APPENDIX A. SUMMARY OF AGENCY-PRESCRIBED SAGE-GROUSE BUFFERS RELATIVE TO THE KEYSTONE XL PIPELINE PROJECT

NSOs (No Surface Occupancy), seasonal restrictions and buffers to protect sage-grouse have evolved rapidly in the last 10 years. This process has not been consistent among geographic areas, agencies, or even divisions within a single agency. However, there is growing recognition that sage-grouse should be managed at the landscape scale, regardless of socio-political boundaries (Knick and Connelly, In press). As a result, it appears that NSOs, seasonal restrictions and buffers for energy development are becoming standardized. The following discussions summarize sage-grouse NSOs, seasonal restrictions, and buffers specific to the Keystone XL Pipeline Project (Project).

BLM

The Project crosses land administered by three BLM Montana Field Offices (Malta, Glasgow, and Miles City). Land and wildlife management policies, including buffers for sage-grouse NSO and seasonal restrictions, are described in Resource Management Plans (RMP) written for each Field Office. The BLM is currently revising these RMPs, a process that occurs every 10 to 20 years. The next draft RMP for the Malta and Glasgow Field Offices (the HiLine RMP)is scheduled for release in fall 2010 while the next draft RMP for the Miles City Field Office (the Miles City RMP) was scheduled for release in spring 2010 but will probably be delayed until spring 2011 (BLM 2010d). The RMPs will be finalized approximately one year after release of the drafts. Until then, the policies, directives and constraints in the existing RMPs will remain in force, but may be modified through "RMP maintenance" actions or direction from the BLM state or national offices.

Existing sage-grouse NSO and seasonal restrictions, including buffers, for each BLM Field Office are:

- Miles City Field Office (Chapter 2, page 38, BLM 1995): "Surface disturbance (other than water developments and fences) will not be authorized within ¼ mile of sage grouse and sharp-tailed grouse leks. Disturbance will not be authorized within 2 miles of a lek from March 1 to June 15 each year to protect sage grouse and sharp-tailed grouse nesting habitat."

- Malta and Glasgow Field Offices (BLM 1992): The Wildlife and Right-of-Way discussions in the RMP do not specify NSO or seasonal restrictions for sage-grouse. However, constraints are listed on page 275 in Appendix B (Oil and Gas Leasing and Development) and include: "No Surface Occupancy for the lek (¼ acre) rather than No Surface Occupancy within ¼ mile of the lek; and seasonal restriction on exploration from March 15 to June 15 for a distance of ¼ mile from the lek rather than surface use prohibited from March 1 to June 15 within 2 miles of a lek."

More recently (March 5, 2010) the BLM issued Instruction Memorandum (IM) No. 2010-071 immediately after the USFWS declared sage-grouse an ESA candidate species. The BLM has used this IM to generally expand mitigation and avoidance measures for sage-grouse. The IM's "Actions Available for Protection of Sage-Grouse Populations" is oriented more toward wind and solar developments, electric transmission lines, and oil and gas wells than buried pipelines and includes:

- "In priority habitat and where supported by NEPA analysis, attach conditions to the approval of Applications for Permit to Drill (APD) that are more protective than the stipulations or restrictions identified in the applicable Resource Management Plan (RMP), as appropriate."

- "Screen new right-of-way applications to identify whether the wind or solar energy development or site testing and project area includes priority habitat. If so, alert the applicant as early as possible that the application may be denied or that terms and conditions may be imposed on the right-of-way grant to protect priority habitat as supported by NEPA analysis."

- "Re-route proposed transmission projects to avoid priority habitat."

MFWP

MFWP's authority to establish conservation measures for sage-grouse is granted by Title 87, Chapter 5, Part 1 Montana Code Annotated (MCA):

> "manage wildlife, fish, game, and nongame animals in a manner that prevents the need for listing under 87-5-107 or under the federal Endangered Species Act, 16 U.S.C. 1531, et seq.; and manage listed species, sensitive species, or a species that is a potential candidate for listing under 87-5-107 or under the federal Endangered Species Act, 16 U.S.C. 1531, et seq., in a manner that assists in the maintenance or recovery of those species" (87-1-201 (9)(a)(i), (ii)). The MFWP must also consider the following: "In maintaining or recovering a listed species, a sensitive species, or a species that is a potential candidate for listing, the department shall seek, to the fullest extent possible, to balance maintenance or recovery of those species with the social and economic impacts of species maintenance or recovery." (87-1-201 (9)(b)).

