DES 05-23

U.S. Department of the Interior
Bureau of Land Management
Twin Falls District
Burley Field Office
Cassia County, Idaho

May 2005

DRAFT ENVIRONMENTAL IMPACT STATEMENT

FOR THE PROPOSED COTTEREL WIND POWER PROJECT

AND DRAFT RESOURCE MANAGEMENT PLAN AMENDMENT

DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED COTTEREL WIND POWER PROJECT AND DRAFT RESOURCE MANAGEMENT PLAN AMENDMENT

Prepared for

U.S. Department of the Interior
Bureau of Land Management
Twin Falls District
Burley Field Office
Cassia County
15 East, 200 South
Burley, Idaho 83318

Serial Number IDI-33676

DES 05-23

On behalf of

Windland, Inc
Suite 804A
10480 Garverdale Court
Boise, ID 83704

and

Shell WindEnergy, Inc.
Suite 1042
910 Louisiana
Houston, TX 77002

May 2005

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Burley Field Office
15 East 200 South
Burley, Idaho 83318
(208) 677-6641
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Reply to: 2800, IDI-33676 (ID220) June, 2005

Dear Interested Reader:

Enclosed for your review and comment is the *Draft Environmental Impact Statement for the Proposed Cotterel Wind Power Project and Draft Resource Management Plan Amendment* (DEIS). The Applicant, Windland, Inc., in partnership with Shell Wind Energy, Inc. (a subsidiary of the Royal Dutch/Shell Group), has submitted a right-of-way application to the Bureau of Land Management, Twin Falls District, Burley Field Office (BLM), requesting to build a 190-240 megawatt, wind-powered electrical generation facility on the ridgeline of Cotterel Mountain, roughly 15 miles east of the city of Burley, and situated between the towns of Albion and Malta, located in Cassia County, Idaho.

A Draft Resource Management Plan Amendment is included in this DEIS. The proposed project and action alternatives are not in conformance with the BLM *Cassia Resource Management Plan, 1985* (Cassia RMP), which does not allow the granting of rights-of-way in the proposed project area. Therefore, the Cassia RMP must be amended if an action alternative is selected.

Based on the analysis of the proposed action and alternatives to the proposed action, the reader is being informed that the **agency preferred alternative at this time is Alternative C, Modified Proposed Action.** A complete description of Alternative C and all other alternatives can be found in this DEIS.

This DEIS was prepared in accordance with the *National Environmental Policy Act, 1969* (NEPA) and with applicable laws and regulations passed subsequent to NEPA. It is intended to provide the public and agency decision makers with a complete and objective evaluation of impacts, beneficial and adverse, resulting from the Proposed Action and all reasonable alternatives.

To ensure a complete analysis, we are asking you to help by reviewing this DEIS and providing comments. The comment period for this document will close 90 days following the publication of the Notice of Availability by the Environmental Protection Agency in the Federal Register. Three public meetings will be scheduled, one in Boise, one in Burley, and one in Albion, Idaho during the comment period to discuss the findings disclosed in this DEIS. The dates, times and exact location of the public meetings will be announced through one or more sources (project newsletter, local news papers, or via website at www.id.blm.gov/planning/cotterel). A copy of the DEIS will be posted to this website.

Please send your written comments to: via mail

Scott Barker, Project Manager
Bureau of Land Management
15 East, 200 South
Burley, Idaho 83318

via fax: (208) 677-6699

via email: id_cotterelwind@blm.gov
hyperlink: id_cotterelwind@blm.gov

The BLM will review and analyze the comments received and will then publish a Final EIS/Proposed Plan Amendment and Record of Decision in 2006. Those who do not comment on the DEIS, or otherwise participate in this EIS process, may have limited options to appeal or protest the final decision. Federal court decisions have ruled that environmental objections that could have been raised at the draft stage may be waived if not raised until after completion of a Final EIS. This is to ensure substantive comments and objections are made available to the BLM when they can be meaningfully considered and responded to in the Final EIS.

Comments received on the DEIS, along with comments received during scoping or at other stages of this process, will be placed into the Administrative Record, where they will be available for public review. **Please be aware that information, such as addresses and phone numbers, may be viewed and copied by anyone with access to these public files in this open process.**

To be most helpful, comments on the DEIS should be specific, mentioning particular pages or chapters where appropriate. Comments may address the adequacy of the DEIS, the merits of the alternatives, or the procedures followed in the preparation of this document as called for under NEPA and its implementing regulations.

For a comment to be considered to have substance, it should:

- Provide new information pertaining to the proposed action or an alternative;
- Identify a new issue or expand upon an existing issue;
- Identify a different way to meet the underlying need;
- Provide an opinion regarding an alternative, **including the basis or rationale for the opinion;**
- Point out a specific flaw in the analysis; or
- Identify a different source of credible research which, if used in the analysis, could result in different effects.

For further information regarding this proposal, you may contact Scott Barker at (208) 677-6678; fax (208) 677-6699; or email scott_barker@blm.gov.

Thank you for your interest and participation in this analysis.

Sincerely,

Wendy Reynolds

Wendy Reynolds
Field Office Manager

DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED COTTEREL WIND POWER PROJECT AND DRAFT RESOURCE MANAGEMENT PLAN AMENDMENT BURLEY, CASSIA COUNTY, IDAHO

Lead Agency:	**U.S. Department of the Interior** **Bureau of Land Management** **Twin Falls District** **Burley Field Office, Burley, Idaho**
Cooperating Agencies:	**U.S. Fish & Wildlife Service** **Bonneville Power Administration** **Idaho Department of Lands** **Bureau of Reclamation** **Cassia County Commissioners**
Participating Agency:	**Idaho Department of Fish & Game**
Tribal Governments:	**Shoshone-Paiute Tribes** **Shoshone-Bannock Tribes**
Responsible Official:	**Assistant Director** **Bureau of Land Management** **Washington, D.C.**
Further Information:	**Wendy Reynolds, Field Office Manager or** **Scott Barker, Project Manager** **BLM Burley Field Office** **15 East, 200 South** **Burley, Idaho 83318** **(208) 677-6641** **e-mail: wendy_reynolds@blm.gov** **scott_barker@blm.gov**

ABSTRACT: Windland, Inc., a Boise-based, private wind energy development company has submitted a right-of-way application to construct, operate and maintain a wind energy facility along the Cotterel Mountains near the towns of Albion, Malta, and Burley, in Cassia County, Idaho. Windland, Inc. is in partnership with Shell WindEnergy, Inc., a subsidiary of the Royal Dutch/Shell Group. The proposed wind energy facility would occupy approximately 16 miles of ridgeline along Cotterel Mountain, consist of a single linear north-south string of turbines situated primarily on public lands managed by the Bureau of Land Management, Burley Field Office, Burley, Idaho. There is a small amount of Idaho State land and privately-owned land associated with the proposed project.

This Draft Environmental Impact Statement (DEIS) has been completed which analyzes four alternatives in detail: Alternative A (No Action); Alternative B (Proponent's Proposed Action); Alternative C (Modified Proposed Action); and Alternative D (Minimum turbine string action). Other agencies may tier to this analysis for any decisions they may make associated with this proposed project.

At this time, Alternative C has been identified as the preferred alternative after having considered the environmental impacts to public lands and the opportunities for use of those lands, which would benefit the most people over the longest term.

This Draft EIS also contains a proposed amendment to the Cassia Resource Management Plan, 1985, that could amend this plan to allow for the granting of a right-of-way for the development of a wind energy facility. Both the analysis disclosed in the DEIS and the proposed plan amendment are available for comment.

DISCLAIMER

National Environmental Policy Act Disclosure Statement
Bureau of Land Management Draft Environmental Impact Statement
Cotterel Mountain Wind Power Project

The President's Council on Environmental Quality (CEQ) regulations at 40 CFR 1506.5© require that consultants preparing an environmental impact statement (EIS) execute a disclosure specifying they have no financial or other interest in the outcome of the project. The term "Financial interest or other interest in the outcome of the project" for the purposes of this disclosure is defined in the March 23, 1981, guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 18026-18038 at Questions 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefits such as promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with the above-referenced regulatory requirements, URS Group, Incorporated has prepared this Draft EIS on behalf of the Bureau of Land Management and declares no financial or other interest in the outcome of the proposed project.

Certified by:

Glenn Roberts, Vice President

5/5/05
Date

URS Group, Incorporated
1750 Front Street, Suite 100
Boise, Idaho 83702

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ACRONYMS

A.D.	After Death
APE	Area of Potential Effects
AUM	Animal unit months
BA	Biological Assessment
B.C.	Before Christ
BFO	Burley Field Office
BLM	Bureau of Land Management
BMP	Best Management Practices
BPA	Bonneville Power Administration
BOR	Bureau of Reclamation
CDC	Conservation Data Center
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
Commission	Shoshone-Bannock Land Use Policy Commission
Council	Tribal Business Council
dB	Decibels
dBA	A-weighted decibels
DOE	Department of Energy
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
°F	Degrees Fahrenheit
FAA	Federal Aviation Administration
FCRTS	Federal Columbia River Transmission System
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FM	Fuel model
FMU	Fire Management Unit
FONSI	Finding of No Significant Impact
FRCC	Fire Regime Condition Class
FS	Forest Service
GIBA	Globally Important Bird Area
HETO	Heritage Tribal Office
I-84	Interstate 84
I-86	Interstate 86
I-90	Interstate 90

ACRONYMS

IDAPA	Idaho Administrative Rules
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDL	Idaho Department of Lands
IDT	Interdisciplinary Team
IDOL	Idaho Department of Labor
IDWR	Idaho Department of Water Resources
IPC	Idaho Power, an IdaCorp Company
IPUC	Idaho Public Utilities Commission
IWETT	Interagency Wind Energy Task Team
ISRH	Idaho Standards for Rangeland Health
ITC	Idaho State Tax Commission
KOP	Key observation point
kV	Kilovolt
kW	Kilowatt
LLC	Limited Liability Corporation
Mg/m3	Milligrams per cubic meter
mi^2	Square miles
MW	Megawatts
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NASS	National Agricultural Statistics Service
NEPA	National Environmental Policy Act
NEPDG	National Energy Policy Development Group
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NO_2	Nitrogen dioxide
NO_X	Oxides of nitrogen
NP	Not Present
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NTP	Notice to Proceed
NWCC	National Wind Coordinating Committee
NWPCC	Northwest Power and Conservation Council
O_3	Ozone
O&M	Operations and maintenance
OHV	Off-highway vehicle
Pb	Lead
PM_{10}	Particulate matter with an aerodynamic diameter less than 10 microns
Proposed Project	Proposed Cotterel Wind Power Project

ACRONYMS

PSD	Prevention of Significant Deterioration
RAC	Resource Advisory Council
RFP	Request for Proposal
RMP	Resource Management Plan
ROS	Recreational Opportunities Spectrum
ROW	Rights-of-Way
RQD	Rock Quality Designation
RSA	Rotor-swept area
SCI	South Central Idaho
SCS	Soil Conservation Service
SH	State Highway
SIEDO	Southern Idaho Economic Development Organization
SL&I	Salt Lake & Idaho Railroad Company Grade
SO_2	Sulfur Dioxide
SO_X	Oxides of sulfur
SQRU	Scenic Quality Rating Units
SRMA	Special Resource Management Areas
SWEI	Shell WindEnergy, Inc.
TES	Threatened, endangered and sensitive
$\mu g/m^3$	Micrograms per cubic meter
URS	URS Group, Inc.
U.S.	United States
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	volatile organic compound
VRM	Visual Resource Management
Windland	Windland, Incorporated

ENGLISH/METRIC AND METRIC/ENGLISH EQUIVALENTS

The following table lists the appropriate equivalents for English and metric units.

MULTIPLY	BY	TO OBTAIN
English/Metric Equivalents		
Acres	0.4047	Hectares (ha)
Cubic feet (ft^3)	0.02832	Cubic meters (m^3)
Cubic yards (yd^3)	0.7646	Cubic meters (m^3)
Degrees Fahrenheit (°F) –32	0.5555	Degrees Celsius (°C)
Feet (ft)	0.3048	Meters (m)
Gallons (gal)	3.785	Liters (L)
Gallons (gal)	0.003785	Cubic meters (m^3)
Inches (in.)	2.540	Centimeters (cm)
Miles (mi)	1.609	Kilometers (km)
Pounds (lb)	0.4536	Kilograms (kg)
Short tons (tons)	907.2	Metric tons (t)
Square feet (ft^2)	0.09290	Square meters (m^2)
Square yards (yd^2)	0.8361	Square meters (m^2)
Square miles (mi^2)	2.590	Square kilometers (km^2)
Yards (yd)	0.9144	Meters (m)
Metric/English Equivalents		
Centimeters (cm)	0.3937	Inches (in.)
Cubic meters (m^3)	35.31	Cubic feet (ft^3)
Cubic meters (m^3)	1.308	Cubic yards (yd^3)
Cubic meters (m^3)	264.2	Gallons (gal)
Degrees Celsius (°C)	1.8	Degrees Fahrenheit (°F) –32
Hectares (ha)	2.471	Acres
Kilograms (kg)	2.205	Pounds (lb)
Kilograms (kg)	0.001102	Short tons (tons)
Kilometers (km)	0.6214	Miles (mi)
Liters (L)	0.2642	Gallons (gal)
Meters (m)	3.281	Feet (ft)
Meters (m)	1.094	Yards (yd)
Metric tons (t)	1.102	Short tons (tons)
Square kilometers (km^2)	0.3861	Square miles (mi^2)
Square meters (m^2)	10.76	Square feet (ft^2)
Square meters (m^2)	1.196	Square yards (yd^2)

EXECUTIVE SUMMARY
OF THE DRAFT
ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED COTTEREL WIND POWER PROJECT
AND DRAFT RESOURCE MANAGEMENT PLAN AMENDMENT
BURLEY, CASSIA COUNTY, IDAHO

This Executive Summary is intended to be a synopsis of the *Cotterel Wind Power Project Draft Environmental Impact Statement and Draft Resource Management Plan Amendment* for the reader. The detailed analysis of the Proposed Action, alternatives to the Proposed Action, and the disclosure of impacts is displayed in detail in the DEIS, available both on CD and in hard copy formats. The Draft Environmental Impact Statement (DEIS) is also available to the reader on the internet at www.id.blm.gov/planning/cotterel.

INTRODUCTION

In March, 2001, the Bureau of Land Management, Burley Field Office, Burley, Idaho (BLM) received an application from Windland, Inc. (the Applicant) for a right-of-way (ROW) to construct, operate and maintain a wind-driven electric power generation facility on Cotterel Mountain. The BLM accepted this application and initiated a *Notice of Intent to Prepare an EIS and Amend the Cassia Resource Management Plan, 1985* (Cassia RMP) in the Federal Register on December 19, 2002. This triggered an initial public scoping period that ran for 60 days and concluded on February 21, 2003. The process for analyzing the proposal and alternatives began with the publication of the Notice of Intent and was consistent with the requirements of the *National Environmental Policy Act, 1969* (NEPA).

SCOPING

Significant Issues Identified through Scoping and Used to Develop Alternatives

Public, government-to-government, and interagency scoping for issues was accomplished early in the analysis process through public meetings, scoping documents, interagency meetings, and internal BLM interdisciplinary discussions and continues today. Issues that emerged during the analysis process were also considered in formulating the scope of work and the alternatives. The issues considered to be significant and addressed in detail include:

- Sage-grouse conservation
- Maintaining and protecting tribal treaty rights or heritage links to public lands
- Migratory birds including raptor migration
- Threatened and Endangered Species Protection
- Maintain public access

- Visual resources protection
- Consistency with the Cassia RMP

Other Issues and Concerns Addressed:

- Air quality (dust in communities during construction)
- Ridgeline and cultural significance to tribes
- Historical migration routes of tribes
- Water resources, including surface, groundwater and springs
- Noise/vibration/harmonics
- Vegetation restoration
- Noxious weeds control
- Wildlife conservation
- Wind turbine effects on birds and bats
- Direct and indirect wildlife habitat loss
- Mule deer winter range Interruption
- Increase human activity on Cotterel Mountain and effects on wildlife
- Cultural and historic resources protection
- Community economic stability
- Land use changes
- Changing private land values
- Increased traffic on local roads during construction
- Livestock grazing interruption
- Recreation opportunity changes

Issues Deemed Outside the Scope of the DEIS:

- Future Bighorn Sheep relocation
- Loss of sage-steppe habitat due to overgrazing
- Other sources of energy opportunities
- Manufacture of wind turbines outside the United States (U.S.)

LEAD, COOPERATING AND PARTICIPATING AGENCIES

The **BLM** is the lead federal agency responsible for conducting the preparation of the draft and final Environmental Impact Statement (EIS) and the associated analysis. The responsible official will be the Assistant Director for Minerals, Realty, and Resource Protection, BLM, Washington D.C.

Cooperating agencies are federal agencies that have jurisdiction by law (40 Code of Federal Regulations (CFR) Section 1501.6) and may or will make a decision relative to the Cotterel Wind Power Project (Proposed Project) based on the analysis disclosed in this EIS. Cooperating agencies may also have special expertise or have information that will assist in development of the analysis. In this analysis, the cooperating agencies include the **Bonneville Power Administration (BPA), U.S. Fish and Wildlife Service (USFWS), Idaho Department of Lands, Bureau of Reclamation (BOR), and Cassia County Commissioners,** representing the local government.

The **Idaho Department of Fish and Game** (IDFG) is a participating agency and is providing input relevant to wildlife and wildlife habitat.

GOVERNMENT-TO-GOVERNMENT CONSULTATION

The U.S. has a unique legal relationship with Indian tribal governments as set for in the Constitution of the U.S., treaties, statutes, Executive Orders, and court decisions. Since the formation of the Union, the U.S. has recognized Indian tribes as domestic dependent nations under its protection. The Federal Government has enacted numerous statutes and promulgated numerous regulations that establish and define a trust relationship with Indian Tribes.

In this analysis, the BLM has formally initiated consultation with the sovereign nations of the Shoshone-Bannock and the Shoshone-Paiute Tribes. This consultation has been initiated with these Tribal Governments in the manner as requested by them and is ongoing throughout the analysis.

INTERAGENCY WIND ENERGY TASK TEAM (IWETT)

The IWETT is a core group of wildlife biologists from the Bureau of Land Management, U.S. Fish & Wildlife Service, and the IDFG that was developed under charter in 2004 by the BLM. This team is a cooperative interagency effort, specifically formed to assist in the development of alternatives and mitigation recommendations for wildlife and wildlife habitat. This team will continue to work together in the development of effectiveness monitoring and adaptive management processes.

THE APPLICANT

Windland, Inc, a Boise-based private wind energy development company, in partnership with Shell Wind Energy, Inc., a subsidiary of the Royal Dutch/Shell Group, is proposing to build a wind energy facility along the Cotterel Mountain, a linear north-south, 16-mile ridgeline located in southeast Idaho between the towns of Albion on the west, and Malta on the east. The Proposed Project would be located in Cassia County, Idaho and situated primarily on public lands managed by the BLM. There is a small amount of Idaho State Land and privately-owned land associated with the Proposed Project.

PURPOSE OF AND NEED FOR PROPOSED ACTION

The purpose of the Proposed Action is to develop an economically-feasible, wind-powered electric generation facility on Cotterel Mountain that will provide an alternative renewable energy source to help supplement existing and future energy demands.

The need for the Proposed Action is demonstrated by growing demand for electricity in the northwest and the need to provide an electricity source alternative to traditional energy generation sources such as coal and gas-fired power plants, and hydro-power facilities. This proposal also meets the national need to reduce reliance on foreign energy markets. The Applicant is responding to the BPA and Idaho Power's Requests for Proposals to include wind energy resources as a percentage of their energy portfolios.

The Department of the Interior, more specifically the BLM, in implementing the *President's National Energy Policy,* is seeking opportunities to develop renewable resources including wind energy. The Cotterel Mountain location contains the prerequisite conditions to fulfill the Proposed Action. These criteria include the presence of an adequate wind energy resource, adequate construction access, and adequate transmission capability to carry the power produced to consumer markets. The Cotterel Mountain site meets these criteria and is therefore being analyzed in detail in this DEIS.

CONFORMANCE WITH EXISTING RESOURCE MANAGEMENT PLAN

The BLM existing Cassia RMP does not address wind energy development. At the time of preparation of the Cassia RMP, wind was not considered as a potential energy source in Idaho, hence Cotterel Mountain was not considered as a wind energy site and the Proposed Action is not consistent with the Cassia RMP. The Proposed Project would require an amendment to the plan should the decision be made to grant a ROW for wind energy development on Cotterel Mountain. The draft plan amendment to the Cassia RMP is displayed in Chapter 2, Proposed Action and Alternatives, and is available to the reader for comment. The Proposed Action and alternatives are consistent with the Cassia RMP in meeting all other land management objectives.

DECISIONS TO BE MADE

Bureau of Land Management (Lead Agency)

The BLM will make a decision whether or not to grant a ROW to allow for the construction, operation, and maintenance of a wind energy project on federal lands. The BLM will also make a decision whether or not to amend its existing Cassia RMP which will allow for the granting of the ROW if so decided. Both decisions will be outlined in a Record of Decision, based on the outcome of the EIS.

U.S. Fish & Wildlife Service (Cooperating Agency)

The USFWS will issue a Biological Opinion based on a Biological Assessment (BA) of impacts to threatened and endangered species. The BA will address potential impacts of the project to bald eagles and gray wolves. The findings of the Biological Opinion will be included in the BLM Record of Decision.

Bonneville Power Administration (Cooperating Agency)

The BPA will make a decision whether or not to offer contract terms for the interconnection of the Proposed Project to the Federal Columbia River Transmission System (FCRTS). BPA has adopted an Open Access Transmission Tariff for the FCRTS, consistent with the Federal Energy Regulatory

Commission's *pro forma* open access tariff. Under BPA's tariff, BPA offers transmission interconnection to the FCRTS to all eligible customers on a first-come, first-served basis.

Idaho Department of Lands (Cooperating Agency)

Idaho Department of Lands will make a decision whether or not to grant a ROW for a portion of a transmission line that would cross state land.

Bureau of Reclamation (Cooperating Agency)

The BOR is deferring the ROW decision to the BLM for a small portion of the transmission interconnection line that will potentially cross lands managed by the BOR.

Cassia County Commissioners (Cooperating Agency)

The Cassia County Commissioners and Planning and Zoning Committee will approve a conditional use permit for certain components of the project.

PROPOSED ACTION AND ALTERNATIVES

This section identifies and describes the Proposed Action, the no action alternative and the action alternatives associated with the Proposed Project. The DEIS analyzed four alternatives in detail:

- Alternative A: The No Action Alternative
- Alternative B: Applicant's Proposed Action
- Alternative C: Modified Proposed Action with fewer but larger output wind turbines, alternative access, alternative transmission line locations and alternative turbine types
- Alternative D: Modification of Alternative C with a reduced number of wind turbines

A brief description of these alternatives and project features common to all action alternatives is provided below. If selected, Alternative B, C and D would require amending the Cassia RMP. Alternative A would not require an amendment to the Cassia RMP. In addition, Alternatives E and F that were not carried forward are discussed.

Alternative A (No Action)

Alternative A, No Action, is the baseline against which the action alternatives can be compared. This baseline also allows for the disclosure of the effects of not developing the proposed wind power project and its associated infrastructure. Under Alternative A, the ROW grant for the construction, operation and maintenance of a wind-powered electrical generation facility would not be granted and the RMP would not be amended by the BLM. This alternative would maintain current management practices for resources and allow for the continuation of resources uses at levels identified in the Cassia RMP.

Alternative B (Applicant's Proposed Action)

This alternative is presented as proposed in the ROW application made by the Applicant to the BLM. The Applicant has attempted to reduce potential project impacts through project design, application of BLM Best Management Practices (BMP) and consideration of input from its own public scoping efforts in developing its Proposed Action.

Under Alternative B, the Applicant is proposing to construct a wind-powered electric generation facility along the approximately 16-mile ridgeline of Cotterel Mountain. As proposed, the Project would consist of approximately 130, 1.5 megawatts (MW) wind turbines that would be sited along the west, central, and east ridges of Cotterel Mountain. The west string would be 0.8-miles in length and located along the short side-ridge west of the main Cotterel Mountain ridgeline. The center string of wind turbines would be about 10.9 miles in length and placed along the spine of the central ridgeline of the mountain. The east string of wind turbines would be 4.1 miles in length and located along the east ridgeline that extends south of the Cotterel Mountain summit. In addition to the 130 wind turbines, two 138 kilovolt (kV) overhead transmission interconnect lines would connect the project to the transmission grid emanating from two separate substations. The exact location of proposed wind turbines, roads, power lines, or other facility-related construction would be sited based on environmental, engineering, meteorological, and permit requirements.

Each turbine would be 210 feet in height to the center of the hub. Each of the three blades would be 115 feet in length, with an over-all diameter of 230 feet. Maximum blade height would be 325 feet above the surrounding landscape. There would be two substations. The substations would be located at the north and central portions of the middle turbine string. The substations would connect to the existing BPA and Raft River 138 kV transmission lines via two newly constructed transmission interconnect lines. The transmission interconnect line ROW would cross lands managed by BLM, Idaho State, as well as those under private ownership.

Approximately 25 miles of all-weather gravel roads would be needed to access and maintain the Proposed Project. This would require about 4.5 miles of road reconstruction, and about 22 miles of new road construction. Total estimated cut volume for road construction would be approximately 2,660,000 cubic yards. The estimated fill volume would be approximately 2,500,000 cubic yards. The total construction impact area for all project features would be about 365 acres. Following the reclamation of construction impact areas, the final Proposed Project would occupy an area of about 203 acres. Other physical components of the wind plant are described in Comparison of Project Features of Alternatives B, C and D.

Alternative C (Agency's Preferred Alternative)

Alternative C is a modified alternative to the Proposed Action (Alternative B) with fewer but larger output wind turbines, alternative access, and alternative transmission line locations. **AT THIS TIME, ALTERNATIVE C IS THE AGENCY'S PREFERRED ALTERNATIVE.** Under Alternative C, the IWETT has identified additional BMPs that are included to specifically address wildlife issues and concerns related to sage-grouse, raptors, bats and requirements under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Alternative C also incorporates a compensatory/off-site mitigation fund that provides the opportunity for effectiveness monitoring and adaptive management, the extent of which would be determined by a technical steering committee.

Under Alternative C, the Applicant would construct a wind-powered electric generation facility along 14.5 miles of ridgeline of the Cotterel Mountain. If built as proposed, the project would consist of a linear alignment of approximately 81-98 wind turbines, based on the size of turbine selected, sited along the central and east ridges of Cotterel Mountain. The central ridge would have approximately 64 wind turbines and the east ridge would have approximately 17 turbines. In addition to the wind turbines, one 138 kV overhead transmission interconnect line would connect the project to the transmission grid from a single substation. The exact location of proposed wind turbines, roads, transmission interconnect lines, or other facility-related construction would be sited based on detailed engineering to address site specific environmental, meteorological, or permit conditions including BMPs.

Under Alternative C, two sizes of wind turbines would be considered. The smaller of the two would have a 77-meter (230 foot) rotor diameter and would have a generation capacity of 1.5 MW. It would sit on a 65-meter (210 foot) tower and the rotor would consist of three blades, 115 feet in length. Maximum blade height would be 325 feet above the ground. The larger turbine would have a 100-meter (328 foot) rotor diameter and would have a generation capacity of between two and three MW. It would sit on an 80-meter (262 foot) tower and the rotor would consist of three blades, 164 feet in length. Maximum blade height would be 426 feet above the ground.

A single substation would be located approximately midway along the central turbine string. Alternative C would have a single overhead 138 kV transmission interconnect line. The transmission interconnect line would extend northeast from the substation down to the Raft River Valley where it would cross over, but not connect to the existing Raft River transmission line. From here the transmission interconnect line would extend to the north approximately 19.7 miles in a new ROW adjacent to the existing ROW for the Raft River transmission line. It would cross over the Snake River west of the Minidoka Dam. The line would then travel in a northeast direction where it would connect the project to the existing Idaho Power transmission lines located north of the Minidoka Dam. The transmission interconnect line ROW would cross lands managed by BLM, BOR, Idaho State, USFWS as well as those under private ownership.

The Proposed Project would require the reconstruction of about 3.2 miles of road and the construction of about 19.5 miles of new roads. Total estimated cut volume for road construction would be approximately 2,200,000 cubic yards. The estimated fill volume would be approximately 2,425,000 cubic yards. Under Alternative C, the total construction impact area for all project features would be about 352 acres. Following the reclamation of construction impact areas, the final Proposed Project would occupy an area of about 203 acres.

Public access on the ridgeline would consist of a combination of new project roads and existing and newly constructed primitive roads. Although public use of project roads along the ridgeline would be restricted through a series of gates, signage and natural rock barriers, there would not be a loss of public access to existing use areas. Public access would be maintained by linking the existing primitive road system through construction of new primitive roads to allow existing uses of the area, including hunting, to continue.

Effectiveness Monitoring, Adaptive Management, Compensatory (Off-Site) Mitigation, and Technical Steering Committee Common to Alternatives C and D

Effectiveness Monitoring

Under Alternatives C and D, effectiveness monitoring is included and is intended to determine the effectiveness of the project design, construction and BMPs in protecting wildlife beyond the requirements of Alternative B. This monitoring would be funded by the Applicant through a compensatory mitigation fund (described below). It includes, but is not limited to, continuing the collection of pre-construction baseline data for use in comparative analysis, off-site sage-grouse lek studies, continuing sage-grouse telemetry studies, sage-grouse nesting studies, sage-grouse winter use studies, and raptor nest surveys.

Wind power projects have effects on wildlife, particularly avian species and bats, depending upon the location, geography, and natural setting of the project. Effectiveness monitoring of the project (5 years or greater) is key in understanding the relationship between the project design, siting of the towers, operation of the facility and effects on wildlife. These effects can occur in a variety of ways but, based on data collected at other operating wind projects, are chiefly associated with bird collisions with the large blades that drive each of the wind turbines (referred to as the rotor swept area of each turbine). Additional long-term monitoring may also be necessary to determine how the characteristics of the project and its turbines affect the behavior and migration of birds and bats and to determine if there are certain turbines along the string that are contributing to bird and bat mortality that would trigger the need to implement management actions to reduce these effects.

Adaptive Management

Adaptive management is based upon a concept of science that understands ecosystems are complex and inherently unpredictable over time. It approaches the uncertainties of ecosystem responses with attempts to structure management actions using a systematic method from which over time learning is a critical tool. Learning and adapting is based on a process of long term monitoring of impacts to wildlife from this project. The Applicant and the BLM recognize that the findings of long-term effectiveness monitoring could indicate the need for modification of operations and adaptive management. The BLM and the Applicant will work cooperatively with the USFWS and the IDFG to develop appropriate actions or mitigation measures designed to address issues or concerns identified as a result of monitoring. Adaptive management tools that are available to the Applicant and BLM include, but are not limited to: Timing stipulations during construction, operational changes of turbines, siting considerations, lighting scenarios, and color schemes. These are, for the most part, addressed in Appendix D.

Off-site Mitigation

BLM Washington Office Policy Guidance Instruction Memorandum No. 2005-069 states that off-site mitigation can be funded by voluntary contributions from the Applicant into a compensatory mitigation fund held by the BLM (Appendix E). This would be done by cooperative agreement between the Applicant and the BLM. This cooperative agreement would prescribe the level of contribution and the management and use of the fund. Accordingly, the Applicant has volunteered to contribute to a compensatory mitigation fund pursuant to the above-mentioned guidance. The Applicant has executed a letter of commitment to enter into a cooperative agreement in accordance with the foregoing (Appendix F). The Applicant intends the annual contribution to be in an amount equal to approximately one-half of one percent of the gross revenues received from the Cotterel Wind Power Project electricity sales. For a 200 MW project name plate, that contribution is expected to average approximately $150,000 per year at today's forecasted production and electricity rates.

An extensive framework of off-site mitigation practices was also recommended by the IWETT to address impacts to wildlife, should they occur as a result of the Proposed Project. These practices would also be funded by the compensatory mitigation fund (described above). The kinds of off-site mitigation practices recommended include, but are not limited to: purchase of key habitats; acquisition of conservation easements on key habitats; or, restoration, treatment or conversion of existing federally managed off-site habitats. Any off-site activities proposed by the steering committee would have impacts associated, which would be separate from the impacts identified for this Proposed Project and analyzed in this document. They would be analyzed in separate NEPA documents on a case-by-case basis as needed.

Technical Steering Committee

It was further recommended by the IWETT that a technical steering committee be formed to advise on the design of mitigation measures and monitoring covered by the compensatory mitigation fund. This committee would be responsible for recommending actions that would be funded by the compensatory mitigation fund (i.e. implementation of monitoring (over and above that which is required), recommending commensurate off-site mitigation, and recommending adaptive management strategies). The intent is to ensure interagency involvement in mitigation and monitoring activities with particular emphasis on addressing the requirements of the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act and sage-grouse conservation. The committee will also examine ongoing research and scientific studies attempting to understand the behavior and relationship between wildlife and wind energy developments. The technical steering committee would be an expansion of the IWETT and would consist of interagency wildlife and other resource professionals and the Applicant, with final decision authority resting with the BLM Field Office Manager. This committee would be formed and chartered prior to any construction of the Proposed Project.

Alternative D

Alternative D is a modification of Alternative C with a reduced number of wind turbines. The IWETT has identified additional BMPs that are included in this alternative to specifically address wildlife issues and concerns related to sage-grouse, raptors, bats and requirements under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Alternative D also incorporates a compensatory/off-site mitigation fund that provides opportunities for effectiveness monitoring and adaptive management the extent of which would be determined by a technical steering committee.

The premise of Alternative D is elimination of turbines from a portion of the sage-grouse habitat (leking, nesting, brood rearing, and winter range) while still maintaining an economically viable project. Because of the infrastructure costs involved with the project (i.e. turbines, roads, powerlines, substation), the Applicant has determined that 66 turbines in the 1.5 + MW size range would be necessary for an economically viable project. Concentrating the turbines along the center ridge of Cotterel Mountain would be the best way to obtain this number of turbines while affecting the fewest resources. In addition, it would concentrate the project features on the central ridge, leaving the east ridge undeveloped.

Alternative D would use the same size range and types of wind turbines as those proposed under Alternative C. Under Alternative D, a range of 66-82 turbines would range in generation capacity from 1.5 to 3.0 MW. Tower height for the turbines would range from 210 feet to 262 feet, with maximum blade height ranging from 325 to 426 feet above the ground. Rotor diameters would range from 230 feet to 328 feet (77-100 meters).

Wind turbines, substations, and transmission interconnect lines would be the same for Alternative D as described under Alternative C.

Under Alternative D, the Proposed Project would require the reconstruction of about 2.9 miles of road and the construction of about 14.5 miles of new roads. Total estimated cut volume for road construction would be approximately 2,080,000 cubic yards. The estimated fill volume would be approximately 2,275,000 cubic yards. The total construction impact area would be about 282 acres. Following the reclamation of construction impact areas, the final Proposed Project would occupy an area of about 160 acres.

Public access under Alternative D would be similar to Alternative C along the central ridgeline and turbine string. However, under Alternative D there would be no road construction or turbines sited along Cotterel Mountain's east ridge. The lower portion of the existing Cotterel Mountain summit road would have minor modifications made to improve safety. The existing Cotterel Mountain summit access road and primitive jeep trails along the east ridgeline would remain unchanged and would continue to be open to the public.

Required on-site monitoring, effectiveness monitoring, adaptive management and compensatory (off-site) mitigation would be the same for Alternative D as described under Alternative C.

Alternatives Considered But Not Analyzed In Detail

Alternative E

Alternative E was developed by the identification of issues through public scoping, agency scoping, the IWETT, government-to-government consultation, and interdisciplinary resource recommendations and is basically a modification of Alternative D. It was proposed as a possible method of further minimizing potential impacts to sage-grouse habitat and habitat use while maintaining an economically viable wind energy development. Alternative E, while avoiding the most direct suspected impacts to sage-grouse lek use and associated nesting at several key locations on the mountain, would effectively reduce the length of the turbine string to approximately 8.4 miles and reduce the number of turbines that could be constructed to a range of 40-49. This is substantially less than the minimum number of wind turbines disclosed by the Applicant as being economically viable to construct (66 turbines), operate and maintain at the Cotterel Mountain site.

The Applicant's analysis and disclosure of a minimum size project is based on the cost of infrastructure (i.e. roads, substation, power transmission, underground cabling, etc.), the cost of construction on a remote, isolated mountaintop, the cost of monitoring and mitigation, and the cost and time required for permitting on public land. It is further based on the time required to amortize the capital investment of a project. Alternative E would have essentially the same infrastructure costs as Alternative D with approximately 60 percent of the production potential. Accordingly, the Applicant states that it is not possible to recoup costs in a reasonable amount of time or achieve the rate of return necessary for such a large investment, nor would it be possible to obtain financing. While Alternative E is technically feasible and could be constructed, it does not meet the Council on Environmental Quality (CEQ) test of a reasonable alternative since it is not economically viable. Therefore, Alternative E does not meet the purpose and need stated in this document. For these reasons, Alternative E is not carried forward or analyzed in detail. It should be noted that in CEQ's definition of "reasonable," technical and economic are linked. If a proposed project does not meet one or the other, it is not feasible to construct and therefore, not a reasonable alternative.

The casual observer may notice a number of small wind projects cropping up around southern Idaho. This begs the question, why are 40 turbines not economically feasible on Cotterel Mountain while one, three or seven turbines seem to be a viable project in other areas? As stated above, the answer is closely tied to infrastructure costs, construction costs, monitoring and mitigation costs, the high costs and lengthy time requirements of siting on public land vs. the low cost and short time frames involved with siting on private land, and the capital investment amortization time and costs. It should be noted that, with the exception of time to amortize the capital investments, these smaller projects located on private land do not experience these other costs.

Alternative F

Alternative F was developed by the identification of issues through public scoping, agency scoping, the IWETT, government-to-government consultation, and interdisciplinary resource recommendations. This alternative further distances the wind energy facilities from sage-grouse use areas. The premise of Alternative F is to site the wind turbines based on the best available science, combined with professional judgment, for the protection of sage-grouse and their habitat. Studies regarding the lifecycle of sage-grouse have shown that nesting and brood rearing generally take place within a 1.8-mile radius of active leks. There is also some scientific information on lesser prairie chickens to suggest that they may avoid tall structures. Therefore, it has been suggested by some that placement of a wind power project within that 1.8 mile radius of leks may have an adverse affect on the lifecycle activities of sage-grouse.

Application of a 1.8-mile no development zone around known, active sage-grouse leks would limit the siting of the wind generation facility to the 3.6-mile section of the central Cotterel Mountain ridgeline and reduce the number of constructible turbines to approximately 20. This requirement would render Alternative F not economically feasible, as a commercial wind generation facility and not in accordance with the purpose and need stated in this document. Therefore, Alternative F has been considered but is not being analyzed in detail.

<u>Project Features Common to All Action Alternatives</u>

Major components of the Proposed Project and common to the other action alternatives identified include:

- Multiple wind turbines and turbine foundations
- Multiple pad mounted transformers
- Buried power collection lines and communication cables
- Several miles of project access roads including existing, reconstructed, and newly constructed road beds
- Meteorological towers on foundations
- One to two substations
- Newly constructed 138 kV overhead power transmission interconnect lines
- Operations and maintenance building (O&M Building); and
- Portable on-site cement batch plant and rock crusher

The table below provides a comparison of the alternatives by Proposed Project features.

Comparison of Project Features of Alternatives B, C and D.

Project Features		Alt. B	Alt. C	Alt. D
Project nameplate (in MW)		195	147-243	123-198
Number of turbines		130	81-98	66-82
Turbine Nameplate (in MW)		1.5 MW	1.5-3 MW	1.5-3 MW
Turbine hub height (meters)		64	80	80
Turbine diameter (in meters)		70	77-100	77-100
Total length of turbine string (in miles)		15.8	14.5	11.6
Project roads total (in miles)		26.6	24.4	19.3
Existing (To be used without modification)		0	1.7	1.7
Reconstructed		4.5	3.2	2.9
New		22.1	19.5	14.7
Electrical trenching (outside of roads, in miles)		5	3-4	2.8
New transmission Interconnect lines (in miles)		9	19.7	19.7
Substations		2	1	1
Meteorological towers		3	3	3
Maintenance and operation building		1	1	1
Temporary ground disturbance (in acres)		365	350	280
Permanent ground disturbance (in acres)		203	203	158
Construction features				
Earth work	Cut (in cubic yards)	2,663,496	2,203,176	2,079,286
	Fill	2,506,995	2,423,935	2,275,735
	Difference	+156,501	-220,759	-196,449
Truck trips to build project roads (road base only)		12,625	10,885	8,500
Truck trips to build project (turbines, substations, other)		2,050	1,850	1,250
Total truck trips		14,675	12,735	9,750
Number of batch plants		1	1	1
Mitigation				
Wildlife fatality monitoring		X	X	X
BLM BMPs		X	X	X
Compensatory/off-site mitigation			X	X
Public access available			X	X

AMENDING THE EXISTING CASSIA RESOURCE MANAGEMENT PLAN

The Proposed Action and the action alternatives are not consistent with the existing Cassia RMP. When the Cassia RMP was completed, the development of wind energy was not considered as a potential use on Cotterel Mountain and the Cassia RMP contained no provisions for the granting of a

ROW for wind energy development. Therefore, if an action alternative is selected, an amendment to the Cassia RMP must be made as per regulations found at 43 CFR 1601.

Included in this DEIS is a draft plan amendment. The BLM published its intent to amend the Cassia RMP in the Federal Register in December 2002. The draft plan amendment is presented in Chapter 2, Proposed Action and Alternatives.

AFFECTED ENVIRONMENT/EXISTING CONDITION

The purpose of this section is to describe the existing environment/existing condition of the Cotterel Mountain area including conditions and trends that could be affected by the alternatives described above.

The Cotterel Mountain range is an area that experiences a range of precipitation of 12 to 25 inches of rain per year depending upon elevation. The wind blows from west to east and winter snowfall is blown clear of certain areas of the mountain while forming deep snowdrifts in other areas.

The geology of the Cotterel Mountain is described as a long, low ridge with a relatively steep face or escarpment on the east side and a long, gentle slope on the west side. The Proposed Project area generally consists of Pliocene and Upper Miocene volcanic rocks, rhyolite flows, tuffs, and ignimbrites.

Soils in the Proposed Project area are located at high elevation, have low water-carrying capacity, have the potential for wind and water erosion, and have minimal to moderate productivity capabilities as rangeland.

The Cotterel Mountain ridgeline divides the Raft River watershed on the east from the Lake Walcott watershed on the west. There are no designated major streams within the Proposed Project area. There are 14 springs, three spring developments, and one well within the Proposed Project boundary.

The relatively remote Proposed Project area is generally quiet and has no industrial noise sources. Existing noise in the Proposed Project area vicinity is attributable to: recreational users such as off-highway vehicles (OHV) and snowmobile riders; occasional low flying aircraft; agricultural equipment; and traffic on area roads.

Big game species include mule deer and mountain lions. Bighorn sheep occur approximately 15 miles south on nearby Jim Sage Mountain and have occasionally wandered on to Cotterel Mountain. The IDFG maps both mule deer and bighorn sheep winter range within the Proposed Project area.

Cotterel Mountain supports numerous species of small mammals. Five species of amphibians and reptiles have been documented in the Proposed Project area or its vicinity. Bats likely use Cotterel Mountain on a year-round basis. Three species of bats have been documented in the vicinity of the Proposed Project area.

Large expanses of big and low sagebrush, juniper, grasslands and mountain mahogany are found within the Proposed Project area. These vegetation types provide potential habitat for a number of bird species, including sage-grouse, Brewer's sparrow, grasshopper sparrow, loggerhead shrike, pinyon jay, plumbeus vireo, sage sparrow, and sage thrasher. In addition, the abundance of open cliffs, strong updrafts, and the close proximity of agricultural lands make this area prime habitat for raptor species including ferruginous hawks, peregrine falcon, prairie falcon, golden eagle and Swainson's hawk. Avian species surveys within the Proposed Project area documented 84 species of birds. Of these, 12 species of falcons, hawks, or eagles were observed. Three species of upland game bird were observed including the greater sage-grouse. In addition to the wide diversity of bird species found during the surveys, there are specialized topographical features that provide breeding, nesting and wintering habitats for many avian species that are not widely available in the vicinity of the Proposed Project area.

There is one known threatened and endangered species (Bald eagle) and potential habitat for another (gray wolf). Approximately 40 BLM Sensitive plant and animal species are known to occur or are suspected to occur within the project area and its vicinity.

The Proposed Project area is located adjacent to the Raft River Valley, which lies immediately east of Cotterel Mountain and is situated near a historically important crossroads of the Oregon Trail. The "Parting of the Ways" or "Separation of the Trails," located on the west bank of the Raft River, was the junction where travelers had to decide whether to head south toward California or proceed west along the Snake River toward the Oregon Country.

The cultural resources inventory and evaluation activities resulted in the identification of 21 archaeological sites and 61 isolated finds, in addition to five previously recorded sites. The BLM has formally initiated consultation with the sovereign nations of the Shoshone-Piaute and the Shoshone-Bannock in the manner as requested by them. Consulted parties expressed knowledge of past use of the Cotterel Mountain area describing general use of the ridge as a transportation corridor.

The Proposed Project would be located in Cassia County, Idaho. Cassia County is closely linked economically with Minidoka County to the north. The two-county area is called the Mini-Cassia area. The Mini-Cassia economy was built around agricultural industries, such as livestock (beef and dairy cattle, sheep) and crop production (sugar beets, grains, potatoes, alfalfa, and beans). Today, the Mini-Cassia area economy continues to be centered on agricultural industries such as food processing. Both counties have higher average unemployment rates compared to other southern Idaho counties, in part due to seasonal layoffs typical of the food processing industry. The area has experienced business closures and layoffs in recent years.

Major land uses include livestock grazing, wildlife habitat, recreation, utility distribution, and communication facilities locations. Management goals for the Proposed Project area include expanding dispersed recreation opportunities, providing for livestock grazing, and transferring certain lands from federal ownership. Prominent land uses around the Proposed Project area include: rural community commercial use that is zoned for the cities of Malta and Albion; commercial recreational use at the Pomerelle Mountain Resort; and agricultural uses such as farming, grazing, and confined animal operations.

A primitive road extends along the Cotterel Mountain ridge top providing access to the entire mountain. Public access to the top of the mountain is available from the north, southwest and southeast. Several feeder roads and trails provide additional access down lateral ridges and drainages, but large areas of Cotterel Mountain remain roadless.

The Pomerell Ski Area is located about nine miles west of the Proposed Project area and provides winter recreation in the form of skiing and snowmobiling. The City of Rocks National Reserve, a popular camping, hiking, rock climbing, and historical area is located about 24 miles southwest of the Proposed Project area. The recreational uses of Cotterel Mountain include hunting, OHV use, picnicking, hiking, and some dispersed camping. The public lands associated with Cotterel Mountain are mandated by the Cassia RMP to provide for multiple uses, including a diverse choice of recreation opportunities.

There are two grazing allotments located within the Proposed Project area, North Cotterel and South Cotterel. The North and South Cotterel allotments have an average stocking rate of between six to seven acres per Animal Unit Month (AUM). Within the Proposed Project area boundary, there are approximately 1,700 AUMs.

ENVIRONMENTAL CONSEQUENCES

The environmental consequences of the Proposed Action and alternatives to the Proposed Action are summarized and compared in the table below. A complete description and disclosure of the impacts are found in Chapter 4, Environmental Consequences.

Summary Comparison of Resource Impacts.

Resource Issue	Alternatives			
	A	B	C	D
PHYSICAL				
Air Quality	No impact	Criteria pollutants and greenhouse gases would temporarily be emitted during construction of the Proposed Project.	Impacts to climate or air quality would be similar to those described under Alternative B; however, the temporary affects would be slightly less due to less construction.	Impacts to climate or air quality for Alterative D would be similar those described under Alternatives B and C; however, the temporary affects to air quality would be the least under Alternative D.
Geologic Hazards	There would be no impacts related to geology.	Shallow blasting to set wind turbine foundations and for road construction up to 203 acres disturbed.	Shallow blasting to set wind turbine foundations and for road construction up to 203 acres disturbed.	Shallow blasting to set wind turbine foundations and for road construction up to 158 acres disturbed.
Paleontological Resources	No impacts	No impacts	No impacts	No impacts
Soils	There would be no impacts related to soils.	Up to 368 acres would be initially disturbed. 165 acres would be reclaimed. 203 acres of permanent impacts to soils.	Up to 350 acres would be initially disturbed. Up to 147 acres would be reclaimed. 203 acres of permanent impacts to soils.	Up to 270 acres would be initially disturbed. Up to 112 acres would be reclaimed. 158 acres of permanent impacts to soils.
Water Resources				
Surface Water	There would be no impacts related to water resources.	The project would have a low potential to affect surface water resources.	Same as B	Same as B
Ground Water	There would be no impacts related to water resources	Blasting should not alter the flow of springs in the Proposed Project area.	Same as B	Same as B.

Summary Comparison of Resource Impacts.

Resource Issue	Alternatives			
	A	B	C	D
Noise				
Increased noise levels near residences and wildlife habitat	No effect. Existing background noise levels in the area would continue.	Noise from large trucks during construction would be temporary Operational impacts from noise to Sensitive receptors are not expected to occur.	Same as B.	Same as B – shorter in duration. Operational impacts would have less of a potential to affect recreational users.
BIOLOGICAL				
Vegetation				
Removal of vegetation	No change to the existing vegetation beyond the levels identified in the Cassia RMP.	Up to 368 acres of vegetation would be directly affected by construction of all project features. Up to 165 acres reclaimed. 203 acres of permanent impact to vegetation.	Up to 350 acres of vegetation would be directly affected by project construction of all project features. Up to 147 acres reclaimed. 203 acres of permanent impact to vegetation.	Up to 282 acres of vegetation would be directly affected by project construction of all project features. Up to 123 acres reclaimed. 158 acres of permanent impact to vegetation.
Noxious weeds	No change to the existing vegetation beyond the levels identified in the Cassia RMP	Disturbance of vegetation could lead to the establishment and spread of noxious weeds, which would increase direct competition for limited resources (nutrients, water, space, etc.) with native or desired vegetation. Indirectly, these species could augment the amount and continuity of fuels, which could lead to increased fire return intervals.	Same as B.	Same as B

Summary Comparison of Resource Impacts.

Resource Issue	Alternatives			
	A	B	C	D
Wildlife				
Loss of big game winter range	There would be no adverse impacts.	Winter range would be permanently eliminated on up to 105 acres of mule deer habitat and 194 acres of bighorn sheep habitat. Mountain lions could be initially displaced by construction activities, but would likely habituate to project features over time.	Winter range would be permanently eliminated on up to 62 acres of mule deer habitat and 162 acres of bighorn sheep habitat. Impacts to mountain lions would be the same as Alternative B.	Winter range would be permanently eliminated on up to 58 acres of mule deer habitat and 115 acres of bighorn sheep habitat. Impacts to mountain lions would be the same as Alternative B.
Big game displacement and/or stress	There would be no adverse impacts.	Displacement of big game from project construction and operation. Potential displacement impacts from increased human activity.	Same as B	Smaller project size would result reduced area of displacement and less areas of improved public access. Displacement would still occur but on a smaller scale.
General wildlife habitat	There would be no adverse impacts.	Wildlife could be negatively affected by increased traffic and human presence on Cotterel Mountain. Permanent loss of 203 acres of potential habitat.	Same as B	Permanent loss of 158 acres of potential habitat. Smaller project size would result in reduced area of displacement and less areas of improved public access.

Summary Comparison of Resource Impacts.

Resource Issue	Alternatives			
	A	B	C	D
Estimated annual avian and bat mortality due to collision with wind towers or power lines.	There would be no adverse impacts.	Raptors = 0-63 mortalities All birds = 0-934 mortalities Bats = 0-667 mortalities Upper end mortality estimates are based on total avian numbers from point counts, mortality at other operating wind projects and total rotor swept area with an operating capacity factor of 35% applied. This estimate assumes that all birds flying within the rotor swept area would be killed (worst case scenario).	Raptors = 0-81 mortalities All birds = 0-1188 mortalities Bats = 0-848 mortalities Assumes larger rotor swept area. Same as B	Raptors = 0-66 mortalities All birds = 0-968 mortalities Bats = 0-691 mortalities Assumes larger rotor swept area. Same as B
Nesting raptors	There would be no adverse impacts.	Wind turbines would be sited greater than ¼ mile from the three golden eagle nests. Blasting during nesting season could result in nest abandonment. Resident hunting raptors may avoid the vicinity of the turbines. Habitat lost to construction would result reduced prey base.	Same as Alternative B. Same as Alternative B.	Same as Alternative B. Same as Alternative B.
Loss of sage-grouse winter range	Existing situation expected to continue	Direct loss of 68 acres. Displacement from up to 6,435 acres	Direct loss of 48 acres. Displacement from up to 5,716 acres	Direct loss of 34 acres. Displacement from up to 4,585 acres.

Summary Comparison of Resource Impacts.

Resource Issue	Alternatives			
	A	B	C	D
Loss of sage-grouse nesting habitat	Existing situation expected to continue	Direct loss of 33 acres. Displacement from up to 5,605 acres.	Direct loss of 28 acres. Displacement from up to 4,890 acres	Direct loss of 15 acres. Displacement from up to 3,194 acres
Displacement of sage-grouse from lek sites	Existing situation expected to continue	Direct loss of 84 acres. Displacement from up to 3,395 acres.	Direct loss of 77 acres. Displacement from up to 3,345 acres.	Direct loss of 52 acres. Displacement from up to 3,255 acres.
Displacement of bats from hibernation sites	Existing situation expected to continue.	Noise and percussion from blasting, drilling, digging, and movement of large vehicles could displace roosting, breeding, or hibernating bat species.	Same as Alternative B.	The smaller project would require less blasting resulting in a reduced potential for displacement of roosting, breeding, or hibernating bat species.
Threatened and Endangered Species				
Bald Eagle	There would be no adverse impacts.	Small potential for direct mortality or injury from electrocution, collisions with transmission lines, or turbine blades.	Same as Alternative B	Same as Alternative B
Gray Wolf	Gray wolves are not known to occur on Cotterel Mountain; therefore, there would be no adverse impacts.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

Summary Comparison of Resource Impacts.

Resource Issue	Alternatives			
	A	B	C	D
BLM Sensitive Species	Existing situation expected to continue.	Cliff chipmunk populations would be affected during construction. These areas would likely be avoided or abandoned, but once construction is complete and disturbance levels decline, cliff chipmunks would be expected to reoccupy habitats near the facility. Nesting and non-breeding golden eagles could be adversely affected not only by construction disturbance, but also from potential collisions with turbines.	The impacts of Alternative C to special status species would be similar to those expected to occur under Alternative B, with slightly smaller areas of permanent and temporary impacts from project construction and fewer turbines.	The impacts of Alternative D to special status species would be similar to those expected to occur under Alternative B and C, with slightly smaller areas of permanent and temporary impacts from project construction.
CULTURAL RESOURCES				
Prehistoric Resources	There would be no affect.	No Affect.	Same as B	Same as B
American Indian Concerns	There would be no affect.	No concerns have been identified.	Same as B	Same as B

Summary Comparison of Resource Impacts.

Resource Issue	Alternatives			
	A	B	C	D
Historical Resources	There would be no affect.	Alternative B would have no impact to sites CM-S-5, CM-S-16, CM-S-20, CM-S-22, or 10CA629 since each of these is located outside of the area of potential effects and would be avoided. Proposed Project impacts to the remaining 21 sites, and to any sites discovered during additional survey of the transmission lines and access roads, would range from no impact to high impact depending on the degree of loss of integrity to the site and on the significance of the site.	Impacts for Alternative C are similar to impacts for Alternative B with the exception that the Proposed Project would have no impact to site CM-S-17 in Alternative C. This site would be avoided.	Impacts for Alternative D are similar to impacts for Alternative C with the exception that the Proposed Project would have no impact to sites CM-S-21, CM-S-22, CM-S-18, and CM-S-1 in Alternative D. Alternative D would have the fewest impacts to historical and cultural resources.
SOCIOECONOMIC				
Regional Economy and Community	There would be no impacts or changes to regional or local socioeconomic conditions. The Proposed Project area would continue to function as a dispersed recreation area and would continue to provide seasonal grazing opportunities for livestock. The Mini-Cassia area would not experience the tax revenue benefits that would be associated with the project.	Impact due to temporary direct and secondary increase in jobs, income, and spending. Construction cost of $200 million. Local and regional labor force could fill positions, and local lodging could accommodate workers. Increase in population would be small.	Impacts would be similar to Alternative B.	Temporary direct and secondary increase in jobs, income and spending. Construction cost of approximately $100 million. One-time influx of sales tax revenue, less than under Alternative B.

Summary Comparison of Resource Impacts.

Resource Issue	Alternatives A	B	C	D
Regional Economy and Community (continued)		No effect on local businesses. No impact on tourism. Impact of one-time influx of sales tax revenue of approximately $500,000. Permanent increase in jobs, income, and spending. Annual operation cost would be $4.5 million. No relocations, displacements, substantial growth of concentration of population, and related demand for public services would occur. Additional property tax revenue to the school district.		Annual operation cost would be $2.3 million. Permanent increase in jobs, income, and spending would be less than under Alternative B. Beneficial impact upon annual property tax revenues, similar in type but less than Alternative B. Beneficial impact of permanent increase in sales tax revenue, similar in type but less than under Alternative B. Impact to population and demand for public services would be less than under Alternative B.
Property Values	There would be no affect.	Impacts to property values are not likely.	Same as Alternative B.	Same as Alternative B.
Environmental Justice	There would be no affect.	No environmental justice impacts.	Same as Alternative B	Same as Alternative B

Summary Comparison of Resource Impacts.

Resource Issue	Alternatives			
	A	B	C	D
LAND USE				
Public Access	There would be no affect.	Public access to federal and state lands within the Proposed Project area would not be restricted, except during construction of the project for safety purposes. Following project construction, public access to federal and state lands would be improved with 24.5 miles of new or reconstructed roads.	Public access on the ridgeline would be altered from Alternative B to become a combination of new project roads and existing and newly constructed primitive roads. Public use of project roads would be restricted through a series of gates and natural rock barriers but would not result in a loss of access to traditional use areas. Primitive access would be maintained wherever possible by linking the existing primitive road system through construction of new primitive roads.	Same as Alternative C

Summary Comparison of Resource Impacts.

Resource Issue	Alternatives			
	A	B	C	D
Recreation	Based on the activities outlined in the Cassia RMP, no change to recreation opportunities or degree of typical use would be anticipated in the area, beyond some minor modifications to recreation facilities and trails. These modifications are expected to enhance the recreation spectrum in the Proposed Project area.	During construction of the Proposed Project, noise, dust, traffic, equipment use, and associated human activities would change the character of the area and result in a temporary loss of recreational opportunities. Wind turbines would be located within about 760 feet of the Coe Creek picnic site. Project could result in change of visitor/use or experience. Changes to recreation use would not alter the current recreational opportunities spectrum category (semiprimitive motorized) for Cotterel Mountain.	Construction impacts would be the Same as B. Wind turbines would be located within about ¼ mile (1,400 feet) of the Coe Creek picnic site. Visitors may be able to hear the turbines during times of turbine operation but less so than under Alternative B.	Construction impacts would be the Same as B. Wind turbines would be located within about ¼ mile (1,400 feet) of the Coe Creek picnic site. Overall smaller project would result in reduced impacts to recreational users.
Land Status	There would be no affect.	No affect to existing surface land ownership or mineral ownership	Same as B.	Same as B.
Rights-of-Ways	There would be no affect.	Future ROWs would not be affected by the Proposed Project. Approval would continue to be obtained from the BLM in accordance with the processes outlined in 43 CFR 2800 and the BLM Right -of-Way Handbook (H-2800-1). An amendment to the land use plan may be required.	Same as B.	Same as B.

Summary Comparison of Resource Impacts.

Resource Issue	Alternatives			
	A	B	C	D
Livestock Grazing	Based on the Cassia RMP no changes to grazing would be expected beyond some vegetation treatments or minor range improvement projects There would be no modification of the existing acres, AUM, range conditions, or improvements outside those identified in the Cassia RMP.	Temporary loss of up to 165 acres of rangeland vegetation. Permanent impacts to 203 acres of rangeland vegetation would result in a loss of livestock forage	Temporary loss of up to 147 acres of rangeland vegetation. Permanent impacts to 203 acres of rangeland vegetation would result in loss of livestock forage	Temporary loss of up to 112 acres of rangeland vegetation. Permanent impacts to 158 acres of rangeland vegetation would result in loss of livestock forage
VISUAL RESOURCES				
Visual Resources	There would be no affect.	Vehicle and heavy equipment traffic associated with project construction could results in short-term impacts. The operational phase of the project would have long-term impacts to surrounding view sheds and communities. Permanent impacts to visual resources would be greatest under this alternative.	Short-term impacts to visual resources would be similar to Alternative B, but with fewer trips needed during the construction phase. Long-term impacts would also be slightly less based on the reduced number of turbines.	Short-term impacts to visual resources would be the lowest under this alternative, and would require the fewest trips during the construction phase. Long-term impacts would also be lowest, based on the reduced number of turbines.
HAZARDOUS MATERIALS				
Hazardous Materials	There would be no affect.	During construction of Alternative B, BMP would be used to avoid spills, leaks, or dumping of hazardous substances.	Same as Alternative B.	Same as Alternative B

Summary Comparison of Resource Impacts.

Resource Issue	Alternatives			
	A	B	C	D
FIRE MANAGEMENT				
Fire and Fuels	Under the Alternative A, fire management's ability to suppress wildfire and manage surface fuels within the Proposed Project area would not be affected. Fire frequency and intensity would not be changed by Alternative A.	The risk of human caused ignitions would increase Suppression strategies would be limited by the presence of turbines and buried electrical cables Improved, wider roads would act as fire breaks and provide improved access and shorter ground response times. Towers would increase the lightning-attractivity of Cotterel Mountain resulting in a potential increase in lightning strikes. This may or may not affect the number of lightning caused ignitions.	Same as Alternative B	Impacts would be similar to B, but the risk of human caused ignitions would lower due to overall smaller project size. Suppression strategies would not be limited on east ridge of Cotterel Mountain.

CUMULATIVE IMPACTS

The CEQ regulations for implementing the NEPA require assessment of cumulative effects in the decision-making process for federal projects. Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative effects are considered for each resource and disclosed in detail in the DEIS.

Cumulative effects in this analysis were determined by combining the effects of each alternative with past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other past, ongoing, or reasonably foreseeable future actions in this area and in the surrounding landscape. All resource impacts would be added to these actions to portray the cumulative picture or incremental contribution this Proposed Project would have on the environment. The following is a brief summary of cumulative effects:

Past and Historical Actions

Examples of past or historical actions that have contributed impacts to wildlife and other resources within the Cassia-Raft River Creeks and Marsh Creek sub-basins include:

- Construction of Interstate Highways 84 and 86
- Livestock grazing
- Drought and severe winters
- Expansion of residential development around small towns
- Agricultural development that removed shrub steppe habitat
- Wildfire and prescribed burning
- Construction of power lines
- Livestock water developments
- Mining
- Water channel alterations and removal of riparian vegetation
- Hunting

Existing Actions

Examples of existing and foreseeable actions within the Cassia-Raft River and Marsh Creek sub-basins that are either causing impacts to wildlife and other resources or could potentially cause such impacts include:

- Public access
- Livestock grazing
- Continued alteration of streams for human purposes
- Mining
- Rural development
- Wildfire and prescribed burning
- Alteration of shrub steppe habitats
- Water development
- Conversion of native vegetation to agricultural
- Fencing on private or public lands
- Construction of powerlines
- Drought and severe winters
- Disease
- Loss of shrub steppe habitats on private lands
- Hunting, poaching, and predation
- Herbicides
- Land exchanges
- Development of energy sources

Foreseeable Actions

Some examples of foreseeable actions that may contribute cumulatively to impacts of the Proposed Project include:

The Idaho Transportation Department is proposing to reconstruct and improve a portion of the City of Rocks Back County Byway between Elba and Almo, Idaho. This 17-mile stretch of road would be built in phases with completion of the Proposed Project occurring in 2007 or 2008. Completion of this road improvement project could likely result in an increase in the number of visitors to the City of Rocks area and an increase in motor vehicle speeds along this section of road.

The Idaho Department of Parks and Recreation is presently constructing a full-service RV campground on public land near the City of Rocks National Reserve located 20 miles south of the Proposed Project.

Other wind power projects are being proposed, recently constructed, or poised for construction in southern Idaho. A 10 MW project was completed early in 2005 at Fossil Gulch near Hagerman, Idaho located approximately 65 miles west of the Proposed Project. Ridgeline/Airtricity is developing three projects totaling 600 MW near Idaho Falls, Idaho and two projects totaling 400 MW near American Falls, Idaho located 125 miles northeast and 45 east of the proposed project respectively. Windland Inc. is developing a 200 MW project south of American Falls, Idaho approximately 45 miles east of the Proposed Project. RES has proposed a 200 MW project southwest of Twin Falls, Idaho located approximately 70 miles southwest of the Proposed Project. These wind projects, once constructed, have the potential to result in cumulative impacts to wildlife and other resources when combined with the proposed Cotterel project and historical, present, and ongoing actions. These actions could result in cumulative impacts to wildlife and other resources.

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CHAPTER 1

PURPOSE AND NEED

1.0 PURPOSE AND NEED

Cotterel Mountain is a linear north-south ridgeline about 16 miles in length that lies in south central Idaho, between the towns of Albion, on the west and Malta on the east, within Cassia County, Idaho. It is predominately federally managed public land within the Idaho Bureau of Land Management (BLM) Twin Falls District, Burley Field Office (Figure 1.0-1).

The potential for developing wind energy on Cotterel Mountain as a resource to generate electricity has been investigated for two decades. The Bonneville Power Administration (BPA) funded wind data collection activities throughout the Pacific Northwest during the 1980s. BPA is a federal agency that owns and operates the majority of the high-voltage electric transmission systems in the Pacific Northwest. Utilizing this BPA funding opportunity, the Oregon State University Energy Resources Research Laboratory collected and recorded wind data at Cotterel Mountain from 1984 through 1988.

National Oceanic and Atmospheric Administration (NOAA) meteorological data was also used to produce estimates of the level of available wind energy at various locations in several western states, including Idaho. These estimates were produced by computer simulations that analyzed decades of daily weather readings in relation to the topography of the area. The results showed that approximately two percent of Idaho landmass is in the highest wind resource categories: Class 5 (excellent), Class 6 (outstanding), and Class 7 (superb). The Cotterel Mountain ridgeline is within these three categories (Figure 1.0-2). In a United States (U.S.) Department of Energy (DOE) study of the potential for renewable resources on public lands, the Cotterel Mountain area is classified as one of 25 BLM planning units with the largest total land area with a Class 5 or greater wind resource (USDI, BLM/DOE 2003).

In late 2000, in response to the electric energy-pricing crisis in California and the Northwest, BPA issued a "Request for Proposals" (RFP) for additional electrical power generated from potential wind energy projects and Windland, Inc. (Windland), a Boise, Idaho company, began to investigate opportunities to responding to BPA's RFP.

In February 2001, Windland submitted an application to the BLM Burley Field Office for a right-of-way (ROW) grant to conduct its own wind testing on Cotterel Mountain. This application was accepted by the BLM (serial number IDI-33675).

In March 2001, Windland followed their first application with a second ROW application to construct, operate and maintain a wind-driven electric power generation facility on Cotterel Mountain. This application was filed by Windland in advance of the proposed meteorological data collection in order to be "first in" consideration for such a project. This second application was accepted by the BLM. Based on the size and scope of the proposed action, the BLM determined that the construction, operation and maintenance of a wind power project on Cotterel Mountain had the potential to result in significant environmental impacts, thereby triggering the need to prepare an Environmental Impact Statement (EIS) to evaluate the proposed action and all reasonable alternatives in compliance with the National Environmental Policy Act of 1969 (NEPA).

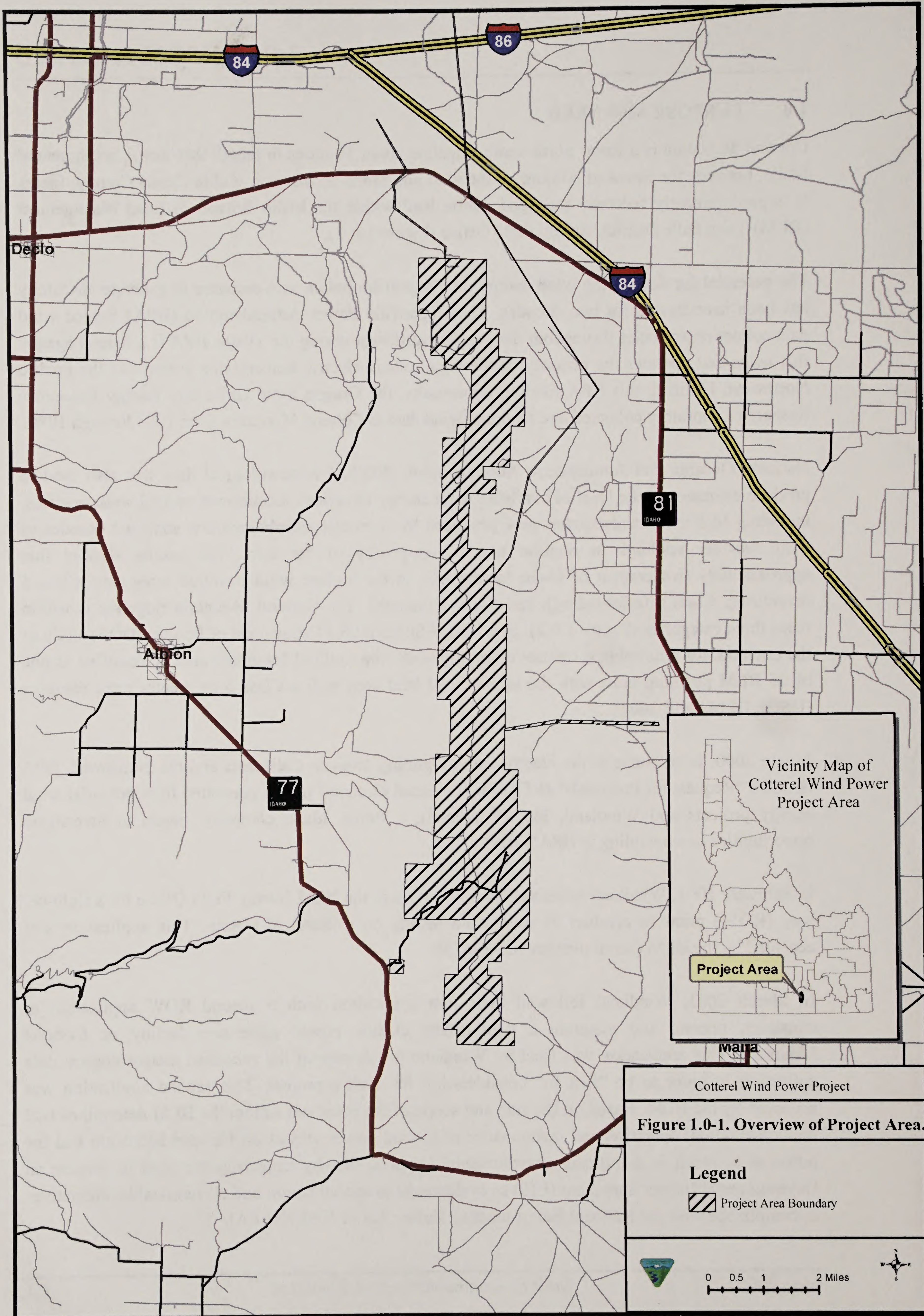

Figure 1.0-1. Overview of Project Area.

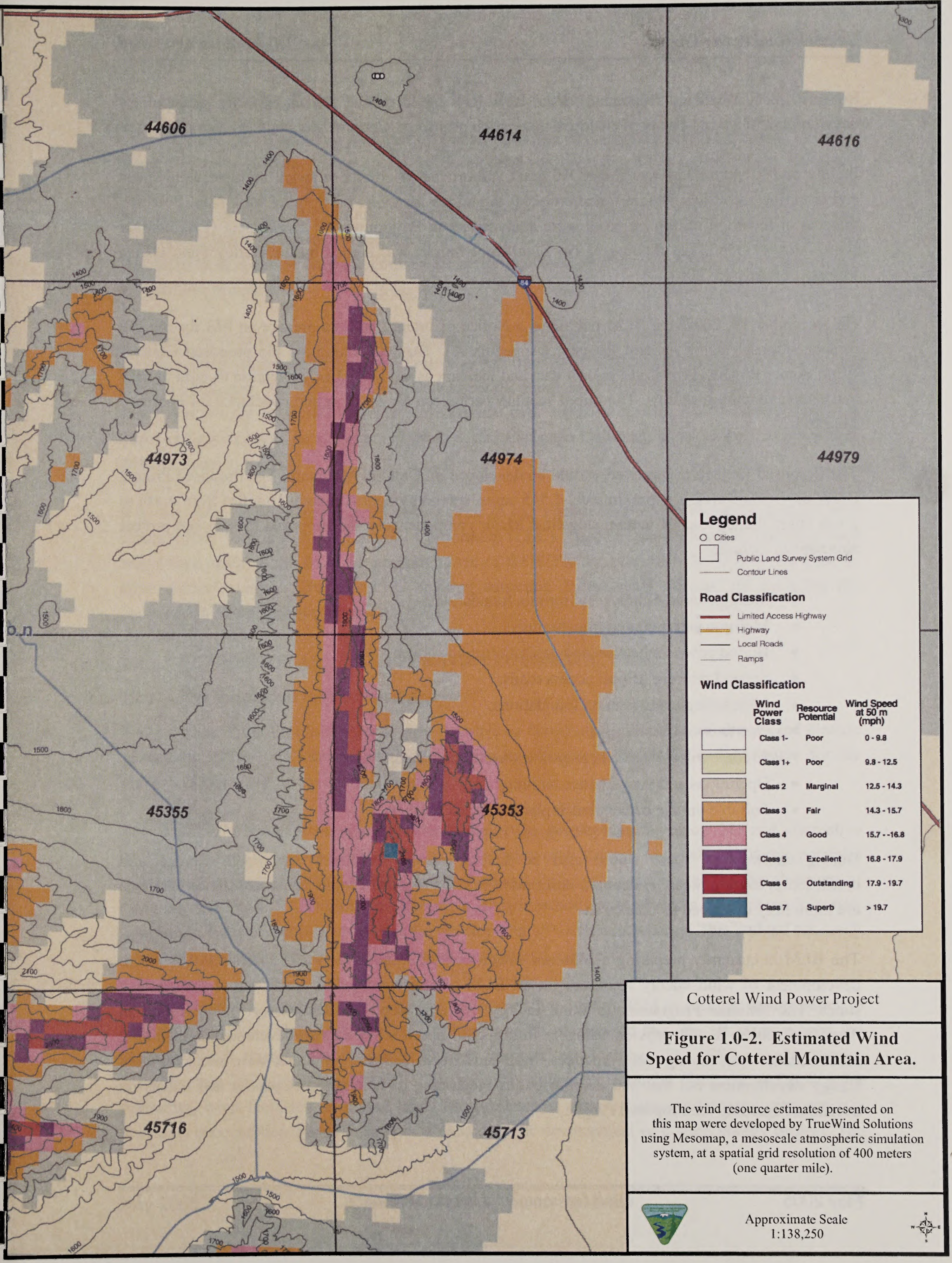

Figure 1.0-2. Estimated Wind Speed for Cotterel Mountain Area.

The wind resource estimates presented on this map were developed by TrueWind Solutions using Mesomap, a mesoscale atmospheric simulation system, at a spatial grid resolution of 400 meters (one quarter mile).

In April 2001, Windland responded to the BPA RFP based on the studies showing potential for development of a wind-powered electrical generation project on Cotterel Mountain (Figure 1.0-2).

In July of 2001, the BLM issued a ROW grant authorizing Windland to install multiple wind speed and direction recording devices (anemometers) at various locations on Cotterel Mountain. Potential impacts of the wind testing proposal were analyzed in an Environmental Assessment (EA) number ID-077-EA-01-0063, and Finding of No Significant Impact was signed by the Burley Field Office Manager on July 13, 2001.

On December 19, 2002, the BLM published a Notice of Intent (NOI) to prepare an EIS for the full project proposal in the Federal Register (Appendix A). The NOI identified the proposed Cotterel Wind Power Project (Proposed Project) area and location as well as BLM's intention to hold agency and public scoping meetings. The initial scoping period ran for 60 days and concluded on February 21, 2003.

The Proposed Project, if approved, would be developed on Cotterel Mountain. The Proposed Project ROW application area is approximately 4,545 acres, extending approximately 16 miles from north to south along the Cotterel Mountain ridgeline. Major components of the Proposed Project and project alternatives include:

- Multiple wind turbines and turbine foundations;
- Multiple pad-mounted transformers;
- Buried power collection and communication cables;
- Several miles of project access roads;
- Meteorological towers on foundations;
- One to two substations;
- 138 kilovolt (kV) overhead power transmission line;
- Operations and maintenance building; and
- Portable on-site cement batch plant and rock crusher.

During construction, there would also be several on-site temporary equipment storage and construction staging areas. A detailed description of the Proposed Project and construction methods are more fully described in Chapter 2.

The BLM is currently preparing a *National Programmatic Wind Energy EIS* to address the future development of wind energy resources on all BLM-administered public lands across the western states. The National Programmatic Wind Energy EIS is presently scheduled for public release in August of 2005. It will provide valuable information about wind energy development, including recommended best management practices. It amends BLM land use plans that were silent on wind energy development but that had no restrictions precluding it. It is not site-specific and makes no decisions regarding the Proposed Project.

1.1 THE APPLICANT

Windland, Inc. (Windland) is a privately owned wind energy development company located in Boise, Idaho. The company has a long history of developing and operating wind power plants. Windland currently manages wind farms in California and has additional projects under and/or proposed for development in Idaho, Oregon and California. Windland is considered a pioneer in the American wind energy industry, having owned and operated a wind farm near Tehachapi, California since 1982. This wind farm is one of only a handful in the nation operated continuously by the same organization for over two decades.

Windland is currently the sole ROW Applicant for the Proposed Project. However, Windland is pursuing the development of Proposed Project as part of a 50-50 joint venture between Windland and Shell WindEnergy, Inc. (SWEI). Shell Oil Corporation and part of the Royal Dutch/Shell group of companies wholly own SWEI. SWEI currently has over 1,000 megawatts (MW) of wind projects under various stages of development in the U.S. and European Union and is the second largest owner of wind farms in the U.S.

It is the intent of Windland and SWEI that prior to any construction of the Proposed Project, they would jointly form a Limited Liability Corporation (LLC), or other corporate entity and Windland would then apply to the BLM for an assignment of the ROW application, IDI-33676 to the LLC or other corporate entity. The new LLC or other corporate entity would be used for financing the construction of the Proposed Project.

1.2 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.2.1 The Purpose of the Proposed Action

The purpose of the Proposed Action is to develop an economically feasible wind-powered electric generation facility on Cotterel Mountain, creating an alternative renewable energy source for the nation's existing and future energy demands.

The President's National Energy Policy encourages the development of renewable and alternative energy resources, including wind energy, as part of an overall strategy to develop a diverse portfolio of domestic energy supplies (NEPDG 2001). National Policy also encourages the development of clean energy. The U.S. Congress and Executive Branch recently re-instituted a 1.8-cent per kilowatt-hour production tax credit to encourage the development of clean wind energy. This Federal tax credit equals approximately 25 percent of the productive value of a project.

The Department of the Interior (USDI) and, more specifically, the BLM is seeking opportunities to develop renewable resources including wind energy. To accomplish this, the BLM developed the Interim Wind Energy Development Policy, released on October 16, 2002, in Instruction Memorandum 2003-20 (Appendix B). This policy provides the common direction and policy for permitting wind facilities on public land. The presence of an adequate wind energy resource is a necessary precondition for an area to be a candidate for development of a wind energy project. The site must also have adequate construction and transmission access. There must be adequate access from the proposed wind project site to existing transmission lines that would carry the power produced by the wind farm to consumers. The proposed Cotterel Mountain site meets these conditions.

1.2.2 The Need for the Proposed Action

The 2003 energy forecast estimates demand for electricity growing in the northwestern U.S. by an annual average of 214 MW (NWPCC 2003). Similarly, the Idaho Power Company (IPC), the largest electric utility in southern Idaho (Figure 1.2-1), recently predicted a 1.9 percent per year system load growth in the region it serves near the Proposed Project area (IPC 2002). The Proposed Project would provide an alternative renewable energy source in an area that has a demonstrated increasing demand. Both IPC and PacifiCorp recently issued a RFP for wind energy in their service districts, actively seeking renewable energy alternatives to traditional energy development. The IPC RFP is for 200 MW and the PacifiCorp RFP is for 500 MW of wind power.

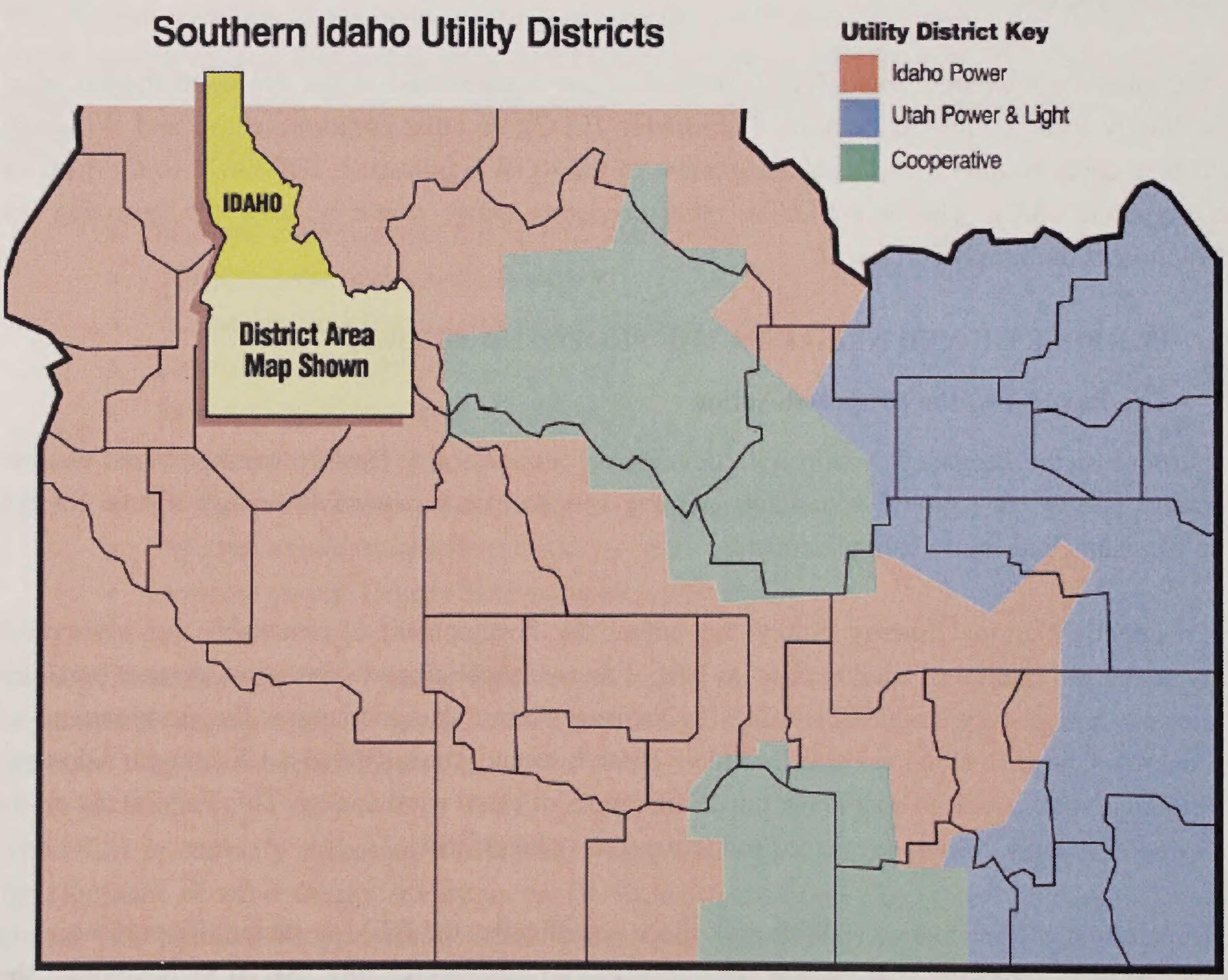

Figure 1.2-1. Southern Idaho Utility Districts.

Meeting the need for additional demand for electricity in southern Idaho is complicated by limitations to the capacity of the existing electric transmission resources in that area. In southern Idaho, the transmission of electricity is constrained by certain components in the transmission grid. The term "transmission constraint" refers to a limit in the electrical transmission system that could prevent the delivery of electricity to a portion of the grid. Two transmission constraints in southern Idaho are located near American Falls in southeastern Idaho and near the Brownlee Dam in west-central Idaho (Figure 1.2-2). The Proposed Project lies "inside" these transmission constraints.

