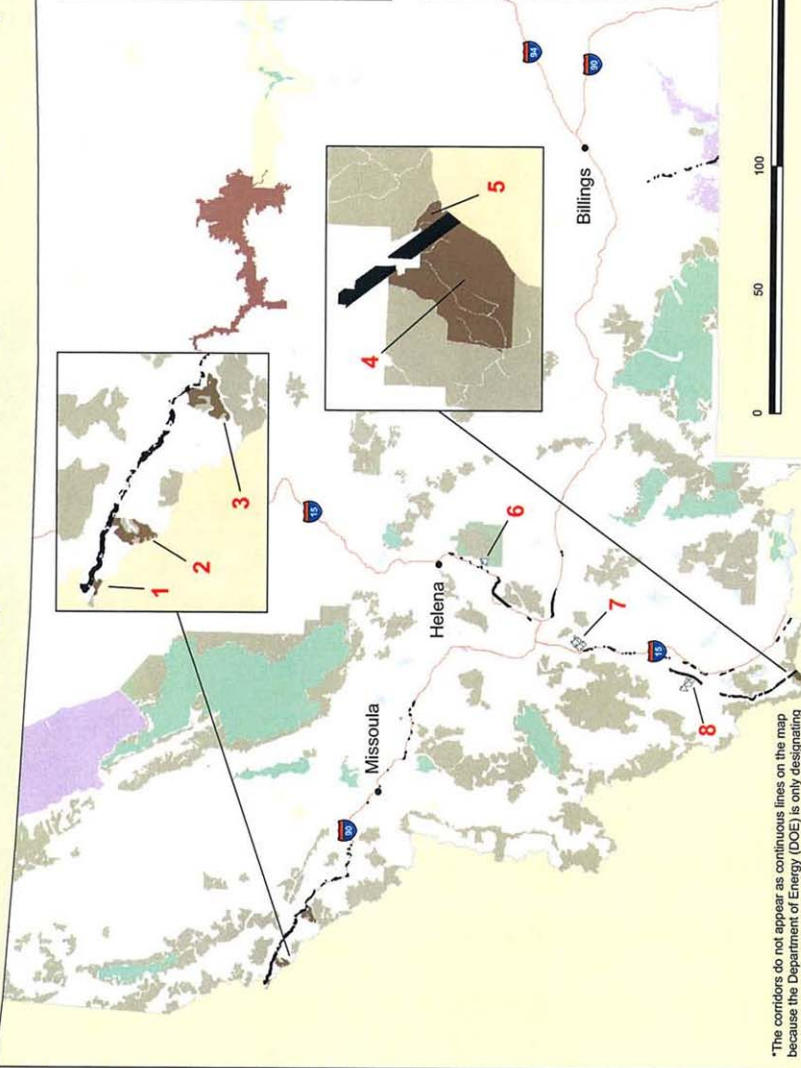


West-Wide Energy Corridors: Special Places Impacted in Montana

- Units Directly Impacted by Corridors****
1. Wonderful Peak USFS IRA
 2. Gift Edge - Silver Creek USFS IRA
 3. Marble Point USFS IRS
 4. Italian Peak USFS IRA
 5. Garfield Mountain USFS IRA
- Units Within 1-Mile of Corridor**
6. Elkhorn WSA
 7. Humbug Spires WSA
 8. Henneberry Ridge WSA

- Draft West-Wide Energy Corridor***
- USFS IRA w/Corridor
 - WSA w/in 1-mile of Corridor
 - NPS Land
 - Wilderness
 - BLM National Monument
 - USFWS Land
 - Wilderness Study Area
 - USFS IRA
 - Proposed Wilderness



**The corridors do not appear as continuous lines on the map because the Department of Energy (DOE) is only designating the corridors on federal lands. Clearly, when pipelines and electrical lines are installed they will cross state and private land but DOE is not providing information regarding the likely location of these connections to the public.

**USFS IRA = US Forest Service Inventoried Roadless Area
WSA = Wilderness Study Area

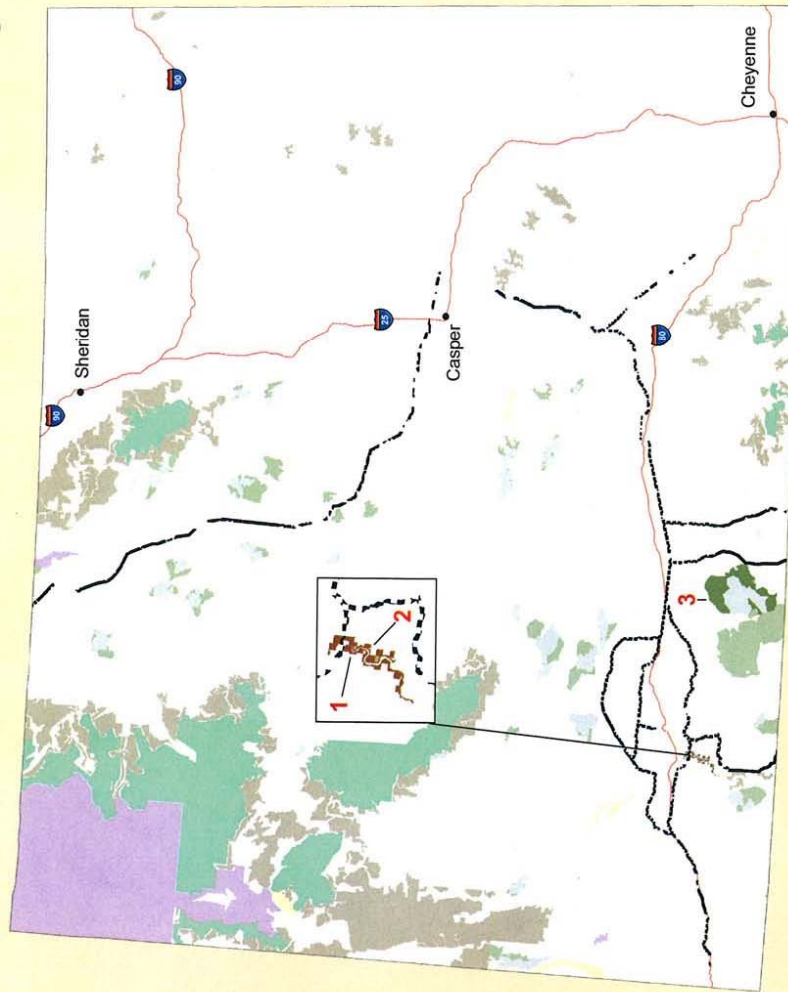
As of 12/2007



The Wilderness Society



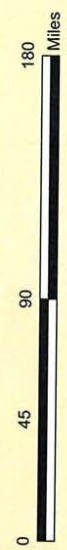
West-Wide Energy Corridors: Special Places Impacted in Wyoming



- Units Directly Impacted by Corridors**
1. 1035 USFS Inventoried Roadless Area
 2. 1036 USFS Inventoried Roadless Area
 3. Adobe Town Citizen Wilderness Proposal

Black	Draft West Wide Energy Corridor*
Brown	USFS Roadless w/Corridor
Green	Proposed Wilderness w/Corridor
Purple	NPS Units
Yellow	USFWS Land
Light Green	Wilderness
Dark Green	US Forest Service Roadless Area
Light Blue	BLM Wilderness Study Area
Dark Green	Proposed Wilderness

*The corridors do not appear as continuous lines on the map because the Draft Energy Corridor (DEC) is only designating the portions on federal lands. Clearly, when pipeline corridors are actually installed they will cross state and private land but DEC is not providing information regarding the likely location of these connections to the public.



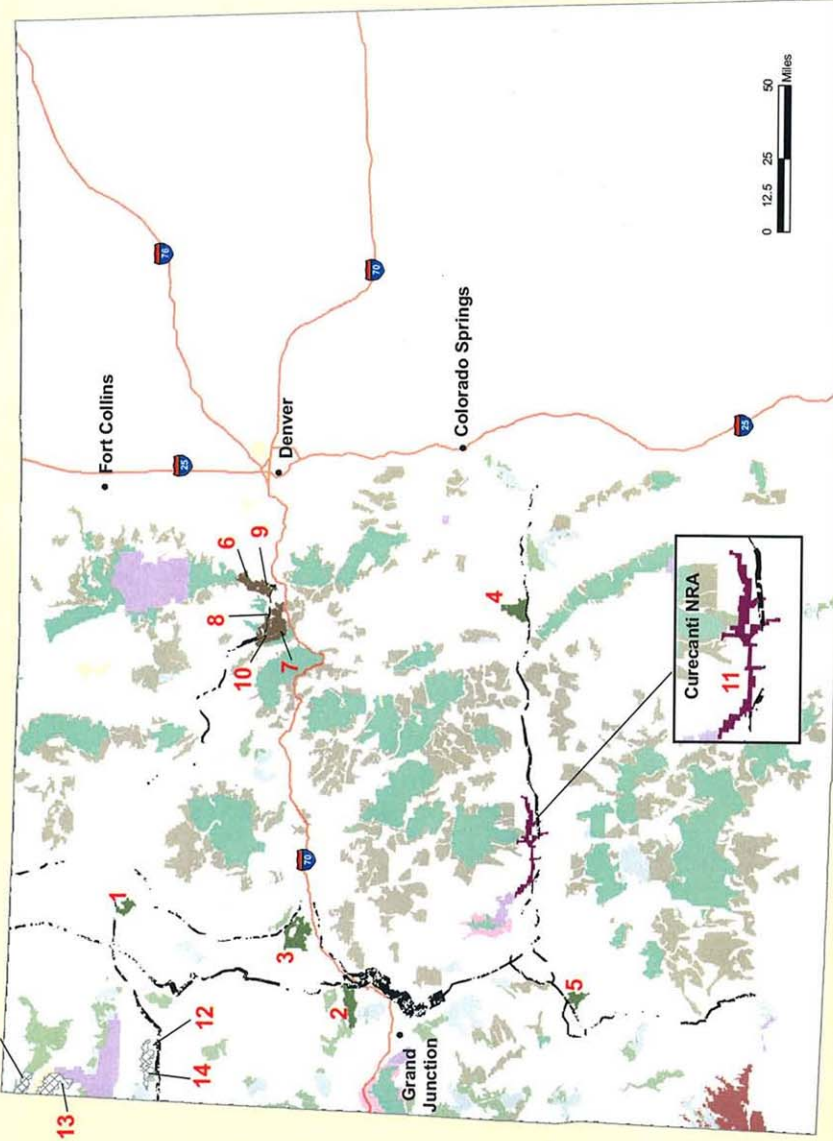
As of 12/2007



The Wilderness Society

West-Wide Energy Corridors: Special Places Impacted in Colorado

- Units Directly Impacted by Corridors****
1. Yampa River CWP
 2. South Shale Ridge CWP
 3. Roan Plateau CWP
 4. Badger Creek CWP
 5. San Miguel River CWP
 6. James Peak USFS IRA
 7. Williams Fork USFS IRA
 8. Vazquez Adj. Area USFS IRA
 9. Bard Creek USFS IRA
 10. Byers Peak USFS IRA
 11. Curecanti Nat. Rec. Area
- Units Within 1-Mile of Corridor**
12. Skull Creek WSA
 13. Diamond Breaks WSA
 14. Willow Creek WSA
 15. Cold Spring West WSA



