest Service managed roads to reduce vehicle/wildlife collisions or design roads to be driven at slower speeds.
- Do not issue ROWs or SUAs to counties on mining development roads, unless for a temporary use consistent with all other terms and conditions including this document.
- Restrict vehicle traffic to only authorized users on newly constructed routes (e. g., use signing, gates, etc.).
- Use dust abatement practices on roads and pads.
- Close and reclaim duplicate roads, by restoring original landform and establishing desired vegetation.
- *Do not construct new roads when there are existing roads that could be used or upgraded to meet the need.*
- *Where possible, avoid constructing roads within riparian areas and ephemeral drainages*

Operations — PPMA and PGMA

- Cluster disturbances associated with operations and facilities as close as possible.
- Place infrastructure in already disturbed locations where the habitat has not been restored.
- Restrict the construction of tall facilities and fences to the minimum number and amount needed.
- Site and/or minimize linear ROWs or SUAs to reduce disturbance to sagebrush habitats.
- Place new utility developments (power lines, pipelines, etc.) and transportation routes in existing utility or transportation corridors.
- Bury power lines.
- Cover (e.g., fine mesh netting or use other effective techniques) all pits and tanks regardless of size to reduce GRSG mortality.
- Equip tanks and other above ground facilities with structures or devices that discourage nesting of raptors and corvids.
- Control the spread and effects of non-native plant species (Gelbard and Belnap 2003, Bergquist et al. 2007).
- Restrict pit and impoundment construction to reduce or eliminate threats from West Nile virus (Doherty 2007). ~~See this table's BMP Section A: West Nile Virus.~~
- Require GRSG-safe fences around sumps.

- Clean up refuse (Bui et al. 2010).
- Locate man camps outside of priority GRSG habitats.

Reclamation – PPMA and PGMA

- Include restoration objectives to meet GRSG habitat needs in reclamation practices/sites.
- Address post reclamation management in reclamation plans such that goals and objectives are to protect and improve GRSG habitat needs.
- Maximize the area of interim reclamation on long-term access roads and well pads including reshaping, topsoiling and revegetating cut and fill slopes, *and investigating the possibility of establishing fuel breaks.*
- Restore disturbed areas at final reclamation to pre-disturbance landform and desired plant community
- Irrigate interim reclamation as necessary during dry periods.
- *Utilize mulching techniques to expedite reclamation.*

Fuels and Fire Management

- Fire and fuels operations should focus on protecting and enhancing occupied GRSG habitats. This includes taking into account the feasibility and cost of future rehabilitation efforts during WFDSS planning and general fire operations in all occupied GRSG habitats

Fuels Management

- Where applicable, design fuels treatment objective to protect existing sagebrush ecosystems, modify fire behavior, restore native plants, and create landscape patterns which most benefit GRSG habitat.
- Provide training to fuels treatment personnel on GRSG biology, habitat requirements, and identification of areas ~~utilized~~ used locally.
- Use burning prescriptions that minimize undesirable effects on vegetation or soils (e.g., minimize mortality of desirable perennial plant species and reduce risk of annual grass invasion).
- Ensure proposed sagebrush treatments are planned with full interdisciplinary input pursuant to NEPA and coordination with ~~state fish and wildlife agencies~~ NDOW and SETT, and that treatment acreage is conservative in the context of surrounding GRSG seasonal habitats and landscape.
- Where appropriate, ensure that treatments are configured in a manner that promotes use by GRSG.
- Where applicable, incorporate roads and natural fuel breaks into fuel break design.