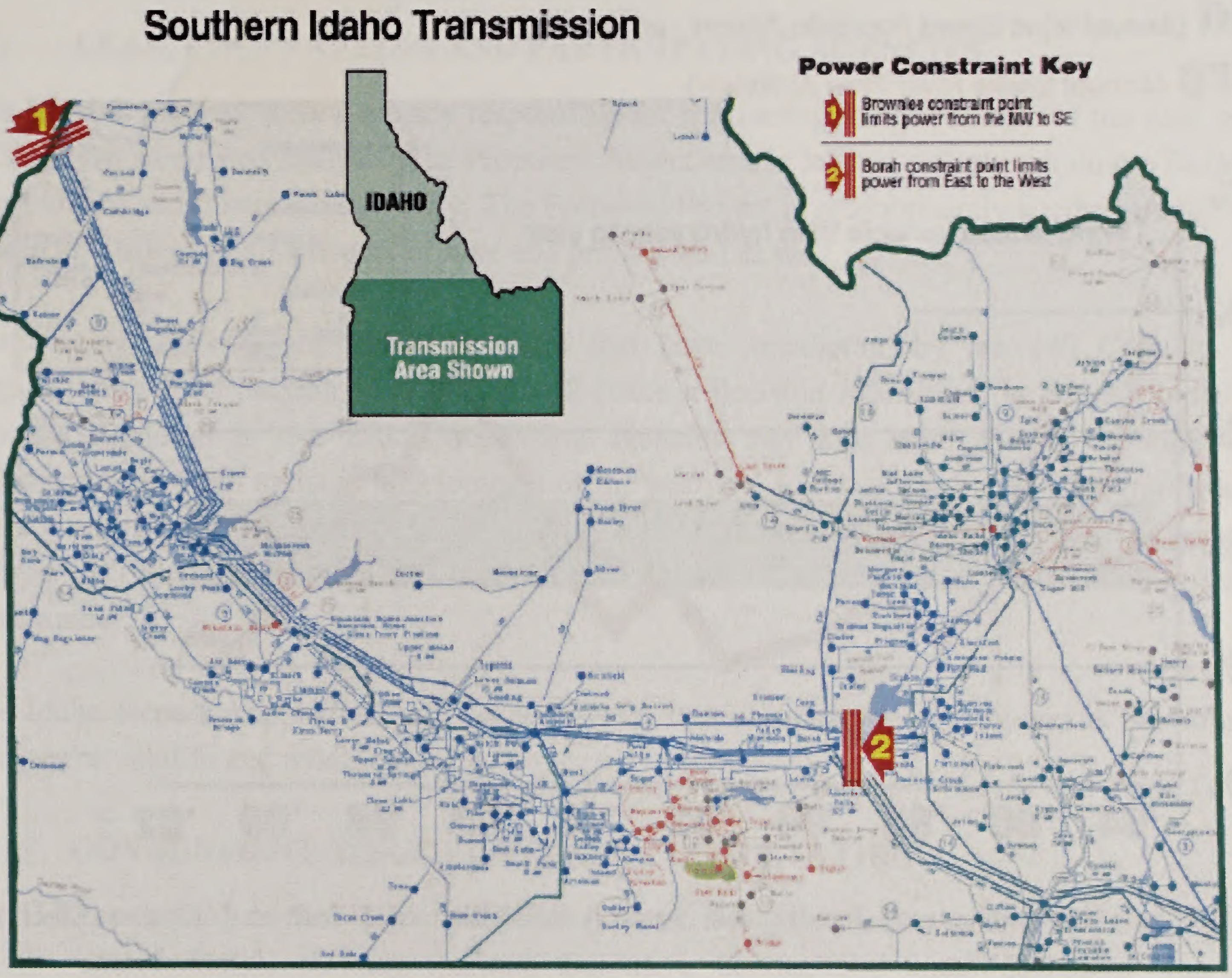

Figure 1.2-2. Electrical Transmission Grid of Southern Idaho.

Idaho Power Company typically generates 55 percent of its electricity at hydroelectric dams on the Snake River. The amount of hydro-generated electricity varies yearly because of the inter-annual variability of precipitation. Due to a third year of poor hydro conditions in 2002, only 45 percent of its electric generation came from hydro, forcing IPC to increase its reliance on the coal and gas fired plants that it owns and operates at Jim Bridger, Wyoming; Boardman, Oregon; Valmy, Nevada; and Mountain Home, Idaho and on power purchases on the wholesale market (IPUC 2003). Because the inter-annual variability of wind energy is lower than the inter-annual variability of precipitation powering hydro-generated electricity, cost effective wind generated electricity can effectively supplement the current supply of electrical generation in southern Idaho (Figure 1.2-3). Other utilities in the northwestern U.S. (including PacifiCorp, Portland General Electric, and Puget Sound) have identified renewable energy resources (such as wind power) as appropriate resources to meet the growing demand for electricity in their service territories.

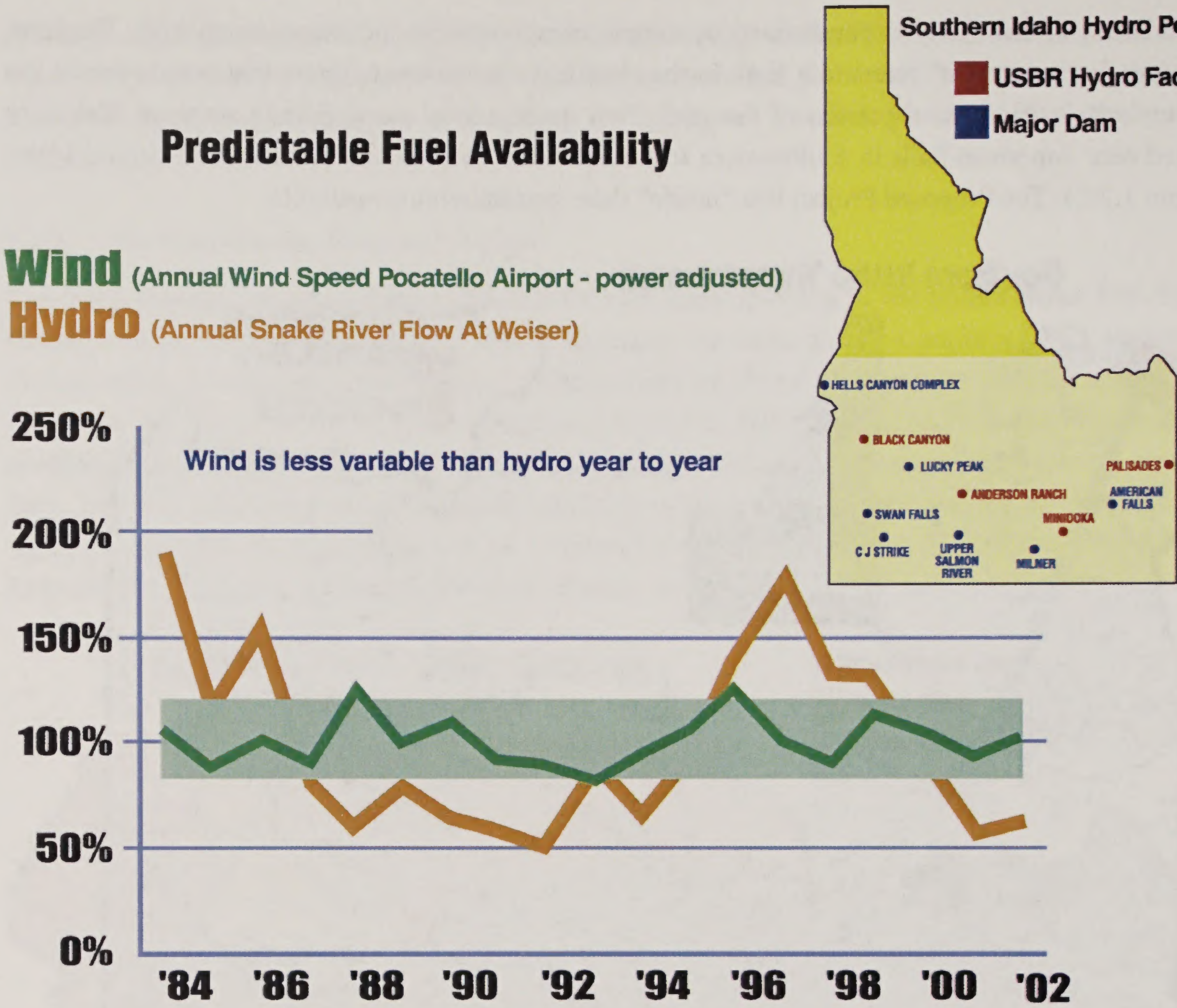

Figure 1.2-3. Comparison of Predictable Fuel Availability of Wind and Hydro Electrical Generation.

The Proposed Project would contribute to meeting the economic needs of Cassia County and the surrounding communities. Recently, Cassia County and the surrounding area experienced business closures and work force layoffs. The downturn in employment is primarily the result of a decline in the local food processing industry, which includes the closing of the large Simplot Plant in Heyburn, Idaho, who was a primary employer in the local community.

The Proposed Project would create both temporary and permanent long-term jobs. Construction activity would result in favorable trends for employment and economic benefits within Cassia County. Employment effects would include (1) indirect employment resulting from the purchase of goods and services by firms involved with construction, and (2) induced employment resulting from construction workers spending their income in the local area. Similarly, indirect and induced income and spending effects would also occur as "ripple" effects or economic multiplier effects as construction dollars come into the local economy. Beneficial impacts to local businesses and the economy would include:

- Spending by "temporary" construction workers for food, gas, and lodging;
- Spending by construction contractors for supplies and standard materials needed for construction (these would include but not be limited to road construction fill and surfacing, concrete materials and water); and
- Additional permanent jobs and related income adding to the local economy.

1.3 LEAD, COOPERATING AND PARTICIPATING AGENCIES

The BLM is the lead federal agency responsible for conducting the preparation of the draft and final EIS and the associated analysis. The Proposed Project area is located entirely within the Burley BLM Field Office administrative boundary. The Proposed Project is predominantly sited on public land but would also affect small amounts of state and private land as well.

Cooperating agencies are federal agencies that have jurisdiction by law (40 Code of Federal Regulations (CFR) Section 1501.6) and will make a decision relative to the project based on the analysis disclosed in this EIS. Cooperating agencies may also have special expertise or have information that will assist in development of the analysis. In this analysis, the cooperating agencies include the BPA, U.S. Fish and Wildlife Service (USFWS), Idaho Department of Lands (IDL), Bureau of Reclamation (BOR), and Cassia County Commissioners, representing the local government.

The Idaho Department of Fish and Game (IDFG) is a participating agency and is providing input relevant to wildlife and wildlife habitat.

1.4 GOVERNMENT-TO-GOVERNMENT CONSULTATION

The U.S. has a unique legal relationship with Indian tribal governments as set for in the Constitution of the United States, treaties, statutes, Executive Orders, and court decisions. The Federal Government has enacted numerous statutes and promulgated numerous regulations that establish and define a trust relationship with Indian Tribes.

The Federal Government, under the law of the U.S., in accordance with treaties, statutes, Executive Orders, and judicial decisions, has recognized the right of Indian tribes to self-government. As sovereign nations, Indian tribes exercise inherent powers over their members and territory. The U.S. continues to work with Indian tribes on a government-to-government basis to address issues concerning Indian tribal self-government, tribal trust resources, and Indian tribal treaty and other rights.

In this analysis, the BLM has formally initiated consultation with the sovereign nations of the Shoshone-Bannock Tribes and the Shoshone-Paiute Tribes. This consultation has been initiated with these Tribal Governments in the manner as requested by them.

1.5 INTERAGENCY WIND ENERGY TASK TEAM (IWETT)

The IWETT is a core group of representatives from USFWS, BLM, and IDFG that was formed in 2004 under a charter written to assist in the development of alternatives and mitigation recommendations for wildlife and wildlife habitat. Its guiding charter is displayed below:

IWETT Charter

> "This charter sets the goals of the Interagency Wind Energy Task Team in relationship to the Cotterel Wind Energy Proposal, presently being analyzed by the Bureau of Land Management (BLM) in Burley, Idaho. This team consists of representatives from the BLM, U.S. Fish & Wildlife Service, and Idaho Department of Fish & Game. Technical guidance relevant to the construction, operation and maintenance of a wind energy development will be provided by the applicant, Windland, Inc. in partnership with Shell WindEnergy, Inc. The goals are as follows:
>
> - Review baseline technical reports and data;
> - Assist and contribute to the development of mitigation measures;
> - Assist and contribute to development of adaptive management strategies;
> - Assist with development and/or further enhancement of alternatives; and
> - Identify additional data needs, if appropriate.
>
> All goals are intended to be achieved in a timely manner.
>
> This interagency effort is intended to contribute collective agency experience and scientific expertise to the development of the Draft and Final Environmental Impact Statement being prepared by the BLM. It shall be considered part of the analysis process and does not constitute any decision action on the part of any of the participating parties."

This team has contributed significantly to the analysis process. Its recommendations have been taken into consideration and used in the impact analysis and in the development and enhancement of alternatives, mitigation and monitoring strategies for the Proposed Project.

1.6 CONFORMANACE WITH EXISTING LAND USE PLAN

The BLM existing Cassia Resource Management Plan, 1985 (Cassia RMP) does not address wind energy development. At the time of preparation of the Cassia RMP, Cotterel Mountain was not considered as a wind energy site. In addition, the proposed action is not consistent with the Cassia RMP. The Cassia RMP states that BLM will not approve any additional ROW authorizations in Management Unit 11. An amendment to the Cassia RMP is being proposed and evaluated in this Draft EIS. The NOI also states the BLM's intention to amend the Cassia RMP. The proposed amendment would revise the existing restrictions that limit ROW development in the Cotterel Mountain Management Area. The amendment would allow for the granting of a ROW for the development of the Proposed Project. This proposed action and alternatives are consistent with the Cassia RMP in meeting all other land management objectives.

1.7 SCOPING

In December 2002, a scoping statement was mailed to government agencies, municipalities, Native American Tribes, grazing permittees, lease operators, industry representatives, environmental organizations, and individuals having a potential interest in the Proposed Project. Local and regional media also received the scoping statement and a press release. The scoping statement explained the Proposed Project and requested comments regarding issues and concerns that should be addressed in the Draft EIS. Three public scoping meetings were held in the towns of Albion on January 7, 2003; Burley on January 8, 2003; and Boise, Idaho on January 9, 2003, with 135 total attendees. Initial scoping comment letters were encouraged through February 21, 2003 to help the BLM identify issues that would guide the formulation of alternatives to the proposed action. Written comments were received from 47 individuals, three Federal and state agencies, and five interest groups. A list of all respondents is presented in Chapter 5.

1.7.1 Significant Issues Identified and Used to Develop Alternatives

NEPA requires Federal agencies to identify and analyze significant issues related to a proposed action and its alternatives. Significant issues primarily serve as the basis for developing and comparing alternatives. While the focus of the analysis is on significant issues identified, all issues brought forward through the scoping process are considered. The following is a list of significant issues identified by the public, Shoshone Bannock tribes, the Shoshone Paiute tribes, BLM, and other governmental organizations that were used to develop alternatives and assess impacts of the Proposed Project. The significant issues addressed in this Draft EIS include:

- Sage-grouse – Commentors were concerned that the Proposed Project would result in the loss of sage-grouse habitat, loss of nesting habitat and disturbance to leks. Grouse could also be killed by colliding with wind turbines.

- Tribal treaty rights or heritage links to public lands – The Tribes expressed a desire that these be maintained and protected.

- Migratory birds including raptor migration – Commentors expressed concern over migratory birds being killed by colliding with wind turbines.

- Public access – Commentors expressed the need to continue to allow and protect public access to the Cotterel Mountain.

- Visual resources – Commentors expressed concern about the visual impact to the town of Albion and other communities, as the Proposed Project would be in close proximity to towns, ranches, and homes.

- Conformance with the Cassia RMP – Internal review disclosed the proposed action was not in conformance with the Cassia RMP and an amendment would be required.

1.7.2 Other Issues and Concerns Addressed

Other issues and concerns were identified by the public, BLM, Shoshone Bannock Tribes, Shoshone Paiute Tribes, and other governmental organizations regarding the Proposed Project and its alternatives. They are listed below and described in more detail in Chapter 3 of this Draft EIS.

- Air Quality
- Ridgeline and cultural significance to tribes
- Historical migrations routes of tribes
- Geology
- Soils
- Water Resources (including surface, groundwater, and springs)
- Noise/vibration/harmonics
- Vegetation
- Noxious weeds
- Wildlife
- Wind turbine effects on birds and bats
- Direct and indirect wildlife habitat loss
- Mule deer winter range
- Increased human activity on Cotterel Mountain and its effects on wildlife
- Threatened, Endangered, and Sensitive Species and their habitats
- Cultural and historical resources
- Socioeconomics
- Land use
- Private land values
- Increased traffic on local roads during construction
- Livestock grazing
- Recreation

1.7.3 Issues Deemed Outside the Scope of the Draft EIS

Some issues were found to be outside of the scope of the Draft EIS. These included management direction or habitat suitability assessments for the reintroduction of big horn sheep into the Cotterel Mountain. The potential impacts of the Proposed Project to the suitability of the Cotterel Mountain for reintroduction of big horn sheep will not be addressed in the Draft EIS. The loss of sage-steppe habitat for sage-grouse will be assessed as it relates to the Proposed Project. However, it is outside the scope of this Draft EIS to assess the loss of sage-steppe habitat from a range management standpoint in regard to grazing. The issue of whether or not the wind turbines would be manufactured in the U.S. was deemed outside the scope of the Draft EIS because the source and manufacturer of the turbines will have no effect on the development or analysis of the alternatives. Other issues of concern included the need for development of all forms of renewable energy. The Draft EIS will address creating power with wind energy, but will not address the need for other sources of energy or other locations for the Proposed Project.

The Applicant's proposal identified the Proposed Project area for development. The wind resource in southern Idaho has been studied since the 1980s. The results showed that less than two percent of the Idaho landmass is in the top three wind resource categories: Class 5 (excellent), Class 6 (outstanding), and Class 7 (superb). The majority of the Cotterel Mountain ridgeline is within one of these three categories. Based on the above-mentioned studies and wind data collection that the Applicant completed, the Proposed Project site has a proven wind resource suitable for producing electricity at competitive prices. Other possible project site locations could jeopardize project feasibility because of a lack of sufficient wind resource or remoteness from nearby power transmission lines or barriers to access by construction equipment.

1.8 FEDERAL AND STATE AUTHORITIES AND ACTIONS

Table 1.8-1 lists all authorizing actions required for project compliance with all relevant Federal and state laws. The development of energy resources is part of the BLM management program under the authority of the Federal Land Policy and Management Act of 1976. The development of energy-generation facilities is an integral part of the President's National Energy Policy, which encourages the development of renewable energy resources, including wind energy, as part of an overall strategy to develop a diverse portfolio of domestic energy supplies for the nation's future and decrease reliance on external suppliers.

Table 1.8-1. Federal and State Authorities and Actions for the Proposed Project.

Agency	Action	Authority
U.S. Bureau of Land Management	Draft EIS, Final EIS, Cassia RMP Amendment, and Record of Decision preparation	NEPA, 40 CFR Parts 1500-1508; Federal Land Policy and Management Act of 1976 (as amended), Public Law 94-579.
	ROW grant	U.S. Department of the Interior, Federal Land Policy and Management Act of 1976 (as amended) Public Law 94-579; 43 CFR 2800
	Notice to Proceed	BLM Manual H-2801-1 ROW Plan of Developments
Bonneville Power Administration	Cooperating agency - support renewable energy sources Interconnection approval	Public Law 96-501 BPA Open Access Tariff

Table 1.8-1. Federal and State Authorities and Actions for the Proposed Project.

Agency	Action	Authority
U.S. Bureau of Reclamation	Granting of ROW	
U.S. Environmental Protection Agency	Permit for treatment, storage, or disposal of hazardous wastes Air Quality	Resource Conservation and Recovery Act Clean Air Act as amended 1990
U.S. Fish and Wildlife Service	Cooperating agency. Review impact on federally listed or proposed TES species of fish, wildlife, plants, and migratory birds Preparation of Biological Opinion of potential project impacts on Threatened and Endangered species Provides input on recommended mitigation measures	Fish and Wildlife Coordination Act of 1934, as amended 1946, 1977 (16 U.S.C. 661-667e); Endangered Species Act of 1973 (16 U.S.C. Sections 1531 *et seq.*); Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703 *et seq.*); Eagle Act (16 U.S.C. 668-668d).
Idaho Department of Fish and Game	Review impact, wildlife, and wildlife habitat and assist in developing mitigation measures	Fish and Wildlife Coordination Act of 1934, as amended 1946, 1958, 1977 (U.S.C. 661-667e).
Idaho Department of Lands	Granting of ROW	State of Idaho Administrative Rule 20.03.08 Easements on State Owned Land
Idaho Department of Environmental Quality	Permit for Concrete Batch Plant Permit for Mobile Rock Crusher	Administrative Rule 5801200 and Permit by Rule requirements 5801795
Idaho State Historic Preservation Office	Consult with BLM on-site eligibility and the effects of the Proposed Project on eligible sites Provide determination of eligibility	National Historic Preservation Act of 1966, as amended (16 U.S.C. 470).

1.9 DECISIONS TO BE MADE

1.9.1 Bureau of Land Management

The BLM will make a decision whether or not to grant a ROW to allow for the construction, operation, and maintenance of the Proposed Project on federal lands. The BLM will also make a decision whether or not to amend its existing Cassia RMP, which will allow for the granting of the

ROW if so decided. Both decisions will be outlined in a Record of Decision, based on the outcome of the EIS.

1.9.2 Bonneville Power Administration

The BPA will make a decision whether or not to offer contract terms for the interconnection of the Windland project to the Federal Columbia River Transmission System (FCRTS). BPA has adopted an Open Access Transmission Tariff for the FCRTS, consistent with the Federal Energy Regulatory Commission's (FERC) *pro forma* open access tariff*. Under BPA's tariff, BPA offers transmission interconnection to the FCRTS to all eligible customers on a first-come, first-served basis.

> *Although BPA is not subject to FERC's jurisdiction, BPA follows the open access tariff as a matter of national policy. This course of action demonstrates BPA's commitment to non-discriminatory access to its transmission system and ensures that BPA will receive non-discriminatory access to the transmission systems of utilities that are subject to FERC jurisdiction.

1.9.3 U.S. Bureau of Reclamation

The BOR will make a decision on whether or not to grant a ROW for a portion of any transmission line that would cross lands managed by the BOR.

1.9.4 U.S. Fish & Wildlife Service

The USFWS will issue a Biological Opinion based on the Biological Assessment of impacts to threatened and endangered species.

1.9.5 Idaho Department of Lands

The IDL will make a decision whether or not to grant a ROW for a portion of any transmission line, any wind turbines, or any access roads that would cross state land.

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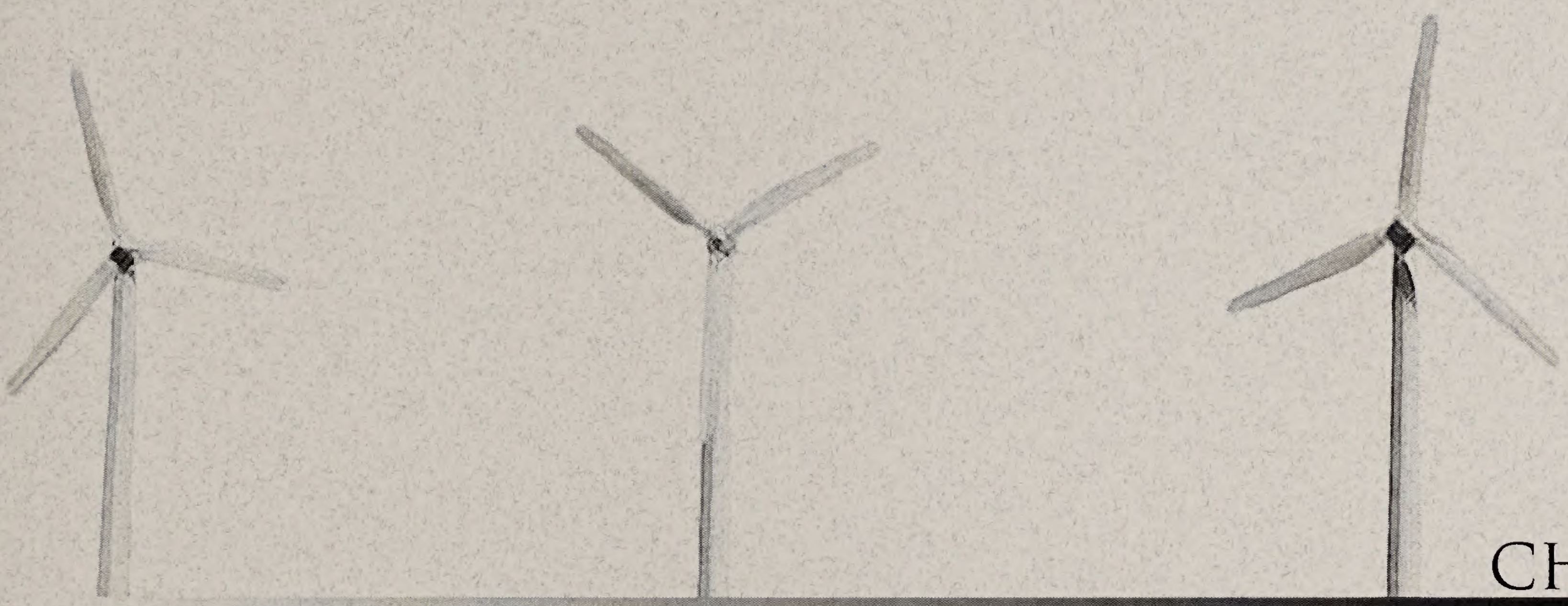


CHAPTER 2

PROPOSED ACTION AND ALTERNATIVES

2.0 PROPOSED ACTION AND ALTERNATIVES

The purpose of this chapter is to identify and describe the alternatives (potential actions) associated with the proposed Cotterel Wind Power Project (Proposed Project) including the Proposed Action and No Action Alternatives. Under the National Environmental Policy Act (NEPA), agencies must:

> "rigorously explore and objectively evaluate all reasonable alternatives and for alternatives which are eliminated from detailed study, briefly discuss the reasons for their having been eliminated [(40 Code of Federal Regulations (CFR) 1502.14(a))]."

Section 1502.14 requires the Environmental Impact Statement (EIS) to examine all reasonable alternatives to the proposal. In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than whether the Applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are technically and economically practical, are feasible, and use common sense, rather than simply desirable from the standpoint of the Applicant (Council of Environmental Quality (CEQ) 4646 FR 18026 [March 23, 1981] as amended).

2.1 PROPOSED ACTION AND RANGE OF ALTERNATIVES

This Draft EIS considers four alternatives:

- Alternative A: The No Action Alternative
- Alternative B: Applicant's Proposed Action
- Alternative C: Modified Proposed Action with fewer but larger output wind turbines, alternative access, alternative transmission line locations and alternative turbine types
- Alternative D: Modification of Alternative C with a reduced number of wind turbines

These alternatives have been developed in accordance with CEQ regulations to provide decision-makers and the public with a clear basis for choice (40 CFR 1502.14). A detailed description of these alternatives is provided below. If selected, Alternative B, C and D would require amending the Cassia Resource Management Plan (RMP). Alternative A would not require an amendment to the RMP.

2.1.1 Alternatives Considered and Eliminated from Detailed Study

The Bureau of Land Management (BLM) considered two alternatives (Alternatives E and F) that were not carried forward or analyzed in detail. One alternative was proposed as a modification of Alternative D, which attempted to achieve a greater balance between reducing the potential for impacts to sage-grouse habitat and habitat use while maintaining an economically viable wind energy development. The alternative attempted to avoid the most direct suspected impacts to sage-grouse lek use and associated nesting at several key locations on the mountain by eliminating turbines from those areas. This substantially reduced the number of turbines allowed. The other alternative focused on the complete protection of sage-grouse and minimizing possible impacts by severely reducing the numbers of turbines allowed. A description of these alternatives and brief rationale for why they are not analyzed in detail is disclosed in Section 2.7 below.

2.2 ALTERNATIVE A (NO ACTION)

Background: As required by NEPA, this Draft EIS includes Alternative A, a No Action Alternative as the baseline against which the action alternatives can be compared. This baseline also allows for the disclosure of the effects of not developing the proposed wind power project and its associated infrastructure. For purposes of this analysis, Alternative A assumes that no actions associated with the Proposed Project would occur, and existing management of the area would continue to be implemented under the Cassia RMP; therefore, an amendment to the Cassia RMP would not be required for this alternative.

Description of Alternative A: Under Alternative A, the Rights-of-Way (ROW) grant for the construction, O&M of a wind-powered electrical generation facility would not be granted and the RMP would not be amended by the BLM. This alternative would maintain current management practices for resources and allow for the continuation of resources uses at levels identified in the Cassia RMP. This alternative would also incorporate any management decisions that have been made subsequently to the Cassia RMP. This alternative generally satisfies most commodity demands of public lands, while mitigating impacts to sensitive resources. It includes moderate levels of resource protection and development including: wildlife habitat protection; range improvements; vegetation treatments; soil erosion controls; and fire management. In addition, livestock use, recreation activities (including off-highway vehicle use), timber harvest, and land development (energy and communication) would continue at present levels. However, these levels would be subject to adjustments when monitoring studies indicate changing resource conditions or trend has occurred. ROW would also continue to be limited to those allowed under the current RMP.

2.3 PROPOSED PROJECT FEATURES COMMON TO ALL ACTION ALTERNATIVES

The Proposed Project action alternatives would consist of access roads, wind turbines interconnected by a network of utility-grade facilities consisting of transformers at the base of each turbine, underground electric collection lines, substation(s), and transmission interconnect lines for connection to the existing utility grid. There would also be several wind speed measuring meteorological towers and an operations and maintenance (O&M) facility sited within the Proposed Project area. All of the wind turbine control systems would be connected by a communications system for computerized automated monitoring of the entire project. A temporary cement batch plant, rock crusher, and construction operation trailer pad would also be located on-site.

The Proposed Project involves one to three linear strings of wind turbine towers that would be sited on three distinct ridgelines on Cotterel Mountain. The towers within each string would be sited approximately one-quarter mile apart. The proposed Cassia RMP amendment is specific to the Cotterel Wind Power Project. No other wind energy projects will be permitted on Cotterel Mountain.

Understanding how a wind power generating facility function helps better understand the potential effects to resources and other public use of the area and aids in developing responsive management strategies to avoid, reduce and mitigate these effects wherever possible along the turbine string.

The Proposed Project is projected to operate at 0.35 (35%) capacity factor under optimum wind conditions. This means that the project generates 0.35 (35%) of its total nameplate capacity because the wind does not always blow at a speed high enough to turn the blades of the turbines and generate electricity; and at times it blows so fast, i.e., during storms, that the blades are feathered or braked (stopped).

This is not to say that all of the turbines in a project are running 35 percent of the time or that they all are not running 65 percent of the time. Each turbine functions independently of each other. The turbine blades begin to turn when the wind reaches speeds of approximately eight to nine miles per hour or greater. When wind speeds exceed approximately 55 miles per hour, the blades are feathered and turned out of the wind.

Naturally, wind speeds are variable along the length of a mountain ridge. As you move along a 12 to 14 mile turbine string, as is proposed on Cotterel Mountain, each turbine turns independently of the others according to the wind speed at its location. The observer will normally see that some turbines are turning and others are not turning at any given time. Rarely would all the turbines be either turning or not turning at the same time. Each turbine operates as a single entity; some may generate 45 percent of the time and others only 25 percent of the time because of their location on the mountain (it is only the overall project average that is 35%). In summary, it is difficult to predict at what time and how long any one turbine would be turning.

2.3.1 General Features of the Wind Power Project

The Wind Turbines

Wind turbines consist of three main physical components that are assembled and erected during construction: the tower; the nacelle; and the rotor blades. The modern wind turbines under consideration for the Proposed Project have tower heights that range from 210 to 262 feet and rotor diameters that range from 230 to 328 feet (Figure 2.3-1). The number of turbines proposed would range from 66 to 130 depending on the alternative.

Tower: The tower is a tubular freestanding, painted steel, conical (tubular)-type structure that is manufactured in multiple sections depending on the required height. Towers are delivered to the site and erected in two or three sections each. Each section is bolted together via an internal flange. An access door is located at the base of each tower. An internal ladder runs to the top of the tower just below the nacelle. The tower is equipped with interior lighting.

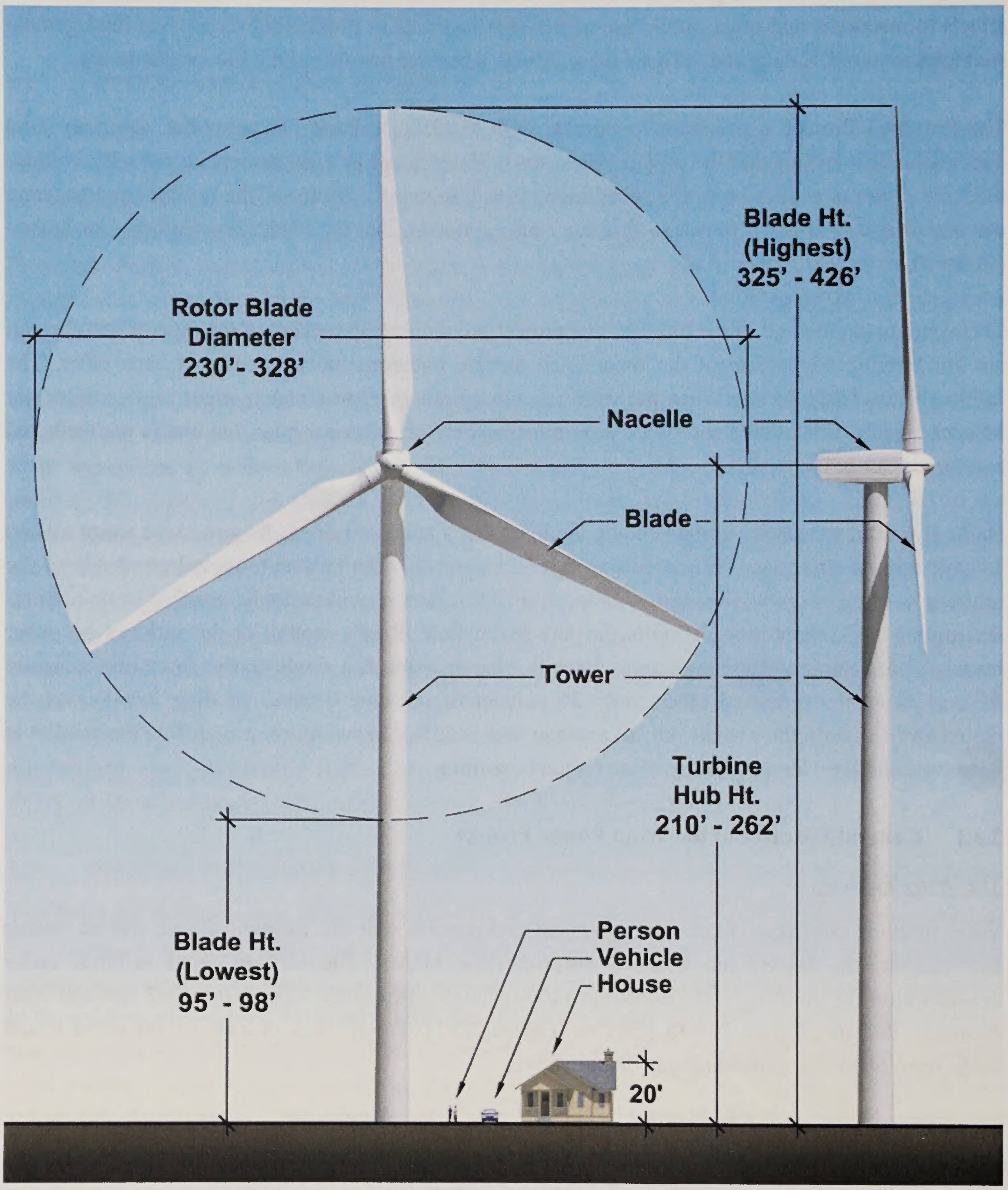


Figure 2.3-1. Diagram of a Typical Wind Turbine.

Nacelle: The gearbox, generator, and various control equipment are enclosed within the nacelle, which is the housing of the unit that protects the turbine mechanics and electronics from environmental exposure. A yaw system is mounted between the nacelle and the top of the tower on which the nacelle resides. The yaw system, which is comprised of a bearing surface for directional rotation of the turbine and a drive system consisting of a drive motor(s) to keep the turbine pointed into the wind to maximize energy capture. A wind vane and anemometer are mounted at the rear of the nacelle to signal the controller with wind speed and direction information.

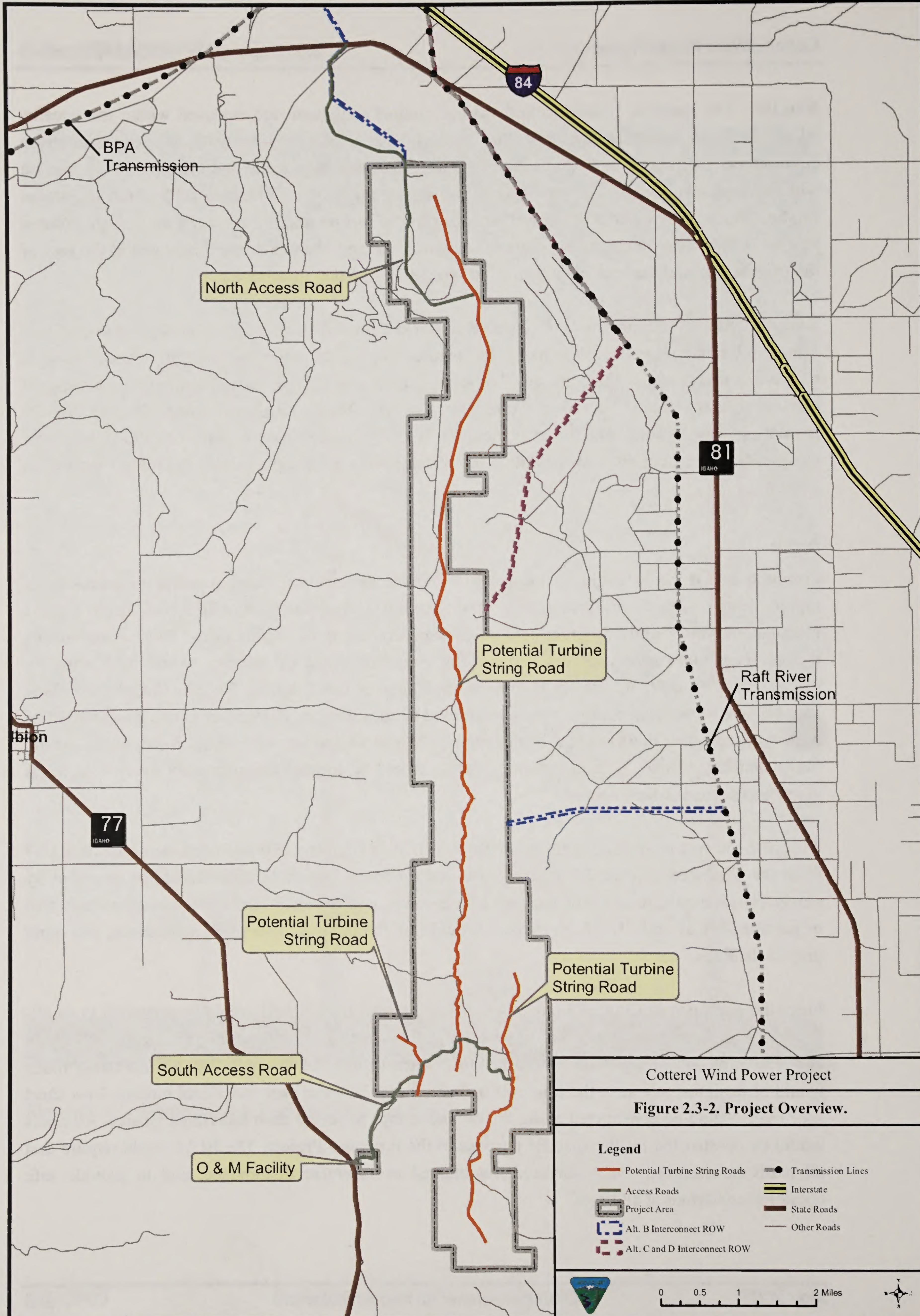
Rotor Blades: Wind turbines are powered by three composite or fiberglass blades connected to a central rotor hub. Wind creates lift on the blades, causing the rotor hub to spin. This rotation is transferred to a gearbox where the speed of rotation is increased to the speed required for the attached electric generator that is housed in the nacelle. The rotor blades turn slowly, typically less than 20 revolutions per minute. The rotor blades are typically made from a glass-reinforced polyester composite. The blades are non-metallic, but are equipped with a sophisticated lightning suppression system.

Roads

Proposed access roads would be located to minimize disturbance, avoid sensitive resources (e.g., raptor nests, cultural resource sites), and maximize transportation efficiency. Each turbine manufacturer has slightly different equipment transport and crane requirements. These requirements dictate road width and road turn radius. The type and brand of turbines would be limited by manufacturer production capacity within the timeframe of the Proposed Project schedule. To allow safe passage of the large transport equipment used in construction, all-weather gravel roads would be built with adequate drainage and compaction to handle 15-ton per axle loads. Road widths would range between 16 and 35 feet. Passing turnouts would be located approximately every four miles along access roads where needed.

Access to the area would be via Interstate 84 (I-84), State Highway (SH)-81 from the north, or SH-77 from the southwest (Figure 2.3-2). Access to the Proposed Project facilities would be provided by newly constructed extensions of existing access roads, and reconstructed existing access roads that begin from SH-81 and SH-77. New roads would link the individual turbines, substations, and other project facilities.

From the north end of Cotterel Mountain the existing road from SH-81 would be upgraded to an all-weather gravel road and would be the primary access route for all larger turbine components. New all-weather turbine string roads would be constructed to link the turbines. The turbine string roads would be designed to enable the transport of large cranes between each individual turbine. New short spur roads would be constructed along the turbine strings to access each individual turbine. All roads would be constructed for the specific purpose of the Proposed Project. The BLM would require that all roads be designed, built, surfaced, maintained to minimize disturbance, and to provide safe operation conditions at all times.



Cotterel Wind Power Project

Figure 2.3-2. Project Overview.

Electrical System

Each wind turbine generates electricity at approximately 600 volts. The low-voltage from each turbine generator would be increased via a transformer located at each turbine to the 34.5 kilovolt (kV) level required for the medium voltage collector system. The power collection system would consist of medium voltage, high-density insulated underground cables that connect each separate turbine to a substation. These underground cables would be buried in parallel trenches. These trenches would be primarily located within the roadbed of the turbine connector roads. In some cases underground cable trenches would need to be located outside of the roadbed. At the substation, voltage would be further increased to 138 kV. The stepped-up power would then be delivered through the transmission interconnect lines to the transmission grid.

Communications System

Each wind turbine generator contains electronic devices to constantly monitor turbine performance. Data from these monitoring devices can be read at each turbine. The data would also be distributed via a network of communication cables, and possibly radio links, to the O&M building. Underground communication cables would be buried in the same trenches as the medium voltage electrical system.

Substations

The main function of the substation is to step-up the voltage from the collection lines (34.5 kV) to the transmission level (138 kV) and to provide fault protection. The basic elements of the step-up substation facilities are a control house, a bank of one or two main transformers, outdoor breakers, capacitor banks, relaying equipment, high voltage bus work, steel support structures, an underground grounding grid and overhead lightning suppression conductors. All of the main outdoor electrical equipment and control house would be installed on a concrete foundation. The exact footprint of the substations would depend largely on the utility requirements, the number of turbines used and the resulting nameplate capacity, which would affect the number of 34.5 kV feeder breakers. Each substation would consist of a graveled footprint area of approximately one acre, a 12-foot chain-link perimeter fence, and an outdoor lighting system. Depending on the alternative, there would either be one or two substations for the entire project.

Transmission Interconnect Lines

The substation(s) would connect the project to existing transmission grid via 138 kV transmission interconnect line. The transmission interconnect line would be hung from two-pole, wooden H-frame structures approximately 60 to 65 feet tall (Figure 2.3-3). Overhead wires would consist of three wires attached to nonspecular (low reflectivity) conductors and two continuous ground wires.

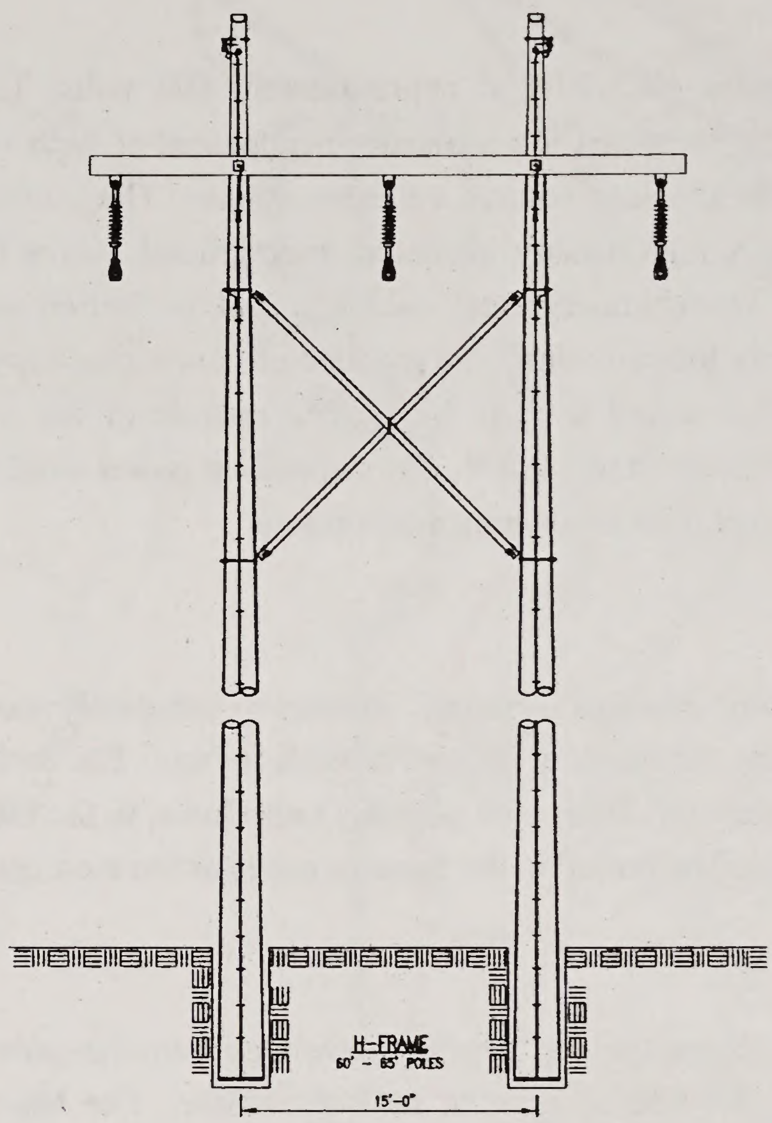


Figure 2.3-3. Typical Wooden H-Frame Transmission Interconnect Line Support Structure.

Operations and Maintenance (O&M) Facility

The O&M facility would be sited at the south access road east of SH-77 near the Conner Creek Summit. The O&M facility would include a main building with offices, spare parts storage, restrooms, a shop area, outdoor parking facilities, a turn-around area for larger vehicles, outdoor lighting and a gated access with partial or full perimeter fencing. The O&M building would have a foundation footprint of about 50 by 100 feet. The projected permanent footprint of the O&M facility (including parking area) would be about two acres. The building would be painted to match the surrounding landscape color and would be landscaped with native species of grasses and shrubs matching those found on-site prior to construction.

2.3.2 Construction

The Proposed Project would use standard construction and operation procedures used for other wind power projects in the western U.S. These procedures, with minor modification to allow for site-specific circumstances and differences between turbine manufacturers, are summarized below. Additionally, project construction and operations will follow BLM Best Management Practices (BMP) as described in Appendix C. The construction of the project is projected to take approximately eight months.

Staging/Equipment Lay-Down Areas

To facilitate the construction of the Proposed Project, project staging areas would be needed. It is anticipated that a single project staging area would be located off-site near I-84 northeast of Cotterel Mountain. This staging area would be sited on private land that would be leased by the Applicant for the duration of the project construction. The staging area would be approximately five acres in size and would be used for the temporary storage of turbine components, construction equipment, and other supplies.

Five equipment lay-down areas would be required for construction of the Proposed Project. The lay-down areas would be used during construction for storage of equipment and facility construction materials, equipment parking and refueling sites, crane assembly and disassembly, a batch plant, waste disposal and collection receptacles, sanitary facilities, and temporary modular office space. The lay-down areas would range from two to five acres in size. The total area of ground disturbance for the five lay-down areas would be approximately 15 acres.

Road Construction

To obtain preliminary roadway footprints, profiles and sections were developed for the Proposed Project roads. From these preliminary profiles and sections, estimates of cut-and-fill required to construct the roads were calculated using InRoads® model. Five-foot contour data were used to develop a digital terrain model that represents the existing ground in the InRoads® model. A horizontal alignment was created and overlaid on the digital terrain model. This alignment met the requirements for the type and size of trucks that would be delivering and constructing the Proposed Project. The roadway alignment requires the following design features:

- The road is to be gravel, 16 feet wide, less than two percent crown or inslope with ditch and culverts as required on uphill side.
- Maximum grade is ten percent.
- Maximum allowable dip is six inches in 50 feet. Maximum allowable bump is six inches in 50 feet.
- On turns, the minimum inside radius is 82 feet. The minimum outside radius is 115 feet (so at the apex of a 180 degree turn the road is 33 feet wide).

A profile was then developed from the digital terrain model along the horizontal alignment, and a vertical alignment was developed along the profile that met the requirements. A typical section was developed, that met the requirements, and was placed every 20 feet along the horizontal and vertical alignment. Cut-and-fill lines were developed on the digital terrain model at the 20-foot interval and interpolated between the 20-foot placements.

The numbers generated for area, along with cut-and-fill volumes for the Proposed Project roadways are based on general assumptions and approximate locations of the Proposed Project features. These numbers are for analysis purposes only. Final location of the road and the cut-and-fill volumes would be based on topography and sound engineering principles. Figure 2.3-4 shows a diagram of the typical cross section of the 16-foot wide project access roads. Figure 2.3-5 shows a diagram of the typical cross section of the 35-foot wide turbine string roads.

The minimum full-surfaced width for project access roads would be 16 feet. The roadway along the ridgelines to access the turbine string would be 35 feet in width. There would be no shoulders. Cut-and-fill slopes would be at a ratio of 2:1. Equipment clearance would require a minimum inside radius of 82 feet on all turns, and would be graded to within no more than 6 inches of rise or drop in any 50-foot length. Turnouts to allow for safe passing of construction vehicles would be 64 feet wide and 450 feet in length.

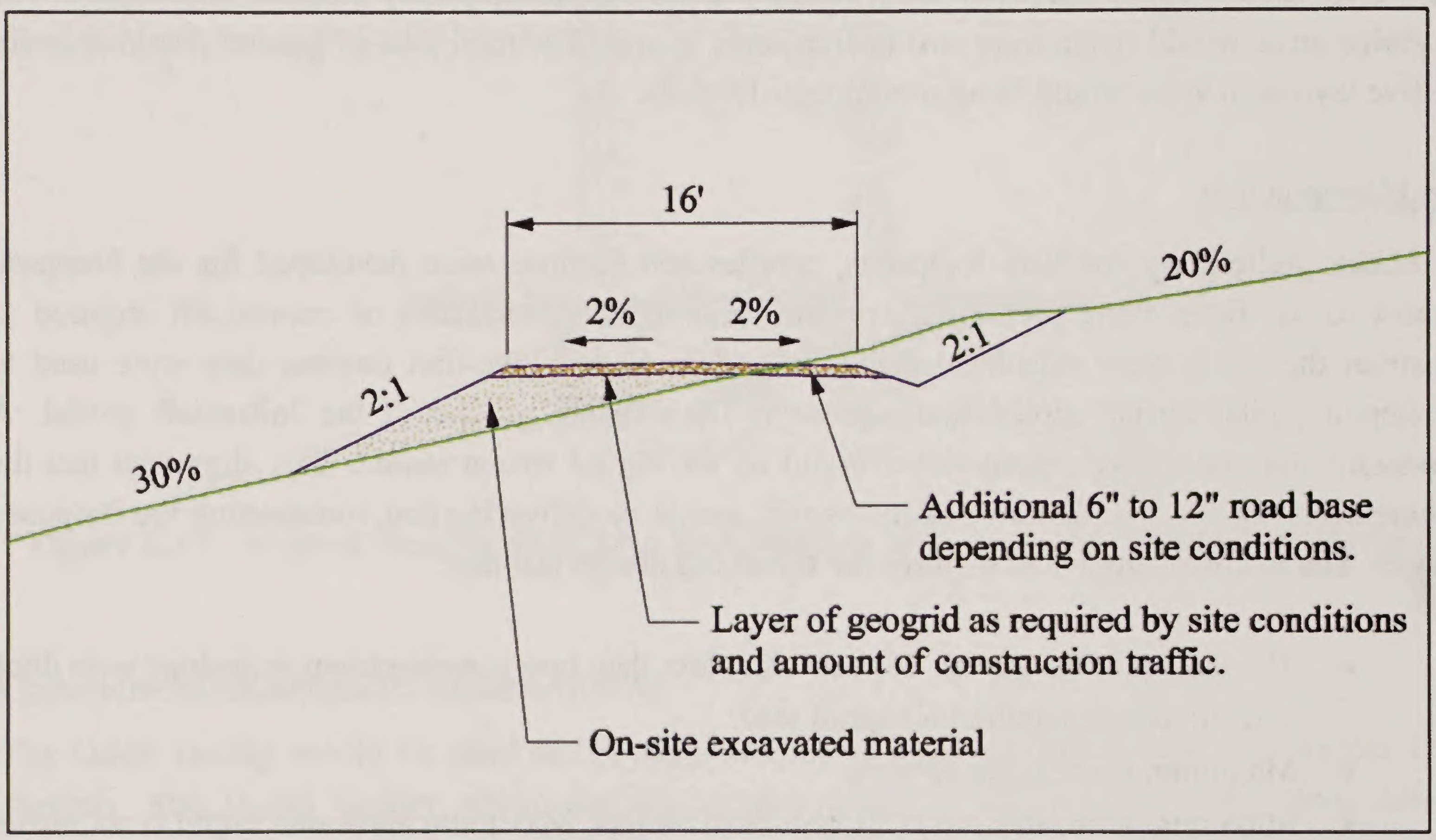


Figure 2.3-4. Typical Cross Section for Project Access Roads.

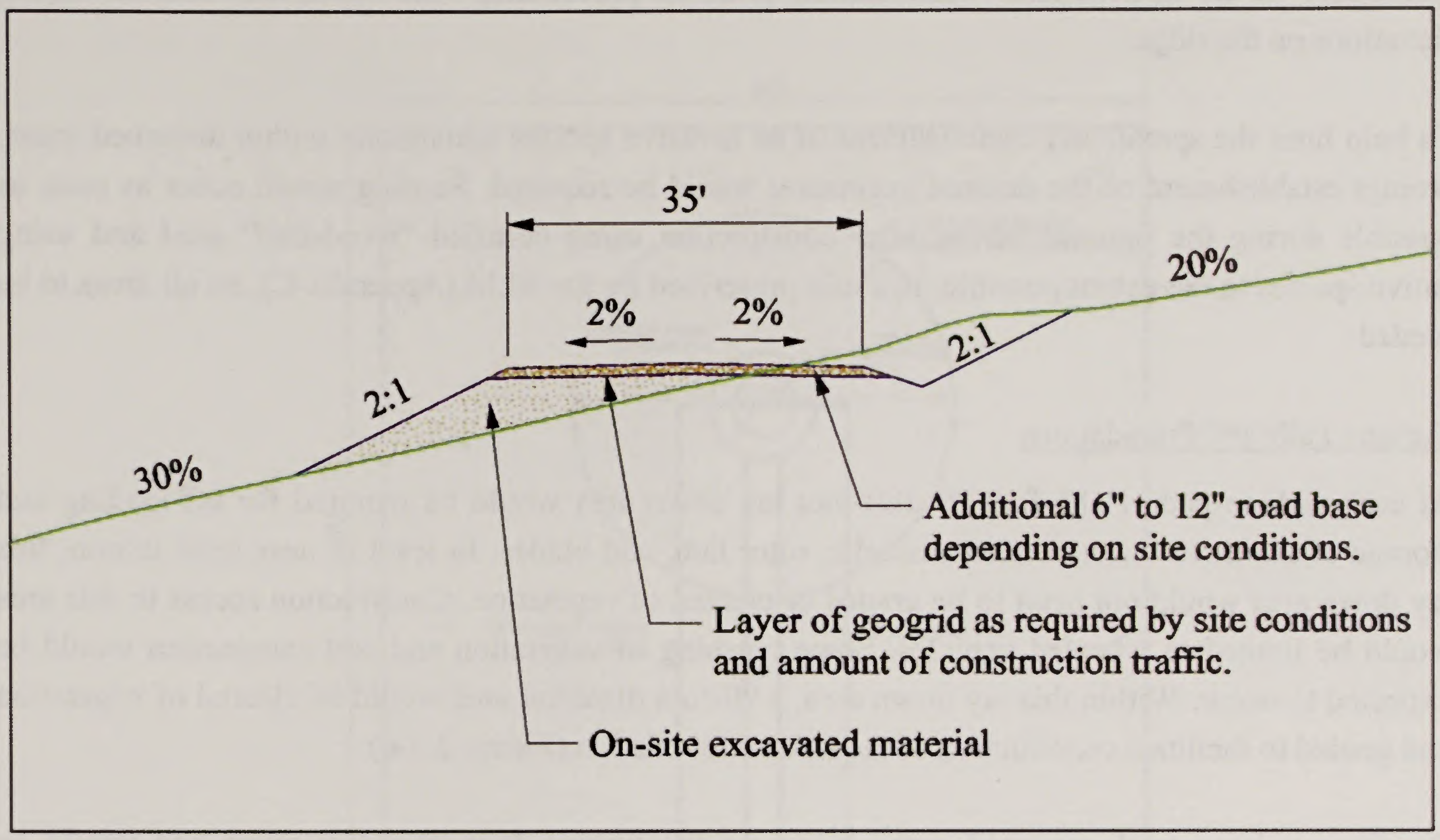


Figure 2.3-5. Typical Cross Section for Project Turbine String Roads.

No material quarries will be located on BLM or other federal lands. Any needed fill or road base material in excess of that generated from road cut activities would be obtained from a licensed off-site private source.

Topsoil removed during road construction would be stockpiled at project staging areas. The stockpiled topsoil would be respread on cut-and-fill slopes, and then re-vegetated as soon possible following road construction.

Construction traffic would be restricted to the roads developed for the project. Use of existing unimproved roads would be for emergency situations only. Flaggers with two-way radios would be used to control construction traffic and reduce the potential for accidents along all roads. Speed limits would be set commensurate with road type, traffic volume, vehicle type, and site-specific conditions as necessary to ensure safe and efficient traffic flow.

To avoid unnecessary impacts to vegetation, construction equipment would be limited to construction corridors and to designated staging/equipment lay-down area footprints. Where possible, the BLM Sensitive plant species *Pedio cactus* would be transplanted from road ROW and tower pad sites to areas outside of the project impact area, as approved by the BLM.

All construction equipment would be thoroughly washed off-site prior to delivery to the project site. To prevent the spread of weeds and noxious weeds within the Proposed Project area, construction equipment used for road construction at lower elevations on Cotterel Mountain would be washed thoroughly at an intermediate wash station prior to proceeding with work activities at higher elevations on the ridge.

To help limit the spread and establishment of an invasive species community within disturbed areas, prompt establishment of the desired vegetation would be required. Seeding would occur as soon as possible during the optimal period after construction using certified "weed-free" seed and using native species to the extent possible, in a mix prescribed by the BLM (Appendix C), on all areas to be seeded.

Turbine Pads and Foundations

At each turbine pad, a 185-foot by 180-foot lay down area would be required for off-loading and storage of the three tower sections, nacelle, rotor hub, and blades. In level or near level terrain, this lay down area would not need to be graded or cleared of vegetation. Construction access to this area would be limited to wheeled vehicles. Some crushing of vegetation and soil compaction would be expected to occur. Within this lay down area, a 90-foot diameter area would be cleared of vegetation and graded to facilitate construction of the turbine foundation (Figure 2.3-6).

To allow a large track-mounted crane to access the turbine foundations, a crane pad would be constructed adjacent to the turbine access road. The crane pad would be 40-feet in width and 120 feet in length. It would be constructed using standard cut-and-fill road construction procedures. To allow the crane to safely lift the large and extremely heavy turbine components, the crane pad must be nearly flat. Following construction, the majority of the crane pad would be recontoured and seeded. An eight-foot wide, 120-foot long gravel-surface turbine spur road would be left to allow maintenance vehicles access to the turbine.

The Proposed Project area has rhyolite or basalt rock formations within a few inches, but no more than two feet from the surface where the turbine foundations would be constructed. These rock formations are covered by a few inches to two feet of mineral soil. The quality of the rhyolite or basalt formations is sufficient to allow for the use of a rock socket type foundation (GeoEngineers 2004).

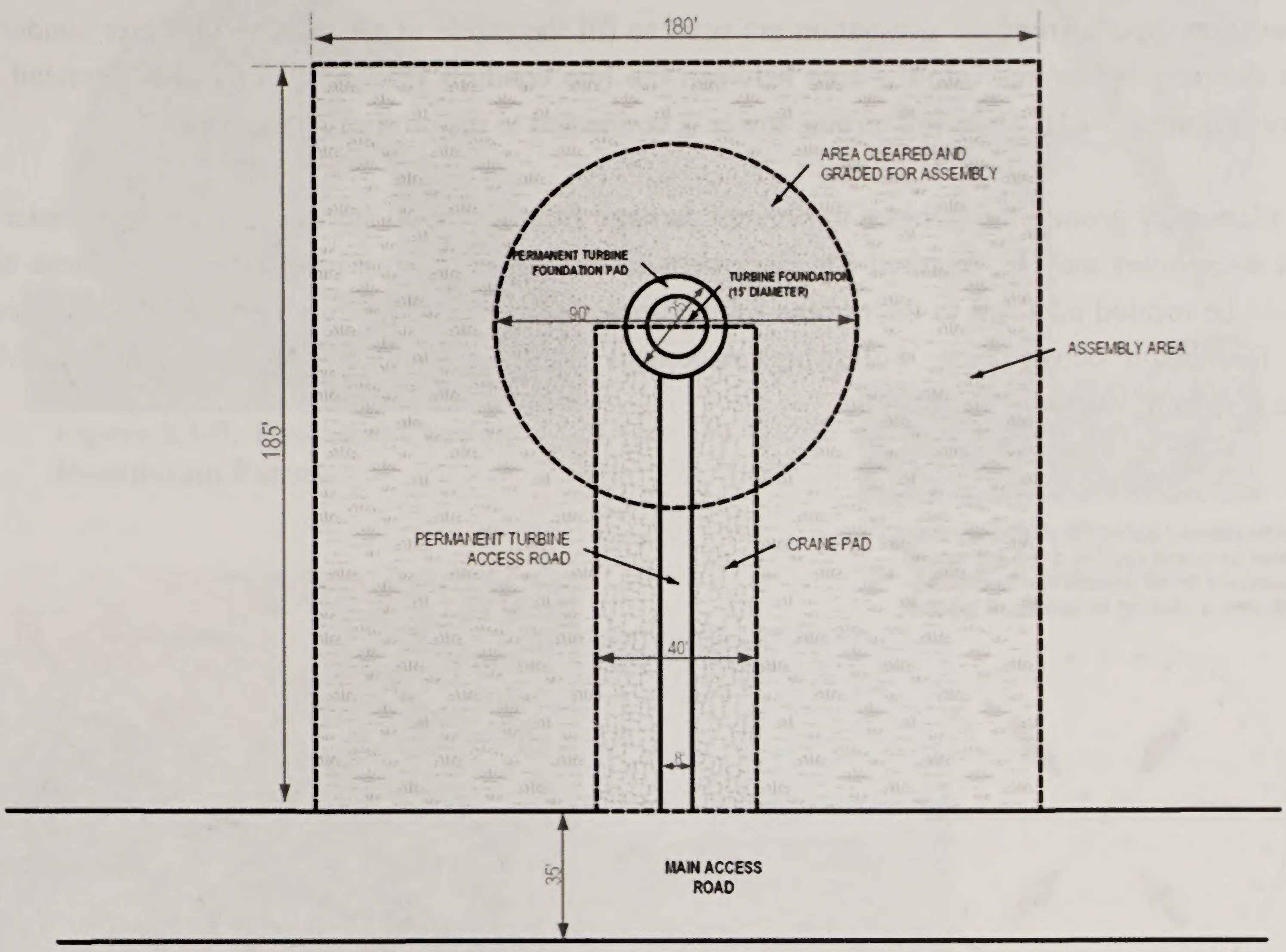


Figure 2.3-6. Typical Turbine Pad Lay-Down and Construction Area.

Rock socket foundations for turbines in the 1.5 to 3.0 megawatts (MW) range involve making a roughly circular excavation approximately 16 feet in diameter and 25 to 30 feet deep. Boreholes about three inches in diameter are drilled to a depth of two feet below the foundation depth (i.e., 27 to 32 feet deep). Packets of explosives about the size of soda cans (each containing about 2 pounds of explosive) are lowered into the boreholes (one packet per each foot of depth) and the remaining space is filled with sand. Rock within the excavation area is first fractured by delayed detonation blasting in interior and perimeter bore holes (Figure 2.3-7). The majority of the energy released by the detonation is consumed in fracturing rock within a conical zone a maximum of twice the depth of the foundation (i.e., 48 to 56 feet). The remaining energy is transferred away from the blast in ring waves as elastic vibration in the rock (no permanent deformation of the rock) and air vibration. Rock vibrations should dissipate within less than 200 feet from the foundation site. The fractured rock is subsequently removed from the excavation area (Figure 2.3-8). Blasting would not occur within 200 feet of the two concrete-block structures that house electronic communication equipment located at the summit of Cotterel Mountain. These structures would be evaluated by an engineer pre-blasting and post-blasting to determine if any impact to these structures occurred. If impacts from blasting occur, these structures would be repaired or replaced by the Applicant.

Two sections of concentric steel conduit forms are lowered into the excavation (Figure 2.3-9). Concrete slurry is pumped between the outside of the larger diameter conduit and the perimeter of the excavation. Spoils from the excavation are used to fill the inside of the smaller diameter conduit. A bolt structure is lowered into the area between the two conduits (Figure 2.3-10) and concreted into place (Figure 2.3-11). The wind turbine tower is connected to the protruding bolts.

To adequately ground the turbines to prevent damage from electrical storms, three-inch diameter 30-foot deep holes may be required for placement of turbine grounding rods as needed. These holes would be located adjacent to the turbine foundations within the 90-foot diameter area that is cleared for foundation construction. Following placement of the grounding rods, the holes would be backfilled and capped with concrete.

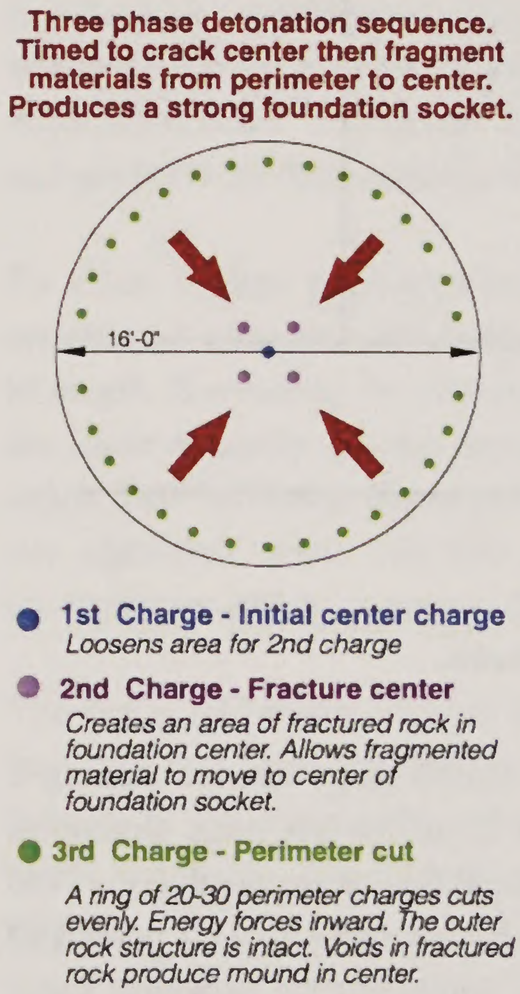


Figure 2.3-7. Detonation Sequence for Tower Foundation Blasting.

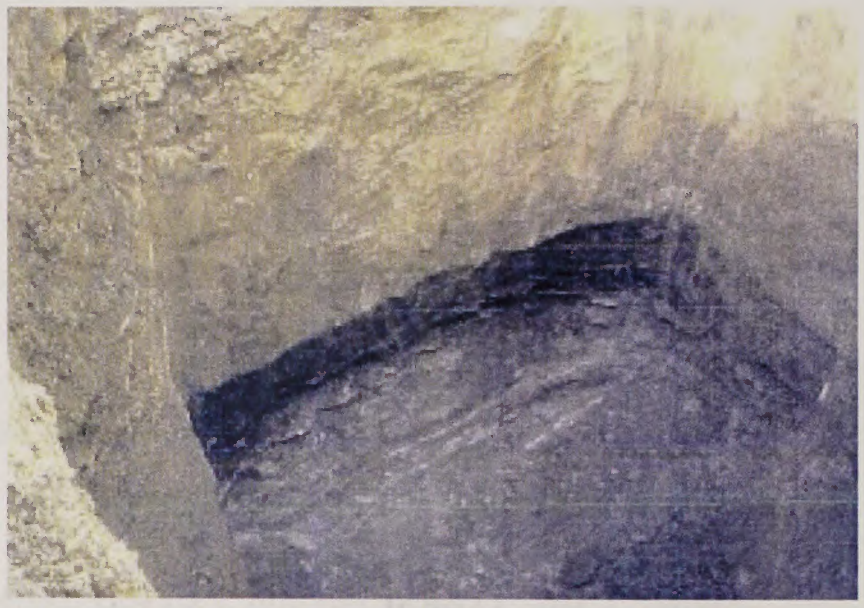


Figure 2.3-8. Excavation of Tower Foundation Hole Following Blasting.

Figure 2.3-9. Two Steel Conduit Foundation Forms.

Figure 2.3-10. Bolt Structure for Tower Foundation.

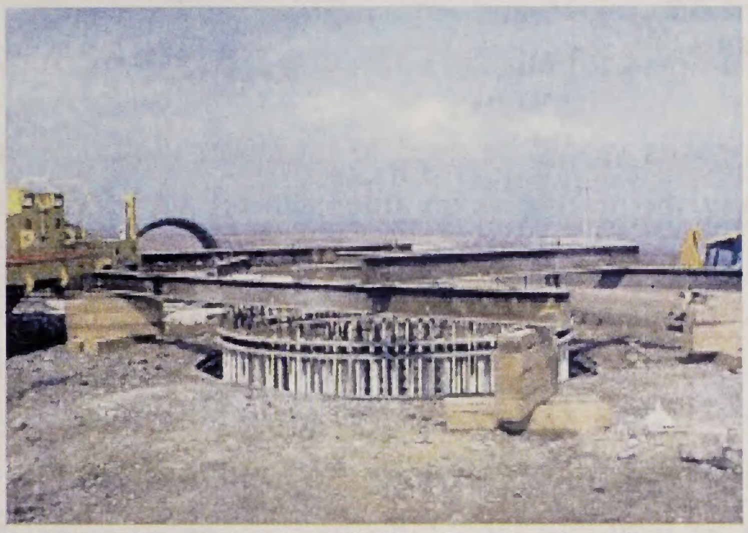


Figure 2.3-11. Foundation Bolts Ready for Concrete Pour.

Tower Erection

Tower erection requires the use of one large track-mounted crane and two small cranes. The large crane would first raise the bottom conical steel tower section vertically, and then lower it over the threaded foundation bolts. The large crane would then raise each additional tower section to be bolted through the attached flanges to the lower tower section. The crane would then raise the nacelle, rotor, and blades to be installed atop the towers. Two smaller wheeled cranes would be used to off-load turbine components from trucks, and to assist in the precise alignment of tower sections.

Underground Communication and Electrical Cables

Trenching equipment would be used to excavate trenches in or near the access road bed to bury the insulated underground cables that would connect each turbine to one of the two project substations. Large conductor cables would be packed in sand within the trenches and covered to protect the cables from damage or possible contact. Optical fiber communication links would be placed in the same trenches as the conductor cables. The depth and number of trenches would be determined by the size of the cable required and the thermal conductivity of the soil or rock surrounding the trench.

Transmission Interconnect Line Construction

Transmission interconnect line construction would use standard industry procedures including: surveying; ROW preparation; materials hauling; structure assembly and erection; ground wire; conductor stringing; cleanup; and restoration. All transmission lines and structures would be designed to prevent the perching of raptors and other birds as outlined in "*Suggested Practices for Raptor Protection on Power Lines-The state of the Art in 1996*" (Olendorff *et al.* 1996). Construction procedures described below would be the same for both transmission line routes.

The overhead 138 kV transmission interconnect lines would be constructed on wooden H-frame structures. The wooden H-frame structure holes would be approximately three feet in diameter and ten feet deep. They would be auger drilled unless consolidated rock is encountered, then, structure holes would be advanced using dynamite. All blasting would be conducted by a permitted contractor, and would be in compliance with state and federal regulations. Structures would be assembled on-site. Aboveground pole height would range from 60 to 65 feet. The disturbed surface area at each structure location would average 50 by 100 feet. Structure erection and conductor stringing would occur sequentially along the ROW.

Existing public and private roads would be used to transport materials and equipment from staging areas to ingress points along the transmission interconnect line ROW using the shortest distance possible. The ROW would be used to access transmission interconnect line construction sites. The interconnect line would require the installation of a temporary construction trail. The construction trail would be a 12-foot wide area, which is cleared of large boulders to allow high clearance vehicles to pass. The trail would be installed to allow access to support the construction of the interconnect lines. Clearing of vegetation and minor grading may be necessary at some of the transmission interconnect line structures to facilitate their construction. Once construction is complete, the trail would be used approximately twice a year for inspection and maintenance. Native vegetation would be allowed to re-establish over the trails to the extent that 4-wheel-drive vehicle travel remains practical. Barriers would be placed where the ROW intersects roads to prevent unauthorized traffic onto the transmission line ROW.

Batch Plant

The Proposed Project would require over 9,000 cubic yards of concrete for construction of the wind tower foundations and substations. Depending upon weather conditions, concrete typically needs to be poured within 90 minutes of its mixing with water. Delivery time to pour locations would likely exceed 90 minutes from existing concrete suppliers in the vicinity of the Proposed Project area or from potential off-site staging areas. Therefore, a temporary concrete batch plant would be constructed within the Proposed Project area to facilitate the sub-90 minute delivery time needed.

The concrete batch plant would be located on-site at a central location within an area approximately five acres in size. The batch plant would not be located with ¼ mile of any golden eagle nest, consistent with BMP for wildlife (Appendix D). Vegetation would be cleared and the ground leveled and a one-foot high earth berm or other appropriate erosion control devices, such as silt fences and straw bales, would be installed around the area to contain water runoff. Diversion ditches would be installed as necessary to prevent storm water from running onto the site from surrounding areas. The batch plant would operate during project construction hours for approximately four to five months of the eight month construction period. The batch plant would require a stand-alone generator approximately 250-kilowatt (kW) in size. The generator would draw fuel from an approximately 500-gallon aboveground storage tank with secondary storage for spill prevention. It is estimated that the batch plant would consume from 2,000 to 4,000 gallons of water per day. There would be a 4,000-gallon water tank on-site that would be replenished as needed. The batch plant operation would be permitted by the Idaho Department of Environmental Quality.

Stockpiles of sand and aggregate would be located at the batch plant in a manner that would minimize exposure to wind. Cement would be discharged via screw conveyor directly into an elevated storage silo without outdoor storage. Construction managers and crew would use BMP along with good housekeeping practices to keep the plant, storage, and stockpiles clean, and to minimize the buildup of fine materials. Cement trucks would be cleaned and washed at the batch plant. Cement residue would be washed from the cement delivery trucks into an aboveground settling pond. Cement residue would be collected from the settling pond and trucked off-site for disposal, as needed.

Following completion of construction activities, the Applicant's contractor would rehabilitate the batch plant area. The area would be re-contoured, stockpiled topsoil would be replaced, and the area would be re-seeded with a designated mixture of native grasses, forbs, and shrubs as determined by the BLM.

<u>Portable Rock Crusher</u>

To construct the Proposed Project's roads, a rock crusher would be required to provide appropriately sized aggregate for fill and road base. The rock crusher would have an average capacity of approximately 20,000 tons per day. The crusher would operate during project construction hours for approximately four to five months of the eight-month construction period. In accordance with BMP, the rock crushing area would be sprayed by a water truck to suppress dust. The crusher contains several dust-suppression features including screens and water-spray. Dust-control measures would be operating at all emission points during operation, including start-up and shut-down periods, as required by the Idaho Department of Environmental Quality Air Quality permit.

During construction, water would be needed for dust control and for making concrete. No wells would be drilled or springs developed for the Proposed Project. All needed water would be hauled from an off-site municipal or private source.

<u>Trailer Pad</u>

Contractors constructing the Proposed Project would require on-site mobile trailers to provide for management of and communication to the work force. The mobile trailers would also house a first aid station, emergency shelter, restrooms, and hand-tool storage area for the construction workforce. The trailer pad would be located at the southern end of the center turbine string. Vegetation would be cleared and the ground leveled over an area of about 200 by 500 feet. The ground surface would be graveled to limit dust and mud within the area.

Traffic

Construction of the Proposed Projects roads, facilities, and electrical/communication lines would occur at about the same time, using individual vehicles for multiple tasks. During the construction period, there would be approximately 60 daily round trips by vehicles transporting construction personnel to the site. Over the entire construction period, there would be 2,205 trips of large trucks delivering the turbine components and related equipment to the project. In addition, there would be over 12,000 truck trips by dump trucks, concrete trucks, water trucks, cranes, and other construction and trade vehicles (Table 2.3-1). Once constructed, O&M of the Proposed Project would require three round trips per day using pickups or other light-duty trucks.

A traffic management plan would be prepared for the construction of the project to ensure that no hazards would result from the increased truck traffic and so traffic flow would not be affected on local roads and highways. This plan would incorporate measures such as informational signs, flagmen when equipment may result in blocked throughways, traffic cones and flashing lights to identify any necessary changes in temporary land configuration.

Table 2.3-1. Estimated Vehicle Trips for Construction of the Proposed Project.

Turbine Component Ttypes	Number of Components Required per Turbine	Number of Components per Truck Load	Number of Truck Loads per Turbine
Tower sections	3.0	1.0	3.0
Blades	3.0	2.0	1.5
Nacelle	1.0	1.0	1.0
Rotor hub	1.0	2.0	0.5
Foundation components	2.5	1.0	2.5
Foundation concrete (cubic yards)	70.0	10.0	7.0
Total truck loads/turbine			15.5

Purpose for truck load	**Number of Truck Loads**
Deliver turbine components (assume 130 turbines)	2,205.0
Road and turbine foundation construction	12,625.0
Crane delivery and removal	40.0
Deliver substation and other electrical components	50.0
Deliver O&M building materials	20.0
Total large truck loads	14,940.0

Project Construction Clean Up

Final cleanup and restoration of the Proposed Project area would occur immediately following construction. Waste materials would be removed from the area and recycled or disposed of at approved facilities. All construction-related waste would be properly handled in accordance with state and federal regulations and permit requirements. The waste would be removed to a permitted disposal facility. This waste may include trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials.

Excess material (soil, rocks, vegetation) developed during the construction of the project would be disposed of at an off-site location. The off-site disposal area would be a private facility licensed to accept such material.

Construction Work Force

Approximately 107 to 132 workers per day would be required for construction of the Proposed Project. The beginning and end of the construction period would involve a slightly lower number of workers when compared to the middle months. The breakdown of the construction workforce by type is shown in Table 2.3-2. Construction of the Proposed Project would be completed in one season over an approximate 8-month period.

Table 2.3-2. Estimated Workforce for the Proposed Project.

Type of Worker	Average Number Required Throughout the Construction Period
Carpenter/form setter	7
Cement finisher	3
Cement, rebar	4
Electrician helper	17
Electrician, industrial	11
Electrician, master	2
Laborer	43
Structural steel worker	9
Backhoe operator	5
Cherry picker operator	7
Cable crane operator	5
Dozer operator	2
Power shovel operator	3
Road roller operator	2
Estimated daily total	120

Twelve employees would work at the Proposed Project on a permanent basis, including one office administrator, one foreman, and ten windsmiths/electricians. Employees would work eight-hour shifts, five days per week, with the exception of five of the windsmiths, who would rotate shifts to cover nights and weekends. The Applicant anticipates that all permanent positions, with the exception of the foreman position, would be filled from the local labor force. Windsmith training would be provided to those who have a basic understanding of electrical work.

The Applicant would contract with a county or state-approved local sanitation company to provide and maintain appropriate sanitation facilities. The sanitation facilities would be located at each of the crane assembly areas, the batch plan, the substations, and the trailer pad area, and when necessary additional facilities would be placed at specific construction locations.

2.3.3 Public Access and Safety

Public access to the federal and state lands would not be restricted. However, during construction of specific project features (blasting, tower erection, transmission interconnect line stringing) certain portions of the Proposed Project area would be restricted to the public for safety purposes. Authorized users such as grazing permittees and communication site personnel would continue to have access during the construction period. Following project construction, public access to federal and state lands would be allowed to resume. The two substations would be fenced with 12-foot high chain-link fence to prevent public and wildlife access to high voltage equipment. Safety signs would be posted in conformance with applicable state and federal regulations around all towers (where necessary), the two transformers, and other high voltage facilities and along roads. Any existing livestock control fences that would need to be replaced or repaired would conform to BLM Manual Handbook H-1741-1 for the passage of wildlife.

Federal Aviation Administration (FAA) regulations require lighting on structures over 200 feet in height. The turbines proposed under all the action alternatives would be over 210 feet in height and therefore would require appropriate obstruction lighting. However, the FAA may determine that the absence of marking and/or lighting does not threaten aviation. Recommendations on marking and lighting structures vary depending on: terrain; local weather patterns; geographic location, and, in the case of wind farms, the cumulative number of towers and overall site layout. The FAA would review the Proposed Project prior to construction and might recommend that tower markings or aviation safety lighting be installed on all or only a portion of the turbine towers.

Although coordination with the FAA has not been initiated, based on the lighting and marking requirements of similar projects and the FAA Obstruction Marking and Lighting Advisory Circular (AC70/7460-1K), a likely adequate lighting setup for the Proposed Project can be determined. It is anticipated that the probable lighting setup would consist of two medium-intensity, flashing white lights operating during the day and twilight, and two flashing red beacons operating during the night. The intensity of the lights would be based on a level of ambient light, with illumination below two foot-candles being normal for the night and illumination of above five foot-candles being the standard for the day. It is anticipated the lights would not be mounted on every turbine. Most likely they would be located on several strategically selected turbines to adequately mark the extent of the facility. The minimum number of required lights would be used in order to minimize attractants for birds during night migrations.

2.3.4 Operations and Maintenance (O&M)

Routine maintenance of the turbines would be necessary to maximize performance and detect potential difficulties. Routine activities would consist primarily of daily travel by windsmiths that would test and maintain the wind facilities. O&M staff would travel in pickup or other light-duty trucks. Most servicing and repair would be performed within the nacelle, without using a crane to remove the turbine from the tower. Occasionally, the use of a crane or equipment transport vehicles may be necessary for cleaning, repairing, adjusting, or replacing the rotors or other components of the turbine. Cranes used for maintenance activities are not as large as the large track-mounted cranes needed to erect the turbine towers.

Monitoring the operations of the Proposed Project would be conducted from computers located in the base of each turbine tower and from the O&M building using telecommunication links and computer-based monitoring.

Over time, it would be necessary to clean or repaint the blades and towers, and periodically exchange lubricants and hydraulic fluids in the mechanisms of the turbines. All lubricants and hydraulic fluids would be stored, used, and disposed of in accordance with applicable laws and regulations. Any necessary repainting would be performed by licensed contractors in compliance with applicable laws and regulations.

<u>Hazardous Materials</u>

Hazardous materials are those chemicals listed in the Environmental Protection Agency Consolidated List of Chemicals Subject to Reporting under Title III of the Superfund Amendments and Re-authorization Act of 1986. No extremely hazardous materials (as defined by 40 CFR; Section 335) are anticipated to be produced, used, stored, transported, or disposed of as a result of this project. All production, use, storage, transport, and disposal of hazardous materials associated with the Proposed Project would be in strict accordance with federal, state, and local government regulations and guidelines. All potentially hazardous materials used in the O&M of the wind plant would be stored in the O&M building in approved aboveground containers with appropriate spill containment features.