As of 12/2007

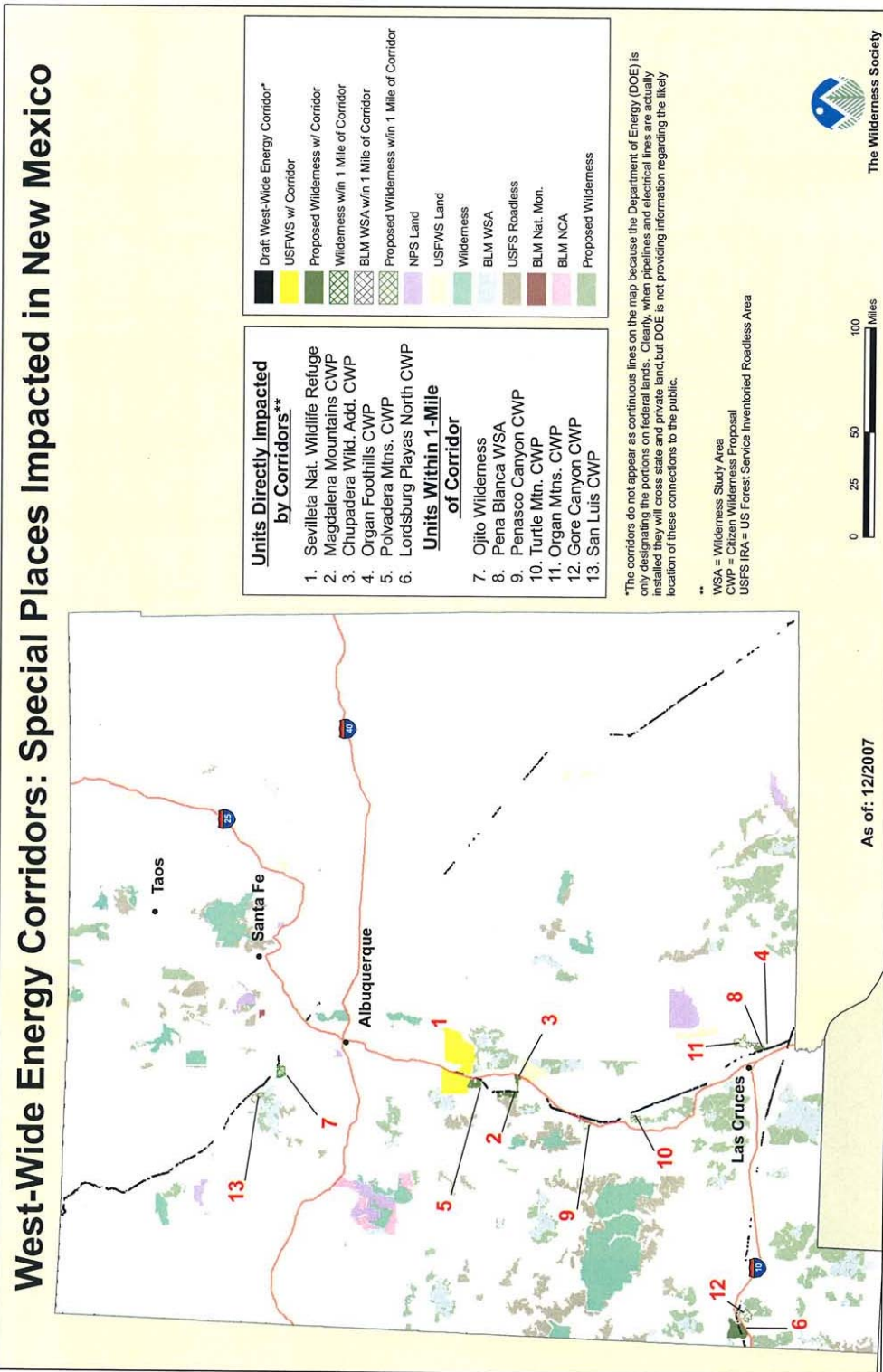
- Dratt West-Wide Energy Corridor*
- Proposed Wilderness w/ Corridor
- USFS Roadless w/ Corridor
- NPS Unit w/Corridor
- BLM WSA w/in 1 Mile of Corridor
- NPS Units
- USFWS Land
- Wilderness
- BLM National Monument
- BLM National Conservation Area
- USFS Roadless
- BLM WSA
- Proposed Wilderness

* The corridors do not appear as continuous lines on the map because the Department of Energy (DOE) is only designating the portions on federal lands. Clearly, when pipelines and electrical lines are actually installed they will cross state and private land, but DOE is not providing information regarding the likely location of these connections to the public.

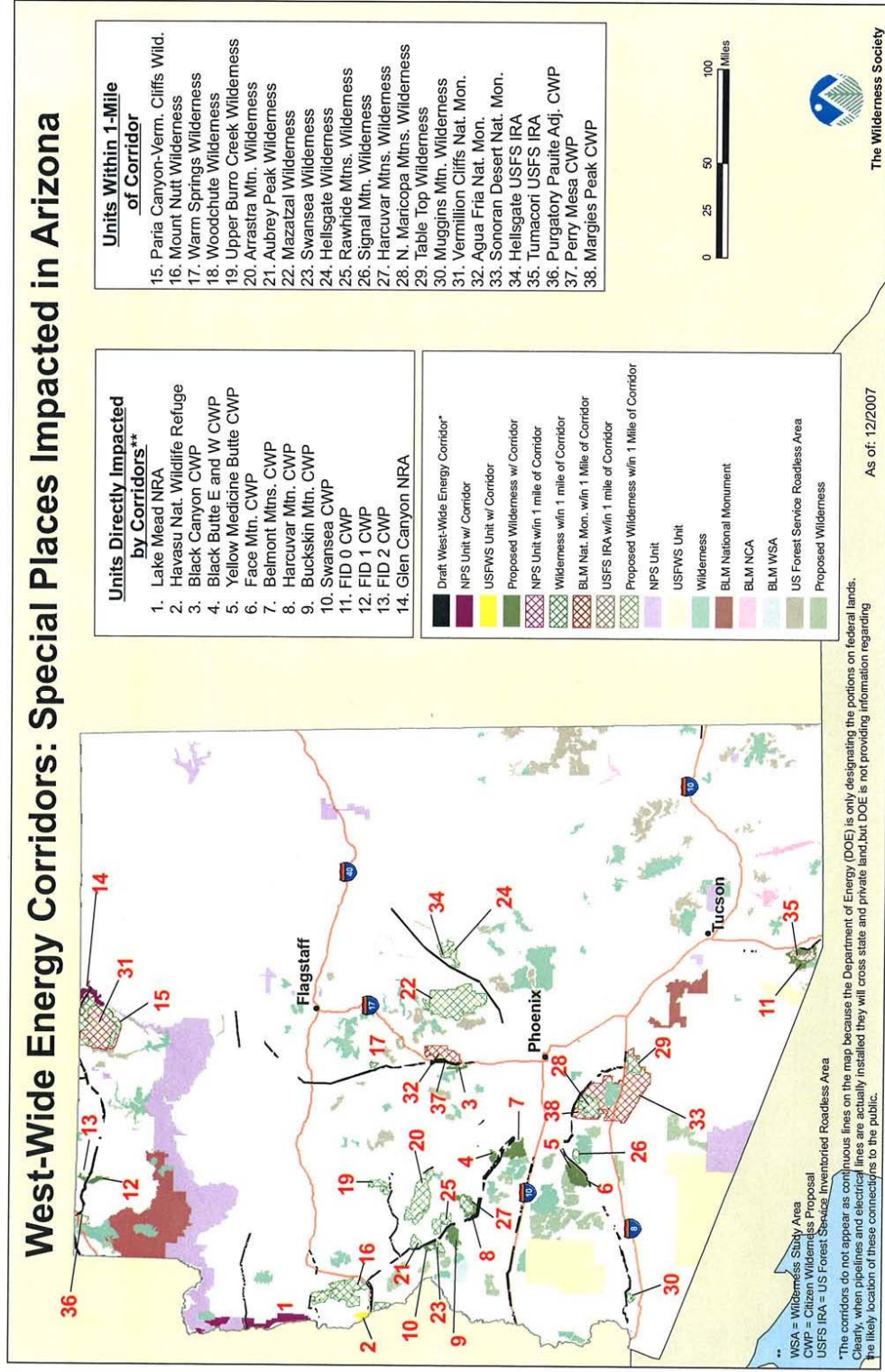
** WSA = Wilderness Study Area
 CWP = Critical Wildlife Habitat
 USFS IRA = US Forest Service Inventoried Roadless Area



The Wilderness Society



West-Wide Energy Corridors: Special Places Impacted in Arizona



- Units Within 1-Mile of Corridor**
15. Paria Canyon-Verm. Cliffs Wild.
 16. Mount Nutt Wilderness
 17. Warm Springs Wilderness
 18. Woodchute Wilderness
 19. Upper Burro Creek Wilderness
 20. Arrastra Mtn. Wilderness
 21. Aubrey Peak Wilderness
 22. Mazatzal Wilderness
 23. Swansea Wilderness
 24. Hellsgate Wilderness
 25. Rawhide Mtns. Wilderness
 26. Signal Mtn. Wilderness
 27. Harcuvar Mtns. Wilderness
 28. N. Maricopa Mtns. Wilderness
 29. Table Top Wilderness
 30. Muggins Mtn. Wilderness
 31. Vermillion Cliffs Nat. Mon.
 32. Agua Fria Nat. Mon.
 33. Sonoran Desert Nat. Mon.
 34. Hellsgate USFS IRA
 35. Tumacacori USFS IRA
 36. Purgatory Paulte Adj. CWP
 37. Perry Mesa CWP
 38. Margies Peak CWP

- Units Directly Impacted by Corridors****
1. Lake Mead NRA
 2. Havasu Nat. Wildlife Refuge
 3. Black Canyon CWP
 4. Black Butte E and W CWP
 5. Yellow Medicine Butte CWP
 6. Face Mtn. CWP
 7. Belmont Mtns. CWP
 8. Harcuvar Mtn. CWP
 9. Buckskin Mtn. CWP
 10. Swansea CWP
 11. FID 0 CWP
 12. FID 1 CWP
 13. FID 2 CWP
 14. Glen Canyon NRA