- *Where appropriate and allowable, utilize livestock grazing as a tool to reduce fuels and control non-native species.*
- Power-wash all vehicles and equipment involved in fuels management activities prior to entering the area to minimize the introduction of undesirable and/or invasive plant species.
- Design vegetation treatments in areas of high fire frequency which facilitate firefighter safety, reduce the potential acres burned, and reduce the fire risk to GRSG habitat. Additionally, develop maps for GRSG habitat which spatially display existing fuels treatments that can be used to assist suppression activities.
- *Give priority to* For implementing specific GRSG habitat restoration projects in annual grasslands, first *give priority* to sites which are adjacent to or surrounded by PPMA or that reestablish continuity between priority habitats. Annual grasslands are a second priority for restoration when the sites are not adjacent to PPMA, but within two miles of PPMA. The third priority for annual grassland habitat restoration projects are sites beyond two miles of PPMA. The intent is to focus restoration outward from existing, intact habitat.
- As funding and logistics permit, restore annual grasslands to a species composition characterized by perennial grasses, forbs, and shrubs or one of that referenced in land use planning documentation.
- Emphasize the use of native plant species, recognizing that non-native species may be necessary depending on the availability of native seed and prevailing site conditions.
- Remove standing and encroaching trees within at least 110 yards of occupied GRSG leks and other habitats (e.g., nesting, wintering and brood rearing) to reduce the availability of perch sites for avian predators, as resources permit.
- Protect wildland areas from wildfire originating on private lands, infrastructure corridors, and recreational areas.
- Reduce the risk of vehicle- or human-caused wildfires and the spread of invasive species by installing fuel breaks and/or planting perennial vegetation (e.g., green-strips) paralleling road rights-of-way. Strategically place and maintain pre-treated strips/areas (e.g., mowing, herbicide application, etc.) to aid in controlling wildfire, should wildfire occur near PPMA or important restoration areas (such as where investments in restoration have already been made).

Fire Management

- Compile District/Forest level information into state-wide GRSG tool boxes. Tool boxes will contain maps, listing of resource advisors, contact information, local guidance, and other relevant information for each District/Forest, which will be aggregated into a state-wide document.
- Provide localized maps to dispatch offices and extended attack incident commanders for use in prioritizing wildfire suppression resources and designing suppression tactics.

- Assign a resource advisor with GRSG expertise, or who has access to GRSG expertise, to all extended attack fires in or near GRSG habitat. Prior to the fire season, provide training to GRSG resource advisors on wildfire suppression organization, objectives, tactics, and procedures to develop a cadre of qualified individuals. Involve state wildlife agency expertise in fire operations through:
 - instructing resource advisors during preseason trainings;
 - qualification as resource advisors;
 - coordination with resource advisors during fire incidents;
 - contributing to incident planning with information such as habitat features or other key data useful in fire decision making.
- On critical fire weather days, pre-position additional fire suppression resources to optimize a quick and efficient response in GRSG habitat areas.
- During periods of multiple fires, ensure line officers are involved in setting priorities.
- To the extent possible, locate wildfire suppression facilities (i.e., base camps, spike camps, drop points, staging areas, heli-bases, etc.) in areas where physical disturbance to GRSG habitat can be minimized. These include disturbed areas, grasslands, near roads/trails or in other areas where there is existing disturbance or minimal sagebrush cover.
- Power-wash all firefighting vehicles, to the extent possible, including engines, water tenders, personnel vehicles, and all-terrain vehicles (ATV) prior to deploying in or near GRSG habitat areas to minimize noxious weed spread. Minimize unnecessary cross-country vehicle travel during fire operations in GRSG habitat.
- Minimize burnout operations in key GRSG habitat areas by constructing direct fire line whenever safe and practical to do so.
- Utilize retardant, mechanized equipment, and other available resources to minimize burned acreage during initial attack.
- As safety allows, conduct mop-up where the black adjoins unburned islands, dog legs, or other habitat features to minimize sagebrush loss.
- Adequately document fire operation activities in GRSG habitat for potential follow-up coordination activities.

Lands and Realty

[Leases and Permits](#)

- *Only allow permits and leases that have neutral or beneficial effects sage-grouse and their habitat in sage-grouse habitat management areas.*

Right-of-Ways (ROWs)