Turbine lubricants used in the turbine gearbox are potentially hazardous. The gearbox would be sealed to prevent lubricant leakage. The gearbox lubricant would be sampled periodically and tested to confirm that it retains adequate lubricating properties. When the lubricants have degraded to the point where they no longer contain the needed lubricating properties, the gearbox would be drained and new lubricant would be added.

Transformers contain oil for heat dissipation. The transformers are sealed and contain no moving parts. The transformer oil would not be subject to periodic inspection and does not need replacement.

Construction equipment and O&M vehicles would be properly maintained at all times to minimize leaks of motor oils, hydraulic fluids, and fuels. During construction, refueling and maintaining vehicles that are authorized for highway travel would be performed off-site at an appropriate facility. Construction vehicles that are not highway-authorized would be serviced on the project site by a maintenance crew using a specially designed vehicle maintenance truck. During operation, O&M vehicles would be serviced and fueled at the O&M building or at an off-site location. A Spill Prevention, Containment and Countermeasure Plan would be prepared for the Proposed Project and would contain information regarding training, equipment inspection and maintenance, and refueling for construction vehicles, with an emphasis on preventing spills.

The Hazardous Materials Management Plan for the Proposed Project would contain specific information regarding the types and quantities of hazardous materials, as well as their production, use, storage, transport, and disposal. This plan would be included as a requirement of the ROW grant for the Proposed Project.

2.3.5 Reclamation

Reclamation refers to the restoration of lands used temporarily during a construction activity (such as staging areas) to their approximate condition prior to construction. After construction is complete, temporary work areas, trenches, and tower pads would be graded to the approximate original contour, and the area would be re-vegetated with a BLM-approved mixture of native grass, forbs, and shrub species. Reclamation would include implementation of all applicable BLM BMP (Appendix C).

2.3.6 Decommissioning

Decommissioning refers to the dismantling of the project elements and re-vegetating of the site upon completion of the operating life of the facility. While the ROW grant would have a 30-year term, it could be renewed indefinitely. Thus, the anticipated life of the wind plant would be greater than 30 years. Upgrading and replacing equipment can extend the operating life indefinitely, assuming that there would be future demand (after the 30-year term) for the electricity generated by the Proposed Project. Therefore, the estimated life of the project depends primarily on the demand for power, which would be expected to increase for the foreseeable future.

At the end of the useful life of the project, the Applicant would obtain any necessary authorization from the BLM and other appropriate regulatory agencies to decommission the project facilities. Decommissioning would involve removing the turbines, support towers, transformers, substations, and the upper portion of foundations. Generally, wind turbines, electrical components, and towers are either refurbished and resold, or recycled for scrap. All unsalvageable materials would be disposed of at authorized sites in accordance with laws and regulations.

Site reclamation after decommissioning would be based on site-specific requirements and techniques commonly employed at the time the area would be reclaimed. Techniques could include re-grading, spot replacement of topsoil, and revegetation of all disturbed areas with an approved native seed mix. Turbine towers and sub-station foundations would be removed to a depth of six inches below grade.

Assuming that the transmission line would not be used for other potential developments, all structures, conductors, and cables would be removed. Abandoned roads would be reclaimed or left in place based on the preference of the BLM at the time of decommissioning. The ROW would then revert to BLM control.

2.3.7 Project Design and Best Management Practices (BMP)

All action alternatives would be subject to BMP (Appendix C). In addition, fatality monitoring, and a ¼ mile golden eagle nest buffer zone would be required (Appendix D). The BMP in Appendix C represent standards from the BLM ROW Handbook (H2801-1). These BMP are designed to guide construction activities and development of facilities to minimize environmental and operational impacts. These include, but are not limited to, standards associated with overall project management, surface disturbance, facilities design, erosion control and revegetation, hazardous materials, project monitoring and responsibilities for environmental inspection.

An example of these BMP would be standards related to noxious weed control. Based on these standards, the Applicant would be responsible for the control of noxious weeds caused by the activities authorized by the ROW (Appendix C). The Applicant would be required to meet BLM standards in the application of weed control. The Applicant would use integrated noxious weed control management techniques to control the establishment of weeds. Methods of control would include herbicidal, manual, mechanical and biological methods. The actual control method would be based on access, time of year, type of weed species, growth stage of the weed species, wind velocity, affected acreage, etc. All applicable personal protective equipment and clothing would be used in noxious weed control work. All weed control work would be completed in consultation with the Burley BLM noxious weed control specialist and the Cassia County Weed Supervisor.

All noxious weed control efforts would be in accordance with annual NEPA compliance documents, which document sensitive species and map their locations, provides site-specific herbicidal usage rates, and includes plant and animal clearances. These NEPA documents would identify newly established noxious weed species and provide control practices from year to year. It is estimated that actual weed control efforts would not exceed 50 acres per year, although weed control inventory and monitoring may include several thousand acres annually.

2.4 ALTERNATIVE B - PROPOSED ACTION

This alternative is presented as proposed in the ROW application made by the Applicant to the BLM. The Applicant has attempted to reduce potential project impacts through project design, application of BMP (Appendix C), and consideration of input from its own public scoping efforts in developing its proposed action. The BLM has not modified this alternative; it is the Applicant's proposed action.

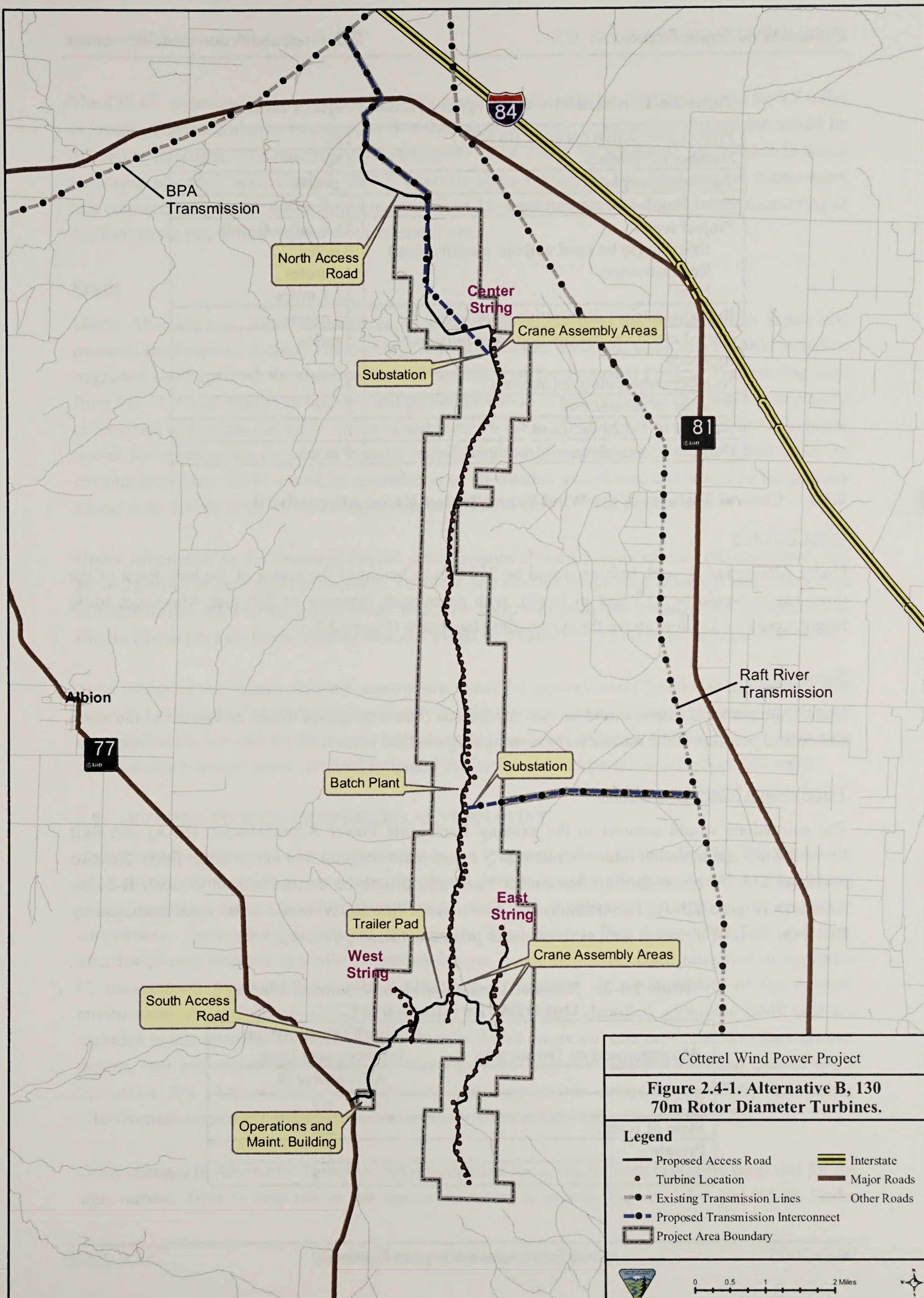
Background: On March 23, 2001, Windland, Inc. filed a ROW application with the BLM pursuant to Title V of the *Federal Land Policy and Management Act of October 21, 1976* (43 U.S.C. 1761, as amended). The Applicant has petitioned the BLM to grant a ROW for the construction, operation, maintenance and removal of a wind-powered electric generation facility on Cotterel Mountain in

Cassia County, Idaho. The application specified the proposed construction of between 210 and 226 Vestas (V-47) 660-kW wind turbines with a nameplate rating for the whole project of between 139 and 150 MW. These turbines require a 165-foot high tower and have a rotor diameter of 154 feet, with a total height to the tip of the blade at its highest point being 242 feet.

When the application was filed, the V-47 was considered a very reliable industry standard and the Applicant was confident that this would be their machine of choice. However, wind turbine technology has changed, with several manufactures building larger machines with nameplate ratings of between 1.3 and 1.8 MW. The V-47 has been replaced by much larger, more efficient turbines; hence, the nature of the original application has changed. Because of the rapid rise in technology, the Applicant now includes an alternate proposal of constructing between 120 and 130 of the larger turbines, thereby, giving the Proposed Action a total generated output or nameplate rating of between 156 and 234 MW. These turbines would require towers between 212 and 262 feet in height and have blade diameters of between 213 and 231 feet, with a total height to the tip of the blade at their highest point being between 319 and 395 feet. Since these machines are so much larger, the spacing requirement between them is much greater, which reduces the number of wind towers.

Today, a commonly used machine in wind power projects is a 1.5 MW turbine. The Applicant's proposed action was modified to construct 130, 1.5 MW turbines with 210-foot tall towers, 230-foot diameter blades, and a total height to the tip of the blades at their highest point of 325 feet. This would be analyzed as Alternative B in this Draft EIS. The Applicant's proposal to use the Vestas V-47 is outdated and is mentioned here purely for informational purposes.

Description of Alternative B: Under Alternative B, the Applicant is proposing to construct a wind-powered electric generation facility along the approximately 16-mile ridgeline of Cotterel Mountain. As proposed, the project would consist of approximately 130, 1.5 MW wind turbines that would be sited along the west, central, and east ridges of Cotterel Mountain (Figure 2.4-1). The west string would be 0.8-miles in length and located along the short side-ridge west of the main Cotterel Mountain ridgeline. The center string of wind turbines would be about 10.9 miles in length and placed along the spine of the central ridgeline of the mountain. The east string of wind turbines would be 4.1 miles in length and located along the east ridgeline that extends south of the Cotterel Mountain summit. In addition to the 130 wind turbines, two 138 kV overhead transmission interconnect lines would connect the project to the transmission grid emanating from two separate substations. The exact location of proposed wind turbines, roads, power lines, or other facility-related construction would be sited based on environmental, engineering, meteorological, or permit requirements. Other physical components of the wind plant are described in Table 2.4-1.



BPA Transmission
84
North Access Road
Center String
Crane Assembly Areas
Substation
81
IDAHO
Raft River Transmission
Albion
77
IDAHO
Substation
Batch Plant
East String
Trailer Pad
West String
Crane Assembly Areas
South Access Road
Operations and Maint. Building
Cotterel Wind Power Project
Figure 2.4-1. Alternative B, 130 70m Rotor Diameter Turbines.
Legend
Proposed Access Road
Turbine Location
Existing Transmission Lines
Proposed Transmission Interconnect
Project Area Boundary
Interstate
Major Roads
Other Roads
0
0.5
1
2 Miles

Table 2.4-1. Alternative B - Proposed Action Project Features.

Project production capacity (in MW)	**195**
Number of turbines	**130**
Turbine nameplate (each)	1.5 MW
Total length of turbine strings	15.8 miles
Project roads Existing (to be used without modification) Reconstructed New	**26.6 miles (total)** 0 miles 4.5 miles 22.1 miles
Buried electrical distribution lines total	23 miles
Buried electrical distribution lines outside of roadbeds	5 miles
Number meteorological stations	3
Number of substations	2
Number of O&M facilities	1
Overhead transmission interconnect lines	9 miles

2.4.1 General Features of the Wind Power Project Under Alternative B

Wind Turbines

Under Alternative B, each turbine would be 210 feet in height to the center of the hub. Each of the three blades would be 115 feet in length, with an over-all diameter of 230 feet. Maximum blade height would be 325 feet above the surrounding landscape (Figure 2.3-1).

Substations

Under Alternative B, there would be two substations. The substations would be located at the north and central portions of the middle turbine string (Figure 2.4-1).

Transmission Interconnect Lines

The substations would connect to the existing Bonneville Power Administration (BPA) and Raft River 138 kV transmission lines via two newly constructed transmission interconnect lines. The two overhead 138 kV transmission interconnect lines would both be constructed on wooden H-frame structures (Figure 2.3-3). The transmission interconnect line ROW would cross lands managed by BLM, the State of Idaho, as well as those under private ownership (Table 2.4-2).

Table 2.4-2. Miles of Transmission Interconnect Line by Ownership for Alternative C.

Management or Ownership	Miles of Transmission Interconnect Line
	Alternative B
BLM	5.7
State of Idaho	2.2
Private	1.1
Total	**9**

The 138 kV transmission interconnect line that connects to the existing BPA line would be 5.7 miles in length. The transmission interconnect line that connects to the existing Raft River Line would be 3.3 miles in length. The transmission interconnect lines would be supported by wooden H-frame structures placed at approximately 800-ft intervals along the ROW. The transmission interconnect line connecting to the BPA line would require about 38 structures; the transmission line connecting to the Raft River line would require about 22 structures.

Roads

Under Alternative B, about 25 miles of all-weather gravel roads would be needed to access and maintain the Proposed Project. The existing Cotterel Mountain north and south access roads would be upgraded and improved for construction and operation of the Proposed Project. The existing road from SH-77 would require an upgrade and partial relocation to reduce maximum grade to ten percent or less, and to increase the inside radius of any turns on the road. This road would be used as primary access for construction crews and smaller materials. From the north end of Cotterel Mountain the existing road from SH-81 would be upgraded to an all-weather gravel road and would be the primary access route for all larger turbine components delivered to the Proposed Project area.

Under Alternative B, the Proposed Project would require about 4.5 miles of road reconstruction, and about 22 miles of new road construction. To allow safe passage of the large transport equipment used in construction, all-weather gravel roads would be built with adequate drainage and compaction to handle 15-ton per axle loads. Passing turnouts would be located every four miles along access roads.

Total estimated cut volume for road construction would be approximately 2,660,000 cubic yards. The estimated fill volume would be approximately 2,500,000 cubic yards. Under Alternative B, the total construction impact area for all project features would be about 365 acres. Following the reclamation of construction impact areas, the final Proposed Project would occupy an area of about 203 acres.

2.5 ALTERNATIVE C – PREFERRED ALTERNATIVE

Background: Alternative C is an alternative to the Proposed Action (Alternative B), that allows for wind energy development and has been developed through the identification of issues raised during public scoping, agency scoping, consultation with the Applicant, government-to-government consultation, from meetings with the Interagency Wind Energy Task Team (IWETT), and from interdisciplinary resource specialist recommendations. In addition to the BMP identified in Appendix C, management practices that would further help to facilitate the sustainability of the existing environment are included in this alternative. The IWETT has identified additional BMP that are included in this alternative to specifically address wildlife issues and concerns related to sage-grouse, raptors, bats and requirements under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (Appendix D). Alternative C also incorporates compensatory/off-site mitigation, effectiveness monitoring and adaptive management plans defined below in Section 2.5.4.

Other changes in Alternative C include not constructing the seven turbines originally proposed for the west turbine string to help reduce the impacts to visual resources (Figures 2.5-1 and 2.5-2). Under

Alternative B, the west turbine string and the North Access Road to the north end of the east string would be the most visible aspects of the Proposed Project from both the Pomerelle Mountain Resort access road and the City of Rocks Back Country Byway (SH-77). In addition, the northern-most four turbines of the east string would not be developed to avoid construction of a highly-visible road cut across the west facing slope below the existing telecommunications facilities.

Additionally, the five southern-most turbines of the middle string would not be developed due to limited wind resource in this area based on the results of wind monitoring on Cotterel Mountain. To make up for loss of project output capacity, additional turbines would be added at the north end of the middle string.

Description of Alternative C: Under Alternative C, the Applicant would construct a wind-powered electric generation facility along 14.5 miles of ridgeline of Cotterel Mountain. If built as proposed, the project would consist of approximately 81 to 98 wind turbines, based on the size of turbine selected, sited along the central and east ridges of Cotterel Mountain (Figures 2.5-1 and 2.5-2). The central ridge would have approximately 64 wind turbines and the east ridge would have approximately 17 turbines. In addition to the wind turbines, one 138 kV overhead transmission interconnect line would connect the project to the transmission grid from a single substation. The exact location of proposed wind turbines, roads, and transmission interconnect lines, or other facility-related construction would be sited based on detailed engineering to address site specific environmental, meteorological, or permit conditions including BMP. Other physical components of the wind plant are described in Table 2.5-1.

Under Alternative C, the final selection of the exact make and model of wind turbine to be used depends on a number of factors, including equipment availability at the time of construction. The number of turbines and the resulting capacity of the project would depend on the type of technology used. Therefore, to capture a "reasonable range" of potential project impacts, Alternative C defines and evaluates a range of turbine sizes and associated facilities, and their potential impact on the environment.

Table 2.5-1. Alternative C Project Features.

Number of turbines	**81 to 98**
Turbine nameplate	1.5 to 3.0 MW
Project nameplate	147 to 243
Total length of turbine strings	14.5 miles
Project roads	**24.4 miles (total)**
Existing (to be used without modification)	1.7 miles
Reconstructed	3.2 miles
New	19.5 miles
Buried electrical distribution lines	18 miles
Electrical trenching (outside of road bed)	3 to 4 miles
Number of substations	1
Number of O&M building	1
New transmission interconnect line	19.7 miles
Meteorological towers	3

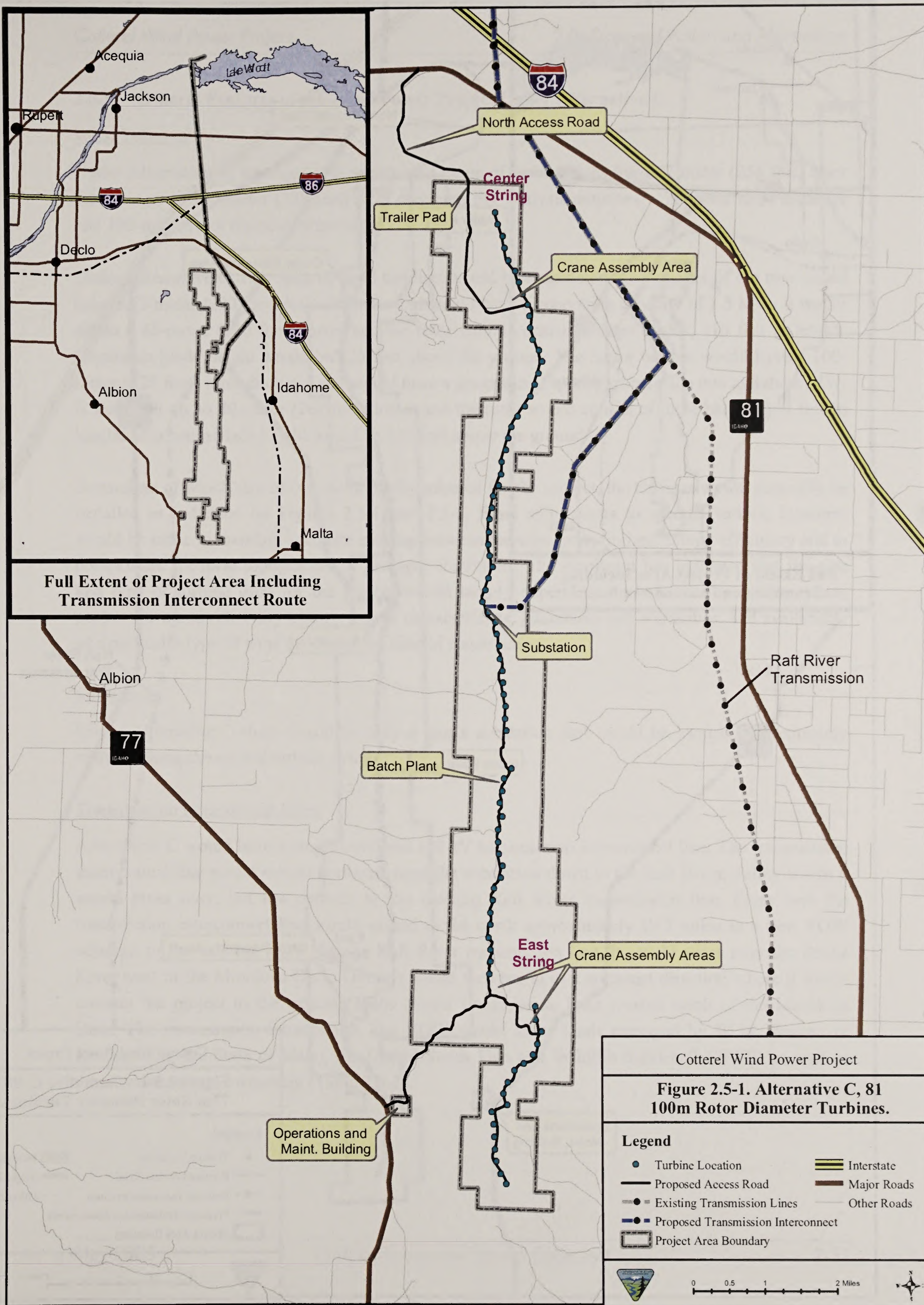


Figure 2.5-1. Alternative C, 81 100m Rotor Diameter Turbines.

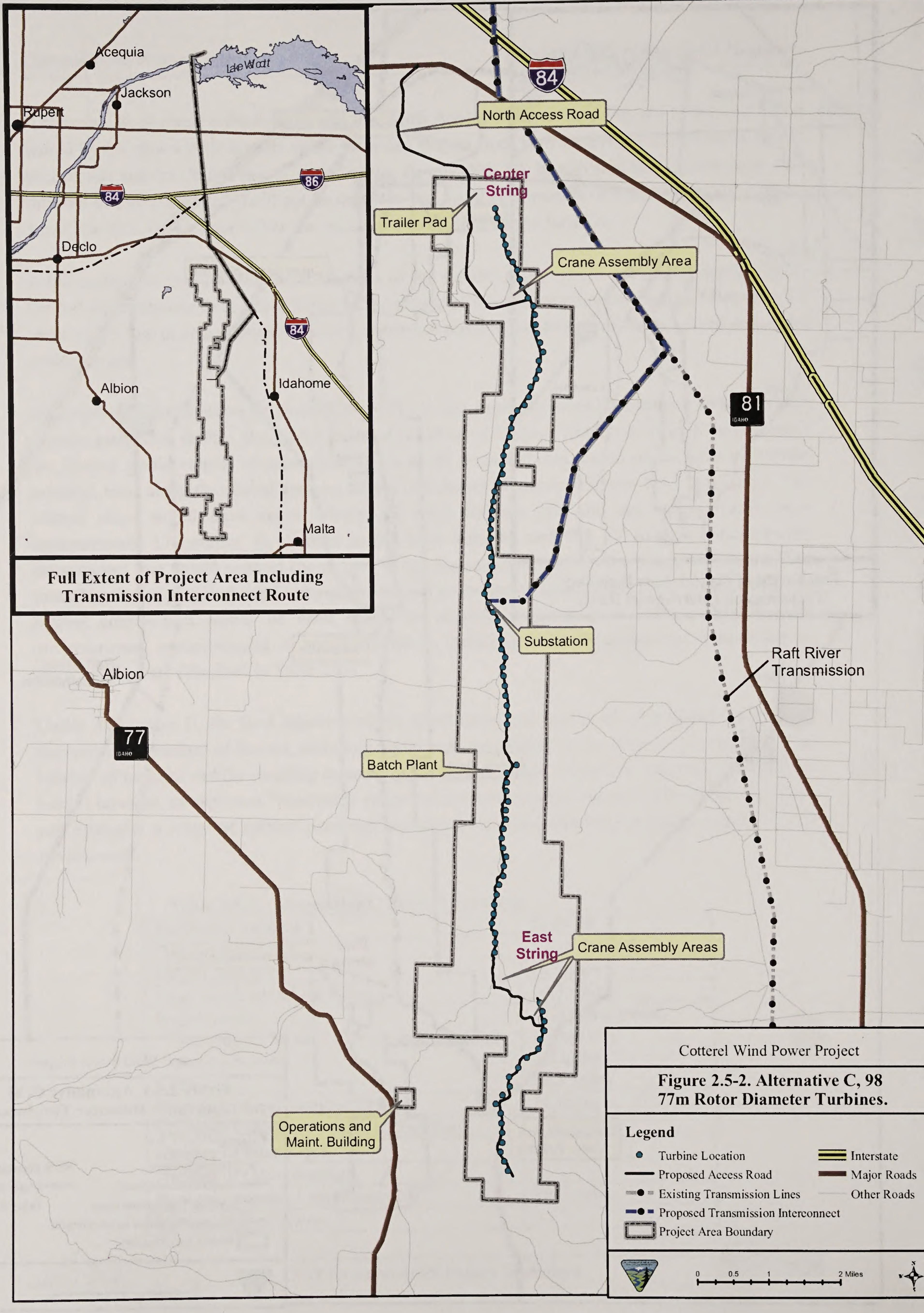


Figure 2.5-2. Alternative C, 98 77m Rotor Diameter Turbines.

2.5.1 General Features of the Wind Power Project Under Alternative C

Wind Turbines

Under Alternative C, the Applicant could use a range of turbine sizes from 77-meter (253 feet) rotor diameter up to 100-meter (328 feet) rotor diameter. For analysis purposes, a 77-meter rotor diameter and 100-meter rotor diameter were used.

Under Alternative C, two sizes of wind turbines would be considered. The smaller of the two would have a 77-meter (230 foot) rotor diameter and would have a generation capacity of 1.5 MW. It would sit on a 65-meter (210 foot) tower and the rotor would consist of three blades, 115 feet in length. Maximum blade height would be 325 feet above the ground. The larger turbine would have a 100-meter (328 foot) rotor diameter and would have a generation capacity of between two and three MW. It would sit on an 80-meter (262 foot) tower and the rotor would consist of three blades, 164 feet in length. Maximum blade height would be 426 feet above the ground.

Regardless of which size of turbine is finally selected for the project, the turbines would generally be installed as indicated on Figures 2.5-1 and 2.5-2. Final adjustments to specific turbine locations would be made to maintain adequate spacing between turbines for optimized energy efficiency and to compensate for local topographic or geologic conditions. The Applicant has indicated that the size and type of turbine used for the project would largely depend on such factors as quality, price, performance and reliability history, power characteristics, guarantees and warranties, and availability of a particular type of wind turbine at the time of construction.

Substations

Under Alternative C there would be only a single substation that would be located approximately midway along the central turbine string.

Transmission Interconnect Lines

Alternative C would have a single overhead 138 kV transmission interconnect line. The transmission interconnect line would extend northeast from the substation down to the Raft River Valley where it would cross over, but not connect to the existing Raft River transmission line. From here the transmission interconnect line would extend to the north approximately 19.7 miles in a new ROW adjacent to the existing ROW for the Raft River transmission line. It would cross over the Snake River west of the Minidoka Dam. The line would then travel in a northeast direction where it would connect the project to the existing Idaho Power transmission lines located north of the Minidoka Dam. The transmission interconnect line ROW would cross lands managed by BLM, Bureau of Reclamation, the State of Idaho, the United States Fish and Wildlife Service (USFWS) as well as those under private ownership (Table 2.5-2).

Table 2.5-2. Miles of Transmission Interconnect Line by Ownership for Alternative C.

Management or Ownership	Miles of Transmission Interconnect Line
	Alternative C
BLM	5.6
Bureau of Reclamation	0.7
State of Idaho	5.5
USFWS	0.2
Private	7.7
Total	**19.7**

The overhead transmission interconnect line from the Proposed Project substation to the Raft River Valley would be supported by 30 wooden H-frame, single circuit structures placed at approximately 800-foot intervals. From the Raft River transmission line to the north, approximately 105 structures would be placed at approximately 800-foot intervals parallel to the existing ROW of the Raft River transmission line. Under Alternative C, the transmission interconnect line would be designed to prevent the perching of raptors and other large birds.

Roads

Under Alternative C, only the existing north Cotterel Mountain access road would be reconstructed and relocated. The south access road would have only minor modifications made to improve safety including, ditch shaping, corner softening, improved sight distance. Under Alternative C, the Proposed Project would require the reconstruction of about 3.2 miles of road and the construction of about 19.5 miles of new roads. Total estimated cut volume for road construction would be approximately 2,200,000 cubic yards. The estimated fill volume would be approximately 2,425,000 cubic yards. Under Alternative C, the total construction impact area for all project features would be about 352 acres. Following the reclamation of construction impact areas, the final Proposed Project would occupy an area of about 205 acres.

Project Access

Under Alternative C, only the north access road off of SH-81 would be reconstructed. The south access road would have minor upgrades made to improve safety but would be mostly unchanged from existing conditions. Turbine components would only be delivered to the Proposed Project area from SH-81 along the north access road. The southern access would be available for ingress and egress from the Proposed Project area for all other construction vehicles.

Since turbine delivery under Alternative C would only occur from the north, trucks delivering turbine components would be required to turn around to travel back out the north access road. Truck turn-around areas would be 210 feet in diameter and would be centered on the access road. Truck turn around areas would be located every four miles along the access road and would be interspersed with pullouts. Therefore, there would be either a truck turn-around or a pullout every two miles along the project roads.

Trailer Pads

Under Alternative C the trailer pad would be located at the north end of Cotterel Mountain. The south access road would not be used for construction vehicles entering the site. Therefore, the trailer pad would be located adjacent to the north access road to facilitate management and communication with construction vehicles and the construction work force entering and exiting the Proposed Project area.

2.5.2 Public Access

Under Alternative C, public access on the ridgeline would consist of a combination of new project roads and existing and newly constructed primitive roads (Figure 2.5-3). Although public use of project roads along the ridgeline would be restricted through a series of gates, signage and natural rock barriers, there would not be a loss of public access to existing use areas. Public access would be maintained by linking the existing primitive road system through construction of new primitive roads to allow existing uses of the area, including hunting, to continue.

2.5.3 Operations and Maintenance (O&M)

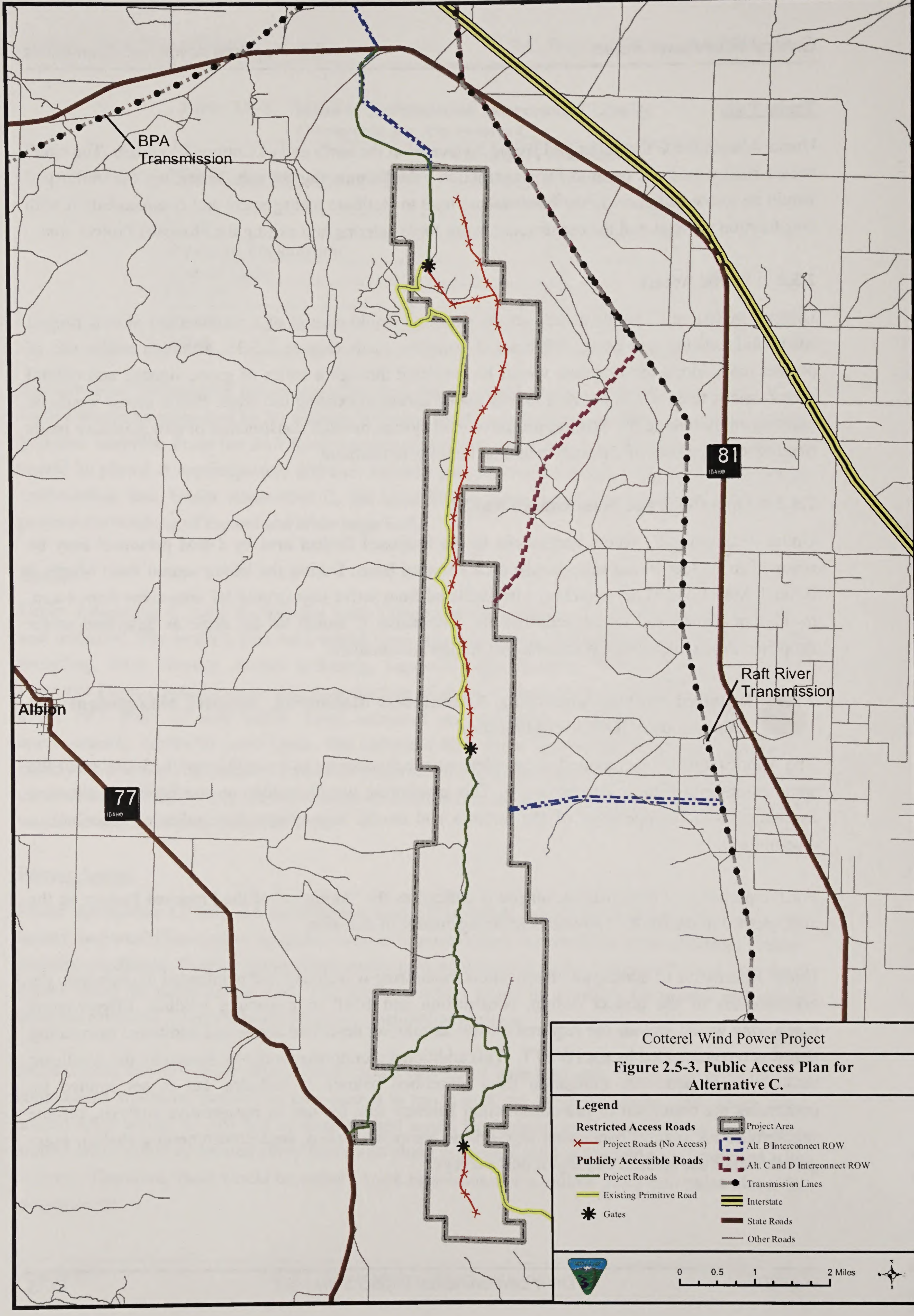
Under Alternative C, access restrictions to the Proposed Project area by O&M personnel may be required to protect leking sage-grouse on a seasonal basis. During the leking season from March 1 through May 1, O&M personnel may be restricted from active sage-grouse lek sites areas from 4 a.m. to 11 a.m. Otherwise, O&M activities for Alternative C would be the same as described under Proposed Project Features Common to All Action Alternatives.

2.5.4 Required On-Site Monitoring, Effectiveness Monitoring, Adaptive Management and Compensatory (Off-Site) Mitigation

The Applicant would be required to complete on-site monitoring as a condition of the ROW grant the same as described under Alternative B. This monitoring would include on-site fatality monitoring associated with the operation of the turbines and on-site sage-grouse lek studies as described in Appendix D.

For the purposes of this analysis, on-site is defined as the “footprint” of the Proposed Project, or the area granted in the ROW. Off-site is anything outside of that area.

Under Alternative C, additional effectiveness monitoring is included and is intended to determine the effectiveness of the project design, construction and BMP in protecting wildlife. Effectiveness monitoring would include the required on-site monitoring described above and additional monitoring that was recommended by the IWETT. This additional monitoring would be funded by the Applicant through a compensatory mitigation fund (described below). It includes, but is not limited to, continuing the collection of pre-construction baseline data for use in comparative analysis, off-site sage-grouse lek studies, continuing sage-grouse telemetry studies, sage-grouse nesting studies, sage-grouse winter use studies, and raptor nest surveys.


BPA Transmission
81
IDAHO
Raft River Transmission
Albion
77
IDAHO
Cotterel Wind Power Project
Figure 2.5-3. Public Access Plan for Alternative C.
Legend
Restricted Access Roads
Project Roads (No Access)
Publicly Accessible Roads
Project Roads
Existing Primitive Road
Gates
Project Area
Alt. B Interconnect ROW
Alt. C and D Interconnect ROW
Transmission Lines
Interstate
State Roads
Other Roads
0
0.5
1
2 Miles

Wind power projects have effects on wildlife, particularly avian species and bats, depending upon the location, geography, and natural setting of the project. Effectiveness monitoring of the project (5 years or greater) is key in understanding the relationship between the project design, siting of the towers, operation of the facility and effects on wildlife. These effects can occur in a variety of ways but based on data collected at other wind farms, are chiefly associated with bird collisions with the large blades that drive each of the wind turbines (referred to as the rotor swept area of each turbine). Additional long-term monitoring may also be necessary to determine how the characteristics of the project and its turbines affect the behavior and migration of birds and bats and to determine if there are certain turbines along the string that are contributing to bird and bat mortality that would trigger the need to implement management actions to reduce these effects.

Adaptive management is based upon a concept of science that understands ecosystems are complex and inherently unpredictable over time. It approaches the uncertainties of ecosystem responses with attempts to structure management actions using a systematic method from which over time learning is a critical tool. Learning and adapting is based on a process of long-term monitoring of impacts to wildlife from this project. The Applicant and the BLM recognize that the findings of long-term effectiveness monitoring could indicate the need for modification of operations and adaptive management. The BLM and the Applicant will work cooperatively with the USFWS and the Idaho Department of Fish and Game to develop appropriate actions or mitigation measures designed to address issues or concerns identified as a result of monitoring. Adaptive management tools that are available to the Applicant and BLM include, but are not limited to: timing stipulations during construction, operational changes of turbines, siting considerations, lighting scenarios, and color schemes. These are, for the most part, addressed in Appendix D.

BLM Washington Office Policy Guidance Instruction Memorandum No. 2005-069 states that off-site mitigation can be funded by voluntary contributions from the Applicant into a compensatory mitigation fund held by the BLM (Appendix E). This would be done by cooperative agreement between the Applicant and the BLM. This cooperative agreement would prescribe the level of contribution and the management and use of the fund. Accordingly, the Applicant has volunteered to contribute to a compensatory mitigation fund pursuant to the above-mentioned guidance. The Applicant has executed a letter of commitment to enter into a cooperative agreement (Appendix F). The Applicant intends the annual contribution to be in an amount equal to approximately one-half of one percent of the gross revenues received from Cotterel Wind Power Project electricity sales. For a 200 megawatt project on Cotterel Mountain, that contribution is expected to average approximately $150,000 per year at today's forecasted production and electricity rates.

An extensive framework of off-site mitigation practices was also recommended by the IWETT to address impacts to wildlife, should they occur as a result of the Proposed Project. These practices would also be funded by the compensatory mitigation fund. The kinds of off-site mitigation practices recommended include, but are not limited to: purchase of key habitats; acquisition of conservation easements on key habitats; or, restoration, treatment or conversion of existing federally managed off-site habitats. Any off-site activities proposed by the steering committee would have impacts associated, which would be separate from the impacts identified for this Proposed Project and analyzed in this document. They would be analyzed in separate NEPA documents on a case-by-case basis as needed.

It was further recommended by the IWETT that a technical steering committee would be formed to advise on the design of mitigation measures and monitoring covered by the compensatory mitigation fund. This committee would be responsible for recommending actions that would be funded by the compensatory mitigation fund (i.e. implementation of monitoring over and above that which is required, recommending commensurate off-site mitigation, and recommending adaptive management strategies). The intent is to ensure interagency involvement in mitigation and monitoring activities with particular emphasis on addressing the requirements of the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act and sage-grouse conservation. The committee will also examine ongoing research and scientific studies attempting to understand the behavior and relationship between wildlife and wind energy developments. The technical steering committee would be an expansion of the IWETT and would consist of interagency wildlife and other resource professionals and the Applicant, with final decision authority resting with the BLM Field Office Manager. This committee would be formed and chartered prior to any construction of the Proposed Project.

2.6 ALTERNATIVE D

Background: Alternative D is an alternative to the Proposed Action (Alternative B), that allows for wind energy development and has been developed through the identification of issues raised during public scoping, agency scoping, consultation with the Applicant, the IWETT process, government-to-government consultation, and from interdisciplinary resource specialist recommendations. In addition to the BMP identified in Appendix C, management practices that would further help to facilitate the sustainability of the existing environment are included under Alternative D. The IWETT has identified additional BMP that are included in this alternative to specifically address wildlife issues and concerns related to sage-grouse, raptors, bats and requirements under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (Appendix D). Alternative D also incorporates compensatory/off-site mitigation, effectiveness monitoring and adaptive management plans defined above in Section 2.5.4.

The premise of Alternative D is elimination of turbines from a portion of the sage-grouse habitat (leking, nesting, brood rearing, and winter range) while still maintaining an economically viable project. Because of the infrastructure costs involved with the project (i.e. turbines, roads, power lines, substation), the Applicant has determined that 66 turbines in the 1.5 MW or larger size range would be necessary for an economically viable project. Concentrating the turbines along the center ridge of Cotterel Mountain would be the best way to obtain this number of turbines while affecting the fewest resources. In addition, it would concentrate the project features on the central ridge, leaving the east ridge undeveloped.

Description of Alternative D: Alternative D would use the same size range and types of wind turbines as those proposed under Alternative C. Under Alternative D, a range of 66 to 82 turbines would range in generation capacity from 1.5 to 3.0 MW (Figure 2.6-1 and Figure 2.6-2). Tower height for the turbines would range from 210 feet to 262 feet, with maximum blade height ranging from 325 to 426 feet above the surrounding landscape. Rotor diameters would range from 230 feet to 328 feet (77 to 100 meters; Table 2.6-1).

In Alternative D, as under Alternative C, the final selection of the exact make and model of wind turbine to be used depends on a number of factors, including equipment availability at the time of construction. The number of turbines and the resulting capacity of the project would depend on the type of technology used. Therefore, to capture a "reasonable range" of potential project impacts, Alternative D defines and evaluates a range of turbine sizes and associated facilities, and their potential impact on the environment.

Table 2.6-1. Alternative D Project Features.

Number of turbines	**66 to 82**
Turbine nameplate	1.5 to 3.0 MW
Project nameplate	123 to 198
Total length of turbine strings	11.6 miles
Project roads Existing (to be used without modification) Reconstructed New	**19.3 miles (total)** 1.7 miles 2.9 miles 14.7 miles
Buried electrical distribution lines	14 miles
Electrical trenching (outside of road bed)	3 miles
Number of substations	1
Number of O&M buildings	1
New transmission line	19.7 miles
Meteorological towers	3

2.6.1 General Features of the Wind Power Project Under Alternative D

Wind Turbines

Wind turbines would be the same for Alternative D as described under Alternative C.

Substations

Substations would be the same for Alternative D as described under Alternative C.

Transmission Interconnect Lines

The transmission interconnect lines would be the same for Alternative D as described under Alternative C.

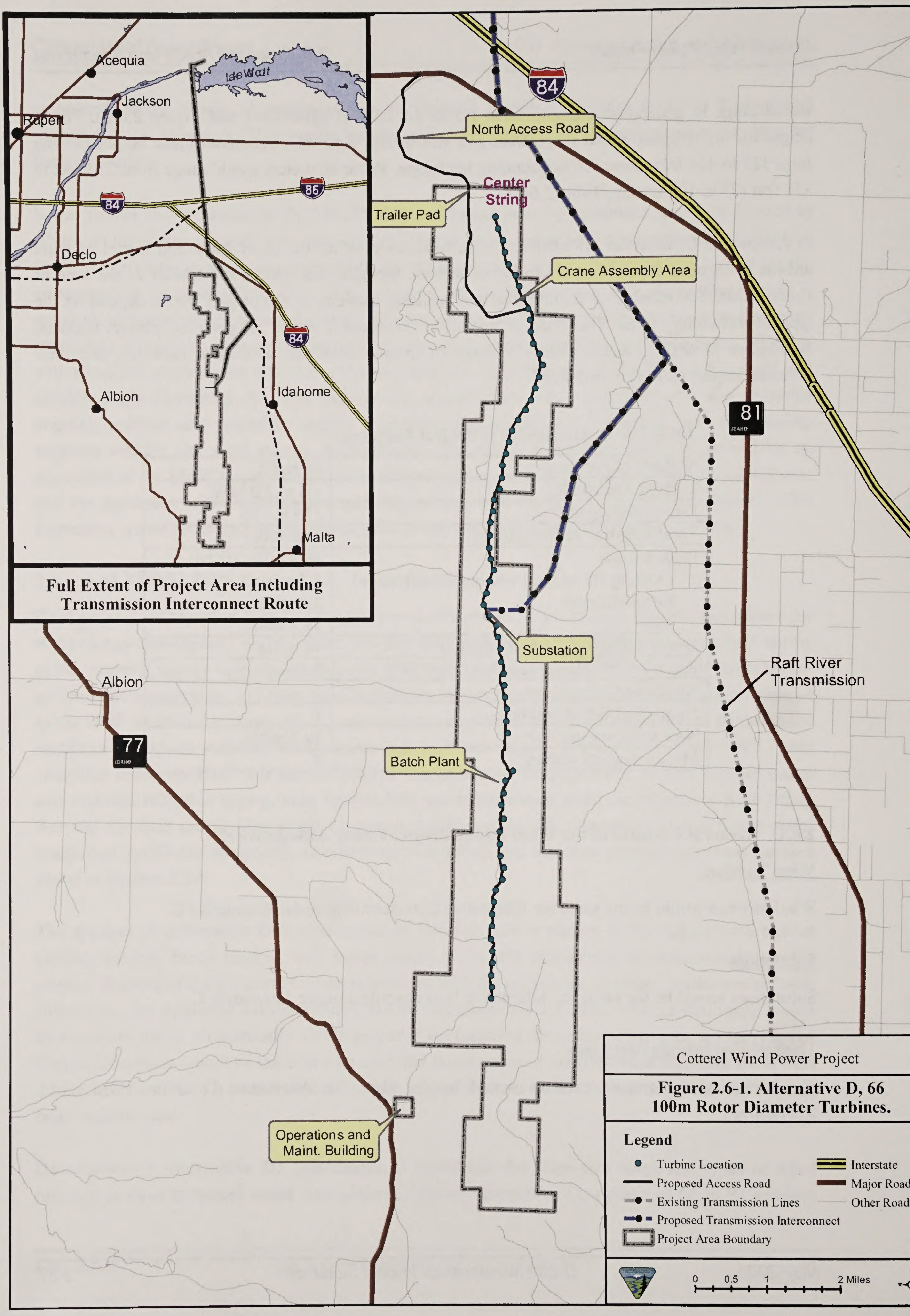


Figure 2.6-1. Alternative D, 66 100m Rotor Diameter Turbines.

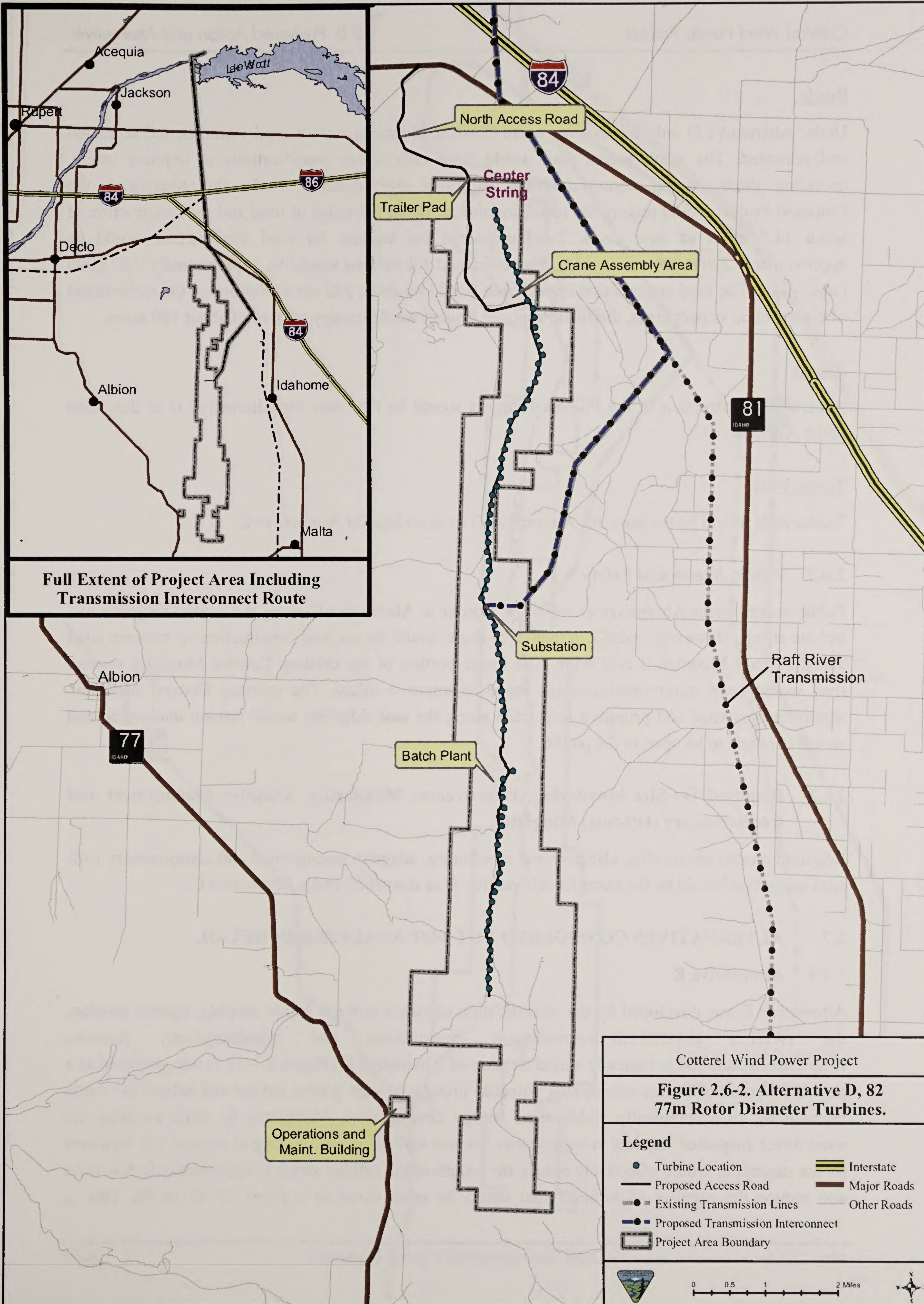


Figure 2.6-2. Alternative D, 82 77m Rotor Diameter Turbines.

Roads

Under Alternative D only the existing north Cotterel Mountain Access road would be reconstructed and relocated. The south access road would have only minor modifications to improve safety, including: ditch shaping, corner softening, improved sight distance. Under this Alternative, the Proposed Project would require the reconstruction of about 2.9 miles of road and the construction of about 14.5 miles of new roads. Total estimated cut volume for road construction would be approximately 2,080,000 cubic yards. The estimated fill volume would be approximately 2,275,000 cubic yards. The total construction impact area would be about 282 acres. Following the reclamation of construction impact areas, the final Proposed Project would occupy an area of about 160 acres.

Access

Access for construction of the Proposed Project would be the same for Alternative D as described under Alternative C.

Trailer Pads

Trailer pads would be the same for Alternative D as described for Alternative C.

2.6.2 Public Access and Safety

Public access under Alternative D would be similar to Alternative C along the central ridgeline and turbine string. However, under Alternative D there would be no road construction or turbines sited along Cotterel Mountain's east ridge. The lower portion of the existing Cotterel Mountain summit road would have minor modifications made to improve safety. The existing Cotterel Mountain summit access road and primitive jeep trails along the east ridgeline would remain unchanged and would continue to be open to the public.

2.6.3 Required On-Site Monitoring, Effectiveness Monitoring, Adaptive Management and Compensatory (Off-Site) Mitigation

Required on-site monitoring, effectiveness monitoring, adaptive management and compensatory (off-site) mitigation would be the same for Alternative D as described under Alternative C.

2.7 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

2.7.1 Alternative E

Alternative E was developed by the identification of issues through public scoping, agency scoping, the IWETT, government-to-government consultation, and interdisciplinary resource recommendations and is basically a modification of Alternative D (Figure 2.7-1). It was proposed as a possible method of further minimizing potential impacts to sage-grouse habitat and habitat use while maintaining an economically viable wind energy development. Alternative E, while avoiding the most direct suspected impacts to sage-grouse lek use and associated nesting at several key locations on the mountain, would effectively reduce the length of the turbine string to approximately 8.4 miles and reduce the number of turbines that could be constructed to a range of 40 to 49. This is

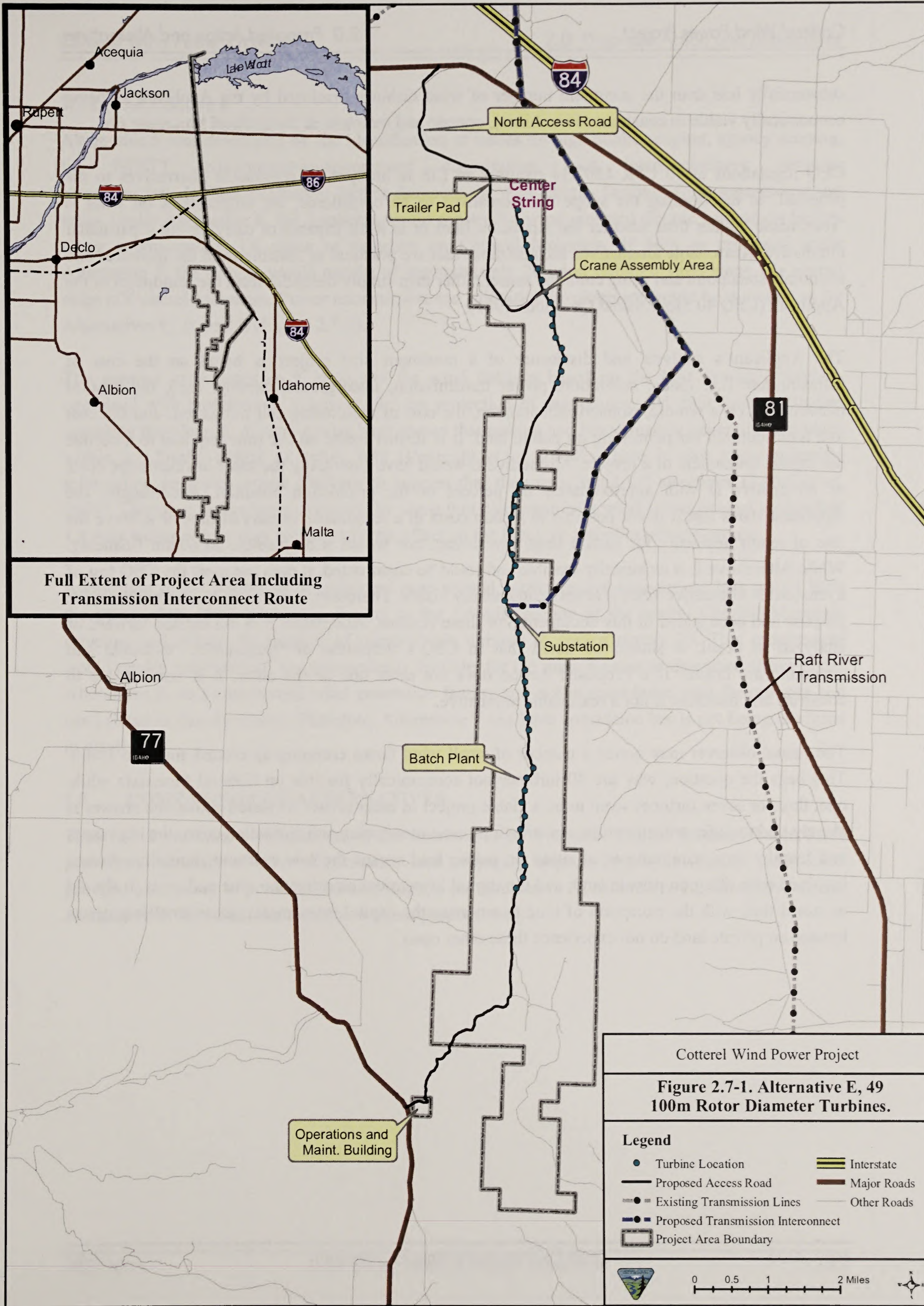


Figure 2.7-1. Alternative E, 49 100m Rotor Diameter Turbines.

substantially less than the minimum number of wind turbines disclosed by the Applicant as being economically viable to construct (66 turbines), operate and maintain at the Cotterel Mountain site.

CEQ regulations at 40 CFR 1502.14 requires an EIS to analyze all reasonable alternatives to the proposal. In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than whether the Applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the Applicant (CEQ 40 Most Asked Questions 1981).

The Applicant's analysis and disclosure of a minimum size project is based on the cost of infrastructure (i.e. roads, substation, power transmission, underground cabling, etc.), the cost of construction on a remote, isolated mountaintop, the cost of monitoring and mitigation, and the cost and time required for permitting on public land. It is further based on the time required to amortize the capital investment of a project. Alternative E would have essentially the same infrastructure costs as Alternative D with approximately 60 percent of the production potential. Accordingly, the Applicant states that it is not possible to recoup costs in a reasonable amount of time or achieve the rate of return necessary for such a large investment, nor would it be possible to obtain financing. While Alternative E is technically feasible and could be constructed, it does not meet the CEQ test of a reasonable alternative since it is not economically viable. Therefore, Alternative E does not meet the purpose and need stated in this document. For these reasons, Alternative E is not carried forward or analyzed in detail. It should be noted that in CEQ's definition of "reasonable," technical and economic are linked. If a Proposed Action does not meet one or the other, it is not feasible to construct and therefore is not a reasonable alternative.

The casual observer may notice a number of small wind farms cropping up around southern Idaho. This begs the question, why are 40 turbines not economically feasible on Cotterel Mountain while one, three or seven turbines seem to be a viable project in other areas? As stated above, the answer is closely tied to: infrastructure costs; construction costs; monitoring and mitigation costs; the high costs and lengthy time requirements of siting on public land versus the low cost and short time frames involved with siting on private land; and the capital investment amortization time and costs. It should be noted that, with the exception of time to amortize the capital investments, these smaller projects located on private land do not experience these other costs.

2.7.2 Alternative F

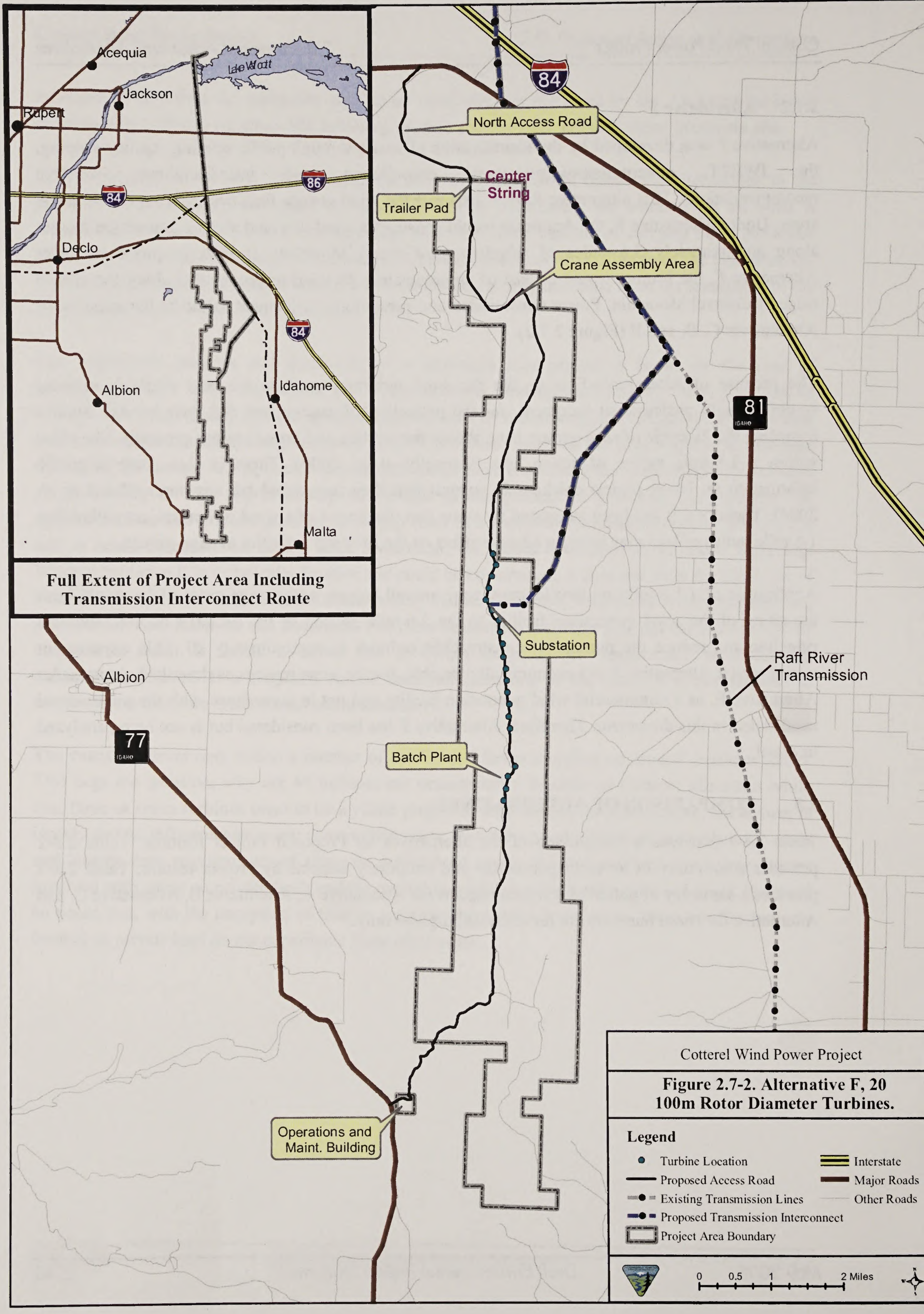
Alternative F was developed by the identification of issues through public scoping, agency scoping, the IWETT, government-to-government consultation, and interdisciplinary resource recommendations. This alternative further distances the wind energy facilities from sage-grouse use areas. Under Alternative F, the Applicant would construct a wind-powered electric generation facility along approximately 3.6 miles of ridgeline on Cotterel Mountain. If built as proposed under Alternative F, the project would consist of approximately 20 wind turbines, sited along the central ridge of Cotterel Mountain. Power transmission and substation involvement would be the same as for Alternatives C, D, and E (Figure 2.7-2).

The premise of Alternative F is to site the wind turbines based on the best available science, combined with professional judgment, for the protection of sage-grouse and their habitat. Studies regarding the lifecycle of sage-grouse have shown that nesting and brood rearing generally take place within a 1.8-mile radius of active leks (Connelly *et al.* 2000). There is also some scientific information on lesser prairie chickens to suggest that they may avoid tall structures (Robel *et al.* 2004). Therefore, it has been suggested by some that placement of a wind power project within that 1.8 mile radius of leks may have an adverse affect on the lifecycle activities of sage-grouse

Application of a 1.8-mile no development zone around known, active sage-grouse leks would limit the siting of the wind generation facility to the 3.6-mile section of the central Cotterel Mountain ridgeline and reduce the number of constructible turbines to approximately 20. This requirement would render Alternative F not economically feasible, for the same reasons as described above under Alternative E, as a commercial wind generation facility and not in accordance with the purpose and need stated in this document. Therefore, Alternative F has been considered but is not being analyzed in detail.

2.8 COMPARISON OF ALTERNATIVES

Table 2.8-1 provides a comparison of the alternatives by Proposed Project features. Table 2.8-2 provides a summary of acres of permanent and temporary impacts by project feature. Table 2.8-3 provides a summary of potential resource impacts for Alternative A, Alternative B, Alternative C, and Alternative D. These numbers are for analysis purposes only.



Cotterel Wind Power Project

Figure 2.7-2. Alternative F, 20 100m Rotor Diameter Turbines.

Table 2.8-1. Comparison of Project Features of the Action Alternatives.

Project Features	Alt. B	Alt. C	Alt. D
Project nameplate (in MW)	195	147 to 243	123 to 198
Number of turbines	130	81 to 98	66 to 82
Turbine nameplate (in MW)	1.5 MW	1.5 to 3 MW	1.5 to 3 MW
Turbine hub height (meters)	64	80	80
Turbine diameter (in meters)	70	77 to 100	77 to 100
Total length of turbine string (in miles)	15.8	14.5	11.6
Project roads total (in miles)	26.6	24.4	19.3
Existing (to be used without modification)	0	1.7	1.7
Reconstructed	4.5	3.2	2.9
New	22.1	19.5	14.7
Electrical trenching (outside of roads, in miles)	5	3 to 4	2.8
New transmission Interconnect lines (in miles)	9	19.7	19.7
Substations	2	1	1
Meteorological towers	3	3	3
Maintenance and operation building	1	1	1
Temporary ground disturbance (in acres)	365	350	280
Permanent ground disturbance (in acres)	203	203	158
Construction features			
Earth work Cut (in cubic yards)	2,663,496	2,203,176	2,079,286
Fill	2,506,995	2,423,935	2,275,735
Difference	+156,501	-220,759	-196,449
Truck trips to build project roads (road base only)	12,625	10,885	8,500
Truck trips to build project (turbines, substations, other)	2,050	1,850	1,250
Total truck trips	14,675	12,735	9,750
Number of batch plants	1	1	1
Mitigation			
Wildlife fatality monitoring	X	X	X
BLM BMP		X	X
Compensatory/off-site mitigation		X	X
Public Access Available		X	X

Table 2.8-2. Acreage of Land That Would Be Affected by Development of the Proposed Cotterel Wind Power Project.

	Temporary Construction Disturbance (approx. acres)*			Permanent Construction Disturbance (approx. acres)		
	Alt. B	Alt. C	Alt. D	Alt. B	Alt. C	Alt. D
Turbine pads	95	59 to 72	48 to 60	0.8	0.6	0.5
New project roads	50	48	40	200	202	157
O & M facility	0	0	0	2	2	2
Temporary equipment storage and construction staging**	10	8	4	0	0	0
Power line ROW	7	14	14	0	0	0
Substation	0	0	0	0.5	0.3	0.3
Batch plant	5	5	5	0	0	0
Meteorological towers	0	0	0	0.014	0.014	0.014
Total	167	134 to 147	111 to 123	202	205	159

*Temporary construction impacts are in addition to permanent impacts.

**Includes temporary office trailers and crane assembly areas.

Table 2.8-3. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	B	C	D
PHYSICAL				
Air Quality	No impact	Criteria pollutants and greenhouse gases would temporarily be emitted during construction of the Proposed Project.	Impacts to climate or air quality would be similar to those described under Alternative B; however, the temporary affects would be slightly less due to less construction.	Impacts to climate or air quality for Alterative D would be similar those described under Alternatives B and C; however, the temporary affects to air quality would be the least under Alternative D.
Geologic Hazards	There would be no impacts related to geology.	Shallow blasting to set wind turbine foundations and for road construction up to 203 acres disturbed.	Shallow blasting to set wind turbine foundations and for road construction up to 203 acres disturbed.	Shallow blasting to set wind turbine foundations and for road construction up to 158 acres disturbed.
Paleontological Resources	No impacts	No impacts	No impacts	No impacts
Soils	There would be no impacts related to soils.	Up to 368 acres would be initially disturbed. 165 acres would be reclaimed. 203 acres of permanent impacts to soils.	Up to 350 acres would be initially disturbed. Up to 147 acres would be reclaimed. 203 acres of permanent impacts to soils.	Up to 270 acres would be initially disturbed. Up to 112 acres would be reclaimed. 158 acres of permanent impacts to soils.
Water Resources				
Surface Water	There would be no impacts related to water resources.	The project would have a low potential to affect surface water resources.	Same as B	Same as B
Ground Water	There would be no impacts related to water resources	Blasting should not alter the flow of springs in the Proposed Project area.	Same as B	Same as B.

Table 2.8-3. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	B	C	D
Noise				
Increased noise levels near residences and wildlife habitat	No effect. Existing background noise levels in the area would continue.	Noise from large trucks during construction would be temporary (eight months). Operational impacts from noise to Sensitive receptors are not expected to occur.	Same as B.	Same as B – shorter in duration.
BIOLOGICAL				
Vegetation				
Removal of vegetation	No change to the existing vegetation beyond the levels identified in the Cassia RMP.	Up to 368 acres of vegetation would be directly affected by construction of all project features. Up to 165 acres reclaimed. 203 acres of permanent impact to vegetation.	Up to 350 acres of vegetation would be directly affected by project construction of all project features. Up to 147 acres reclaimed. 203 acres of permanent impact to vegetation.	Up to 282 acres of vegetation would be directly affected by project construction of all project features. Up to 123 acres reclaimed. 158 acres of permanent impact to vegetation.
Noxious weeds	No change to the existing vegetation beyond the levels identified in the Cassia RMP.	Disturbance of vegetation could lead to the establishment and spread of noxious weeds, which would increase direct competition for limited resources (nutrients, water, space, etc.) with native or desired vegetation. Indirectly, these species could augment the amount and continuity of fuels, which could lead to increased fire return intervals.	Same as B.	Same as B

Table 2.8-3. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	B	C	D
Wildlife				
Loss of big game winter range	There would be no adverse impacts.	Winter range would be permanently eliminated on up to 105 acres of mule deer habitat and 194 acres of bighorn sheep habitat. Mountain lions could be initially displaced by construction activities, but would likely habituate to project features over time.	Winter range would be permanently eliminated on up to 62 acres of mule deer habitat and 162 acres of bighorn sheep habitat. Impacts to Mountain lions would be the same as Alternative B.	Winter range would be permanently eliminated on up to 58 acres of mule deer habitat and 115 acres of bighorn sheep habitat. Impacts to Mountain lions would be the same as Alternative B.
Big game displacement and/or stress	There would be no adverse impacts.	Displacement of big game from project construction and operation. Potential displacement impacts from increased human activity.	Same as B	Smaller project size would result reduced area of displacement and less areas of improved public access. Displacement would still occur but on a smaller scale.
General wildlife habitat	There would be no adverse impacts.	Wildlife could be negatively affected by increased traffic and human presence on Cotterel Mountain. Permanent loss of 203 acres of potential habitat.	Same as B	Permanente loss of 158 acres of potential habitat. Smaller project size would result in reduced area of displacement and less areas of improved public access.

Table 2.8-3. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	B	C	D
Estimated annual avian and bat mortality due to collision with wind towers or power lines.	There would be no adverse impacts.	Raptors = 0-63 mortalities All birds = 0-934 mortalities Bats = 91-667 mortalities Upper end mortality estimates are based on total avian numbers from point counts, mortality at operating wind projects, and total rotor swept area with an operating capacity factor of 35 percent applied. This estimate assumes that all birds flying within the rotor swept area would be killed (worst case scenario).	Raptors = 0-81 mortalities All birds = 0-1188 mortalities Bats = 69-848 mortalities Assumes larger rotor swept area. Upper end mortality estimates are based on total avian numbers from point counts, mortality at operating wind projects, and total rotor swept area with an operating capacity factor of 35 percent applied. This estimate assumes that all birds flying within the rotor swept area would be killed (worst case scenario).	Raptors = 0-66 mortalities All birds = 0-968 mortalities Bats = 57-691 mortalities Assumes larger rotor swept area. Upper end mortality estimates are based on total avian numbers from point counts, mortality at operating wind projects, and total rotor swept area with an operating capacity factor of 35 percent applied. This estimate assumes that all birds flying within the rotor swept area would be killed (worst case scenario).
Nesting raptors	There would be no adverse impacts.	Wind turbines would be sited greater than ¼ mile from the three golden eagle nests. Blasting during nesting season could result in nest abandonment. Resident hunting raptors may avoid the vicinity of the turbines. Habitat lost to construction would result reduced prey base.	Same as Alternative B.	Same as Alternative B.

Table 2.8-3. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	B	C	D
Loss of sage-grouse winter range	Existing situation expected to continue.	Direct loss of 68 acres. Displacement from up to 6,435 acres	Direct loss of 48 acres. Displacement from up to 5,716 acres	Direct loss of 34 acres. Displacement from up to 4,585 acres.
Loss of sage-grouse nesting habitat	Existing situation expected to continue.	Direct loss of 33 acres. Displacement from up to 5,605 acres.	Direct loss of 28 acres. Displacement from up to 4,890 acres	Direct loss of 15 acres. Displacement from up to 3,194 acres
Displacement of sage-grouse from lek sites	Existing situation expected to continue.	Direct loss of 84 acres. Displacement from up to 3,395 acres.	Direct loss of 77 acres. Displacement from up to 3,345 acres.	Direct loss of 52 acres. Displacement from up to 3,255 acres.
Displacement of bats from hibernation sites	Existing situation expected to continue.	Noise and percussion from blasting, drilling, digging, and movement of large vehicles could displace roosting, breeding, or hibernating bat species.	Same as Alternative B.	The smaller project would require less blasting resulting in a reduced potential for displacement of roosting, breeding, or hibernating bat species.
Threatened and Endangered Species				
Bald Eagle	There would be no adverse impacts.	Small potential for direct mortality or injury from electrocution, collisions with transmission lines, or turbine blades.	Same as Alternative B	Same as Alternative B
Gray Wolf	Gray wolves are not known to occur on Cotterel Mountain; therefore, there would be no adverse impacts.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

Table 2.8-3. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	B	C	D
BLM Sensitive Species	Existing situation expected to continue.	Cliff chipmunk populations would be affected during construction. These areas would likely be avoided or abandoned, but once construction is complete and disturbance levels decline, cliff chipmunks would be expected to reoccupy habitats near the facility. Nesting and non-breeding golden eagles could be adversely affected not only by construction disturbance, but also from potential collisions with turbines.	The impacts of Alternative C to special status species would be similar to those expected to occur under Alternative B, with slightly smaller areas of permanent and temporary impacts from project construction and fewer turbines.	The impacts of Alternative D to special status species would be similar to those expected to occur under Alternative B and C, with slightly smaller areas of permanent and temporary impacts from project construction.
CULTURAL RESOURCES				
Prehistoric Resources	There would be no affect.	No Affect.	Same as B	Same as B
American Indian Concerns	There would be no affect.	No concerns have been identified.	Same as B	Same as B

Table 2.8-3. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	B	C	D
Historical Resources	There would be no affect.	Alternative B would have no impact to sites CM-S-5, CM-S-16, CM-S-20, CM-S-22, or 10CA629 since each of these is located outside of the area of potential effects and would be avoided. Proposed Project impacts to the remaining 21 sites, and to any sites discovered during additional survey of the transmission lines and access roads, would range from no impact to high impact depending on the degree of loss of integrity to the site and on the significance of the site.	Impacts for Alternative C are similar to impacts for Alternative B with the exception that the Proposed Project would have no impact to site CM-S-17 in Alternative C. This site would be avoided.	Impacts for Alternative D are similar to impacts for Alternative C with the exception that the Proposed Project would have no impact to sites CM-S-21, CM-S-22, CM-S-18, and CM-S-1 in Alternative D. Alternative D would have the fewest impacts to historical and cultural resources.
SOCIOECONOMIC				
Regional Economy and Community	There would be no impacts or changes to regional or local socioeconomic conditions. The Proposed Project area would continue to function as a dispersed recreation area and would continue to provide seasonal grazing opportunities for livestock. The Mini-Cassia area would not experience the tax revenue benefits that would be associated with the project.	Impact due to temporary direct and secondary increase in jobs, income, and spending. Construction cost of $200 million. Local and regional labor force could fill positions, and local lodging could accommodate workers. Increase in population would be small.	Impacts would be similar to Alternative B.	Temporary direct and secondary increase in jobs, income and spending. Construction cost of approximately $100 million. One-time influx of sales tax revenue, less than under Alternative B.

Table 2.8-3. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	B	C	D
Regional Economy and Community (continued)		No effect on local businesses. No impact on tourism. Impact of one-time influx of sales tax revenue of approximately $500,000. Permanent increase in jobs, income, and spending. Annual operation cost would be $4.5 million. No relocations, displacements, substantial growth of concentration of population, and related demand for public services would occur. Additional property tax revenue to the school district.		Annual operation cost would be $2.3 million. Permanent increase in jobs, income, and spending would be less than under Alternative B. Beneficial impact upon annual property tax revenues, similar in type but less than Alternative B. Beneficial impact of permanent increase in sales tax revenue, similar in type but less than under Alternative B. Impact to population and demand for public services would be less than under Alternative B.
Property Values	There would be no affect.	Impacts to property values are not likely.	Same as Alternative B.	Same as Alternative B.
Environmental Justice	There would be no affect.	No environmental justice impacts.	Same as Alternative B	Same as Alternative B

Table 2.8-3. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	B	C	D
LAND USE				
Public Access	There would be no affect.	Public access to federal and state lands within the Proposed Project area would not be restricted, except during construction of the project for safety purposes. Following project construction, public access to federal and state lands would be improved with 24.5 miles of new or reconstructed roads.	Public access on the ridgeline would be altered from Alternative B to become a combination of new project roads and existing and newly constructed primitive roads. Public use of project roads would be restricted through a series of gates and natural rock barriers but would not result in a loss of access to traditional use areas. Primitive access would be maintained wherever possible by linking the existing primitive road system through construction of new primitive roads.	Same as Alternative C

Table 2.8-3. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	B	C	D
Recreation	Based on the activities outlined in the Cassia RMP, no change to recreation opportunities or degree of typical use would be anticipated in the area, beyond some minor modifications to recreation facilities and trails. These modifications are expected to enhance the recreation spectrum in the Proposed Project area.	During construction of the Proposed Project, noise, dust, traffic, equipment use, and associated human activities would change the character of the area and result in a temporary loss of recreational opportunities. Wind turbines would be located within about 760 feet of the Coe Creek picnic site. Project could result in change of visitor/use or experience. Changes to recreation use would not alter the current Recreation Opportunity Spectrum category (semiprimitive motorized) for Cotterel Mountain.	Construction impacts would be the Same as B. Wind turbines would be located within about ¼ mile (1,400 feet) of the Coe Creek picnic site. Visitors may be able to hear the turbines during times of turbine operation but less so than under Alternative B.	Construction impacts would be the Same as B. Wind turbines would be located within about ¼ mile (1,400 feet) of the Coe Creek picnic site. Overall smaller project would result in reduced impacts to recreational users.
Land Status	There would be no affect.	No affect to existing surface land ownership or mineral ownership	Same as B.	Same as B.
Rights-of-Ways	There would be no affect.	Future rights-of-ways would not be affected by the Proposed Project. Approval would continue to be obtained from the BLM in accordance with the processes outlined in 43 Code of Federal Regulations 2800 and the BLM Right -of-Way Handbook (H-2800-1). An amendment to the land use plan may be required.	Same as B.	Same as B.

Table 2.8-3. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	B	C	D
Livestock Grazing	Based on the Cassia RMP no changes to grazing would be expected beyond some vegetation treatments or minor range improvement projects There would be no modification of the existing acres, animal unit months, range conditions, or improvements outside those identified in the Cassia RMP.	Temporary loss of up to 165 acres of rangeland vegetation. Permanent impacts to 203 acres of rangeland vegetation would result in a loss of livestock forage	Temporary loss of up to 147 acres of rangeland vegetation. Permanent impacts to 203 acres of rangeland vegetation would result in loss of livestock forage	Temporary loss of up to 112 acres of rangeland vegetation. Permanent impacts to 158 acres of rangeland vegetation would result in loss of livestock forage
VISUAL RESOURCES				
Visual Resources	There would be no affect.	Vehicle and heavy equipment traffic associated with project construction could results in short-term impacts. The operational phase of the project would have long-term impacts to surrounding view sheds and communities. Permanent impacts to visual resources would be greatest under this alternative.	Short-term impacts to visual resources would be similar to Alternative B, but with fewer trips needed during the construction phase. Long-term impacts would also be slightly less based on the reduced number of turbines.	Short-term impacts to visual resources would be the lowest under this alternative, and would require the fewest trips during the construction phase. Long-term impacts would also be lowest, based on the reduced number of turbines.
HAZARDOUS MATERIALS				
Hazardous Materials	There would be no affect.	During construction of Alternative B, BMP would be used to avoid spills, leaks, or dumping of hazardous substances.	Same as Alternative B.	Same as Alternative B

Table 2.8-3. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	B	C	D
FIRE MANAGEMENT				
Fire and Fuels	Under the Alternative A, fire management's ability to suppress wildfire and manage surface fuels within the Proposed Project area would not be affected. Fire frequency and intensity would not be changed by Alternative A.	The risk of human caused ignitions would increase Suppression strategies would be limited by the presence of turbines and buried electrical cables Improved, wider roads would act as fire breaks and provide improved access and shorter ground response times. Towers would increase the lightning-attractivity of Cotterel Mountain resulting in a potential increase in lightning strikes. This may or may not affect the number of lightning caused ignitions.	Same as Alternative B	Impacts would be similar to B, but the risk of human caused ignitions would lower due to overall smaller project size. Suppression strategies would not be limited on east ridge of Cotterel Mountain.

2.9 AMENDING THE EXISTING CASSIA RMP

Public land management actions, including the granting of ROW under Title V of the Federal Land Policy and Management Act of 1976, are guided by decisions recorded in the Cassia RMP approved on January 24, 1985. The RMP currently restricts ROW to existing facilities/localities within Management Area 11 (Cotterel Mountain) and thus, the proposed Cotterel Wind Power Project development project is not consistent with the RMP.

When the RMP was completed, development of wind energy was not considered as a potential use on Cotterel Mountain. Since that time, advances in technology and demand for energy, particularly a diversified energy portfolio including renewable sources, have made wind energy development both cost effective and desirable. Wind resource studies, both existing and ongoing as part of this analysis, have shown that Cotterel Mountain is a very good renewable wind resource and potential energy production site.

2.9.1 Purpose and Need to Amend the Existing Cassia RMP

Since the Proposed Project is not consistent with the current direction in the Cassia RMP, there is a legal requirement to amend the land use plan if any of the action alternatives (Alternatives B, C and D) in this analysis are selected. Alternative A would not require an amendment. The planning regulations at 43 CFR 1601 provide for plan amendments for actions that are not presently in conformance with the plan.

The Cassia RMP Management direction for Management Area 11 (which encompasses the Cotterel Mountain range) and generally for the whole area, emphasize the following:

- Expand dispersed recreation opportunities on approximately 18,000 acres south of the communication facility;
- Limit rights-of-way to existing facilities/localities;
- Manage the area to maintain scenic quality and open space;
- Improve 31,212 acres of poor and fair condition rangeland to good;
- Provide 5,278 animal unit months of forage for livestock;
- Provide forage for and following mule deer by season of use: 403 spring; 403 summer; 403 fall; 563 winter;
- Provide yearlong forage for 127 antelope;
- Maintain or improve 6,414 acres of crucial deer winter range and 703 acres of sage-grouse brood-rearing habitat;
- Protect nesting ferruginous hawks from human disturbance;
- Control surface disturbing activities on 5,677 acres having soils with high erosion potential;
- Transfer 440 acres out of federal ownership (this action has already been completed);
- Protect any known and potential ferruginous hawk nesting sites (isolated juniper trees);

- Restrict activity within 2,300 – 3,000 feet of known ferruginous hawk nest sites from March 1 to July 15;
- No surface occupancy within ½ mile of active ferruginous hawk nest sites;
- Maintain cover in deer migration routes;
- Protect meadow seeps and springs to provide for needed production of water, forbs and insects within upland game ranges; and
- Improve raptor habitat by modifying selected sections of power lines where a problem has been identified.

These management objectives were developed in 1985 and are guidelines to help achieve what was then the desired future condition of the management area. While some of the objectives have been achieved, the BLM continues to work toward those objectives that are still desired.

The purpose of the proposed amendment is to modify the ROW restriction in Management Area 11 (containing the Cotterel Mountain range) such that granting of a ROW for and construction of a wind energy development would be consistent with the land use plan.

2.9.2 Planning Process

The planning action is to amend the Cassia RMP as a part of this Draft EIS. This action is being done using the BLM 1600 manual guidance, Idaho State BLM instruction memoranda, and the planning regulations published as 43 CFR, part 1600.

To initiate the plan amendment process, a Notice of Intent (NOI) to prepare a land use plan amendment was published in the Federal Register and local newspapers in December of 2002. The notice invited the public, state and local governments and other federal agencies to participate in the planning process by attending any or all of three public scoping meetings held in Albion, Burley and Boise in January of 2003 and submitting comments in person or by mail. In addition to the publication, the scoping statement was sent out to a mailing list of approximately 150 interested parties. A large paid advertisement was also placed in the local newspapers by the Applicant announcing the public meetings. Briefing sessions were held in February, March and April of 2003 for County Commissioners, City Councils and other interested groups around the Mini-Cassia area. Through public meetings, letters, briefings and other notices, the public has been given the opportunity to comment on and provide additional information on this proposal. In addition, government-to-government consultation was conducted with both the Shoshone-Bannock and the Shoshone-Paiute Native American Tribes and BLM coordinated closely with other state and federal agencies with an interest in the Proposed Project. All comments were considered in preparation of this analysis. These considerations brought to light additional issues and prompted additional and more comprehensive wildlife and wildlife habitat studies for preparation of the analysis.