Legend

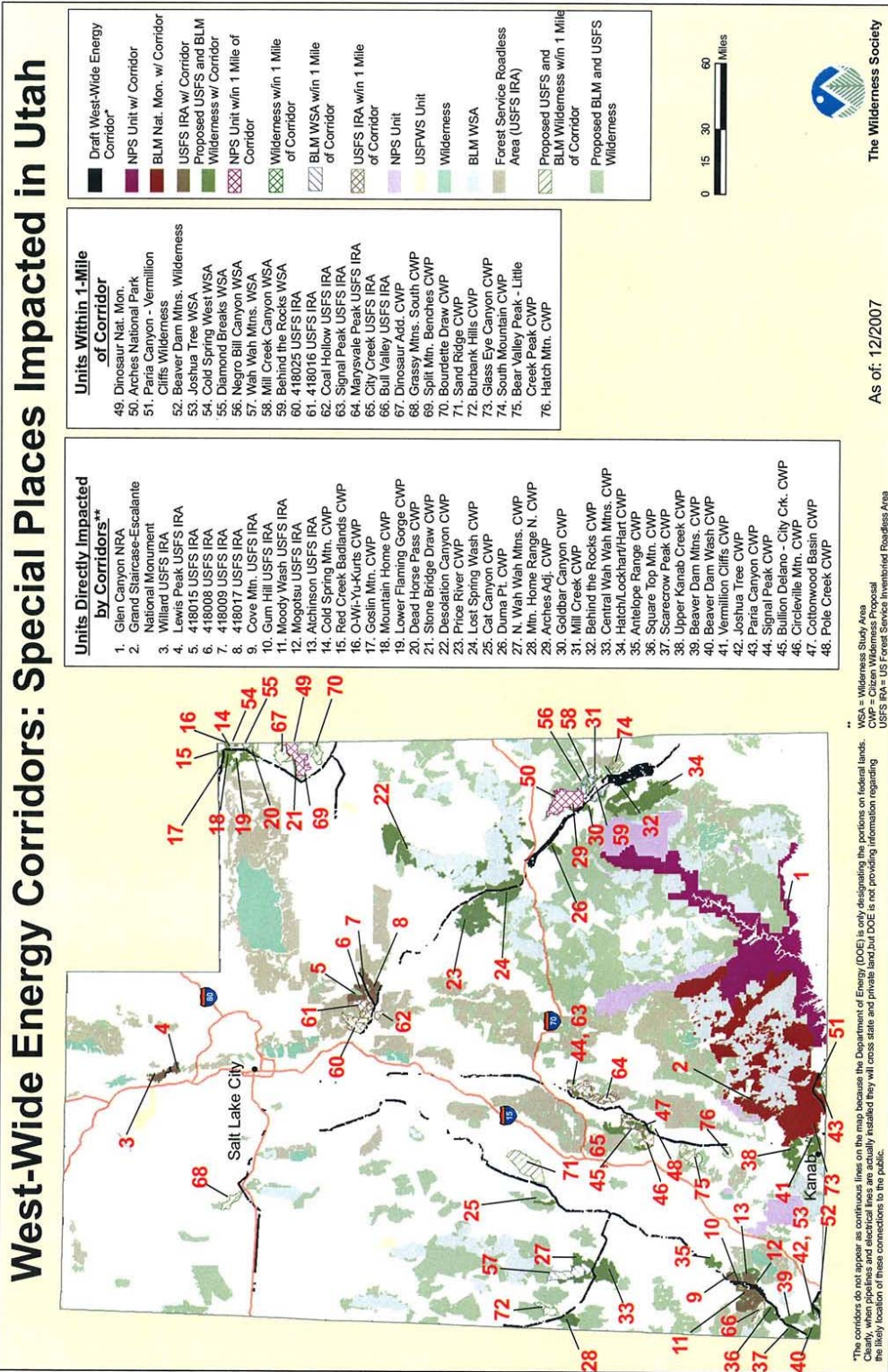
- Draft West-Wide Energy Corridor*
- NPS Unit w/ Corridor
- USFWS Unit w/ Corridor
- Proposed Wilderness w/ Corridor
- NPS Unit w/in 1 mile of Corridor
- Wilderness w/in 1 mile of Corridor
- BLM Nat. Mon. w/in 1 Mile of Corridor
- USFS IRA w/in 1 mile of Corridor
- Proposed Wilderness w/in 1 Mile of Corridor
- NPS Unit
- USFWS Unit
- Wilderness
- BLM National Monument
- BLM NCA
- BLM WSA
- US Forest Service Roadless Area
- Proposed Wilderness



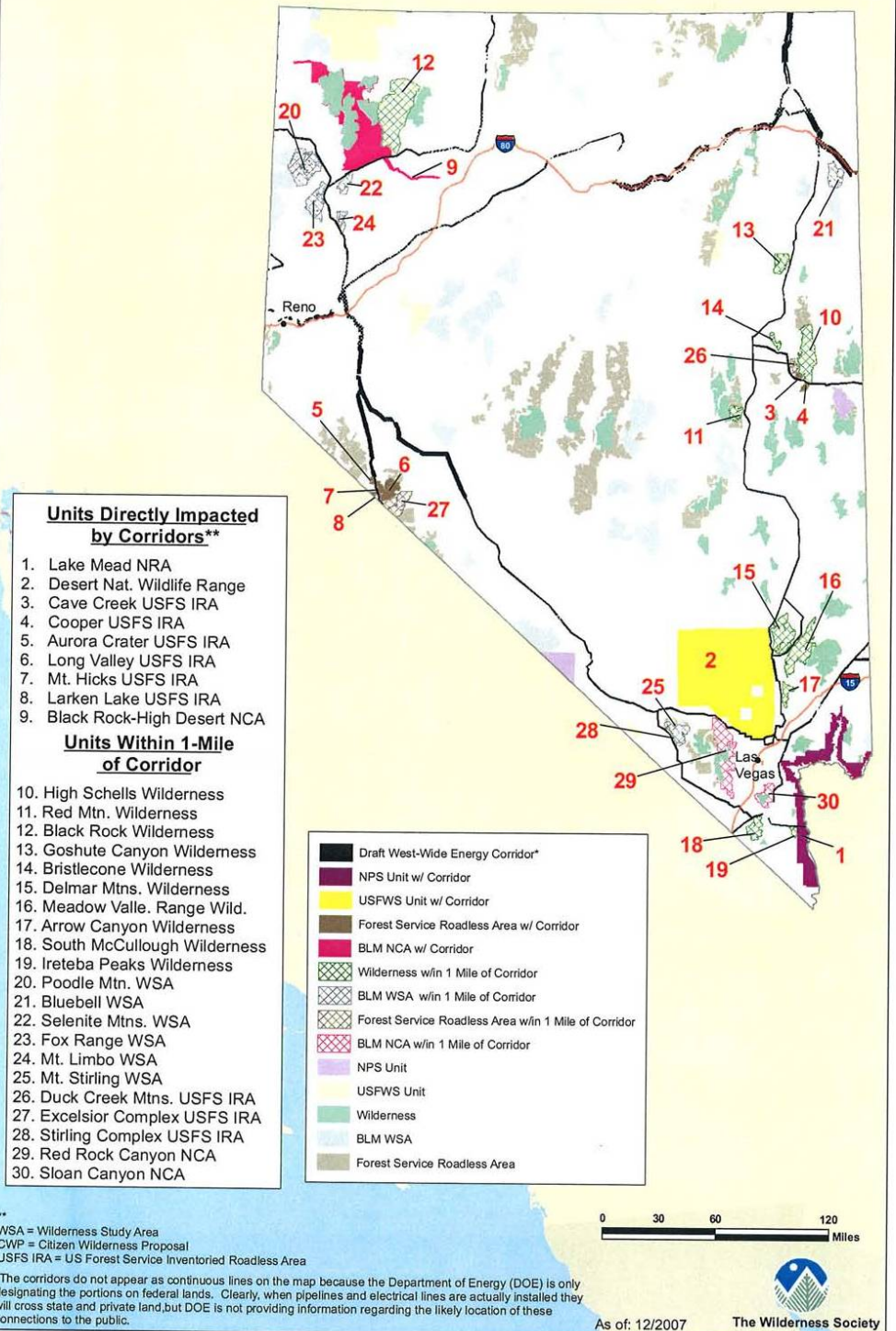
The Wilderness Society

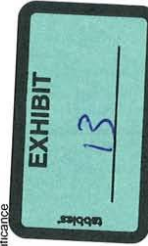
AS of: 12/2007

WSA = Wilderness Study Area
 CWP = Citizen Wilderness Proposal
 USFS IRA = US Forest Service Inventoried Roadless Area
 *The corridors do not appear as continuous lines on the map because the Department of Energy (DOE) is only designating the portions on federal lands. Clearly, when pipelines and electrical lines are actually installed they will cross state and private land, but DOE is not providing information regarding the likely location of these connections to the public.



West-Wide Energy Corridors: Special Places Impacted in Nevada





Comments	Designated	Desig/Use	Name	Width/Feet	STATE_ABBR	SMA_CODE	Potential Conservation Area	BIODIVSIG
Multimodal, not designated, default 3500' width	No	All	126-133	3500 CO	BLM	Cedar Springs Draw	B4: Moderate Biodiversity Significance	
CO - BLM - Uncompahgre - Electric-only	No	Electric-only	130-131 (N)	3500 CO	BLM	Hwy 141 and 145 Junction	B2: Very High Biodiversity Significance	
CO - FS - San Juan - Designated	Yes	All	130-131 (N)	3500 CO	BLM	San Miguel River at Cottonwood Creek	B3: High Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	130-274	3500 CO	USFS	Cherry Creek	B5: General Biodiversity Interest	
Multimodal, not designated, default 3500' width	No	All	130-274	3500 CO	BLM	San Miguel Basin	B2: Very High Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	130-274	3500 CO	USFS	San Miguel Basin	B2: Very High Biodiversity Significance	
CO - BLM - Grand Junction - Pipeline-only	No	Underground-only	132-133	3500 CO	BLM	Roubidoux Creek	B3: High Biodiversity Significance	
CO - BLM - Grand Junction - Pipeline-only	No	Underground-only	132-133	3500 CO	BLM	Clear Creek	B3: High Biodiversity Significance	
CO - BLM - Grand Junction - Pipeline-only	Yes	Underground-only	132-133	5280 CO	BLM	Deception Creek	B1: Outstanding Biodiversity Significance	
Multimodal, not designated, default 3500' width	Yes	Underground-only	132-133	-1 CO	BLM	Rare Plants of the Wasatch	B5: General Biodiversity Interest	
CO - BLM - Grand Junction - Pipeline-only	No	All	132-136	2640 CO	BLM	Shaner Ridge	B4: Moderate Biodiversity Significance	
CO - BLM - Grand Junction - Pipeline-only	Yes	All	132-136	2640 CO	BLM	Colorado River	B1: Outstanding Biodiversity Significance	
CO - BLM - Grand Junction - Pipeline-only	Yes	All	132-136	2640 CO	FWS	Colorado River	B1: Outstanding Biodiversity Significance	
CO - BLM - Grand Junction - Pipeline-only	Yes	All	132-136	2112 CO	BLM	Deer Creek West	B1: Outstanding Biodiversity Significance	
CO - BLM - Grand Junction - Pipeline-only	No	All	132-136	3500 CO	BLM	Gumison River	B2: Very High Biodiversity Significance	
Multimodal, not designated, default 3500' width	Yes	All	132-136	2112 CO	BLM	Orchard Mesa	B3: High Biodiversity Significance	
CO - BLM - Grand Junction - Pipeline-only	Yes	All	132-136	2112 CO	BLM	Orchard Mesa	B3: High Biodiversity Significance	
CO - BLM - Grand Junction - Pipeline-only	Yes	All	132-136	3500 CO	BLM	Rare Plants of the Wasatch	B1: Outstanding Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	132-276	3500 CO	BLM	Reeder Mesa	B4: Moderate Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	132-276	3500 CO	BLM	Colorado River	B1: Outstanding Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	132-276	3500 CO	FWS	Rare Plants of the Wasatch	B1: Outstanding Biodiversity Significance	
Electric-only, not designated, default 3500' width	No	Electric-only	132-276	3500 CO	BLM	Rare Plants of the Wasatch	B1: Outstanding Biodiversity Significance	
Electric-only, not designated, default 3500' width	No	Electric-only	132-276	3500 CO	BLM	Upper Hogback	B3: High Biodiversity Significance	
Electric-only, not designated, default 3500' width	No	Electric-only	132-276	3500 CO	BLM	Upper Cany Creek	B3: High Biodiversity Significance	
Multimodal, not designated, default 3500' width	Yes	All	133-142	3500 CO	BLM	Williams Fork	B3: High Biodiversity Significance	
CO - BLM - Uncompahgre - Electric-only	No	All	134-136	3500 CO	USFS	Williams Fork	B2: Very High Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	136-139	3500 CO	BLM	Roubidoux River	B3: High Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	136-139	3500 CO	BLM	Timber Park	B3: High Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	136-277	3500 CO	BLM	Cedar Creek	B2: Very High Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	136-277	3500 CO	BLM	Cedar Creek	B2: Very High Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	139-277	3500 CO	BLM	Firm Road	B3: High Biodiversity Significance	
Electric-only, not designated, default 3500' width	No	Electric-only	139-277	3500 CO	BLM	Dry Cedar Creek	B2: Very High Biodiversity Significance	
Electric-only, not designated, default 3500' width	No	Electric-only	144-275	1056 CO	USFS	Blacktail Creek at Gore Pass	B3: High Biodiversity Significance	
CO - FS - Arapaho-Roosevelt - 10560' width	Yes	All	144-275	3500 CO	USFS	Blacktail Creek at Gore Pass	B3: High Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	144-275	3500 CO	BLM	Lawson Butte	B1: Outstanding Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	144-275	3500 CO	BLM	South Fork of the Williams Fork	B3: High Biodiversity Significance	
CO - FS - Arapaho-Roosevelt - 1000' - Elec-only	No	All	144-275	1000 CO	USFS	South Fork of the Williams Fork	B3: High Biodiversity Significance	
CO - FS - Arapaho-Roosevelt - 10560' width	No	All	144-275	1056 CO	USFS	Toponas Creek	B4: Moderate Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	144-275	2000 CO	USFS	Upper Williams Fork	B3: High Biodiversity Significance	
CO - FS - Arapaho-Roosevelt - 2000' - Elec-only	No	Electric-only	144-275	900 CO	USFS	Upper Williams Fork	B3: High Biodiversity Significance	
CO - FS - Arapaho-Roosevelt - 2500' - Elec-only	No	Electric-only	144-275	2500 CO	USFS	Upper Williams Fork	B3: High Biodiversity Significance	
CO - BLM - Little Snake - 3500' width assumed	Yes	Underground-only	73-133	3500 CO	BLM	Juniper Mountain	B5: General Biodiversity Interest	
CO - BLM - Gummison - 5280' width	Yes	All	87-277	-1 CO	BLM	Blue Creek at Curcanti Needle	B3: High Biodiversity Significance	
CO - BLM - Gummison - 5280' width	Yes	All	87-277	3500 CO	BLM	Brush Hollow Reservoir	B5: General Biodiversity Interest	
CO - BLM - Gummison - 5280' width	Yes	All	87-277	3500 CO	BLM	Castle Gardens	B1: Outstanding Biodiversity Significance	
CO - BLM - Gummison - 5280' width	Yes	All	87-277	3500 CO	BLM	Garden Park Fossil	B2: Very High Biodiversity Significance	
CO - BLM - Gummison - 5280' width	Yes	All	87-277	5280 CO	BLM	Gummison Basin	B1: Outstanding Biodiversity Significance	
CO - BLM - Gummison - 5280' width	Yes	All	87-277	5280 CO	BLM	Gummison Basin	B1: Outstanding Biodiversity Significance	
CO - BLM - Gummison - 5280' width	Yes	All	87-277	5280 CO	BLM	Gummison Basin	B1: Outstanding Biodiversity Significance	
CO - BLM - Gummison - 5280' width	No	All	87-277	3500 CO	BLM	Gummison Basin	B1: Outstanding Biodiversity Significance	
CO - BLM - Gummison - 5280' width	No	All	87-277	3500 CO	NPS	Gummison Basin	B1: Outstanding Biodiversity Significance	
CO - BLM - Gummison - 1000' in ACEC	Yes	All	87-277	1000 CO	BLM	Gummison Basin	B1: Outstanding Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	87-277	3500 CO	BLM	Gummison Basin	B1: Outstanding Biodiversity Significance	
Multimodal, not designated, default 3500' width	No	All	87-277	3500 CO	USFS	Gummison Basin	B1: Outstanding Biodiversity Significance	
CO - BLM - Gummison - 5280' width	Yes	All	87-277	3500 CO	BLM	Phantom Canyon of Eightmile Creek	B2: Very High Biodiversity Significance	