- Work with existing rights-of-way holders in an attempt to install perch guards on all poles where existing utility poles are located within 3 miles of known leks, where necessary. Stipulate these requirements at grant renewal.
- ~~Authorize new rights of way at least 3.3 km (2miles) or other appropriate distances (based on features such as type of project, topography, etc.) from leks.~~
- Use existing utility corridors and consolidate rights-of-way to reduce habitat loss, degradation, and fragmentation. Whenever possible, install new power lines within existing utility corridors. ~~Otherwise power lines should be located at least 3 miles from breeding, nesting, brood-rearing and winter habitat.~~
- Where GRSG conservation opportunities exist, BLM field offices and Forests should work in cooperation with rights-of-way holders to conduct maintenance and operation activities, authorized under an approved ROW grant, to avoid and minimize effect on GRSG habitat.
- When renewing or amending ROWs, assess the impacts of ongoing use of the ROW to GRSG habitat and minimize such impacts to the extent allowed by law.
- Work with applicants to minimize habitat loss, fragmentation, and direct and indirect effects to GRSG and its habitat.
- Conduct pre-application meetings *with the BLM or Forest Service and SETT* for all new ROW proposals consistent with the ROW regulations (43 CFR 2804.10) and consistent with current renewable energy ROW policy guidance (WO-IM-2011-061, issued February, 2011). Assess the impact of the proposed ROW on GRSG and its habitat, and implement the following: Ensure that reasonable alternatives for siting the ROW outside of GRSG habitat or within a BLM designated utility corridor are considered and analyzed in the NEPA document; and identify technically feasible best management practices, conditions, (e.g., siting, burying power lines) that may be implemented in order to eliminate or minimize impacts.
- ~~For ROWs where the total project disturbance for the ROW and any connected action is less than 1 linear mile, or 2 acres of disturbance, develop mitigation measures related to construction, maintenance, operation, and reclamation activities that as determined in cooperating with the Nevada Department of Wildlife, would cumulatively maintain or enhance GRSG habitat.~~
- ~~For ROW applications where the total project disturbance from the ROW and any connected action is greater than 1 linear mile or 2 acres of disturbance, the each District will determine that it is appropriate to authorize a ROW, utilizing the following process:~~

~~—The BLM will document the reasons for its determination and require the ROW holder to implement measures to minimize impacts to sage grouse habitat.~~

~~—In addition to considering opportunities for onsite mitigation, the BLM will, to the extent possible, cooperate with the project proponents to develop and consider implement appropriate offset mitigation that the BLM, coordinating with the Nevada Department of Wildlife determines would avoid or minimize habitat and population-level effects (Refer to WO-IM-2012-043 Greater Sage Grouse Interim Management Policies and Procedures.) When developing such mitigation, the BLM should consider compensating for the short-term and long-term direct and indirect loss of GRS and its habitat.~~

- Maximize the area of interim reclamation on long-term access roads and well pads including reshaping, topsoiling and revegetating cut and fill slopes.
- Authorize ROWs by applying appropriate BMPs (BLM Wind Energy Development EIS, June 2005), land use restrictions, stipulations, and mitigation measures. *The BLM will document the reasons for its determination and require the ROW holder to implement these measures to minimize impacts to sage grouse habitat.*
- Evaluate and take advantage of opportunities to remove, bury, or modify existing power lines within priority sage-grouse habitat areas.
- Where existing leases or rights-of-way (ROWs) have had some level of development (road, fence, well, etc.) and are no longer in use, reclaim the site by removing these features and restoring the habitat.
- Within designated ROW corridors encumbered by existing ROW authorizations: new ROWs should be co-located to the extent practical and feasible with the entire footprint of the proposed project within the existing disturbance associated with the authorized ROWs.
- Subject to valid, existing rights, where new ROWs associated with valid existing rights are required, co-locate new ROWs within existing ROWs or where it best minimizes sage-grouse impacts. Use existing roads, or realignments as described above, to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary.
- Upon project completion, roads used for commercial access on public lands would be reclaimed, unless, based on site-specific analysis, the route provides specific benefits for public access and does not contribute to resource conflicts.
- Bury or reroute power lines outside of sage-grouse habitat wherever possible. If power lines cannot be sited outside of sage-grouse habitat, site power lines in the least suitable habitat possible,
- Remove power lines that traverse important sage-grouse habitats when facilities being serviced are no longer in use or when projects are completed.
- Install anti-perching and anti-nesting measures on tall structures, such as power lines.