2.9.3 Planning Issues and Criteria

The NOI listed the planning issues BLM anticipated and invited the public, other federal agencies, and state and local governments to identify additional concerns or issues during scoping meetings and the 60-day comment period that followed.

Planning Issues

The issues identified and through public scoping and used to develop alternatives are as follows:

- Migratory birds
- Sage-grouse
- Maintaining and protecting tribal treaty rights or heritage links to public lands
- Public access
- Visual resources
- Raptor migration
- Consistency with the RMP

Planning Criteria

The following general planning criteria are being considered in the development of the proposed plan amendment:

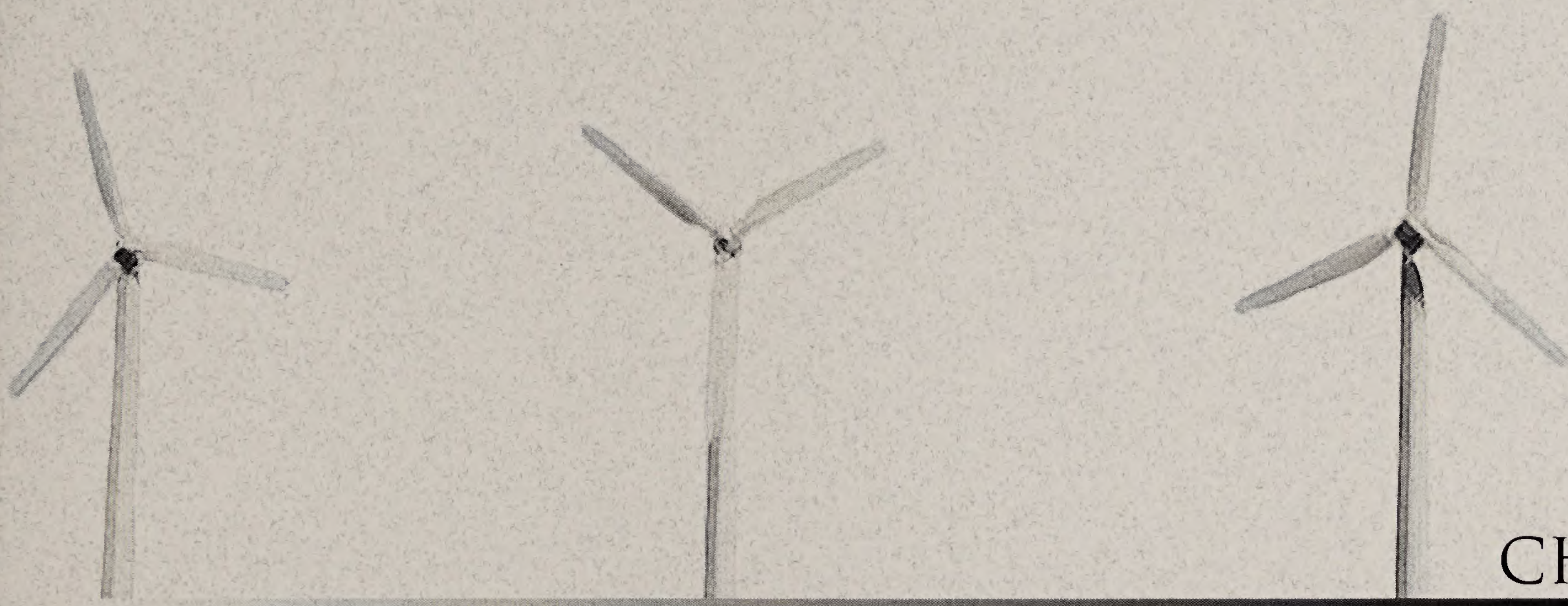
- NEPA
- Existing laws, regulations, and BLM policies
- Plans, programs and policies of other federal, state and local governments, and Indian tribes
- Public input
- Future needs and demands for existing or potential resource commodities and values
- Past and present use of public and adjacent lands
- Environmental impacts
- Social and economic values
- Public welfare and safety
- President's National Energy Policy

2.9.4 Proposed Plan Amendment to the Existing Cassia RMP

Alternatives B, C, or D if selected, would require a plan amendment to the Cassia RMP. This proposed amendment would allow the granting of a ROW on Cotterel Mountain for a wind energy development project. There is currently a restriction in the Cassia RMP that limits ROW to existing facilities and locations. This restriction would be rewritten to allow the development of one wind energy project. The amended restriction would read, "limit rights-of-way to existing facilities/localities, with the exception of one wind energy project."

The proposed amendment would also involve changing the language in item B from the Resource Management Objectives on page 39 of the Cassia RMP which currently reads: "Manage the area to maintain scenic quality and open space." The new language would read: "Manage the area to maintain scenic quality and open space consistent with the Visual Resource Management (VRM) classes for management area 11 and with the exception of the development of one wind energy project." The area is classified VRM Class IV, in which, projects such as the proposed action are acceptable. In addition, the existing Resource Management Objective G, also on page 39 of the RMP currently reads: "Maintain or improve 6,414 acres of crucial deer winter range and 703 acres of sage-grouse brood-rearing habitat." It would be revised to read as follows: "Maintain or improve 6,414 acres of crucial deer winter range" (Alternatives B, C, and D); "Maintain or improve 600 acres of sage-grouse brood rearing habitat" (Alternatives B and C); or "Maintain or improve 703 acres of sage-grouse brood rearing habitat" (Alternative D).

Additional ROW proposals would not be considered under the proposed amendment. If additional ROW are proposed in this management area, which appear to have merit, they would require additional amendments to the RMP and be subject to full and complete analysis in accordance with NEPA.



CHAPTER 3

AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

The purpose of this chapter is to describe the existing or affected environment, including conditions and trends that could be affected by the alternatives described in Chapter 2. Information about the landscape, cultural, natural, and human environment is provided to describe more fully the statement of needs explained in Chapter 1. The affected environment also sets the foundation for understanding and evaluating the alternatives discussed in Chapters 2 and the environmental consequences discussed in Chapter 4.

This chapter focuses on those portions of the environment that are directly related to the conditions and resource categories being addressed by the alternatives. The description is not meant to be a complete portrait of the study area, but is intended to portray the conditions and trends of most concern to the public and the Bureau of Land Management (BLM). Indicators for the impact assessment have been established by resource to better assess the consequences of each alternative.

3.0.1 Critical Elements Not Affected or Present Within the Proposed Project Area

<u>Areas of Critical Environmental Concern</u>

There are no Areas of Critical Environmental Concern within or adjacent to the Proposed Project area.

<u>Wetlands</u>

Under Alternative C and Alternative D, the proposed transmission interconnect line would cross the air space over the Snake River. No impacts to wetlands would occur from this action.

<u>Wild and Scenic Rivers</u>

There are no wild and scenic rivers within or adjacent to the Proposed Project area.

<u>Wilderness</u>

There are no wilderness areas within or adjacent to the Proposed Project area.

<u>Floodplains</u>

Under Alternative C and Alternative D, the proposed transmission interconnect line would cross the air space over the Snake River. No impacts to the floodplain of the Snake River would occur from this action.

<u>Farm Lands</u>

No impacts to farm lands would occur under any of the Proposed Project alternatives.

3.1 PHYSICAL RESOURCES

3.1.1 Climate and Air Quality

Climate

The nearest climate recording station from the Proposed Project area is at the town of Malta, located approximately five miles to the east of the Proposed Project area at the base of Cotterel Mountain. The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS, formerly Soil Conservation Service) does not believe that the Malta station is entirely representative of the weather patterns throughout the area. The Malta weather station is located in the rain shadow of several mountains in the area, including Cotterel Mountain, Jim Sage Mountain, Mount Harrison, and Mount Independence. The average annual precipitation ranges from 12 to 16 inches throughout these mountains at elevations below about 6,000 feet. Above 6,000 feet, precipitation can range from 14 to more than 25 inches per year. Approximately 60 percent of the precipitation in the area falls in April through September. Average seasonal snowfall at the Malta station is about 18 inches (USDA, NRCS 1986). On the higher mountains more than 50 percent of the precipitation may fall as snow.

At the Malta station, the winter average temperature is 29 degrees Fahrenheit (°F), the average daily minimum temperature is 10°F, and the extreme historical low was -27°F. In summer, the average temperature is 60°F and the average daily maximum temperature is 85°F with an extreme historical high of 104°F (USDA, NRCS 1986).

Wind on Cotterel Mountain typically blows from west to east with minor seasonal variations. Winter snowfall blows clear on some portions of the mountain while forming deep drifts on others. During winter there are periods when low clouds settle over the mountain. When temperatures are low enough, these clouds can create freezing fog that forms rime ice on the west face of trees, shrubs, fences, and other structures. In the summer, afternoon thunderstorms can form resulting in heavy rainfall events with lightening and strong winds.

Air Quality

The Proposed Project would be located entirely in Cassia County, Idaho, in United States (U.S.) Environmental Protection Agency (EPA) Air Quality Control Region 63. The area is classified as attainment or unclassifiable for all of the following federal and state criteria air pollutants:

- Carbon monoxide (CO);
- Nitrogen dioxide (NO_2);
- Particulate matter with an aerodynamic diameter less than 10 microns (PM_{10});
- Oxides of sulfur (SO_X);
- Ozone (O_3); and
- Lead (Pb).

The National Ambient Air Quality Standards (NAAQS) for criteria pollutants are shown in Table 3.1-1. These match the Idaho Ambient Air Quality Standards listed in the Idaho Administrative Rules (IDAPA) 58.01.01.577.

Table 3.1-1. National Ambient Air Quality Standards.

Pollutant	Averaging Period	NAAQS[a]
CO	1-hour	40 mg/m^3
	8-hour	10 mg/m^3
NO_2	Annual	100 µg/m^3
PM_{10}	24-hour	150 µg/m^3
	Annual	50 µg/m^3
SO_X (measured as SO_2)	3-hour	1,300 µg/m^3
	24-hour	365 µg/m^3
	Annual	80 µg/m^3
O_3	1-hour	235 µg/m^3
Pb	Quarterly	1.5 µg/m^3

[a]mg/m^3 = milligrams per cubic meter
µg/m^3 = micrograms per cubic meter
CO = Carbon monoxide
NO_2 = Nitrogen dioxide
PM_{10} = Particulate matter with an aerodynamic diameter less than 10 microns
SO_X = Oxides of sulfur
O_3 = Ozone
Pb = Lead

All areas throughout the country are assigned to one of three different classes of air quality protection. These are called Prevention of Significant Deterioration (PSD) Classes I, II, and III. Essentially, they help to ensure that the air quality in clean air areas remains clean, and does not deteriorate to the level of the NAAQS. The mechanism created by Congress to meet this goal is the establishment of "PSD increments." These increments define the maximum allowable increases over baseline concentrations that are allowed in a clean air area for a particular pollutant. These increments are promulgated in the EPA PSD regulations at 40 Code of Federal Regulations (CFR) 52.21(c). Idaho has adopted these increments as state regulation in IDAPA 58.01.01.577.

In the 1977 Clean Air Act Amendments, Congress designated all international parks, national wilderness areas, and national memorial parks, which exceed 5,000 acres in size, and all national parks, which exceed 6,000 acres in size as mandatory PSD Class I areas. Class I areas are to receive special protection from degradation of air quality, and the most stringent PSD increments apply in these areas. The Class I areas closest to the Proposed Project area are: the Craters of the Moon National Monument, located 60 miles north of the proposed area, and the Jarbidge Wilderness area in Nevada, located 75 miles southwest of the proposed area. All of Cassia County and the remainder of Idaho are designated as PSD Class II areas. PSD Class II areas are those that need reasonably or moderately good air quality protection. Most proposed development projects can be accommodated within the increments set for PSD Class II areas. There are no Class III areas in Idaho.

The two pollutants of concern in Idaho are PM_{10} and CO; PM_{10} is currently the most problematic pollutant in Idaho. PM_{10} sources include windblown dust, re-entrained road dust, smoke (residential, agricultural, and forest fires), industrial emissions, and motor vehicle emissions (IDEQ 2001). There are five areas in Idaho designated as PM_{10} nonattainment. The PM_{10} nonattainment area nearest to the proposed area is located approximately 70 miles northeast at Fort Hall, Idaho.

PM_{10} was monitored at the Rupert active ambient air monitoring station by IDEQ from 1995 to 1998. Rupert is located approximately 14 miles northwest of the proposed area in Minidoka County. Data collected from 1995 to 1998 indicate that the PM_{10} NAAQS were not exceeded at this station during this time. From 1995 to 1998, the mean annual PM_{10} concentration was 23 μg/m3 and the maximum mean annual PM_{10} concentration was 24.5 μg/m3. From 1995 to 1998, the maximum 24-hour PM_{10} concentration was 145 μg/m3.

The primary source of CO is incomplete fossil fuel combustion. CO concentrations have the potential to be high in urbanized areas where automobile traffic is heavy and cars frequently idle at stoplights. The Boise area is the only CO nonattainment area in the state. No violations of the 1-hour CO NAAQS have occurred in Idaho since 1987. The 8-hour CO NAAQS in Boise was exceeded once in 1991 on January 11. There have been no exceedances since that date (IDEQ 2001).

3.1.2 Geology

Cotterel Mountain is a long, low ridge with a relatively steep face or escarpment on the east side and a long, gentle slope on the west side. Cotterel Mountain comprises part of the Malta Range, which flanks the west side of the Raft River Valley. The Raft River Valley is a north-trending intermontane tectonic basin approximately 37 miles long and approximately 15 miles wide with an average valley floor elevation of about 4,600 feet. The valley opens northward toward the broad Snake River Plain. The Raft River basin lies in the northeast part of the Basin and Range province and is within an area of relatively high heat flow known as the Cordilleran thermotectonic anomaly (Williams *et al.* 1982).

The eastern side of Cotterel Mountain is flanked by the Raft River detachment fault, which is an east-dipping low-angle normal fault. North-striking normal faults are numerous and conspicuous in the Cotterel Mountain vicinity, implying that the area is block faulted. This is common for late Cenozoic tectonic activity in the Basin and Range province, which has been recognized as a region dominated by extensional tectonics (Williams *et al.* 1982).

The Proposed Project area generally consists of Pliocene and Upper Miocene volcanic rocks, rhyolite flows, tuffs, and ignimbrites (Link 2002). Specifically, the northern end of Cotterel Mountain is composed of lower and upper successions of rhyolite flows, and a middle unit of varied lithology with a total maximum thickness of approximately 3,900 feet. The lower and upper rhyolite flows are very similar and consist of mainly dark gray to black, glassy porphyritic rhyolite that weathers to dark reddish brown. The rhyolite rock is commonly flow banded, and has well-developed columnar jointing that is square in cross section. The southern part of Cotterel Mountain is volcanic explosion breccia that was produced by rhyolite flowing into a body of water. The breccia is overlain by two thin, vitric, rhyolite ash-flow tuffs that were erupted from sources to the east. The tuffs are overlain by approximately ten feet of white to gray tuffaceous sandstone to siltstone (Williams *et al.* 1982).

The basalt of the northern end of Cotterel Mountain is the oldest basalt in the Raft River region and consists of two flows. The basalt rock is gray to light gray with a reddish oxidation tint. It contains olivine and plagioclase clasts in a dense groundmass of fine-grained plagioclase, olivine, pyroxene, opaque minerals, and glass (Williams *et al.* 1982).

GeoEngineers (2004) performed a limited subsurface geotechnical investigation as a basis for developing preliminary recommendations for foundation design of the wind turbine towers. Their investigation included drilling eight air-track holes and four rock core holes. The rock core holes were drilled to a depth of about 40 feet; three holes were drilled in rhyolite, and one hole was drilled in basalt. GeoEngineers described the core, which included assigning a rock quality designation (RQD). RQD is a modified core recovery index defined as the total length of unfractured core greater than 100 millimeters in length, divided by the total length of the core run. The resulting value is presented in the form of a percentage (Deere and Deere 1988). A high RQD value generally means that the rock has few natural discontinuities (fractures, faults, etc). The RQD percentage is typically translated into the following descriptors of rock quality (Deere and Deere 1988):

0 – 25% RQD	=	Very Poor rock quality;
25 – 50% RQD	=	Poor rock quality;
50 – 75% RQD	=	Fair rock quality;
75 – 90% RQD	=	Good rock quality; and
90 – 100% RQD	=	Excellent rock quality.

The basalt exhibits good rock quality. The rhyolite exhibits very poor to poor rock quality.

Mineral Resources

The Cotterel Mountain area has known mineral resources (Griggs 2004). There is a platy rhyolite locally referred to as "desert antique" in the southern reaches of the Proposed Project area. Due to the difficulty of access, there has been little or no interest in mineral sales. The Nibbs Creek Community Pit is within one mile of the Proposed Project, and there has been one mineral material sale from that site since April 2003 (Griggs 2004). Within the Proposed Project area, there are:

- No known oil and gas discoveries;
- No active coal leases;
- No coal bed methane producing resources;
- No locatable minerals are known to exist in sufficient quantities for economical recovery.

Geologic Hazards

The potential for seismic activity within the Proposed Project area is moderate, according to the Uniform Building Code Seismic Code Map (Idaho Geologic Survey 2003). There are landslides within the proposed ROW boundary, located on the east side of the escarpment (Griggs 2004).

3.1.3 Soils

Soils in the Proposed Project area were differentiated and mapped by the NRCS into 17 soil types (USDA, NRCS 1986). These 17 soil types all have the following general characteristics. They are located at high elevation, have low water-carrying capacity, have a potential for erosion by wind and water, and have minimal to moderate productivity capabilities as rangeland. For the Proposed Project area, we separated the 17 soil types into six soil groups; based on characteristics such as slope, soil depth, depth to bedrock or hardpan, and susceptibility to erosion. Each soil group contains from one to five soil types. Figure 3.1-1 shows the locations of these six major soil groups. The following descriptions for the soil groups are compilations of the individual soil types described by the NRCS (USDA, NRCS 1986).

Group 1 consists of deep silt-loam soils on slopes of less than 12 percent. These soils occur predominantly on hillsides, in alluvial fans and on fan terraces. Bedrock occurs at a depth of greater than 60 inches. Water capacities of these soils are higher relative to other soils in the Proposed Project area. This may result in complications for construction due to severe frost action. Erosion potential from water runoff is moderate to very severe within this group, while the potential for wind-caused erosion is only moderate. Soils in Group 1 represent approximately 22 percent of the total soils in the Proposed Project area and about eight percent of the soils that may be affected by construction. Soil units in Group 1 include:

Rexburg Silt-Loam;
Watercanyon Silt-Loam;
Hades Gravelly Loam;
Heglar Silt-Loam; and
Kancan Gravelly Silt-Loam.

Group 2 consists of moderately deep loam to silt-loam soils on slopes less than eight percent. These soils are typically found on fan terraces or hillsides. Bedrock occurs at a depth of greater than 60 inches. A hardpan generally exists at a depth of 20 inches to 40 inches in Group 2 soils. This hardpan may impact any proposed construction activities in these soils. Erosion potential due to water run-off is only slight to moderate within this group, but erosion potential due to wind is moderate to severe. Soils in Group 2 represent about one percent of the total soils in the Proposed Project area and about one percent of the soils that may be affected by construction. Soil units in Group 2 include:

Raftriver loam; and
Taunton Silt Loam.

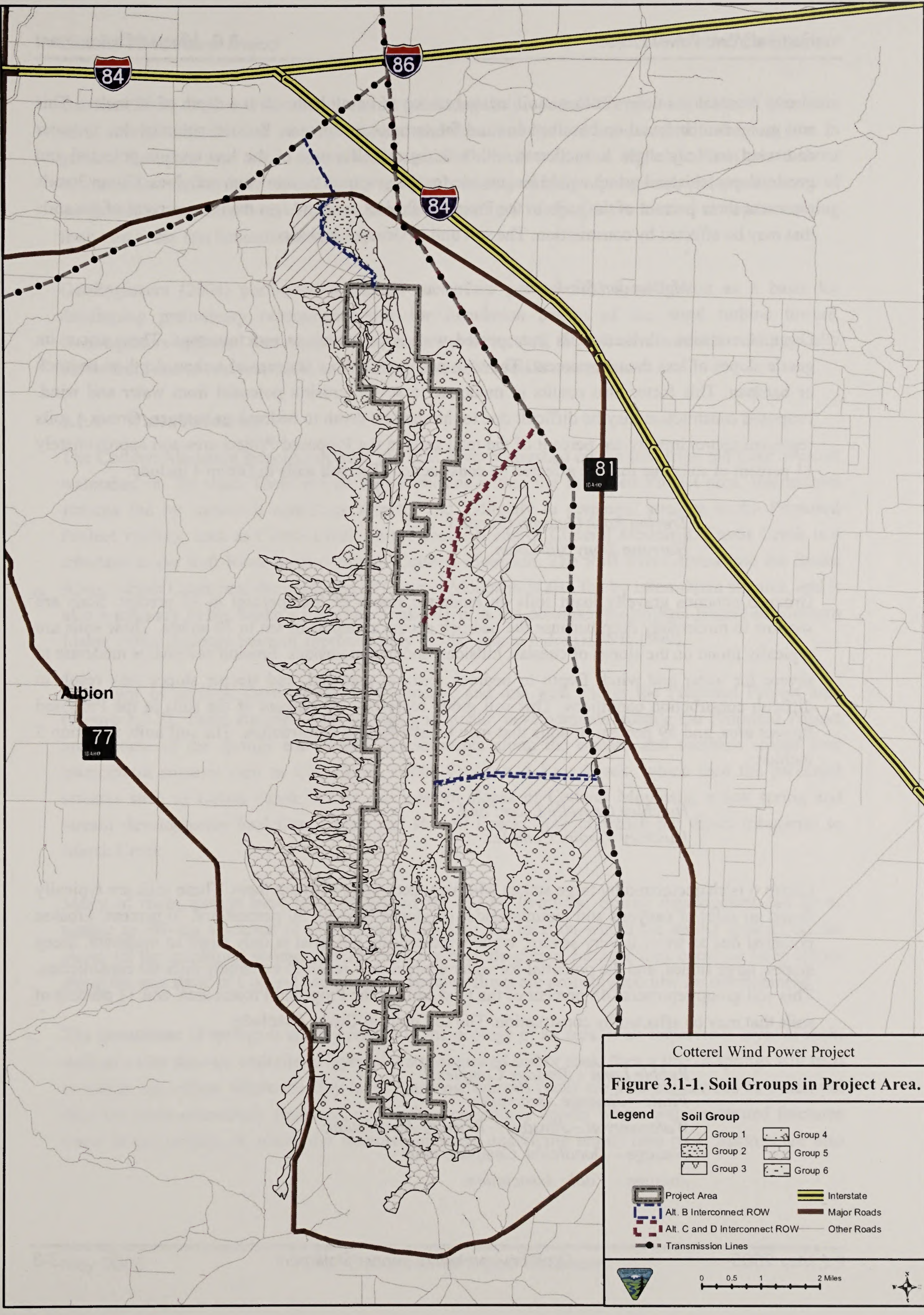


Figure 3.1-1. Soil Groups in Project Area.

Group 3 contains a deep silt-loam soil located on top of basalt bedrock at a depth of 40 inches. This soil group can be found on basalt plains and fan terraces in the area. Erosion potential due to water and wind are only slight to moderate within this group. Because of the low erosion potential and gentle slopes, this soil group would be suitable for the proposed construction activities. Group 3 soils represent three percent of the soils in the Proposed Project area and less than one percent of the soils that may be affected by construction. The soil unit in Group 3 includes:

McClendon Silt-Loam.

Group 4 contains silt-loam soils interspersed with large stones or rock outcrops. These occur on gentle slopes of less than 12 percent. The soils are very shallow because of a short depth to bedrock or hardpan. This factor also results in moderate to severe erosion potential from water and wind. Proposed construction may be difficult due to the shallow depth to bedrock or hardpan. Group 4 soils represent approximately ten percent of the total soils in the Proposed Project area and approximately 11 percent of soils that may be affected by construction. The soil units in Group 4 include:

Trevino Rock Outcrop Complex; and
Harroun Stony Silt-Loam.

Group 5 contains gravelly loam soils on moderate slopes of four percent to 35 percent. Soils are shallow to moderately deep because the bedrock occurs at depths of ten to 20 inches. These soils are typically found on the slopes of cuestas, hillsides, and mountainsides. Erosion potential is moderate to severe for water and wind. Depth to bedrock, erosion potential, and steeper slopes may result in difficult construction conditions. This soil group represents 16 percent of the soils in the Proposed Project area, and 69 percent of soils that may be affected by construction. The soil units in Group 5 include:

Hutchley Gravelly Loam; and
Hutchley Vipoint Complex.

Group 6 is characterized by large stones with very deep soils between them. These soils are typically found on sides of canyons and mountainsides on slopes between 30 percent and 70 percent. Erosion potential due to water is very severe, while wind erosion potential is only slight to moderate. Steep slopes, large stones, and the potential for water erosion may result in extremely difficult construction. This soil group represents 48 percent of the total soils in the Proposed Project area, and 11 percent of soils that may be affected by construction. The soil units in Group 6 include:

Rubble Land – Jimsage Complex;
Vitale – Jimsage Association
Watercanyon – Jimsage – Rexburg Association;
Jimsage – Doodlelink Complex; and
Jimsage – Vitale Association.

GeoTek (2004) evaluated the soil at ten test pits along the proposed 4.5 mile-long Cotterel Mountain north access road. GeoTek visually assessed and described the soil encountered in the test pits. In general, the upper zero to one foot of soil consists of silt, silt with sand, and clay. From one to about 12 feet below the surface, the soil in the test pits consists primarily of silt, sand, and gravel; some of the gravel is cemented with calcium carbonate, forming a hardpan layer located at depths ranging from two to six feet beneath the surface.

GeoEngineers (2004) performed a limited subsurface geotechnical investigation as a basis for developing preliminary recommendations for foundation design of the wind turbine towers. GeoEngineers indicated that where the towers are to be located, the soil cover over the rock typically varies from one to two feet thick, and in many places, the soil is non-existent.

3.1.4 Water Resources

The Cotterel Mountain ridgeline divides the Raft River watershed on the east from the Lake Walcott watershed on the west. There are no major streams within the Proposed Project area. Intermittent streams fed by snowmelt contribute directly and indirectly to perennial streams in the Proposed Project vicinity, such as Cassia Creek on the southern end of Cotterel Mountain. Cassia Creek is a tributary to the Raft River located east of Cotterel Mountain. The Raft River drains into the Snake River. Marsh Creek near the north end of Cotterel Mountain is also fed by intermittent streams, and is also a tributary to the Snake River. The Snake River is the dominant hydrologic feature in southern Idaho, with a drainage basin of approximately 72,000 square miles (IDWR 1999).

There are 14 springs, three spring developments, and one well within the Proposed Project area (Figure 3.1-2). There are additional springs and stream developments outside the Proposed Project area. Some of the springs and stream developments along the eastern and southern slopes feed intermittent streams such as Coe Creek, Nibbs Creek, and Rice Creek, which feed the perennial streams such as Cassia Creek. Along the western slopes of Cotterel Mountain, a few spring and stream developments feed Cow Creek and Howell Creek, both of which are direct tributaries to Marsh Creek.

Many of these springs have been developed for use by livestock. Spring development can be as simple as driving a section of pipe horizontally into the location where the spring appears on the slope. Of the remaining springs, several have not been developed because they occur on steep slopes along the east flank of Cotterel Mountain, or because flows are probably too low for development.

The occurrence of springs is closely related to the geology of an area. If an impervious layer of rock, such as a clay deposit, underlies a layer of water-saturated soil or rock, then a line of springs will tend to appear on a slope where the clay layer outcrops. Igneous rocks are also impervious to water, yet they are often extensively fractured, and springs commonly appear where water-saturated fractures come to the surface, or where the fractures intersect underlying impervious rock. Springs are also

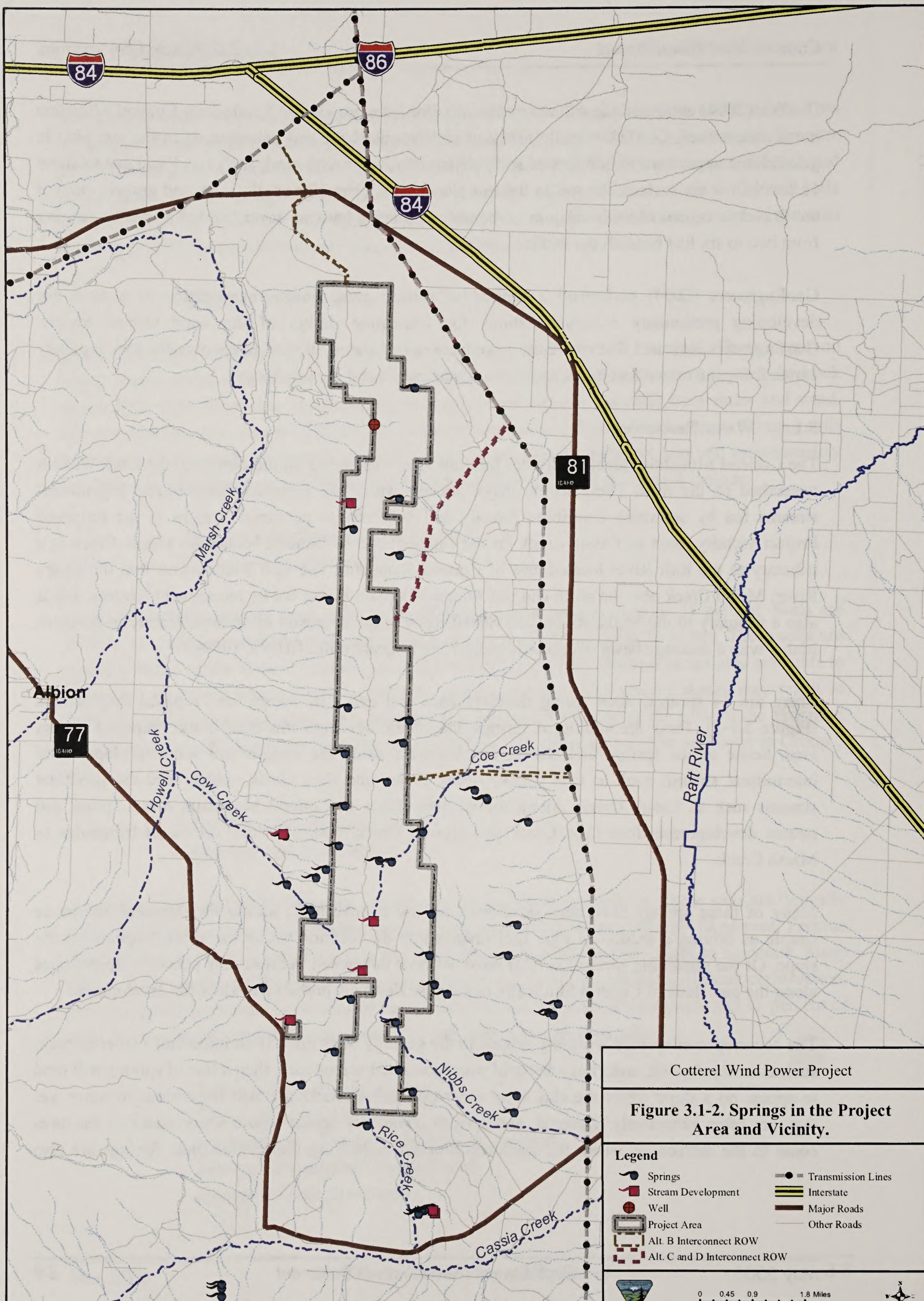


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Figure 3.1-2. Springs in the Project Area and Vicinity.

common along faults, because the fault plane may act as a conduit for groundwater to reach the surface, or the fault plane may be impervious, and force the water to reach the surface.

Under section 303(d) of the Clean Water Act, states, territories, and tribes are required to develop lists of impaired waters that do not meet water quality standards. Cassia Creek, Marsh Creek, and the Raft River are listed by the State of Idaho as impaired or threatened waters under the 303d designation (IDEQ 2003). Table 3.1-2 summarizes the status of the 303d designation for each stream segment.

Table 3.1-2. Impaired (303d designation) Waters Near the Proposed Project Area (IDEQ 2003).

Cassia Creek (Headwaters to Connor Creek)	De-listed from 303(d) list in 1998.
Cassia Creek (Connor Creek to Raft River)	Listed in 1996 for concerns over habitat alteration and sediment.
Raft River (Malta to Snake River)	Listed in 1996 for concerns over pathogens (replaced by "bacteria" in the 1998 list), dissolved oxygen, channel flow alteration, ammonia, nutrient loading, and sediment.
Marsh Creek	Listed in 1998 for reasons not stated.

The State of Idaho has designated beneficial uses for Cassia Creek, Marsh Creek and the Raft River. Each of these perennial streams should provide water quality appropriate for aesthetics, irrigation and livestock, industrial water supply, and wildlife habitat. In addition, the Raft River should also provide water quality suitable for primary contact recreation (i.e. swimming), the protection and maintenance of populations of cold-water species, and habitat for the active self-propagation of salmonid fish species.

Groundwater within the Proposed Project vicinity occurs at depths ranging from 800 to 2,500 feet below ground surface within the unconfined Raft River Valley aquifer. Regional groundwater flows to the northwest towards the Snake River. The western slopes of Cotterel Mountain are within a Critical Groundwater Management Area designated by the Idaho State Department of Water Resources (IDWR). This designation indicates that all or part of the groundwater basin does not have sufficient groundwater to provide a reasonably safe supply for irrigation or other uses at the current or projected rates of withdrawal (IDAPA 1993; IDWR 1999). There are no public drinking water wells within the Proposed Project area boundary (Risley 2003).

3.1.5 Noise

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding roughly to the threshold of pain.

Human response to noise is subjective and can vary greatly from person to person. Factors that can influence individual response include: intensity, frequency, and time pattern of the noise; the amount of background noise present prior to the intruding noise; and the nature of work or human activity that is exposed to the noise. The adverse effects of noise include interference with concentration, communication, and sleep. At the highest levels, noise can induce hearing damage.

There are several methods of characterizing sound. Environmental noise is usually measured in A-weighted decibels (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive for typical environmentally occurring sounds. Some representative noise sources and their corresponding noise levels (in dBA) are shown in Table 3.1-3 (USDOT-FHWA 1998). The noise levels presented in Table 3.1-3 are representative of measured noise at a given instant in time; however, they rarely persist consistently over a long period of time.

Table 3.1-3. Representative Noise Sources and Corresponding Noise Levels.

Noise Level (dBA)	Common Indoor Noise Levels	Common Outdoor Noise Levels
100-110	Above 100 dBA – rock band	Jet flyover at 1,000 feet.
90-100	Inside subway train (New York)	Gas lawn mower at 3 feet.
80-90	Food blender at 3 feet, garbage disposal at 3 feet.	Diesel truck at 50 feet, noisy urban daytime
70-80	Shouting at 3 feet, vacuum cleaner at 10 feet.	Gas lawn mower at 100 feet
60-70		Commercial area, heavy traffic at 300 feet.
50-60	Large business office	Quiet urban daytime setting
40-50	Small theater	Quiet urban nighttime setting
30-40	Conference room (background), library	Quiet suburban nighttime setting
20-30	Concert hall (background)	Quiet rural nighttime setting
10-20	Broadcast and recording studio	
0-10	Threshold of hearing	

Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies. Local regulation of noise involves implementation of general plan policies and noise ordinance standards.

At the federal and state level, there are no regulations that would apply to noise from commercial wind turbine generator operation. In a Wind Energy Programmatic EIS Frequently Asked Question report (USDI, BLM 2004), the BLM stated that much of the wind turbine noise is masked by the sound of the wind itself, and that turbines only operate when the wind is blowing. Noise from wind turbines has diminished as the technology of turbines has improved. Newer turbine blade design results in wind energy being converted into greater rotational torque with less acoustic noise versus early-model turbines. Under most conditions, modern wind turbines are quiet (USDI, BLM 2004b).

The relatively remote Proposed Project area has no industrial noise sources. Existing background noise in the Proposed Project area is expected to be similar to the EPA "farm in valley" noise category, which is about 32 to 39 dBA. Existing noise in the Proposed Project area vicinity is attributable to: recreational users such as off-highway vehicles (OHV) and snowmobile riders; occasional low flying aircraft; agricultural equipment; and traffic on area roads such as State Highway (SH)-77, SH-81, and Interstate 84 (I-84).

3.2 BIOLOGICAL RESOURCES

As a federal land manager, the BLM is responsible for conserving wildlife, plant populations, and their habitats in the Proposed Project area. Within the Proposed Project area, the potential impact on biological resources required studies of vegetation and wildlife. Biological resources may not be found in the same place from year to year. Therefore, inventories needed to be completed prior to the construction of the Proposed Project. To provide an adequate inventory, some of the resource studies extended beyond the Proposed Project area boundary to better assess potential project impacts to wide ranging species like ferruginous hawk, sage-grouse, and mule deer.

3.2.1 Vegetation

The Proposed Project area is located within the southeast portion of the Interior Columbia Basin. The area is characterized primarily as semi-desert shrub-steppe with sagebrush and woodland sites as the major potential vegetation groups (USDA, FS 1994; USDA, NRCS 1994; USGS 2003).

Vegetation types within the Proposed Project area were delineated from digital color orthophotography with an approximate ground resolution of one foot (0.3 meter). A buffer of 2.5 miles around the Proposed Project area was mapped using digital color orthophotography with a ground resolution of approximately two feet (0.6 meter). The buffer area delineation is approximately 67,600 acres. Additional resources used in the vegetation delineation and verification process included district soil maps (USDA, NRCS 1994), sagebrush assessment data (USGS 2003), and ground surveys. Six major and six minor community types were delineated within the Proposed Project area (Figure 3.2-1). Overlapping polygons in Figure 3.2-1 are transition sites where characteristics from multiple community types are represented.

<u>Community Types</u>

Twelve general community types were located within the Proposed Project area and the associated buffer (Figure 3.2-1). Within the Proposed Project area nine community types were identified including: low sagebrush, mountain mahogany, juniper, juniper/mountain mahogany mix, mountain sagebrush, low/mountain sagebrush mix, grasslands, big sagebrush, aspen, rock outcrops, and riparian communities (Tables 3.2-1, 3.2-2 and 3.2-3). Because of the complexity and distribution of the

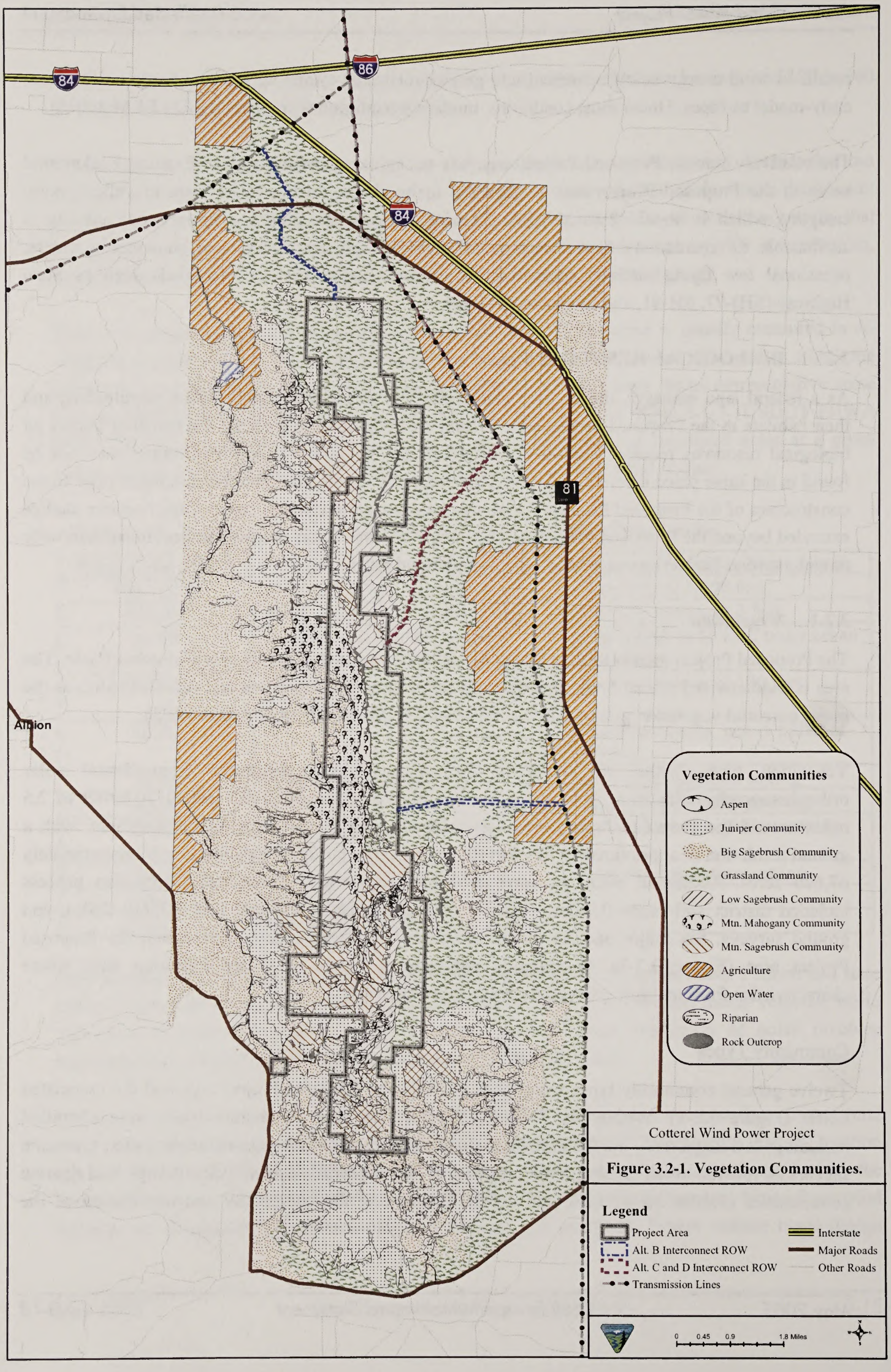

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Figure 3.2-1. Vegetation Communities.

overlapping community type ranges of low/mountain sagebrush mix and juniper/mountain mahogany mix, they were not able to be visually displayed on the vegetation map for the Proposed Project area.

Table 3.2-1. Vegetative Components within Each Community Type.

Community Type	Tall Woody Shrubs	Low Woody Shrubs	Forbs	Grasses and Grass Like Species
Low sagebrush	Not Present (NP)	low sage, and rabbitbrush	phlox, onions, buckwheat, agoseris, death camas (*Zygaenus venenosos),* and cactus	Sandberg's bluegrass, bluebunch wheatgrass, and squirreltail
Big sagebrush	NP	Great Basin and Wyoming big sagebrush, and rabbitbrush	arrowleaf balsamroot, yarrow, buckwheat, stone seed, agoseris, lupine, phlox, mullein (*Verbuscum thapsus*), common dandelion (*Taraxacum officinale*)	bluebunch wheatgrass, Sandberg's bluegrass, bulbous bluegrass, needle and thread grass, great basin rye, and crested wheatgrass, cheatgrass, and indian rye grass
Mountain sagebrush	NP	mountain sagebrush, and rabbit brush	arrowleaf balsamroot, phlox, buckwheats, lupines, penstemon, agoseris, depinium yarrow, mertensia	bluebunch wheatgrass, Sandberg's bluegrass, bulbous bluegrass, great basin wild rye, needle and thread, and squirrel tail
Juniper	juniper	Wyoming Big sagebrush, mountain big sagebrush, bitter brush and rabbitbrush	buckwheat, and cactus	Sandberg's bluegrass and bluebunch wheatgrass
Mountain mahogany	mountain mahogany	mountain sagebrush, rabbit brush, bitter brush, and snowberry	buckwheat, yarrow, and cactus	bluebunch wheatgrass and Sandberg's bluegrass
Grasslands		rabbitbrush, big and mountain sagebrush	phlox, onions, agoseris, penstemon, buckwheat, stone seed, death camas, and cactus	Intermediate and desert wheatgrass, bulbous bluegrass, cheatgrass, Sandberg's bluegrass, bluebunch wheatgrass, Russian wild rye, Great Basin wild rye, annual fescue, and indian rice grass
Aspen	service berry, Rocky Mountain Juniper, chokecherry, snowberry, currant (Ribes spp.)	mountain big sagebrush, rabbitbrush	yarrow, arrowleaf balsamroot, lupine, stone seed, lily, videt, waterleaf	

Table 3.2-2. Acreage of Each Community Type Within Vegetation Survey Area.

Vegetative Community	Total Acres	Percent of Total Area
Low sagebrush	2,376	3.1%
Big sagebrush	17,582	22.6%
Mountain sagebrush	2,079	2.7%
Low/mountain sage mix	356	0.5%
Juniper	11,449	14.7%
Mountain mahogany	265	0.3%
Juniper/Mahogany mix	1,805	2.3%
Grasslands	25,521	32.8%
Aspen	42	0.1%
Agricultural land	14,998	19.3%
Rock outcrop	469	0.6%
Riparian	333	0.4%
Open water	50	0.1%
Existing roads*	395	0.5%
Total Area:	**77,720 acres**	**100%**

Total area calculation is +/- 2%.
*Not included as a community type.

Table 3.2-3. Acres of Each Community Type Within The Proposed Project Area.

Vegetative Community	Acres within Proposed Project Area	Percent of Proposed Project Area
Low sagebrush	1,435	12.8%
Big sagebrush	1,522	13.6%
Mountain sagebrush	1,527	13.7%
Low/Mountain sage mix	84	0.8%
Juniper	1,267	11.3%
Mountain mahogany	255	2.3%
Juniper/Mahogany mix	1,127	10.1%
Grasslands	3,465	31.0%
Aspen	41	0.4%
Agricultural land	0	0.0%
Rock outcrop	268	2.4%
Riparian	20	0.2%
Open water	0	0.0%
Existing roads*	158	1.4%
Total Area:	****11,169 acres**	**100%**

*Not included as a community type.
**Total area calculation is +/- 1%. Actual Proposed Project area is approximately 11,500 acres.

Low Sage

The low sage community type is principally shrub land with a dominant low shrub layer. It occupies approximately 2,376 acres (3.1%) of the total area and 1,435 acres (12.8%) of the Proposed Project area. This community type normally occurs on hilltops and ridges and consists of well-drained shallow soils that are severely susceptible to water and wind erosion.

The low sage community is comprised primarily of woody shrubs, with some forbs, grasses, moss, and lichens. The vegetation component of this community makes up approximately 55 percent of the ground cover (Tharp 2004), with the rest consisting of litter, cryptogrammic soils, rock and bare ground. The total vegetation cover of this community type can vary significantly depending on the amount of rock and soil depth. It consists of: low, woody shrubs consisting of low sage (*Artemisia arbuscula*), and rabbitbrush (*Chrysothamnus spp.*); grasses, including Sandberg bluegrass (*Poa secunda*), bluebunch wheatgrass (*Agropyron spicatum*), and squirreltail (*Sitanion hystrix*); forbs, including hoods phlox (*Phlox hoodii*), onion (*Allium spp.*), buckwheat (*Eriogonum spp.*), Mariposa lily (*Calochortus spp.*), and cactus (*Opuntia spp.* and *Pediocactus simpsonii*); and moss and lichens.

Wyoming/Great Basin Big Sage

The big sagebrush community type is normally found in the lowest elevation of the Proposed Project area and is principally shrubland with a dominant layer of low shrubs and a significant graminoid/herb understory. This community type occupies approximately 17,582 acres (22.6%) of the total area and 1,522 acres (13.6%) of the Proposed Project area. It consists of well-drained, very deep soils that are severely susceptible to water erosion and only moderately susceptible to wind erosion.

The Wyoming/Great Basin big sage complex includes low shrubs, forbs, grasses, moss, and lichens. Great Basin big sage generally occupies drainage bottoms and deeper soils within the Wyoming sagebrush zone. The vegetation component comprises approximately 55 to 60 percent (Tharp 2004) of the total ground cover, with litter, bare ground, and rocks comprising the remainder. The vegetation cover of this community type consists of: low shrubs such as Great Basin (*Artemisia tridentata spp. tridentata*) and Wyoming big sagebrush (*Artemisia tridentata ssp. Wyomingensis*) and rabbitbrush; grasses, including Bluebunch wheatgrass, Sandberg bluegrass, bulbous bluegrass, needle and thread grass (*Stipa thurberiana*), Indian rice grass (*Oryzopsis hymenoides*), Great Basin wild rye (*Elymus scinereus*), cheatgrass and crested wheatgrass (*Agropyron desertorum*); forbs consisting of arrowleaf balsamroot, yarrow, buckwheat, lupine, and phlox; and moss, and lichens.

Mountain Big Sage

The mountain big sagebrush community type is principally shrub land with a dominant layer of low shrubs and a significant graminoid understory. It is normally found at elevations above Wyoming and Great Basin sagebrush habitat and occupies approximately 2,079 acres (2.7%) of the total area and 1,527 acres (13.7%) of the Proposed Project area. It consists of well-drained, deep soils that are severely susceptible to water erosion, but only slightly susceptible to wind erosion due to increased vegetative cover.

The mountain big sage community includes woody shrubs, forbs, grasses, moss and lichens. The vegetation component of the community comprises approximately 60 to 70 percent of the ground cover (Tharp 2004), with the remainder consisting of litter, open-faced rock, and bare ground. The total vegetation cover of this community type consists of: short, woody shrubs including mountain sagebrush, bitterbrush, and rabbitbrush; grasses consisting of bluebunch wheatgrass, Sandberg bluegrass, bulbous bluegrass (*Poa bulbosa*), Great Basin wild rye, and squirrel tail; forbs such as phlox, buckwheat, onions, lupine (*Lupinus spp.*), and arrowleaf balsamroot (*Balsamorhiza hookeri*); and moss and lichens are present as well.

Low Sagebrush/Mountain Sagebrush Mix

The low sagebrush/mountain sagebrush mix community occupies approximately 356 acres (0.5%) of the total area and 84 acres (0.8%) of the Proposed Project area. This type is characterized by an irregular mix of low sagebrush and mountain community types.

Juniper

The juniper (*Juniperous Osteosperma*) community type is generally a low precipitation woodland with varying amounts of understory. It occupies approximately 11,449 acres (14.7%) of the total area and 1,267 acres (11.3%) of the Proposed Project area. It consists of well-drained, deep soils that are severely susceptible to water erosion, but only slightly susceptible to wind erosion.

The juniper community includes tall and short woody shrubs, forbs, grasses, moss, and lichens, comprises approximately 65 percent of the ground cover, with the rest consisting primarily of bare ground and some open-face rock. The total vegetation cover of this community type consists of: juniper and mountain mahogany; low shrubs including big sagebrush, mountain sagebrush, bitterbrush, and rabbitbrush; grasses that consist of Sandberg bluegrass and bluebunch wheatgrass; forbs such as buckwheat and cactus; and moss and lichens are present as well.

Mountain Mahogany

The mountain mahogany community type is low-precipitation woodland generally found in environments similar to Utah Juniper (USGS 2003; USDA, FS 1994). It occupies approximately 265 acres (0.3%) of the total area and 255 acres (2.3%) of the Proposed Project area. It typically occurs on hilltops and east-facing slopes with shallow soils with little understory.

The mountain mahogany community includes woody shrubs, forbs, grasses, moss and lichens. It comprises approximately 50 to 65 percent of the ground cover (Tharp 2004), with the rest consisting of litter, bare ground, and some open-faced rock. The total vegetation cover of this community type consists of: mountain mahogany (*Cercocarpus ledifolius*); low, woody shrubs, including mountain sagebrush (*Artemisia tridentata spp. Vaseyana*), rabbitbrush, and bitterbrush; grasses consisting of Bluebunch wheatgrass and Sandberg bluegrass; forbs such as buckwheat, yarrow (*Achillea millefolium*), and cactus; and moss, and lichens.

Juniper/Mountain Mahogany Mix

The juniper/mountain mahogany mix community type occupies approximately 1,805 acres (2.3%) of the total area and 1,127 acres (10.1%) of the Proposed Project area.

Grasslands

The grassland community type is composed primarily of native and seeded communities that were historically big sagebrush, low sagebrush, and juniper communities that burned primarily due to wildfire. This type contains some of the most disturbed, and support primarily localized concentration of annual exotics. It occupies approximately 25,521 acres (32.8%) of the total area and 3,465 acres (31.0%) of the Proposed Project area. It consists of soil types ranging from well-drained, very deep soils that are only moderately susceptible to water and wind erosion to well-drained, shallow soils that are very susceptible to water and wind erosion (USDA, NRCS 1994).

The grassland community includes tall and short woody shrubs, forbs, grasses, moss, and lichens that comprise approximately 30 to 60 percent of the ground cover, with the rest consisting of litter, bare ground and rock. The vegetation cover of this community type consists primarily of grasses including Intermediate (*Agropyron intermidia*) and desert wheatgrass, bulbous bluegrass, cheatgrass (*Bromus tectorum*), Sandberg bluegrass, bluebunch wheatgrass, Russian wild rye (*Elymus junceus*), Great Basin wild rye, six weeks fescue (*Vulpia bromoides*), Indian rice grass, bulbous bluegrass, needle and thread grass, crested wheatgrass, and Junegrass (*Koeleria cristata*). Scattered among the grass species are sparse patches of low, woody shrubs such as rabbitbrush, big sage, and mountain sagebrush, as well as forbs such as phlox, onion, agosoris (*Agosoris spp.*), penstemon (*Penstemon spp.*), buckwheat, stone seed (*Lithospermum ruderale*), western wheatgrass, and cactus, moss and lichens.

Aspen

The aspen community type is generally found at mid elevations on east-facing slopes. It is principally occupied by a dominant layer of tall to medium deciduous shrubs and a significant graminoid/herb understory. This community type occupies approximately 42 acres (0.1%) of the total area, and 41 acres (0.4%) of the Proposed Project area. It typically occurs in snow catch pockets or near springs with very deep, highly erodable soils (USGS 2003; USDA, FS 1994).

The aspen community includes tall trees, woody shrubs, forbs, and some moss and lichens, which comprises approximately 85 percent of the ground cover. The rest of the community consists of litter, bare ground, and some open-faced rock. The total vegetation cover of this community type consists of: aspen trees and service berry (*Amelanchier alnifolia*); Rocky Mountain Juniper (*Juniperus scopulorum*); chokecherry (*Prunis virginiana*); snowberry (*Symphoricarpos albu*); currant (*Ribes spp.*); low, woody shrubs, including mountain big sagebrush and rabbitbrush; and forbs such as yarrow, arrowleaf balsamroot, lupine, stone seed, lily, videt, and waterleaf.

Minor Community Types

There are a variety of other community types that make up a very small portion of the Proposed Project area but are key functional components including: barren rock outcrops make up 469 acres (0.6%) of the total area and 268 acres (2.4%) of the Proposed Project area; open waters make up 50 acres (0.1%) of the total area and zero acres of the Proposed Project area; riparian zones make up 333 acres (0.4%) of the total area and 20 acres (0.2%) of the Proposed Project area; and agricultural lands make up 14,998 acres (19.3%) of the total area and zero acres of the Proposed Project area (Tables 3.2-2 and 3.2-3). These minor community types make up approximately 15,850 (20.4%) of the total area and 288 acres (2.6%) of the Proposed Project area. They occur throughout the area and are key process and structural components of the Cotterel Mountain area ecosystem, as well as habitat and forage sites for wildlife, birds, cattle, and big game. However, based on the limited size and low probability of impact from the Proposed Project, these community types have not been described in detail. Non-vegetated community influences include: rock outcrop, disturbed sites, and open water.

Threatened or Endangered Plant Species

The only federally listed plant species in the area is Christ's paintbrush (*Castilleja christii*; federal candidate). This species is known only from the type location at Mount Harrison, approximately 12 miles west of the Proposed Project area, at the northern end of the Albion Mountains in Cassia County, Idaho. It occurs primarily on gentle, northerly–facing slopes between 8,600 and 9,200 feet, and is inversely related to the density of sagebrush. It generally occurs only in openings in the sagebrush and within the nearly shrubless swales of the patterned ground (CDC 2000). According to personal communications with James Tharp of BLM, Christ's paintbrush has not been found, and is not expected to be found, within the Proposed Project area due to a lack of appropriate habitat.

Special Status Plant Species

There is only one special status species that has been identified by the Idaho Conservation Data Center (CDC), or the BLM, that is within the Proposed Project area, the Simpson's hedgehog cactus (*Pediocactus simpsonii*). Cotterel Mountain supports a large population of Simpson's hedgehog cactus. This species occurs sporadically on almost every portion of the Mountain.

Noxious Weeds

There are six known noxious weed species that are currently identified by the BLM within or near the Proposed Project area (within five to ten miles). These include, leafy spurge (*Euphorbia esula*), Russian knapweed (*Centaurea repens*), diffuse knapweed (*Centaurea diffusa*), Scotch thistle (*Onopordum acanthium*), rush skeleton weed, and black henbane (*Hyoscyamus niger*). Only two, scotch thistle and black henbane, of these noxious weed species have been found within the Proposed Project area. Scotch thistle is primarily found only on the northern end of Cotterel Mountain, where black henbane is found scattered along roadways within the Proposed Project area.

Several species identified as "invasive species" do occur within the Proposed Project area. These species include: cheatgrass, bulbous bluegrass, curlycup gumweed (*Grindillia squarrosa*), annual sunflower (*Helianthus annuus*), field bindweed (*Convolvulus arvensis*), tumble mustard (*Sisymbrium altissimum)*, and Russian thistle (*Salsola iberica*). These invasive species typically occur on disturbed areas including: the current roadway corridors, communication facility platforms, OHV and livestock trails, burned areas, and rodent dig spots. These species can be monitored and controlled with appropriate mitigation with the exception of cheatgrass and bulbous bluegrass. These two species have spread throughout a majority of southern Idaho and can only be controlled on a site-specific basis with intensive management actions.

3.2.2 Wildlife

This section is a summary of wildlife resources in the vicinity of the Proposed Project area. The sources of information include published literature, unpublished Idaho Department of Fish and Game (IDFG) data on big game and game birds, BLM sensitive species lists from the Burley Field Office (BFO), BLM Wildlife Data Base, and interviews with BLM and IDFG biologists familiar with the area. In addition, a year-long baseline field study was conducted starting in the fall of 2002, and included surveys of nesting raptors, breeding sage-grouse, bird use, diurnal fall raptor migration, and a radar study of nocturnal fall migrating birds and bat species. The detailed methods and results of the baseline study are provided in the Technical Baseline Reports for Biological Resources (TBR 2004) The Technical Baseline Reports for Biological Resources is a compilation of nine reports documenting the results of field surveys, data searches, and historical BLM data summaries. These reports were prepared by numerous authors (ABR 2004; Sharp 2004; TREC 2004a; TREC 2004b; TREC 2004c; URS 2004; USDI BLM 2004) and constitute the best available knowledge of the existing biological resources within the Proposed Project area.

Typically, wildlife species are evaluated across their range by using ranking systems. These ranking systems evaluate each species population status and provide a general idea about the overall trend of the species. IDFG, Idaho BLM and CDC all use different ranking systems, which are discussed below. Species are classified by several different ranking systems including BLM sensitive species 1 to 5; Idaho State Status 1 to 5; Global Status 1 to 5, and federally protected under the Endangered Species Act (ESA) (16 U.S.C. 1531-1543) (1973) including: Endangered, Threatened and Candidate species. Federally protected species will be evaluated in greater detail in Biological Assessments (BA) presented to the United States Fish and Wildlife Service (USFWS) and available for public review.

IDFG ranks nongame species based on a ranking protocol of 1 to 5. State ranked species are summarized in the following ranks: (1) critically imperiled because of extreme rarity or because of some factor of its biology making it especially vulnerable to extinction (typically five or fewer occurrences); (2) imperiled because of rarity or because of other factors demonstrably making it vulnerable to extinction (typically six to 20 occurrences); (3) vulnerable (typically 21 to 100 occurrences; (4) not rare, and apparently secure, but with cause for long-term concern; and (5) demonstrably widespread, abundant and secure.

The Nature Conservancy is a worldwide conservation organization that ranks a species not just within one state, but also on a worldwide (global) level. The Nature Conservancy uses the same definitions for their ranking system 1 to 5 as CDC. The state status and the global status ranks of the same species provide a description of the status of this species within Idaho and worldwide.

BLM sensitive ranking includes Type 1 to 5. Species listed by the USFWS as threatened or endangered or are proposed or candidates for listing under the ESA are Type 1. Species experiencing significant declines throughout their range with a high likelihood of being listed in the foreseeable future due to their rarity and/or significant endangerment factors are Type 2. Species that are experiencing significant declines in population or habitat, or are in danger of regional or local extinctions in Idaho in the foreseeable future, are listed as Type 3. Species that are generally rare in Idaho with the majority of their breeding range located largely outside of the state, are listed as Type 4. Watch list species are not considered BLM sensitive species and are listed as Type 5. Watch list species include species that may be added to the sensitive species list depending on new information concerning threats, species biologist evaluations, or statewide trends.

Big Game

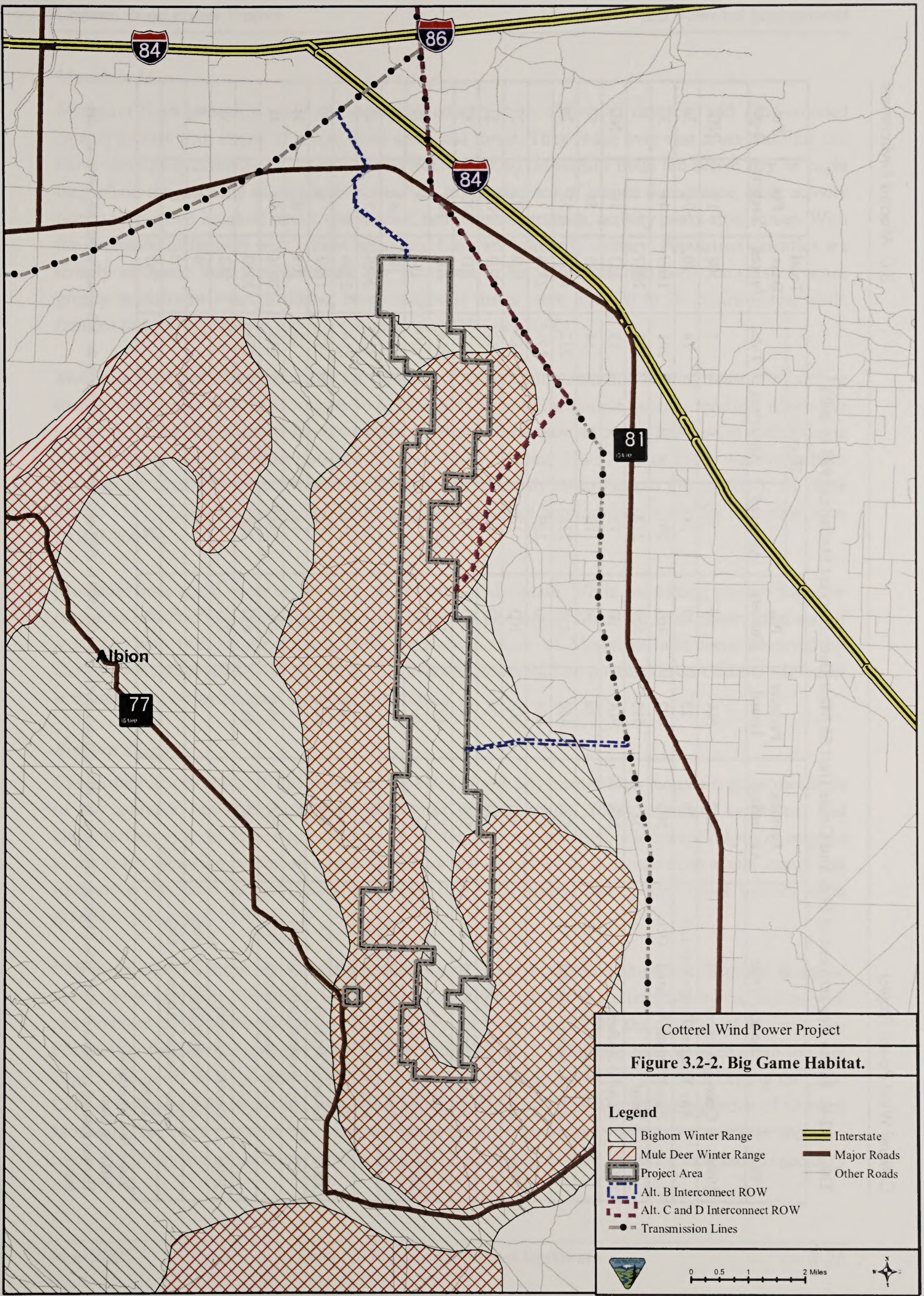
Four big game mammal species occur within or near the Cotterel Mountain area: mule deer (*Odocoileus hemionus*), mountain lion (*Felis concolor*), California bighorn sheep (*Ovis canadensis californiana*), and American pronghorn (*Antelocapra americana*).

Mule Deer

Mule deer are the most abundant big game species in the Proposed Project area. Populations in Idaho have been decreasing since 1996, primarily due to habitat reduction, specifically critical winter habitat. Winter/year-round range is defined as that range of which a portion is used yearlong, but which during winter has a substantial influx of animals from other seasonal ranges. The Proposed Project area is located within year-round mule deer habitat. Approximately 5,475 acres (48%) of the Proposed Project area lies within winter habitat range for mule deer (IDFG 2003a; Figure 3.2-2).

Mule deer occupy nearly all habitats in Idaho from dry, open country to dense forests. They prefer rocky, brushy areas, open meadows, open pine forests, and burns (Brown 1992). Mule deer can also be found in coniferous forests, shrub steppe, chaparral, and grasslands with shrubs. Mule deer are often associated with early succession vegetation or vegetation resulting from disturbance, especially near agricultural lands.

Cotterel Mountain is within mule deer hunting management unit #55. This unit is restricted to archery between November 25 and December 19th, and any-weapon controlled hunts between August 15 and September 24th and October 5 and October 31. All other hunting means are prohibited in this unit. Mule deer harvest statistics for 1999-2003 are shown in Table 3.2-4. Table 3.2-4 shows a decline in the number of permits issued, but an increase in the number of deer harvested. For the 2003 hunting season, the number of permits being issued for the any-weapon October hunt were reduced to 350, due to the decreasing populations within the area (IDFG 2003b).



84
86
84
81
Albion
77
Cotterel Wind Power Project
Figure 3.2-2. Big Game Habitat.
Legend
Bighorn Winter Range
Mule Deer Winter Range
Project Area
Alt. B Interconnect ROW
Alt. C and D Interconnect ROW
Transmission Lines
Interstate
Major Roads
Other Roads
0 0.5 1 2 Miles

Table 3.2-4. Idaho Department of Fish and Game Unit 55 Mule Deer Harvest Statistics 1998 to 2003.

Year	Season-Type	Permits Authorized	Permits Issued	No. Hunters	Harvest			Total Days Hunted	Pct. Success	Pct. 4-pts.
					Antlered	Antlerless	Total			
1998	General Archery	NA[a]	NA	59	7	0	7	308	12	ND[b]
	Any-Weapon Early-Antlered	25	23	19	14	0	14	80	74	30
	Any-Weapon Antlered – Oct.	500	492	461	201	0	201	1669	44	37
	Total	525	515	539	222	0	222	2057		
1999	General Archery	NA	NA	80	13	0	13	433	16	ND
	Any-Weapon Early-Antlered	25	24	24	14	0	14	123	58	50
	Any-Weapon Antlered – Oct.	500	460	436	232	0	232	1800	53	28
	Total	525	484	540	259	0	259	2356		
2000	General Archery	NA	NA	ND	12	1	13	ND	ND	27
	Any-Weapon Early-Antlered	25	24	ND	19	0	19	ND	ND	31
	Any-Weapon Antlered – Oct.	500	469	ND	232	0	232	ND	ND	32
	Total	525	493	ND	263	1	264	ND	ND	
2001	General Archery	NA	NA	131	8	2	10	380	8	71
	Any-Weapon Early-Antlered	25	21	21	14	0	14	86	67	77
	Any-Weapon Antlered – Oct.	500	468	447	232	0	232	2068	52	44
	Total	525	489	599	254	2	256	2534		
2002	General Archery	NA	NA	220	12	5	17	1132	8	70
	Any-Weapon Early-Antlered	25	23	22	18	0	18	104	82	71
	Any-Weapon Antlered – Oct.	500	459	440	238	0	238	2074	54	45
	Total	525	482	682	268	5	273	3310		
2003	General Archery	-	-	229	13	7	17	763	7	58
	Any-Weapon Early-Antlered	-	-	0	0	0	0	0	0	0
	Any-Weapon Antlered – Oct.	-	-	0	0	0	0	0	0	0
	Total	-	-	229	13	5	17	763	-	-

[a]NA = Not Applicable
[b]ND = No Data
Harvest data are estimates derived from telephone sampling or harvest report cards. Data for 1999 to 2003 does not include harvest in the 300-permit youth-only either-sex deer hunt.

Mountain Lion

Mountain lions generally prefer mountainous country with cliffs and rimrock, and semi-wooded canyon habitat with slopes of mixed open areas and forest. They range over vast areas and thus can move through a diversity of habitat types (Holmes 2000). Mountain lions are active day or night throughout the year and in all kinds of weather. In the absence of human disturbance, peak activity occurs within two hours of sunset and sunrise; near human presence, activity peaks after sunset. With the exception of females with kittens, mountain lions are primarily solitary. Population densities are usually not more than 3 to 4 animals per 40 square miles. Mountain lion home range size varies greatly in different areas. In Idaho, home ranges of males were from 20 to 90 square miles, while females had home ranges of 5.5 to 57 square miles (Holmes 2000).

Mountain lions are hunted annually on Cotterel Mountain. Mountain lion hunting season in hunting management unit #55 is from August 30 to March 31 or until the female quota is reached, whichever comes first. Harvest statistics are not known for the specific unit but are tallied for the entire Magic Valley region, which includes statistics for units 43-49, 52, and 52a-57. Since 1996, there have been 190 (80 females, 110 males) mountain lions killed, primarily using hounds (76 to 80%). Of those killed, 11 to 15 percent were killed by hunters who were not hunting specifically for mountain lions (IDFG 2003b).

Mountain lions could occur on any portion of Cotterel Mountain. While conducting surveys for other resources in 2003, four Mountain lions were observed on Cotterel Mountain. One observation was of a female with two kittens. During 2004, two observations of Mountain lions were observed on Cotterel Mountain (USDI, BLM 2005). The average mountain lion population on Cotterel Mountain is estimated to range between 4-5 adult individuals.

Bighorn Sheep

California bighorn sheep (BLM sensitive Type 3; G4 and S4) inhabit high mountain grass meadows in the summer, using open slopes where the land is rough, rocky, sparsely vegetated, and characterized by steep slopes and canyons. In winter, they occupy high, windswept ridges, or migrate to the lower elevation sagebrush-steppe habitat as low as 4,800 feet to escape deep winter snows and find more nutritious forage (Lauer and Peek 1976). Typically, this species relies heavily upon grassland forage and forbs.

California bighorn sheep are currently not known to occur on Cotterel Mountain. Bighorn sheep do occur in the Jim Sage Mountains located about eight miles south of Cotterel Mountain, and may be rare visitors to Cotterel Mountain. In February of 2000 and 2001 the IDFG, BLM, and The Foundation for North American Wild Sheep reintroduced 45 California bighorn sheep into the Jim Sage Mountains. By September 2001, 17 of the originally released sheep had died. During the 2000 California bighorn sheep release, one ewe and her lamb initially used the southern portion of Cotterel Mountain, but were predated by cougars (Fowles 2002). The majority of these mortalities were the result of kills by mountain lions (Fowles 2001). The reintroduced herd has since increased to about 75 individuals. Prior to the initial bighorn sheep release, Cotterel Mountain was evaluated as potential bighorn sheep range (ID-024-EA-99-023).

American Pronghorn

Pronghorn groups have not been observed on Cotterel Mountain. They have been recorded to the north and east of the Proposed Project area. Pronghorn groups are considered to be unlikely to occur in the Proposed Project area.

Furbearers

Bobcat

Bobcats (Game species; S4; G5) are generally trapped for their fur on Cotterel Mountain. Populations in southern Idaho are up to one bobcat per 3.9 square kilometers (Knick 1990). Bobcats are solitary, except during breeding and typically forage on rabbits. When rabbit numbers decline, then bobcat populations follow. During 2003, two photographs of bobcats were obtained and cataloged (USDI, BLM 2005). The estimated bobcat population on Cotterel Mountain is unknown, but Cotterel Mountain offers suitable habitats for home ranges including rocks, crevices and a surrounding productive rabbit population.

Bats

Bats probably use Cotterel Mountain on a year-round basis. Bats forage and roost from lower elevations on Cotterel Mountain to the highest elevations of the mountain (IDFG 2002). Bats utilize water resources on the mountain as foraging habitat for some species, and as a water source for most, if not all species. Two types of bat groupings occur on Cotterel Mountain including resident bats that remain on site year round or during the spring through fall breeding and rearing season and migrating bats or those that fly over the site in the spring or the fall. Bat migration typically follows the moth migrations. In southern Idaho, moth migrations generally peak about the first two weeks in October. Moth migration times vary at different elevations and depending upon the species, moths generally migrate through a higher elevation site later in the season.

One bat (unknown type) was recorded during all of the surveys for this Proposed Project; however, many bat species are known to, or suspected to occur in the study area (CDC 2002; IDFG 2002; USDI, BLM 2003). Species known to occur in the area include the western small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*Myotis evotis*), and pallid bat (*Antrozous pallidus*). Species suspected to occur in the Proposed Project area include the big brown bat (*Eptesicus fuscus*), Townsend's big-eared bat (*Corynorhinus townsendii*), Yuma myotis (*Myotis yumanensis*), long-legged myotis (*Myotis volans*), and western pipistrelle (*Pipistrellus hesperus*). Migratory species such as the hoary bat (*Lasionycteris noctivagans*) and silver-haired bat (*Lasiurus borealis*) may also pass through the area during the fall, following the moth migrations of southern Idaho.

The western small-footed myotis (BLM sensitive Type 5; G5; S4) is primarily found in arid sites with cliffs and talus slopes. It may be more abundant in southern Idaho in lava-tube caves where it hibernates in cracks and crevices. During summer months, the western small-footed myotis roosts in rock crevices, under boulders, beneath loose bark, or in buildings. It leaves its daytime roost shortly after sunset. The western small-footed myotis generally forage along cliffs and rocky slopes for small insects including moths, flies, true bugs, and ants. It hibernates in caves and abandoned mines in winter (one of the last bats to begin hibernation).

The long-eared myotis (BLM sensitive Type 5; G5; S3) is found in a wide range of habitats. In shrub communities, it may be found in crevices in cliffs, crevices in rocks on the ground, lava-tube caves, and abandoned mines. An Idaho study found roosts were normally associated with areas adjacent to reservoirs or streams containing slow-moving water. Their diet consists primarily of moths and beetles, along with lacewings, true bugs, wasps, and bees. This species may glean insects from the surface of a variety of desert shrubs but it also occurs and feeds in coniferous forests. In northern Idaho, long-eared myotis appear to feed near the back of mines, especially at the portal. They do not seem to use these mines for night roosting or winter hibernation. The long-eared myotis is known to forage with long-legged myotis, big brown bat, silver-haired bat, and hoary bat, but an Idaho study found species foraged earlier in evening than several other bat species (Keller *et al.* 1993; Keller 2000).

The pallid bat (No BLM ranking; G5; S1) is generally found in arid or semi-arid shrub steppe/grasslands, and to a lesser extent in higher elevation coniferous forests, where rocky river canyons or cliffs are near water. They roost in rock crevices, mines, hollow cavities in trees, and buildings. Their prey can be captured in the air, but is predominantly captured on the ground. The pallid bat is a gregarious species that fly at low levels and have a much more acute sense of sight than the Myotis genus. They seldom hibernate, are active year round, and only migrate short distances. Breeding occurs in late fall, but sperm is stored until ovulation in early spring (IDFG 2002; Keller 2000).

The big brown bat (No BLM ranking; G5; S4) is a common species throughout North America; it can even be found in urban areas. In forested areas, they generally roost in hollow spaces in snags or living trees. The big brown bat is a common species near the entrances of caves and mines but usually does not cluster with other individuals in these colder locations. Foraging occurs primarily near the permanent roost, but temporary roosts may also be utilized. They may hibernate for a shorter period of time than members of the genus *Myotis*. Breeding occurs in late fall and sometimes in winter (IDFG 2002; Keller 2000).

The Townsend's big-eared bat (BLM sensitive Type 3, G4, S2) roosts colonially in caves, buildings, and mine adits. This species may use Cotterel Mountain for both roosting and foraging needs (IDFG 2002). In addition, there is a known hibernation site on the east side of the Proposed Project area (IDFG 2002). The Townsend's big-eared bat occurs at a wide range of elevations in a variety of habitats from desert shrub to deciduous and coniferous forests. In Idaho, some individuals likely migrate to hibernal sites to overwinter and disperse to forested areas during summer when the sexes separate. Their diet consists mostly of moths, beetles, flies, and lesser amounts of other insects. The

Townsend's big-eared bat may eat insects near or over still or slow moving water (Vullo *et al.* 1999). During winter months they hibernate. If multiple hibernation sites are close together, some bats may move from one to the other (Vullo *et al* 1999). Populations in southern Idaho are strongly loyal to roost sites during winter hibernation (Humphrey and Kunz 1976; Wackenhut 1990), and weakly loyal to roost sites during summer months due to shifting prey populations (Keller *et al.* 1993).

The Yuma myotis (BLM sensitive Type 5; G5; S3) occurs in a wide variety of upland and lowland habitats, including riparian settings, desert scrub, and moist woodlands. Summer roosts include crevices in cliffs, old buildings, underground mines, caves, bridges, and abandoned cliff swallow nests. They eat a variety of soft-bodied small insects, especially moths and emergent aquatic insects, including stoneflies and mayflies found near and over water. No large winter concentrations of this species have been studied in Idaho (Keller *et al.* 1993; Keller 2000).

The long-legged myotis (BLM sensitive Type 5; G5; S3) occurs in a variety of habitats from desert to mountainous coniferous forests, where it may be the most common bat species, especially if open water occurs in the area. They eat a variety of small insects found in forests including moths, leafhoppers, lacewings, termites, flies, and small beetles. The food taken may vary with insect availability. Summer roosts include cliff crevices, cracks in the ground, hollows in snags, hollow areas under exfoliating bark and in living trees, and old buildings. Winter hibernal sites include caves and mine tunnels. No large winter concentrations of this species have been found in mines in Idaho (Keller *et al.* 1993; Keller 2000).

The western pipistrelle (BLM sensitive Type 4; G5; S1) is found in deserts and lowlands, desert mountain ranges, desert scrub flats, and rocky canyons. In Idaho, it prefers cliffs and canyon walls close to water. The western pipistrelle roosts in crevices, mine tunnels, and buildings. They emerge in the early evening, especially in canyon areas, where they are often seen feeding over slack water. An important predator on small swarming insects, pipistrelles feed on flying ants, mosquitoes, leafhoppers, and fruit flies, but often select only one kind of insect that is abundant when feeding (Keller *et al.* 1993; Keller 2000).

Small Mammals

Cliff chipmunks (*Neotamias dorsalis*) and an unidentified fox were observed during 2003 field surveys (TBR 2004). Several other small mammal species observed at Cotterel Mountain were Uinta chipmunk (*Tamias umbrinus*), snowshoe hare (*Lepus americanus*), coyote (*Canis latrans*), bushy tailed woodrat (*Neotoma cinerea*) (USDI, BLM Wildlife Database 2005). A variety of other mammal species occur on Cotterel Mountain, including shrews, voles, mice, pack rats, ground squirrels, pocket gophers, weasels, coyotes, cottontails, and jackrabbits (IDFG 2003a).

Amphibians and Reptiles

No amphibians or reptiles were recorded during the 2003 field surveys. BFO has conducted amphibian and reptile surveys within the Proposed Project area from 1997 through 2004 and have found the following species around the Proposed Project area: Great Basin spadefoot toad

(*Scaphiopus intermontanus*) and eggs in McClendon Spring pond; western toad (*Bufo boreas*) in Coe Creek; striped whipsnake (*Masticophis taeniatus*) along Nibbs Creek; and Common racer (*Coluber constrictor*) in mountain mahogany on rocky outcrops. Other common species that were found in the past within the general area include Pacific treefrog (*Hyla regilla*) and western skink (USDI, BLM 2005).

The majority of amphibian and reptile species found in southern Idaho could potentially be found in suitable habitats on Cotterel Mountain including: longnose lizard (*Gambelia wislizenii*); short horned lizard (*Phrynosoma dougalassii*); desert horned lizard (*Phrynosoma platyrhinos*); sagebrush lizard (*Sceleporus graciosis*); western fence lizard (*Sceloporus occidentalis*); western skink (*Eumeces skiltoninus*); gopher snake (*Pituophis catenifer*); western garter snake (*Thamnophis elegans*); common garter snake (*Thamnophis sirtalis*); and night snake (*Hypsiglena torquata*).

Three of these species will be discussed in further detail due to their BLM sensitive species status including the common garter snake, night snake and western toad. The common garter snake (BLM sensitive Type 3; State 5; GS 5) is nocturnal/diurnal and usually found in habitats associated with water, such as streams, rivers, lakes, ponds and marshes. They can also be found in open meadows and coniferous forests. They hibernate underground, or under surface cover at times with other snake species. Active from about March or April through October in northern range and at higher elevations, active season is longer in southern range, to year-round in Florida (Nussbaum *et al.* 1983; Cossell 1997).

The night snake (BLM sensitive Type 5; State Status 5; Global Status 3) is nocturnal. This snake inhabits desert lowlands, grassland, chaparral, sagebrush flats, woodlands, and moist mountain meadows that generally have a rocky component. They can also be found in areas lacking rocks, provided there are rodent burrows (Diller and Wallace 1986; Cossell 1997).

The western toad (BLM sensitive Type 3; G4; S4) is found in mountain meadows to brushy desert flats and typically near a water source. Its distribution is throughout Idaho, but populations appear to be declining in parts of the U.S. due to water channeling and re-direction, thus leading to a loss of habitat (Bartels and Peterson 1994).

<u>Birds</u>

Large expanses of big and low sagebrush, juniper, grasslands and mountain mahogany are found within the Proposed Project area. These vegetation covers are potential habitat for a number of BLM sensitive species, including sage-grouse, Brewer's sparrow, grasshopper sparrow, loggerhead shrike, pinyon jay, plumbeus vireo, sage sparrow, and sage thrasher. In addition, the abundance of open cliffs, strong updrafts, and the close proximity of agricultural lands make this area prime habitat for BLM sensitive raptor species including ferruginous hawks, peregrine falcon, prairie falcon, golden eagle and Swainson's hawk. In addition to the wide diversity of bird species found during the surveys, there are specialized topographical features that provide breeding, nesting and wintering habitats for many avian species that are not widely available in the Raft River Valley-Cassia Creek and Marsh Creek sub-basin habitats.

Avian Survey Efforts

To assess the abundance and location of birds using specific habitats in the area, the following studies were conducted: (1) a yearlong avian point count survey; (2) a fall migration point survey; (3) a raptor nest survey; (4) a nocturnal bird migration survey using radar; (5) two sage-grouse lek surveys; and (6) a sage-grouse radio telemetry study (TBR 2004). The field methods chosen for use in the Cotterel Mountain study were derived from a review of guidelines for studying wind energy and bird interactions published by the National Wind Coordinating Committee (Anderson *et al.* 1999) and of the methods used in a number of other recent avian baseline studies at proposed wind plants in the western U.S. The baseline studies included Johnson *et al.* (1997); Johnson *et al.* (2000b); Erickson *et al.* (2001a); Sharp *et al.* (2001a), West Inc. (2002) and Young *et al.* (2002). During the point count surveys, in-transit observations were made of large birds and sensitive species while the observers were in transit between observations points. In-transit observations were entered into a separate database and analyzed separately. After analysis, these data were deemed not comparable to the point count data. Therefore, the in-transit observation data were only used in a general way to augment the species composition and richness information for the avian study areas.

Yearlong Avian Point Count Survey

For the yearlong avian point count survey, 11 circular plots, each with a radius of 1,970 feet (600 meters), were established on Cotterel Mountain, and each plot was surveyed for 20 minutes at weekly intervals between November 26, 2002 and November 23, 2003 (Figure 3.2-3; TBR 2004). Approximately 17.3 hours of observations were made at each circular point count station through the four seasons for an entire year. All birds, including raptors, passerines, corvids, upland gamebirds and other species were recorded and when possible, ocular estimates of flight height of these birds were also recorded. In addition, flight paths of large birds were mapped. Data were recorded on data sheets, entered into a database, and analyzed. Flight paths were digitized into a Geographical Information System coverage layer.