WEC_00101

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

**Review of Draft Interagency Operating Procedures
and Mitigation Measures:**

**West-wide Energy Corridor Draft
Programmatic Environmental Impact Statement**

February 12, 2008

Submitted to:

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2260 Baseline Rd., Suite 200
Boulder, CO 80302

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BIO-Logic, Inc.
February 12, 2008



West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

TABLE OF CONTENTS

I. INTRODUCTION3

II. PREPARER QUALIFICATIONS AND EXPERIENCE3

III. METHODS4

IV. SUMMARY OF COMMENTS4

V. REVIEW OF IOPs AND MITIGATING MEASURES BY PEIS PAGE AND IOP NUMBER7

VI. SUGGESTED IMPROVEMENTS TO IOPs AND MITIGATION MEASURES 19

VII. SUGGESTED NEW IOPs, AND MITIGATION MEASURES39

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

I. INTRODUCTION

As requested by Western Resource Advocates, Bio-Logic, Inc. reviewed selected Interagency Operating Procedures (IOP) and mitigation measures contained in the West-wide Energy Corridor Draft Programmatic Environmental Impact Statement (PEIS). As part of its PEIS analysis, BIO-Logic completed the following:

1. Reviewed the following sections of the PEIS:
 - (a) Pages 2-27 through 2-34 (Interagency Operating Procedures)
 - (b) Pages 3-52 through 3-56 (geologic/soils)
 - (c) Pages 3-97 through 3-100 (water)
 - (d) Pages 3-218 through 3-227 (vegetation/wetlands and aquatic biota)
 - (e) Pages 3-227 through 3-233 (wildlife); 3-233 through 3-235 (Threatened and Endangered Species)
2. Provided specific recommendations to improve the proposed IOPs and mitigation measures in order to protect lands, water, soils, vegetation, wildlife and other natural resources. These recommendations are divided into the separate phases of power line right-of-way: (a) planning; (b) construction; (c) initial/long-term reclamation; and (d) monitoring/maintenance/adaptive management.
3. Provided recommendations for other mitigation measures that should be required to arrive at complete set of Best Management Practices to protect these resources. Within the wildlife/TES recommendations, special consideration has been given to sage-brush dependent species including sage-grouse.

II. PREPARER QUALIFICATIONS AND EXPERIENCE

Primary PEIS Reviewer and Report Author was Jim Ferguson, A Senior Biologist at BIO-Logic, Inc., Mr. Ferguson has a BS degree in wildlife biology (Delaware State College, 1976). He has over 31 years experience in Utah and western Colorado as biologist with the U.S. Department of Interior, Bureau of Land Management (BLM). During his career he has completed numerous Environmental Assessments, Biological Assessments, and worked on the biological resource sections of Environmental Impact Statements. Environmental Assessment and Impact Statement work included biological resource issues associated with power generation facilities, natural gas transmission and distribution lines, electrical transmission and distribution lines, coal mine development, oil and gas activities, mining claim development, livestock grazing, recreation activities, and woodland management. He also has two years of full time experience in natural resource planning, and additional part time work on the biological sections of 3 major planning efforts. Mr. Ferguson has supervised and participated in inventories and monitoring studies for upland wildlife habitats, riparian habitats, Threatened and Endangered species, and BLM sensitive species.

Project Manager and Report Editor was Steve Boyle, Principal and Senior Scientist at BIO-Logic, Inc. Mr. Boyle conducted the site visits and authored this report. Mr. Boyle holds a Master's degree in Wildlife Biology (Colorado State University, 1981) and has 26 years of experience in biological assessments, natural resource planning, and surveys for threatened and endangered species in the western U.S. and overseas. He has carried out more than thirty Biological Assessments, Environmental Assessments, and Environmental Impact Statements.

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

Mr. Boyle has been the Principal Investigator for funded research on pronghorn, wild horses, bats, and songbirds, and has field experience investigating the biology of spotted owls, kit fox, mule deer, elk, bighorn sheep, wild turkey, and desert tortoises. He has conducted western Colorado bird surveys, validated theoretical models linking vertebrate species distributions to habitat characteristics for the Colorado Gap Analysis Project, and co-authored the Colorado Breeding Bird Atlas. Mr. Boyle was formerly District Wildlife Manager for the Colorado Division of Wildlife in Dolores County, and has held research and field positions with the U.S. Fish and Wildlife Service, Department of Fishery and Wildlife Biology at Colorado State University, U.S. Bureau of Land Management, and the Royal Australasian Ornithologists Union in Western Australia.

III. METHODS

During review of the proposed IOPs and mitigation measures for future pipeline and power line projects that may be located within designated corridors in the PEIS, BIO-Logic also reviewed mitigation contained in other site specific transmission line and pipeline environmental documents, as well as other appropriate sources. The results of the review and recommended changes are arranged by document sections (a) through (e), by phase of construction/operation activities, and by page. We list only those IOPs or mitigating measures for which we had comments. Placement of mitigation into planning, construction, reclamation, and monitoring/maintenance/adaptive management was complicated by the fact that the PEIS sections divided the measures into only three categories (planning, construction, and operation). We present the material in a table format, and indicate which of the four project development phases pertain to that measure. If the document did not indicate a particular project development phase, we indicate which phases of development we believe are appropriate. The four development phases were also used for additional mitigation measures and IOPs that BIO-Logic recommends. Where appropriate, literature sources are noted in the tables.

IV. SUMMARY OF COMMENTS

The Draft Programmatic Environmental Impact Statement (PEIS) has been prepared by the Department of Energy (DOE), Department of the Interior (USDI), Bureau of Land Management (BLM), and other cooperating federal agencies as a response to Section 368 of the Energy Policy Act of 2005. The primary objectives of the process are to 1) designate energy corridors in 11 western states, 2) perform environmental analysis to designate the corridors, and 3) incorporate the energy corridors into the respective agency land use plans. The scale of the proposal and the nature of a programmatic environmental analysis make it difficult to develop mitigation measures that would apply to all types of future projects spread across many different vegetation communities and habitat types in the western U.S. The Environmental Impact Statement process will provide mitigation and Interagency Operating Procedures for use by a large number of BLM, U.S. Forest Service (USFS), National Park Service (NPS), Department of Defense (DOD), U.S. Fish and Wildlife Service (USFWS), and other federal agency field offices in the 11 western states. These IOPs and mitigating measures could ultimately result in a suite of best management practices for energy corridor development projects. In order to insure that project proponents and federal agencies have a solid foundation for planning future projects, many of the proposed IOPs and mitigation measures need edits or modification. We also believe that a number of additional IOPs or mitigation measures are needed.

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

While the proposed IOPs and mitigating measures in the PEIS are mostly well thought out, they are sometimes confusing, not located in the appropriate project phase, or are far too general even for a programmatic analysis. Although the PEIS is not intended to prejudge or approve any site-specific activities, the IOPs and mitigation in the PEIS should form the foundation for what actions are expected from the applicants as they prepare a proposal, and how agencies would work together to avoid delays and accelerate the process of filing a ROW application. We found considerable duplication between resource sections, and between resource sections and the IOPs. For example, the requirement for the use of blast mats to contain flying debris is contained in the IOPs (Page 2-32), the air resources construction section (Page 3-128), and also in the wildlife construction section (Page 3-231). Requirements for seeding, a revegetation plan, minimizing access roads, etc. are repeated in slightly different ways in many sections of the document. We suggest that the PEIS preparers edit this mitigation information to achieve consistency, make the information easier for the public to understand and comment, and for agency personnel to implement.

The PEIS can be greatly improved by adopting and using consistent terminology concerning the distinct phases of project development. For example, the PEIS sometimes uses different terms for the same or similar thing. In the wildlife section on page 3-228, the term "preconstruction" is used rather than the term "planning" used elsewhere in the document. In keeping with past practices, the PEIS places project development into planning, construction, and operation phases. In actuality, projects could be broken down into more phases as suggested by Western Resource Advocates. If the PEIS included additional project development phases, including long term monitoring/adaptive management, and decommissioning, it would foster improved communication, planning, and understanding between the public, project proponents, and federal agencies.

The PEIS often confuses mitigations measures between the different phases of project development. For example, there are many instances where IOPs or mitigating measures state that a plan should be developed, resource inventories completed, or something should be designed, yet the PEIS places them under the "construction" or "operation" phases. In nearly every case, activities such as developing plans, designing roads, and completing inventories more properly belong in the "planning" phase, and should occur prior to approval of the project, not during the construction, reclamation or maintenance/monitoring phases of the project. If these items are mentioned in phases other than planning, it should relate to implementation of the appropriate components within the Plan of Development and other plans required for development, mitigation, reclamation, or operation.