MFWP is a signatory to the Management Plan and Conservation Strategies for Sage Grouse in Montana – Final (Montana Sage Grouse Work Group 2005). This document presents several NSO and seasonal restrictions as "conservation actions" to minimize impacts of energy development on sage-grouse:

- Allow no surface occupancy within 0.25 miles of an active lek. Use the best available information for siting structures near important breeding, brood-rearing, and winter habitat considering the following:
  a) size of the structure(s),
  b) life of the operation,
  c) extent to which impacts would be minimized by topography, and
  d) disturbance by noise and maintenance.

- Allow no surface use in nesting habitat within 2 miles of an active lek during a period of breeding and nesting—1 March –15 June.

- Restrict maintenance and related activities in sage grouse breeding/nesting complexes—1 March –15 June—between the hours of 4:00-8:00 am and 7:00-10:00 pm.

- Allow no surface use activities within crucial sage grouse wintering areas during 1 December-31 March.

However, since the publication of Montana Sage Grouse Work Group (2005) MFWP has expressed concern that NSO and seasonal restrictions presented in the plan are insufficient to effectively mitigate the effects of intensive energy development on sage-grouse (MFWP 2007; Colorado Department of Wildlife et al. 2008). These concerns are based on the results of several studies published between 2003 and 2006 that documented reductions in sage-grouse lek attendance, lek persistence, and nesting success as distances from energy development were reduced. MFWP's (2007) recommendations for buffers were:

- Sage-grouse breeding activities: "utilize a minimum 1.6 km (1 mile) buffer and preferably a 3 km (1.8 mile) buffer of no surface occupancy around existing leks."

- Sage-grouse nesting and brood rearing: "utilize a 6.9 km (4 mile) buffer around leks to protect nesting and brood rearing habitat for a minimum of 70% of the nesting hens associated with a lek from March 1 through June 30."

- Sage-grouse winter habitat use: prior to field development, model potential winter habitat and once crucial areas are identified, prohibit development in those areas."

It should be noted, however, that MFWP's (2007) recommendations, like most of the studies on which they were based, were primarily oriented toward CBNG well drilling and field development, with its attendant system of closely spaced well pads, roads, small-diameter pipelines, transmission lines, comparatively high traffic volumes, etc. Also, MFWP's 2007 NSO recommendations do not incorporate the considerations of topography, level of disturbance, or size and life of the operation discussed by Montana Sage Grouse Work Group (2005). While there have been studies of the effects of cross-country electric transmission lines on sage-grouse (e.g., Ellis 1984; Braun 1998; Braun et al. 2002) there apparently have been few or no studies of the effects of cross-country, solitary, large-diameter buried pipelines on sage-grouse; for example, cross-country large-diameter buried pipelines are not discussed in two recent summaries of energy development impacts to sage-grouse (USFWS 2010; Naugle et al. In press). While it is recognized that pipeline construction rights-of-way (ROW) may be a form of habitat fragmentation, the absence of roads/traffic and above-ground facilities over much of the ROW, and the select location of above-ground facilities such as pump stations with their attendant transmission lines along existing improved roads, present a different scenario than that of CBNG developments or cross-country transmission lines. ODFW (2009) recognized this difference to some degree when it recommended that "ground level structures (e.g., transfer stations, pipelines, buried power lines) should be sited >0.5 mile of the nearest occupied lek." Similarly, Walker (2007) did not measure negative impacts to lek persistence from rarely used dirt roads. The Keystone XL Pipeline Project ROW would be less of an impact to sage-grouse leks than dirt roads since there will be no post-construction traffic along the majority of the ROW, and the ROW will be revegetated with species that are consistent with the surrounding environment and that can be used by sage-grouse.

USFWS

To date, the USFWS has not implemented regulatory buffers for sage-grouse, but has acknowledged buffers recommended by other agencies or programs (USFWS 2009, 2010). However, in its analysis of the impacts of the Bison Pipeline Project (which passes through southeast Montana) FERC (2009) stated: "The buffer zones, as recommended by FWS, include a 3-mile area of no disturbance around leks between March 1 through June 30 (and a 0.6-mile no surface occupancy year-round), and a 3-mile area of no disturbance around important winter habitat between November 15 and March 14."

SDGFP

The SDGFP apparently has not recommended any NSO or seasonal restrictions, including buffers, to minimize impacts of energy development on sage-grouse (SDGFP 2008). However, South Dakota is part of sage-grouse Management Zone 1 and it is reasonable to assume that buffers recommended by Colorado Department of Wildlife et al. (2008) would be relevant to South Dakota leks. Further, the South Dakota Public Utilities Commission has conditioned their permit to require the Project to abide by buffers specified by the SDGFP and USFWS in South Dakota.