Observational data was compiled for each point count location. For the yearlong avian point count survey, 84 species of birds were identified. Species observed are listed in the Technical Baseline Reports for Biological Resources report prepared by the Applicant's consultant for the Proposed Project (TBR 2004). Table 3.2-5 lists the avian groups and their subtotals. The averages of bird use varied geographically among the yearlong point count survey plots. Near the north end of Cotterel Mountain, plots 7, 8, and 9, had the highest average use, while near the south end of the mountain, plots 2, 11, and 12 had the lowest average use (Figure 3.2-4). By season, the number of species observed, along with percent of total birds observed for each season were:

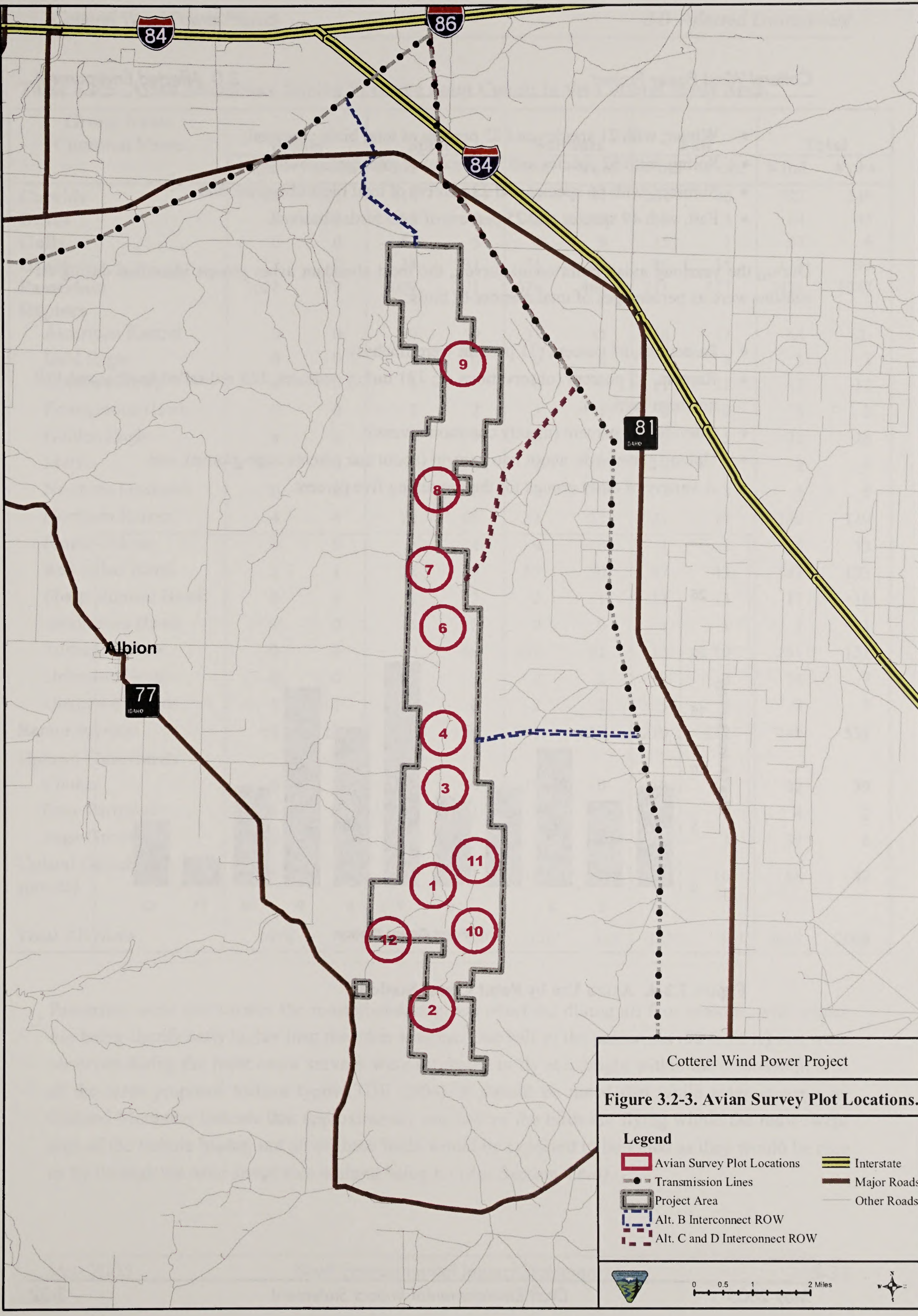


Figure 3.2-3. Avian Survey Plot Locations.

- Winter, with 21 species and 22 percent of total birds observed;
- Spring, with 62 species and 30 percent of total birds observed;
- Summer, with 66 species and 23 percent of total birds observed; and
- Fall, with 49 species and 25 percent of total birds observed.

During the yearlong avian point count survey, the most abundant avian groups identified during all seasons were as percentages of total number of birds:

- Passerines, 68 percent (31 percent were finches);
- Raptors, 15 percent (observations of: 131 turkey vultures, 123 red-tailed hawks, and 119 northern harriers);
- Corvids, ten percent (mostly common ravens);
- Upland gamebirds, about two percent (about one percent sage-grouse); and
- A variety of other groups for the remaining five percent.

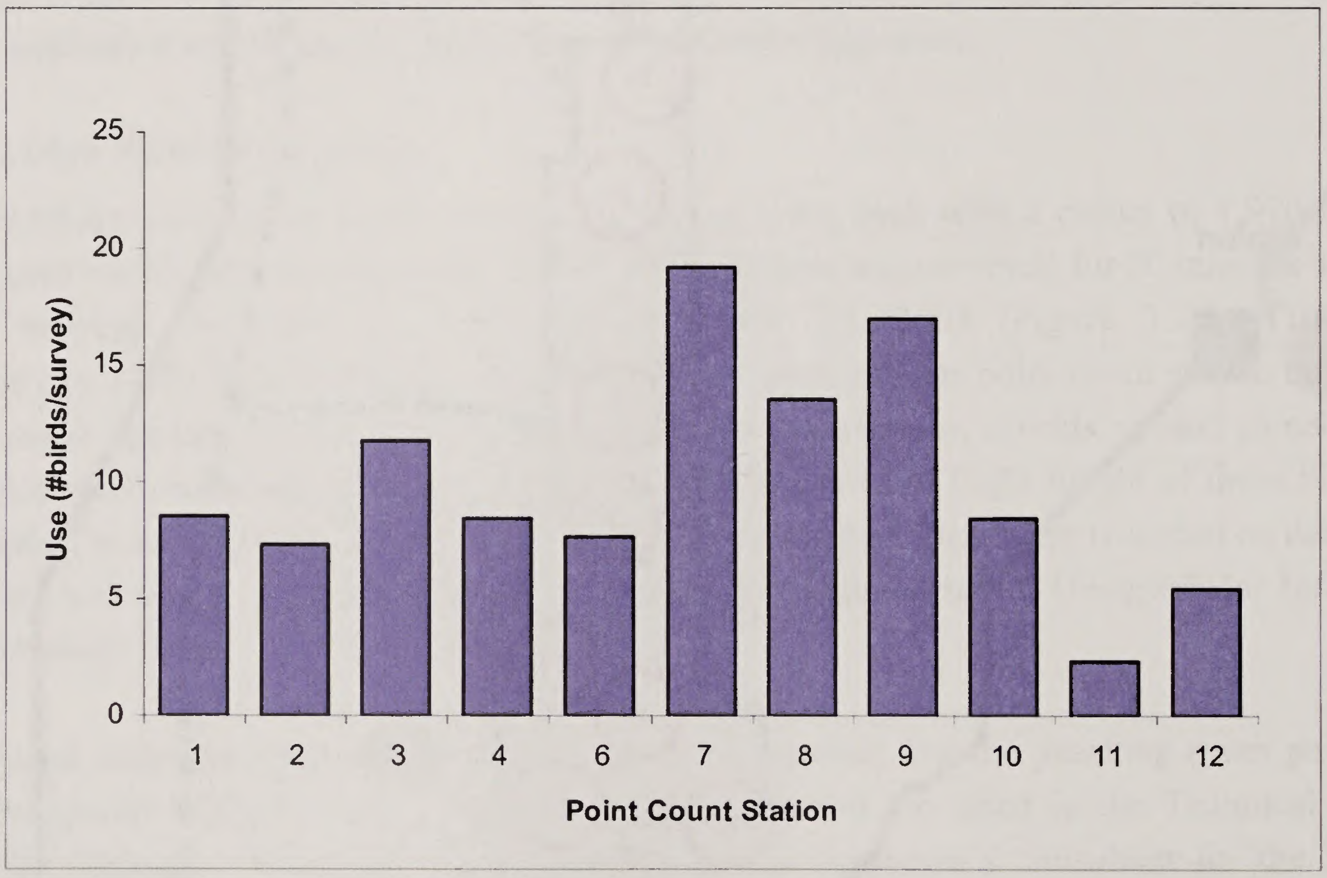


Figure 3.2-4. Avian Use by Point Count Station.

Table 3.2-5. Avian Abundance During Yearlong Point Counts in the Cotterel Study Area.

Group Name Common Name	Winter		Spring		Summer		Fall		Total	
	# ind	# obs	# ind	# obs	#ind	# obs	# ind	# obs	# ind	# obs
Corvids	48	41	118	86	92	41	264	80	522	248
Doves	0	0	13	8	48	33	3	3	64	44
Gulls	0	0	52	5	0	0	15	1	67	6
Other	2	2	38	31	51	42	20	18	113	93
Passerines	1028	79	1009	321	676	460	711	177	3424	1037
Raptors										
American Kestrel	0	0	9	9	37	35	18	17	64	61
Bald Eagle	0	0	0	0	0	0	1	1	1	1
Cooper's Hawk	0	0	1	1	0	0	11	11	12	12
Ferruginous Hawk	0	0	2	2	1	1	0	0	3	3
Golden Eagle	8	7	9	9	10	7	5	5	32	28
Merlin		0	0	2	2	0	0	2	2	4
Northern Goshawk	0	0	2	2	0	0	3	3	5	5
Northern Harrier	4	4	72	65	33	31	21	19	130	119
Prairie Falcon	0	0	5	4	9	8	1	1	15	13
Red-tailed Hawk	1	1	38	29	57	50	47	43	143	123
Sharp-shinned Hawk	0	0	2	2	2	1	13	13	17	16
Swainson's Hawk	0	0	0	0	0	0	1	1	1	1
Turkey Vulture	0	0	80	40	138	81	13	10	231	131
Unknown Buteo	0	0	3	3	2	2	69	2	74	7
Unknown Raptor	1	1	0	0	2	2	5	4	8	7
Raptor subtotal	14	13	225	168	291	218	210	132	740	531
Upland Gamebirds										
Chukar	6	1	17	16	17	10	12	12	52	39
Gray Partridge	0	0	1	1	0	0	3	1	4	2
Sage-Grouse	0	0	19	4	1	1	12	3	32	8
Upland Gamebird subtotal	6	1	37	21	18	11	27	16	88	49
Total All Birds	1098	136	1492	640	1176	805	1250	427	5018	2008

Passerines were consistently the most abundant group observed during all four seasons, with winter use being significantly higher than the other seasons. One half of the passerines (52 to 55%) that were observed during the point count surveys were estimated to fly at a height within the rotor-swept area of the three proposed turbine types (TBR 2004). It should be noted that while avian surveys on Cotterel Mountain indicate that approximately one half of the birds are flying within the rotor swept area of the turbine blades, not all of these birds would be expected to be killed as they would be able to fly through the rotor swept area without being hit (See Section 4.6.4).

Raptor sightings were similar during the spring, summer, and fall surveys (ranged from 1.49 to 1.89 birds per plot), but declined during the winter (to 0.18 birds per plot). Turkey vulture, red-tailed hawk and northern harrier were the three species with highest use of the area during spring and summer. Sixty-two to seventy-eight percent of raptors were estimated to fly at a height within the rotor-swept area of three proposed turbine types (TBR 2004).

Of the corvids, the common raven was consistently one of the top two species with highest use of the plot areas during all seasons. High percentages (65 to 76%) of Corvids were estimated to fly at a height equal to the rotor-swept area of three different turbine types (TBR 2004).

Three groups of upland game birds were observed during the yearlong avian point count survey: the chukar (52 observed), the gray partridge (four observed), and the sage-grouse (32 observed). The greater sage-grouse is the only native species of the three. Low to moderate percentages (six to 56%) of upland game birds were estimated to fly at a height within the rotor-swept area of three different turbine types (TBR 2004).

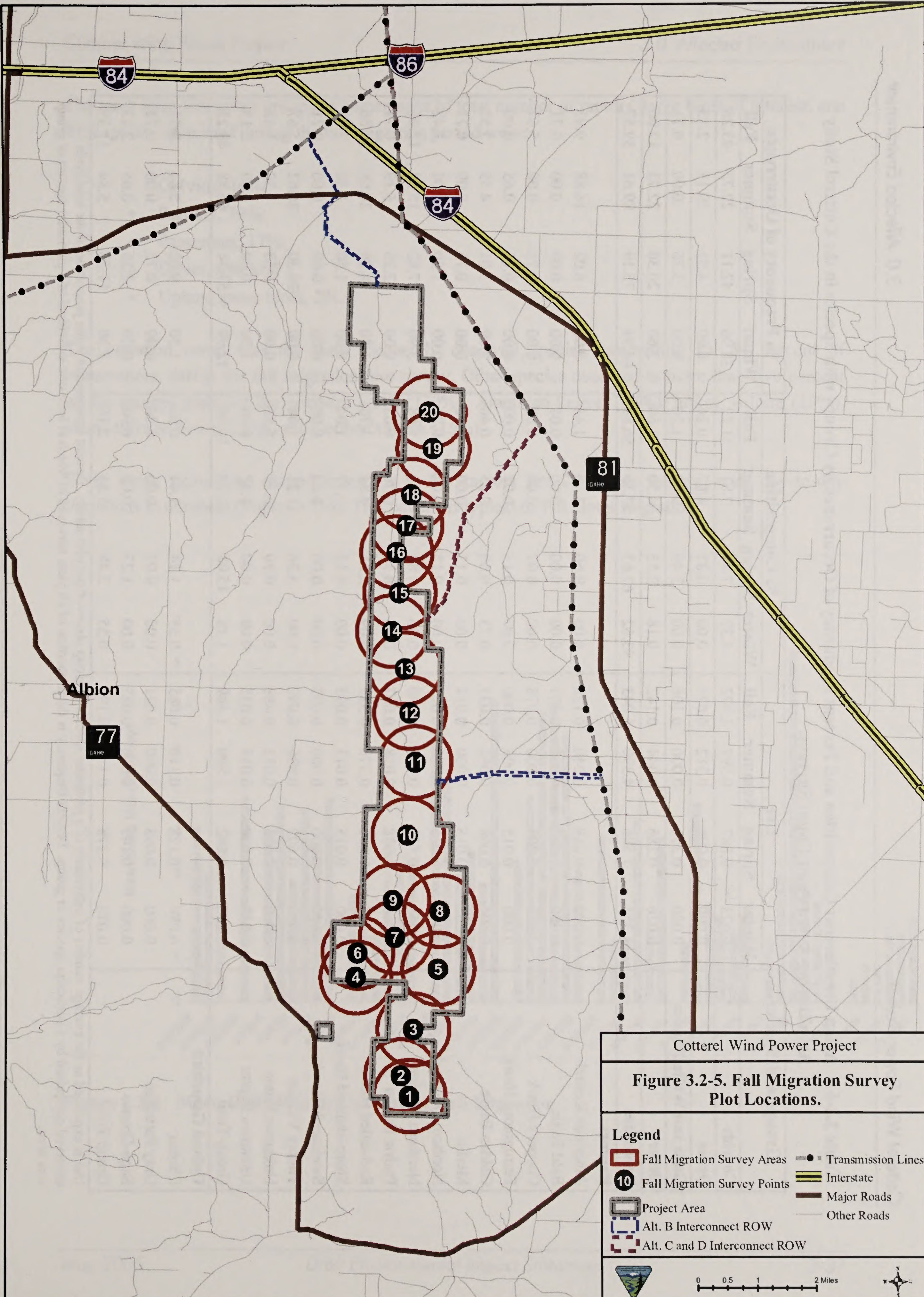
Other avian groups observed included: two small flocks of migrating California gulls and two small flocks of ring-billed gulls, both flocks observed during the spring; and a single flock of 15 American white pelicans observed during the fall.

Of the small birds observed during the yearlong avian point count survey, gray-crowned rosy finches and Townsend's solitaire had the highest plot area use during fall and winter, while the rock wren, mountain bluebird, western meadowlark, American robin, spotted towhee, vesper sparrow, violet-green swallow, chipping sparrow, dark-eyed junco, and Brewer's sparrow had the highest plot area use during spring and summer. The species with the highest plot area use generally had the highest frequency of occurrence during the yearlong avian point count surveys (except for the gray-crowned rosy finch).

Fall Migration Survey

For the fall migration plot survey, 18 plots, each with a radius of 3,280 feet (one kilometer), were established on Cotterel Mountain, and each plot was surveyed for 30 minutes, six days a week, from mid-August to mid-October 2003 (TBR 2004; Figure 3.2-5). The data were similar to the yearlong avian point count survey, but only raptors, large birds of interest, and threatened or endangered or sensitive (TES) species were recorded.

For the fall migration plot survey, 49 species of birds were identified. Species observed are listed in the Technical Baseline Reports for Biological Resources report prepared by the Applicant's consultant (TBR 2004). Table 3.2-6 lists the avian groups and their subtotals. Use by plot area varied from 5.5 birds per survey at plot 15, to 22.4 birds per survey at plot 11. Plots 8, 9, 11, and 13 had the highest plot area use, while plots 4, 6, 12, and 13 had the lowest plot area use.


84
86
84
81
IDAHO
Albion
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1
Cotterel Wind Power Project
Figure 3.2-5. Fall Migration Survey Plot Locations.
Legend
Fall Migration Survey Areas
10 Fall Migration Survey Points
Project Area
Alt. B Interconnect ROW
Alt. C and D Interconnect ROW
Transmission Lines
Interstate
Major Roads
Other Roads
0 0.5 1 2 Miles

Table 3.2-6. Avian Use, Percent Composition and Percent Frequency of Occurrence by Groups with Species in the Cotterel Study Area During Avian Point Count Surveys.

Groups and Species	Use				% Composition				% Frequency of Occurrence			
	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Corvids	0.623	0.887	0.597	1.872	4.37	7.91	7.81	21.12	38.96	42.11	22.73	43.26
Doves	0.000	0.098	0.312	0.021	0.00	0.87	4.07	0.24	0.00	4.51	20.13	2.13
Gulls and White Pelican	0.000	0.391	0.000	0.106	0.00	3.49	0.00	1.20	0.00	3.76	0.00	0.71
Other	0.026	0.286	0.344	0.142	0.18	2.55	4.50	1.60	2.60	20.30	22.73	12.06
Passerines	13.351	7.586	4.390	5.043	93.62	67.63	57.39	56.88	64.94	75.19	89.61	59.57
Raptors												
American Kestrel	0.000	0.068	0.240	0.128	0.00	0.60	3.14	1.44	0.00	6.02	16.88	9.93
Bald Eagle	0.000	0.000	0.000	0.007	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.71
Cooper's Hawk	0.000	0.008	0.000	0.078	0.00	0.07	0.00	0.88	0.00	0.75	0.00	5.67
Ferruginous Hawk	0.000	0.015	0.006	0.000	0.00	0.13	0.08	0.00	0.00	0.75	0.65	0.00
Golden Eagle	0.104	0.068	0.065	0.035	0.73	0.60	0.85	0.40	9.09	3.01	4.55	3.55
Merlin	0.000	0.015	0.000	0.014	0.00	0.13	0.00	0.16	0.00	0.75	0.00	0.71
Northern Goshawk	0.000	0.015	0.000	0.021	0.00	0.13	0.00	0.24	0.00	1.50	0.00	1.42
Northern Harrier	0.052	0.541	0.214	0.149	0.36	4.83	2.80	1.68	3.90	27.82	15.58	12.06
Prairie Falcon *	0.000	0.038	0.058	0.007	0.00	0.34	0.76	0.08	0.00	2.26	5.19	0.71
Red-tailed Hawk	0.013	0.286	0.370	0.333	0.09	2.55	4.84	3.76	1.30	14.29	24.68	19.86
Sharp-shinned Hawk	0.000	0.015	0.013	0.092	0.00	0.13	0.17	1.04	0.00	1.50	1.30	7.09
Swainson's Hawk	0.000	0.000	0.000	0.007	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.71
Turkey Vulture	0.000	0.602	0.896	0.092	0.00	5.36	11.71	1.04	0.00	20.30	26.62	5.67
Unknown Buteo	0.000	0.023	0.013	0.489	0.00	0.20	0.17	5.52	0.00	1.50	1.30	1.42
Unknown Raptor	0.013	0.000	0.013	0.035	0.09	0.00	0.17	0.40	1.30	0.00	1.30	2.13
Group Total	0.182	1.692	1.890	1.489	1.28	15.08	24.70	16.80	12.99	57.14	66.88	48.23
Upland Gamebird												
Chukar	0.078	0.128	0.110	0.085	0.55	1.14	1.44	0.96	1.30	9.02	5.84	8.51
Gray Partridge	0.000	0.008	0.000	0.021	0.00	0.07	0.00	0.24	0.00	0.75	0.00	0.71
Sage-Grouse	0.000	0.143	0.006	0.085	0.00	1.27	0.08	0.96	0.00	2.26	0.65	2.13
Group Total	0.078	0.278	0.117	0.191	0.55	2.48	1.53	2.16	1.30	11.28	5.84	11.35

Use is expressed as the average number of individuals of a particular species or group observed per plot survey. Percent composition is the proportion of the total birds observed comprised by a particular species or group. Percent frequency is the proportion of all plots surveyed in which at least one individual of a particular species or group was seen.

The most abundant avian groups as percentages of total number of raptors, large birds of interest, and TES species identified during the fall migration period were:

- Corvids, 46%;
- Raptors, 29%;
- Passerines, 17%;
- Doves, 6%; and
- Upland game birds, 2%.

The common raven was the most frequently observed species, accounting for 54 percent of observations during the fall migration plot survey. Other species observed in more than five percent of the surveys included the northern harrier (30%), American kestrel (22%), turkey vulture (19%), sharp-skinned hawk (15%), and Cooper's hawk (15%).

Daily mean raptor use ranged from 0.6 to 8.3 raptors per 20-minute survey, with day-to-day variations in numbers (Figure 3.2-6). This pattern is typical of fall raptor migration.

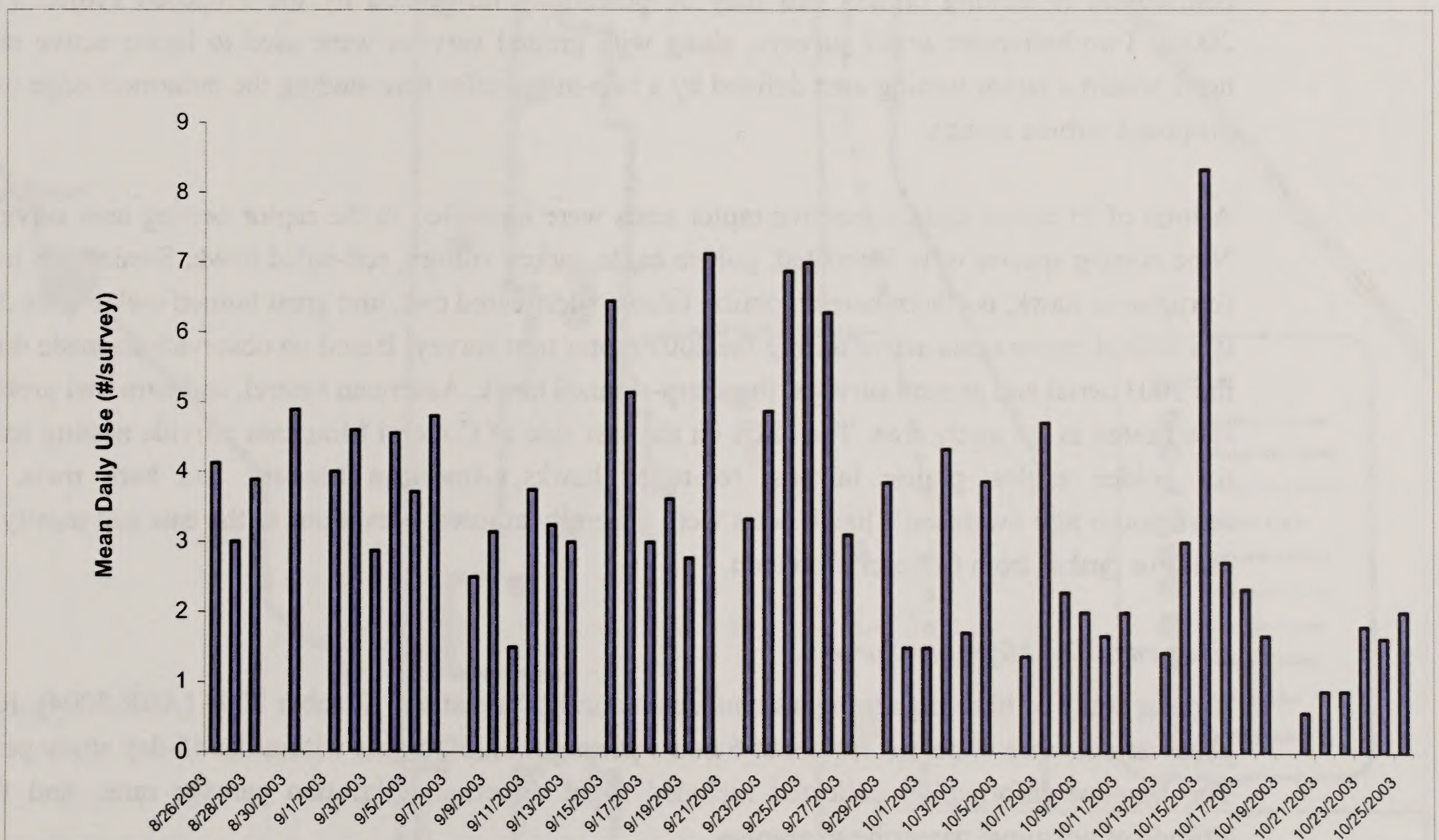


Figure 3.2-6. Mean Daily Raptor Use During Fall Migration

High percentages (66 to 70%) of corvids were estimated to fly at a height equal to the rotor-swept area of three different turbine types.

Moderate to high percentages (54 to 62%) of raptors were estimated to fly at a height equal to the rotor-swept area of three different turbine types.

Moderate to high percentages (60 to 62%) of passerines were estimated to fly at a height equal to the rotor-swept area of three different turbine types.

Moderate to high percentages (43 to 87%) of doves were estimated to fly at a height equal to the rotor-swept area of three different turbine types.

No upland game birds were estimated to fly at a height equal to the rotor-swept area of three different turbine types.

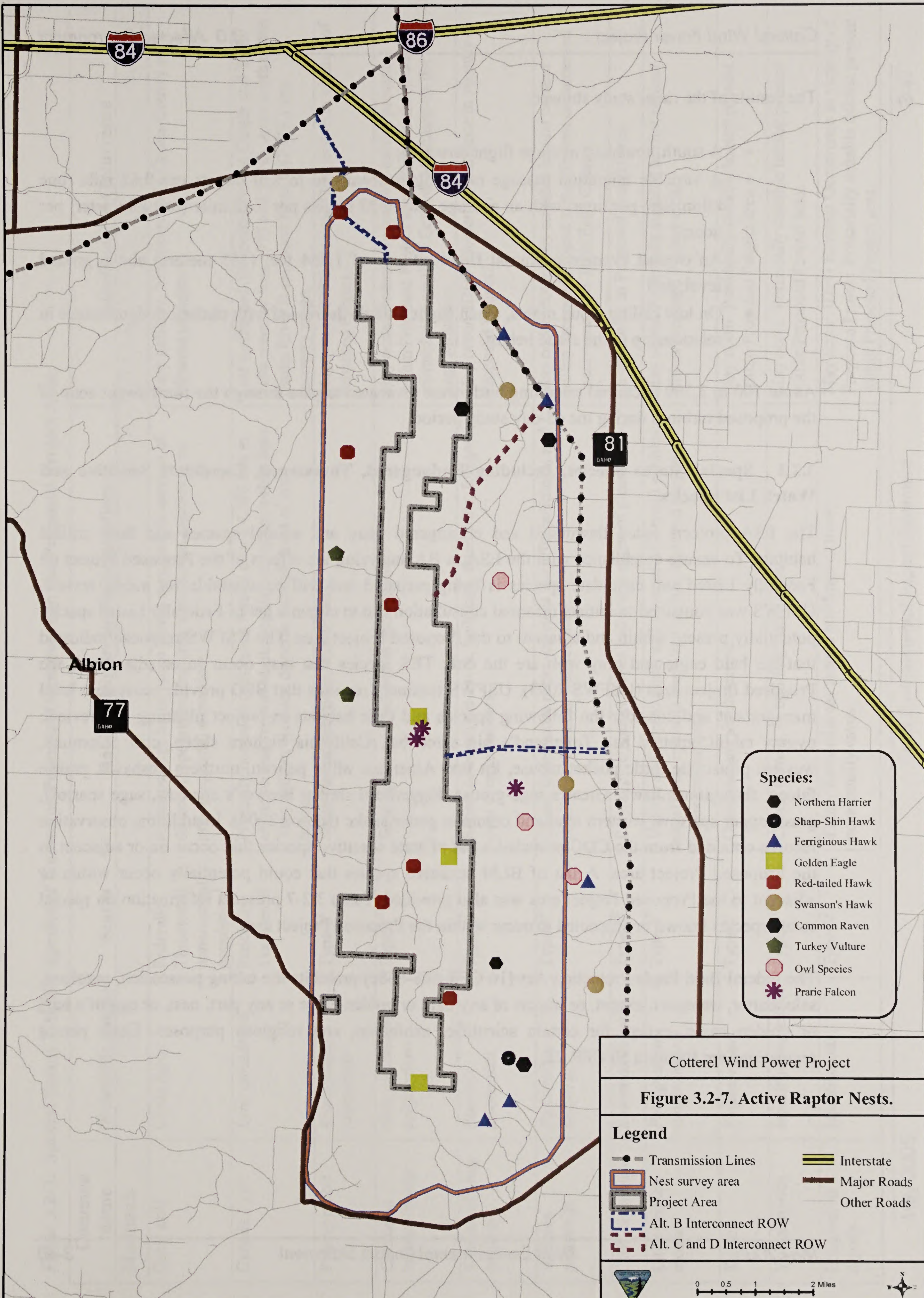
Raptor Nest Survey

A raptor nest survey was conducted during May and June 2003 to evaluate the numbers and distribution of nesting raptors that may be potentially influenced by the Proposed Project (TBR 2004). Two helicopter aerial surveys, along with ground surveys were used to locate active raptor nests within a raptor nesting area defined by a two-mile buffer surrounding the outermost edge of the proposed turbine strings.

A total of 21 active and 20 inactive raptor nests were identified in the raptor nesting area surveyed. Nine nesting species were identified: golden eagle, turkey vulture, red-tailed hawk, Swainson's hawk, ferruginous hawk, northern harrier, prairie falcon, short-eared owl, and great horned owl. Figure 3.2-7 is a map of raptor nests active during the 2003 raptor nest survey. Based on observations made during the 2003 aerial and ground surveys, the sharp-shinned hawk, American kestrel, and barn owl probably also nested in the study area. The cliffs on the east side of Cotterel Mountain provide nesting habitat for golden eagles, prairie falcons, red-tailed hawks, American kestrels, and barn owls. The ferruginous and Swainson's hawk nests were generally at lower elevations to the east and mostly two miles or farther from Cotterel Mountain.

Nocturnal Bird Migration Survey

A radar study of bird migration was conducted during August and October 2003 (ABR 2004). Radar observations were collected for about 6 hours per night on 30 nights within the 45-day study period. The baseline information collected included flight direction, migration passage rates, and flight altitude of nocturnal passerine migrants.



Cotterel Wind Power Project

Figure 3.2-7. Active Raptor Nests.

The results of the radar study showed:

- A south, southeast average flight direction;
- A variable migration passage rate ranging from two to 210 targets per 0.62 mile (one kilometer) per hour, with an average rate of 32 targets per 0.62 mile (one kilometer) per hour;
- An overall average nocturnal flight altitude of 1,854 feet (565 meters) above ground level; and
- On low ceiling cloud nights, avian flight altitude decreased with statistical significance in relationship to the cloud height.

About 700 to 3,700 nocturnal migrating birds were estimated to pass through the rotor-swept zone of the proposed turbines during the 45-day study period.

3.2.3 Special Status Species, Including Endangered, Threatened, Candidate Sensitive and Watch List Species

The ESA protects listed threatened and endangered plant and animal species and their critical habitats. To ensure compliance with the ESA, a BA analyzing the effects of the Proposed Project on Federally Listed and candidate species is being prepared and will be available for public review. USFWS was contacted to initiate informal consultation and to obtain a list of Federally Listed species potentially present within and adjacent to the Proposed Project area. The USFWS response indicated that the bald eagle and gray wolf are the only TES species that may occur in or adjacent to the Proposed Project area (USFWS 2003). USFWS routinely requests that BFO provide ecosystem level management and consider the following species and their habitats in project planning and review: pygmy rabbit, spotted bat, Townsend's big eared bat, California bighorn sheep, cliff chipmunk, western pipistrelle, little pocket mouse, kit fox, American white pelican, northern goshawk, prairie falcon, ferruginous hawk, Greater sage-grouse, loggerhead shrike, Brewer's sparrow, sage sparrow, grasshopper sparrow, western toad and common garter snake (Moroz 2004). In addition, observation records obtained from the CDC provided a list of state sensitive species that occur on or adjacent to the Proposed Project area. A list of BLM sensitive species that could potentially occur within or adjacent to the Proposed Project area was also provided. Table 3.2-7 presents information on special status species known or suspected to occur within the Proposed Project area.

The federal Bald Eagle Protection Act (16 CFR 668-668c) prohibits the taking possession, purchase, sale, barter, transport, export, or import of any bald or golden eagle or any part, nest, or egg of a bald or golden eagle, except for certain scientific, exhibition, and religious purposes. Eagle permit regulations are found in 50 CFR 22.

Table 3.2-7. Special Status Wildlife Species of Known or Potential Occurrence in the Proposed Project Area.

Common name	(Scientific name)	Status	Habitat Requirements/Associations	Likelihood of Occurrence
Mammals				
Gray wolf	*Canis lupus*	Federally Threatened, nonessential population[1]	Requires large home range which may include number of different topographic features; distribution appears to be prey (ungulate) dependent.	Very unlikely. Not recorded in Cassia County or adjacent counties.
Canada Lynx	*Lynx canadensis*	Federally Threatened	Primarily occurs in coniferous forests above 4,000 feet in elevation and support stable populations of snowshoe hare. They will on occasion disperse through areas of non-habitat.	Last confirmed observation in the Cassia and Twin Falls counties was 1975 and 1990. Area south of the Snake River is excluded from USFWS Lynx recovery range.
Pygmy rabbit	*Brachylagus idahoensis*	Type 2[2]	Shrub steppe with deep, friable soils.	May occur. IDFG Element Occurrence in vicinity of Proposed Project.
California bighorn sheep	*Ovis canadensis californiana*	Type 3[2]	Semi-desert arid mountains and canyons.	May occur. Potentially suitable habitat present within Proposed Project area. Bighorn sheep were reintroduced south of Cotterel Mountain on the Jim Sage Mountain.
Townsend's big-eared bat	*Plecotus townsendii*	Type 3[2]	Roosts colonially in caves, buildings, mine adits; forages over diverse habitats.	May occur. IDFG Element Occurrence in vicinity of Proposed Project.
Western pipistrelle	*Pipistrellus hesperus*	Type 4[2]	Caves, under loose rocks, crevices in cliffs, buildings; arid conditions, but near watercourses.	May occur. Potentially suitable habitat present within Proposed Project area. Nearest documented occurrence is in Twin Falls County.
Cliff chipmunk	*Eutamias dorsalis*	Type 4[2]	Pinyon pine/juniper slopes and lower edges of pines.	Documented in Proposed Project area.
Little pocket mouse	*Perognathus longimembris*	Type 4[2]	Valleys and slopes; sandy soil covered with small pebbles; sagebrush, creosote bush, and cactus; scattered pinyon pines and junipers.	May occur. Potentially suitable habitat present within Proposed Project area.
Kit fox	*Vulpes velox*	Type 4[2]	Grassland and shrub-steppe.	May occur. Potentially suitable habitat present within Proposed Project area.
Yuma myotis	*Myotis yumanensis*	Type 5[2]	Caves, tunnels, or buildings; arid areas.	May occur. Potentially suitable habitat present within Proposed Project area.
Long-eared myotis	*Myotis evotis*	Type 5[2]	Thinly forested areas around buildings or trees; occasionally caves.	May occur. IDFG Element Occurrence in vicinity of Proposed Project. Potentially suitable habitat present within Proposed Project area.

Table 3.2-7. Special Status Wildlife Species of Known or Potential Occurrence in the Proposed Project Area.

Common name	(Scientific name)	Status	Habitat Requirements/Associations	Likelihood of Occurrence
Long-legged myotis	*Myotis volans*	Type 5[2]	Buildings, small pockets or crevices in rock ledges.	May occur. IDFG Element Occurrence in vicinity of Proposed Project. Potentially suitable habitat present within Proposed Project area.
Spotted bat	*Euderma maculatum*	Type 3	High cliffs and rocky ledges, larger and older trees, hollows, and crevices. Generally associated with nearby water sources.	May occur. IDFG Element Occurrence in vicinity of Proposed Project. Potentially suitable habitat present within Proposed Project area.
Western small-footed myotis	*Myotis ciliolabrum*	Type 5[2]	Caves, mine tunnels, crevices in rocks, buildings; in or near forested areas.	May occur. IDFG Element Occurrence in vicinity of Proposed Project. Potentially suitable habitat present within Proposed Project area.
Birds				
All bird species that are protected under the Migratory Bird Treaty Act.			All	Some species documented to occur within Proposed Project area boundary.
American white pelican	*Pelecanus erythrorhynchos*	Type 2[2]	Nests colonially in large lakes, flies long distances for food, migrant.	Nests at Lake Walcott. May migrate through the area.
Bald eagle	*Haliaeetus leucocephalus*	Federally Threatened[1]	Rivers, lakes, forages on fish and waterfowl, carrion over a variety of habitats.	Documented to occur. Nearby wintering areas and nesting sites.
Black tern	*Chlidonias niger*	Type 3[2]	Nests in loose colonies in lakes, marshes.	Nests at Lake Walcott. May migrate through the area.
Boreal owl	*Aegolius funereus*	Type 5[2]	Dense coniferous forest, mixed forest, thickets of alder, aspen, or stunted spruce, most commonly in proximity to open grassy situations. Nests in tree hole, natural cavity or old woodpecker hole; sometimes in artificial nest boxes.	Documented to occur. Potentially suitable habitat present within Proposed Project area.
Brewer's sparrow	*Spizella breweri*	Type 3[2]	Shrub-steppe and alpine habitats.	Potentially suitable habitat occurs within Proposed Project area.
Calliope hummingbird	*Stellula calliope*	Type 5	Mountain forest, shrub, and grassland mosaics.	Potentially suitable habitat present within Proposed Project area.
Cassin's finch	*Carpodacus cassinii*	Type 5[2]	Open coniferous forest; in migration and winter also in deciduous woodland, second growth, scrub, brushy areas, partly open situations with scattered trees.	Potentially suitable habitat present within Proposed Project area.

Table 3.2-7. Special Status Wildlife Species of Known or Potential Occurrence in the Proposed Project Area.

Common name	(Scientific name)	Status	Habitat Requirements/Associations	Likelihood of Occurrence
Columbian sharp-tailed grouse	*Tympanuchus phasianellus columbianus*	Type 3[2]	Breeds at communal display sites (leks), grassland and steppe habitats.	Potentially suitable habitat present within Proposed Project area.
Ferruginous hawk	*Buteo regalis*	Type 3[2]	Nests on trees, cliffs, ground, forages over grassland and steppe habitats.	Documented nesting in lower elevations within Proposed Project vicinity, but outside of Proposed Project area. IDFG Element Occurrence in Proposed Project vicinity.
Flammulated owl	*Otus flammeolus*	Type 3[2]	Montane forest, usually open conifer forests containing pine, with some brush or saplings Most often found on ridges and upper slopes. Cavity nester.	May occur. Potentially suitable habitat present within Proposed Project area.
Golden Eagle	*Aquila chrysaetos*	Bald Eagle Protection Act[3]	Nests on cliffs or in trees, forages over open habitats.	Documented to occur.
Grasshopper sparrow	*Ammodramus savannarum*	Type 3[2]	Grassland and shrub-steppe.	Documented to occur and nest within the Proposed Project area.
Greater sage-grouse	*Centrocercus urophasianus*	Type 3[2]	Breeds at communal display sites (leks), grassland and steppe habitats.	Documented to occur in Proposed Project area. IDFG Element Occurrence in Proposed Project area.
Green-tailed towhee	*Pipilo chlorurus*	Type 5[2]	Habitat is usually low shrubs, sometimes interspersed with trees; avoids typical forest, other than open pinyon/juniper woodlands.	Documented to occur and nest within the Proposed Project area.
Loggerhead shrike	*Lanius ludovicianus*	Type 3[2]	Shrub-steppe habitats.	Documented to occur and nest within the Proposed Project area.
Long-billed curlew	*Numenius americanus*	Type 5[2]	Grassland and shrub-steppe.	May occur. IDFG Element Occurrence in Proposed Project vicinity. Potentially suitable habitat occurs within Proposed Project area at the northern end of Cotterel Mountain.
Northern goshawk	*Accipiter gentilis*	Type 3[2]	Mature Forests.	May pass through the Proposed Project area on occasion. Was observed during avian surveys in 2003. Potentially suitable foraging habitat within the Proposed Project area.

Table 3.2-7. Special Status Wildlife Species of Known or Potential Occurrence in the Proposed Project Area.

Common name	(Scientific name)	Status	Habitat Requirements/Associations	Likelihood of Occurrence
Northern pygmy-owl	*Glaucidium gnoma*	Type 5[2]	Forests or open woodlands in foothills and mountains; frequents meadows while foraging. Nests in abandoned woodpecker holes and natural tree cavities, so requires snags and larger living trees.	May occur. Potentially suitable habitat present within Proposed Project area. IDFG Element Occurrence in Proposed Project vicinity.
Peregrine falcon	*Falco peregrinus anatum*	Type 3[2]	Nests on cliffs, forages over open habitats.	May occur. Potentially suitable habitat occurs within Proposed Project vicinity.
Pinyon jay	*Gymnorhinus cynanocephalus*	Type 5[2]	Pinyon/juniper woodland, less frequently pine; in nonbreeding season, also occurs in scrub oak and sagebrush. Nests in shrubs or trees (e.g., pine, oak, or juniper).	Potentially suitable habitat present within Proposed Project area.
Plumbeus vireo	*Vireo plumbeus*	Type 5[2]	Pinyon/juniper, oak woodland; pine savanna, aspen forests, foothill riparian forests, and Gambel oak shrublands with scattered tall trees; occasionally breeds in lowland riparian forests adjacent to foothills.	Potentially suitable habitat present within Proposed Project area.
Prairie falcon	*Falco mexicanus*	Type 3[2]	Nests on cliffs, forages over open habitats.	Known to occur, suitable habitat occurs within Proposed Project vicinity.
Red-naped sapsucker	*Sphyrapicus nuchalis*	Type 5[2]	Primarily coniferous forest that includes aspen and other hardwoods. Cavity nester.	Potentially suitable habitat present within Proposed Project area.
Sage sparrow	*Amphispiza belli*	Type 3[2]	Shrub-steppe habitats.	May occur. Potentially suitable habitat occurs within Proposed Project area.
Sage thrasher	*Oreoscoptes montanus*	Type 5[2]	Sagebrush plains, primarily in arid or semi-arid situations, rarely around towns. In northern Great Basin, breeds and forages in tall sagebrush/bunchgrass, juniper/sagebrush/bunchgrass, mountain mahogany/shrub, and aspen/sagebrush/ bunchgrass communities.	May occur. Potentially suitable habitat present within Proposed Project area.
Virginia's warbler	*Vermivora virginae*	Type 5[2]	Arid montane woodlands, oak thickets, pinyon/juniper, coniferous scrub, chaparral. Brushy steep mountain slopes within or near dry coniferous woodlands. Will inhabit ravines or rocky slopes with dense scrub oaks or mountain mahogany. Also found along mountain streams in sagebrush, or cottonwood and willow habitat at 5,800 to 9,000 feet.	May occur. Potentially suitable habitat present within Proposed Project area.

Table 3.2-7. Special Status Wildlife Species of Known or Potential Occurrence in the Proposed Project Area.

Common name	(Scientific name)	Status	Habitat Requirements/Associations	Likelihood of Occurrence
Western burrowing owl	*Athene cunicularia*	Type 5[2]	Grassland and shrub-steppe.	May occur. Potentially suitable habitat present within northern portion of the Proposed Project area. IDFG Element Occurrence in Proposed Project vicinity.
Amphibians and Reptiles				
Common garter snake	*Thamnophis sirtalis*	Type 3[2]	Occurs in variety of habitats; lives in or near ponds, marshes, prairie swales, roadside ditches, streams, sloughs, damp meadows, woods, farms and city lots. Sea level to 8,000 feet.	Not likely to occur.
Night snake	*Hypsiglena torquata*	Type 5[2]	Occurs in variety of habitats: grassland, chaparral, sagebrush flats, deserts, woodlands, and moist mountain meadows. Rocky and sandy areas. Sea level to 8,700 feet.	Potential to occur.

KEY

Federally listed, proposed and candidate species: Species that are listed under the ESA, proposed or candidates for listing.

Type 2: Range wide/global imperilment species: includes species that are experiencing significant declines throughout their range with a high likelihood of being listed under the ESA in the foreseeable future due to their rarity and/or significant endangerment factors.

Type 3: Regional/state imperilment species: includes species that are experiencing significant declines in population or habitat and are in danger of regional or local extinctions in Idaho in the foreseeable future.

Type 4: Peripheral species in Idaho: includes species that are generally rare in Idaho with the majority of their breeding range outside the state.

Type 5: Watch list species: includes species that are not considered Idaho BLM sensitive species but current populations or habitat information suggests that species may warrant sensitive status in the future.

[1] Source: U.S. Fish and Wildlife Service consultation letter, dated September 27, 2002.

[2] Source: Idaho BLM Special Status Animal Species for Districts and Field Offices, dated August 2002.

[3] Bald Eagle Protection Act.16 U.S.C. §§ 668-668d, June 8, 1940, as amended 1959, 1962, 1972, and 1978. The Act prohibits the taking or possession of and commerce in bald and golden eagles.

No specific surveys were conducted for special status species. However, special status species observations were recorded during point count, in-transit, and raptor fall migration studies. Information review indicates that as many as 45 Special Status species may be present in or near the Proposed Project area (Table 3.2-7). Of the 45 TES species reported in Table 3.2-7, six are known from recent or historical records or observations, fourteen were observed during the 2003 baseline surveys for this Proposed Project, including nine species that were suspected to occur but had not previously been documented in the Proposed Project area. The only federally listed species observed was the bald eagle (*Haliaeetus leucocephalus*, Threatened).

Birds

Bald eagle (Threatened) home ranges are generally associated with large montane rivers, lakes, impoundments, and coniferous and cottonwood forests. They generally occupy riparian or lakeside habitat during the breeding season, but occasionally exploit upland areas for food and roost sites. However, nesting sites in the BFO are located at least 25 miles from the Snake River (USDI, BLM Wildlife Database 2005). Some breeding birds remain near nesting territories throughout the winter months. Wintering bald eagles are usually associated with areas that have a high number of daytime perch sites near open slow-moving water (Gough *et al.* 1998; USFWS 1986).

The bald eagle was observed only twice during the avian surveys. All observations occurred during the fall months. No nests for this species were observed. There are four bald eagle nesting sites located within the Cassia Creek-Raft River Valley area. One nesting site is located approximately eight miles south of the Proposed Project area. A second is located approximately ten miles from the Proposed Project area; a third and fourth nest are located approximately 15 miles from the Proposed Project area. An annual winter bald eagle survey route has been conducted for the past 20 years within the Cassia Creek-Raft River area. Up to 12 bald eagles are observed during the route every year with an average of five bald eagles observed per survey year. Bald eagles do winter along Cassia Creek located about three miles south of the Proposed Project area. They also are known to winter and forage for waterfowl at the man-made pond located on Marsh Creek northwest of the Proposed Project area. In addition, bald eagles have been observed perching on utility poles in the Raft River Valley located to the east of the Proposed Project area (USDI, BLM 2005). Bald eagles may search Cotterel Mountain for winter kill carrion for foraging.

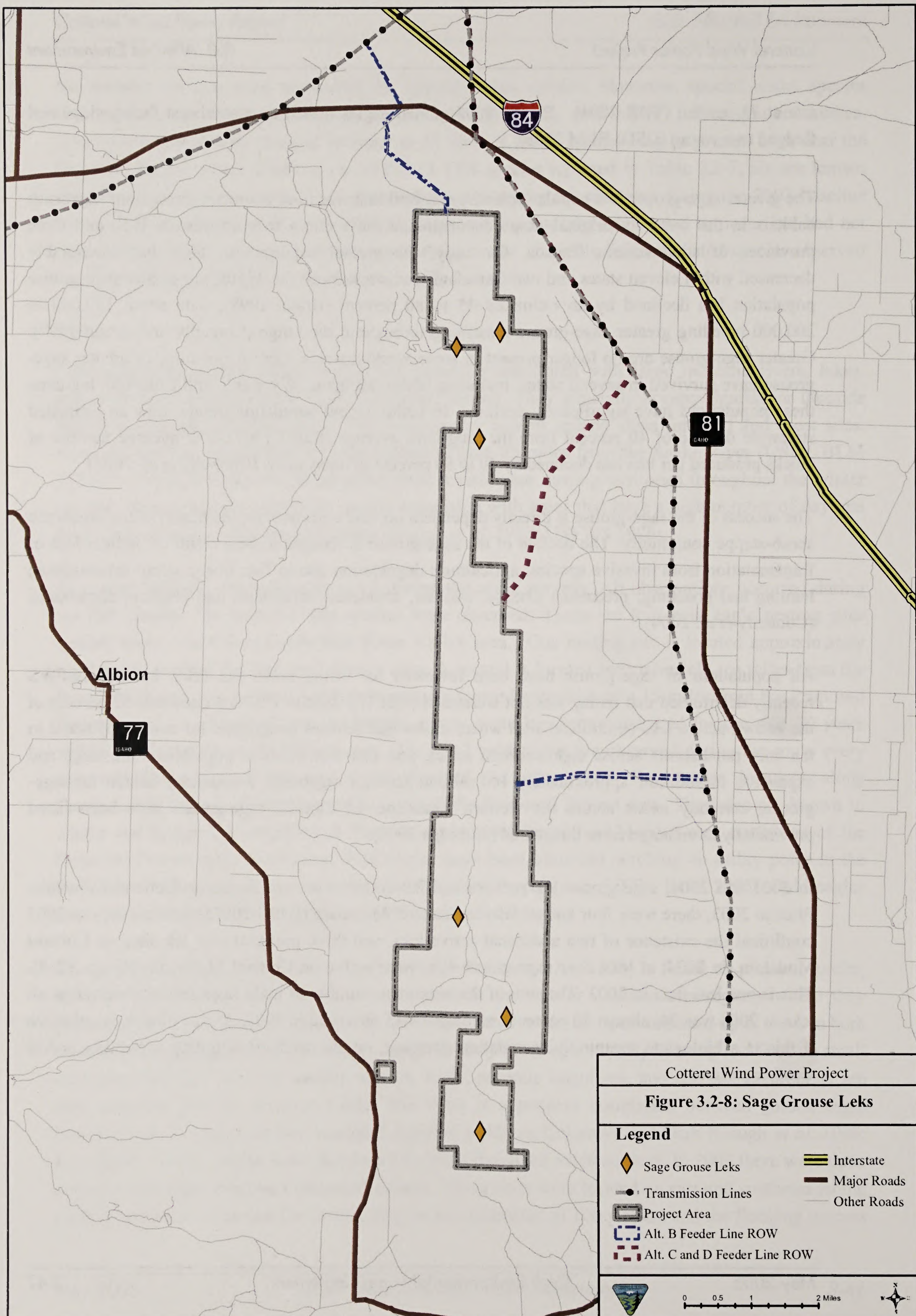
The golden eagle (protected under the Bald Eagle Protection Act 1978) is found on prairies, tundra, open wooded country, and barren areas, especially in hilly or mountainous regions where they generally build stick nests on cliffs, or in trees. In Idaho they prefer open and semi-open areas in both deserts and mountains. They commonly forage in early morning and early evening and feed on small mammals, but may also eat insects, snakes, birds, juvenile ungulates, and carrion. Jackrabbits are their principal prey in southern Idaho, and there is a positive correlation between golden eagle breeding success and jackrabbit numbers reported in Idaho, Colorado, and Utah (Gough *et al.* 1998; Karl 2000). Golden eagles were observed 141 times during all avian surveys. In 2003 there were three active golden eagle nests on Cotterel Mountain. These nests were located on east and southeast facing cliffs. The nest success rate for Golden Eagles was estimated at 100 percent and the fledging success rate at 75 percent (TBR 2004). During 2004 golden eagles nested on a southeast facing slope and fledged two young (USDI BLM 2005).

The greater sage-grouse is a popular upland game bird that was once abundant throughout sagebrush habitats in the west. Its original range encompassed the western to northwestern U.S. and three provinces of southwestern Canada. Currently, the greater sage-grouse range has measurably decreased within eleven states and two Canadian provinces. Since the 1950s, the greater sage-grouse population has declined by an estimated 45 to 80 percent (Braun 1998), with about 150,000 to 200,000 breeding greater sage-grouse remaining throughout the range (Connelly and Braun 1997). Greater sage-grouse are no longer present in some western states. Core populations of greater sage-grouse have survived in several states, including Idaho, Montana, Wyoming, and Colorado, but even these populations have significantly declined. In Idaho, recent population trends show an estimated statewide decline of 40 percent from the long-term average (IDFG 1997). The average number of chicks produced per hen has declined by 40 to 50 percent in many areas (Connelly *et al.* 2004).

The success of the sage-grouse is directly dependent on, and correlates to, the health of the sagebrush shrub-steppe community. The decline of the sage-grouse is thought to be a result of: habitat loss or fragmentation from invasive species; agriculture; degradation due to fire; overgrazing; urbanization; hunting and poaching; predation; disease; weather; accidents; herbicides; and physical disturbance (Connelly *et al.* 2004).

All populations of sage-grouse have been reviewed for listing under the ESA, but the USFWS recently determined that listing was not warranted (USFWS 2005). USFWS cited that 92 percent of the known active leks (traditional sites where males and females congregate for courtship) occur in ten core populations across eight western states, and that five of these populations are large and expansive. In addition, approximately 160 million acres of sagebrush, a necessary habitat for sage-grouse, currently exists across the western landscape. In Canada, sage-grouse have been listed provincially as endangered or threatened (Aldridge 2000).

In 2003 and 2004, sage-grouse lek surveys and lek counts were conducted on Cotterel Mountain. Prior to 2003, there were four known leks on Cotterel Mountain (IDFG 2003c). Lek surveys in 2003 confirmed the existence of two additional active leks, and three potential new lek sites on Cotterel Mountain. In 2004, at least four sage-grouse leks were active on Cotterel Mountain (Figure 3.2-8). This is one less than in 2003. The sum of the maximum number of male sage-grouse observed at all leks in 2004 was 24, almost 50 percent less than the 45 observed in 2003. At this time, it is unknown if this is a biological meaningful population decrease, or the result of sampling variability and/or weather patterns.



84
81
IDAHO
Albion
77
IDAHO
Cotterel Wind Power Project
Figure 3.2-8: Sage Grouse Leks
Legend
Sage Grouse Leks
Transmission Lines
Project Area
Alt. B Feeder Line ROW
Alt. C and D Feeder Line ROW
Interstate
Major Roads
Other Roads
0
0.5
1
2 Miles

In an effort to better understand the year round use of Cotterel Mountain by sage-grouse, a radio telemetry study was initiated in March of 2004 (TREC 2005). The objective of this study was to monitor the annual movements and to identify areas used for nesting, brood-rearing, and wintering of the grouse population on Cotterel Mountain to provide pre-construction data to serve as a baseline against which to evaluate the impacts of the Proposed Project if approved, on sage-grouse. This study is proposed to continue for several years. A total of 37 sage-grouse were trapped and fitted with radio-collars. All marked sage-grouse were located on a weekly basis between March 8 and December 31 2004. The first year results of the study documented the following results:

- Overall nesting effort was high and the nest success rate was above the range-wide average.
- Some male sage-grouse left Cotterel Mountain in spring following the leking season.
- In 2004, hunters harvested 21 percent of the collared grouse, which is higher than harvest rates reported for other areas in southwest Idaho.

As data are collected in subsequent years of the study, additional information on these issues will become available.

The brewer's sparrow (BLM sensitive Type 3; G5, S5 protected nongame species) is usually found in association with sagebrush and alpine habitats. During migration and in winter, it is also found in desert scrub and creosote bush. An Idaho study found Brewer's Sparrows prefer large, living sagebrush for nesting (Gough *et al.* 1998; Karl 2000). Brewer's sparrows were observed a total 121 times during all avian surveys. Most observations of Brewer's sparrow occurred during spring and summer (TBR 2004). Brewer's sparrows could potentially nest on Cotterel Mountain.

The Cassin's finch (BLM sensitive Type 5; S5; G5) is generally found in open, montane coniferous forests at higher elevations. During migration and in winter, it's also found in deciduous woodlands, second growth, scrub, brushy areas, partially open sites with scattered trees, and occasionally in suburbs near mountains. Cassin's finch was observed a total 49 times during all avian surveys. All observations of Cassin's finch occurred during spring and fall and were evenly distributed between the two seasons (TBR 2004). Cassin's finch could potentially nest on the Cotterel Mountain.

The prairie falcon (BLM sensitive Type 3; G4; S5) is found in open situations in mountainous shrub steppe, or grasslands areas. In Idaho, it breeds in shrub steppe and dry mountainous habitat, and winters at lower elevations (Gough *et al.* 1998; Karl 2000). The prairie falcon was observed a total 42 times during all avian surveys. All observations of prairie falcon occurred during spring and summer with the majority occurring during the summer months (TBR 2004). In 2003 there were two active prairie falcon nests. Both nests were located on east facing cliffs. One nest contained two eggs and the other had two downy chicks. The success of these nesting and fledging attempts are unknown (TBR 2004).

The pinyon jay (BLM sensitive Type 5; G5; S2) is generally found in pinyon/juniper woodland, less frequently pine; in nonbreeding season, also occurs in scrub oak and sagebrush. They normally nest in juniper or pine trees, sometimes oak. They form complex social organizations and forage on ground or in foliage for pinion seeds (Ehrlich *et al.* 1988; Karl 2000). Cotterel Mountain is located at the very northern edge of the recorded pinyon jay range. The pinyon jay was observed 28 times during all avian surveys (TBR 2004). All observations occurred during the fall months. Pinyon jay could potentially nest in juniper or taller shrubs on Cotterel Mountain.

The sage thrasher (BLM sensitive Type 5; G5; S5) is found in sagebrush plains, primarily in arid or semi-arid communities. During migration and in winter, they can also be found in scrub, brush, and thickets (rarely around towns). In the northern Great Basin, it breeds and forages in tall sagebrush/bunchgrass, juniper/sagebrush/bunchgrass, aspen/sagebrush/bunchgrass and mountain mahogany/shrub communities. An Idaho study found that big sagebrush used for nesting was taller than average, had greater foliage density, and most often faced easterly (Ehrlich *et al.* 1988; Karl 2000). The sage thrasher was observed 17 times during the avian surveys (TBR 2004). All observation occurred during the fall months. Sage thrashers could potentially nest in big sagebrush on Cotterel Mountain.

The northern goshawk (BLM sensitive Type 3; G5; S4) is generally found in deciduous and coniferous forests, along forest edges, and in open woodlands. In Idaho they usually summer and nests in coniferous and aspen forests and winter in riparian and agricultural areas. Northern Goshawks have been studied extensively in the South Hills of Twin Falls County, Sawtooth Forest. They migrate mostly along ridges and coastlines and forage in cultivated regions (Gough *et al.* 1998; Karl 2000). The northern goshawk was observed 12 times during the avian surveys (TBR 2004). All observations occurred during the spring and fall months. Northern goshawks could potentially nest on Cotterel Mountain, most likely in an aspen stand.

The ferruginous hawk (BLM sensitive Type 3; G4; S3) is a grassland, pinyon/juniper or desert shrub-steppe nester and prey primarily on jackrabbits and rodents. Of the large raptors, it is second only to the red-tail hawk in habitat versatility. They generally avoid agricultural and cultivated lands (McAnnis 1990).

The Raft River Valley-Curlew National Grassland was nominated and accepted as a Globally Important Birding Area by the American Bird Conservancy. It is estimated that one percent of the global ferruginous hawk productivity occurs in this area. In addition, ferruginous hawk nesting densities in the Jim Sage-Cotterel Mountain area are one of the highest in Idaho. The BFO, United States Geological Survey (USGS), and Boise State University have conducted nesting, banding or productivity surveys annually on ferruginous hawks in the Raft River Valley for 23 of the past 27 years (USDI, BLM Wildlife Database 2005). Approximately 305 nests occur within the BFO and of those about 20 percent produce young each year. Unlike northern Utah and some other states, since 1977, the Globally Important Birding Area ferruginous hawk population has remained stable. In recent years nesting productivity within the Jim Sage and Cotterel Mountains have been influenced by severe spring weather, human disturbance to nesting and other factors (TBR 2004).

The ferruginous hawk was observed ten times during the avian surveys (TBR 2004). All observations occurred during the spring and summer months. Ferruginous hawks have been observed most frequently during the late summer or early fall along the Cotterel Mountain eastern most ridgeline (USDI, BLM Wildlife Database 2005). In 2003, aerial nest surveys located three active nests of this species within two miles of the Proposed Project area (TBR 2004). All were in solitary junipers on relatively flat ground on the east slope of Cotterel Mountain. Only one of the three active nests was considered successful.

The loggerhead shrike (BLM sensitive Type 3, G5; S3) is generally found in open country with scattered trees and shrubs, in savannas, desert scrub and, occasionally, in open juniper woodlands. Often found on poles, wires or fence posts. It constructs bulky, cup-shaped nest in shrubs. A study in southeastern Idaho located nests in sagebrush, bitterbrush, and greasewood (Gough *et al.* 1998; Karl 2000). The loggerhead shrike was observed eight times during the avian surveys (Sharp 2004). All observations occurred during the spring months. Loggerhead shrike could potentially nest on Cotterel Mountain.

The peregrine falcon (BLM sensitive Type 3; G5; S1) is found in various open situations from tundra, moorland, steppes, and seacoasts (especially where there are suitable nesting cliffs), to mountains, open forested regions, and populated areas. In Idaho, former and current nest sites are located in both mountain and desert regions, and are generally associated with bodies of water (Gough *et al.* 1998; Karl 2000). The peregrine falcon was observed only twice during the avian surveys. All observation occurred during the fall months. No nests for this species were observed. Suitable peregrine falcon nesting habitat (high cliff faces) does occur within and adjacent to the Proposed Project area (Sharp 2004).

The Green-tailed towhee (BLM sensitive Type 5; G5; S5) is usually found in low shrubs, sometimes interspersed with trees, and avoids typical forest, other than open pinyon/juniper woodlands. It was observed 12 times during fixed-point count observations (Sharp 2004). Green-tailed towhee could potentially nest on Cotterel Mountain.

The plumbeus, or solitary, vireo (BLM sensitive Type 5) is found in northern hardwood-coniferous forests, mixed woodlands, humid montane forests, pine savannas, oak forests, aspen forests, foothill riparian forests, Gambel oak shrublands with scattered tall trees, and pinyon/juniper communities. During migration and in winter, it can also be found in a variety of forests, woodlands, scrub, and thicket habitats, but prefers forest edges and semi-open areas. It occasionally breeds in lowland riparian forests adjacent to foothills (Karl 2000; Robbins *et al.* 1966). The plumbeus vireo was observed only once during the avian surveys (Sharp 2004). The single observation of this species occurred during the summer months. The plumbeus vireo could potentially nest on Cotterel Mountain.

Sensitive Species Not Present During Surveys

The BLM has previously documented occurrences of the Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus*) in the vicinity of Cotterel Mountain. Similarly, the IDFG has identified the Long-billed curlew (*Numenius americanus*-Type 5), Northern pygmy-owl (*Glaucidium gnoma*-Type 5), and Western burrowing owl (*Speotyto cunicularia*-Type 5) in the Cotterel Mountain vicinity, but no observations of individuals or nest sites were recorded during fixed-point counts, fall migration surveys, or intransit observations for any of these species. These species have potentially suitable habitat adjacent to the Proposed Project area, but are not likely to occur in the Proposed Project footprint area due to unsuitable available habitats and rocky soils.

There is also potential habitat within the Proposed Project area for the: Flammulated owl (*Otus flammeolus*-Type 3); Willow flycatcher (*Empidonax trailii*-Type 3); Sage sparrow (*Amphispiza belli*-Type 3), Grasshopper sparrow (*Ammodramus savannarum*-Type 3); Red-naped sapsucker (*Sphyrapicus nuchalis*-Type 5); Virginia's warbler (*Vermovora virginae*-Type 5); and Calliope hummingbird (*Stellula calliope*) Type 5. These species have not previously been recorded within the Proposed Project area, and there were no observations of individuals or nest sites recorded during fixed-point counts, fall migration surveys, or intransit observations. Habitat is present for these species, although they have not been documented within the Proposed Project area.

There is no suitable habitat present within the Proposed Project area for the American white pelican (*Pelecanus erythrorhynchos*; BLM sensitive Type 2; G3; S1) or Black tern (*Chlodonias niger*; BLM sensitive Type 3; G4; S2). It is possible that these species may migrate or use the air space above the Proposed Project area.

Mammals

The gray wolf (Federally listed Endangered/Experimental Non-Essential Population) was historically found in most of North America. In the west, they now occur only in Alaska, Canada, Idaho, Wyoming, Montana and Washington State. This species was re-introduced to Idaho in 1997 and is estimated at a current population of 500 individuals within Idaho. Suitable habitat for these wide-ranging mammals includes (1) secluded denning and rendezvous sites to raise pups; (2) a sufficient, year-round prey base of ungulates and beaver; and (3) sufficient land area that is not subject to disturbance from humans. Wolves generally prefer habitat with no roads or very low road density. Gray wolf territories are large, encompassing up to 100 to 260 square miles.

In 1994, final rules in the Federal Register made a distinction between Idaho wolves that occur north of Interstate 90 (I-90) and wolves that occur south of I-90. Gray wolves occurring north of I-90 are listed as endangered species and receive full protection in accordance with provisions of the ESA. Gray wolves occurring south of I-90 are listed as part of an experimental population, with special regulations defining their protection and management.

No gray wolves (ESA, Experimental Population) were observed during any of the surveys conducted for the Proposed Project. However, Cotterel Mountain does provide suitable habitat for the gray wolf.

Foraging opportunities include mule deer and beaver along Marsh Creek to the west and Cassia Creek to the south.

The pygmy rabbit (BLM sensitive Type 2; G4; S3) is currently petitioned for listing by the USFWS. This species typically prefers areas of tall, dense sagebrush cover with high percent woody cover, growing in deep, loose sediment (Gabler 1997). The IDFG has a historic documented occurrence in the vicinity of Cotterel Mountain along SH-77. Surveys of this historic location found no evidence of occurrence or use by pygmy rabbits. Additional historically occupied sites are located north of Albion at lower elevations. Soils over most of the Proposed Project area are shallow and rocky and therefore unsuitable for pygmy rabbits. Therefore, no further analysis on pygmy rabbits will be conducted in this Draft EIS.

The cliff chipmunk (BLM sensitive species Type 4; G5; S1) is usually found in rocky pinyon/juniper woodlands and lower elevations of pine forests. Also found in higher-elevation Douglas-fir and Mexican pine. In Idaho, it generally occurs only in pinyon/juniper stands in south-central part of state and primarily inhabits cliffs and rocky areas where it consumes a wide variety of seeds, acorns, and fruits (Streubel 2000). The cliff chipmunk was observed numerous times during surveys conducted for the Proposed Project. This species has been observed and live-trapped in selected habitats from Rock Creek, Idaho east to Weston Canyon, Idaho (USDI, BLM Wildlife Database 2005).

3.3 HISTORIC AND CULTURAL RESOURCES

Historic and cultural resources are defined as nonrenewable remains of past human activity including buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance. Historic and cultural resources are protected under the National Historic Preservation Act of 1966 and the Archaeological Resources Protection Act of 1979. The archaeological record of the Proposed Project area has been partially examined through surveys ethnographic materials regarding Native American populations, and historic documents pertaining to the settlement and use of the area by Euro-Americans.

3.3.1 Natural and Cultural Setting

The Proposed Project area is located within the Snake River Plain of the Great Basin. Cotterel Mountain is bordered by the Raft River Valley to the east, the Albion Mountains to the west, and the Jim Sage Mountains to the south. The Cotterel and Jim Sage Mountains are formed from Miocene rhyolite lava flows and ash-flow tuffs and as a result contain abundant sources of obsidian (Link and Phoenix 1994). The Silent City of Rocks, found in the Albion Range south of Cotterel Mountain, is an Oligocene granite pluton, weathering of which results in rounded monoliths (Link and Phoenix 1994) and an area of unique geology that has been of cultural importance throughout prehistory and history (Heritage Research Associates 1996).

Low rainfall and extreme seasonal temperatures characterize the climate in the Snake River Plain. Native vegetation in the area reflects the relatively arid climate and is characterized by the *Artemisia tridentata/Agropyron spicatum* vegetation zone (Franklin and Dyrness 1988). The principal large mammal species of the sagebrush communities of the Snake River Plain include pronghorn antelope (*Antilocapra americana*) and mule deer (*Odocoileus hemionus*), though mountain sheep and bear are also present (Walker 1978). Smaller faunal resources found in desert areas include burrowing rodents, small birds, and occasional predators such as fox, coyote, and hawk. Along the edge of the desert in sagebrush areas kangaroo rats, chipmunks, woodrats, ground squirrels, jackrabbits, cottontails, and sagehens are typical faunal resources (Harper 1986). Many of these natural resources were of great economic importance to the Native American inhabitants of the Snake River Plain. The diverse plant and animal resources provided food, materials for shelter and clothing, and minerals for making tools and weapons.

Prehistory

A general cultural sequence has been proposed for the Snake and Salmon River areas, defined by three broad periods and sub-periods which are discussed in detail below (Butler 1986; Butler 1978) (Table 3.3-1). Results of archaeological excavations indicate the prehistory of the Upper Snake River region extends back to possibly 12,500 B.C. and document a unique region within the intermontane area that is connected to both the northwestern Plains and Great Basin culture areas (Butler 1986).

Table 3.3-1. Chronological Subdivisions of Upper Snake River Prehistory.

Cultural Period	Temporal Range	Key Sites
Key Sites:		
Early Big Game Hunting Period	12,500 – 5800 B.C.	Jaguar Cave; Simon Site
Clovis Subperiod	10,000 – 9000 B.C.	Owl Cave; Jaguar Cave
Folsom Subperiod	9000 – 8600 B.C.	Owl Cave; Veratic Cave
Plano Subperiod	8600 – 5800 B.C.	
Archaic Period	5800 B.C. – A.D. 500	Veratic Cave; Owl Cave; Weston Canyon Rockshelter
Late Period	A.D. 500 – 1805	Clover Creek; Givens Hot Springs; Wilson Butte Cave

The Early Big Game Hunting Period (12500 to 5800 B.C.) represents the earliest human occupation of the Upper Snake and Salmon River area and reflects the hunting of big-game animals including several species that reached extinction during the terminal phase of the Late Pleistocene or in the Early Holocene. The Early Big Game Hunting period is divided into three subperiods: Clovis, Folsom, and Plano, and several sites throughout Idaho are attributed to this period, though dated contexts are rare (Yohe and Woods 2002). Clovis culture in Idaho is not well known, but these groups are presumed to have been hunters that pursued now-extinct forms of elephant and camel, and to have lived in caves or temporary shelters. Folsom subperiod sites are better documented in the southern Idaho region, and have been documented both as isolate finds (Swanson 1961; Moe 1982; Titmus 1985) and from *in situ* deposits (Miller 1978). In general, Folsom people appear to have hunted herds of large animals, particularly bison, and lived in temporary shelters while following these herds. The

Plano subperiod is the best represented of the Early Big Game Hunting Period and is characterized by a more diverse artifact assemblage and increased occupation of rockshelters and caves (Plew 1986). Significant climatic and environmental changes coincided with the end of the Early Big Game Hunting Period and the gradual transition to the Archaic Period (5800 B.C. to A.D. 500), which is defined primarily by a change in tool technology. In the archaeological record, the transition between the two periods primarily involves the introduction of the atlatl and dart weapon system (Butler 1978; Butler 1986). The bulk of the tool kit remained unchanged, however, suggesting that the Archaic Period does not represent a major break with the preceding Early Big Game Hunting Period. Although the horse, camel, and elephant had become extinct by this time, modern forms of bison and mountain sheep had emerged and replaced the older forms in the region. In western Idaho, another feature of the Archaic Period is the Western Idaho Burial Complex, a distinctive burial pattern best known from the Braden site near Weiser, Idaho. Increased sedentism is suggested by early pit houses found at Givens Hot Springs on the Snake River, though large semi-permanent villages are not characteristic of this period (Butler 1986).

In the northern Great Basin, the Late Period (A.D. 500 to 1805) is manifested by at least two distinctive sets of cultural remains, the Northern Fremont and the Shoshonean. The Northern Fremont is a Formative Stage culture best known from Utah, while the Shoshonean culture is a continuation of the Archaic stage (Butler 1986). Though most evidence for Fremont culture is found near the Great Salt Lake, occasional deposits have been identified in the Snake River Plain. Sites that have been recognized as Fremont are often marked by Great Salt Lake gray ware pottery in association with semisubterranean housepits, manos and pestles, and small, corner-notched Rose Spring or Rosegate projectile points and are dated between A.D. 500 and 1350. Most Late Period structures in western Idaho, however, are small wikiup-sized structures, with the exception of a large semisubterranean house identified at Givens Hot Springs (Butler 1986). In general, it appears that the Fremont cultural complex was short-lived and is not clearly identified in Idaho. The pattern of hunting and gathering established throughout the Archaic Period persisted through the Late Prehistoric and into the ethnographic past, as manifested by the Shoshonean cultural complex found along the Snake River Plain.

Ethnography

At the time of historic contact, southern Idaho was the homeland of the Northern Shoshone and Bannock Indians. Sometime prior to Euro-American contact, the Northern Shoshone, who traditionally occupied southeastern Idaho, were joined by an intrusive group, the Bannock, who spoke a dialect of the Northern Paiute language. Similar social institutions developed between the two groups, so that they became known as the Shoshone-Bannock for purposes of general description (Murphy and Murphy 1986; Walker 1978).

The Northern Shoshone and Bannock occupied an area generally along the Snake River plains and the mountains to the north, though many neighboring Eastern Shoshone and Northern Paiute groups also used resources of this region (Murphy and Murphy 1986). Local groups within the Shoshone region were often identified by other Indian groups and by early settlers based on foods that were commonly eaten, such as "Agaideka" for "salmon eaters" living along the Snake River, "Tukudeka" for "sheepeaters" found in the Sawtooth mountains, and "Kammedeka" for "jackrabbit eaters" living along Bannock Creek and the Raft River. However, this nomenclature does not refer to political divisions and resulted in confusing designations given the high mobility and seasonal exploitation of resources by all of these groups (Murphy and Murphy 1986). Northern Shoshone populations focused near the Proposed Project area are more commonly referred to as the upper Snake River or Fort Hall Shoshone, a mounted group that lived in close association with the Bannock.

The Shoshone-Bannock were generally atypical of other Great Basin cultures because of their proximity to the Great Plains, their adoption of Great Plains cultural attributes, and their location along the upper Snake River, which allowed for a more productive resource base (Walker 1978). Wealth accumulated in horses, organization into larger communities, and composite band political groupings further differentiate the Shoshone-Bannock from traditional Great Basin cultures (Walker 1978).

The Shoshone-Bannock relied heavily upon small game, birds, insects, seeds, and nuts, much like the Northern Paiute (Walker 1978), though use of the horse and the nomadic lifestyle of some Northern Shoshone groups increased access to bison on the eastern Plain. This equestrian lifestyle provided mobility for hunting large game such as bison and digging camas roots in distant areas (Walker 1978). Ecological determinants prevented adoption of an equestrian lifestyle by many native inhabitants, particularly in western Idaho, and as a result there were both mounted and unmounted Shoshone groups that occupied the Snake River Plain.

The availability of anadromous fish, together with hunting and gathering activities, dictated seasonal population shifts and village locations. While buffalo hunting was a major attribute of Northern Shoshone economy, salmon fishing constituted a principal source of subsistence for the lower Snake River Shoshone living below Shoshone Falls and in western Idaho. The Shoshone recognized several runs by the agai, or salmon, the first of which would occur in March or April (Steward 1938). Large numbers of people would temporarily gather during these runs, and the abundance of fish allowed the resource to be dried and cached for winter (Steward 1938). In eastern Idaho, the upper Snake River Shoshone and Bannock would form into a large composite group each fall to hunt buffalo toward the east, returning together to the Snake River bottomlands to pasture their horses for the winter (Steward 1938) In the spring, smaller groups would travel along the Snake River to below Shoshone Falls for salmon fishing, and south toward Bear River for hunting and collecting berries (Steward 1938). Annual trips were also made to Camas Prairie, near modern Fairfield, Idaho, to dig camas bulbs, while seeds and berries were gathered in the hills between the Prairie and the Snake River (Daugherty and Welch 1985; Murphy and Murphy 1986). The Northern Shoshone of the Snake River also collected pine nuts from northwestern Utah (Murphy and Murphy 1986). Seasonal cycles dictated resource use; typically, large game hunting and fishing occurred in spring until mid-summer when large groups traveled to the hunt bison. Large intertribal gatherings would also take place in summer. Women collected berries roots, nuts, seeds, and insects throughout the year until winter, which was a time of limited hunting and gathering (Walker 1978). This hunting and gathering subsistence pattern of the Shoshone-Bannock, which was based on seasonal exploitation of resources and migration, appears to have persisted from prehistoric times throughout the ethnographic period.

History

First Euro-American contact is generally attributed to the Corps of Discovery, sent by President Thomas Jefferson in 1805 to discover an overland route to the Pacific Ocean. Less than a decade following the expedition, British and American fur trading posts were established throughout the Pacific Northwest. Early explorers of the Snake River Plain included Wilson Price Hunt and partner Donald McKenzie who traveled the Upper Snake River in 1811; much of their route would be explored by other expeditions and traders throughout the 1820s and would later become the Oregon Trail (Brown 1932). Various Snake River Plain expeditions were conducted between 1824-1831, headed successively by Alexander Ross, Peter Skene Ogden, and John Work of the Hudson's Bay Company, who provided primary sources on the Northern Shoshone and Bannock in their journals (Murphy and Murphy 1986).

Competition between British and American interests manifested itself in the fur trade, but by 1821, the Hudson's Bay Company dominated the fur enterprise throughout the Pacific Northwest (Galbraith 1957). One response of the Hudson's Bay Company to the increased American competition was to create a "fur desert" by annihilating as many beaver as possible in the Snake River country so as to establish a buffer between the Pacific Northwest and the Americans to the east. In spite of attempts by the Hudson's Bay Company to reduce the American presence, trappers Kelley, Wyeth, and Bonneville each led expeditions that crossed through Snake River country in the 1830s. Wyeth later returned to the area in 1834 and established Fort Hall near present-day Pocatello (Brown 1932). The fort functioned as a center of trade, where Indians could barter skins and buffalo meat for Euro-American goods such as knifes and tobacco (Franzen 1981). Fort Hall was located at a strategic position, an area still rich in beaver and at the intersection of old Indian trails from all directions that would later become emigrant routes (Brown 1932). In response to construction of Fort Hall, the Hudson's Bay Company constructed Fort Boise; competition later forced the sale of Fort Hall to the Hudson's Bay Company in 1837 (Ghent 1929). A rapid decimation of the buffalo and beaver populations led the trappers to gradually leave the Snake River country once the area no longer produced significant quantities of fur (Beal and Wells 1959[1]); by the early 1840s, the fur-trapping era drew to a close and the stage was set for the great overland migration along the Oregon Trail (Dicken and Dicken 1979). Fort Hall became an important stop along the travelers' route, as it was located approximately two-thirds of the way from Independence, Missouri to Oregon City. Hudson's Bay Company men aided the emigrants passing along the Oregon Trail and raised cattle for trade with Indians and the emigrants (Beal and Wells 1959).

The Proposed Project area is located adjacent to the Raft River Valley, which lies immediately east of Cotterel Mountain and is situated near a historically important crossroads of the Oregon Trail. The "Parting of the Ways" or "Separation of the Trails," located on the west bank of the Raft River, was the junction where travelers had to decide whether to head south toward California or proceed west along the Snake River toward the Oregon Country (Figure 3.3-1). The California Trail route, originally traveled in 1841 by the Bidwell party, became better traveled by the mid-1840s, and use of the name "California Trail" became commonplace after 1843. The year 1849 was a turning point, as for the first time more emigrants traveled to California than to Oregon. The gold rush to California in 1849 also resulted in the opening of Hudspeth's Cutoff from the Oregon Trail (Hope 1990). The California Trail and Hudspeth's Cutoff junctioned at Cassia Creek just north of the City of Rocks, which became an important landmark for travelers along the trail (Heritage Research Associates 1996). The effects of the Oregon Trail usage on Native Americans in the region was considerable in terms of use of natural resources, primarily forage and firewood fuel, by the emigrants. An estimated 240,000 emigrants with 1.5 million animals traveled through the territory of the Fort Hall Indians during the great migration (Madsen 1980). Subsequently, hostilities between Native Americans and new emigrants increased. A number of massacres and ambushes, led by both Native Americans and military cavalry, occurred near the Raft River Valley throughout the 1800s (Sudweeks 1941).

The Idaho area remained largely unsettled by Euro-Americans, however, until the discovery of gold. By the early 1860s, a number of gold discoveries had occurred in the areas of the Salmon and Boise rivers, sparking a mining boom that lasted for several decades. Mineral mining in southeastern Idaho did not take hold until the 1870s, when mining areas were developed at Cariboo Mountain, at Bonanza Bar at the mouth of the Raft River, and at Black Pine (Franzen 1981).

Concomitant to the 1860s gold rush was the establishment of farming and ranching, including along the Raft River Valley, as demand by miners for cattle increased. The earliest settlements in southeastern Idaho were established by Mormon pioneers traveling north from Salt Lake City and were based on agriculture and ranching rather than mining (Franzen 1981). By the early 1860s, the mail and stage lines were established between Brigham City, Utah, and Boise, and preceded Mormon pioneer settlement of the Raft River Valley (Franzen 1981). The "Boise-Kelton Road" was the primary transportation corridor connecting the new settlements with Utah. Later known as the "Albion to Conner's Corner Road", this transportation corridor went through the community of Sweetzer and south of Cotterel Mountain along current SH-77.

The increased Euro-American settlement and subsequent disruption of traditional Native American lifeways resulted in periodic skirmishes in southern Idaho that culminated in the Bannock War of 1878 and the Sheepeater War of 1878-1879 (Murphy and Murphy 1986). The process of placing the Native Americans onto reservations in this region began in the 1860s and the Fort Hall Reservation was set aside in 1867. Encroachment by white settlers resulted in a series of cessions throughout the nineteenth and early twentieth centuries that reduced the original size of the reservation considerably (Murphy and Murphy 1986; Ruby and Brown 1992).