For those proposed IOPs or mitigating measures that we found to be confusing, we suggest editorial changes in the tables below to make them more understandable and useable. In some cases a single mitigating measure contained more than one area of emphasis, and often the beginning sentence did not adequately convey this. To reduce confusion for the reader, we have recommended splitting the IOP or mitigating measure, or we have recommended a change in the beginning sentence to better describe what is actually in the IOP or mitigating measure. Relatively few additional mitigating measures have been suggested.

As requested by Western Resource Advocates, we reviewed the PEIS with particular attention to IOPs and mitigation for sagebrush environments and sagebrush-dependent species. Due to the programmatic nature and scale of the PEIS, we did not provide extremely detailed sagebrush-specific recommendations because we believe that these issues can be best addressed during project specific analysis. However, we have provided suggested edits where

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

we believe that IOPs or mitigation could be strengthened by the inclusion of sagebrush or sagebrush dependent species as examples.

Based on our many years of experience working with federal agencies, we believe that during the project-specific environmental analysis and project approval, the federal agencies do their best to develop mitigation that they believe will adequately protect the public's resources. However, once a Record of Decision has been signed and a project constructed, follow-through on monitoring and long term enforcement of required mitigation is sometimes less than adequate. For example: we have seen wetland mitigation that was not adequately accomplished, vegetation reclamation that was not successfully completed, project induced erosion problems that have gone untreated, and weed problems that have not been addressed. In our experience this is primarily due to shortages of agency personnel and funding necessary to administer and implement these requirements for rights-of-ways on federal lands. Turnover of personnel in the federal agencies typically results in a loss of institutional knowledge and familiarity with individual projects. If project proponents were required to hire third party contractors to complete required monitoring for the agencies it may help to reduce this problem. We do not feel that it would resolve it, because agencies may still be short of personnel to supervise the third party contractors, and to act on all of the findings provided to them. It is especially critical that all project proponents understand agency expectations as early as possible in the application process, which makes the IOPs and mitigation developed from this PEIS process particularly important to long-term management of energy corridor development projects. We also hope that the IOPs and mitigation lead to the agencies developing best management practices for energy corridor development.

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

V. REVIEW OF IOPs AND MITIGATING MEASURES BY PEIS PAGE AND IOP NUMBER

In the following table, IOPs and Mitigation shown in the left column are exactly as they appear in the PEIS. Our comments appear in the right column.

PEIS IOP or Mitigation Measure	Review Comments
Page 2-27; 2.4.1 Planning IOPs	
5. All project applications must comply with applicable findings, mitigation, and/or standards contained in regional land management plans, such as the Northwest Forest Plan, when such regional plans have been incorporated into agency planning guidelines and requirements.	Local federal land management planning documents are not mentioned. Those are not incorporated into agency planning guidelines and requirements, but are no less pertinent to proposed projects. Adding local land use or forest management plans to this IOP should help with some specific concerns about sagebrush communities, and some other habitats that may have been locally identified in planning documents.
9. Applicants should identify important, sensitive, or unique habitats in the vicinity of proposed projects and, to the extent feasible, design the project to minimize or mitigate impacts to these habitats.	The IOP can be improved by adding a short list of government agencies to consult, and a short list of resource values that should be identified. Resources need to be identified as early as possible in the planning stage to allow adequate project design, impact analysis, and consultation with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) as required by the U.S. Endangered Species Act. Identification of potential habitats for federally listed or candidate species should occur prior to any surface survey work in order to avoid inadvertent impacts to species or habitat. Crucial habitats such as sage-grouse breeding complexes also need to be protected from such inadvertent impacts.
Page: 2-28; 2.4.1 Planning IOPs	
12. The vegetation management plan should address monitoring, education of personnel on weed identification, the manner in which weeds spread, and the methods for treating infestations. The use of certified weed-free mulching and the cleaning of vehicles to avoid the introduction of invasive weeds may be required.	In most areas of the west alien and noxious weeds are a serious concern, and it would be better to require that weed-free mulch WILL be used at all disturbance sites, and that cleaning of equipment WILL be required in all instances where noxious weeds are present or likely to occur at proposed disturbance sites.
Page: 2-31: Section 2.4.2 Construction IOPs	
3. All areas of disturbed soil should be restored by the applicant using weed-free native	The noninvasive vegetation in most cases should be a temporary measure to reduce weed establishment and help stabilize soils. The goal should be the establishment

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigation Measure	Review Comments
<p>grasses, forbs, and shrubs as directed by the agency. Restoration may not be unnecessarily delayed. If native species are not available, noninvasive vegetation recommended by agency specialists may be used.</p>	<p>of appropriate native species on all disturbed sites. It is not likely that the applicant would be unable to find <i>any</i> of the native seed appropriate to a given site. Applicants should also have adequate time between planning and construction to make certain that they have contracted for an adequate amount of native seed. We suggest that the nonnative species should only be used as a substitute for a small portion of the native seed mix. Nonnative seed should not dominate any seed mix used on the projects.</p>
<p>4. The applicant should not create excessive slopes during excavation. Areas of steep slopes, biological soil crusts, erodible soil, and stream channel crossings would often require site specific and specialized construction techniques by the applicant. These specialized construction techniques should be implemented by adequately trained and experienced employees.</p>	<p>This measure discusses two separate mitigation issues: avoiding the creation of excessively steep slopes by excavation, and special construction techniques required on existing steep slopes and other landforms of high environmental sensitivity. We suggest separating this measure into 2 measures.</p> <p>Other special construction situations such as wetlands, landslide areas, and avalanche zones should be added to this list.</p>
<p>Page: 2-32: Section 2.4.2 Construction IOPs</p>	
<p>6. The applicant should minimize stream crossings by access roads to the extent practicable. All structures crossing intermittent and perennial streams should be located and constructed so that they do not decrease channel stability, increase water velocity, or impede fish passage</p>	<p>The crossings and structures should be designed in the planning phase, although some variances would occur during construction. It makes a difference whether this refers to temporary or permanent access/structures. If it refers to permanent structures, then habitats such as those occupied by cutthroat trout may benefit from impediments to fish passage. It should be coordinated with state wildlife management agencies. This IOP should be worded so that it is compatible with management goals for fish habitat and populations.</p>
<p>8. Applicants should not alter existing drainage systems and should give particular care to sensitive areas such as erodible soils or steep slopes. Soil erosion should be reduced at culvert outlets by appropriate structures. Catch basins, roadway ditches, and culverts should be cleaned and maintained.</p>	<p>The phrase "give particular care" is unnecessarily vague. We suggest rewording such as "The applicant should not alter existing drainage systems, especially on sensitive areas such as erodible soils or steep slopes."</p> <p>This IOP addresses three related but different issues. For clarity and consistent application in the field, it should be broken up into three separate measures: drainage systems and steep slopes, culvert outlets, and cleaning of ditches, culverts, etc.</p> <p>Sediment cleaned from basins, culverts ditches etc.</p>

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigation Measure	Review Comments
	should be disposed of only in approved locations or using approved methods.
10. The applicant should backfill foundations and trenches with originally excavated material as much as possible. Excess excavation materials should be disposed of by the applicant only in approved areas.	In bedrock areas, fractured rock would most likely not be fully utilized as backfill onsite. If excavated rock were crushed on site it could be used as bedding material without having to haul gravel from offsite locations, and find disposal sites for unused material. Waste rock should also be utilized for riprap, culvert outlet armor, and other erosion control activity. See soils mitigation on page 3-53 regarding the backfilling of foundations and trenches.
16. The applicant should water land before and during surface clearing or excavation activities. Areas where blasting would occur should be covered with mats.	The purpose of this IOP is unclear, and is assumed to address fugitive dust from surface clearing activity and flying debris from blasting. If so, it should be stated as such. The project specific environmental impact statements reviewed by BIO-Logic, contained no references relative to watering land before surface clearing took place. There are other locations in the IOPs and mitigation measures that deal with dust abatement, and blasting safety. Those should be adequate for this level of analysis and planning. Project specific analysis would add more detail as appropriate. BIO-Logic feels that this IOP could be deleted in favor of using mitigation located elsewhere in the document. If this IOP is retained in this location, BIO-Logic recommends a minor rewrite.
Page: 2-33: 2.4.3 Project Operation IOPs	
2. Applicants should review existing information regarding plant and animal species and their habitats in the vicinity of the project area and identify potential impacts to the applicable agencies.	This appears to be an update of an action that should have occurred during planning. If so, it is an action that should be done at some specified interval during the life of the project. This kind of review rarely, if ever, occurs once a project has been authorized. Given the operation rights of the ROW holder, substantial changes in project operation may be difficult to require, unless something like the ESA is involved. This underscores the importance of the planning phase and firm mitigation measures for the post-construction phases of the individual projects.
3. Project staff should avoid harassment or disturbance of wildlife, especially during reproductive courtship, migratory, and nesting seasons.	The prevention of harassment and disturbance, especially relative to seasonal restrictions for reproduction, courtship, crucial wintering areas, etc., is part of the constraints or stipulations placed on the project during construction. These should also be stipulated in the ROW grant, and merely need to be complied with (Page 2-33, Item #1).

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigation Measure	Review Comments
Page: 2-34: 2.4.3 Project Operation IOPs	
<p>9. Dust abatement techniques (e.g., water spraying) may be used by the applicant on unpaved, unvegetated surfaces to minimize airborne dust. Water for dust abatement should be obtained and used by the applicant under the appropriate state water use permitting system.</p>	<p>As in the case of water depletions and the Colorado River system, Federal law may also apply to the use of water for dust abatement. Reference to this constraint should be added to this IOP. Add:state water use permitting system, and in compliance with ESA relative to Endangered or Threatened aquatic species and designated Critical Habitat.</p>
<p>Mitigating measures in this Section of the Document are not numbered. In this table they are presented by page in the order they originally appear in the PEIS.</p>	
Page: 3-53	
<p>-Topsoil removed during construction should be salvaged and reapplied during reclamation, and plant debris should be left on-site to serve as mulch. Disturbed soils should be reclaimed as quickly as possible, or protective covers should be applied.</p>	<p>Topsoil should not be intermixed with subsoil. If noxious weeds were present in the area, plant debris should not be used for mulch. In some instances noxious weeds may include woody materials.</p>
<p>-Design all ditches, canals, and pipes with at least an 80% chance of passing high flows and remaining stable during their life.</p>	<p>What flood frequency is associated with this 80% chance of passing high flows? 50 year, 100 year? The term "high flows" is not quantifiable.</p>
<p>-Install cross drains to disperse runoff into filter strips and minimize connected disturbed areas. Make cuts, fills, and road surfaces strongly resistant to erosion between each stream crossing and at least the nearest cross drain. Revegetate using certified local native plants, as feasible; avoid persistent or invasive exotic plants.</p>	<p>We recommend that the statement about revegetation be made into a separate mitigating measure for this section. It should also dovetail with the IOP dealing with this same issue. See page 2-31, Item #3 as modified.</p>
Page: 3-54	
<p>- Key sediment traps into the ground. Clean them out when 80% full. Remove sediment to a stable gentle upland site and</p>	<p>Disposing of sediment to undisturbed upland sites may not be the best choice for many areas. It would be best to use the approved disposal site language. In some cases it may be better to move the sediment to borrow locations</p>