Travel and Transportation

- Establish speed limits on BLM and Forest Service-administered roads to reduce vehicle/wildlife collisions or design roads to be driven at slower speeds.
- *Conduct restoration of roads, primitive roads, and trails not designated in travel management plans. This also includes primitive route/roads that were not designated in wilderness study areas and within lands managed for wilderness characteristics that have been selected for protection.*
- *When reseeding roads, primitive roads, and trails, use appropriate seed mixes and consider the use of transplanted sagebrush in order to meet sage-grouse habitat restoration objectives. Where existing annual grasses are present, pre-emergent herbicides should be used to enhance the effectiveness of any seeding and to also establish islands of desirable species for dispersion.*
- *Use existing roads, or realignments to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then any new roads would be constructed to the absolute minimum standard necessary.*
- *Allow no upgrading of existing routes that would change route category (road, primitive road, or trail) or capacity unless the upgrading would have minimal impact on sage-grouse habitat, is necessary for motorist safety, or eliminates the need to construct a new road.*
- *Identify, map, quantify, and evaluate impacts of existing roads, including 2-tracks, in relation to known lek locations and sage-grouse winter ranges.*
- *Consider the use of speed bumps where appropriate to reduce vehicle speeds near leks, such during oil and gas development.*
- *Manage on-road travel and OHV use in key grouse areas to avoid disturbance during critical times such as winter and nesting periods.*
- *Consider road removal, realignment, or seasonal closures where appropriate to avoid degradation of habitat.*
- *Reclaim closed roads with plant species beneficial to sage-grouse.*

Recreation

- *Only allow special recreation permits that have neutral or beneficial effects to sage-grouse and their habitat in sage-grouse habitat management areas.*
- *Issue special recreation permits with appropriate distance and timing restrictions to minimize impacts to seasonal sage-grouse habitat.*

Energy Development and Infrastructure

- *Adopt standards outlined in Nevada Energy and Infrastructure Development Standards to Conserve Greater Sage-grouse Populations and Their Habitats, April 2010, pgs 25-29.*

Riparian Areas and Wetlands

- *At a minimum, all riparian areas and wet meadow brood rearing habitat should meet proper functioning condition (PFC). Where PFC is met, strive to attain reference state vegetation relative to the ecological site description.*

Wild Horses and Burros

- *Prioritize gathers in sage-grouse habitat, unless removals are necessary in other areas to prevent catastrophic environmental issues.*
- *Within sage-grouse habitat, develop or amend herd management area (HMAs) plans to incorporate sage-grouse habitat objectives and management considerations for all HMAs. For all HMAs within sage-grouse habitat, prioritize the evaluation of all appropriate management levels based on indicators that address structure/condition/composition of vegetation and measurements specific to achieving sage-grouse habitat objectives.*
- *When conducting NEPA analysis for wild horse and burro management activities, water developments or other rangeland improvements for wild horses in sage-grouse habitat, address the direct and indirect effects to sage-grouse populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock identified in sage-grouse habitats.*

Livestock Grazing and Range Management

- *Adopt the Natural Resource Conservation Service (NRCS) Conservation Practice Standards and Specification listed below. In addition, adopt the recommendations additions to the standards developed by NRCS and NDOW as part of NRCS' Sage-grouse Initiative*
 - *Code 645: Upland Wildlife Habitat Management*
 - *Code 528: Prescribed Grazing*
 - *Emphasize rest periods when appropriate as part of the grazing management plan and restoration.*
 - *Code 614: Water Facilities*
 - *Avoid placement where sagebrush cover will be reduced near a lek, in nesting habitat, or winter habitat whenever possible. NDOW recommends structures be at least 1 mile from a lek.*