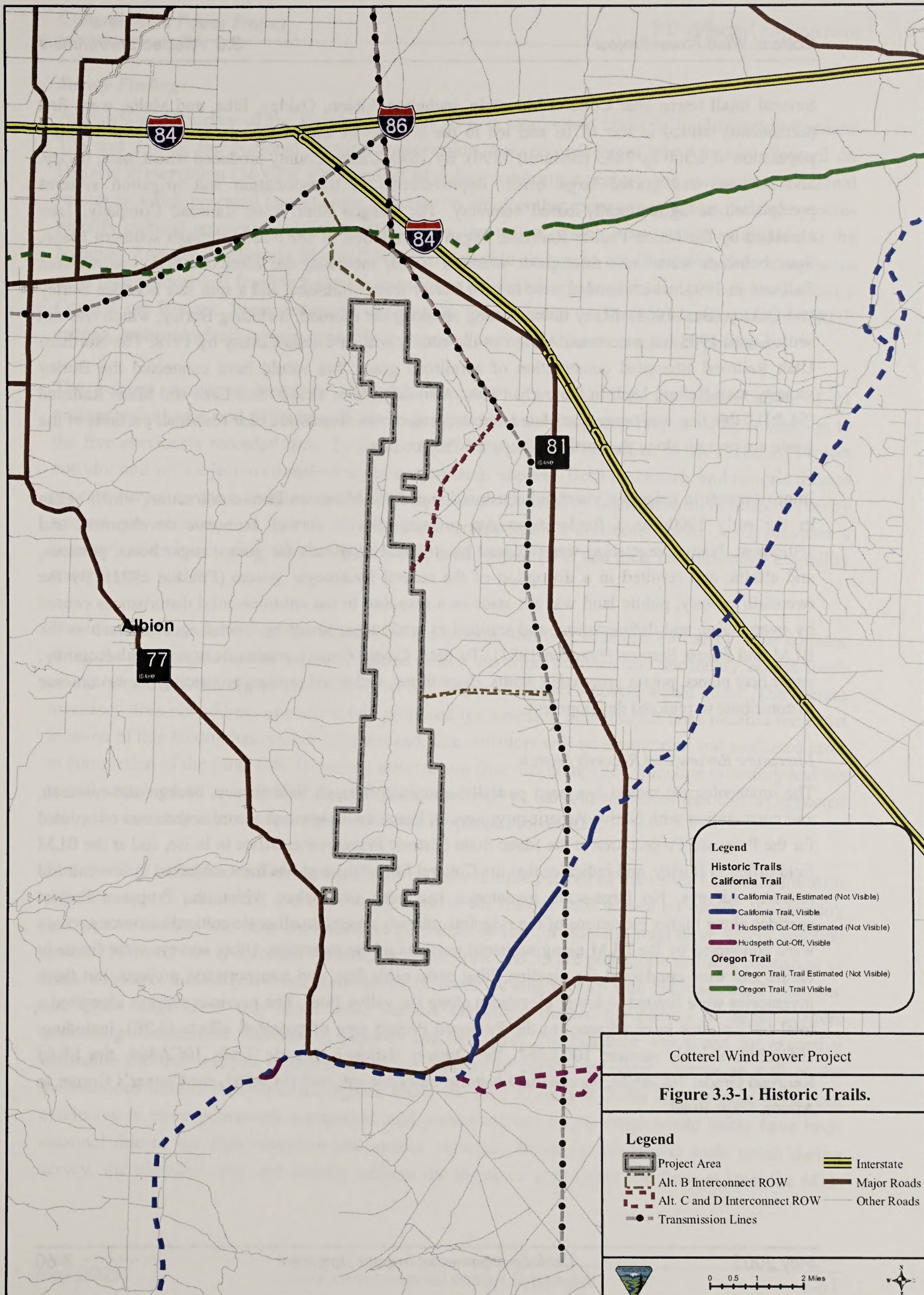


Figure 3.3-1. Historic Trails.

Several small towns near Cotterel Mountain, including Albion, Oakley, Elba, and Malta, were first permanently settled in the 1870s and led to the creation of Cassia County in 1879, which had a population of 2,500 by 1885 (Bancroft 1890). By 1890, Cassia County produced wheat, oats, barley, and potatoes and grazed large herds. Improvements in transportation and irrigation systems precipitated an agriculturally based economy. The Oregon Short Line Railroad Company, later absorbed by the Union Pacific Railroad, began construction in 1881-1884 through southern Idaho. Spur branches were built throughout southern Idaho, including the Minidoka and Southwestern Railroad in 1904, which headed west toward Burley from Minidoka, and a spur line between Burley and Oakley (Beal 1962). Many towns sprung up along the railroad, including Burley, which was not settled until 1905 but succeeded Albion as the county seat of Cassia County by 1918. The Northern Utah Railroad attempted construction of a railroad grade that would have connected the Burley vicinity with Kelton, Utah in the early 1900s. Also referred to as the "Salt Lake and Idaho Railroad (SL&I)," this line was never completed and the project was abandoned near Idahome; portions of the grade are present along the northern Proposed Project area.

Improvements in irrigation via canal construction and the Minidoka Dam construction, which began in the early 1900s as a Reclamation Act project, allowed further economic development and settlement. Native vegetation was replaced by irrigated croplands for grains, sugar beets, potatoes, and alfalfa, and resulted in a disruption of the natural hydrologic system (Franzen 1981). By the twentieth century, public land was set aside as a response to the environmental disturbances caused by overgrazing and deforestation, and resulted in land management by federal agencies such as the BLM and Forest Service (Franzen 1981). To date, Cassia County retains its agricultural economy; sugar beet plants, potato processing plants, dairy farms, and wood product processing plants continue to contribute to regional development.

Literature Review and Records Search

The archaeological record has been partially examined through field survey, background research, and consultation with Native American groups. A literature review and record search was completed for the Proposed Project area at the Idaho State Historic Preservation Office in Boise, and at the BLM field office in Burley, and indicates that the Cotterel Mountain area has been subjected to few cultural resource surveys. No large-scale inventories had been undertaken within the Proposed Project corridor along higher elevations of the ridgeline, though several small-scale cultural resource surveys were conducted by the BLM along scattered portions of the mountain. Other surveys were linear in nature and were conducted for pipeline, fiber optic cable line, and transportation projects, but these inventories were limited to lower elevations along the valley floor. The previous surveys identified a total of five sites in or adjacent to the Proposed Project area of potential effects (APE), including: 10CA298, a lithic scatter; 10CA862, the Oregon National Historic Trail; 10CA864, the SL&I Railroad Grade; 10CA629, an unnamed historic trail remnant; and 10CA961, the Conner's Corner to Albion Stage Road.

Survey Findings

Archaeological survey of the Proposed Project APE is required to assist in implementing Sections 106 and 110 of the National Historic Preservation Act, procedures of the Advisory Council on Historic Preservation (36 CFR 800), and BLM policy requiring inventory and evaluation of cultural resources within potential impact areas. Section 106 requires that, prior to any action, federal agencies identify cultural resources potentially affected by the action, which may qualify as eligible to the National Register of Historic Places (NRHP). If eligible resources are identified, federal agencies must take prudent and feasible measures to avoid or reduce adverse impacts and provide the Advisory Council on Historic Preservation an opportunity to comment on these measures. Under NRHP criteria, archaeological sites are generally recognized as eligible based on research potential.

The cultural resources inventory and evaluation activities resulted in the identification of 21 archaeological sites and 61 isolated finds in or adjacent to the Proposed Project APE, in addition to the five previously recorded sites. To date, a total of 26 sites are identified in the Proposed Project corridor and are subject to consideration of construction impacts. Both prehistoric and historic themes are represented by the cultural materials. Twenty sites are defined by prehistoric lithic scatters, two by historic can scatters, and four as linear historic transportation corridors. Table 3.3-2 provides a summary of archaeological sites within the Proposed Project APE and their recommended eligibility status for the NRHP.

The inventory focused on an approximately 14-mile long, 400-foot wide (ca. 680 acre) linear corridor along the highest elevations of the ridgeline where the wind turbines and secondary access roads would be constructed, where the majority of the Proposed Project impacts would occur. The current inventory does not address one of the two proposed transmission interconnect lines because the exact location of this facility has not been determined. The corridors will be inventoried and evaluated prior to completion of the Final EIS. However, information from the completed ridgeline inventory and the record search provides estimates for the density and type of cultural resources that can be expected along the currently non-surveyed portions of the Proposed Project APE.

The sites and isolates identified during survey reflect multiple periods of use of the Cotterel Mountain ridge throughout prehistory, and more limited use in the historic past. Based on survey, the quantity and type of isolates and sites are indicative of transitory use for hunting, migration, and/or spiritual quests. Of the 61 newly recorded isolates, six are historic and 55 are prehistoric artifacts consisting of lithic debitage, bifacially-worked stone tools, or cores. A single cairn was encountered. Prehistoric site types range from very small lithic scatters exhibiting limited complexity to larger scatters containing considerable variation in material and tool types. No evidence was found for extensive habitation but this was not expected given the scarcity of permanent water sources as well as the mountainous terrain. Resource-rich regions along the Raft River and Snake River would have been conducive to more permanent occupation, and prehistoric use of the ridge would likely have been seasonal due to the high elevation and annual snowfall. Based on diagnostic tools noted during survey, the recorded sites and isolates address the theme of prehistoric use from at least the Mid-

Archaic through the Late Prehistoric periods; while it is likely that the area has a considerably older human history, no older sites were identified.

Table 3.3-2. NHRP Eligibility For Sites Within the Proposed Project Area.

Site Number	Site Type	NRHP Eligibility Recommendation
10CA298	Lithic Scatter	Potentially Eligible
10CA629	Historic Trail	Ineligible
10CA862	Oregon Trail	Listed
10CA864	SL&I Railroad Grade	Potentially Eligible
10CA961	Albion Stage Road	Potentially Eligible
CM-S-1	Lithic Scatter	Ineligible
CM-S-2	Lithic Scatter	Potentially Eligible
CM-S-3	Lithic Scatter	Potentially Eligible
CM-S-4	Lithic Scatter	Potentially Eligible
CM-S-5	Lithic Scatter	Ineligible
CM-S-6/8	Lithic Scatter	Potentially Eligible
CM-S-7	Lithic Scatter	Ineligible
CM-S-9	Lithic Scatter	Ineligible
CM-S-10	Lithic Scatter	Potentially Eligible
CM-S-11	Lithic Scatter	Ineligible
CM-S-12	Lithic Scatter	Ineligible
CM-S-13	Lithic Scatter	Ineligible
CM-S-14	Lithic Scatter	Ineligible
CM-S-15	Lithic Scatter	Ineligible
CM-S-16	Tin Can Scatter	Ineligible
CM-S-17	Lithic Scatter	Ineligible
CM-S-18	Lithic Scatter	Ineligible
CM-S-19	Tin Can Scatter	Ineligible
CM-S-20	Lithic Scatter	Ineligible
CM-S-21	Lithic Scatter	Potentially Eligible
CM-S-22	Lithic Scatter	Ineligible

Evidence for historic use of the area is more limited but includes six archaeological resources and six isolated finds. Historic sites include transportation corridors located along the valley floor: 10CA864, the "SL&I Railroad Grade," and site 10CA862, the Oregon National Historic Trail, both located along the valley floor at the northern end of the Proposed Project area where the extant gravel road accesses SH-81; site 10CA629, an historic trail segment located on the valley floor within approximately 0.25 miles of the proposed northern transmission line connection; and site 10CA961, the "Conners Corner to Albion Stage Road", located where the extant gravel road accesses the southern portion of Cotterel Mountain from SH-77. Historic sites CM-S-16 and CM-S-19 are both small historic tin can scatters that were identified during survey of higher elevations along the ridgeline. The isolates recorded include assorted tin cans, an enamelware pail, and a horseshoe. The recorded historic sites and isolates likely represent the themes of transitory ranching or hunting activity dating from the late-nineteenth to mid-twentieth century.

Based on apparent integrity of the recorded resources and identified research potential, NRHP eligibility was assessed for sites within the Proposed Project area. Of the previously and newly recorded sites, only one, 10CA862, the Oregon National Historic Trail, is listed on the NRHP. Four prehistoric sites defined by lithic scatters, CM-S-2, CM-S-3, CM-S-6/8, and CM-S-21, and the historic Conner's Corner to Albion Stage Road (10CA961), are recommended as eligible for the NRHP. Thirteen prehistoric sites (CM-S-1, -5, -7, -9, -11, -12, -13, -14, -15, -17, -18, –20, and –22) and three historic sites (10CA629, CM-S-16, and CM-S-19) are recommended as ineligible for nomination to the NRHP based on lack of integrity and/or information potential. Three prehistoric sites (10CA298, CM-S-4 and CM-S-10) and one historic site, the SL&I Railroad Grade (10CA961), remain unevaluated due to insufficient data.

3.4 AMERICAN INDIAN CONCERNS

3.4.1 Treaty Rights

American Indian concerns are identified through consultation as directed by the Fort Bridger Treaty of 1868, the Ruby Valley Treaty, Executive Order 13007 (Sacred Sites Act) and Executive Order 13175 (Government-to-Government Consultation).

Shoshone-Bannock treaty rights are those rights reserved or retained by the Shoshone-Bannock Tribes as stated in the 1868 Ft. Bridger Treaty. Specifically, "they shall have the right to hunt on the unoccupied lands of the U.S. so long as game may be found thereon, and so long as peace subsists among the whites and Indians on the borders of the hunting districts." Later interpretations of these rights include any right not specifically extinguished by the treaty, such as gathering, fishing, collecting plants, and collecting materials important to both the secular and sacred well being of tribal members.

Shoshone-Paiute: Although the Duck Valley Reservation of the Shoshone-Paiute was established by Executive Order in 1877, the Shoshone-Paiute understand that they retain the aboriginal rights as a consequence of the Ruby Valley Treaty and the failure of the U. S. Government to ratify either the Boise Treaty, Bruneau Treaty, or the Long Tom Treaty. The Ruby Valley Treaty neither ceded land nor extinguished rights held by the Shoshone-Paiute.

During scoping consultation, the Shoshone-Bannock and Shoshone-Paiute expressed concern about how the Proposed Project would affect their rights on Cotterel Mountain. Both tribes stated that Cotterel Mountain is still important to them and had some specific concerns about access, wildlife, and the preservation of their rights. Specifically, the Shoshone-Bannock mentioned traditional rabbit hunting grounds to the east of Cotterel Mountain in the Raft River Valley. Specific resources in the Proposed Project area were not addressed.

Government-to-Government consultation will continue and conclude when the terms of Executive Order 13175 are fulfilled.

3.4.2 Trust Responsibility

The BLM has a trust responsibility to the Tribes to acknowledge and preserve the Tribes treaty rights for present and future generations and should address concerns identified by the Tribes regarding the environment, natural and other resource identified as treaty rights on land which BLM manages.

3.4.3 Traditional Cultural Places and Use Areas

Information concerning Traditional Cultural Places and Use Areas is considered highly sensitive by Tribal members. Locations and uses are carefully guarded by Tribal members and would be similarly treated within the confines of government to government consultation.

The BLM has initiated Native American consultation. The BLM and tribal representatives from the Fort Hall Reservation participated in a visit to the Proposed Project area. Consulted parties expressed some knowledge of past use of the Cotterel Mountain area, with the exception of general use of the ridge as a transportation corridor. No specific concerns about culturally sensitive areas in the Proposed Project area were presented during initial consultation. Consultation will be on going during the course of the Proposed Project.

3.4.4 Sacred Sites

No specific sacred sites were identified during initial consultations. It was noted that ridges and mountaintops had a special interest to the Tribes to identify special places, significant events, and group identities. Any such sites would require the application of Executive Order 13007.

3.5 SOCIOECONOMICS

This report describes the existing social and economic conditions in the Proposed Project area, and analyzes the socioeconomic impacts that would be attributable to construction and operation of the Proposed Project under each alternative. Socioeconomic issues analyzed here include: labor force, employment, and income; population and housing, including property values; taxes; social values; and environmental justice issues. The study area for this analysis is Cassia County and Minidoka County combined. The Proposed Project would be located entirely within Cassia County. Local purchases and tax benefits attributable to the construction contract, and the permanent increase in property values attributable to the Proposed Project would result in economic benefits to both Cassia County and Minidoka County.

3.5.1 Existing Conditions

Sources of information for the existing conditions include the Idaho Department of Labor (IDOL); local cities, counties, school districts, public services agencies, real estate professionals, newspapers, and economic development associations; the U.S. Census Bureau; private research findings (for travel impact data and property value information); the Idaho Department of Commerce; the Idaho State Tax Commission; the Census of Agriculture; and the U.S. Department of Labor. Estimated and projected economic data were collected for past, current and future conditions. For all economic variables, data are presented for the most current year for which that type of data was available. Existing conditions are the same for all build alternatives.

3.5.2 Regional Economy and Community

Background

The Proposed Project would be located in Cassia County, beginning south of where I-84 meets Interstate 86 (I-86) and extending south (Figure 1.0-1). Cassia County is a rural county surrounded by Twin Falls, Jerome, Minidoka, Blaine, Power and Oneida counties in Idaho; Elko County in Nevada; and Box Elder County in Utah. Cassia County is most closely linked economically with Minidoka County to the north. The two-county area is called the Mini-Cassia area.

The Mini-Cassia economy was built around agricultural industries, such as livestock (beef and dairy cattle, sheep) and crop production (sugar beets, grains, potatoes, alfalfa, and beans) (Cassia County History 2003). In 2002, Cassia County ranked first among all counties in the state for value of agricultural products sold, second for value of livestock and poultry, and third for value of crops. The same year, Minidoka County ranked second for value of crops, eighth for value of agricultural products sold, and twelfth for value of livestock and poultry (Minidoka County Information 2004). For value of sales in 2002, Cassia County dropped to second (from first rank in 1997) for cattle and calves. In 2002 it ranked third in the grains, oilseeds, dry beans, and dry peas category; and the other crops and hay category. In 2002, Minidoka County ranked first for sheep and goats, and second for the category of vegetables, melons, potatoes, and sweet potatoes (NASS 2003, 1997).

Today, the Mini-Cassia area economy continues to be centered on agricultural industries such as food processing. Both counties have higher average unemployment rates compared to other southern Idaho counties, in part due to seasonal layoffs typical of the food processing industry. The area has experienced business closures and layoffs in recent years, including: the closure of the original J.R. Simplot potato plant in Heyburn, which resulted in over 600 lost jobs in 2004 (Idaho Statesman 2003); the closure of a Kmart in Burley; and layoffs at other potato plants (Anderson 2003; Idaho Statesman 2003). The retail job losses at Kmart may be countered by an expansion of 200 jobs at the Burley Wal-Mart by mid-2004 (Anderson 2003). On Cotterel Mountain, there are two grazing allotments with 12 permittees within the Proposed Project area (Idaho Watersheds Project 1999).

Labor Force and Employment

In 2003, the Mini-Cassia area labor force of 19,644 workers was 2.8 percent of the State of Idaho labor force. During the period 1980 to 2003, employment in the Mini-Cassia area generally grew slower than total Idaho employment, except for Cassia County employment between 2000 and 2003, which grew at a rate similar to the state rate (Table 3.5-1).

Employment in Minidoka County grew slower than Cassia County's employment from 1980 to 2003. The relatively slower rates are typical of the rural south-central Idaho counties (IDOL 2003c).

Between 1995 and 2003, the annual average unemployment rate for Cassia County was highest in 1995, 1997 and 1998 at 7.1 percent, while the same measure for Minidoka County was highest in 1995 and 1997 at 8.5 percent (IDOL 2003c).

In 2003, unemployment was 6.6 percent in Cassia County and 8.3 percent in Minidoka County. The Mini-Cassia area had more unemployed residents compared to the State of Idaho as a whole, which had 5.4 percent unemployed residents in 2003. The J.R. Simplot plant closure is reflected in the July 2004 unemployment rate in Minidoka County of 9.3 percent (Rogers 2004). The U.S. government has designated both Cassia County and Minidoka counties as Federal Labor Surplus Areas[1] (Rogers 2004).

Table 3.5-1. Labor Force and Employment for Cassia County, Minidoka County and the State of Idaho.

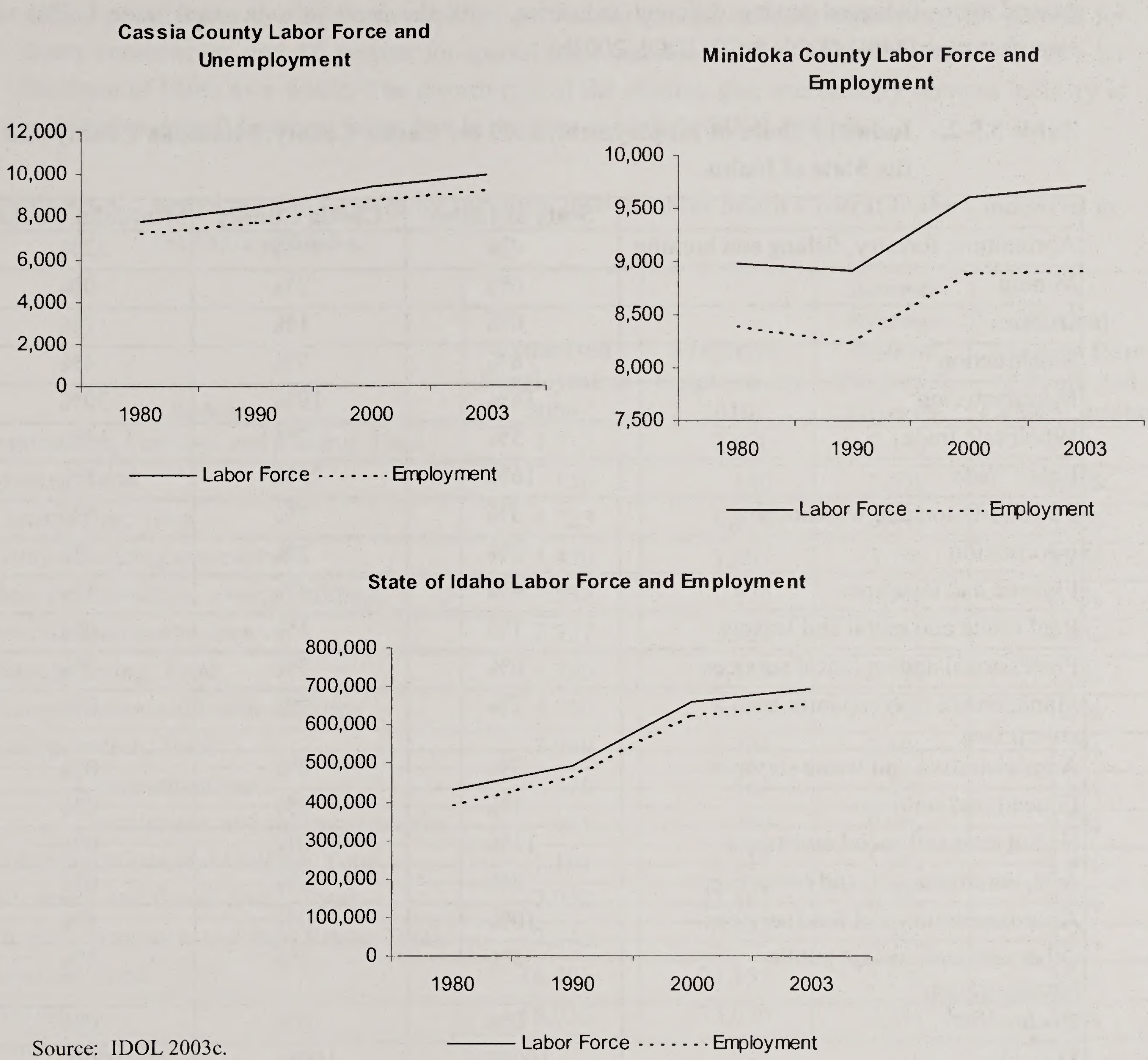
	Labor Force	Employment	Unemployment Rate
Cassia County 1980	7,744	7,267	6.2
Cassia County 1990	8,423	7,775	7.7
Cassia County 2000	9,430	8,840	6.3
Cassia County 2003	9,935	9,276	6.6
AARG, 1980-1990	0.8%	0.7%	-
AARG, 1990-2000	1.1%	1.3%	-
AARG, 2000-2003	1.8%	1.6%	-
Minidoka County 1980	8,981	8,401	6.5
Minidoka County 1990	8,914	8,240	7.5
Minidoka County 2000	9,596	8,899	7.3
Minidoka County 2003	9,709	8,907	8.3
AARG, 1980-1990	-0.1%	-0.2%	-
AARG, 1990-2000	0.7%	0.8%	-
AARG, 2000-2003	0.4%	0.0%	-
State of Idaho 1980	429,010	394,993	7.9
State of Idaho 1990	492,613	463,472	5.9
State of Idaho 2000	656,778	624,806	4.9
State of Idaho 2003	692,552	655,104	5.4
AARG, 1980-1990	1.4%	1.6%	-
AARG, 1990-2000	2.9%	3.0%	-
AARG, 2000-2003	1.8%	1.6%	-

Notes: AARG = Average Annual Rate of Growth.
Source: IDOL 2003c.

Employment level trends closely follow labor force trends in both Cassia County and in the State of Idaho (IDOL 2003c). However, for Minidoka County, the labor force trend shows an increase in recent years when compared to the employment level trend (Figure 3.5-1). This indicates an increase in the unemployment rate in recent years for Minidoka County.

[1] A county designated a federal Labor Surplus Area has an average unemployment rate of at least 20 percent above the average unemployment rate for all states during the previous two calendar years (USDOL 2003).

Figure 3.5-1. Labor Force and Employment Trends for Cassia County, Minidoka County, and the State of Idaho.



Source: IDOL 2003c.

Industry

Important industries in the Mini-Cassia area include food processing (Ore-Ida and McCain, both potato processors), manufacturing (Boise Cascade Corporation, a manufacturer of cardboard boxes), machinery manufacturing, milk processors, feed mills, commercial livestock feed lots, and gravel and cement processors (Cassia County History 2003).

Most jobs in Cassia County are in retail trade (25%); manufacturing (19%); and agriculture, forestry, fishing and hunting (19%).[2] Most Minidoka County jobs are in manufacturing (30%) and agriculture, forestry, fishing and hunting (22%). In comparison, jobs in the State of Idaho as a whole are in general more balanced among different industries, with the most jobs in retail trade (16%) and manufacturing (14%) (Table 3.5-2; IDOL 2003b).

Table 3.5-2. Industry Share of Employment, 2002 for Cassia County, Minidoka County and the State of Idaho.

	State of Idaho	Cassia County	Minidoka County
Agriculture, forestry, fishing and hunting	4%	19%	22%
Mining	0%	2%	0%
Utilities	0%	1%	1%
Construction	8%	7%	4%
Manufacturing	14%	19%	30%
Wholesale trade	5%	7%	13%
Retail trade	16%	25%	8%
Transportation and warehousing	3%	7%	5%
Information	2%	2%	3%
Finance and insurance	4%	4%	1%
Real estate and rental and leasing	1%	1%	0%
Professional and technical services	6%	3%	2%
Management of companies and enterprises	2%	0%	0%
Administrative and waste services	7%	0%	0%
Educational services	1%	0%	0%
Health care and social assistance	11%	0%	0%
Arts, entertainment, and recreation	2%	0%	0%
Accommodation and food services	10%	0%	8%
Other services, except public administration	3%	3%	3%
Unclassified	0%	0%	0%
TOTAL	100%	100%	100%

Notes:
ND = Data not disclosed.
N/A = Data not available.
Source: IDOL 2003b.

[2] Employment in Table 3.5-2 represents jobs within Cassia County or Minidoka County as opposed to residents of Cassia County or Minidoka County who are employed. Table 3.5-1 represents Cassia County and Minidoka County residents who are employed. The difference between these estimates is the number of residents who commute in or out of the respective counties for work.

Table 3.5-3 shows the projected growth by industry for the period 2000 to 2010 in South Central Idaho. The highest rates of projected growth are expected to be in: agriculture, forestry and fishing (7.3%); construction (3.4%); and services (3.1%). Within the construction category, the expected annual growth rates by subcategory are: 3.2 percent for general building contractors, 0.7 percent for heavy construction, and 4.0 percent for special trade contractors. These rates are similar to rates for the State of Idaho as a whole. The growth rate of the electric, gas, and sanitary services industry is expected to grow 0.1 percent faster than in the state as a whole (IDOL 2003d).

Table 3.5-3. Projected Job Growth by Industry 2000-2010 for South Central Idaho Compared to the State of Idaho.

Industry	Estimated Employment 2000	Projected Employment 2010	Annual Average Rate of Projected Growth	Annual Average Rate of Projected Growth, Idaho
Agriculture, Forestry, and Fishing, Total	1,712	2,970	7.3%	3.1%
Mining, Total	156	180	1.5%	-2.5%
Construction, Total	4,723	6,315	3.4%	3.3%
General building contractors	1,450	1,907	3.2%	3.2%
Heavy construction, except building	536	576	0.7%	0.8%
Special trade contractors	2,737	3,832	4.0%	4.0%
Manufacturing, Total	8,595	9,163	0.7%	1.7%
Transportation and Public Utilities	4,250	5,059	1.9%	1.6%
Transportation, Total	3,089	3,744	2.1%	1.7%
Communications	476	565	1.9%	1.8%
Electric, gas, and sanitary services	685	750	0.9%	0.8%
Communications and Utilities, Total	1,161	1,315	1.3%	1.4%
Wholesale and Retail Trade, Total	17,952	22,462	2.5%	2.5%
Finance, Insurance, and Real Estate, Total	2,242	2,775	2.4%	2.6%
Services, Total	18,405	24,155	3.1%	2.9%
TOTAL	58,035	73,079	2.6%	2.6%

Source: IDOL 2003d.

Tourism and Recreation

Most jobs in the tourism and recreation industry are in retail trade, services, or local government, three industries with notable representation in the Mini-Cassia Area. Tourism and recreation resources in the county include public land for hunting, fishing, hiking, climbing, camping, horseback riding, bicycling, and scenic viewing. The Snake River is located north of the Proposed Project area, dividing Cassia County and Minidoka County, and provides boating, boat racing, water skiing, and fishing opportunities. Pomerelle Mountain Resort on Mt. Harrison, west of the Proposed Project area, provides snow skiing and snowmobiling areas. It is located to the southwest of the Proposed Project area and serves all of southeast Idaho. The City of Rocks National Reserve, Cache Peak, and

Independence Peak are hiking and climbing areas located southwest of the Proposed Project area. A section of the Sawtooth National Forest including Mt. Harrison and Lake Cleveland is located in Cassia County (Cassia County History 2003).

The City of Burley has a golf course, and parks with softball, swimming, tennis, soccer and boating facilities. Private facilities in Burley also include a golf course, bowling, health club, and racquetball facilities. Other towns in Cassia County also have parks and softball facilities. Other tourist attractions in Burley include the Cassia County Museum and the Cassia County Fair and Rodeo.

Recreational activities that take place at Cotterel Mountain and near the Proposed Project area include dispersed hiking, hunting, wildlife viewing, OHV riding, and hang-gliding. Public access to Cotterel Mountain is limited, especially on upper roads. No designated or maintained hiking trails exist in the Proposed Project area. Picnic areas accessible in dry weather include a small picnic area west of the radio tower at Coe Creek, and McClendon Springs, which is an improved picnic site with wildlife and plant viewing opportunities. McClendon Springs is located on the east side of Cotterel Mountain near Malta, and is maintained by BLM. This area has riparian habitat for migratory songbirds because livestock are fenced out of this location, which increases opportunities for wildlife watching (Idaho Watersheds Project 1999).

In 1997, travel and tourism spending in south central Idaho[3] was approximately $135 million and was associated with 2,122 jobs (Dean Runyan Associates 2003). The Mini-Cassia portion of this economic impact was $36.4 million in spending and 550 jobs. These travel and tourism jobs represented three percent of the total jobs in the Mini-Cassia area that year.

<u>Income</u>

Median household income in Cassia County was $33,322 in 1999, representing 88 percent of the State of Idaho median household income, and 94 percent of the median household income of South Central Idaho as a whole. The median household income of Minidoka County of $32,021 in 1999 represented 85 percent of the State of Idaho and 90 percent of South Central Idaho median household income for the same year (Census 2000d). Per capita personal income in Cassia County was $22,121 and $17,823 in Minidoka County in 2001 (IDOL 2003a), compared to $24,506 in the State of Idaho as a whole. The relatively lower income levels can be typical of a rural area that has not had recent strong economic growth.

Table 3.5-4 shows annual covered wages and percentage of total wages by industry in 2000 for Cassia County, Minidoka County, and the State of Idaho. The industries with percentages of total wages over 15 percent in Cassia County were manufacturing (23%), retail trade (20%) and agriculture, forestry, fishing and hunting (16%). In Minidoka County, the manufacturing industry represents 42 percent of wages, and agriculture, forestry, fishing and hunting represents 17 percent of wages. Manufacturing

[3] Dean Runyan Associates (Dean Runyan Associates 2003) included Cassia, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls counties in "south central Idaho" for the purpose of their estimates.

wages are relatively higher than retail trade wages as shown by comparing the industry share to wages by industry.

Table 3.5-4. Annual Covered Wages and Percentage of Total Wages, 2002 ($1,000s) for Cassia County, Minidoka County and the State of Idaho.

	State of Idaho	% of Total	Cassia County	% of Total	Minidoka County	% of Total
Agriculture, forestry, fishing and hunting	438,450	3%	21,317	16%	23,384	17%
Mining	70,349	1%	3,195	2%	---	0%
Utilities	131,452	1%	1,701	1%	2,186	2%
Construction	1,132,450	9%	12,621	9%	5,828	4%
Manufacturing	2,478,592	19%	30,144	23%	57,787	42%
Wholesale trade	861,499	7%	9,186	7%	17,856	13%
Retail trade	1,488,232	12%	26,287	20%	9,040	7%
Transportation and warehousing	421,525	3%	11,347	8%	5,919	4%
Information	305,019	2%	3,604	3%	3,416	2%
Finance and insurance	653,383	5%	6,695	5%	1,783	1%
Real Estate and rental and leasing	139,113	1%	620	0%	431	0%
Professional and technical services	1,210,010	9%	3,585	3%	2,039	1%
Management of companies and enterprises	480,620	4%	(ND)	0%	(ND)	0%
Administrative and waste services	590,804	5%	(ND)	0%	(ND)	0%
Educational services	106,860	1%	(ND)	0%	(ND)	0%
Health care and social assistance	1,515,284	12%	(ND)	0%	(ND)	0%
Arts, entertainment, and recreation	135,843	1%	(ND)	0%	207	0%
Accommodation and food services	474,066	4%	(ND)	0%	4,449	3%
Other services, except public administration	287,383	2%	3,228	2%	2,300	2%
Unclassified	8,816	0%	N/A	0%	25	0%
Total	12,929,750	100%	133,530	100%	136,650	100%

ND = Not disclosed by BLS.
N/A = Data not available.
Source: IDOL 2003b.

3.5.3 Population, Housing and Property Values

Population

Table 3.5-5 and Figure 3.5-2 show the population trends in Cassia County, Minidoka County and the State of Idaho. In 2002, Cassia County had a population of 21,720 and Minidoka County had a population of 19,465; together representing three percent of the State of Idaho population (IDOL 2003a). In recent years, the population of the Mini-Cassia area has grown more slowly than the population of the state. From 1980 to 2001, the population of Cassia County grew between 0.1 and 1.5 percent per year, while the total population of the state grew between 0.6 and 3.2 percent per year (IDOL 2003a; Cassia County 2003a). From 1980 to 2001, the population of Minidoka County has been decreasing, except during the early 1990s (IDOL 2003a; Table 3.5-5). Population decreases in the Mini-Cassia area may be caused by the high unemployment rate and relatively slow economic growth.

Figure 3.5-2. Annual Average Rates of Population Growth in Cassia County, Minidoka County and the State of Idaho

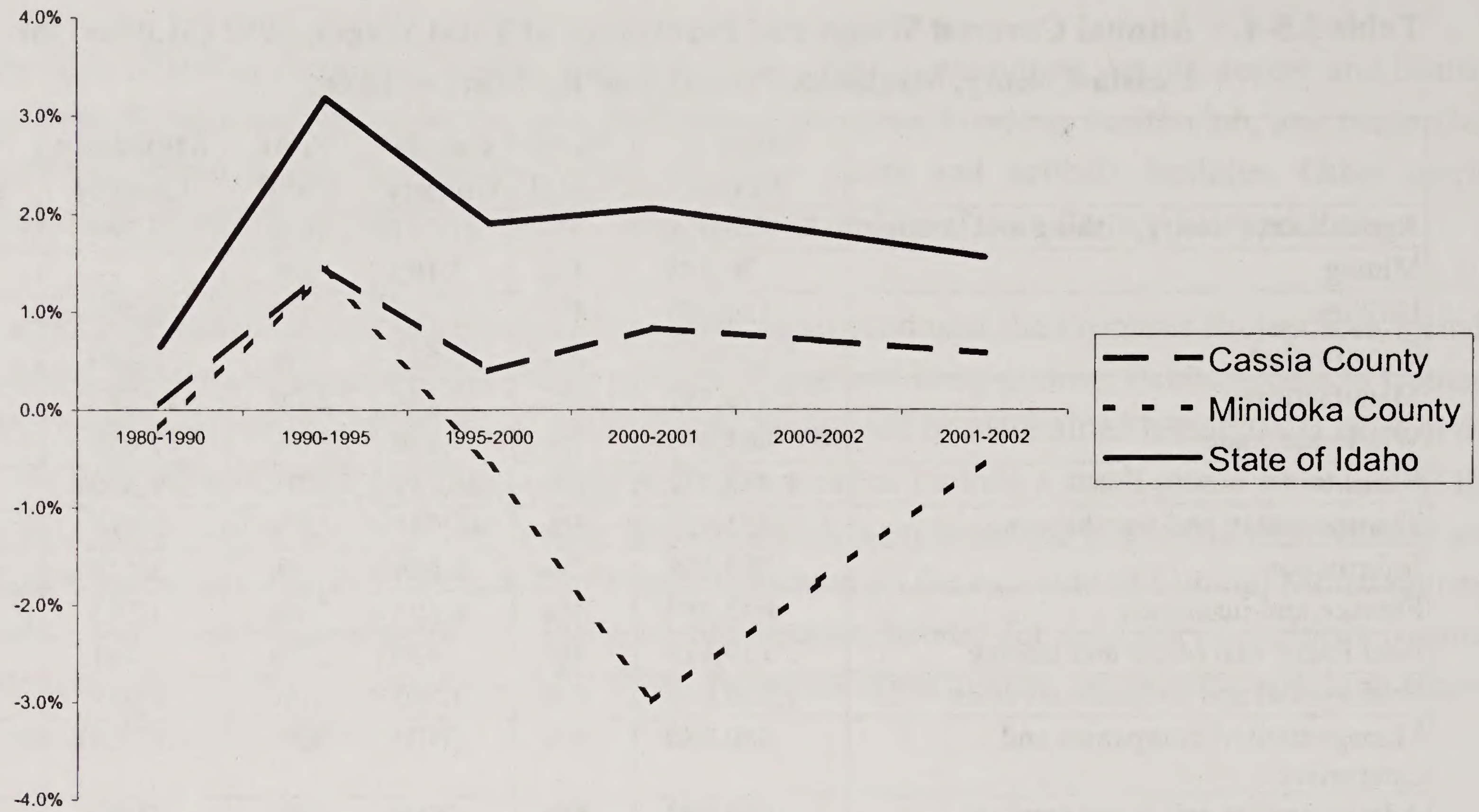


Table 3.5-5. Population Trends in Cassia County, Minidoka County and the State of Idaho.

	Cassia County	Minidoka County	Idaho	Mini-Cassia Percent of State Population
Population				
1980	19,427	19,718	943,935	4%
1990	19,532	19,361	1,006,734	4%
1995	20,996	20,759	1,177,322	4%
2000	21,416	20,174	1,293,953	3%
2001	21,595	19,569	1,320,585	3%
2002	21,720	19,465	1,341,131	3%
Annual Average Rates of Population Growth				
AARG, 1980-1990	0.1%	-0.2%	0.6%	N/A
AARG, 1990-1995	1.5%	1.4%	3.2%	N/A
AARG, 1995-2000	0.4%	-0.6%	1.9%	N/A
AARG, 2000-2001	0.8%	-3.0%	2.1%	N/A
AARG, 2000-2002	0.7%	-1.8%	1.8%	N/A
AARG, 2001-2002	0.6%	-0.5%	1.6%	N/A

AARG = Annual average rate of growth
N/A = Data not available.
Source: IDOL 2003a

Forecasts of county-level population in the State of Idaho were not available at the time this report was written. However, the U.S. Census predicted in 2000 that the State of Idaho would grow by approximately two percent per year (on average) between 2000 and 2015, and by approximately one percent per year between 2015 and 2025 (Census 2000e). These rates are consistent with and slightly lower than recent rates as shown in Table 3.5-5.

Cities closest to the Proposed Project area with populations over 20,000 are Twin Falls (61 miles to the west), home to 34,469 residents, and Pocatello (82 miles to the northeast), home to 51,466 residents (Census 2000c). Other large cities in the region include American Falls (57 miles to the northeast), and Boise (178 miles to the northwest). Smaller cities and their distances from the Proposed Project area are: Oakley, 20 miles; Heyburn, 16 miles; Burley, 15 miles; Rupert, 14 miles; Declo, 8 miles; Albion, 5 miles; and Malta, 4 miles. Unincorporated communities and their distances from the Proposed Project area are: Marion, 22 miles; Basin, 17 miles; Springdale, 13 miles; and Elba, 6 miles.

The cities closest to the Proposed Project area are Malta, located 4 miles east of the ridgeline along SH-81 and Albion, located 5 miles west of the ridgeline along SH-77. Albion (population 262) has approximately one block of commercial development that includes: a gas station/general store, a saloon, a restaurant/café, a bank, a bed and breakfast, an inn, and public facilities such as city offices, a fire department, a grange hall, and an elementary school. A few residential streets are located south and east of the commercial block. Other homes are located in unincorporated Cassia County, on roads leading away from Albion. Albion also has some historic structures. Malta (population 177) consists of approximately ten square blocks of residential uses, along with two motels, two restaurants, a high school, an elementary school, a junior high school, a post office, a fuel depot and store, a gift shop, a gas station, and a grocery store. Similar to Albion, homes are located along roads leading away from Malta, outside of the city limits.

The largest city within 50 miles of the Proposed Project area is Burley, with 9,074 residents (Idaho Department of Commerce 2003a). It is located 15 miles northwest of the Proposed Project area. Burley is the county seat, the largest city in Cassia County, and the home of 42 percent of the county population. The unincorporated Cassia County area is home to over half the county population (Table 3.5-6; Idaho Department of Commerce 2003a). Cities in Cassia County had near-zero percent population growth between 1980 and 2000. Only the unincorporated area and the City of Declo had annual average growth rates in population greater than zero, for both 5-year periods 1990 to 1995, and 1995 to 2000.

Table 3.5-6. Population Distribution in Cassia County.

	Albion	Burley	Declo	Malta	Oakley	Unincorporated Area
1980	286	8525	276	196	663	9,481
1990	305	8420	279	171	635	9,722
2000	262	9316	338	177	668	10,655
2002	264	9375	339	178	669	10,895
% of County in 2002	1.2%	43.2%	1.6%	0.8%	3.1%	50.2%

Source: Idaho Department of Commerce 2003a.

Cities in Minidoka County include Acequia, Heyburn, Minidoka, Paul and Rupert. The largest cities are Rupert, with 5,402 residents, and Heyburn, with 2,805 residents. Over half the residents of Minidoka County live in the unincorporated area (Table 3.5-7).

Table 3.5-7. Population Distribution in Minidoka County.

	Acequia	Heyburn	Minidoka	Paul	Rupert	Unincorporated Area
1980	100	2,889	101	940	5,476	10,212
1990	106	2,714	67	901	5,455	10,118
2000	144	2,899	129	998	5,645	10,359
2002	139	2,805	123	971	5,402	10,025
% of County in 2002	0.7%	14.4%	0.6%	5.0%	27.8%	51.5%

Source: Idaho Department of Commerce 2003a.

No known residences are located within 2 miles of the Proposed Project area. The closest house to the Proposed Project area is approximately 2.5 miles from the proposed west string. Approximately 80 homes exist along SH-77 or SH-81, outside of the towns of Albion and Malta, but within view of the Proposed Project.

3.5.4 Housing and Property Values

Units, Vacancy and Types of Housing

The Mini-Cassia area had approximately 15,360 housing units in 2000, representing three percent of total housing units in the State of Idaho. Mini-Cassia area housing units were seven to ten percent vacant that year, compared to 11 percent for the State of Idaho as a whole, indicating a slightly tighter real estate market when compared to the state average. Although the Mini-Cassia area is generally healthier (in terms of fewer vacant units) than other areas in the State of Idaho, the vacancy rate in the area is on par with the national average of nine percent. In 2000, 68 percent of the total housing units in the Mini-Cassia area were owner-occupied, and 90 percent of housing units were built prior to 1988. New development has not been common in recent years in the Mini-Cassia area.

The breakdown of housing units by type in 2000 (Table 3.5-8) indicates that 72 percent of the units in Cassia County were single-family, and approximately 17 percent were mobile homes, boats, RVs or other types of housing units. In Minidoka County, 78 percent of units were single-family and 12 percent were mobile homes, boats, RVs or other types of housing units. Compared to the State of Idaho, the Mini-Cassia area has more mobile homes and single family homes relative to multi-family homes. However, more mobile homes are vacant in the Mini-Cassia area when compared to the state.

Table 3.5-8. Housing Types and Characteristics, 2000 in Cassia County, Minidoka County and the State of Idaho.

	Total Units	% of Total	Vacant Units	% of Total	Owner Occ'd. Units	% of Total	Renter Occ'd. Units	% of Total
Cassia County	7,862	---	802	---	5,125	---	1,935	---
Single family	5,690	72%	438	55%	4,195	82%	1,057	55%
Multi-family	837	11%	143	18%	107	2%	587	30%
Mobile homes	1,275	16%	199	25%	785	15%	291	15%
Other (RVs, boats, etc.)	60	1%	22	3%	38	1%	0	0%
Minidoka County	7,498	---	525	---	5,360	---	1,613	---
Single family	5,861	78%	278	53%	4,666	87%	917	57%
Multi-family	693	9%	141	27%	49	1%	503	31%
Mobile homes	934	12%	106	20%	642	12%	186	12%
Other (RVs, boats, etc.)	10	0%	0	0%	3	0%	7	0%
State of Idaho	527,824	---	58,179	---	339,913	---	129,732	---
Single family	369,924	70%	35,493	61%	285,977	84%	48,454	37%
Multi-family	91,004	17%	12,328	21%	10,838	3%	67,838	52%
Mobile homes	64,163	12%	8,852	15%	42,081	12%	13,230	10%
Other (RVs, boats, etc.)	2,733	1%	1,506	3%	1,017	0%	210	0%

Source: Census 2000f.

Housing Values and Rents

The median value of housing in Minidoka County was $74,600 (Census 2000f) in 2000; this is 30 percent lower than the median value of housing for Idaho as a whole. The median value of housing in Cassia County was $53,100 (Census 2000f) in 2000; this is 22 percent lower than the median value of housing for Idaho as a whole (Table 3.5-9).

Table 3.5-9. Median Housing Values in Cassia County, Minidoka County and the State of Idaho in 2000.

Area	Median Housing Value, 1990	Median Housing Value, 2000	Percentage Increase, 1990 to 2000
Minidoka County	$41,500	$74,600	79.8%
Cassia County	$46,000	$83,100	80.7%
State of Idaho	$58,000	$106,300	83.3%

Source: Census 2000f.

Median rent in Cassia County doubled to $403 per month between 1990 and 2000. Minidoka County median rent also doubled to $394 in 2000. The median rent was $413 in 2000 throughout the State of

Idaho (Census 2000d). The lower housing values and rents in the Mini-Cassia area suggest a relaxed housing market in contrast to the relatively low vacancy rate.

On Friday June 6, 2003, eight single-family homes, one manufactured home, and parcels for manufactured homes were listed for sale in the South Idaho Press. Four of the eight single family homes were listed with prices that ranged from \$51,000 to \$75,000.[4] Locations for three of the single-family homes were listed as one in Burley and two in Heyburn. The paper also listed over twelve apartments for rent ranging from \$250 to \$425 per month. Over 17 homes were listed for rent in Rupert, Heyburn, Burley, Paul, and Declo from \$325 to \$650. Prices and locations were not included in all listings (South Idaho Press 2003).

According to local real estate agents, new construction in the Mini-Cassia area included homes priced from \$160,000 to \$185,000 for 1,500 to 1,800 square feet for single-family homes, and custom-built single-family homes priced up to \$500,000 (McCall 2003; Anderson 2003). Custom-built homes are typically under construction outside of Burley, while lower-priced new homes ranging in price from \$85,000 to \$100,000 are under construction within Burley city limits. The housing market in the Mini-Cassia area is generally stable and steady, with few highs and lows, and has been this way for several decades. In the future, local agents expect the market to remain steady, and for more homes in the \$75,000 to \$85,000 range to enter the market (McCall 2003; Anderson 2003). In 2000, 90 percent of existing housing units in the Mini-Cassia area were built prior to 1988.

Temporary Lodging

At least 972 lodging rooms in hotels or motels exist within 60 miles of the Proposed Project area (Table 3.5-10). Assuming a summer vacancy rate of 15 percent on average (weekends and weekdays), approximately 150 rooms would be available at one time.

Campgrounds and RV parks near the Proposed Project area include:

- Heyburn Riverside RV Park in Heyburn;
- Willow Bay Recreation Area, and Indian Springs Swimming and RV in American Falls;
- KOA Campground in Jerome;
- Budget RV Park in Pocatello; and
- Central Idaho 4-H Camp, Oregon Trails Campgrounds Center, Curry Trailer Park, and Nat Soo Pah Hot Springs and RV in Twin Falls (Idaho Lodging 2003).

[4] The other four listings did not include price.

Table 3.5-10. Temporary Lodging Near the Proposed Project Area.

Name and Location	City/Town	Miles from Albion, Idaho	No. of Rooms
Marsh Creek Inn	Albion	5	12
Best Western Burley Inn & Convention Ctr.	Burley	18	126
Budget Motel of Burley	Burley	18	139
East Park Motel	Burley	18	12
Lampliter Motel	Burley	18	16
Evergreen Motel	Burley	18	13
Parish Motel	Burley	18	15
Powers Motel	Burley	18	23
Starlite Motel & Taxi	Burley	18	9
Super 8	Heyburn	20	68
Tops Motel	Heyburn	20	16
Flamingo Lodge Motel	Rupert	18	15
Hillview	American Falls	57	33
Amber Inn Motel	Eden	44	25
AmeriTel Inn	Twin Falls	57	118
Best Western Apollo Motor Inn	Twin Falls	57	50
Capri Motel	Twin Falls	57	23
Comfort Inn	Twin Falls	57	52
El Rancho Motel	Twin Falls	57	14
Holiday Motel	Twin Falls	57	18
Holiday Inn Express	Twin Falls	57	59
Monterey Motor Inn	Twin Falls	57	28
Motel 6	Twin Falls	57	132
Red Lion Canyon Springs	Twin Falls	57	112
Shilo Inn - Twin Falls	Twin Falls	57	128
Super 7 Motel	Twin Falls	57	40
Super 8 Motel Twin Falls	Twin Falls	57	93
Twin Falls Motel	Twin Falls	57	8
Weston Inn	Twin Falls	57	97
Estimated Number of Rooms Within 60 miles			972

Source: URS 2003.

3.5.5 Public Finance and Fiscal Conditions

The State of Idaho collects property tax, sales tax, and personal and corporate income tax from its residents. The Idaho State Tax Commission collects the income and sales taxes, and counties collect property taxes. The taxing of property within Cassia County funds county operations. Taxes that would apply directly to Proposed Project construction and operation include property and sales taxes.

<u>Property Tax</u>

Cassia County would benefit from tax revenue attributable to the Proposed Project because the Proposed Project site is within the County. Tax impacts are discussed in Chapter 4, Environmental Consequences.

The 2002-2003 budget for Cassia County was $11.4 million (Cassia County 2003a). Of this amount, $2.9 million (25%) was from annual property tax revenue. Almost half of property tax revenue was allocated to the Justice Fund (i.e., law enforcement needs), while approximately one-fifth was allocated to the Current Expense Fund (Table 3.5-11). Other funds each received less than ten percent of tax revenue.

The 2003 average property tax rates for the State of Idaho were 1.67 percent for urban areas, and 1.17 percent for rural areas. For Cassia County, the urban area average rate was 1.56 percent, slightly lower than the state urban average rate, while the Cassia County rural rate average was 1.17 percent, which was the same as the state rural average rate (Holland 2003).

Table 3.5-11. Cassia County Distribution of Property Tax Revenue from the 2002-2003 Adopted Budget.

Fund	Amount	Percent of Total
Justice Fund	$1,407,350	48.9%
Current Expense Fund	$614,580	21.4%
Jail Bond	$250,000	8.7%
Indigent Fund	$186,760	6.5%
Junior College Fund	$129,560	4.5%
Weed and Pest Fund	$82,000	2.8%
Re Evaluation	$66,250	2.3%
Ambulance Services Fund	$58,000	2.0%
Fair Exhibits	$57,000	2.0%
Co. Roads (Unorg.) Fund	$16,480	0.6%
Historical Society	$10,400	0.4%
Total	$2,878,380	100.0%

Source: Cassia County 2003a.

Table 3.5-12 shows the Cassia County taxable assessed value in 2001 was $210.8 million (Cassia County 2003b). The Proposed Project is located within Tax Code Areas 16 and 17 (ITC 2003a), which are taxed at 1.2 percent.

Over half of the tax revenue collected from Tax Code Areas 16 and 17 funds Cassia Joint School District No. 151, which serves most of Cassia County and portions of Oneida and Twin Falls counties (Table 3.5-12). Cassia Joint School District includes 16 schools and over 5,000 students (Cassia Joint School District 2003). The property tax revenues represent 21 percent of total funding for school operations. Remaining funding is provided by state tax revenues (65%) and federal funds (14%) (Cassia Joint School District 2003).

Table 3.5-12. Property Tax Rates in Tax Code Areas 16 and 17.

Taxing District	Tax Code Area 16 Rate	Tax Code Area 17 Rate
School Dist. 151	0.644%	0.644%
County	0.315%	0.315%
Raft River Hwy	0.194%	0.194%
Flood District 15	0.043%	0.043%
Raft River Fire	0.014%	0.014%
Valley Vu Cemetery	0.007%	0.000%
TOTAL	1.218%	1.211%

Source: Cassia County 2003b.

Retail Sales Tax

Retail sales in Cassia County in 1997 accounted for $193 million (Cassia County 2003b). This represented 1.7 percent of total retail sales in the State of Idaho, and resulted in a ranking of 15 out of 44 counties in the State of Idaho (Census 1997). From 1993 to 2002, retail sales in Cassia County grew at rates ranging from four to 11 percent per year, and represented one percent of the total retail sales in the State of Idaho (Idaho Department of Commerce 2003b).

Sales taxes apply to the sale, rental, or lease of tangible personal property, and some services. The Idaho sales tax rate was increased from five to six percent on May 1, 2003 (Poplar 2003). Based on $193 million in retail sales in 1997 in Cassia County (Cassia County 2003b), sales tax revenue collected that year would have been approximately $9.7 million.

Social Values

Rural communities tend to be characterized by social and lifestyle patterns that are distinct from their metropolitan counterparts. Smaller rural communities are often characterized by a high level of what social scientists call social cohesiveness. Cohesiveness refers to the forces or attractions that hold members of a community together, and is based on the quality of social life within the community, and an important emphasis on a sense of place and togetherness. An impact that may decrease the attractiveness of the community itself, or the desirability of associating with, or identifying with the community may have a detrimental effect on the level of cohesion and the corresponding sense of community (Finsterbusch 1980). Social values in the Mini-Cassia area are likely rooted in a strong social cohesiveness, along with a high regard for agriculture and its related industries. In addition, the Mini-Cassia area contains vast open spaces with remote, mountainous terrain. Residents also likely value these natural settings and the recreational opportunities afforded by them.

3.5.6 Environmental Justice

Executive Order 12898 (1998) requires that federal agencies address high and disproportionate environmental impacts on minority and low-income populations ("environmental justice" impacts) attributable to projects proposed on federal land. Environmental justice impacts would result if potentially high and adverse environmental impacts attributable to the Proposed Project would fall disproportionately on minority or low-income populations. The first step of an environmental justice analysis involves screening the Proposed Project area to determine if environmental justice populations exist in the area. The second step (addressed in Chapter 4) is to determine whether Proposed Project impacts would be high, and if they would disproportionately affect any environmental justice populations.

Minority Populations

The U.S. Census classifies 21 percent of the population of Cassia County and 28 percent of the population in Minidoka County as a racial minority, compared to 17 percent in the South Central Idaho region[5,6] (Census 2000a). The State of Idaho as a whole was 12 percent minority in 2000. The Mini-Cassia area population was 24 percent minority on average and more racially diverse than South Central Idaho and the state as a whole (Table 3.5-13).

Census blocks are the smallest geographic units used in compiling the decennial U.S. Census. The decennial census has always reported population by state and county, and in the latter half of the twentieth century added the concepts of the census tract, the block group, and the census block to its spatial subdivision of the nation. The census block, normally used only in urbanized areas, is an actual physical block or other spatial unit within the census tract. The census block *group* combines, on average, about four census blocks to comprise approximately 1,500 persons and normally represents a residential subdivision or other reasonable geographic entity. The populations of these spatial units can vary widely, and may even have a population of zero (Census 1994).

The Proposed Project area is located within five designated census blocks within Census Tract 9501 (Table 3.5-13). Two of the five census blocks have no population. The remaining three census blocks contain a combined population of 48, of which 4 residents are listed as minority residents (Census 2000a). These four minority residents live within census block 2000, which covers the northern end of the proposed turbine strings.

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[5] Minority populations include Hispanic, Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, & other non-white races.

[6] This report uses the definition for the South Central Region of Idaho used by the IDOL. The South Central Region of Idaho includes the counties of Cassia, Minidoka, Blaine, Camas, Gooding, Jerome, Lincoln, and Twin Falls.

Table 3.5-13. Minority Populations in the South Central Region of Idaho.

Geographic Area	Population	Minority Population[a]	Percentage of Total
Census Tract 9501 and Census Block 2000	20	4	20%
Census Tract 9501 and Census Block 2014	0	0	N/A
Census Tract 9501 and Census Block 2015	2	0	0%
Census Tract 9501 and Census Block 2245	0	0	N/A
Census Tract 9501 and Census Block 2246	26	0	0%
Cassia County	21,416	4434	21%
Minidoka County	20,174	5,622	28%
Mini-Cassia area	41,590	10,056	24%
Blaine County	18,991	2,460	13%
Camas County	991	81	8%
Gooding County	14,155	2,782	20%
Jerome County	18,342	3,551	19%
Lincoln County	4,044	669	17%
Twin Falls County	64,284	7,894	12%
South Central Idaho[b]	162,397	27,493	17%
State of Idaho	1,293,953	154,662	12%

Note:

(a) Minority populations include Hispanic, Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, and other non-white races.

(b) This report uses the definition for the South Central Region of Idaho used by the IDOL. The South Central Region of Idaho includes the counties of Cassia, Minidoka, Blaine, Camas, Gooding, Jerome, Lincoln, and Twin Falls.

Source: Census 2000a.

Low Income Populations

Fourteen percent of Cassia County residents and 15 percent of Minidoka County residents lived below the poverty level in 1999 (Table 3.5-14). In comparison, 13 percent of residents in South Central Idaho lived below the poverty level, and 12 percent of Idaho residents lived below the poverty level in 1999 (Census 2000b). That year, the Mini-Cassia area had slightly more residents living in poverty (14%, on average) when compared to South Central Idaho and the State of Idaho.

In census block group 2 within census tract 9501 (which surrounds the Proposed Project), relatively fewer residents live below the poverty level (10%, Table 3.5-14).

Table 3.5-14. Populations Living Below Poverty Level, 1999 in the South Central Region of Idaho.

Geographic Area	Population for Whom Poverty Status Is Determined	Population Living Below Poverty Level	Percentage of Total
CT 9501 CBG 2	1,280	134	10%
Cassia County	21,109	2,875	14%
Minidoka County	19,992	2,960	15%
Mini-Cassia area	41,101	5,835	14%
Blaine County	18,868	1,469	8%
Camas County	985	82	8%
Gooding County	13,916	1,922	14%
Jerome County	18,235	2,526	14%
Lincoln County	3,995	522	13%
Twin Falls County	63,123	8,038	13%
South Central Idaho[a]	160,223	20,394	13%
State of Idaho	1,263,205	148,732	12%

Notes:

(a) This report uses the definition for the South Central Region of Idaho used by the IDOL. The South Central Region of Idaho includes the counties of Cassia, Minidoka, Blaine, Camas, Gooding, Jerome, Lincoln, and Twin Falls.

Source: Census 2000b.

3.6 LANDS AND REALTY

The Proposed Project area is within public lands managed by the BLM BFO. These lands are managed in accordance with the Cassia Resource Management Plan (Cassia RMP) (USDI, BLM 1985a; Figure 3.6-1). They are part of Management Area 11, Cotterel Mountain, within the Cassia RMP (Figure 3.6-2). Major land uses include livestock grazing, wildlife habitat, recreation, utility distribution, and communication facilities locations.

Management goals for the Proposed Project area include expanding dispersed recreation opportunities, providing for livestock grazing, and transferring certain lands from federal ownership (USDI, BLM 1985a). Prominent land uses around the Proposed Project area include: rural community commercial use that is zoned for the cities of Malta and Albion; commercial recreational use at the Pomerelle Mountain Resort; and agricultural uses such as farming, grazing, and confined animal operations.

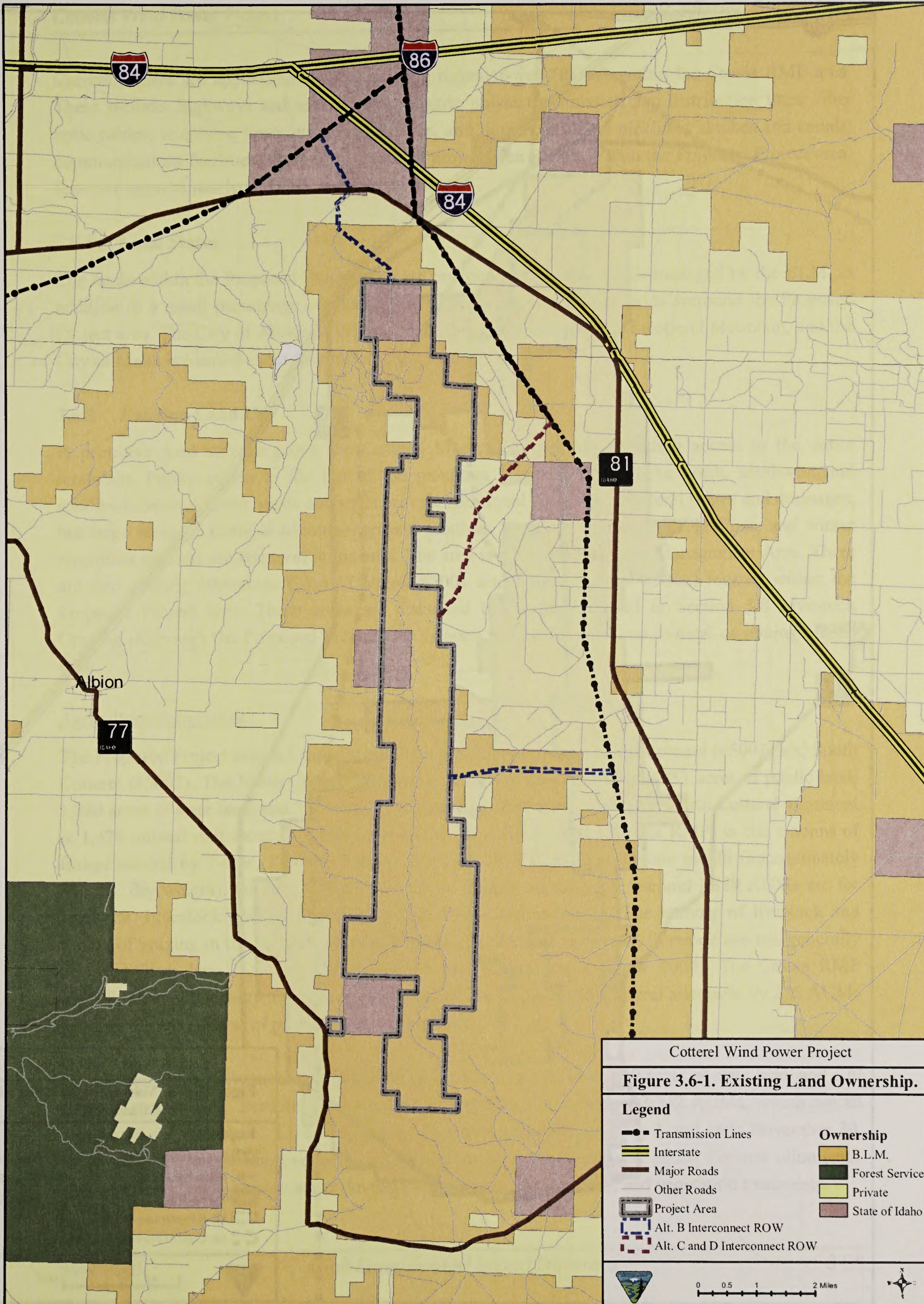


Figure 3.6-1. Existing Land Ownership.

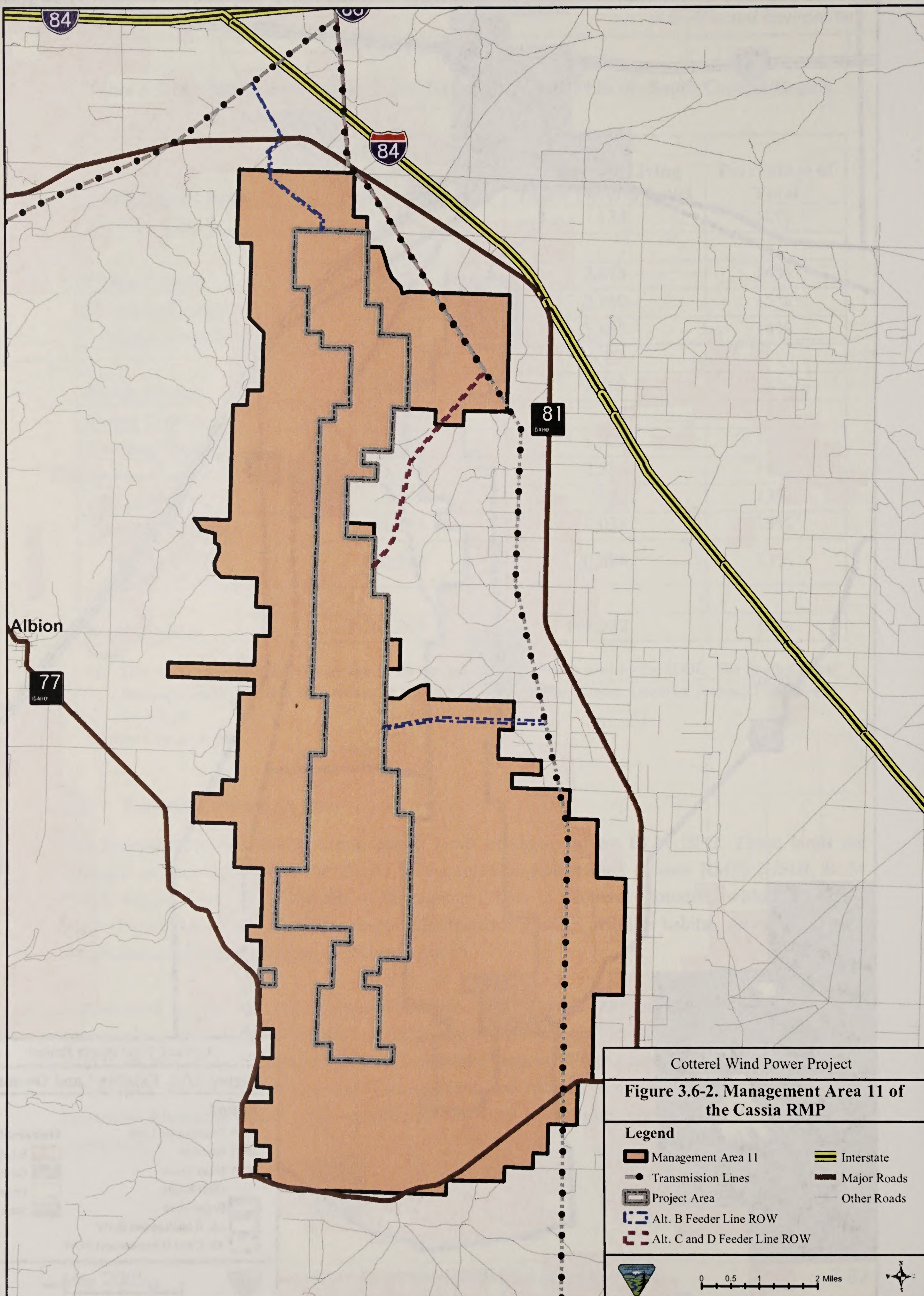


Figure 3.6-2. Management Area 11 of the Cassia RMP

Currently there are approximately 320 existing rights-of-way (ROW) within the Cassia RMP area. These include: highways and access roads; electric power transmission and distribution lines; fiber optic cables; telephone lines; water, natural gas, and liquid petroleum pipelines; ditches and canals; communications facilities; and various types of project area ROW. Within the Proposed Project area, there are approximately 15 ROW and special uses.

3.6.1 Land Status

The lands within the Proposed Project area are predominantly public lands managed by the BLM, in addition to a small percentage of state land. Public, state, and private lands surround the Proposed Project area. The City of Albion is located about five miles to the west of Cotterel Mountain, and the City of Malta is located about four miles to the east.

3.6.2 Existing Land Use

A primitive road extends along the Cotterel Mountain ridge top providing access to the entire mountain. Public access to the top of the mountain is available from the north, southwest and southeast. Several feeder roads and trails provide additional access down lateral ridges and drainages, but large areas of Cotterel Mountain remain roadless. Hunting, sightseeing, OHV use, and winter recreation pursuits are common in the area. The area is a Special Resource Management Area. There are two grazing allotments (North Cotterel #5001 and South Cotterel #5002) located within the Proposed Project area. These areas are discussed below and detailed in Section 3.8 Livestock Grazing. Although the Proposed Project area is open to mineral entry, no mineral or mining claims exist.

<u>Agriculture/Rangelands</u>

The Proposed Project area is located within two grazing allotments: North Cotterel (#5001) and South Cotterel (#5002). The North Cotterel allotment consists of approximately 9,981 acres of public land; 1,280 acres of state land, and 320 acres of private land. Permitted use on the North Cotterel allotment is 1,428 animal unit months (AUM). An AUM, as defined by the Cassia RMP, is the amount of forage needed by 1-cow, 1-horse, 5-sheep, 5.3-deer, or 9.4-antelope for one month (approximately 800 lbs. dry weight). Of the 1,428 AUMs, 37 are designated for horse use and 1,389 AUMs are for livestock. Livestock grazing begins May 1 and ends December 27. The number of livestock and timing of grazing in the North Cotterel allotment can fluctuate; however, livestock use has generally occurred from June 1 to July 31 during the past several years (Shaw 2004). The Cassia RMP identified the opportunity to increase the permitted use in the North Cotterel allotment by 275 AUMs pending the completion of proposed land treatments.

The South Cotterel allotment consists of 30,007 acres of public land, 640 acres of state land, and 120 acres of private land. Permitted use on the Cotterel South allotment is 3,242 AUMs, which are all designated for cattle use. Livestock use in the allotment begins on May 1 and ends November 30. More than 100 range improvements are located in both the North and South Cotterel allotments. These improvements include water development, fences, cattle guards, and vegetation treatments.

Utility Distribution and Commercial Use

The area is open to energy resource exploration, mining, and ROW under the current restriction prescribed by the Cassia RMP.

Rights-of-Way and Special Use Permits

The following are current existing ROW and special use permit holders (permit number in parentheses).

- State of Idaho Communications Site (IDI-016817)
- Bonneville Power Administration Communications Site (IDI-016828)
- Bureau of Reclamation Communications Site (IDI-16460)
- Fisher Broadcasting Company Communications Site (IDI-012066)
- Raft River Electric/ATC Communications Site and Access Road (IDI-29847)
- Federal Aviation Administration Communications Site and Access Road (IDI-013642)
- Moo View Cow Palace Communications Site and Access Road (IDI-32796)
- ATC Communications Buried Telephone Cable (IDI-5128)
- Raft River Electric Company Buried Power Distribution Line (IDI-4446)
- Windland, Inc. Meteorological Data Collection (IDI-33675)
- Chevron Pipeline Company Buried Liquid Petroleum Pipeline (IDI-0602)
- Raft River Electric Company Overhead Power Transmission Line (IDI-014294)
- State Land Easement to the U.S. for a Buried Stockwater Pipeline and Storage Facility (IDI-29653)
- Private Land Easement to the U.S. for an Access Road (IDI-31422)
- Numerous range improvements including a water station and water storage facility on the north end of the Proposed Project area

Tribal Land Use

No tribal deeded or reservation lands are present in the Proposed Project area. However, the Shoshone-Bannock Tribes continue to maintain historical hunting and gathering rights within the Proposed Project area in accordance with the Fort Bridger Treaty Act of 1868.

3.6.3 Planned Land Use

Management direction is outlined in the Cassia RMP. It includes continuation of fire management, livestock grazing, use of motorized vehicles with restrictions, recreation, and wildlife habitat management. Activity Plans that have been initiated or planned for implementation include: Allotment Management Plans; a Recreation Area Management Plan; a Limited Suppression Fire Plan; a Watershed Management Plan; and a Habitat Management Plan.

Presently the Cassia RMP limits ROW to existing facilities and localities (Page 40 Section D). It also recommends managing the area to maintain scenic quality and open space. The BLM evaluated the

Proposed Project in relation to the current restrictions in the Cassia RMP and determined that it is not consistent with the plan. Because of several factors including, but not limited to, the fact that wind energy development was not considered in 1985 when the Cassia RMP was completed, the relationship of the Proposed Project to the President's Energy Policy, and the growing demand for electric power in the region, BLM has proposed to amend the plan to allow ROW for wind energy developments in the Cotterel Mountain Management Area. Land Use Plans such as the Cassia RMP can be amended in accordance with BLM regulations (43 CFR 1600), and the National Environmental Policy Act process, as detailed in the Council on Environmental Quality regulations, which guide the preparation of plan amendments (40 CFR 1500). The plan amendment process is tailored to the anticipated level of public controversy and potential for significant impacts. For this proposal, an assessment for consistency with the existing Cassia RMP was completed by the BLM as stated above. The proposed plan amendment will be assessed by alternative in Chapters 2 and 4 of this document to determine the impact on existing resource objectives. A summary of the proposed amendment based on this assessment is provided below.

3.6.4 Rights-of-Way

Current Plan Objective:

Limit ROW to existing facilities and localities.

Proposed Amendment:

The proposed amendment would lift the ROW restriction on Management Area 11 of the Cassia RMP to the extent that wind energy development would be permitted. It would also change the Cassia RMP objective of managing the area to maintain scenic quality and open space. No other developments would be allowed.

These aspects of the Cassia RMP would be amended through the interdisciplinary and public participatory National Environmental Policy Act process in conjunction with BLM resource program-specific guidance.

3.7 RECREATION

The region of south-central Idaho is typically rural in nature. Sparse populations and open space characterize the landscape, with large areas under agricultural production. Desert mountain ranges, caves, rugged lava flows, forested terrain, and large expanses of valley land and rolling mountains make it a unique area in Idaho providing opportunities for a variety of recreational uses. Much of the area is federal land that helps to satisfy the growing public demand for outdoor recreation. The Pomerelle Mountain Resort is located about nine miles west of the Proposed Project area and provides winter recreation in the form of skiing and snowmobiling. The City of Rocks National Reserve, a popular camping, hiking, rock climbing, and historical area is located about 24 miles southwest of the Proposed Project area. The recreational uses of Cotterel Mountain include hunting, OHV use, picnicking, hiking, and some dispersed camping. The public lands associated with Cotterel

Mountain are mandated by the Cassia RMP to provide for multiple uses, including a diverse choice of recreation opportunities.

3.7.1 Recreation Opportunities

The physical environment often determines where, when, and what types of recreational activities occur. Landscape attributes that enhance opportunities for recreation and attract visitors to public land include desert badlands, mountains, canyons, lava features, grasslands, and wooded environments. The Proposed Project area provides opportunities for a number of recreational activities including: sightseeing, wildlife viewing, hiking, picnicking, horseback riding, upland game bird and big game hunting, OHV riding, mountain biking, and camping. Visitor use numbers (dispersed) for the Cotterel Mountain area have been approximately 7,500 individuals for each fiscal year since 2000 (Thompson 2004). Wheeled vehicle use has been limited to existing roads and trails. There are currently no plans to construct any new trails for the area.

The Proposed Project area is designated a Special Resource Management Area. These areas are described in the BLM Land Use Manual-Section 1601 as administrative units established to direct recreation program priorities, including the allocation of funding and personnel, to those areas where a commitment has been made to provide specific recreation activity and experience opportunities on a sustained yield basis (USDI BLM 2000).

The Recreational Opportunities Spectrum (ROS) for the Proposed Project area is semiprimitive motorized. The ROS provides a management tool for inventory, planning, and administration of outdoor recreation resources on public land. The BLM often uses the ROS as a framework for defining the environment present for outdoor recreation opportunities. The ROS recognizes that people differ in their needs and the experience they desire and that the resource base is not uniform. The ROS allows managers to characterize all possible combinations of recreational opportunities and resources and arrange combinations of activities, setting, and experience along a continuum. The ROS establishes management objectives for recreational activities into six classes, ranging from essentially natural low-use areas (resource-dependent recreational opportunities) to highly developed, intensive use areas (facility/vehicle-dependent recreation opportunities). The six classes are identified as primitive, semiprimitive nonmotorized, semiprimitive motorized, roaded natural, rural, and urban. Once these opportunities have been defined, managers are able to determine which opportunities should be provided and are able to assess the impacts of other resource actions on the recreation resource.

3.7.2 Hunting

Hunting in the area (Management Unit #55) consists mainly of upland game birds, deer, and mountain lion. The IDFG manages hunts within the Proposed Project area. IDFG hunting data from 1990 to 2003 indicates that the area receives moderate use (IDFG 2003b).

3.7.3 Camping

Two developed recreation sites are located on Cotterel Mountain. The Coe Creek picnic site is located at the head of Coe Creek within the Proposed Project area. McClendon Spring Campground is located on the lower east side of Cotterel Mountain, outside of the Proposed Project area. These recreational sites have been upgraded and are considered developed, but use is minimal. Total yearly visits to these sites are estimated to be 700 individuals for Coe Creek, and 1,500 individuals for McClendon Springs.

3.7.4 Off-highway Vehicle Use

OHV use occurs throughout BLM lands in Southern Idaho and can be characterized as either a method of transportation or as recreation use. In the transportation category, OHVs are used to transport people to remote areas for activities such as hunting. In the recreation category, OHVs are often used for touring, sightseeing, family outings, hill climbing, and various competitive events.

OHV use on BLM land has increased substantially in recent years. Current regulation and policy require that BLM manage public land for OHV use by designating areas as open, limited, or closed. The Cassia RMP states that the Proposed Project area is open to snowmobiles, but wheeled vehicle use is limited to existing roads and trails.

3.8 LIVESTOCK GRAZING

The grazing history of the Proposed Project area is similar to that of much of the northwest U.S. prior to the mid-twentieth century. Ranchers throughout southern Idaho and northern Utah have used intermixed private, state, and public lands to support cattle, sheep, and horses. The communities surrounding Cotterel Mountain have a rich history of sheep grazing, but due to changing markets, changes in vegetation, irrigation, and loss of area to development, there is a greater emphasis now on cattle.

In the Proposed Project area, the federal grazing program was initiated with the implementation of the Taylor Grazing Act in 1934, administered by the Grazing Service and the Division of Grazing. The program has since been administered by the BLM and is currently managed by the BFO under the Cassia RMP. The guidelines specific to rangeland management are summarized below:

- Provide allocation of available forage among domestic livestock, and wildlife;
- Reserve sufficient vegetation for maintaining plant health, soil stabilization, wildlife cover, and other non-consumptive uses; and
- Range improvements, grazing systems, and other range management practices would be considered in conjunction with livestock management on allotments.

3.8.1 Livestock use of Grazing Allotments

The Proposed Project area, approximately 11,500 acres, lies within two BLM-administered allotments: North Cotterel and South Cotterel (Table 3.8-1 and Table 3.8-2). Thirty-nine percent

(4,400 acres) of the Proposed Project area is within the North Cotterel allotment. Areas in the allotment are not suitable for livestock grazing due largely to steep slopes and water availability. Currently, the majority of the livestock use is within and adjacent to the Proposed Project area, with the northern portion of the allotment receiving a larger portion of the use due to water availability. The average stocking rate for the North Cotterel allotment is seven acres per AUM; therefore, about 629 AUMs are located within the Proposed Project area boundaries.

Table 3.8-1. Current Grazing Permits in the Proposed Project Area.

Name	Number of livestock/type	Dates of grazing	Percent public land	AUMs
North Cotterel Allotment #5001				
Jeff and Tamara Chatburn	243 cattle	5/20-7/19	80	389
	9 horses	5/20-9/24	100	38
Six S Ranch	377 cattle	5/20-7/31	100	904
	9 cattle	5/20-12/27	100	65
Brigham Young University	5 cattle	4/16 – 10/15	100	30
South Cotterel Allotment #5002				
Helen Anderson	70 cattle	5/01-6/08	100	90
	44 cattle	5/01-9/13	100	197
Blackjack Ranch	5 cattle	5/01-10/12	100	27
Albert Cottle	7 cattle	3/25-4/30	100	9
	8 cattle	2/01-2/28	100	7
Grant Clark	27 cattle	5/01-9/15	100	122
D & K Cattle Co.	41 cattle	5/01-11/30	100	288
Larry and Darlene Kincade	50 cattle	5/01-11/06	100	312
Hank Higley	164 cattle	5/01-9/15	93	692
Ramona Sears	37 cattle	5/01-6/15	100	56
	17 cattle	5/01-9/15	100	77
	1 cattle	5/01-5/31	100	1
Wallace Sears Jr.	8 cattle	5/01-9/30	100	40
Ward Livestock Inc	350 cattle	5/01-5/31	100	357
	130 cattle	5/01-9/30	100	654
	67 cattle	10/1-11/14	100	99
	224 cattle	11/15-12/14	100	221

Table 3.8-2. Grazing Allotment Distribution in the Proposed Project Area.

	Total Acres	Total AUMs
North Cotterel	12163	1680
South Cotterel	30767	3802

Ninety-one percent of the permitted use (AUMs) on the North Cotterel Allotment is from cattle, and occurs from May 20 to July 31. Horse use (3% of the permitted use) occurs from May 20 to

September 24. The remaining use is from cattle (ten head) that are authorized to graze from May 20 to December 27. During recent years approximately 68 percent of the permitted use has not been activated. The remaining 32 percent (both horses and cattle) has been used form mid-May to mid-July.
On the North Cotterel allotment, there are three developed springs, two catchments, and a pipeline system that are fed by a well, which supplies livestock drinking water within the allotment area are found within the Proposed Project. Due to limited water availability, a rotational grazing system is not feasible. However, when adequate water is available, the livestock permittees rotate grazing between the north and south portions of the allotment.

Three ranching operations are permitted to graze livestock on the North Cotterel allotment; however, only two of the three permittees have livestock near or in the Proposed Project area. The third permittee uses the portion of the allotment located on the flats east of Cotterel Mountain. Table 3.8-1 lists the grazing permittees authorized to use the North Cotterel allotment.

Ten ranching operations are permitted to graze livestock on the South Cotterel allotment. Of these ten, nine are authorized for livestock use within the Proposed Project area. The remaining operator uses only the lower elevation pastures in the South Cotterel allotment.

Twenty-one percent (6,490 acres) of the South Cotterel allotment lies within the Proposed Project area. The allotment is divided into eleven pastures. Three of these pastures are located on Cotterel Mountain (mountain pastures) and the remaining eight are on the flats east of Cotterel Mountain (east flats pastures). The Proposed Project area lies within the mountain pasture, specifically the summit pasture. The average stocking rate in the mountain pasture is six acres per AUM; therefore, about 1,082 AUMs are located within the Proposed Project area boundary. Incorporated into the Proposed Project area is the proposed Raft River power line route, which passes through the Coe Creek mountain pasture and the allotment #8 pasture.

A rest-rotation grazing system is implemented on both the upper and lower pastures. Cattle are scheduled to move into the mountain pastures from June 1 to 15 and remain there until about September 30. Annually, livestock grazes two of the mountain pastures and the third is rested. Livestock are in each of the grazed pastures for approximately forty-six days. The lower eight pastures are also managed using a rest-rotation grazing system with two pastures rested annually.

Livestock water in the Summit, Coe Creek, and Allotment #8 pastures are supplied by numerous developed and undeveloped springs found throughout the Proposed Project area (Figure 3.1-2). Coe Creek provides another source of water for livestock in the Coe Creek pasture. Pasture and allotment division fences run across, or are adjacent to, the Proposed Project area.

3.8.2 Rangeland Conditions

Monitoring data is important in evaluating the effects of livestock grazing to identify sites of concentrated use and impact. In addition, key forage species including: bluebunch wheatgrass;

Sandberg's bluegrass; crested and intermediate wheatgrass; as well as invasive species (cheatgrass, juniper, etc.) are monitored to examine short-term and long-term effects on range condition and trend. These range conditions are evaluated based on their departure from Ecological Reference Areas, as stated in the Idaho Standards for Rangeland Health-43 1480, in order to assess if the ecological processes are functioning within a normal range of variability. Range conditions on Cotterel Mountain have not recently been assessed and are not current. Historic range conditions show a slight to moderate dissimilarity with the Ecological Reference Areas. The primary factors affecting ecosystem functionality are decreased amounts of litter, increased bare-ground, and the introduction of invasive species.