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigation Measure	Review Comments
revegetate.	that were used by the project.
<ul style="list-style-type: none"> - Properly compact fills and keep woody debris out of them. Revegetate cuts and fills upon final shaping to restore ground cover using certified local native plants, as feasible; avoid persistent or invasive exotic plants. Provide sediment control until erosion control is permanent. 	The choice of plant material for reclamation should match the revised wording for Page 2-31, Item #3.
Page: 3-55	
<ul style="list-style-type: none"> - On soils with topsoil thinner than 1 inch, topsoil organic matter less than 2%, or effective rooting depth less than 15 inches, retain 90% or more of the fine (less than 3 inches in diameter) logging slash in the stand after each clearcut and seedtree harvest, and retain 50% or more of such slash in the stand after each shelterwood and group-selection harvest, considering existing and projected levels of fine slash. 	<p>Soils matching the thickness, rooting depth, and organic matter criteria are often found on other than forested sites. It would help if this mitigation was confined to forest, and woodland sites.</p> <p>The mitigation appears to be unnecessarily complex. As written it appears that the writer was more interested in forest management prescriptions than in soils mitigation. It may be better to state that all slash less than 3 inches in diameter in wooded sites will be placed back on the access roads, pipeline construction areas, temporary use sites, etc. This would help impede traffic, reduce erosion, and speed plant community recovery.</p> <p>An example of a similar mitigation can be found in #6 thru #9 from: Renewal of the Agreement and Grant of Right-of- Way for the Trans-Alaska Pipeline and Related Facilities between The United States of America and Amerada Hess Pipeline Corporation, BP Pipelines (Alaska) Inc., Exxon Mobil Pipeline Company, Phillips Transportation Alaska, Inc., Unocal Pipeline Company, and Williams Alaska Pipeline Company, L.L. C. http://www.jpo.doi.gov/TAPS/TAPS%20Renewal%20Grant.pdf</p>
Page 3-221	
Operators should conduct surveys to identify wetlands, springs, seeps, streams, 100-year floodplains, ponds, riparian habitat, and rare natural communities in the project vicinity and design the project to avoid (if possible), minimize, or mitigate	<p>The Draft PEIS places this mitigation in the construction phase. It should be in the planning phase, with implementation in the construction phase, and perhaps in the monitoring/adaptive management phase.</p> <p>Wetlands and biological soil crusts shouldn't be combined in the same mitigating measure. This should be split to make soil crusts a separate measure. BLM has</p>

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigation Measure	Review Comments
<p>potential impacts to these resources. Surveys submitted by operators need to be completed by qualified and trained ecologists, botanists, or biologists. Damage to biological soil crusts should be avoided or minimized. The design and siting of the facilities should follow appropriate guidance and requirements from the BLM and other resource agencies, as available and applicable. For example, a number of BLM state offices have policies that are protective of these resources.</p>	<p>an excellent publication on conservation of soil crusts which has conservation guidelines, and lists the most sensitive crust communities that should receive special attention: Biological Soil Crusts. 2001. Ecology and Management, U.S. Dept. of the Interior. Technical Reference 1730-2.</p> <p>Because this is a broad scale PEIS, the broad Technical Reference guidance would be an appropriate place to start. For each project the relevant state guidance can be utilized where it is more specific.</p>
<p>Where avoidance of impacts to wetlands or riparian areas is not possible, compensatory mitigation should be provided. Such mitigation should be developed and approved in coordination with federal, state, and local resource agencies.</p>	<p>This compensatory mitigation should be developed during the planning phase. Some modification may be required during the construction/mitigation phase, but the location and methods of compensatory mitigation that is appropriate should be known at the time the project is approved, well before construction begins. Include a statement that compensatory mitigation will be in accord with the National Wetlands Mitigation Action Plan: available online at: http://www.mitigationactionplan.gov/index.html</p>
<p>Page 3-222</p>	
<p>Cutting in wetlands or stream and wetland buffers should be conducted by hand or feller-bunchers to minimize disturbance of soil and remaining vegetation.</p>	<p>One of the objectives here should be to retain the root mass to maintain soil stability. For example, the Overland Pass Pipeline Final EIS included mitigation that allowed root masses to remain: "In riparian wetland areas, Overland Pass will cut the existing vegetation to ground level, leaving existing root systems intact. Cut vegetation will be removed from these areas for disposal. Grading activities will be limited to the area directly over the pipeline trench. Except if standing water is present, up to 1 foot of topsoil will be stripped and separated from the trench spoil. Overland Pass will limit the pulling of stumps to the trench area except where safety considerations necessitate stump removal. Excavated stumps will be removed from the wetland."</p>
<p>The placement of ROW structures should be excluded from streams, floodplains, playas, wetlands, riparian areas, and lakeshores.</p>	<p>This measure should address an appropriate setback requirement On page 3-221 it is 500 feet for construction activities. One hundred feet is probably adequate in most cases. This decision should be made during the planning/design phase for the projects.</p>

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigation Measure	Review Comments
Page 3-223	
<p>Operators must develop a plan for control of noxious weeds and invasive plants, which could occur as a result of new surface disturbance activities at the site. The plan should address monitoring, weed identification, the manner in which weeds spread, and methods for treating infestations. The use of certified weed-free mulching should be required.</p>	<p>The draft PEIS lists this as a construction-related activity. It is a planning activity, which has been dealt with in the planning IOPs. We suggest that it be eliminated from this location.</p>
<p>Directional drilling for pipeline installation should be used for wetland, stream, water body, and riparian crossings. Stream crossings by buried pipelines using directional drilling should not intersect alluvial aquifers. Trench crossings should be conducted only during no-flow periods on dry substrates.</p>	<p>It is not likely that trench crossings would occur only on dry substrates. This measure should also address the situation if the channel has flow, including methods to be used and the timing of the crossing based on flow characteristics.</p>
Page 3-224	
<p>A habitat restoration and management plan should be developed that identifies vegetation, soil stabilization, and erosion reduction measures and requires that restoration activities be implemented as soon as possible following facility construction activities. The plan must be approved by the applicable resource management agency.</p>	<p>This is a planning action, not a mitigation/restoration action. It should be deleted from this section. There are similar IOPs and mitigating measures located in the appropriate location.</p>
<p>Disturbed soil should be revegetated immediately following completion of the disturbance. Preparation should include topsoil respreading and actions for seedbed preparation, such as ripping or scarifying on contour.</p>	<p>Disturbed areas should not necessarily be revegetated immediately following disturbance. The timing of seeding should be when it is most likely to succeed, which could be later than when construction disturbance is complete. This measure should state that disturbed areas will be revegetated during the time of year when revegetation is most likely to succeed for the site, but should never exceed one year after disturbance.</p>

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigation Measure	Review Comments
Page: 3-226	
Operators should develop a long-term plan for control of noxious weeds and invasive plants, which could occur as a result of new surface disturbance activities at the site. The plan should address monitoring, weed identification, the manner in which weeds spread, and methods for treating infestations. The use of certified weed-free mulching should be required.	This plan should have been written at the planning stage for the specific project. There should be no need to repeat it here. If anything might be appropriate in this location, it may be a statement that the original weed management plan would continue to be implemented during the operating phase as rewritten in Section VI.
Page: 3-227	
When possible, use directional drilling to place pipelines at major river crossings to reduce surface disturbance and to reduce the need for activities in riparian habitat. Ensure that directional drilling does not intercept or degrade alluvial aquifers.	The primary purpose for directional drilling would be to reduce aquatic habitat impacts, and secondarily to reduce impacts to riparian habitats. The reference to riparian habitats in the first sentence should be replaced with the term "aquatic".
Any pipelines that cross rivers or streams containing sensitive aquatic species should have block or check valves on both sides of the river to minimize the amount of product that could be released into waterways due to leaks. Pipelines should be constructed of double-walled pipe at river crossings.	The need for block or check valves depends a great deal on what is in the pipeline. Natural gas and NGL dissipate rapidly, but oil would not. Downstream movement could result in substantial impacts to aquatic biota. It is fair to say that all aquatic biota is sensitive to oil spills. The term sensitive species as it relates to BLM and USFS lands has a specific legal meaning, which would confine this mitigation to only those streams with agency designated sensitive species. Some approved pipeline projects used endangered fish species as justification for block valves and some use stream width as a determining factor. While there is no perfect solution, simply saying sensitive aquatic species is not adequate.
Spill management plans should be developed to address potential fuel spills, and any spills should be immediately addressed by following the appropriate spill management plan.	This should be an IOP for the planning stage. See suggested new IOP in Section VII.
Page: 3-229	
Construction activities should be sited as far as possible (up to 0.5 mile from active and inactive	This measure should be split into one for raptors and one for sage-grouse.

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigation Measure	Review Comments
<p>raptor nests and sage-grouse leks). Buffers may range up to 1 mile (e.g., for the bald eagle). Attempts should also be made to conceal work locations and access roads from the nest using topography. Timing restrictions are also important because not all raptor pairs use the same nest every year within their nesting territory.</p>	<p>The buffer zone from active sage-grouse leks should extend up to 0.6 miles. Nesting areas require additional buffers and timing restrictions; depending on location, sage-grouse nesting areas should be considered to extend from 2.5 to 4 miles from active leks. Buffer zones and timing restrictions will depend on statewide sage-grouse plans for all states involved in a specific project.</p> <p>Timing restrictions if mentioned in this measure must be for raptors <i>and</i> sage-grouse. Timing will be greatly influenced by the location of the proposed project, and must be adjusted accordingly. Examples of state and regional conservations plans are:</p> <p>Gunnison Sage-grouse Rangewide Steering Committee. 2005. Gunnison sage-grouse rangewide conservation plan. Colorado Division of Wildlife, Denver, Colorado, USA.</p> <p>Idaho Sage-grouse Advisory Committee. 2006. Conservation Plan for the Greater Sage-grouse in Idaho.</p>
<p>Transmission line support structures and other facility structures should be designed to discourage their use by raptors for perching or nesting, particularly within 2 miles of sage grouse habitat.</p>	<p>We do not believe there is good rationale for this type of blanket constraint on raptor use of transmission line structures. We did not find this type of blanket constraint while reviewing project specific environmental documents. In some localities the structures can enhance habitat for raptors without causing unacceptable impacts to either prey species or transmission line reliability. From a biological standpoint, it is appropriate to discourage raptor use of transmission line structures if sage-grouse or other priority species would be adversely impacted.</p>
<p>Page: 3-230</p>	
<p>Structures should be located to avoid sensitive or crucial habitats. Allow conductors to span the habitats clearly within limits of standard structure design.</p>	<p>This measure is listed under construction but it should be a planning function. Delete from this location.</p>
<p>The transmission lines should be designed and constructed in conformance with the <i>Avian Protection Plan Guidelines</i> (APLIC and USFWS 2005) to reduce the operational and avian risks that result from avian interactions with electric utility facilities.</p>	<p>This mitigation is listed under construction but it should be listed under planning (Page 3-228). While it could also be listed under construction, it is primarily a planning function that construction techniques, mitigation, and operational aspects of the projects would follow.</p> <p>This should be covered by the general Avian Power Line Interaction Committee (APLIC) guideline mitigation on</p>

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigation Measure	Review Comments
	page 3-228, and deleted from this location.
<p>Outside of riparian areas, if construction must be conducted during the bird breeding season, the construction area should first be surveyed for nests. If a migratory bird nest were to be found with eggs or nestlings present, the area should be avoided, to the extent practicable, until the birds have fledged. E.O. 13186 defines the responsibilities of federal agencies to protect migratory birds. The Migratory Bird Treaty Act of 1918 and subsequent amendments (16 USC 703-711) state that it is unlawful to take, kill, or possess migratory birds. A list of these protected birds is in 50 CFR 10.13. In compliance with this E.O., DOE finalized a MOU with the USFWS on August 3, 2006, that guides future agency regulatory actions and policy decisions.</p>	<p>Because this mitigation is a legal requirement for all the federal agencies that may be involved, it should probably be an IOP. It's doubtful that the discussion of the provision of the MBTA, the CFR citations, and 2006 MOU are needed in the IOP/mitigation. Those should be discussed elsewhere in the PEIS to provide rationale for this IOP.</p> <p>We recommend moving this to the IOP section, minus the full suite of legal citations. See Section VI of this document for a recommended IOP.</p>
Page: 3-231	
<p>Wildlife should be removed from open trenches during construction. Earthen ramps should be used in open trenches to allow wildlife an escape mechanism.</p>	<p>Regular inspections of the pipeline trench, daily and before backfilling, should be specified in this measure.</p>
<p>The use of guy wires should be avoided.</p>	<p>This mitigation measure would be appropriate in some areas such as sage- grouse habitat, but is not necessary as a general provision. From an engineering standpoint it may not always be feasible. Wildlife issues relating to specific projects and habitats should dictate what constraints may be placed on the use of guy wires. If retained, engineering requirements will make this measure a planning action, not a construction action.</p>
<p>All refueling should occur in a designated fueling area that</p>	<p>It is understandable that a biologist would be concerned with these issues, but it seems to us as</p>