- Code 574: Spring Development
 - Code 533: Pumping Plant
 - NDOW recommends the structure should not be placed within 3 miles of a lek to avoid disturbance to nesting sage-grouse.
 - Code 642: Water Well
 - Code 516: Livestock Pipeline
 - Code 410: Grade Stabilization Structure
 - If possible, avoid the installation of these structures during the late summer brood rearing period. NDOW recommends structure placement in mid-September through late November.
 - Code 382: Fence
 - If possible, fencing should not be constructed near a lek and should be avoided in winter habitats near ridges. To make a fence more visible, use white tipped metal fence posts, securing flagging or reflectors to the top fence wires, or slide sections of PVC pipe over the top wire.
- Remove or modify existing water developments that are *having a net* negatively impact on GRSG habitats.
 - ~~Build or modify exclosures so that they large enough to provide hiding cover to GRSG and other wildlife and to reduce the possibility of wildlife collisions with fences. This includes mitigation for reduction of Culex mosquitoes.~~
 - ~~In PPMA, R~~remove, *relocate, or modify* livestock ponds built in perennial channels that are *having a net* negatively impacting on riparian habitat, either directly or indirectly. ~~and do not permit new ones to be built in these areas. Development of new livestock ponds should be designed to have neutral or positive impacts to GRSG habitat.~~
 - ~~Ensure that any water developments do not remove more than 50% of water from any spring or other surface water source. Water developments should make water available on the ground for wildlife use.~~ All troughs should be outfitted with the appropriate type and number of wildlife escape ramps.
 - All field and district offices should apply BLM IM 2013-094 or similar methodology until superseded related to drought management planning.
 - Use aircraft to check livestock in areas where consistent trespass has been noted and access/manpower is difficult to obtain.
 - ~~In pastures where short term livestock utilization standards are not met, AUMs grazed the following year should be reduced accordingly. AUMs cannot be applied to another pasture.~~
 - ~~In PPMA, any pasture scheduled for rest as part of its grazing permit schedule should not be used if short term utilization limits have been exceeded.~~
 - ~~To reduce the probability of Culex mosquitoes or reductions in nesting habitat volumes, evaluate the need for livestock~~

~~reductions or changes in seasons of use before considering construction of new livestock ponds in PPMA.~~

Surface Disturbing Activities - General

- During the period specified, manage discretionary surface disturbing activities and uses to prevent disturbance to GRSG during life cycle periods. Seasonal protection is identified for the following:
 - Seasonal protection within four (4) miles of active GRSG leks from March 1 through June 15;
 - Seasonal protection of GRSG wintering areas from November 1 through March 31;
 - Seasonal protection of GRSG brood-rearing habitat from May 15 to August 15.
- For any surface-disturbing activities proposed in sagebrush shrublands, the Proponent will conduct clearance surveys for GRSG breeding activity during the GRSG's breeding season before initiating the activities. The surveys must encompass all sagebrush shrublands within 3.0 miles of the proposed activities. Three surveys would be conducted every season during pre-planning operations. In areas found to have probable GRSG activity, surveys should continue during project operations. *These surveys should be conducted as part of a monitoring program to inform an adaptive management framework for required design features and operations.*
- Ensure that all authorized ground disturbing projects have vegetation reclamation standards suitable for the site type prior to construction and ensure that reclamation to appropriate GRSG standards are budgeted for.
- Implement appropriate time-of-day and/or time-of year restrictions for future construction and/or maintenance activities in known GRSG habitat to avoid adverse impacts.
- Reseed all areas requiring reclamation with a seed mixture appropriate for the soils, climate, and landform of the area to ensure recovery of the ecological processes and habitat features of the potential natural vegetation, and to prevent the invasion of noxious weeds or other exotic invasive species. *Long-term monitoring is required to determine success.*
- Maximize the area of interim reclamation on long-term access roads and well pads including reshaping, topsoiling and revegetating cut and fill slopes.

Miscellaneous

- On BLM and Forest Service-administered Wilderness and Wilderness Study Areas (WSAs), mechanized equipment may be used to protect areas of high resource concerns or values; however, the use of mechanized equipment will be evaluated against potential long-term resource damage.
- ~~An Environmental Assessment is required for applications for monitoring sites in known Sage-Grouse Population Management Units.~~

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Acronym List:

BMP: Best Management Practice

GRSG: Greater Sage-grouse

PGMA: Preliminary General Management Area

PPMA: Preliminary Priority Management Area

RDF: Required Design Feature

ROW: Right-of-way

SUA: Special Use Authorization

WFDSS: Wildland Fire Decision Support Tree

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