3.8.3 Rangeland Improvements

Under the guidance of the Cassia RMP, these allotments, located in Management area 11, are to be managed according to specific objectives created to improve rangelands and provide sustained forage for livestock and wildlife (USDI, BLM 1985). Objectives specific to the North and South Cotterel allotments include:

- Expand dispersed recreation opportunities on approximately 18,000 acres south of the communication facility.
- Manage the area to maintain scenic quality and open spaces.
- Improve 31, 212 acres of poor and fair condition rangeland to good.
- Provide 5,278 acres of forage for livestock.
- Provide forage for the following mule deer by season of use: 403 spring; 403 summer; 403 fall; 563 winter.
- Provide yearlong forage for 127 antelope.
- Maintain or improve 6,414 acres of critical deer winter range and 703 acres of sage-grouse brood-rearing habitat.
- Protect nesting ferruginous hawks from human disturbance.
- Control surface disturbing activities on 5,677 acres having soils with high erosion potential.
- Transfer 440 acres out of federal ownership: 280 acres via private exchange and 160 acres via sale or other disposal method.

Boundary fences and water developments were constructed by permittees and the BLM in the Proposed Project area from 1950 to present. Under the Cassia RMP, permittees are responsible for maintenance of these improvements as assigned.

A rangeland health assessment/evaluation was completed for the South Cotterel allotment in 2004. Vegetation in the Proposed Project area consisted primarily of native plant communities with some exotic species present. In general, the assessment described the range as being healthy, with less than four percent of the range marginally healthy. The assessment described the majority of the range as exhibiting good plant diversity, plant production, and seedling recruitment. Encroaching juniper and decadent sagebrush are contributing factors in those areas showing marginal rangeland health. A determination as to compliance with the Idaho Standards and Guidelines for Rangeland Health is pending. A rangeland health assessment was also completed for the North Cotterel allotment in 2004, but the written evaluation and determination are pending.

3.8.4 Wildhorses

No wildhorses or burros are found in or managed for in the Proposed Project area.

3.9 VISUAL RESOURCES

3.9.1 Visual Resource Management System

In order for the BLM to meet its responsibility to maintain the scenic values of the public lands, they use a Visual Resource Management (VRM) system. This system defines the levels of scenic value, and provides a way to describe and evaluate landscapes (USDI, BLM 1986a; USDI, BLM 1986b). Different levels of scenic values require different levels of management. For example, management of an area with high scenic value might be focused on preserving the existing character of the landscape. In contrast, management of an area with little scenic value might allow for major modifications to the landscape. Determining how an area should be managed first requires an assessment of the scenic value of the area.

Assessing scenic values and determining visual impacts can be a subjective process. To increase objectivity and consistency, the VRM system describes and evaluates landscapes by using the basic design elements of form, line, color, and texture. This same system can also be used to describe proposed actions. Projects that repeat these design elements are usually in harmony with their surroundings, and those that do not create contrast. By adjusting project designs so that the elements are repeated, visual impacts can be minimized. The VRM system provides a way to identify and evaluate scenic values. It also provides a way to analyze potential visual impacts and apply visual design techniques to ensure that surface-disturbing activities are in harmony with their surroundings. Basically, the VRM system consists of two stages: inventory classification and management classification (USDI, BLM 1986b). The VRM Inventory stage is summarized below, followed by the management classification for the Cotterel Mountain area. The analysis is presented in Chapter 4, Environmental Consequences.

3.9.2 Visual Resource Inventory

The Visual Resource Management Inventory involves identifying the visual resources of an area and assigning them to one of four classes using the BLM visual resource inventory process (USDI, BLM 1986a). The process involves rating the visual appeal of a tract of land, measuring public concern for scenic quality, and determining whether the tract of land is visible from travel routes or observation points. The VRM Inventory Class for an area is determined by using a classification matrix that ranks scenic quality, visual sensitivity, and distance zones (Table 3.9-1). Inventory classes provide a basis for considering visual values in the RMP process, but they do not establish management direction and shouldn't be used as a basis for constraining surface disturbing activities. Visual values are considered throughout the RMP process, and the visual resources are then assigned to VRM classes with the following established objectives.

Table 3.9.1. Existing VRM Inventory Ratings for the Proposed Project Area.

Scenic Quality Rating Unit	Scenic Quality (raw score)	Visual Sensitivity	Distance Zone	Classification
Unit 202	C = Low (5)	Low-Moderate	Foreground/ middleground	Class IV
Unit 220	B = Moderate (12)	High	Foreground/ middleground	Class II
Unit 243	B = Moderate (12)	Moderate	Background	Class IV
Unit 244	B = Moderate (15)	Moderate	Background	Class IV
Unit 245	C = Low (9)	Low	Foreground/ middleground	Class IV

VRM Class I Objective: To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention.

VRM Class II Objective: To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.

VRM Class III Objective: To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.

VRM Class IV Objective: To provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

Scenic Quality is a measure of the visual appeal of a tract of land. In the visual resource inventory process, public lands are give an A, B, or C rating based on the apparent scenic quality that is determined using seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. During the rating process, each key factor is ranked on a comparative basis with similar features within the area. As an example, within the key factor of landform, prominent cliffs with high, vertical relief would receive a score of 5, while a flat valley bottom would receive a score of 1. Within the defined sensitivity level-rating unit, the rankings of each factor are summed. A, B, or C ratings for scenic quality are assigned as follows:

A = 19 or more;
B = 12-18; and
C = 11 or less.

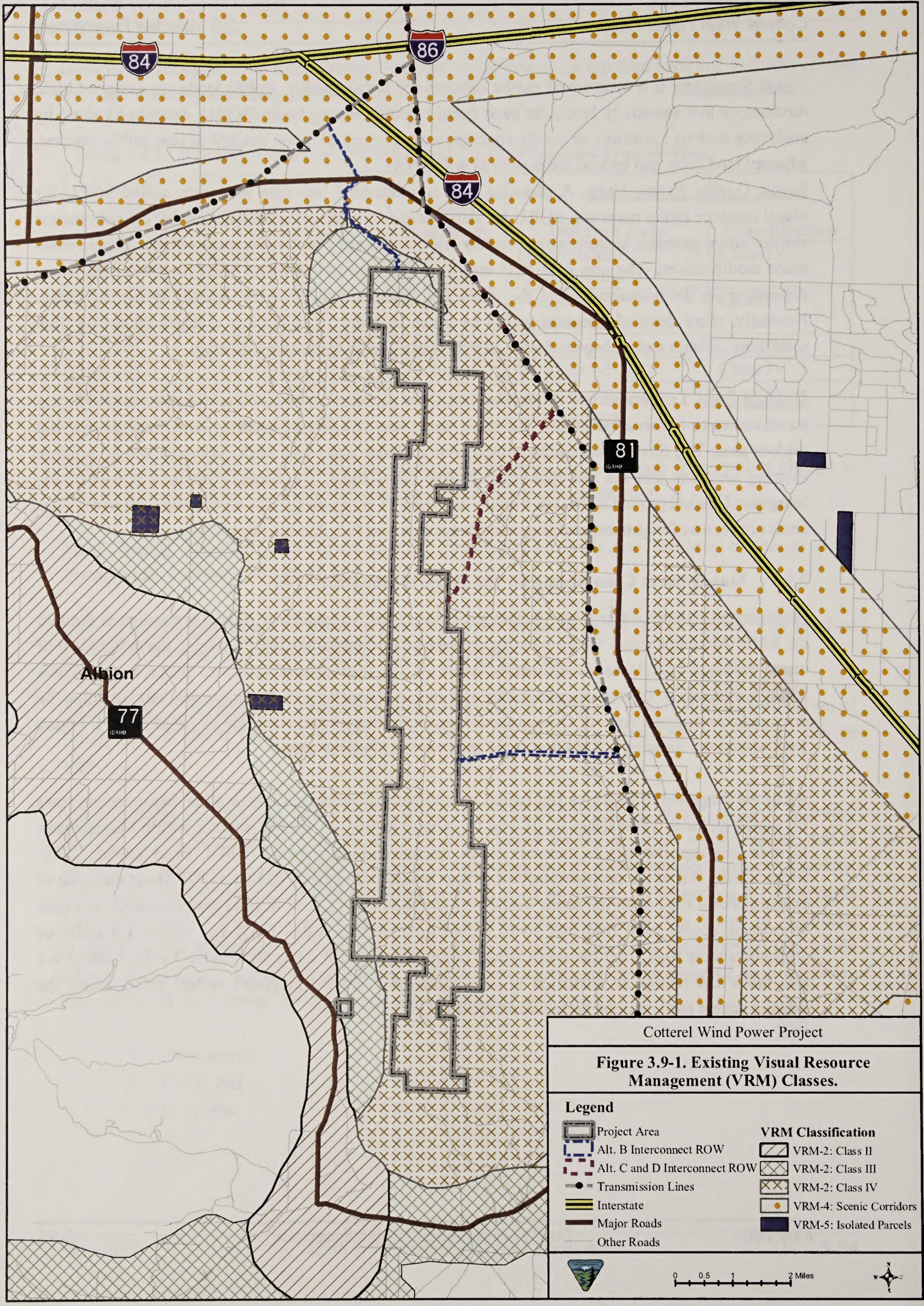
Visual Sensitivity is a measure of public concern for scenic quality. Public lands are assigned high, medium, or low sensitivity levels for each Scenic Quality Rating Units (SQRU; described below) by analyzing various indicators of public concern, such as: type of users, amount of use, public interest, adjacent land uses, and special areas such as wilderness.
Scenic Quality Rating Units. A planning area is subdivided into map area units called SQRU for visual resource rating purposes. SQRU are delineated on a basis of: like physiographic characteristics; similar visual patterns, texture, color, variety, etc.; and areas which have similar impacts from man-made modifications. The size of SQRU may vary from several thousand acres to 100 or less acres, depending on the homogeneity of the landscape features, and the detail desired in the inventory. Normally, more detailed attention would be given to highly scenic areas or areas of known high sensitivity. Within a planning area, each SQRU is assigned a unique map number.

Distance Zone. Landscapes are subdivided into three distance zones based on relative visibility from travel routes or observation points. The three zones are: foreground-middleground, background, and seldom seen. The foreground-middleground zone includes areas seen from highways, rivers, or other viewing locations that are less than three to five miles away. The background zone is beyond the foreground-middleground zone, but usually less than 15 miles away. The seldom-seen zone includes areas not seen as foreground-middleground or background (i.e., hidden from view).

3.9.3 Management Class Rating for the Cotterel Mountain Area

Management Classes differ from inventory classes in that management classes are assigned through the RMP. Although visual values must be considered throughout the RMP process, the assignment of visual management classes is ultimately based on the management decisions made in the Cassia RMP. For example, an area deemed highly scenic that warrants special management attention may be designated as a scenic Area of Critical Environmental Concern and classified as VRM Class I. Figure 3.9-1 shows the Existing VRM Classes for the Proposed Project area.

All of the Proposed Project area (including access roads) is within the Cassia RMP Management Area 11, which includes VRM Class II, III, and IV. The objective for visual resources within Management 11 is to "manage the area to maintain scenic quality and open space" (USDI, BLM 1986a; USDI, BLM 1986b). All of the proposed turbine strings would fall within VRM Class IV. About one mile of existing access road from the south would pass through VRM Class III. Less than one-tenth of a mile of existing access road from the south would pass through VRM Class II. About 1.5 miles of proposed access road from the north would pass through VRM Class III (Figure 3.9-1). Table 3.9-1 lists the VRM ratings as identified in the Cassia RMP for the proposed turbine string areas, the existing access road, and the proposed access road.



Cotterel Wind Power Project

Figure 3.9-1. Existing Visual Resource Management (VRM) Classes.

3.10 HAZARDOUS MATERIALS

A hazardous wastes and materials evaluation was conducted to help identify potential issues located within a one-mile vicinity of the Proposed Project area. Information was gathered from federal and state environmental databases through Environmental FirstSearch Technology Corporation. This information was reviewed to evaluate whether activities within or adjacent to the proposed study area have the potential to impact environmental conditions within the Proposed Project area (FirstSearch 2003). There are eight sites located within a one-mile radius of the proposed study area: six underground storage tanks; one leaking underground storage tank; and one Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Information System No Further Remedial Action Planned, Archived Site. The archive designation indicates that, to the best of EPA knowledge, assessment at the site has been completed, and that EPA has determined no further steps will be taken to list this site on the National Priorities List. Each of the eight sites is designated as closed, site cleanup completed, or No Further Remedial Action Planned. A site review of the Proposed Project area was found to be free of obvious environmental degradation within the scope of the hazardous substances and petroleum products identified in the CERCLA.

3.11 FIRE MANAGEMENT

The Proposed Project area is located within the Albion Fire Management Unit (FMU) in the BLM Twin Falls District. The terrain of the Proposed Project area is mountainous with mostly contiguous parcels of BLM managed lands along the ridge tops. Table 3.11-1 illustrates the Fire Management Priority Rankings for the Albion FMU. Communities considered at risk from wildfire that are near the Proposed Project area include Albion, Conner, and Elba. Due to the proximity of the wildland urban interface and key wildlife habitat in the Proposed Project area, all fire management priorities are ranked as high. Wildland fire use is considered not appropriate anywhere within the Albion FMU.

Table 3.11-1. Albion FMU Fire Management Priority Ranking

Suppression	High
Fuels Treatments	High
ESR	High
Community Assistance/ Protection	High

Fires are an intricate component of the development and maintenance of natural plant communities in the western U.S. (Brown 2000). Fire exclusion activities, grazing, and agriculture on public lands from the early 1900s to the present have caused fine fuels to accumulated to higher levels than would have been present with more frequent fires, resulting in more severe fires that burn hotter, and have greater impacts on: soil stability and structure; hydrological function; biotic integrity; and overall community dynamics and functionality (Keeley *et al.* 1999).

This movement away from natural fire regimes has created a need for increased fire management. The National Wildland Fire Plan defines and designates agencies nationally to work together using a cohesive strategy for establishing past conditions, identifying current departure, and recommending future strategies for achieving desired outcomes. Information from the Cassia RMP and Southern Idaho Fire Management Plan have been used to formulate and define alternatives directly related to the Proposed Project area.

Fire History

Fire plays an essential ecological role in the regeneration and maintenance of a diverse mosaic of healthy cover types across ecosystems. Historically (prior to 1900), the area landscape would have been dominated by vegetation characteristic of Fire Regime Condition Class 1 (FRCC 1; USDI 2004b).

From 1984 to 2003, 290 fires burned 145,233 acres of BLM managed land in the Albion FMU. The Proposed Project area is located in the southern part of the FMU where an increased number of fires are human caused; however, these fires are generally small due to suppression response. Fires caused from lightning strikes are also common. Average fire size on BLM lands within the FMU is 501 acres. A tendency for large, repeated wildland fires is increasing in the FMU.

Fire Ecology

A mosaic of three vegetation cover types dominates the Proposed Project area; mountain shrub, mid-elevation shrub steppe, and juniper, pinyon/juniper mix. Each vegetation type has a corresponding fuel model (FM) that can be used to predict fire behavior. Fuel models in the Proposed Project area are predominantly FM 2, FM 5, and FM 6. Wildfires in the Proposed Project would be carried by one or more of these FMs. Juniper and mid-elevation shrub covertypes typically fall under Historic Fire Regime II (up to 35 years, stand replacement) while the mountain shrub covertype falls under Historic Fire Regime III (35 to 100 years, mixed severity).

Fuel Model 2 - Timber (Grass and Understory):
Fire spread is primarily through the fine herbaceous fuels, either curing or dead. These are surface fires where the herbaceous material, in addition to litter and dead-down stemwood from the open shrub or timber overstory, contribute to the fire intensity. Open shrub lands and pine stands or scrub oak stands that cover one-third to two-thirds of the area may generally fit this model; such stands may include clumps of fuel that generate higher intensities and that may produce firebrands. Some pinyon/juniper may be in this model.

Fuel Model 5 - Brush (2 feet):
Fire is generally carried in the surface fuels that are made up of litter cast by the shrubs and the grasses or forbs in the understory. The fires are generally not very intense because surface fuel loads are light, the shrubs are young with little dead material, and the foliage contains little volatile material. Usually shrubs are short and almost totally cover the area.

Fuel Model 6 - Dormant Brush, Hardwood Slash:
Fire carries through the shrub layer where the foliage is more flammable than FM 5, but this requires moderate winds, greater than eight miles per hour at mid-flame height. Fire can drop to the ground at low wind speeds or at openings in the stand. The shrubs are older, but not as tall as the shrubs types of FM 4, nor do they contain as much fuel as FM 4. This model covers a broad range of shrub conditions. Fuel situations to be considered include intermediate stands of chamise, chaparral, oak brush, low pocosin, Alaskan spruce taiga, and shrub tundra. Even hardwood slash that has cured can be considered. Pinyon/juniper shrublands may be represented but may over-predict rate of spread except at high winds, like 20 miles per hour at the 20-foot level.

Fire Regime Condition Class 3 (FRCC3) dominates the Proposed Project area with small pockets of FRCC2 interspersed.

Fire Regime Condition Class 2 (FRCC2):
Fire regimes on these lands have been moderately altered from their historical range by either increased or decreased fire frequency. A moderate risk of losing key ecosystem components has been identified in these lands. To restore their historical fire regimes, these lands may require some level of restoration as through prescribed fire, mechanical or chemical treatments, and the subsequent reintroduction of native plants.

Fire Regime Condition Class 3 (FRCC3):
These lands have been significantly altered from their historical range. Because fire regimes have been extensively altered, the risk of losing key ecosystem components from fire is high. Consequently, these lands verge on the greatest risk of ecological collapse. To restore their historical fire regimes before prescribed fire can be utilized to manage fuel or obtain other desired benefits these lands may require multiple mechanical or chemical restoration treatments, or reseeding.

Fire Management

The Cassia RMP states that maximum suppression efforts on 18,000 acres south of the Federal Aviation Administration (FAA) communication site are needed to protect resource values and recreational facilities and opportunities. Limited suppression efforts and prescribed burns would be allowed on the 22,967 acres north of the FAA communications tower, in coordination with Clean Air Act regulations.

Wildfires will be aggressively suppressed in the Albion FMU and the full range of Appropriate Management Response is allowed. Fires in the Proposed Project area will be suppressed at less than 500 acres per ignition 90 percent of the time. No more than 80,000 acres of the entire FMU would be allowed to burn (prescribed fire and unplanned wildfire) over a ten-year period, of which 30,000 acres are projected wildland fire acres. Fire would be suppressed using the least amount of surface disturbance necessary. Public lands and resources affected by fire would be rehabilitated in accordance with multiple uses identified in the affected area, subject to available funding. Goals and objectives associated with fire management include allowing fire to resume a more natural ecological role on BLM lands, reducing fire suppression costs, reducing the number of acres damaged by severe wildfires, and increasing public safety from wildfires. Short-term goals are to reduce hazardous fuels through various treatment methods (mechanical, chemical and prescribed fire) and to re-introduce fire into the ecosystem.

Fire Mitigation Considerations: Emphasis should be focused on prevention, detection, and rapid suppression response and techniques that would reduce unwanted ignitions and threats to life, property, and natural and cultural resources.

Fire Suppression Considerations: Virtually all wildland fires would be actively suppressed except where Wildland Fire Use is determined to achieve resource objectives and where such an activity would not decrease public safety.

Fuel Treatment Considerations: Non-fire treatments are employed. Prescribed fire is allowed everywhere except where specifically excluded in the Cassia RMP. Pile burning of mechanically removed vegetation is acceptable.

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter describes the environmental consequences, or potential impacts, on the natural, cultural and human environment on Cotterel Mountain from implementation of the alternatives considered in this Draft Environmental Impact Statement (EIS). The topics discussed are by resource, in the same order as those described in Chapter 3, Affected Environment.

For each topic, the impact analysis follows the same general approach. Impact indicators for intensity of impacts were developed based on individual resources. A study area, or area of impact analysis, was also specified for each topic and impact duration definitions (short-term, long-term) were assessed where applicable. Impacts were then identified and assessed based on these definitions and indicators; a review of relevant scientific literature, previously prepared environmental documents (Cassia Resource Management Plan (RMP)), and the best professional judgment of Interdisciplinary Team (IDT) resource specialists.

Much of the information on the affected environment and potential environmental consequences is derived from detailed technical reports prepared by Bureau of Land Management (BLM) specialists, the URS Group, Inc. (URS), and subcontractors to the prime consultant. These reports are available for review as part of the Analysis File maintained for the Cotterel Wind Power Project (Proposed Project) at the Burley Field Office (BFO).

Knowledge is, and always will be, incomplete regarding many aspects of the terrestrial species, vegetative communities, the economy, and communities and their interrelationships. The ecology, inventory, and management of ecosystems are a complex and evolving discipline. However, basic ecological relationships are well established, and a substantial amount of credible information about ecosystems in the Proposed Project area is known. The alternatives were evaluated using the best available information about these ecosystems. While additional information may add precision to estimates or better specify relationships, new information would be unlikely to appreciably change the understanding of the relationships that form the basis for the evaluation of effects.

The numbers generated and used for comparison of impacts are for analysis purposes only. The exact location and size of the Proposed Project features cannot be determined until a final document is completed. Therefore, the exact areas of impact to specific resources are estimates based on the best available information at the time of this writing.

4.1 DIRECT AND INDIRECT EFFECTS

Effects are described in general terms and are qualified as short-term and long-term, as appropriate. Impacts may also be described as direct or indirect. Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by an action and occur later in time or farther removed from the area, but are reasonably foreseeable.

4.2 CUMULATIVE IMPACTS

The Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) requires assessment of cumulative effects in the decision-making process for federal projects. Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 Code of Federal Regulations (CFR) 1508.7). Cumulative effects are considered for each resource.

Cumulative effects were determined by combining the effects of the alternative with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other past, ongoing, or reasonably foreseeable future actions in this area and in the surrounding landscape. All resource impacts would be added to these actions to present the cumulative picture or incremental contribution this Proposed Project would have on the resources.

4.3 PAST/PRESENT ACTIONS

Past use of the Proposed Project area has included: livestock and wildlife grazing; recreation including hunting, off-highway vehicle (OHV) use, sightseeing, camping, mountain biking, horseback riding, and wildlife sightseeing; and siting of communication facilities (microwave and cell phone transmitters). These uses continue through the present and are anticipated to continue into the reasonably near future.

4.4 FUTURE FORSEEABLE ACTIONS

On Cotterel Mountain, future foreseeable actions, other than the Proposed Project, would be limited to general recreation, OHV use, hunting, and grazing.

The Idaho Transportation Department is proposing to reconstruct a portion of the City of Rocks Back County Byway between Elba and Almo, Idaho. This 17-mile stretch of road would be built in phases with completion of the project occurring in 2007 or 2008.

At this time, there are no other wind projects planned for the Cotterel Mountain area. However, other wind plant sites or other energy developments on public lands in Idaho may be considered in support of the President's National Energy Policy, which encourages the development of renewable energy resources, including wind energy. Other potential future actions associated with energy development would include:

- The firm U.S. Geothermal is conducting exploratory geophysical exploration on private and BLM managed lands south of Jim Sage Mountain, which is south of the Proposed Project area. It is the goal of U.S. Geothermal to develop a commercially viable geothermal electrical generation facility on private land in this area. Their proposed development would be approximately 25 miles south of the Proposed Project.

- Currently there are three other wind energy rights-of-way (ROW) applications on BLM managed lands in Idaho. These sites are located at Danskin Mountain, north of Mountain Home, north of Glenns Ferry, and at Brown's Bench southwest of Twin Falls. These projects are in various phases of wind speed monitoring. There is no guarantee that these projects will result in the construction of wind energy facilities at these sites.

- On private lands in Idaho, there are currently two operating wind power projects. One project located between Boise and Mountain Home consists of three operational wind turbines. The other project, located near Hagerman and South of the Snake River has seven operational wind turbines. Currently, there are other proposed wind power projects on private land that have received county approval for construction: a trio of 200 megawatts (MW) projects near Idaho Falls, by Ridgeline/Airtricity; a pair of 200 MW projects near American Falls, by Ridgeline/Airtricity; a 200 MW project near American Falls, by Windland, Inc. (Windland); and four 10 MW projects near Hagerman.

- There are currently over 30 wind-monitoring towers collecting data on wind speed scattered across eastern, southcentral, southern and western Idaho. These towers are located on private, state, Tribal, and federal lands. Whether these sites would be developed into commercially viable wind power projects is unknown at this time.

4.5 PHYSICAL RESOURCES

4.5.1 Climate and Air Quality

This section describes air quality impacts that could result from construction and operation of the Proposed Project. Wind power projects do not involve the combustion of fuels to generate electricity, so there are no air quality impacts from the generation of power. Any air quality impacts would be related to emissions from vehicles and from fugitive dust associated with construction and operations and maintenance (O&M) activities. The Proposed Project would not result in any impacts to the climate.

<u>Alternative A</u>

Under Alternative A there would be no new sources of emissions or fugitive dust. Existing recreational use would continue resulting in minor amounts of emissions from the exhaust of OHV. Small amounts of fugitive dust would be generated from OHV use and cattle trailing. Fugitive dust from wind erosion of the existing native surface roads would continue to occur. Smoke from possible wildland fires could result in a temporary reduction of air quality standards.

Alternative B

Construction

Temporary and localized increases in criteria pollutant concentrations would occur during the construction phase of the Proposed Project. Expected emissions would consist of tailpipe emissions from the exhaust of construction equipment, particulate matter emissions from the concrete batch plants, combustion emissions from the diesel-fueled generators associated with the concrete batch plants, fugitive dust missions from vehicular traffic, and fugitive dust emissions from soil and rock disturbances. Since construction-related air pollution effects would be temporary and localized no impact on air quality or ambient values in the study area would occur. These temporary and localized potential emissions increases are not expected to have an appreciable impact on air quality.

Operation

The operation of the Proposed Project would not impact air quality.

Alternative C

Impacts to air quality for Alternative C would be similar to those described under Alternative B; however, the temporary affects would be slightly less due to smaller area disturbed by construction.

Alternative D

Impacts to air quality for Alternative D would be similar those described under Alternative B. Alternative D would result in the least amount of ground disturbance and would likely have a shorter construction period. Therefore, the temporary affects to air quality would be the least of all the action alternatives.

4.5.2 Geology

The primary impacts on geology associated with the Proposed Project are tied to the area of bedrock disturbance identified for each alternative. The type of bedrock disturbance would be different for each turbine location and roadway. The impacts would also be dependent on the number of acres of associated geologic disturbance, as well as the number and distribution of turbines and roadways proposed under each of the alternatives.

Alternative A (No Action)

Under Alternative A, no impacts related to geology would occur.

Alternative B

Under Alternative B, the proposed construction would have a permanent footprint of approximately 203 acres due to blasting to set foundations for wind turbine pads and road construction. Because best management practices (BMP) would be used during construction (Appendix C), impacts regarding landslides and erosion potential would be minimized.

Earthquake induced landslide areas are apparent at the northeastern side of the study area. However, no literature could be located that documents these events (Griggs 2004). The potential for movement along faults and new landslides in the Proposed Project vicinity is considered low. The Proposed Project would be designed and constructed with appropriate seismic design codes, including foundations for the wind turbines placed directly on competent rock.

Alternative C

The proposed construction would have a permanent footprint of approximately 203 acres due to blasting to set foundations for wind turbine pads and road construction. Construction activities from Alternative C would less than those discussed under Alternative B because there would be less blasting and construction due to the placement of fewer turbines.

Alternative D

The proposed construction would have a permanent footprint of approximately 158 acres due to blasting to set foundations for wind turbine pads and road construction. Construction activities from Alternative D would less than those discussed under Alternative B or Alternative C because there would be less blasting and construction due to the placing of fewer turbines and roads. Impacts to geology from building the Proposed Project would be the least under Alternative D.

4.5.3 Soils

The primary impacts on soils associated with the Proposed Project are tied to the area of surface disturbance identified for each alternative. Although the type of surface disturbance would be similar for each turbine location and roadway, the impacts would be dependent on the number of acres of associated soil disturbance, as well as the number and distribution of turbines and roadways proposed under each of the alternatives. Impacts to soils would be minimized during construction using the BMP described in Appendix C.

Alternative A (No Action)

Under Alternative A, no impacts to soils from the Proposed Project would occur.

Alternative B

Under Alternative B, impacts to soils would be directly related to acres of surface disturbance. Soils would be disturbed, mixed structurally, compacted, and exposed to erosion during construction, possibly resulting in a temporary increase in erosion and windblown dust on up to approximately 368 acres (3%) until construction is completed (Table 4.5-1). Following construction, approximately 165 acres would be reclaimed. Post construction permanent impacts would affect about 203 acres (2%) of soils in the Proposed Project area. The construction of roads and turbines would impact soils by mechanically breaking down the soil structure, which would increase the erosion potential. Impacts to soils would indirectly impact vegetation and the ability to re-vegetate after construction.

Table 4.5-1 Acres of Soil Disturbance Under Each Alternative.

Soil Group	Alternative B	Alternative C		Alternative D		Erosion Potential Hazard
Size of turbine (meters)	70	77	100	77	100	
Group 1	19	17	17	15	15	Moderate to severe
Group 2	1	1	1	1	1	Slight to moderate
Group 3	0	0	0	0	0	Slight to moderate
Group 4	23	72	72	73	73	High
Group 5	137	105	105	69	69	Moderate to severe
Group 6	22	8	8	0.4	0.4	Severe
Total temporary	164	144	131	121	109	
Total permanent	201	203	203	158	158	

Alternative C

The size of the temporarily disturbed areas varies only slightly based on type of turbines selected. Alternative C would initially impact between approximately 337 to 350 acres (3%) of soils in the Proposed Project area. Following construction, between approximately 134 to 147 acres would be reclaimed, resulting in about 203 acres (2%) of permanent impacts to soils within the Proposed Project area. Overall impacts to soils under Alternative C would be similar to those described under Alternative B.

Alternative D

Impacts to soils from construction and operation of the Proposed Project would be the least under Alternative D. The size of the temporarily disturbed areas varies only slightly based on type of turbines selected. Alternative D would initially impact approximately 269 to 270 acres (2%) depending upon which turbine is selected. Permanently disturbed acres would be about the same for both turbine sizes of about 158 acres (<1.5%) and would have similar impacts as described under Alternative B.

4.5.4 Water Resources

Alternative A (No Action)

Under Alternative A, no additional impacts to water resources would occur.

Alternative B

Impacts to surface and groundwater quality and quantity would be low under Alternative B. There are 14 springs, three spring developments, and one well located within the Proposed Project area boundary. There are also springs, livestock water wells, pipelines, and storage facilities in close proximity to the Proposed Project area. Potential impacts to water resources would be minimized using BMP during construction. Impacts due to accidental spills of hazardous materials (Section 4.14) would be low due to BMP used during construction and project O&M. Water used during construction would come from a source outside the Proposed Project area.

Some of the road building, and all of the tower foundations would require the blasting of bedrock in a controlled fashion to break the rock just sufficiently to allow for easier excavation. Impacts to springs in the Proposed Project area from blasting are not anticipated. This is due to the type of ground water flow system that produces the springs. Two factors are considered as being favorable for maintaining spring flow: (1) blasting is not anticipated to affect rock at any great distance from the tower locations, and (2) any rock disturbance that might occur would most likely produce additional vertical fracturing in the bedrock without affecting the lateral flow of ground water as it moves down gradient off the mountain crest. This increase in secondary porosity would actually mimic the existing flow system, whereby precipitation and snow melt provide recharge water via vertical columnar jointing in the volcanic flow that forms the surface rock over most of the Proposed Project area. Thus, the overall mechanism of ground water flow would not be affected by blasting operations (see Chapter 3 for description of ground water flow).

Potential impacts from construction of the Proposed Project to 303d listed streams would be limited to potential delivery of sediment to these water bodies. However, because there is no surface flow within the Proposed Project area where construction activities would occur, it would be unlikely that sediment would reach the 303d listed streams. Furthermore, construction activities would be required to follow BMP including erosion control and soils management techniques. These BMP would be employed during construction, O&M, and decommissioning, and are expected to prevent fine sediments from being introduced into drainages above existing levels. Therefore, the Proposed Project is not expected to impact the 303d listed streams that are located near the Proposed Project area.

Alternative C

Construction activities from Alternative C would approximate those for Alternative B, and would be expected to have a low impact to water resources in the Proposed Project area.

Alternative D

Construction activities from Alternative D would approximate those for Alternative B and Alternative C, and would be expected to have a low impact to water resources in the Proposed Project area.

4.5.5 Noise

Construction Impacts

The Proposed Project area is relatively remote and unpopulated. The nearest residence is located approximately two miles west of the proposed turbine string. There are a number of residences along State Highway (SH)-77 and SH-81 in the towns of Declo, Albion, Connor and Malta.

Construction would create the greatest project related noise impacts. The frequency and duration would vary with the amount of construction in each action alternative. In all of the action alternatives, noise would occur from construction equipment and other vehicles associated with road and turbine string construction. During the eight-month construction period, there would be approximately 2,205 trips of large trucks delivering the turbine components and related equipment, and approximately 12,735 trips including dump trucks, concrete trucks, cranes, and other construction and trade vehicles. Power tools such as pneumatic wrenches, vibrators, and saws would add temporarily to the overall noise level. Using typical construction site noise levels (United States (U.S.) Environmental Protection Agency (EPA) 1974), noise levels during construction would be expected to range from 68 A-weighted decibels (dBA) to infrequent peaks of up to 95 dBA at 50 feet from the operating equipment. Construction noise caused by the Proposed Project may temporarily impact people and wildlife. However, the nearest resident is located approximately two miles west of the Proposed Project construction area.

Blasting activity for the proposed construction would occur as needed in all action alternatives. The noise from blasts can extend for a few miles when geographical and atmospheric conditions are conducive. However, such noise would be infrequent and of short duration. Blasting would only be conducted during daylight hours. The vibration levels, which result from blasting, would not be anticipated to be of sufficient magnitude to adversely impact structures, because most of the blasting would occur along the Cotterel Mountain ridgeline well away from any structures or residences. Therefore, it is not anticipated that blasting would impact any residences or communities near the Proposed Project area.

Visitors to the Proposed Project area during construction periods could be impacted by noise, based upon the proximity and type of construction activity. Within some portions of the Proposed Project area, topographic features would function to restrict most of the construction noise to the immediate vicinity of the construction activities. With rare exceptions, construction-related noise impacts would be limited to daytime hours. Impacts to nesting wildlife would be minimized by restricting construction activities during certain nesting periods (Appendix C and Appendix D).

Operational Impacts

Sound travel outdoors, especially over distances greater than 200 to 300 feet from a sound source, and is highly dependent on weather conditions. The atmospheric conditions that affect sound travel the most are temperature variations, wind currents, and humidity. Sound tends to travel farther than expected when it is traveling with the wind.

As noise spreads out from a source, the sound intensity would drop at a rate of three decibels (dB) per doubling of distance for a line source such as a road and at six dB per doubling of distance for a point source such as truck or piece of heavy equipment. The type of ground (hard or soft, vegetated or unvegetated) can affect this rate of drop in the sound level as well as natural barriers.

Modern wind turbines are designed with large rotor diameters that have very low rotational speeds. Efficient power generation is achieved at these low rotational speeds, thereby reducing noise impacts that would result from higher rotational speeds. The rotor blades make a slight swishing sound when rotating. Because of these technological advances and the distance of the blades from the ground (minimum of 95 feet), even when standing immediately underneath a turbine, this noise is anticipated to be minimal. Furthermore, as wind speeds increase, the sound made from the wind passing over the human ear is typically louder than and drowns out the swishing sound of the rotating turbine blades.

Vibration-reducing features are incorporated into the design of the turbines. On large modern wind turbines, the chassis frame of the nacelle is designed to ensure the frame would not vibrate as a result of movement of the other turbine components. As discussed in Chapter 2, regular maintenance is scheduled for the structures. Routine maintenance would also reduce the likelihood of excessive noise and vibration from worn parts or lack of lubricating oils. Therefore, minimal noise and vibration is anticipated to result from the operation of the wind turbines.

<u>Alternative A (No Action)</u>

Under Alternative A, existing background noise levels on Cotterel Mountain and its vicinity would continue without influence of the Proposed Project. Existing sources of noise that would continue to occur under Alternative A include: recreational users such as OHVs; snowmobile riders; occasional low flying aircraft; agricultural equipment; and traffic on area roads and highways such as SH-77, SH-81, and Interstate 84 (I-84).

<u>Alternative B</u>

Noise impacts due to construction are expected to be low during the construction period. The transportation noise from large trucks during the initial construction period would be temporary (eight months). Operational impacts from noise would not be expected to occur. Noise generated by the operating wind turbines would most likely dissipate prior to reaching residences that are located over two miles from the Proposed Project. Recreational users of Cotterel Mountain when standing near or under the operating wind turbines would hear the swishing sound of the rotor blades. Whether this swishing sound is bothersome would likely depend upon the individual.

<u>Alternative C</u>

Under Alternative C, impacts from noise as a result of construction and operational activities would be the same as Alternative B.

Alternative D

Under Alternative D, impacts from noise as a result of construction and operational activities would be similar to Alternative B and Alternative C. However, Alternative D would have fewer turbines and therefore would have less potential to affect recreational users of the mountain as a result of operational noise.

4.6 BIOLOGICAL RESOURCES

4.6.1 Vegetation

This section discusses the potential impacts to vegetation resulting from implementation of the alternatives. This analysis describes how the proposed activity could directly, indirectly, and cumulatively affect community composition and dynamics. The analysis takes into account existing and future vegetation population and distribution patterns.

The primary impacts on vegetation associated with the Proposed Project are tied to the vegetation community affected and the area of surface disturbance identified for each alternative. Although the type of surface disturbance would be similar for each turbine location and roadway, the impacts would be dependent on the number of acres of associated vegetation, as well as the number and distribution of turbines and roadways proposed under each of the alternatives. For this analysis, acres were used for each vegetation type affected for the entire Proposed Project rather than a site-by-site basis.

Alternative A (No Action)

Direct and indirect impacts to vegetation in the area would be associated with activities currently outlined in the Cassia RMP including: wildlife use, continued livestock grazing, vegetation treatments, range improvement projects, recreation, and some minor modifications and alterations to the existing communication facilities. These uses and potential modifications are not expected to alter the existing vegetation beyond the levels identified in the Cassia RMP.

Alternative B

Construction impacts associated with Alternative B would initially affect approximately 368 acres (3%) of the Proposed Project area. Post-construction reclamation would restore vegetation to approximately 165 acres (45%) of this affected area. It could take 20 to 40 years or more for reclaimed areas to return to their pre-disturbance community types. It should be noted that approximately ten percent to 20 percent of the temporarily disturbed sites could have shallow soils that would have a low probability of successful restoration. The result would be a permanent impact to approximately 203 acres (2%) of the Proposed Project area.

Vegetation community types that would be directly affected from construction activities include: juniper; mountain mahogany; big, low, and mountain sagebrush; grasslands; and some riparian sites (Table 4.6-1). Approximately one-tenth acre (less than 1% of the Proposed Project area) of riparian habitat along Marsh Creek would be affected as a result of culvert replacement and road improvement of the south access road. Agricultural land, aspen communities, and open water sites would not be affected by this alternative.

The construction of roadways and turbines throughout the Proposed Project area would directly impact vegetation and special status plant species by reducing established native communities and habitat. It could also indirectly impact vegetation and special status species habitat by mechanically impacting soils, increasing the potential for establishment and spread of invasive and noxious weed species, and potentially alter the fire regime within the system.

Construction activities such as trampling, surface disturbance, accidental spills, or burning would directly impact established native communities, including non-vascular and special status species populations. These impacts would decrease the number of individuals available for fertilization and seed production, reducing the potential number of seeds for reestablishment and genetic variability of subsequent generations; therefore, short-term and long-term direct impacts to vegetation would limit the capacity of these communities to reestablish.

Mechanical effects to soil from construction activities, such as surface disturbance or soil compaction, would indirectly affect vegetation and special status species by impacting soil structure and function. Surface disturbances from excavation and blasting could lead to increased erosion potential and the loss of topsoil. The loss of this soil layer could result in: diminished structural support for, and exposure of, root systems; a reduction of available nutrients for established plants; and a diminished seed bank. Soil compaction on the other hand, could reduce water infiltration, restricted root depth, and limited seed germination. Individually, or a compilation of these two impacts, could indirectly lead to further reductions in native plant communities and potential for reestablishment.

Surface disturbances from construction activities could also indirectly impact vegetation and special status species by creating habitat for invasive species, or increasing the susceptibility of the system to new invasive species and noxious weeds from external sources. The establishment and spread of these species would lead to increased direct competition for limited resources (nutrients, water, space, etc.) with native and desired plant species. Indirectly, invasive and noxious weed species could augment the amount and continuity of fuels, which could lead to decreased fire return intervals (Peters and Bunting 1994; Whisenant 1990). The compilation of decreased fire return intervals and competition for resources could appreciably alter community dynamics (fire frequency and severity, soil stability, nutrient cycling, etc.); therefore, surface disturbances would likely have short-term and potentially long-term impacts on vegetation and special status species. Maintenance activities may also redisturb native and/or restored vegetation communities and continue to provide sites for invasive vegetation.

Table 4.6-1. Permanent and Temporary Impacts to Vegetation (in acres) from the Proposed Project.

	Alternative B			Alternative C 77m to 100m			Alternative D 77m to 100m		
Vegetation Community	**Permanent Impact**	**Temporary Construction Impacts**	*TOTAL*	**Permanent Impact**	**Temporary Construction Impacts**	*TOTAL*	**Permanent Impact**	**Temporary Construction Impacts**	*TOTAL*
Aspen	0	0	0	0	0	0	0	0	0
Juniper	17	14	31	9	6 to 7	15 to 16	6	4 to 5	10 to 11
Juniper/mountain mahogany	13	11	24	13	9	22	12	8 to 9	20 to 21
Mountain mahogany	14	11	25	13	9	22	11	8 to 9	19 to 20
Big sagebrush	12	10	22	2	1	3	1	1	2
Mountain sagebrush	26	21	47	13	9	22	5	4	9
Mountain sage/low sage	15	12	27	15	10 to 11	25 to 26	10	7 to 8	17 to 18
Low sagebrush	40	32	72	32	21 to 23	53 to 55	12	8 to 9	20 to 21
Grassland	38	31	69	86	57 to 62	143 to 148	85	60 to 67	145 to 153
Agricultural	0	0	0	0	0	0	0	0	0
Disturbed/existing roads	26	21	47	18	12 to 13	30 to 31	15	11 to 12	26 to 27
Open water	0	0	0	0	0	0	0	0	0
Riparian	0.1	0.1	0.2	0	0	0	0	0	0
Rock outcrop	2	2	4	2	1	3	1	1	2
Total	203	165	368	203	134 to 147	337 to 350	158	111 to 123	269 to 282

Alternative C

Construction impacts associated with Alternative C would initially affect approximately 337 to 350 acres (3%) of the Proposed Project area. Post-construction reclamation would restore approximately 134 to 147 acres (40% to 42%) of this affected area. However, it should be noted that approximately ten percent to 20 percent of the temporarily disturbed sites could have shallow soils that would have a low probability of successful restoration. The result would be a permanent impact to approximately 203 acres (2%) of the Proposed Project area.

Vegetation community types that would be directly affected from construction activities include: juniper; mountain mahogany; big, low, and mountain sagebrush; grasslands; and some riparian sites (Table 4.6-1). Agricultural land, aspen communities, and open water sites would not be affected by this alternative.

Impacts to vegetation and special status plants species from construction activities would be similar to Alternative B. The number of acres permanently affected would be the same as Alternative B. However, under Alternative C, the total acres of vegetation affected by both temporary and permanent impacts would be less (Table 4.6-1). By affecting fewer acres, the number of individual plants lost would be reduced; therefore, the direct impacts to reproduction and reestablishment would be decreased. Similarly, a reduction in the number of acres directly affected would decrease the potential for indirect impacts associated with invasive species, mechanical impact to soils, and alteration of community dynamics.

Alternative D

Construction impacts associated with Alternative D would initially affect approximately 269 to 282 acres (3%) of vegetation within the Proposed Project area. Post-construction reclamation would restore approximately 111 to 123 acres (41% to 44%) of this affected area. However, it should be noted that approximately ten percent to 20 percent of the temporarily disturbed sites could have shallow soils that would have a low probability of success restoration. The result would be a permanent impact to approximately 158 acres (1%) of the Proposed Project area.

Vegetation community types that would be directly affected from construction activities include: juniper; mountain mahogany; big, low, and mountain sagebrush; grasslands; and some riparian sites (Table 4.6-1). Agricultural land, aspen communities, and open water sites would not be affected by this alternative.

Under Alternative D, potential impacts to vegetation and special status plants species from construction activities would be less than those expected for Alternative B and Alternative C. Also, Alternative D would affect fewer total acres of vegetation when considering both temporary and permanent impacts (Table 4.6-1). By affecting fewer acres, the number of individual plants lost would be reduced; therefore, the direct impacts to reproduction and reestablishment would be decreased. Similarly, a reduction in the number of acres directly affected would decrease the potential for indirect impacts associated with invasive species, mechanical impact to soils, and alteration of community dynamics.

4.6.2 Wildlife

A detailed report on probable impacts of this Proposed Project is provided in the Proposed Project technical report for biological resource impacts (Sharp *et al.* 2005). There are no similar operating wind projects located on the common landforms (long, narrow ridge with cliffs), region (southeast Idaho), or within specific habitats (sagebrush and mountain mahogany) that exist on Cotterel Mountain. As a consequence, there is no specific case history available to use in predicting the impacts of this Proposed Project on wildlife. Thus, this impact analysis relies on the experience and data from other western wind plants and in some cases, midwestern wind plants. It should be noted that there are several wind power projects on private land that have recently received permits in Idaho and which could be under construction during the next few years. These may provide some insight into wildlife impacts but none are in habitat similar to that on Cotterel Mountain. Therefore, they will not be a factor in the analysis of potential wildlife impacts from this Proposed Project.

Ranking systems provide insight into species-specific population status (e.g. potential decline, population fragility, or potential for impacts) and will be used in this section to assist in describing the context and intensity of impacts to specific species from this Proposed Project. For example, suspected impacts to a BLM Type II Special Status Species would be more closely scrutinized than would those of a BLM Type V watch species because it is likely that the population of a watch species would be more stable.

Potential impacts to wildlife will be analyzed in terms of: (1) local populations, (2) surrounding area populations, and (3) landscape populations. Local impacts are those that are anticipated to result from the Proposed Project on-site. Surrounding area impacts are those that may affect connected or adjacent populations, migrations, habitat use, or "ripples" from the local effects. The surrounding area would be considered the Raft River-Cassia Creek and Marsh Creek watersheds. Landscape level effects are generally thought of as impacts to populations such as migratory birds, bats, or other migratory species. A landscape effect could include analysis of impacts to wildlife populations in other states.

Wildlife impacts for ranked species in the local, surrounding area and landscape, both direct and indirect as well as cumulative impacts will generally be discussed within the framework of the following effects: direct mortality, habitat loss, habitat avoidance (i.e. displacement), and habitat degradation.

Big Game

Big game species are an important natural resource in Idaho, and hunting is one of Idaho's primary outdoor recreational activities. High quality, relatively undisturbed big game winter range is an important resource, especially those areas where human disturbance is low. The quantity and quality of winter range usually limits big game populations, so a reduction in the carrying capacity of winter range could result in permanently lowered populations. The quality of winter range is affected by the amount of human disturbance, which is in turn related to how easily people can access winter range habitat. Big game using the parts of Cotterel Mountain outside the vicinity of the access road to the radio tower site is typically accustomed to seclusion and low levels of human intrusion.

Alternative A (No Action)

The No Action Alternative would not adversely affect big game winter range on Cotterel Mountain.

Alternative B

Big game species potentially occurring on Cotterel Mountain (mule deer, bighorn sheep, and mountain lion) would experience direct habitat loss, and the indirect impacts of displacement from the vicinity of the site during both construction and operation of the Proposed Project. The acreages of impact to big game habitat presented below are for the amount of habitat actually disturbed by the Proposed Project; additional habitat adjacent to the actual disturbance may not be used by big game due to the presence of humans, equipment, and noise during construction and O&M activities.

Approximately 105 acres of mapped mule deer winter range, comprising two percent of the total mapped winter range within the Proposed Project area, would be permanently eliminated under Alternative B (Table 4.6-2). The loss of two percent of the total mule deer winter range within the Proposed Project area is not expected to affect the number of deer that can be supported during winter on Cotterel Mountain; therefore, impacts from the Proposed Project on mule deer winter range are expected to be low. Some habitat avoidance and habitat degradation would also be expected to occur.

Table 4.6-2. Potential Mapped Big Game Habitat Loss From the Proposed Project.

Alternative	Big Game Species Habitat Type		
	Mule Deer Winter Range (acres)	Bighorn Sheep Winter Range (acres)	Mountain Lion (acres)
Alternative B			
Permanent impact	105	194	203
Percent of total habitat	2%	2%	2%
Alternative C			
Permanent impact	62	162	203
Percent of total habitat	1%	1.5%	2%
Alternative D			
Permanent impact	58	115	158
Percent of total habitat	1%	1%	1.5%

The overall response of mule deer to the operating wind power project is difficult to predict. Radio telemetry studies have shown that mule deer avoided oil and gas exploration sites for distances of up to one mile in Wyoming (NWCC 2004). It is possible that some portion of the mule deer that use Cotterel Mountain would habituate to the presence of the operating project as well as to the increased traffic associated with maintenance of the Proposed Project. Some mule deer may not habituate to the presence of the Proposed Project and its associated activities and therefore would avoid the Proposed Project area. It would be anticipated that mule deer would use other winter range within the Raft River Valley drainage system. In addition, mule deer may avoid the Proposed Project area year round, thus losing not only winter range use, but potentially other seasonal use of the area. It is unknown if this displacement would adversely affect the behavior and fitness of these deer.

The Proposed Project, under Alternative B, has the potential to increase the number of visitors to Cotterel Mountain. Increased human activity would be expected to result in additional displacement of mule deer further from their Cotterel Mountain winter range. Improved road access available to hunters could result in increased harvest or poaching of deer. However, if human use increases following completion of the Proposed Project, then some displacement of mule deer from the area would be expected.

Alternative B would permanently eliminate a total of 115 acres of mapped bighorn sheep winter range, which is less than one percent of the total area of winter range within the Proposed Project area (10,877 acres). Although most of Cotterel Mountain is designated as bighorn sheep winter range (Idaho Department of Fish and Game (IDFG) 2003b), it is currently not used and therefore adverse impacts are not expected from Alternative B. However, it could be expected that bighorn sheep habitat on Cotterel Mountain would become unsuitable with the development of the Proposed Project and increased human use of the area, thus the potential for bighorn sheep use on Cotterel Mountain in the future would be lost.

The use of fencing within the Proposed Project area would be very limited. Chain link fences would be used to prevent big game, livestock, and people from entering the Proposed Project substations. Since individual wind towers would not be fenced, it is anticipated that big game movement through the Proposed Project area would not be curtailed or hindered.

Disturbance during and after construction would also have adverse impacts on mountain lions. Mountain lions, would likely initially avoid the area during project construction. Following construction mountain lions may habituate to the operating project to some degree depending on the level of public use of the area, and to any changes that may occur to mule deer distribution. Construction and O&M may change the patterns of mountain lion use and decrease prey availability on Cotterel Mountain.

Alternative C

The impacts of Alternative C to big game would be similar to those expected to occur under Alternative B, with slightly smaller areas of temporary impacts (Table 4.6-2).

Alternative D

The impacts to mapped mule deer winter range from Alternative D would be slightly less than Alternative B but would be about the same as Alternative C. Under Alternative D, no turbines would be constructed along the east ridgeline of Cotterel Mountain. Overall, there would be a reduced potential for disturbance to mule deer from construction activities and there would be no O&M activities along the east ridge area.

Impacts to mapped bighorn sheep winter range from Alternative D would be slightly less than Alternative B and Alternative C (Table 4.6-2). Under Alternative D, no turbines would be constructed along the east ridgeline of Cotterel Mountain. Overall, there would be reduced potential for disturbance to mapped bighorn sheep from construction activities and there would be no O&M activities along the east ridge area.

Impacts to mountain lions from Alternative D would be the similar to Alternative B. Under Alternative D, no turbines would be constructed along the east ridgeline of Cotterel Mountain. Overall, there would be reduced potential for disturbance to mountain lions from construction activities and there would be no O&M activities along the east ride area.

General Wildlife Habitat for Birds and Non-Game Mammals

Alternative A (No Action)

The No Action Alternative would not adversely affect wildlife habitat on Cotterel Mountain.

Alternative B

Non-game mammals and small birds would be affected by increased traffic and human presence on Cotterel Mountain, but primary effects would occur in direct proportion to the amount of potential habitat removed by Proposed Project construction. Alternative B would permanently eliminate about 200 acres, or two percent of the 11,500-acre Proposed Project area, and temporarily alter an additional 164 acres (1.4%), which would be restored once construction is complete. It should be noted that restoration of shrub-steppe vegetation to a condition where it is again providing suitable habitat could take many years. Due to the added complication of soil compaction during construction of the Proposed Project, it could take up to 20 years or longer to restore temporarily altered habitat on Cotterel Mountain.

Under Alternative B, there would be loss of a portion of seasonal (winter and nesting) habitat for many different species such as small birds, small mammals and raptors. Based on the vegetation analysis, there is not expected to be a total loss of any single vegetation cover type or habitat found on

Cotterel Mountain. During construction, some areas would likely be avoided by those resident birds and mammals that are sensitive to human disturbance. Once construction is complete and disturbance levels decline, many of those species would be expected to reoccupy habitats near the facility. During operation, nesting passerines may avoid the area within a few hundred meters of the turbines (Leddy *et al.* 1999), but no species are expected to permanently disappear from Cotterel Mountain.
It has been shown that small birds may avoid the area surrounding the wind turbines, transmission interconnect lines, and roads of wind projects by up to 590 feet (NWCC 2004). Using this 590-feet potential avoidance zone from the Proposed Project features, the area of avoidance for passerines under Alternative B would be approximately 4,485 acres.

Alternative C

The impacts under Alternative C would be similar to, but slightly less than those of Alternative B in terms of the permanent and temporary disturbance footprints. The 180-meter avoidance zone under this alternative would affect approximately 3,700 acres.

Alternative D

The impacts under Alternative D would be similar to, but less than those of Alternative C, and much less than those of Alternative B, in terms of a 180-meter avoidance zone which would be approximately 3,120 acres. The temporary and permanent construction footprints of this alternative would also affect the fewest number of acres of the three action alternatives.

4.6.3 Amphibians and Reptiles

Alternative A (No Action)

Alternative A would not have an impact on amphibians and reptiles at Cotterel Mountain.

Alternative B

Impacts to local amphibian habitats would be expected to be low because the Proposed Project road construction generally would occur outside of the riparian habitat where amphibians would occur. Less than one percent of the riparian habitat would be impacted from road construction. Impacts to reptilian habitat would be expected to be moderate because the Proposed Project would generally occur within rocky areas, including blasting which could alter thermal attributes snake hibernation sites and potentially make them unusable or it could create additional snake hibernation sites. In addition, local mortality impacts are expected to be high because many reptiles are attracted to warm roads during the summer and thus are expected to experience higher fatality rates from vehicles.

Alternative C

Expected impacts to amphibians and reptiles would be similar to those of Alternative B.

Alternative D

Impacts to amphibians and reptiles would be similar to those of Alternative B and Alternative C, although the area of ground disturbance would be lowest under this alternative and it would likely have the least impact of the action alternatives on amphibians and reptiles.

4.6.4 Bat and Bird Fatalities from the Operations of the Proposed Wind Project

Wind power projects may have effects on wildlife, particularly avian species and bats, depending upon the location, geography, and natural setting of the Proposed Project. Long-term effectiveness monitoring of the Proposed Project (five years or greater) is key in understanding the relationships between the Proposed Project design, siting of the towers, and operation of the facility and effects on wildlife. These effects can occur in a variety of ways but based on data collected from other wind farms, are chiefly associated with occasional bird collisions with the large propellers that drive each of the wind turbines (referred to as the rotor swept area of each turbine).

Long-term monitoring is also necessary to determine how the characteristics of the Proposed Project and its turbines affect the behavior and migration of birds and bats and to determine if there are certain turbines along the string that are contributing to bird and bat mortality that would trigger the need to implement management actions to reduce these effects. The Applicant and BLM recognize that effectiveness monitoring results may require operational changes or adaptive management actions and will work cooperatively with the U.S. Fish and Wildlife Service (USFWS) and IDFG to develop adaptive management actions that will address wildlife mortality if it occurs. Adaptive management tools that are available to the Applicant and BLM include, but are not limited to: timing stipulations during construction, operational changes of turbines, siting considerations, lighting scenarios, and color schemes. These adaptive management tools are addressed in Appendix D.

Many existing wind power projects that have multiple strings of wind turbines stacked one behind another create a “gauntlet” for birds and bats. Mortality factors increase in these maze-like wind farm layouts where there can be multiple risks to birds and bats that attempt to navigate through them. Recent data at other wind energy sites across the country that have these layouts (including Altamont and Stateline) have identified “problem turbines” that often cause the majority of bird and bat mortalities.

The Proposed Project involves only one linear string of towers with the towers being approximately one-quarter mile apart. In addition, the proposed Cassia RMP amendment is specific to the Proposed Project only, and no other wind energy projects will be permitted on Cotterel Mountain. This will eliminate the possibility of the “gauntlet” effect on birds and bats in the future.

Understanding how a wind power generating facility function helps better understand the potential effects to resources and other public use of the area and aids in developing responsive management strategies to avoid, reduce and mitigate these effects wherever possible along the turbine string.

The Proposed Project is projected to operate at 0.35 (35%) capacity factor under optimum wind conditions. This means that the Proposed Project generates 0.35 (35%) of its total nameplate capacity over time because the wind does not always blow at a speed high enough to turn the blades of the turbines and generate electricity; and at times it blows so fast, i.e., during storms, that the blades are feathered or braked (stopped).
This is not to say that all of the turbines in a project are running 35 percent of the time or that they all are not running 65 percent of the time. Each turbine functions independently of each other. The turbine blades begin to turn when the wind reaches speeds of approximately eight to nine miles per hour or greater. When wind speeds exceed approximately 55 miles per hour, the blades are feathered and turned out of the wind.

Naturally, wind speeds are variable along the length of a mountain ridge. As you move along a 12 to 14 mile turbine string, as is proposed on Cotterel Mountain, each turbine turns independently of the others according to the wind speed at its location. The observer will normally see that some turbines are turning and others are not turning at any given time. Rarely would all the turbines be either turning or not turning at the same time. Each turbine operates as a single entity; some may generate 45 percent of the time and others only 25 percent of the time because of their location on the mountain (it is only the overall Proposed Project average that is 35%). In summary, it is difficult to predict at what time and how long any one turbine would be turning. There is, however a general difference between diurnal and nocturnal wind patterns.

Migratory Bats

Most studies have shown that the majority of bat mortalities at wind plants are long-distance migratory tree and foliage roosting species, such as the hoary bat, little brown myotis, and silver-haired bat. Of these species, the hoary bat has a higher wind turbine impact mortality rate than all other species in the west (Erickson *et al.* 2002; Gruver 2002). The data also show that mortality is almost nonexistent during the breeding season and generally occurs during migration and dispersal in late summer between July and September (Johnson *et al.* 2002; Gruver 2002). The same studies also showed that mortality rates were higher during fall migration than spring. This was attributed to a lower migration concentration because females leave earlier than males in the spring, but not in the fall (Gruver 2002). Studies also indicate that bats follow large migrations of moths during the fall months. Further, it is well documented that these same species have a history of impact mortality with transmission interconnect lines, television and communication towers, and even lighthouses (Erickson *et al.* 2002).

The evidence also shows that resident bats, which are foraging or commuting between roosts, do not make up the bulk of collision mortality (Crawford and Baker 1981; Johnson *et al.* 2000b). This is based on impact distribution data among turbines and observed forage habitat characteristics. Since resident bats would have a defined flight corridor between roosts, they should exhibit higher densities of fatalities in these corridors, but in a majority of the cases that were studied, there are no patterns; rather, there are no areas of appreciably higher densities in the distribution of fatalities (Erickson *et al.* 2002; Johnson *et al.* 2000a).

In addition to flight corridor data, evidence from foraging behavior demonstrates that it is unlikely that fatalities would occur in resident bat populations rather than migrating ones (Erickson *et al.* 2000). Normally, bats do not forage at heights associated with turbine activity or in areas associated with wind-turbine projects, since these areas generally are very flat and windy and have reduced insect populations. Rather, they are normally associated with less wind and more water (Johnson *et al.* 2002).

Migratory bat species may be more likely to be involved with collision mortality events because they fly higher in the air and in denser clusters when migrating (Harvey *et al.* 1999). This not only puts the bats at a height associated with the turbine impact zone, but because they migrate in groups, their ability to use echolocation is affected (Griffin 1970). Evidence also shows that fatality events during migration may be dependent on the surrounding habitat. Studies done at Foote Creek Rim (Wyoming) and Buffalo Ridge (Minnesota) wind plants have shown an inverse relationship between the number of turbine mortalities and the distance to the nearest woodland habitat (Erickson *et al.* 2002; Johnson *et al.* 2000b). There are woodlands (juniper and mountain mahogany) in the immediate vicinity of some of the proposed turbines. The same studies also showed that turbines with lights mounted on or near the turbines did not cause appreciably higher numbers of fatalities.

Based on the available information, larger, less maneuverable, migrating species are primarily associated with wind turbine mortality events. In addition, those species, most notably hoary and silver haired bats in the western U.S., migrating in large colonies in late fall, make up the majority of fatalities observed and recorded (Erickson *et al.* 2002; Johnson *et al.* 2000a). Although there have been limited quantifiable data about wind turbine/bat collision effects on bat populations, qualitative and circumstantial data suggest that turbine mortalities do not appreciably contribute to population declines (Erickson *et al.* 2002), at least in the west.

Resident Bats

Cotterel Mountain has three known bat species (western small-footed myotis, long-eared myotis, and pallid bat) that may be affected by disturbances from construction or impact caused mortality from turbines. Other bat species may occur, but have not yet been identified. If bat hibernacula or nursery colonies are present in the cliffs and rock outcrops along Cotterel Mountain, blasting and/or drilling during construction could disturb bats and cause temporary or permanent abandonment of these areas during the hibernating or nursery season.

<u>Alternative A (No Action)</u>

Alternative A would not adversely affect resident bats on Cotterel Mountain.

<u>Alternative B</u>

The construction of turbine foundations and roads would directly affect only about one acre of rock outcrop within the Proposed Project area. However, noise and percussion from blasting, drilling, digging, and movement of large vehicles could affect roosting, breeding, or hibernating bat species. Once construction is complete and disturbance levels decline, displaced bat species would be expected to reoccupy roosting habitats near the facility. Therefore, the primary potential impact to bat species from the Proposed Project would be to those species attempting to rear young and hibernate within rock outcrops near the construction sites both from potential displacement and potential impact mortality due to turbine proximity to cliff areas.

Of the three species of bat known to occur on Cotterel Mountain, the western small-footed myotis is the only species that hibernates winter-long (one of the last species to start) and uses rock outcrops and caves as primary roosting, breeding, and hibernating habitat. Construction activity from late May or June through early July could displace hibernating or breeding western small-footed myotis and lead to increased offspring mortality.

The long-eared myotis is normally found near open water and roosts/hibernates in trees (IDFG 2002). Pallid bats are also found near open water, and generally do not hibernate. Both of these species are less likely to be affected adversely by Proposed Project construction.

No turbine impact caused mortality has been recorded for western small-footed myotis, long eared myotis, and pallid bat at any other wind plant. Therefore, impacts from operation of the Proposed Project should be low to these species.

<u>Alternative C</u>

Impacts would be similar to that of Alternative B, but to a lesser extent.

<u>Alternative D</u>

Impacts would be similar to that of Alternative B and Alternative C, but would be the smallest of the three action alternatives.

Birds

Passerines are the most frequent fatality recorded at wind plants and often comprise more than 80 percent of the fatalities recorded in modern wind plants in the west (Erickson *et al.* 2001b). The degree of collision risk to birds at wind plants appears to be species-specific, based on the results of fatality monitoring at other wind plants throughout the west. For example, fatalities of ravens, turkey vultures, and ferruginous hawks are rare, while fatalities of American kestrels, red-tailed hawks, and horned larks are more common. The siting of a wind power project in specific types of habitat and the behavior of an individual species plays a large role in its risk of collision.

Flight heights recorded in the field during point counts and diurnal fall migration surveys were analyzed to produce risk indices for each species and combined to produce overall indices for each group, although it must be recognized that there is variability within each group. Avian risk indices were calculated by turbine type for the avian and fall migration studies. Risk was calculated by multiplying use, expressed as the average number of birds of that group observed per plot survey, by the proportion of those birds that were observed flying, by the proportion of those flying birds that flew within the rotor swept area of that turbine. The risk indices for each group are therefore the average number of flying birds observed, per plot survey that flew within the rotor swept area of that turbine type.

Vertical risk indices were calculated from point count and diurnal fall migration data by multiplying percentages flying within the vertical rotor-swept area (RSA) by use. These risk indices varied among species, and were fairly similar among turbine types (Sharp *et al.* 2005). The vertical risk estimates for individual species varied from zero for sage-grouse, chukar, and pinyon jay to higher levels in the 0.2 to 0.8 range for the red-tailed hawk, turkey vulture, northern harrier, and a high of 0.6 to 3.8 for the common raven during point counts and diurnal fall migration, respectively. The American kestrel risk was in the lower range around 0.05 during the year long point counts and in the higher 0.1 to 0.2 range during the fall migration surveys, presumably because migrating birds flew higher than resident, hunting birds. The common raven, red-tailed hawk, turkey vulture, northern harrier, and American kestrel were the five species with the highest risk indices based on data from both the yearlong point counts and the fall migration surveys. Among passerines, swallows, unknown passerines, pine siskins, mountain bluebirds, and gray-crowned rosy finches had the highest risk indices. Tables 4.6-3 and 4.6-4 provide summaries of the risk indices by group, from the yearlong point counts and fall migration surveys, respectively. Risk indices by species are presented in the Proposed Project technical report for biological resource impacts (Sharp *et al.* 2005).

Table 4.6-3. Vertical Risk Indices by Avian Group and Turbine Type Based on Year-long Point Counts.

Avian Group	Vertical Risk Indices by Turbine Diameter Type and Group					Overall Use
	70-meter	77-meter	80-meter	92-meter	100-meter	
Corvids	0.51	0.48	0.60	0.55	0.60	0.830
Doves	0.05	0.03	0.05	0.04	0.05	0.103
Gulls	0.07	0.07	0.07	0.07	0.07	0.101
Others	0.04	0.02	0.04	0.03	0.04	0.145
Passerines	2.654	1.86	2.70	2.56	2.70	5.857
Raptors	0.82	0.92	1.02	0.97	1.02	1.347
Upland game birds	0.04	0.00	0.04	0.00	0.04	0.105

These risk calculations, however, do not account for the obvious fact that the majority of birds must see turbines and avoid them, since birds are always present at wind plants in varying numbers, and the number of fatalities recorded is small, estimated to range between zero and four birds per turbine per year in the west. For example, a comparison of spring radar data and nighttime fatality estimates at the Stateline (Washington/Oregon), Buffalo Ridge (Minnesota), and Nine Canyon (Washington) wind plants indicated that between less than 0.01 percent to 0.08 percent of the targets passing through the area resulted in fatalities (NWCC 2004).

Table 4.6-4. Vertical Risk Indices by Avian Group and Turbine Type Based on Fall Migration Surveys.

Avian Group	Vertical Risk Indices by Turbine Diameter Type and Group					Overall Use
	70-meter	77-meter	80-meter	92-meter	100-meter	
Corvids	3.49	3.35	3.86	3.71	3.86	5.345
Doves	0.57	0.27	0.57	0.27	0.57	0.685
Others	0.02	0.02	0.02	0.02	0.02	0.025
Passerines	1.20	1.01	1.23	1.11	1.23	2.020
Raptors	1.81	1.82	2.27	2.07	2.29	3.398
Upland game birds	0.00	0.00	0.00	0.00	0.00	0.123

Avian Risk Indices were calculated by turbine for all birds observed flying in the avian and fall migration studies. The overall use in these tables is the average number of birds of that group observed per plot survey. Vertical Risk was found using the formula:

Vertical Risk = Use * Proportion of Birds Flying * Proportion of Birds Flying in the RSA

Flight direction patterns mapped on Cotterel Mountain showed that large birds moved predominantly southward during the fall, based on point count and fall migration survey data (TBR 2004). Flight directions during the spring, and of small birds, however, did not show such strong trends. The point count flight path maps showed that a fairly large proportion of raptor flight paths were parallel to and offset from the ridgetop where the turbines are proposed. The fall migration data showed some species-specific tendencies in terms of flight paths. Sharp-shinned hawks and Cooper's hawks tended to be to one side or the other of the ridgetop, and American kestrel flight paths were often to the west of the ridgetop. The flight paths of other species appeared to be somewhat uniformly distributed over the Proposed Project area.

The aerial raptor nest surveys documented an average of 0.32 active large raptor nests per square mile (mi^2) in the 68-square-mile raptor nesting survey area (excluding ravens and ground nesters such as northern harrier). The raptor nesting density in the raptor nesting survey area at Cotterel Mountain is slightly higher than raptor nesting densities recorded for other wind projects located in Colorado, Oregon, Washington, and Wyoming. These other wind projects reported nest densities ranging from 0.03 to 0.30 nests per mi^2, with a median density of 0.16 nests per mi^2 (n = 28) (Erickson *et al.* 2001b). This higher nesting density for raptors at Cotterel Mountain is attributed to the differences in habitat and topographic features between Cotterel Mountain and these other wind projects. Cotterel Mountain habitat is comprised of forested juniper and mountain mahogany with an abundance of cliffs. Habitat within the other projects was predominantly dry, open grassland and active, dry agriculture where the scarcity of trees and cliffs present raptors with few suitable nesting opportunities. Table 4.6-5 lists the comparative raptor nesting survey data. Potential raptor fatalities are of concern at the Projected Project area, because both the nesting density of 0.32 active nests per mi^2 and rates of use (1.3 raptors per 20-minute survey) are relatively high, compared to that at other western wind plant sites (Sharp *et al.* 2005).

Table 4.6-5. Raptor Nesting Density Comparisons.

Project	Project Site	Habitats	Year	Nest Sites	Density Comparison (nests/mi^2)	Comments
Cotterel, ID	Cotterel, ID	Sagebrush and native grasses, juniper and mountain mahogany, some aspen, cliff faces	2003	22	0.32	All active and probably active nests, excluding ravens and ground nesting species such as harriers, and including turkey vultures
Condon, OR	Condon, OR	Primarily dry agriculture, shrub-steppe, and grasslands; scarce upland trees; rare riparian habitats; a few very small wetlands and residential areas.	2000	19	0.04	Raptors and ravens (no ground species)
			2000	13	0.03	Raptors (no ground species)
Kenetech and CARES Wind Farm, OR/WA	Kenetech and CARES Wind Farm, OR/WA	Rangeland, shrub-steppe, rounded loess hills, basalt outcropping and cliffs, some riparian habitat, some cropland and woodland, "natural landscape"	1994	16	0.30	Hawk, owls, eagles
Maiden Wind Farm, WA	Maiden Wind Farm, WA	Grassland/shrub-steppe, dryland agriculture (wheat), CRP pastures, "natural landscape"	2001	55	0.23	Active raptor and raven nests (did not include ground dwelling species (northern harriers, short-eared owls, and burrowing owls)
			2001	38	0.16	Only active raptor nests (not including ground species)
Ponnequin Wind Energy, CO	Ponnequin Wind Energy, CO	Gently rolling, short/mid grass prairie	1997	27	0.16	Raptor nests includes unknown species
			1998	16	0.10	Active raptor nests, includes unknown species

Table 4.6-5. Raptor Nesting Density Comparisons.

Project	Project Site	Habitats	Year	Nest Sites	Density Comparison (nests/mi^2)	Comments
Seawest Windpower Project, WY	Foote Creek Rim	Natural landscape	1995	56	0.15	Active raptor nests
			1997	83	0.22	
			1998	70	0.18	
			1999	70	0.18	
	Simpson Ridge		1995	87	0.16	
			1997	96	0.17	
			1998	97	0.18	
			1999	93	0.17	
	Morton Pass Reference		1995	40	0.07	
			1997	37	0.07	
			1998	49	0.09	
			1999	48	0.09	
The Stateline Project OR/WA	Wind Resource Area	Grazed shrub-steppe, CRP seeded pastures, cultivated wheat fields	1995	8	0.10	Active nests, hawks and owls
			2000	16 to 18	0.20 to 0.23	Active nests, hawks, owls, unknown raptor, unknown large birds
	WRA (blue)		2000	11	0.14	Active nests, no unidentified birds, nor burrowing owls
	Reference Area		1995	13	0.15	Active nests, hawks, unknown raptors, owls
TPC Oregon Wind Power Development	Oregon	Non-irrigated agriculture, wheat and cattle grazing,	2001	50	0.24	Active nests, buteos, falcons, owls

Table 4.6-5. Raptor Nesting Density Comparisons.

Project	Project Site	Habitats	Year	Nest Sites	Density Comparison (nests/mi^2)	Comments
Stateline, OR	---	"agricultural landscape"	2001	19	0.213	Raptors (buteos, eagles, great horned owl), no ground species (northern harriers, short-eared owls, burrowing owls)
Klondike, OR	----	"agricultural landscape"	2001	3	0.060	
Nine Canyon, WA	----	"agricultural landscape"	2001	4	0.158	
Zintel Canyon, WA	----	"agricultural landscape"	2001	4	0.033	
Buffalo Ridge, MN	----	Agricultural crops (corn, soybeans, grains, hay,) and Conservation Reserve Program fields (grasslands), small areas of woodlots and wetlands, "agricultural landscape"	Unknown	Unknown	0.153	

Nest Densities as Reported by West, Inc. (Erickson *et al.* 2001a)
Raptors only, excludes inconspicuous ground species

Nesting Raptors

Alternative A (No Action)

Alternative A would not result in any impacts on raptor populations.

Alternative B

The impact of Alternative B on nesting raptors would depend on a number of factors including the construction methods used, the proximity of the construction to the nest, the noise level, and whether the construction activity is visible to the birds in the nest. Blasting during the nesting season would have the highest likelihood of causing abandonment of raptor nests. Resident hunting raptors may avoid the vicinity of the turbines and in combination with the habitat lost to construction have a slightly smaller prey base available within their territories. This reduction could affect the productivity or survival of individual pairs of birds. Golden eagles and prairie falcons nest among the cliffs very near the Proposed Project. Construction and Proposed Project operations would be precluded within a one-quarter mile circle around a known golden eagle nest location.

Alternative C

The impacts of Alternative C would be similar to that of Alternative B.

Alternative D

The impacts of Alternative D would be very similar to that of Alternative B and Alternative C. Under Alternative D, there would be fewer turbines constructed. There would be no turbines constructed along the east ridge of Cotterel Mountain. This would result in reduced potential impacts to nesting raptors along the east ridgeline area. The two golden eagle nests located at the north and south end of the east Cotterel Mountain ridgeline would be avoided. Overall, there would be a reduced potential for disturbance to nesting raptors from construction activities and there would be no O&M activities in this area.

Waterfowl, Shorebirds, and Waders

This group of species is not expected to be measurably affected by any of the Proposed Project alternatives, because no suitable habitat is present at Cotterel Mountain for birds in this group, and only a very few migrants were observed during on-site avian surveys (TBR 2004). There would be the potential for migrating individuals from this group to occasionally pass through the Proposed Project area. However, this would be expected to be rare and would not be expected to result in a measurable affect on any local or regional population of this group of species.

Passerines and Other Small Birds

Radar Data

The radar study conducted during the fall of 2003 (ABR 2004; TBR 2004) indicates that fall nocturnal migration passage rates at Cotterel Mountain are similar to two other locations studied (i.e., at the Stateline and Vansycle wind-energy sites in eastern Oregon; Mabee and Cooper 2002). Flight altitudes were also similar between these sites. Overall, only 3.3 percent of nocturnal targets flew at or below 125 meters above ground level during the fall radar study. Risk of fatality in nocturnal migrants is predicted to be similar to the mortality rates at Stateline and Vansycle, although a direct comparison cannot be made, as the data from Stateline and Vansycle were collected at a different time and included spring migrants. Further, turbine heights at the Stateline and Vansycle projects are lower than the proposed turbines at the Proposed Project. The passage rates and elevations indicate that the fatality rates for nocturnal migrants would be expected to be similar to rates from eastern Oregon and Washington.

There are no existing wind projects on the same type of landform, region, and habitat at Cotterel Mountain. As a consequence, there is no case history available to use in predicting the impacts of this Proposed Project on wildlife. Some new wind plants in other regions of the U.S. have experienced higher fatality rates of raptors and bats than those in Minnesota, Wyoming, Oregon, and Washington. Considering this new information, the fatality rates for bats and/or birds at this Proposed Project may be higher than predicted rates based solely on the Minnesota, Wyoming, Oregon, and Washington rates.

<u>Alternative A (No Action)</u>

Alternative A would not adversely affect birds or bats on Cotterel Mountain.

<u>Alternative B</u>

Table 4.6-6 provides a summary of the estimated ranges of annual fatalities for birds and bats at the Proposed Project, based on the fatality searches conducted in Minnesota, Wyoming, Oregon, and Washington wind plants. The estimated annual fatality range calculations were made three ways: per turbine, per 3000 square meters of RSA, and per MW. These three ranges were used based on the findings of the wildlife working group of the NWCC. This group is comprised of professional biologists conducting post-construction monitoring studies of wind plants. These professionals agree that it was prudent to use three estimates, given the large variation in turbine sizes currently in operation. Relatively few rigorous, standardized carcass searches, which also account for birds missed by the surveyors or removed by scavengers have been conducted, and therefore the range of estimated fatalities that result from these studies is large. This is typical of studies that attempt to obtain a sufficiently large sample of rare events.

Considering data from other projects, it is estimated that annual raptor mortality for Alternative B may range from zero to 63 birds. The estimated number of all bird fatalities may range from zero to 934 per year. The estimated number of bat fatalities may range from zero to 667 per year (Table 4.6-6). In all three cases, the range differs according to the basis of the prediction (number per turbine per year, number per 3000 square meters of RSA, or number per MW).

Additional fatalities may also occur from collisions with overhead electric transmission interconnect lines, although such collisions are expected to be rare. Alternative B is likely to have the lowest mortality from transmission interconnect lines since it includes only nine miles of new transmission interconnect line. Fatalities would be most likely to occur during conditions of low visibility, or if transmission interconnect lines were located in areas where birds regularly flew between destinations, such as between foraging and nesting areas, or between attractive patches of habitat (bird movement patterns).

Table 4.6-6. Estimated Annual Fatality Ranges, by Alternative, for Birds and Bats at the Proposed Project.

Group and Basis for Estimate	Annual Fatality Range Used for Estimate*		Alternative B	Alternative C		Alternative D	
	Low	High	70 meter	77 meter	100 meter	77 meter	100 meter
Raptors							
Per turbine	0	0.036	0 to 5	0 to 4	0 to 3	0 to 3	0 to 2
Per 3000 sq meters of RSA	0	0.38	0 to 63	0 to 58	0 to 81	0 to 48	0 to 66
Per MW	0	0.265	0 to 52	0 to 39	0 to 64	0 to 33	0 to 52
All birds including raptors							
Per turbine	0	2.8	0 to 364	0 to 274	0 to 227	0 to 230	0 to 185
Per 3000 sq meters of RSA	1.1	5.6	183 to 934	167 to 852	233 to 1188	140 to 713	190 to 968
Per MW	0.9	2.8	176 to 546	132 to 412	219 to 680	111 to 344	178 to 554
Bats							
Per turbine	0	3.2	0 to 416	0 to 314	0 to 259	0 to 262	0 to 211
Per 3000 sq meters of RSA	1	4	167 to 667	152 to 608	212 to 848	127 to 509	173 to 691
Per MW	0.8	3.3	156 to 644	118 to 485	194 to 802	98 to 406	158 to 653
Features of the alternatives							
Number of turbines			130	98	81	82	66
Rotor diameter (meters)			70	77	100	77	100
Total RSA (sq meters)			500,300	456,350	636,174	381,844	518,364
MW per turbine			1.5	1.5	3	1.5	3
Total MW			195	147	243	123	198

Based on data from Erickson *et al.* (2001b).

Alternative C

The impacts of the 147 MW variation of Alternative C would be slightly less than but similar to those of Alternative B. The impacts of the 243 MW variation of Alternative C would be higher (Table 4.6-6). It is estimated that annual raptor mortality at the Proposed Project may range from zero to 58 birds for the 147 MW variation of Alternative C, or zero to 81 birds for the 243 MW variation, based on fatality and use rates from other western wind power projects (Table 4.6-6). The estimated number of bird fatalities for the 147 MW variation of Alternative C is from zero to 852 per year, depending on whether the basis of the prediction was number per turbine per year, number per 3000 square meters of RSA, or number per MW. Bat fatalities are estimated to range from zero to 608 for the 147 MW variation of this alternative, and 57 to 848 per year for the 243 MW variation. The estimated number of fatalities varies, depending on the basis of the prediction: number per turbine per year; number per 3000 square meters of RSA; or number per MW (Table 4.6-6). Fatalities resulting from collisions with overhead electric transmission interconnect lines may be higher than under Alternative B, due to the 19.7 miles of new transmission interconnect line, although this would also be related to the location of the transmission interconnect line in relation to bird movement patterns.

Alternative D

The 123 MW variation of Alternative D would probably cause the lowest number of fatalities of raptors, all birds, and bats, since it has the lowest number of turbines, RSA, and MW. This version of Alternative D is estimated to cause zero to 39 raptor fatalities, zero to 574 all bird fatalities, and zero to 410 bat fatalities per year. Conversely, the 198 MW version of Alternative D is estimated to cause fatality rates very similar to that of the 243 MW version of Alternative C (Table 4.6-6). Fatalities from collisions with transmission interconnect lines would be the same as those under Alternative C because there would also be 19.7 miles of new transmission interconnect line.

4.6.5 Special Status Wildlife Species

Threatened and Endangered Species

Alternative A (No Action)

Alternative A would not impact either of the listed species, gray wolf or bald eagle. This alternative would also not have an impact on sensitive species.

Alternative B

The gray wolf (Threatened, nonessential population) and bald eagle (Threatened) are the only two listed species with potential to occur on Cotterel Mountain and which could be affected by the Proposed Project. Only two bald eagles were observed during the baseline study in the fall of 2003. Wolves or their signs were not observed during the baseline study, and there are no records of wolves on Cotterel Mountain or south of the Snake River. A complete analysis of Proposed Project impacts to bald eagle and gray wolf will be detailed in a biological assessment which is currently under preparation.

Bald eagles appear to be rare migrants through the Cotterel Mountain area, based on the limited observations made during the baseline study. The habitat is not optimal for eagles due to the lack of large trees needed for perching, nesting and roosting. Mortality or injury is the primary potential impact to bald eagles from the Proposed Project. Mortality could occur from both electrocution and collisions with transmission interconnect lines and turbines blades. Bald eagle mortality from electrocution is not expected to occur because overhead transmission interconnect lines would be designed to discourage raptor perching and the distance between wires would be great enough to prevent eagles from touching two wires at once. In addition, electrical facilities at the two substations would be designed in such a way as to decrease the possibility of bird electrocution.

The potential for bald eagles to be killed by the Proposed Project is unlikely, however, the potential does exist and cannot be discounted. Therefore, the potential for a "take" of a bald eagle(s) must be considered a possibility if the ROW for the Proposed Project is granted. As a result, the Proposed Project would require formal consultation under Section 7 of the Endangered Species Act (ESA) of 1973, as amended. A result of that consultation would be a Biological Opinion issued by the USFWS. Take can be authorized in the Incidental Take Statement of the Biological Opinion after the anticipated extent and amount of take has been described, and the effects of the take are analyzed with respect to jeopardizing the species or adversely modifying critical habitat. The Biological Opinion would also specify reasonable and prudent measures and conservation recommendations to minimize impacts on the bald eagle.

According to available information from the BLM and the IDFG, gray wolves are not known to occur on Cotterel Mountain. Since the reintroduction of the gray wolf to central Idaho in 1996, this species has increased its range and population substantially. During the life of the Proposed Project, it is possible that this species could return to Cassia County and inhabit Cotterel Mountain. If wolves did return, they would be anticipated to avoid human activity and would not likely be affected by the operation of the Proposed Project.

<u>Alternative C</u>

The effects of Alternative C would be similar to those of Alternative B, and are not likely to adversely affect either bald eagles or gray wolves.

<u>Alternative D</u>

The effects of Alternative D would be similar to those of Alternative B and Alternative C, and are not likely to adversely affect either bald eagles or gray wolves.

Special Status Species

Small Mammals

<u>Alternative A (No Action)</u>

Alternative A would not have an impact on any sensitive species.

<u>Alternative B</u>

Under Alternative B, the overall impacts to cliff chipmunk populations would likely be low due to the scattered distribution and extent of potential disturbance. During construction, some areas would likely be avoided or abandoned, but once construction is complete and disturbance levels decline, cliff chipmunks would be expected to reoccupy habitats near the facility. The potential absence of predators due to Proposed Project construction may benefit cliff chipmunk populations.

Alternative C

The impacts of Alternative C to special status species would be similar to those expected to occur under Alternative B, with slightly smaller areas of permanent and temporary impacts from Proposed Project construction and fewer turbines.

Alternative D

The impacts of Alternative D to special status species would be similar to those expected to occur under Alternative B and Alternative C, with slightly smaller areas of permanent and temporary impacts from Proposed Project construction.

Birds

Alternative A (No Action)

Alternative A would not have an impact on any sensitive species.