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigation Measure	Review Comments
<p>includes a temporary berm to limit the spread of any spill.</p> <ul style="list-style-type: none"> • Drip pans should be used during refueling to contain accidental releases. • Drip pans should be used under fuel pump and valve mechanisms of any bulk fueling vehicles parked at the construction site. • Spills should be immediately addressed per the appropriate spill management plan, and soil cleanup and soil removal initiated, if needed. 	<p>though hazardous materials issues, like those associated with fuel, should be handled in the IOPs. Another mitigating measure on page 3-227 should be incorporated into this IOP. See suggested IOPs in Section VII of this document.</p>
<p>Page: 3-232</p>	
<p>Where transmission lines would cross areas where bird collisions are likely (e.g., river crossings, waterfowl staging areas), consideration should be given to marking the shield wires with devices that have been scientifically tested and found to significantly reduce collision potential.</p>	<p>This is not included in the mitigation for planning. A more general version is shown under construction. Collision issues should be covered under the APLIC guidelines, primarily in the planning phase.</p> <p>Marking of shield wires may not be the only or best method to reduce collisions at specific crossings. A third party contractor should be required to provide the applicant with the best options for each crossing location.</p> <p>This should be covered by the general APLIC guideline mitigation on page 3-228, and deleted from this location.</p>
<p>Page: 3-233</p>	
<p>Surveys for plant and animal species that are listed or proposed for listing as threatened or endangered and their habitats should be conducted in areas proposed for development where these species could potentially occur, following accepted protocols and in consultation with the USFWS or NMFS, as appropriate. Particular care should be taken to avoid disturbing listed species during surveys in any designated critical habitat. If any threatened or endangered species are found, the USFWS should be consulted as required by Section 7 of the ESA, and an appropriate course</p>	<p>Many of the specifics of this mitigation should be used to enhance IOP #9, page 2-27. A suggested enhanced version is shown in Section VI of this document, IOP #9, page 2-27</p>

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigation Measure	Review Comments
of action should be determined to avoid or minimize impacts.	
Page: 3-235	
<p>Activities should be managed to ensure maintenance or enhancement of riparian and wetland habitat.</p> <ul style="list-style-type: none"> • Loss or disturbance of riparian and wetland habitats should be avoided. • For crossings of rivers and major streams, directional drilling should be used to reduce surface disturbance and eliminate activities in riparian habitat. Such directional drilling must not intercept or degrade alluvial aquifers. 	<p>These measures are stated in Mitigation Measures for Vegetation and Wetlands, and Mitigation Measures for Aquatic Biota. Because they are not couched in Threatened and Endangered (T&E) species terms at this location, the previous locations should be adequate. We recommend that this measure be deleted from this location in the Draft PEIS.</p>

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

VI. SUGGESTED IMPROVEMENTS TO IOPs AND MITIGATION MEASURES

Where the document places an IOP or mitigation measure in one of the construction categories such as planning, construction, reclamation, etc. and we believe that it should remain at that location, it is indicated by "YES" in the appropriate column. If we believe that the IOP or mitigation has been placed in the incorrect location, it is indicated by "REMOVE". If we believe that specific IOPs or mitigation should be adopted for, or added to, other project development phases, this is indicated by "ADD" in the appropriate column. Where we believe that it is not appropriate or necessary to add an IOP or mitigation to additional columns, it will be noted by "NA".

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>Page 2-27; 2.4.1 Planning IOPs</p> <p>5. All project applications must comply with applicable findings, mitigation, and/or standards contained in regional land management plans, such as the Northwest Forest Plan, when such regional plans have been incorporated into agency planning guidelines and requirements.</p>	<p>5. All project applications must comply with applicable findings, mitigation, and/or standards contained in regional land management plans, such as the Northwest Forest Plan, when such regional plans have been incorporated into agency planning guidelines and requirements. Applications must also comply with planning decisions contained in local BLM Resource Management Plans or USFS Forest Management Plans.</p>	<p>YES</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>9. Applicants should identify important, sensitive, or unique habitats in the vicinity of proposed projects and, to the extent feasible, design the project to minimize or mitigate impacts to these habitats.</p>	<p>9. Applicant should cooperate with USFWS, NIMFS, state game management agencies, natural heritage programs, land management agencies, and local governments to identify important, sensitive, unique habitats within the proposed project area. Examples of such habitats include designated Critical Habitat, occupied and potential T&E species habitat, seasonally crucial habitats, agency sensitive species habitat/locations, State T&E species habitats and regionally important habitats such as sagebrush communities. Project design should avoid, minimize, or mitigate impacts to these habitats and species. Identifying seasonally crucial, and T&E habitats should occur prior to any surface survey work in order to avoid inadvertent impacts to listed species or their habitat.</p>	<p>YES</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>

Page: 2-28; 2.4.1 Planning IOPs

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>12. The vegetation management plan should address monitoring, education of personnel on weed identification, the manner in which weeds spread, and the methods for treating infestations. The use of certified weed-free mulching and the cleaning of vehicles to avoid the introduction of invasive weeds may be required.</p>	<p>12. The vegetation management plan should address monitoring, education of personnel on weed identification, the manner in which weeds spread, the methods used for treating infestations, and monitoring requirements. In order to prevent the introduction of noxious and invasive alien weeds into new areas, the applicant will be required to use certified weed-free mulch. Cleaning of vehicles will be standard practice in all project related surface disturbances where noxious weeds are present.</p>	<p>YES</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>
<p>13. To restore disturbed habitats, the applicant should prepare a habitat restoration plan. The plan should expedite the recovery to natural habitats and require restoration to occur as soon as practicable after completion of construction, minimizing the habitat converted at any one time.</p>	<p>13. To restore disturbed habitats, the applicant should prepare a habitat restoration plan. The plan should expedite the recovery of appropriate native plant communities through the use of weed-free native plant seed or plant materials. This would minimize the length of time habitats are taken out of production/usability.</p>	<p>YES</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>

Page: 2-31: Section 2.4.2 Construction IOPs

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt
<p>3. All areas of disturbed soil should be restored by the applicant using weed-free native grasses, forbs, and shrubs as directed by the agency. Restoration may not be unnecessarily delayed. If native species are not available, noninvasive vegetation recommended by agency specialists may be used.</p>	<p>3. Through the use of weed-free native grasses, forbs and shrubs, all areas of disturbed soil should be restored to native plant communities that are appropriate to the site. Restoration may not be unnecessarily delayed. If native seed is not available for some species within a seed mix, noninvasive, non-native species, approved by agency specialists, may be substituted for a portion of the seed mix. In no case should nonnative species dominate any seed mix utilized on the project.</p>	<p>NA</p>	<p>YES</p>	<p>ADD</p>	<p>NA</p>
<p>4. The applicant should not create excessive slopes during excavation. Areas of steep slopes, biological soil crusts, erodible soil, and stream channel crossings would often require site specific and specialized construction techniques by the applicant. These specialized construction techniques should be implemented by adequately trained and experienced employees.</p>	<p>4.(1) Site specific and specialized construction techniques will be required for steep slopes, erodible soils, stream channel crossings, biological soil crusts, wetlands, landslide areas, avalanche zones, etc. These specialized construction techniques should be implemented by adequately trained and experienced third party contractors.</p> <p>4.(2) The applicant should not create excessive slopes during excavation.</p>	<p>NA</p>	<p>YES</p>	<p>NA</p>	<p>NA</p>

Page: 2-32: Section 2.4.2 Construction IOPs

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>6. The applicant should minimize stream crossings by access roads to the extent practicable. All structures crossing intermittent and perennial streams should be located and constructed so that they do not decrease channel stability, increase water velocity, or impede fish passage</p>	<p>6. The applicant should minimize stream crossings by access roads to the extent practicable. All structures crossing intermittent and perennial streams should not decrease channel stability, increase water velocity, impede fish passage, or conflict with existing state or federal aquatic habitat and aquatic species management goals.</p>	ADD	YES	NA	NA
<p>8. Applicants should not alter existing drainage systems and should give particular care to sensitive areas such as erodible soils or steep slopes. Soil erosion should be reduced at culvert outlets by appropriate structures. Catch basins, roadway ditches, and culverts should be cleaned and maintained.</p>	<p>8. (1) The applicant should not alter existing drainage systems, especially on erodible soils or steep slopes. 8. (2) Soil erosion should be reduced at culvert outlets by appropriate structures. 8. (3) Catch basins, roadway ditches, and culverts should be cleaned and maintained. Cleaning and maintenance applies to new structures, as well as to existing structures impacted by project activities. Sediment cleaned from catch basins, culverts, ditches etc. would be disposed of only in approved locations or using approved methods.</p>	NA	YES	ADD	ADD

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/ adaptive mgt.
<p>16. The applicant should water land before and during surface clearing or excavation activities. Areas where blasting would occur should be covered with mats.</p>	<p>16. In order to reduce fugitive dust, the applicant should water the soil surface before and during surface clearing activities, and mats would be used to cover blasting activities.</p>	NA	YES	NA	NA
<p>Page: 2-33: 2.4.3 Project Operation IOPs</p>					
<p>2. Applicants should review existing information regarding plant and animal species and their habitats in the vicinity of the project area and identify potential impacts to the applicable agencies.</p>	<p>2. Every ten years the applicant should review existing plant and animal species data in the vicinity of the project area in order to determine if there are positive or negative changes to the conflicts or impacts evaluated in the original environmental analysis. Based on the new information, the applicant will consult with the appropriate agency to make reasonable modifications to operating activities.</p>	NA	NA	YES	YES
<p>3. Project staff should avoid harassment or disturbance of wildlife, especially during reproductive courtship, migratory, and nesting seasons.</p>	<p>3. During scheduled maintenance activities, project staff should avoid harassment or disturbance of wildlife, especially during crucial periods as stipulated in the ROW grant. Examples include: Sage grouse strutting grounds and nesting areas during the breeding season, crucial big game winter ranges, raptor nesting buffer zones, and elk calving areas.</p>	NA	NA	YES	YES

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>Page: 2-34: 2.4.3 Project Operation IOPs</p> <p>9. Dust abatement techniques (e.g., water spraying) may be used by the applicant on unpaved, unvegetated surfaces to minimize airborne dust. Water for dust abatement should be obtained and used by the applicant under the appropriate state water use permitting system.</p>	<p>9. Dust abatement techniques (e.g., water spraying) may be used by the applicant on unpaved, unvegetated surfaces to minimize airborne dust. Water for dust abatement should be obtained and used by the applicant under the appropriate state water use permitting system, and in compliance with federal law, such as the Endangered Species Act.</p>	NA	NA	YES	YES
<p>Mitigating measures in this Section of the PDEIS are not numbered. The following are presented in order by page.</p>					
<p>Page: 3-53</p> <p>-Topsoil removed during construction should be salvaged and reapplied during reclamation, and plant debris should be left on-site to serve as mulch. Disturbed soils should be reclaimed as quickly as possible, or protective covers should be applied.</p>	<p>Topsoil removed during construction should be salvaged, stored separately from subsoil, and reapplied during reclamation. Topsoil should never be intermixed with subsoil. Plant debris from sites with no noxious weeds should be left on site to serve as mulch. Disturbed soils should be reclaimed as quickly as possible, or protective covers should be applied.</p>	NA	YES	NA	NA

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>-Design all ditches, canals, and pipes with at least an 80% chance of passing high flows and remaining stable during their life.</p> <p>-Install cross drains to disperse runoff into filter strips and minimize connected disturbed areas. Make cuts, fills, and road surfaces strongly resistant to erosion between each stream crossing and at least the nearest cross drain. Revegetate using certified local native plants, as feasible; avoid persistent or invasive exotic plants.</p>	<p>Design all ditches, canals, and pipes with at least an 80% chance of passing high flows during a 50 year flood event, and remaining stable during the life of the facility.</p> <p>- Install cross drains to disperse runoff into filter strips and minimize connected disturbed areas. Make cuts, fills, and road surfaces strongly resistant to erosion between each stream crossing and at least the nearest cross drain.</p> <p>- Through the use of weed-free native grasses, forbs and shrubs, all areas of disturbed soil should be restored to native plant communities that are appropriate to the site. If native seed is not available for some species, noninvasive, non-native species, approved by agency specialists, may be substituted for a portion of the seed mix.</p>	YES	NA	NA	NA

Page: 3-54

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>- Key sediment traps into the ground. Clean them out when 80% full. Remove sediment to a stable gentle upland site and revegetate.</p> <p>- Properly compact fills and keep woody debris out of them. Revegetate cuts and fills upon final shaping to restore ground cover using certified local native plants, as feasible; avoid persistent or invasive exotic plants. Provide sediment control until erosion control is permanent.</p>	<p>- Key sediment traps into the ground. Clean them out when 80% full. Remove sediment to approved disposal locations.</p> <p>- Properly compact fills and keep woody debris out of them. Revegetate cuts and fills upon final shaping to restore ground cover using certified weed-free local native plants, as feasible; if native seed is not Available for some species, noninvasive, non-native species, approved by agency specialists, may be substituted for a portion of the seed mix. Provide sediment control until erosion control measures are considered permanent.</p>		YES	YES	YES

Page: 3-55

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>— On soils with topsoil thinner than 1 inch, topsoil organic matter less than 2%, or effective rooting depth less than 15 inches, retain 90% or more of the fine (less than 3 inches in diameter) logging slash in the stand after each clearcut and seedtree harvest, and retain 50% or more of such slash in the stand after each shelterwood and group-selection harvest, considering existing and projected levels of fine slash.</p>	<p>All slash shall be disposed of on construction pads or Access Roads unless otherwise directed in writing by the Authorized Officer. This will discourage vehicle access, help stabilize soils and speed recovery.</p>	<p>YES</p>	<p>YES</p>	<p>YES</p>	<p>YES</p>

Page: 3-221

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>Operators should conduct surveys to identify wetlands, springs, seeps, streams, 100-year floodplains, ponds, riparian habitat, and rare natural communities in the project vicinity and design the project to avoid (if possible), minimize, or mitigate potential impacts to these resources. Surveys submitted by operators need to be completed by qualified and trained ecologists, botanists, or biologists. Damage to biological soil crusts should be avoided or minimized. The design and siting of the facilities should follow appropriate guidance and requirements from the BLM and other resource agencies, as available and applicable. For example, a number of BLM state offices have policies that are protective of these resources.</p>	<p>- Operators should conduct surveys to identify wetlands, springs, seeps, streams, 100-year floodplains, ponds, riparian habitat, and rare natural communities in the project vicinity and design the project to avoid (if possible), minimize, or mitigate potential impacts to these resources. Surveys submitted by operators need to be completed by qualified and trained ecologists, botanists, or biologists.</p> <p>- Damage to biological soil crusts should be avoided or minimized, especially on sites with well developed crustal communities, or in the unique crustal communities of N. America: gypsum, glades, thermal springs, playas, arctic sod, and alpine tundra. (Biological Soil Crusts. 2001. Ecology and Management, U.S. Dept. of the Interior. Technical Reference 1730-2.)</p>	<p>ADD</p>	<p>YES</p>	<p>NA</p>	<p>NA</p>

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West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>Where avoidance of impacts to wetlands or riparian areas is not possible, compensatory mitigation should be developed. Such mitigation should be developed and approved in coordination with federal, state, and local resource agencies.</p>	<p>Where avoidance of impacts to wetlands or riparian areas is not possible, compensatory mitigation should be provided. Such mitigation should be developed and approved in coordination with federal, state, and local resource agencies in accordance with the National Wetlands Mitigation Action Plan, 2002.</p>	ADD	REMOVE	NA	NA
<p>Page 3-222 Cutting in wetlands or stream and wetland buffers should be conducted by hand or feller-bunchers to minimize disturbance of soil and remaining vegetation.</p>	<p>In riparian wetland areas, feller-bunchers or hand cutting will be used to cut the existing vegetation to ground level, leaving existing root systems intact. Cut vegetation will be removed from these areas for disposal. Grading activities will be limited to the area directly over the pipeline trench. Except if standing water is present, up to 1 foot of topsoil will be stripped and separated from the trench spoil. Limit the pulling of stumps to the trench area except where safety considerations necessitate stump removal. Excavated stumps will be removed from the wetland.</p>	NA	YES	NA	NA

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>The placement of ROW structures should be excluded from streams, floodplains, playas, wetlands, riparian areas, and lakeshores</p>	<p>ROW structures should be placed at least 100 feet from streams, floodplains, playas, wetlands, riparian areas, lakeshores, and other wetland/riparian areas.</p>				
<p>Page 3-223 Operators must develop a plan for control of noxious weeds and invasive plants, which could occur as a result of new surface disturbance activities at the site. The plan should address monitoring, weed identification, the manner in which weeds spread, and methods for treating infestations. The use of certified weed-free mulching should be required.</p>	<p>(Remove this measure from this location, it is a planning action. IOPs 11 and 12 already contain this requirement.)</p>	ADD	REMOVE	NA	NA
<p>Directional drilling for pipeline installation should be used for wetland, stream, water body, and riparian crossings. Stream crossings by buried pipelines using directional drilling should not intersect alluvial aquifers. Trench crossings should be conducted only during no-flow periods on dry substrates.</p>	<p>Wherever possible, directional drilling for pipeline installation should be used for wetland, stream, water body, and riparian crossings. Stream crossings by buried pipelines using directional drilling should not intersect alluvial aquifers. Trench crossings should be conducted only during no-flow periods, or during base flow periods using the using the flume, or dam and pump methods.</p>	NA	YES	NA	NA

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>Page 3-224</p> <p>A habitat restoration and management plan should be developed that identifies vegetation, soil stabilization, and erosion reduction measures and requires that restoration activities be implemented as soon as possible following facility construction activities. The plan must be approved by the applicable resource management agency.</p> <p>Disturbed soil should be revegetated immediately following completion of the disturbance. Preparation should include topsoil respreading and actions for seedbed preparation, such as ripping or scarifying on contour.</p>	<p>A habitat restoration and management plan should be developed that identifies vegetation, soil stabilization, and erosion reduction measures and requires that restoration activities be implemented as soon as possible following facility construction activities. The plan must be approved by the applicable resource management agency.</p> <p>Disturbed areas would be revegetated at the first opportunity during the time of year appropriate for the site, but should never exceed one year after disturbance. Preparation should include topsoil spreading and actions for seedbed preparation, such as ripping or scarifying on the contour.</p>	ADD	NA	REMOVE	NA
<p>Page: 3-226</p>		NA	NA	YES	ADD

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
Where transmission lines would cross areas where bird collisions are likely (e.g., river crossings, waterfowl staging areas), consideration should be given to marking the shield wires with devices that have been scientifically tested and found to significantly reduce collision potential.	The applicant, through the use of a third party contractor, should identify locations where bird collisions with transmission lines are likely. Transmission line design should utilize the best available methods to reduce or eliminate the potential for collision mortality. Design components should be inspected and maintained for the life of the project.	ADD	NA	YES	NA
Page: 3-227 When possible, use directional drilling to place pipelines at major river crossings to reduce surface disturbance and to reduce the need for activities in riparian habitat. Ensure that directional drilling does not intercept or degrade alluvial aquifers.	To reduce the need for disturbance activities in aquatic habitats, use directional drilling to install pipelines at major river crossings. Ensure that directional drilling does not intercept or degrade alluvial aquifers.	ADD	ADD	NA	NA

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>Any pipelines that cross rivers or streams containing sensitive aquatic species should have block or check valves on both sides of the river to minimize the amount of product that could be released into waterways due to leaks. Pipelines should be constructed of double-walled pipe at river crossings.</p>	<p>Block or check valves may be installed on both sides of streams with high priority aquatic habitats or species such as: designated Critical Habitat, Endangered species, agency sensitive species, etc. Other factors to be considered include stream size, and proximity to other high priority aquatic habitats. Pipelines should be constructed of double-walled pipe at river and stream crossings.</p>	ADD	ADD	NA	NA

Page: 3-229

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>Raptor nest and roost surveys should be conducted each year prior to construction and should implement mitigation (avoidance, screening, and timing of construction) to prevent the project from disrupting any active nests or roosts (generally, nests and roosts are considered active if they are currently in use or have been occupied within the last 2 to 3 years; whereas, inactive raptor nests are those that have been monitored in at least 6 of the last 10 years and were found to be unoccupied each time they were monitored), as per federal or state recommended buffer zones and seasonal restrictions. This would include restrictions on the use of explosives and aircraft.</p>	<p>Baseline raptor nest surveys should be conducted on the entire project area for at least one year during the planning phase of the project. Follow-up surveys should be conducted each year prior to start of construction. During construction, and through the life of the project, raptor mitigation should be implemented to prevent disruption of active nests, or roosts (generally, nests and roosts are considered active if they are currently in use or have been occupied within the last 2 to 3 years; whereas, inactive raptor nests are those that have been monitored in at least 6 of the last 10 years and were found to be unoccupied each time they were monitored), as per federal or state recommended buffer zones and seasonal restrictions. This would include restrictions on the use of explosives and aircraft.</p>	ADD	ADD	NA	ADD

BIO-Logic, Inc.
February 12, 2008

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>Construction activities should be sited as far as possible (up to 0.5 mile from active and inactive raptor nests and sage grouse leks). Buffers may range up to 1 mile (e.g., for the bald eagle). Attempts should also be made to conceal work locations and access roads from the nest using topography. Timing restrictions are also important because not all raptor pairs use the same nest every year within their nesting territory.</p>	<p>Construction activities in the vicinity of raptor nests will be excluded from a buffer zone up to 0.5 miles (up to 1.0 miles for bald eagles), and seasonal timing constraints will apply. Buffer zones and timing limitations, which also apply to scheduled maintenance activity, will be developed in concert with state game management agencies and federal land management agencies. Attempts should also be made to conceal work locations and access roads from raptor nests using topography.</p> <p>In order to protect the sage-grouse breeding complex, construction and scheduled maintenance activities will be excluded within a buffer zone up to 0.6 miles from sage-grouse leks during the strutting season, and may be excluded in sage grouse nesting habitat up to 4 miles from active leks. Sage-grouse buffer zones and timing constraints shall be based on statewide sage-grouse plans for states to be impacted by a specific project.</p>	ADD	ADD	ADD	ADD

West-Wide Energy Transmission Corridor Draft Programmatic EIS: Review of Interagency Operating Procedures and Mitigation

PEIS IOP or Mitigating Measure	Edited IOP or Mitigating Measure	Planning	Construction	Initial, Long Term Mitigation	Monitoring/Maintenance/adaptive mgt.
<p>Transmission line support structures and other facility structures should be designed to discourage their use by raptors for perching or nesting, particularly within 2 miles of sage grouse habitat.</p>	<p>In situations where priority wildlife species, such as sage grouse, would be negatively impacted by raptor use of transmission line structures, those structures should be designed to discourage raptor use. Raptor perch deterrents should not be used routinely.</p>				

Page: 3-230