Alternative B

The impact from Alternative B on special status bird species would be dependent on the species and their associated habitat. Cassin's finch, golden eagle, Brewer's sparrow, prairie falcon, pinyon jay, sage thrasher, northern goshawk, ferruginous hawk, loggerhead shrike, peregrine falcon, plumbeous vireo and green-tailed towhee were all observed within the Proposed Project area during the avian surveys; therefore they are likely to occur within the Proposed Project area during construction and operation.

Nesting and non-breeding golden eagles could be adversely affected not only by construction disturbance, but also from collisions with turbines. Golden eagle fatalities have been recorded at other western wind plants, including the Altamont Pass and Montezuma Hills areas of California. The Altamont Pass eagle population has been studied for many years (Hunt 2002), and it is not clear whether the 40 to 60 golden eagles killed there per year is having an adverse effect on local eagle populations. The eagles killed at Altamont were non-breeding adults and subadults termed "floaters." These are birds that are look for territories to occupy and nest in. The nesting population of eagles within 30 kilometers of Altamont has not declined, but the floater population may have declined and floaters are not being produced within this population; therefore, the only source of floaters would be from immigration from other areas (Hunt 2002).

Based on the point count and fall migration survey data, 53 to 70 percent of golden eagles observed flying were within the RSA, depending on turbine type. This indicates that golden eagles could be at relatively high risk of being killed by turbines. Golden eagle use at Cotterel Mountain is approximately four times lower than at the High Winds project. Golden eagle use at Cotterel Mountain is 0.068 birds per 20-minute survey, while it is 0.287 birds at the High Winds project site in the Montezuma Hills in California (Kerlinger *et al.* 2001). One golden eagle fatality was recorded during the first year of monitoring at the High Winds project (Kerlinger *et al.* 2005), which consists of 90, 1.8-MW wind turbines with 80-meter rotor diameters. The High Winds project is used for this comparison because the type and number of turbines at the High Winds project are representative of what would be constructed for the Proposed Project and those at Altamont Pass are not. The approximate rate of expected golden eagle fatalities at the Proposed Project area could be one bird every four years.

Columbian sharp-tailed grouse, long-billed curlew, northern pygmy-owl, and western burrowing owl have historically been observed within the Proposed Project area, but were not observed during the avian survey; therefore, they are not considered likely to occur within the Proposed Project area during the construction phase. Based on the rarity of occurrence of these species and the limited amount of disturbance that would occur within their possible habitat types, it is unlikely that Proposed Project construction would affect these species.

Although there is potential habitat within the Proposed Project area for the flammulated owl, sage sparrow, grasshopper sparrow, red-naped sapsucker, Virginia's warbler, and calliope hummingbird, there are no recorded observations of individuals or nest sites within the Proposed Project area. It is unlikely that Proposed Project construction would affect these species.

There is no suitable habitat present within the Proposed Project area for American white pelican or black tern. Based on the low number of historic observations and lack of habitat, these species are not likely to occur within the Proposed Project area, and would not be impacted by Proposed Project construction. However, both species nest on the Minidoka National Wildlife Refuge and may use the flight space over Cotterel Mountain during feeding or migration flights.

<u>Alternative C</u>

The impacts of Alternative C to special status species would be similar to those expected to occur under Alternative B, with slightly smaller areas of permanent and temporary impacts from Proposed Project construction and fewer turbines. The fatality risk from the turbines, however, may not be less if the total RSA is as high as Alternative B.

<u>Alternative D</u>

The impacts of Alternative D to special status species would be similar to those expected to occur under Alternative B and Alternative C, with slightly smaller areas of permanent and temporary impacts. The fatality risk from the turbines would likely be less because the total RSA would be lower than Alternative B and Alternative C.

Greater Sage-Grouse

There is incomplete and unavailable information regarding the affects of the Proposed Project on sage-grouse. Because there are currently no wind power facilities in operation close to occupied sage-grouse leks, nesting, rearing, or wintering habitat, there is no case history on which to base impact predictions. As a consequence, this impact assessment is based on case histories of the impacts of new roads and transmission interconnect lines, as well as similar elements (e.g. other types of tall structures). This assessment is conservative because the opinions of experts and the results of research and anecdotal information on the effects of energy developments to sage-grouse are wide ranging and sometimes conflicting. The effects of the Proposed Project are unknown and could range from the extremes of temporary avoidance to extirpation of the local population and loss of use of winter habitat during severe winters by sage-grouse from other areas.

Impacts of energy development in general, and wind-power generation developments in particular, on sage-grouse are not well known (Braun *et al.* 2002; Manes *et al.* 2003; Connelly 2003). Although scientists, conservationists, engineers, and developers speculate on the impacts, rigorous scientific study, which quantifies and demonstrates cause-effect relationships is mostly lacking. For example, the analysis of cause-effect relationships between land uses and population responses was the third highest among the eight key research needs identified for sage-grouse in Oregon (Rowland and Wisdom 2002).

The primary reason for the nationwide decline in sage-grouse is habitat related, including, habitat loss, habitat fragmentation, and habitat degradation (Connelly *et al.* 2004). It is reasonable to assume any similar changes to sage-grouse habitat on Cotterel Mountain resulting from the development of Proposed Project would, on a smaller scale, also affect sage-grouse using the surrounding area such as Conner Ridge and Jim Sage Mountain. Whether such effects are measurable is unknown.

Perhaps the single most unknown factor is how sage-grouse, which are accustomed to a relatively low vegetation canopy, would respond to numerous wind turbines hundreds of meters taller than the surrounding landscape. Some scientists speculate such a skyline may displace sage-grouse hundreds of meters or even miles from their normal range (Manes *et al.* 2002; Flake 2003; Connelly 2003; NWCC 2004). If birds are displaced, it is unknown whether, in time, local populations may become acclimated to elevated structures and return to the area.

A second unknown is how sage-grouse would respond to increased human activity. Certain construction activities would be disruptive, and birds are likely to avoid the immediate vicinity during construction. How post-construction activities associated with O&M would affect grouse is also unknown. It is possible birds would become accustomed to routine activities and may return to the area. Historically small numbers of sage-grouse have used the irrigated lawns at the Central Facilities Area on the Idaho National Engineering and Environmental Laboratory, even though Central Facilities Area has over 50 buildings, 2,000 personnel, and vehicle traffic (Connelly *et al.* 2003).

The sage-grouse inhabiting Cotterel Mountain are using the local habitat that already includes a gravel access road with intermittent traffic, and a cluster of tall communication towers on the mountain summit. The lek closest to this cluster of towers is 0.62 mile away, and the towers are visible from that lek. One observation made by TREC, Inc. staff during the spring of 2004 indicates that at least some of the sage-grouse are somewhat accustomed to being much closer to some tall structures. Several males were observed displaying directly beneath a meteorological tower located within several hundred meters of an active lek. These meteorological and communication towers, however, are very different from a wind turbine, which would be much larger and have parts in motion.

The direct loss and fragmentation of habitat associated with noise disturbances from vehicle traffic and construction have been shown to reduce attendance at sage-grouse lek sites and lower female nest initiation in proximity to these sites. According to one study that specifically addressed noise impacts on sage-grouse leking sites, noise disturbances within 660 feet of a lek site generally resulted in a loss of attendance. As the distance increased from the source of noise, the number of leks with reduced attendance decreased (Braun *et al.* 2002). Similarly, female sage-grouse were found to move greater distances from leks near noise disturbances, and had lower rates of nest initiation in areas disturbed by vehicle traffic (Lyon and Anderson 2003). Therefore, sage-grouse leks located within 660 feet of wind turbines and Proposed Project roads could experience reduced attendance as a result of noise generated from the Proposed Project features. Likewise, suitable nesting habitat located within 660 feet of the Proposed Project roads and turbines could be made unavailable to sage-grouse due to avoidance as a result of Proposed Project generated noise.

Following is a summary of some of the existing research results relevant to potential impacts of the Proposed Project. A more complete summary and critique of a wider spectrum of sage-grouse research through 2001 can be found in Rowland and Wisdom (2002).

Energy Development:

- Sage-grouse were displaced or otherwise disturbed by oil development and coal mining activities (Braun 1987; Braun 1998; Aldridge 1998; Lyon and Anderson 2003).
- There is some evidence that once the activities ceased numbers returned to pre-disturbance levels (Braun 1987; Remington and Braun 1991).
- Other studies showed a continued disruption of the nesting behavior (Lyon 2000).
- Braun (1998) noted that populations did not attain pre-disturbance levels.
- Removal of vegetation for well sites, access roads, and associated facilities can fragment and reduce the availability of suitable habitat (Aldridge 1998).
- There were fewer males on leks within 0.4 kilometer (0.25 mile) of wells versus counts of males on less disturbed sites (Braun *et al.* 2002).

Fences and Transmission Interconnect Lines:

- Sage-grouse in some areas avoid fences, possibly because they are used as perches by avian predators (Braun 1998).
- Fences and transmission interconnect lines pose hazards because they provide additional perch sites for raptor predators (Ellis 1987; Call and Maser 1985; Braun 1998).
- Sage-grouse could be injured or killed by flying into fences and transmission interconnect lines (Call and Maser 1985; Braun 1998).

- Woven-wire fences are more dangerous to sage-grouse than one-to-three wire-strand fences (Braun 1998).
- Moving away from the transmission interconnect line, numbers of sage-grouse increase for up to 600 meters (0.37 mile) and then level off (Braun 1998).

Habitat Fragmentation:

- Construction of roads, fences, reservoirs, ranches, farms, and housing developments resulted in habitat loss and fragmentation (Braun 1998).
- Man-made structures such as fences, roads, and transmission interconnect lines fragment habitats; sage-grouse avoid these sorts of disturbed areas (Rowland and Wisdom 2002).

Roads/Highways/Vehicles:

- Roads and vehicles result in loss of habitat and direct mortality, and may result in reduction of sage-grouse use of leks within one kilometer (0.8 mile) because of noise (Braun 1998).
- Sage-grouse have been documented to be impacted by vehicles during all seasons (Braun 1998).
- In Wyoming, successful hens in a natural gas field nested farther from roads than did unsuccessful hens (Lyon 2000).
- Light traffic disturbance (one to 12 vehicles/day) near leks during the breeding season might reduce nest-initiation rates and increase distances moved from leks during nest-site selection (Lyon and Anderson 2003).
- More heavily used roads and highways result in direct mortalities of sage-grouse, and contribute to habitat fragmentation (Patterson 1952).
- Sage-grouse have also been known to form leks on well-used roads (Patterson 1952).
- Roads and associated human disturbances can have adverse impacts, especially to lek and winter habitat areas (Wisdom *et al.* 2000).
- Road density in the interior Columbia Basin was higher in range from which Sage-grouse were extirpated, and lower in occupied range (Wisdom *et al.* 2002).

Wind Turbines:

- The effects of construction and operation of the Foote Creek Rim wind power project in Wyoming on sage-grouse could not be documented because no active leks were present on the project site before or during construction (Johnson 2000b).
- Avian mortality monitoring over three years at the Foote Creek Rim wind power project in southern Wyoming found no sage-grouse fatalities (Young *et al.* 2003).

Disturbed/Cleared Areas:

- Sage-grouse used disturbed areas (two gravel pits and one recent burn) as leks (Connelly *et al.* 1981).

Impact Assessment

A slight increase in sage-grouse mortality could result from collisions with wind turbines, transmission interconnect lines, and vehicles due to fatal collisions. Sage-grouse using Cotterel Mountain may collide with the transmission interconnect lines and with the lower reaches of the moving rotors. However, given the relative infrequency of sage-grouse flights (i.e., usually limited to escape reactions, movements to foraging areas, short elevational migrations), it is unlikely that these collisions would be numerous or result in an impact to populations on or in the vicinity of Cotterel Mountain. None of the sage-grouse observed flying were within the RSA of any of the turbine classes during the point counts or fall migration surveys. Collisions with vehicles are more likely, especially if the public is given access to the area; it is assumed that Projected Project maintenance personnel would be trained to be sensitive to the presence of sage-grouse and drive slowly to prevent collisions.

Alternative A (No Action)

Alternative A would not have any impacts on sage-grouse.

Alternative B

Under Alternative B, approximately 261 acres of potential sage-grouse habitat would be directly affected by the Proposed Project. Turbines and roads would be sited within one-quarter mile of all six known sage-grouse leks on Cotterel Mountain. In Wyoming, it was determined that there was no decrease in sage-grouse lek attendance due to the construction or operation of a large wind turbine in the vicinity of active leks (Yeo *et al.* 1984). However, mining activities at a surface coal mine contributed to a drop in male sage-grouse attendance at leks closest to the mining activity and, over time, altered the distribution of breeding grouse (Remington and Braun 1991). A relative of the sage-grouse, the lesser prairie chicken that also uses leks for breeding activities, abandoned 83 percent of their leks and nesting sites when associated with anthropogenic features such as gas and oil rigs. Since the Proposed Project would result in the siting of roads and turbines within one-quarter mile of active sage-grouse leks, it is likely that their presence would result in some level of impact to sage-grouse on Cotterel Mountain. Leks located adjacent to existing or newly constructed Proposed Project roads could experience additional disturbance from increased traffic due to operation activity and increased public access.

Based on the best available science for the protection of sage-grouse and their habitat it has been recommended that energy facilities should not be developed within a 1.8 mile radius of sage-grouse leks (Connelly *et al.* 2000). Therefore, it could be assumed that sage-grouse use of habitat within 1.8 miles of the Proposed Project area could affect 26,644 acres of potential habitat under Alternative B (Table 4.6-7). While potential habitat would remain mostly undisturbed, sage-grouse may be displaced due to disturbance from the Proposed Project construction and operation. This does not take into consideration topographical or micro-habitat features of the area that may protect or reduce potential disturbance from the Proposed Project.

Table 4.6-7. Potential Sage-grouse Habitat Loss from the Proposed Project.

Alternative and Impact	Sage-grouse habitat types				
	Breeding (Leks)	Nesting	Brood-Rearing	Wintering	Total
Alternative B					
Permanent impacts from Proposed Project footprint (acres).	84	33	76	68	**261**
Potential displacement impacts within 1.8 miles of the Proposed Project (acres).	3,395	5,605	11,209	6,435	**26,644**
Alternative C					
Permanent impacts from Proposed Project footprint (acres).	77	28	28	48	**181**
Potential displacement impacts within 1.8 miles of the Proposed Project (acres)	3,345	4,980	9,936	5,716	**23,977**
Alternative D					
Permanent impacts from Proposed Project footprint (acres)	52	15	13	34	**114**
Potential displacement impacts within 1.8 mile of the Proposed Project (acres).	3,255	3,194	8,734	4,585	**19,768**

Alternative C

Under Alternative C, approximately 181 acres of sage-grouse habitat would be directly affected by the Proposed Project (Table 4.6-7). This alternative would affect 30 percent less acres of sage-grouse habitat than Alternative B. However, turbines and roads would still be sited within one-quarter mile of all known sage-grouse leks on Cotterel Mountain. Therefore, impacts to sage-grouse would likely still occur under Alternative C.

Within 1.8 miles of the Proposed Project, sage-grouse could be displaced from 23,977 acres of potential habitat under Alternative C. This alternative would affect ten percent fewer acres of potential sage-grouse habitat that Alternative B. Whether the reduced level of affected potential habitat from that estimated for Alternative B would result in lower levels of impact to sage-grouse is unknown, as it would depend on the nature of the reaction of the grouse to the Proposed Project features.

Alternative D

Under Alternative D, approximately 114 acres of sage-grouse habitat would be directly affected by the Proposed Project (Table 4.6-7). This alternative would affect 57 percent fewer acres of sage-grouse habitat than Alternative B and 38 percent less than Alternative C. Turbines and roads would be sited within one-quarter mile of four of the six known sage-grouse leks and no turbines or roads would be sited along the east ridgeline of Cotterel Mountain. This would avoid potential impacts to two sage-grouse lekking areas. Overall, there would be a reduced potential for disturbance to sage-grouse from construction activities and there would be no O&M activities along the east ridge area.

Within 1.8 miles of the Proposed Project, sage-grouse could be displaced from 19,768 acres of potential habitat under Alternative D. This would affect 36 percent fewer acres of potential sage-grouse habitat than Alternative B and 18 percent fewer acres than Alternative C. Whether the reduced level of affected potential habitat from that estimated for Alternative B and Alternative C would result in lower levels of impact to sage-grouse is unknown, as it would depend on the nature of the reaction of the grouse to the Proposed Project features.

4.7 HISTORIC AND CULTURAL RESOURCES

There are three possible effects, which can occur to cultural resource sites as defined by 36 CFR 800:

No Affect: If a site, which is eligible for or on the National Register of Historic Places (NRHP), is avoided, with a suitable buffer zone, which would assure that no disruption or visual intrusion would occur to the site. Sites which are ineligible for inclusion on the NRHP would usually have No Effect determinations although additional information from the site may be needed after the initial evaluation, such as sample collections or detailed mapping, as determined by the BLM guidelines.

No Adverse Affect: A site which is on or eligible for the NRHP may have possible adverse effects mitigated through actions as stipulated in a mitigation plan that is reviewed by the BLM and State Historic Preservation Office.

Adverse Affect: A site which is on or eligible for the NRHP, that has unmitigatable effects taking place, requires that a “Section 106 Compliance Case Report” completed that details the impacts. This Case Report is reviewed by the Advisory Council on Historic Preservation and the State Historic Preservation Office, which results in a Memorandum of Agreement. A case report must be completed on each site so affected.

4.7.1 Alternative A (No Action)

Implementation of Alternative A would have no effects on cultural resources.

4.7.2 Alternative B

Prior to the initiation of any activity, all sites which are currently evaluated as “Potentially Eligible,” will have sufficient data collection conducted so that they may be reevaluated as either eligible or ineligible. Any site which is evaluated to be eligible will have a formal Eligibility Determination completed.

Alternative B would result in the Proposed Project having a range of impacts on sites within the area of potential effects (APE), ranging from no effect (avoidance) to high impact (adverse effect or loss of integrity). Specific impacts to each site would be addressed on an individual basis after proximity of the site to the disturbance was defined more specifically (i.e., practicability of complete avoidance was addressed). Only complete avoidance of all sites would result in the Proposed Project having no effect. While it is likely that at least some sites located within the APE would be avoided, it is more likely that not all would be avoided. As necessary, additional site evaluation would be completed and an assessment of effect would be determined per 36 CFR 800. Mitigation, also determined on an individual site basis, would be required for any unavoidable NRHP listed or eligible site in order to reduce impacts that the Proposed Project would have.

Alternative B would have no impact to sites CM-S-5, CM-S-16, CM-S-20, CM-S-22, or 10CA629 since each of these is located outside of the APE and would be avoided. Proposed Project impacts to the remaining 21 sites, and to any sites discovered during additional survey of the transmission interconnect lines and access roads, would range from no impact to adverse affect depending on if the site is eligible not.

At least four sites, recommended as NRHP eligible, would be subject to adverse effects if they were not avoided during Proposed Project construction. These properties include prehistoric sites CM-S-2, CM-S-3, CM-S-6/8, and CM-S-21, defined by lithic scatters.

Though the Oregon National Historic Trail (10CA862) is listed on the NRHP, and the historic Conner's Corner to Albion Stage Road site (10CA961) is eligible for nomination to the NRHP, the Proposed Project would have no direct impact to these sites because physical evidence of the linear trails/roads is not present in the APE. The Oregon Trail would have bisected the northernmost portion of the APE, however this area has been subjected to historical and modern disturbances such that surviving trail remnants are not visible. Therefore, construction of the transmission interconnect line and expansion of the extant access road near SH-81 would have no direct impact to the integrity of this resource. Indirect visual impacts to intact segments of this resource that are located outside of the APE are addressed in Section 4.13.

Likewise, the integrity of NRHP-eligible site 10CA961, the Conner's Corner to Albion Stage Road, would not be directly affected by the Proposed Project. Though the historic stage road would have bisected the southernmost portion of the APE, the area has been subjected to historical and modern disturbances such that surviving trail remnants are not visible. Because Proposed Project impacts would be confined to the existing access road that heads north from the SH-77 junction for the first one-quarter mile, there would be no impact to this resource.

Four sites located in the APE that are currently unevaluated for NRHP eligibility include lithic scatters at sites CM-S-4, CM-S-10, and 10CA298, and the historic railroad grade, 10CA864. The unevaluated sites would require additional testing and evaluation prior to determination of impact or Proposed Project effect if they were not avoided during Proposed Project construction.

The remaining sites and isolates determined to be ineligible for nomination to the NRHP would be subject to impacts ranging from no impact to high impact. Regardless of Proposed Project impacts, per 36 CFR 800, no further management would be required for these sites.

4.7.3 Alternative C

Prior to the initiation of any activity, all sites which are currently evaluated as "Potentially Eligible," will have sufficient data collection conducted so that they may be reevaluated as either eligible or ineligible. Any site, which is evaluated to be eligible, will have a formal Eligibility Determination completed.

Impacts for Alternative C are similar to impacts for Alternative B with the exception that the Proposed Project would have no impact to site CM-S-17 in Alternative C because this site would be avoided.

4.7.4 Alternative D

Prior to the initiation of any activity, all sites which are currently evaluated as "Potentially Eligible," will have sufficient data collection conducted so that they may be reevaluated as either eligible or ineligible. Any site, which is evaluated to be eligible, will have a formal Eligibility Determination completed.

Impacts for Alternative D are similar to impacts for Alternative C with the exception that the Proposed Project would have no impact to sites CM-S-21, CM-S-22, CM-S-18, and CM-S-1 in Alternative D because these sites would be avoided. Alternative D would have the fewest impacts to historical and cultural resources.

4.8 AMERICAN INDIAN CONCERNS

Impacts to American Indian concerns would be identified during government-to-government consultation. These consultations would be sensitive to the Tribes and would be resolved with the Tribes.

4.8.1 Alternative A (No Action)

Implementation of the No Action Alternative would have no impacts on cultural resources.

4.8.2 Alternative B

As of the publication of the Draft EIS, no sites of concern have been identified.

4.8.3 Alternative C

As of the publication of the Draft EIS, no sites of concern have been identified.

4.8.4 Alternative D

As of the publication of the Draft EIS, no sites of concern have been identified.

4.9 SOCIOECONOMICS

4.9.1 Alternative A (No Action)

Alternative A would result in no impacts or changes to regional or local socioeconomic conditions because the Proposed Project would not be constructed. The Proposed Project area would continue to function as a dispersed recreation area and would continue to provide seasonal grazing opportunities for livestock. The Mini-Cassia area would not experience the tax revenue benefits that would be associated with the Proposed Project.

4.9.2 Alternative B

Community and Regional Economy

<u>Construction</u>

Construction of the Proposed Project would last approximately eight months, from April through November of 2006. The cost of construction would be approximately $200 million, the majority of which would be the cost of the towers and turbines. Table 4.9-1 presents an approximate breakdown of the Proposed Project construction cost.

Table 4.9-1. Construction Costs ($1000s) of the Proposed Project.

Type of cost	Cost
Labor (107 to 132 construction workers)	$3,000
Non-labor costs	$197,000
130 foundations at $60,000 each, and concrete batch plant	$8,000
Wind turbines and towers	$160,000
Other materials and non-labor costs	$10,000
Roads, O&M building, site preparation	$3,000
Electrical and communications	$16,000
Total construction cost	**$200,000**

The aggregate for the concrete batch plant would be purchased within the Mini-Cassia area, along with other standard and available materials and supplies that would be needed for construction.[1] Approximately five workers would constitute the road crew for the road building. The larger crew for the eight-month general construction period would average between 107 and 132 workers. Since the construction process would be an "assembly line" type of operation, the beginning and end of the

[1] The IMPLAN model assumes 20 percent of non-labor costs of construction (excluding cost of wind turbines and towers) would be spent within Cassia County or Minidoka County.

construction period would involve a slightly lower number of workers when compared to the middle months. The breakdown of the construction workforce by type is shown in Table 4.9-2.

Table 4.9-2. Construction Workforce for the Proposed Project.

Type of Worker	Average Number Required Throughout the Construction Period
Carpenter/form setter	7
Cement finisher	3
Cement, rebar	4
Electrician helper	17
Electrician, industrial	11
Electrician, master	2
Laborer	43
Structural steel worker	9
Backhoe operator	5
Cherry picker operator	7
Cable crane operator	5
Dozer operator	2
Power shovel operator	3
Road roller operator	2
Estimated daily total	**107 to 132**

Laborer positions and other construction worker positions that do not require specialized skills would likely be filled from the local Mini-Cassia area labor force.[2] The maximum 132-person workforce would represent one-fifth of construction employment in the Mini-Cassia area. Non-local workers could originate from other counties in south central Idaho, or also from further distances. The few construction workers who are predicted to commute on a weekly basis would stay in local lodging and would likely have less than an hour drive each way to the job site.

Assuming ten percent of the construction workforce would commute on a weekly basis, a maximum of 14 workers would need lodging during the week. Local lodging facilities would have sufficient availability to accommodate these workers during the week.

Construction activity would result in secondary economic impacts (both indirect and induced) within the Mini-Cassia area. Secondary employment effects would include (1) indirect employment resulting from the purchase of goods and services by firms involved with construction, and (2) induced employment resulting from construction workers spending their income in the local area. Similarly, indirect and induced income and spending effects would also occur as "ripple" effects from construction. Indirect and induced impacts were estimated using IMPLAN economic modeling software, an input/output model specific for the economic study area of Cassia County and Minidoka

[2] The IMPLAN model assumes 60 percent of the construction workforce would originate from Cassia County or Minidoka County.

County (IMPLAN 2003). Estimated indirect and induced effects of construction that would occur within Mini-Cassia may add 50 jobs, approximately $1 million in labor income, and approximately $3.3 million in total output. Similar to direct economic impacts from construction, these secondary economic impacts would occur one time. The secondary impacts would likely lag behind direct impacts by six to 12 months.

In summary, approximately 40 percent of construction workers (53 workers) could originate from outside the Mini-Cassia area, and approximately ten percent (14 workers) would commute weekly. This would result in a temporary additional daily population in the area surrounding the Proposed Project from Monday through Friday, during the construction period. The change would be noticeable because the population near the Proposed Project area is small (e.g., 48 residents in the five census blocks near where the Proposed Project is located, 177 residents in Malta, and 262 residents in Albion). However, the population increase would be temporary and would only occur during the week (the majority of the increase would occur during daytime hours only, not overnight). The impact of additional population would be low because population near the Proposed Project area would not grow substantially or permanently. The increase in demand for services would be small and temporary, and no businesses or residences would be displaced by the Proposed Project construction. Communities and businesses would retain their physical arrangement and function. Workers would not likely relocate to cities or unincorporated areas near the Proposed Project area because the construction period would be relatively short.

Beneficial impacts to local businesses and the economy would include: additional spending by workers for food, gas, and lodging; spending by the construction contractor for supplies and standard materials needed for construction; and additional jobs and related income. These impacts are expected to be low to moderate.

Changes in tourism use and spending would likely represent no impact to a low impact due to construction because (1) the construction period would be relatively short, and (2) construction activities would be occurring in an area that is not widely used. Additionally, the "assembly line" construction sequencing allows construction to be completed in one area before construction is begun in the next. Therefore, construction would only occupy one section of the Proposed Project area at one time, freeing other areas for recreational activities.

Construction of the Proposed Project, and in particular, the road system, would require materials to be transported by truck. Approximately 14,940 truck trips would be required under Alternative B. Of these total truck trips, 12,735 truck trips would be for the purpose of road building. These truck trips would result in impacts on local communities similar to impacts from truck trips transporting agricultural goods during harvest season. Types of impacts would include noise, dust, and additional traffic on roads.

Fiscal Impacts

Sales and/or use tax revenue on the construction contract would accrue to Cassia County because Cassia County is the location of the Proposed Project construction. The contractor would need to apply for a use tax account with the Idaho State Tax Commission (ITC 2004). Sales tax revenue on the construction contract would be approximately $12 million. This one-time beneficial fiscal impact would more than double retail sales tax revenue accruing to Cassia County that year.

Minidoka County would benefit from sales tax revenue to the extent that construction or operation employees purchase goods or services in Minidoka County.

Operation

Community and Regional Economy

The Proposed Project operation would be expected to begin in late 2006 or early 2007, and would involve operation of the wind turbines 24 hours per day, seven days per week. Operating the Proposed Project would cost approximately $4.5 million annually (Table 4.9-3).

Table 4.9-3. Annual Cost of Operation and Maintenance ($1000s) of the Proposed Project.

Type of cost	Cost
Labor	$600
Non-labor costs	$3,900
Portion of non-labor costs occurring locally (does not include lubricants)	$1,000
Total annual operation cost	**$4,500**

Notes: The labor cost of $600,000 would include salaries, benefits, and other labor-related costs.

Twelve employees would work at the Proposed Project on a permanent basis, including one office administrator, one foreman, and ten windsmiths/electricians. Employees would work eight-hour shifts, five days per week, with the exception of five of the windsmiths, who would likely rotate shifts to cover nights and weekends. It is anticipated that all permanent positions with the exception of the foreman position would be filled from the local labor force (within the Mini-Cassia area). Some windsmith training would be provided to those who have a basic understanding of electrical work.

In addition to labor costs, the cost of operation also includes maintenance and other non-labor costs associated with operating the turbines and transmitting power. Maintenance costs could increase slightly in the future, after the five-year warranty on the turbine expires. The Applicant would employ on-call staff to address potential turbine breakdowns.

Similar to construction, operation of the Proposed Project would result in secondary (indirect and induced) economic impacts that would occur within the Mini-Cassia area.[3] Indirect and induced

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[3] The IMPLAN model assumes that 25 percent of non-labor operation and maintenance costs would be spent within Cassia County or Minidoka County.

impacts were estimated using IMPLAN (IMPLAN 2003). Unlike indirect and induced impacts from construction, indirect and induced impacts from operation would represent permanent increases in area economic variables. These impacts would lag behind direct economic impacts by approximately six to 12 months. Estimated indirect and induced impacts of Proposed Project operation that would occur within the Mini-Cassia area on an annual basis would be an additional seven permanent jobs, $145,000 in labor income, and approximately $472,000 in output.[4]

In summary, it is expected that one operation employee, at most, would originate from outside the area. This would not represent an increase in population, concentration of population, or increase in demand for public services. Operation of the Proposed Project would not disrupt or displace businesses or residences, and would not divide a community.

Low but beneficial economic impacts to the local community and economy would include 12 new permanent jobs and related income, and additional spending at local establishments by workers (gas and food) and by the Applicant (supplies and standard materials for operational and maintenance functions).

Use of the area by tourists and spending by tourists would not likely decrease substantially in the long run. Visual impacts to recreationists traveling in the area would likely occur. However, since Cotterel Mountain is not a destination recreation location, construction of the Proposed Project should not alter the decision of tourists to travel through the area. Therefore, tourism would not likely be affected by views of the Proposed Project. Users that chose to recreate on Cotterel Mountain in proximity to the Proposed Project would experience change in views compared to current conditions.

<u>Fiscal Impacts</u>

Property Tax

After construction, the Proposed Project property would remain public land. ITC would set the estimated value of improvements because the property would be newly classified as "operating property." According to the ITC, the estimated value of improvements would be $194 million of the $197 million non-labor cost of the Proposed Project, because $3 million would be the cost of roads and transmission interconnect lines. The transmission interconnect lines would be turned over to Bonneville Power Administration (BPA) or to Raft River Rural Electric. Accordingly, the ITC estimates that the Proposed Project would add approximately $197 million in value of improvements in Cassia County (ITC 2003b).

Sales Tax

Sales tax revenue accruing to Cassia County would increase due to increased retail sales (i.e., supplies purchased) attributable to Proposed Project construction. Assuming approximately $7.5 million (20%

[4] The IMPLAN model assumes that seven of the 12 operation employees would originate from the Mini-Cassia area.

of non-labor construction costs excluding the cost of the wind turbines and towers) is spent locally, the one-time increase in sales tax revenue would be approximately $500,000.

Similarly, assuming an annual $1 million is spent each year in the Mini-Cassia area for Proposed Project operation, the permanent increase to annual sales tax revenue would be $60,000. This estimate would increase to the extent construction and operation employees spend money locally on gas, food, and lodging throughout the area. According to the ITC, the amount of sales tax revenue that is returned to each county depends on population and assessed value (Poplar 2003). Therefore, because the Proposed Project would result in an increase in property value in Cassia County, the portion of sales tax revenue returned to the county should also rise. This would represent a moderate impact.

Cassia Joint School District No. 151

According to the distribution of property taxes, Cassia Joint School District No. 151 would receive an additional $1.3 million per year due to the Proposed Project.[5] As a result of this increase in tax revenue, the state would act in two ways: it would remove financial support that is currently provided to the School District, and it would replace those funds through the state property tax replacement system. The net effect of these actions would be an increase in revenues of only $123; therefore, the School District would experience a property tax benefit associated with the Proposed Project. These increases would benefit school districts in the State of Idaho, including Cassia County School District (Times News 2004).

Road Maintenance

The scoping process for this Draft EIS indicated that local citizens are concerned about increased demand for road maintenance by local agencies. The increased demand would result from increased use of existing roads throughout the Proposed Project area, and construction of new roads, for the purpose of Proposed Project construction and operation. Local taxes such as property taxes, sales taxes, and use taxes are meant to cover these additional costs associated with any type of development.

<u>Property Values</u>

Construction

The proposed construction period would be approximately eight months. Because construction (workers, heavy equipment, staging areas, etc.) on the Proposed Project would be temporary and because the Proposed Project is located over two miles from the nearest residence, adverse property value impacts (decreases in property value due to views to construction) attributable to Proposed Project construction are not expected to occur.

[5] The estimate of $1.3 million in additional property tax revenue accruing to Cassia Joint School District No. 151 is supported by a study completed in March 2003 by the ITC, "Proposed Cotterel Mountain Wind Farm Project – Likely Effect on Cassia County Property Taxes" (ITC 2003).

Operation

ECONorthwest prepared a study that analyzed the economic effects of a wind power project on private land in Kittitas County, Washington (ECONorthwest 2002). The study included an assessment of property value impacts due to wind power projects. ECONorthwest (1) conducted a phone survey of tax assessors for counties that recently had wind turbines installed in their areas; (2) reviewed current literature to find statistical studies that quantified the impacts of wind turbines on property values, and (3) reviewed literature on the impacts that transmission interconnect lines have on property values. Assessors were chosen for interviews if the projects within their counties were ten years old or less, were viewed from residential properties, and had multiple turbines. ECONorthwest found that "views of wind turbines would not impact property values." ECONorthwest did not find evidence supporting the claim that views of wind farms decrease property values (ECONorthwest 2002). Applying the ECONorthwest research, even if a visual impact were to occur as a result of this Proposed Project, resulting decreases in property values would not necessarily occur.

<u>Social Values</u>

The Proposed Project would not interfere substantially with social values in the area. Grazing, hunting, and other activities that currently take place at Cotterel Mountain would continue to occur. Due to the increased public access provided by the new and improved roads that would be built as part of the Proposed Project, activities such as hunting could increase. Income that currently accrues to the Mini-Cassia area due to tourism is not likely to decrease because the activities would remain available, and the quality of the recreational experience would remain similar.

Many people who submitted comments during the scoping period wrote in support of the Proposed Project. However, there were those, including some living near the Proposed Project area, who had concerns about property issues (value changes and maintaining boundaries when public access increases), recreation issues (increases in use due to greater public access and possible decrease in desirability due to perception of views), and fiscal impacts (tax impacts and increased need for road maintenance). There are also those, particularly in and surrounding the community, who are strongly opposed to the Proposed Project. This has contributed to a negative change (although minor) in the cohesiveness of the community and may continue to do so.

<u>Environmental Justice</u>

The Mini-Cassia area has more minority and low-income residents when compared to the south central region of Idaho and the State of Idaho. The five census blocks within which the Proposed Project would be constructed are, as a whole, eight percent minority, which is a lower percentage than the same measure for the Mini-Cassia area, South Central Idaho, and the State of Idaho. Similarly, the block group within which the Proposed Project would be constructed is ten percent minority, which is a lower percentage than the same measure for the Mini-Cassia area, South Central Idaho, and the State of Idaho. The residents closest to the Proposed Project, who would experience much of the temporary impacts of construction, should not be identified as a minority or low-income population.

Therefore, minority and low-income populations would not experience disproportionate impacts as a result of the Proposed Project.

4.9.3 Alternative C

Under Alternative C, construction and annual operation cost would be similar to Alternative B; therefore, the impacts would be similar. Under Alternative C, slightly fewer truck trips would be required than under Alternative B, and impacts due to the truck trips would be similar.

4.9.4 Alternative D

Alternative D would have 40 to 50 percent fewer turbines than Alternative B. Socioeconomic benefits such as tax revenue increases due to the Proposed Project would therefore be less in magnitude, and adverse impacts such as disturbances due to construction of the Proposed Project would likely be shorter in duration and less in magnitude. The type of impacts would be similar to Alternative B.

<u>Construction</u>

Community and Regional Economy

The cost of construction would be approximately $125 million, based on the smaller number of turbines. The breakdown of costs would be proportionally the same as shown in Table 4.9-1. The type and amount of employment and the origin of workers would be similar to Alternative B. Secondary impacts would be similar in type to Alternative B, but smaller in magnitude. Impacts would be low to local businesses and the economy such as additional spending by workers for food, gas, and lodging; spending by the construction contractor for supplies and standard materials needed for construction; and additional jobs and related income. Impacts to tourism and related spending would be similar to Alternative B. Under Alternative D, fewer truck trips would be required, approximately one-third less than under Alternative B. Similar to other types of impacts under Alternative D, impacts from truck trips would be the same in type, but less in magnitude and duration when compared to Alternative B.

Fiscal Impacts

Sales or use tax revenue impacts would be similar to Alternative B, except smaller because the construction contract amount would be smaller.

<u>Operation</u>

Community and Regional Economy

Operating the Proposed Project under Alternative D would cost approximately $2.9 million annually, based on the smaller number of turbines. The number of employees and related income associated with operation would be less than under Alternative B. The breakdown of operation costs would be proportionately the same as shown in Alternative B. Secondary impacts would be the same in type as Alternative B, but smaller in magnitude due to the smaller number of turbines.

Fiscal Impacts

The effect on property tax revenue under Alternative C would be less than Alternative B because the estimated value of the improvements to the land would be less. The additional revenue from the construction of the Proposed Project would likely be distributed in the same manner as Alternative B (Table 3.5-11).

Accrued sales tax revenue for Cassia County would also be less in comparison to Alternative B; therefore, fewer funds would be available for the School District under Alternative C, because the value of the improvements to the land would be less.
Issues related to road maintenance would be the same as under Alternative B.

Property Values

The type of impacts due to construction would be the same as under Alternative B. Similar to under Alternative B, impacts (decreases) to property values due to changed views would not likely occur due to operation.

Social Values

Issues related to social values would be the same as under Alternative B.

Environmental Justice

Similar to Alternative B, minority and low-income populations would not experience disproportionate Proposed Project impacts.

4.10 LANDS AND REALTY

This section discusses the potential effects to land ownership, land uses, and land management plans in the Proposed Project area.

4.10.1 Land Status and Ownership

Surface or mineral ownership would not change by implementing any of the alternatives. No direct or indirect effects to existing surface land ownership or mineral ownership would occur by implementing any of the alternatives.

The proposed wind turbines, roads, and ancillary facilities would be located on federal lands under the jurisdiction of the BLM. ROW approvals would be obtained from the BLM in accordance with the processes outlined in 43 Code of Regulations 2800 and the BLM ROW Handbook (H-2800-1).

4.10.2 Land Use

The primary impacts to land use associated with the Proposed Project are tied to change in landscape character, aesthetic quality and prior land use. Current predominant land use in the Proposed Project area consists of wildlife habitat, livestock grazing and recreation.

4.10.3 Alternative A (No Action)

Alternative A would result in no change to landscape character, aesthetic quality or existing land uses within the Proposed Project area or its vicinity.

4.10.4 Alternative B

Moderate impacts would occur from an overall change in landscape character from a remote to an industrial character and a decline in the aesthetic quality of the land for recreational uses. No permanent changes to land use are expected within the Proposed Project area. All surface equipment would be removed from the area at the end of the economic life of the Proposed Project, and reclamation would restore disturbed sites to near prior conditions. All actions would be in conformance with county, state, and federal land use plans.

Livestock grazing, recreation and wildlife use would continue within the Proposed Project area during construction and operation. Impacts to these resources are discussed in the individual resource sections. Prior land uses would be re-established after decommissioning of the Proposed Project, and final reclamation of turbine pads and roads.

4.10.5 Alternative C

For Alternative C, impacts to land use would be the similar to Alternative B. Under Alternative C, fewer miles of access road would be constructed, providing less access to the area than Alternative B.

4.10.6 Alternative D

Alternative D would have the fewest impacts to land use due to a smaller area of construction (fewer turbines) and fewer miles of access road.

4.11 RECREATION

Primary impacts to recreation are based on how the Proposed Project could change the Recreation Opportunity Spectrum (ROS) classification within the Proposed Project area and takes into account: existing recreation opportunities for activities such as camping, hunting, OHV use and sightseeing; visitor use; and potential for improvement of recreation facilities. Changes in visitor type or experience and degree of lost opportunities were used as indicators in the evaluation process.

4.11.1 Alternative A (No Action)

Based on the activities outlined in the Cassia RMP, no change to recreation opportunities or degree of use would be anticipated in the area, beyond some minor modifications to recreation facilities and trails. These modifications are expected to enhance the recreation spectrum in the Proposed Project area.

4.11.2 Alternative B

Under Alternative B, impacts to recreation resources are expected to be moderate. Public access to federal and state lands within the Proposed Project area would not be restricted, except during construction of the Proposed Project for safety purposes. Following Proposed Project construction, public access to federal and state lands would be improved with about 25 miles of new or reconstructed roads. During construction of the Proposed Project, noise, dust, traffic, equipment use, and associated human activities would change the character of the area and result in a temporary loss of recreational opportunities.

The Proposed Project would alter the aesthetic sense of Cotterel Mountain as a rural, undeveloped recreational area. The improved road system would likely result in an increased number of visitors to the area, and the daily presence of O&M personnel may discourage visitors seeking solitude. Increased access would enhance opportunities for legal hunting and wildlife sightseeing for some recreational users. However, this could lead to occurrences of poaching and other disturbances to big game and other wildlife.

The Proposed Project may attract tourists to the area. The types of visitors could shift from predominately local visitors to visitors from outside the area that would be interested or curious about the wind turbines and energy generation. The novelty of the wind turbines and change from the relatively undeveloped prairie and sagebrush landscape along I-84 would likely cause some travelers to view the Proposed Project with interest. Drivers passing by may be intrigued by the wind towers and stop to investigate or photograph them. Interpretive panels may be erected at the rest area along I-84 east of the Proposed Project area or at other locations along highways to inform drivers of the Proposed Project.

Under Alternative B, a wind turbine would be located within about 760 feet of the Coe Creek picnic site. Visitors to the picnic site may be able to hear the wind turbines at times of turbine operation. In addition, several turbines would be visible from the picnic site. The auditory and visual presence of the wind turbines may deter some visitors from using the picnic site. Other visitors may be attracted to the picnic site by its unique location within an operational wind power generation facility.

All surface equipment and structures would be removed during final reclamation. All turbine locations, selected roads, and other disturbed sites would be reclaimed to reestablish grazing lands, wildlife habitat, and recreational use. Some roads may be retained upon Proposed Project completion allowing increased recreational use of the area.

The potential impacts to recreation could result in a change of visitor/use or experience. These potential changes to recreation use would not alter the current ROS category (semiprimitive motorized) for Cotterel Mountain and would not be in conflict with the Cassia RMP.

4.11.3 Alternative C

Under Alternative C, the Proposed Project would require the reconstruction of about three miles of road and the construction of about 19.5 miles of new roads (about 23 miles total). Public use of Proposed Project roads would be restricted through a series of gates and natural rock barriers but would not result in a loss of access to traditional use areas. Primitive access would be maintained wherever possible by linking the existing primitive road system through construction of new primitive roads. Similar to Alternative B, impacts to recreation resources are expected to be moderate.

Under Alternative C, the closest wind turbine would be located within about one-quarter mile (1,400 feet) of the Coe Creek picnic site. Visitors would likely be able to hear the turbines during times of turbine operation but less so than under Alternative B. Turbines would still be visible from the Coe Creek picnic site.

The potential impacts to recreation under Alternative C could result in a change of visitor/use or experience. These potential changes to recreation use would not alter the current ROS category (semiprimitive motorized) for Cotterel Mountain and would not be in conflict with the Cassia RMP.

4.11.4 Alternative D

Under Alternative D, the Proposed Project would require the reconstruction of about three miles of road and the construction of about 15 miles of new roads (about 18 miles total). Public use of Proposed Project roads would be restricted through a series of gates and natural rock barriers but would not result in a loss of access to traditional use areas. Primitive access would be maintained wherever possible by linking the existing primitive road system through construction of new primitive roads. Similar to Alternative B and Alternative C, impacts to recreation resources are expected to be moderate.

Impacts to users of the Coe Creek picnic site would be the same as those described under Alternative C.

The potential impacts to recreation under Alternative D could result in a change of visitor/use or experience. These potential changes to recreation use would not alter the current ROS category (semiprimitive motorized) for Cotterel Mountain and would not be in conflict with the Cassia RMP.

4.12 LIVESTOCK GRAZING

Primary impacts to livestock grazing are based on how the Proposed Project could affect forage availability for livestock grazing, grazing management, and Animal Unit Months (AUMs). The information on current grazing permits in the Proposed Project area (Table 3.8-1) was used for calculating impacts. The following indicators were used in assessing potential impacts to grazing:

- Acres of forage disposed from grazing for livestock and wildlife; and
- Changes in range conditions and alteration of current range improvements.

4.12.1 Alternative A (No Action)

Based on the activities outlined in the Cassia RMP no changes to grazing would be expected in the area beyond some vegetation treatments or minor range improvement projects to facilitate livestock grazing. Under Alternative A, these modifications are not expected to impact livestock grazing.

4.12.2 Alternative B

A temporary loss of rangelands, associated with construction activities, would reduce forage availability on approximately 368 acres (3%) from the North and South Cotterel Allotments. This estimate is based on 100 percent of the affected area being available as forage, even though a percentage of these areas is of no forage value, i.e. rock outcrops, roads, bare ground, etc. It is assumed that impacts on range resources from construction activity would be evenly distributed throughout both grazing allotments. Following construction of the Proposed Project, reclamation and revegetation efforts would restore range improvement projects and forage availability on approximately 165 acres (45% of the impacted area). Restoration of disturbed vegetation to pre-construction conditions is expected to take approximately three to five years. Permanent impacts to rangeland vegetation would result in a loss of forage on approximately 203 acres (2%) of the Proposed Project area.

The overall response of livestock to a fully operational wind power project is difficult to assess. It is likely that most of the livestock would habituate to the presence of the operating wind power project as well as to the increased traffic associated with maintenance of the Proposed Project. Some livestock may not habituate to the presence of the Proposed Project and its associated activities. These animals would likely stay some distance from the turbine strings and access roads; it is unknown if this displacement would adversely effect the range resource or the behavior and fitness of livestock.

Clearing existing vegetation from construction sites may provide a corridor for the spread of invasive and noxious weeds, which could reduce available forage, and in some instances, be harmful to the health of livestock. Based on the amount and distribution of area impacted by Alternative B, impacts to grazing operations would not be appreciable during construction and throughout the period of operation of the Proposed Project.

4.12.3 Alternative C

Impacts to livestock grazing from Alternative C would be similar to Alternative B, but the total number of acres initially affected would be slightly less. The amount of available forage for livestock use would be greater under Alternative B. Alternative C would initially impact approximately 337 to 350 acres (3%) of rangeland currently available for grazing within the Proposed Project area. Following construction of the Proposed Project, reclamation and revegetation efforts would restore range improvement projects and forage availability on approximately 134 to 147 acres (40% to 42% of the impacted area). Restoration of disturbed vegetation to pre-construction conditions is expected to take approximately three to five years. Permanent impacts to rangeland vegetation would result in a loss of forage on approximately 203 acres (2%) of the Proposed Project area.

4.12.4 Alternative D

Impacts to livestock grazing from Alternative D would be similar to Alternative B and Alternative C, but the total number of initial and permanent acres affected would be less. The amount of available forage for livestock use would be greatest under Alternative D. Alternative D would have the least amount of impact to livestock grazing compared to Alternative B and Alternative C. Alternative D, would initially impact approximately 269 to 282 acres (3%) of rangeland currently available for grazing within the Proposed Project area. Following construction of the Proposed Project, reclamation and revegetation efforts would restore range improvement projects and forage availability on approximately 111 to 123 acres (41% to 44% of the impacted area). Restoration of disturbed vegetation to pre-construction conditions is expected to take approximately three to five years. Permanent impacts to rangeland vegetation would result in a loss of forage on approximately 159 acres (1%) of the Proposed Project area.

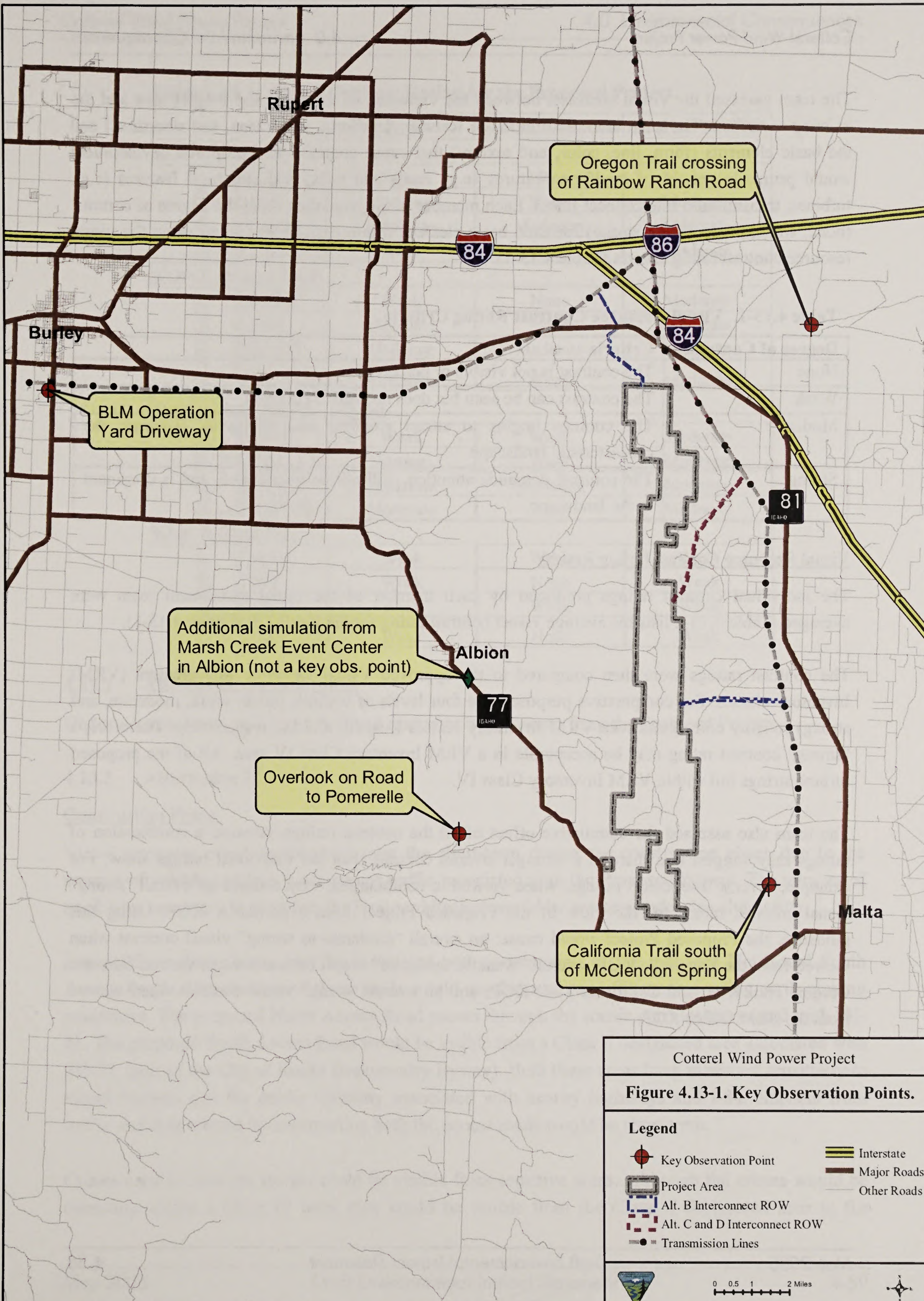
4.13 VISUAL RESOURCES

Visual Resource Contrast Rating involves determining whether the potential visual impacts from proposed surface-disturbing activities or developments would meet the management objectives established for the Cotterel Mountain area or whether design adjustments would be required for the Proposed Project. The Visual Resource Contrast Rating method is summarized below, followed by the Visual Resource Contrast Rating for the Proposed Project

4.13.1 Visual Resource Contrast Rating Method

The Visual Resource Contrast Rating method is a systematic process used by the BLM to analyze potential visual impacts of a proposed action. The degree to which a proposed action affects the visual quality of a landscape depends on the visual contrast created between a proposed action and the existing landscape. The contrast can be measured by comparing the proposed action features with the existing major landscape features. The basic design elements of form, line, color, and texture are used to make this comparison, and to describe the visual contrast created by the proposed action. This process provides a means for determining visual impacts and for identifying measures to mitigate these impacts.

To assess the visual impact from the Proposed Project, contrast ratings were completed from the most critical viewpoints, called key observation points (KOP). Initially, the BLM selected 12 KOP along commonly traveled routes, or at other likely observation points, such as the Pomerelle Mountain Resort. Specialists from the BLM evaluated these 12 points and chose four KOP as representing the best scenic value for the Proposed Project (Figure 4.13-1). The visual observation team visited, photographed, and rated the viewshed of the Proposed Project area from each of the four KOP. Photographs of the Proposed Project area were incorporated into a computer-generated visual simulation of the completed Proposed Project. From each KOP, the computer-generated simulation portrayed the proposed turbines in their proper locations and at the correct scale (Appendix G). Using these simulations, the specialists each completed the BLM visual contrast rating worksheets. A fifth site, in the town of Albion, was also photographed and computer-generated simulation created. However, this site was not selected as a KOP. Appendix G includes the visual simulations used for the visual contrast rating.



Cotterel Wind Power Project

Figure 4.13-1. Key Observation Points.

The team assessed the visual contrasts between the viewshed of the Proposed Project area and the existing viewshed. The team identified the basic features (landform, vegetation, and structures) and the basic elements (form, line, color, and texture) that cause contrast. The proposed development would primarily consist of landform features (e.g., roads and pads) and structural features (e.g., turbines, transmission interconnect lines). Each member of the team then rated the degree of contrast (none, weak, moderate, or strong) for each basic element within each basic feature using the visual resource contrast rating criteria (Table 4.13-1).

Table 4.13-1. Visual Resource Contrast Rating Criteria.

Degree of Contrast	Criteria
None	The contrast is not visible or perceived.
Weak	The contrast can be seen but does not attract attention.
Moderate	The contrast begins to attract attention and begins to dominate the characteristic landscape.
Strong	The contrast demands attention, will not be overlooked, and is dominant in the landscape.

<u>Visual Resource Contrast Rating Results</u>

The individual contrast ratings produced by each member of the visual assessment team were averaged. Table 4.13-2 lists the average visual contrast rating for the four KOP (Figure 4.13-1).

The contrast ratings were then compared to the approved Visual Resource Management (VRM) Inventory classes. For comparative purposes, the four levels of contrast (none, weak, moderate, and strong) roughly correspond with VRM Inventory classes I, II, III, and IV, respectively. Therefore, a "strong" contrast rating may be acceptable in a VRM Inventory Class IV area. All of the proposed turbine strings fall within VRM Inventory Class IV.

The team also assessed the cumulative effect of all the contrast ratings, because a combination of ratings may suggest that there is a stronger overall contrast than the individual ratings show. For example, several "moderate" ratings, when viewed in combination, may warrant an overall "strong" visual contrast rating for the view of the Proposed Project from a particular KOP. Using this guidance, the Proposed Project would cause: an overall “moderate to strong” visual contrast when viewed from the Pomerelle KOP; overall “weak to moderate” visual contrasts when viewed from the Oregon Trail KOP and California Trail KOP; and an overall “weak” visual contrast when viewed from the BLM Office KOP.

Table 4.13-2. Visual Contrast Rating for the Proposed Project.

		LAND	VEGETATION	STRUCTURES
KOP 1: California Trial				
ELEMENTS	FORM	None	None	Moderate
	LINE	Moderate	None	Moderate
	COLOR	Moderate	Moderate	Moderate
	TEXTURE	Weak	Weak	Moderate
KOP 2: Oregon Trial				
ELEMENTS	FORM	Weak	None	Moderate
	LINE	Moderate	None	Moderate
	COLOR	Moderate	Moderate	Moderate
	TEXTURE	Moderate	Weak	Moderate
KOP 3: Howell Canyon Road				
ELEMENTS	FORM	Weak	Weak	Moderate
	LINE	Strong	Weak	Moderate
	COLOR	Moderate	Moderate	Moderate
	TEXTURE	Moderate	Weak	Moderate
KOP 4: BLM Office				
ELEMENTS	FORM	Weak	Weak	Weak
	LINE	Weak	None	Weak
	COLOR	Weak	Weak	Weak
	TEXTURE	Weak	None	Weak

4.13.2 Alternative A (No Action)

Under Alternative A, no impact to visual resources would occur from the Proposed Project.

4.13.3 Alternative B

<u>Construction Phase</u>

Visual resources could be impacted over the short-term during the construction phase due to the amount of vehicle and heavy equipment traffic associated with the Proposed Project. The number of truck trips necessary to complete the Proposed Project would be greatest under this alternative.

Impacts from dust plumes may be associated with construction of the proposed North and South Access Roads. Construction of these roads would involve a cut-and-fill process, using earth-moving equipment. The proposed North Access Road passes through the scenic corridor associated with SH-81. The proposed South Access Road would be visible from a Class II designated area associated with SH-77, (part of the City of Rocks Backcountry Byway). Both these areas have increased sensitivity to visual impacts due the public visibility associated with nearby highways and I-84. Impacts from traffic and dust created by constructing both the access roads would be short-term.

Cranes used to raise the towers could be visible from sensitive areas. Although the cranes would be operating within a Class IV area, they could be visible from the Class II designated area to the southwest. This would represent an impact to visual resources. Crane activity would be the greatest under this alternative.

Construction of the two transmission interconnect lines would be visible from the north and east side of the Proposed Project area. The north transmission interconnect line would pass over SH-81 and its associated scenic corridor. Construction crews and equipment would be visible to the public in this area and may result in visual impacts. The eastern transmission interconnect line would pass through a Class IV designation. Construction crews and equipment would be visible from the scenic corridor associated with SH-81, resulting in a visual impact.

Operational Phase

Under Alternative B, the west string would be about 0.8 mile in length and located along a short side-ridge, west of the main Cotterel Mountain ridgeline. This ridgeline resides within a Class IV designated area, but would be visible in the foreground-middleground zone from the Class II designated areas to the west, resulting in a direct impact to visual resources over the long-term.

The center string of wind turbines would be about 10.9 miles in length and placed along the spine of the main ridgeline of the mountain. This string would reside within a Class IV designated area but would be visible in the middle-ground zone from a Class II designated area to the west that coincides with Albion Valley and a scenic corridor associated with SH-77. When viewed from these aspects, the center string would be visible and change the character of the landscape. It would contrast with the surrounding landscape by matching neither color, form, line, or texture. Compounding this difference in landscape contrast is the increased sensitivity of the viewsheds due to relatively high public visibility from the residents of Albion and Malta, and motorists on both SH-77 and SH-81, resulting in a visual impact over the long-term.

The northern half of the center string would be visible from SH-81 and I-84. These roadways lie within scenic corridors with an increased sensitivity level due to the large number of people who would see the Proposed Project, and may result in an impact.

The east string could also be visible from the east along SH-81 and the community of Malta, Idaho. The community of Malta and SH-81 reside in a scenic corridor with increased levels of sensitivity due to the visibility from the roadway and the community residents. From this aspect, the towers would represent a direct impact over the long-term.

Under Alternative B, the west string and the South Access Road would be the most visible aspects of the Proposed Project from both the Howell Canyon road (Pomerelle Mountain Resort Access road) and SH-77 City of Rocks Backcountry Byway. This visibility would impact the background view from these areas, resulting in a visual impact over the long-term.

Alternative B calls for the expansion of the O&M building at the junction of SH-77 and the proposed South Access Road. There could be an impact to visual resources associated with this proposed expansion to the extent that the facility becomes larger and more visible from the Class II area associated with SH-77.

Improvements to the North Access Road could have impacts by making the road more visible from the scenic corridor associated with SH-81 and I-84. Approximately one-half mile of the road improvement would take place within the scenic corridor, which is sensitive to visual impacts due to the large number of people who may see the improved road.

Transmission interconnect lines would be visible from the north and east side of the Proposed Project area. The majority of the eastern transmission interconnect line would be parallel to the existing Raft River Transmission Line and match it, in both height and form. The north transmission interconnect line would be visible from I-84, pass over SH-81 and through its associated scenic corridor. The northern transmission interconnect line would be visible to motorists in this area, resulting in long-term visual impacts. The eastern transmission interconnect line would pass through a Class IV designated area. The eastern transmission interconnect line would be visible from the scenic corridor associated with SH-81, resulting in a long-term visual impact.

4.13.4 Alternative C

<u>Construction Phase</u>

Under Alternative C, short-term impacts to visual resources due to construction of the Proposed Project may occur due to the amount of vehicle and heavy equipment traffic associated with the Proposed Project. The number of truck trips necessary to complete the Proposed Project under this alternative would be 13 percent fewer than under Alternative B.

Impacts associated with construction of the North Access Road would be the same as described under Alternative B. Impacts from traffic and dust created by constructing the access road would be short-term.

Impacts associated with the visibility of cranes during construction would be similar to those described under Alternative B. Impacts under this alternative would be less than those described under Alternative B with fewer towers to be constructed, and the west string of towers closest to SH-77 would be eliminated.

Impacts from the construction of a transmission interconnect line would be similar to those described under Alternative B. Under this alternative there would be a single transmission interconnect line that would be 19.7 miles in length. There is over twice as many miles of new transmission interconnect lines proposed under this alternative compared with Alternative B. However, the majority (approximately 15 miles) of the interconnect line would parallel the existing Raft River Transmission line where the Proposed Project interconnect line parallels the Raft River line. There would be no new element added to the visual landscape.

Operational Phase

Under this alternative, facilities would be similar to those described under Alternative B. In comparison, there would be: 40 percent to 50 percent fewer towers, slightly fewer miles of new road, nearly twice as many miles of new transmission interconnect line, the turbine hubs would be 20 percent higher, and the turbine diameter would be nine percent to 30 percent larger. Under this alternative, the seven turbines proposed for the west turbine string under Alternative B would not be constructed but the center string would be about 1.5 miles longer. Under this alternative, the combined length of both turbine strings would be 14.5 miles with more space between each tower.

Impacts to visual resources from operation of the center string would be similar to those described under Alternative B. Under this alternative, the center string would be more visible from all directions, except the south where the string would be trimmed by 1.5 miles, due to the increased height of the towers and larger diameter of the turbines. Visual impacts to Albion Valley, SH-77, and SH-81 would be the same as described under Alternative B.

When viewed from the north, the Proposed Project would result in similar impacts to those described under Alternative B. By comparison, the Proposed Project would be more visible to motorists on SH-81 and I-84 due to a 1.5-mile extension to the north of the center string. Impacts to visual resources resulting from operation of the east string would be the same as those described under Alternative B. Under this alternative, the east string would be 1.25 miles shorter in length but the towers would be taller and the turbines would be larger. Impacts from the aspect of Howell Canyon Road and SH-77 City of Rocks Backcountry Byway would be less than those described under Alternative B due to the elimination of the west string. Compared to Alternative B, visual impacts would be further lessened due to the elimination of the hill cut below the telecommunication towers on the summit of Cotterel Mountain. Expansion of the O&M building and improvements to the North Access Road would have the same impacts as described under Alternative B.

Under this alternative, the northern transmission interconnect line would be eliminated. Impacts from the eastern transmission interconnect line would be similar to those described under Alternative B. By comparison, impacts from the eastern transmission interconnect line would be greater due to its increased length and proximity to I-84.

4.13.5 Alternative D

Construction Phase

Construction of the Proposed Project under this alternative would result in similar impacts to those described under Alternative B. Short-term impacts could result due to the amount of traffic associated with the Proposed Project. The number of truck trips necessary to complete the Proposed Project would be 33 percent less than under Alternative B.

Impacts associated with construction of the North and South Access Roads would be the same as described under Alternative B. Moderate impacts from traffic and dust created by constructing both the access roads would be short-term.

Impacts associated with the visibility of cranes during construction would be similar to those described under Alternative B. Impacts under this alternative would be less than those described under Alternative B since there are fewer towers to be constructed, and both the east and west strings of towers would be eliminated.

Impacts from the construction of a transmission interconnect line would be the same as those described under Alternative C.

Operational Phase

Under this alternative, facilities would be similar to those described under Alternative B. In comparison, there would be: 40 percent to 50 percent fewer towers, 27 percent fewer miles of Proposed Project roads, nearly twice as many miles of new transmission interconnect line, the turbine hubs would be 20 percent higher, and the turbine diameter would be nine percent to 30 percent larger. Under this alternative, there would be a single string of turbines 11.6 miles long.

Impacts to visual resources from operation of the center string and when viewed from the north would be the same as those described under Alternative C. Impacts associated with Howell Canyon Road and SH-77 City of Rocks Backcountry Byway would be less than those described under C. The center string of turbines would still be visible resulting in impacts, however the east string would not be visible due to its elimination under this alternative. When viewed from the California Trail KOP, impacts to visual resources would be less than those described under Alternative C. The center string of turbines would be visible and create a contrast in landscape form, however the east string would not be visible due to its elimination under this alternative. Expansion of the O&M building and improvements to the North Access Road would have the same impacts as described under Alternative B. Operation of the transmission interconnect line would be the same as those described under Alternative C.

4.13.6 Lighting and Dark-Sky Impacts

Sky glow refers to the cumulative impact from illumination coming from towns, cities, and other developed areas. It is the yellowish glow visible in the night sky when looking toward a nearby town or city. Sky glow can impact and degrade the visual quality of an area. It can also affect dark-sky activities such as recreational and scientific space observation.

As discussed in Chapter 2, it is anticipated that the Federal Aviation Administration (FAA) required lighting would consist of medium-intensity white lights flashing during daylight and twilight hours and red beacons flashing during all other hours. The use of such lights is common for structures exceeding 200 feet in height. During daylight, these lights are not expected to distract drivers or attract any more attention than the turbines themselves. During non-daylight hours and non-twilight hours, the lights would be apparent from the surrounding areas and would detract from the aesthetics of the night sky for those areas. The lighting of the turbines is not expected to create an abnormal distraction to drivers or produce other safety concerns.

At present, the Proposed Project area and immediately surrounding area are primarily dark at night. Existing light is generated from the lights of the residences and business in the towns of Albion and Malta, traffic safety lighting along I-84 north and east of the Proposed Project area, and lighting on cell phone and radio towers that are sited northeast of the of the Proposed Project. The flashing red lights associated with the turbines of the Proposed Project would be operated during nighttime hours and would introduce a new element into the nighttime environment of the Cotterel Mountain area. These lights would be limited in number, red and directional with little potential to create sky glow.

At the O&M facility and substation(s), outdoor night lighting would be required for safety and security. This lighting would be restricted to the minimum levels required to meet safety and security needs. All lights would be hooded and directed to minimize backscatter[6] and illumination of areas outside of the O&M and substation(s) sites. The O&M facility and substation(s) would create sources of light in areas where there are currently no light sources. Substation(s) lighting may not be visible from the communities in the vicinity of the Proposed Project due to shielding from vegetation and geologic features. Nighttime users of Cotterel Mountain would experience scattered views of the substation(s) lighting. The lighting of the O&M facility would potentially be visible to drivers along SH-77 as they approached Conner Summit while traveling both in a northerly or southerly direction. Because all lighting of the substation(s) and O&M facility would be hooded and directional, the potential of lighting to create sky glow is minimal.

4.14 HAZARDOUS MATERIALS

Information obtained during site observations, along with a review of regulatory agency data indicates that there are no hazardous substances within the Proposed Project area.

4.14.1 Alternative A (No Action)

Under Alternative A, no impacts related to hazardous materials would occur from the Proposed Project.

4.14.2 Alternative B

During construction of Alternative B, BMP would be used to avoid spills, leaks, or dumping of hazardous substances. The potential to cause unmitigated hazardous materials impacts that could result from Alternative B is considered to be low.

4.14.3 Alternative C

The impacts under Alternative C would be the same as discussed under Alternative B.

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[6] Backscatter refers to the reflection of light back toward the ground by moisture or dust in the atmosphere.

4.14.4 Alternative D

The impacts under Alternative D would be the same as discussed under Alternative B and Alternative C.

4.15 FIRE MANAGEMENT

Impacts to fire and fuels could occur during the construction and operation phases of the Proposed Project. For purposes of this assessment fire management includes: suppression, wildfire use, and fuels management. The analysis takes into account guidance provided in the Cassia RMP and the Fire, Fuels, and Related Vegetation Management Direction Plan Amendment and Draft EIS (U.S. Department of the Interior (USDI), BLM 2004a).

4.15.1 Alternative A (No Action)

Under Alternative A, the ability of fire management to suppress wildfire and manage surface fuels within the Proposed Project area would not be affected. Fire frequency and intensity would not be changed by Alternative A.

4.15.2 Alternative B

Construction Impacts

The risk of human caused ignitions in the Proposed Project area would increase slightly over the short-term as a result of road construction and improvement projects. Operation of heavy machinery and work crews in the Proposed Project area would increase the possible sources of ignition during road construction. The miles of new roads constructed and number of truck trips necessary to build Proposed Project roads would be highest under this alternative.

Construction projects associated with towers, substations, and other structures would also slightly increase the risks of human caused ignitions in the Proposed Project area. Welding, or other fabrication activities that produce sparks would pose the highest risks. Operation of heavy machinery in the Proposed Project area could also increase ignition potential. The number of substations would be highest under this alternative. The number of truck trips necessary to construct turbines, substations, and other facilities would also be the highest under this alternative.

In the event of an ignition in the Proposed Project area, the presence of construction crews and equipment could pose a moderate hazard to fire suppression crews. Limited access to the Proposed Project area may cause traffic congestion (vehicle and radio) that could increase safety hazards and response times as construction crews evacuate the area, and suppression crews enter. Traffic congestion could lead to more acres burned from wildfire. Additional hazards to suppression crews include any machinery or vehicles left behind by construction crews, overhead hazards (i.e., towers, transmission interconnect lines, substations, etc.), and hazardous materials.

Operational Impacts

Operation of constructed and improved roads could have impacts to fire management. New and improved roads would provide increased access to the area. The public may be more likely to visit the Proposed Project area as a result of the increased access, increasing the probability for human caused ignitions; however, in the event of an ignition, suppression crew response times in the Proposed Project area could decrease with better roads, resulting in fewer burned acres. Impacts could result from the fuel breaks created by new and improved roads in the Proposed Project area. Roads provide a fuel break that may stop or slow the spread of fire, resulting in smaller fires over the long-term.

The presence of towers, turbines, substations and transmission interconnect lines may limit the suppression strategies in the event of a wildfire. Engine and hand crews would experience impacts from increased overhead hazards while air attack crews would experience flight hazards. The presence of towers along the ridgeline could decrease the availability of potential helicopter landing sites. These limitations would likely cause suppression forces to use indirect tactics, resulting in more acres being burned.

The towers would effectively increase the lightning-attractive area on Cotterel Mountain. The probability of lightning striking an object is found by multiplying the lightning-attractive area of the object by the local ground-flash density (lightning strikes to ground per unit area, Hasbrouck 2004). This may have an influence on the number of lightning caused fire starts in the area.

Electrical trenching could impact fire suppression crews by hampering their ability to contain a wildfire fire by creating a fire line. Fire line created by earth moving equipment such as bulldozers may not be appropriate where electrical trenching exists. This could limit suppression actions, resulting in more acres burned. Impacts from electrical trenching could be realized during fire rehabilitation operations. Rangeland drills, or other heavy equipment that is sometimes used during the emergency stabilization and rehabilitation process may not be appropriate in the vicinity of an electrical trench. The most miles of electrical trenching are proposed under this alternative.

The presence of towers, wind turbines, and substations along the ridgeline could have an impact on communications to the extent that they could scatter radio signals used by fire line personnel to communicate during fire management activities.

4.15.3 Alternative C

Construction Impacts

Compared to Alternative B, the potential for ignitions during road construction and improvement would be less due to fewer miles of roads constructed and fewer truck trips necessary to complete Proposed Project roads. The presence of construction crews and equipment during suppression activities would have the same impacts described under Alternative B.

Operational Impacts

Operation of constructed and improved roads would have impacts to fire management associated with new and improved roads acting as potential fuel breaks. By comparison, fewer miles of roads would be constructed resulting in fewer impacts than under Alternative B.

Under this alternative, there would be fewer towers, turbines, and substations resulting in less widespread impacts, and slight reduction of the lightning-attractive area within the Proposed Project boundary. Also, fewer miles of trenching are proposed under this alternative, so the impacts would not be as widespread as Alternative B. Fewer structures would be constructed under this alternative, resulting in fewer impacts to communications during fire management activities.

4.15.4 Alternative D

Construction Impacts

The potential for ignitions during road construction and improvement would be less under Alternative D than either Alternative B or Alternative C, due to fewer miles of roads constructed and fewer truck trips necessary to complete Proposed Project roads. Also, one fewer substation would be constructed and the number of truck trips necessary to complete the Proposed Project would be fewer, resulting in less of an impact than either Alternative B or Alternative C. The presence of construction crews and equipment during suppression activities would have the same impacts described under Alternative B.

Operational Impacts

Operation of constructed and improved roads acting as potential fuel breaks would have fewer impacts to fire management than Alternative B or Alternative C, due to fewer miles of roads. Impacts associated with possible increased ignitions from visitors and impacts associated with increased access for fire suppression crews would be slight. Under this alternative, there would be fewer towers, turbines, and substations resulting in less widespread impacts and a slight reduction in probability of ignitions due to lightning strikes.

4.16 CUMULATIVE EFFECTS (IMPACTS)

4.16.1 Physical Resources

Air Quality

Current resource uses, such as grazing and recreation, would continue to be the primary foreseeable uses for the area. In the past, these as well as other uses in the area including: highway construction projects, agriculture, changes in fuel loads and altered fire regimes; prescribed burns to treat vegetation; and wildfire have affected air quality, resulting in the current status. Based on current state and federal air quality regulations associated with these types of impacts, this action is not likely to affect air quality appreciably in the future.

Geology

Current resource uses, such as grazing and recreation, would continue to be the primary foreseeable uses for the area. In the past, structures and roads built for access, may have affected the geology of the area, resulting in the current status. There are no other projects in the foreseeable future that would require drilling or blasting; therefore, geologic resources are not likely to be affected appreciably in the future. However, future ROW could be granted that require drilling or blasting. It is expected that geologic hazards would be avoided by all development projects wherever feasible. Therefore, cumulative impacts to or from geologic hazards would be negligible for the Proposed Project.

Soils

Current resource uses, such as grazing and recreation, would continue to be the primary foreseeable uses for the area. On Cotterel Mountain the existing roads, the communication site at the summit, and stock pond developments have all resulted in past and ongoing ground-disturbance. Other uses in the area including agriculture, changes in vegetation composition and the spread of invasive weed species have also affected soils. In the future, additional ROW that include ground-disturbing activities could be granted. Overall, the estimated cumulative impacts to soil resources would be expected to be negligible.

Water Resources

Past projects including road development, the communication site development, and other ground-disturbing activities may have impacted water resources in the area. The Proposed Project would use BMP to avoid impacts to 303(d) listed streams and other water resources. If future ROWs are granted that allow ground-disturbing projects, BMP will also be applied. Therefore, cumulative impacts to water resources are not expected.

Noise

Past projects including road development, the communication site development, and other projects using heaving machinery may have impacted noise levels. No other reasonably foreseeable projects in the vicinity of Cotterel Mountain have been identified that would result in noise impacts to residence or recreational users. The Proposed Project is not expected to impact noise levels, therefore, no cumulative noise impacts are anticipated.

4.16.2 Biological Resources

Vegetation

Historical impacts to vegetation that have occurred within the Cassia-Raft River Creeks and Marsh Creek sub-basin include: construction of I-84; livestock grazing; vegetation treatments; rural development; agricultural development that removed shrub steppe habitat; wildfire and prescribed burning; construction of transmission lines; livestock water developments; and removal of riparian vegetation. Cumulative impacts on vegetation resources could occur through increased loss and alteration of habitat, as well as long-term affects from changes in grazing and fire regimes. Cumulative impacts of the Proposed Project include, reduced habitat and forage for livestock and wildlife, and possible increased populations of invasive species and noxious weeds.

Big Game

Historical cumulative impacts to big game that have occurred within the Cassia-Raft River Creeks and Marsh Creek sub-basins include: construction of I-84; livestock grazing; rural development; agricultural development that removed shrub steppe habitat; wildfire and prescribed burning; construction of transmission lines; livestock water developments; mining; water channel alterations and removal of riparian vegetation; and hunting.

Existing and foreseeable impacts to wildlife occurring within the Cassia-Raft River and Marsh Creek sub-basins include: public access, livestock grazing; continued alteration of streams for human purposes; mining; rural development; wildfire and prescribed burning; and alteration of shrub steppe habitats.

Disturbance within big game habitat on and in the vicinity of Cotterel Mountain is anticipated. Livestock use on Cotterel Mountain is anticipated to be minimally affected by the proposed actions. Mule deer use on Cotterel Mountain could be altered due to increased human access. The Idaho Transportation Department is proposing to reconstruct a portion of the City of Rocks Back County Byway between Elba and Almo, Idaho. This 17-mile stretch of road would be built in phases with completion of the Proposed Project occurring in 2007 or 2008 (Jones 2004). Completion of this road reconstruction project could likely result in an increase in the number of visitors to the City of Rocks area and an increase in motor vehicle speeds along this section of road. This could result in an increase in mortality to big game as a result of an increase in wildlife vehicle collisions. Indirect impacts to big game such as those related to noise and human disturbance (i.e. displacement), are difficult to quantify, but probably would increase the overall level of cumulative impacts to big game habitat, over the long-term.

Amphibians and Reptiles

Regional cumulative impact to amphibian and reptile habitats and individuals include roads (e.g., federal and state highways, primary and secondary roads), future ROW authorizations, wildfire and vegetation management treatments. These disturbances would be expected to be scattered throughout the region, and probably would result in negligible impacts to amphibian and reptile populations. By implementing prompt revegetation and appropriate habitat protection measures following construction, cumulative impacts to amphibian and reptile populations within the region would be expected to be negligible. However, increased vehicle speeds and traffic in the Proposed Project area may increase roadway mortality of reptiles.

Small Mammals

Regional cumulative impact to small mammal habitats and individuals include roads (e.g., federal and state highways, primary and secondary roads), future ROW authorizations, and vegetation management treatments. It would be expected that these disturbances would be scattered throughout the region, and probably presents a negligible impact to small mammal populations. By implementing prompt revegetation and appropriate habitat protection measures following construction, cumulative impacts to small mammal populations within the region would be expected to be negligible. However, potential increased vehicle speeds and traffic in the Proposed Project area may increase roadway mortality of small mammals.

Birds and Bats

Lack of data quantifying the status of local passerine and bat populations in the area make the assessment of cumulative impacts to birds and bats difficult. In the U.S., domestic cats, collisions with vehicles, buildings and windows, and communication towers each kill over one million birds every year, while all of the operating wind projects in 2001 were estimated to kill 10,000 to 40,000 birds per year (Erickson *et al.* 2001b), roughly 80 percent of which are passerines.

The level and sources of bat fatalities from human-induced causes are less well known, but bats are known to have collided with buildings and other tall structures, but less frequently than birds. Recent evidence indicates that wind turbines can kill bats, especially those species which migrate south for the winter. Bats are long-lived and produce few (usually one) young per year, which means that their populations could not recover as quickly from losses as could many birds that can produce many young per breeding cycle. Little is known about bat migration routes, corridors, or populations. However, the number of operating wind projects is expected to increase in the future.

Raptors

It is generally assumed that regional populations of common raptors are widely distributed and stable (Olendorff 1973; Newton 1979). During spring, Raft River Valley-Curlew National Grassland Globally Important Bird Area (GIBA) located to the east and south of the Proposed Project area contains the highest breeding population of ferruginous hawks in Idaho. Other than impacts from natural events, this population has been relatively unaffected for the past 30 years. Past and current levels of disturbance and actions have not appeared to impact productivity to a large degree within the GIBA. Raptors displaced by the Proposed Project could move to other territories if suitable unused habitat is available. Given the anticipated collision rates, local or regional cumulative impacts are not expected from the Proposed Project.

Threatened or Endangered Species

No past, present or reasonably foreseeable projects in the vicinity of Cotterel Mountain have been identified that would potentially affect bald eagle or gray wolf. There are several other wind power projects proposed in southern Idaho. These projects, if constructed within suitable habitat for either bald eagle or gray wolf could have the potential to impact these species. However, bald eagle fatalities at existing wind plants are rare to nonexistent. Gray wolf populations in Idaho continue to increase even with authorized and unauthorized removal of individuals due to predation. No cumulative impacts to gray wolf would be expected to occur.

Greater Sage-grouse

It is generally assumed that regional populations of sage-grouse have been declining as a result of: habitat loss or fragmentation from invasive species; agriculture; degradation due to fire; grazing; urbanization; hunting and poaching; predation; disease; weather; accidents; herbicides; and physical disturbance (Connelly *et al.* 2004).

Historical impacts to sage-grouse that have occurred in the Proposed Project area and its vicinity include: conversion of native vegetation to agricultural; wildfire; prescribed burns; construction of I-84 and Interstate 86 (I-86); construction of other roads; livestock grazing, water development, and fencing on private or public lands; rural development; construction of transmission lines; mining; water channel alterations; drought; hunting; and disease.

Future projects and anticipated natural events that could affect sage-grouse in the Proposed Project area and its vicinity include: continued livestock grazing, water development, and fencing on private or public lands; continued rural development; loss of shrub steppe habitat on private lands; potential wildfire; drought and severe winters; hunting; and disease.

In Idaho, recent population trends show an estimated statewide decline of 40 percent from the long-term average (IDFG 1998). The average number of chicks produced per hen has declined by 40 to 50 percent in many areas (Connelly *et al.* 2004). At least six sage-grouse leks are currently active or occasionally active on Cotterel Mountain. In 2003, the estimated population of sage-grouse on Cotterel Mountain was approximately 70 birds (TBR 2004). Within the Proposed Project area and its vicinity lek attendance trends over the last ten years have been flat. For the ten years prior to this period, there were declining lek attendance trends.

Statewide it is estimated that there are 772 active leks and 5,684,900 acres of key sage-grouse habitat. If the Proposed Project results in the abandonment of all six known sage-grouse leks on Cotterel Mountain this would represent less than a one percent (0.008%) loss to the total number of leks state-wide. Under the proposed action (Alternative B), which would result in the largest project footprint, it is estimated that sage-grouse could potential be displaced from about 26,644 acres of suitable habitat on Cotterel Mountain. This displacement from potential suitable habitat would represent less than one-half percent (0.005%) loss to the total estimated acres of suitable sage-grouse habitat state-wide.

In the Proposed Project area and its vicinity, it is estimated that there are 20 active leks and 142,927 acres of key sage-grouse habitat. If the Proposed Project results in the abandonment of the six known sage-grouse leks on Cotterel Mountain, this implies an approximate 30 percent loss to the total number of leks in the area. Under Alternative B, displacement from potential suitable habitat would represent approximately a 19 percent loss to the total estimated acres of potential suitable sage-grouse habitat from the Proposed Project area and its vicinity.

Cumulative impacts on sage-grouse could occur through: increased loss or alteration of habitat; increased access; agriculture; urbanization; hunting and poaching; predation; disease; herbicides; land exchanges, as well as the development of energy resources. Past and present uses of the Proposed Project site and surrounding areas have altered vegetative composition and community dynamics (fire frequency and severity, soil structure and function, nutrient cycling, etc.), or converted sagebrush communities to agriculture or development purposes, resulting in loss of habitat.

The construction of the Proposed Project, in conjunction with the development of other energy or land conversion projects within potential sage-grouse habitat, could have additive impacts by decreasing region-wide habitat. The continuing loss and fragmentation of sagebrush habitat has reduced the number of potential sites were sage-grouse are found; therefore, impacts to the remaining sage-grouse populations are multiplied when occupied habitat is affected. Future actions that continue this trend would result in a reduced population of sage-grouse.

4.16.3 Historical and Cultural Resources

The Proposed Project, in conjunction with other past projects or planned projects in the area, would result in ground disturbance that could potentially impact identified and unidentified prehistoric or historic sites, as well as cause impacts on traditional cultural properties. If surveys were conducted prior to construction of these unknown future projects, the location of these resources would be identified so impacts could be avoided to the extent possible. Implementation of mitigation programs in each individual project should help to limit project-specific impacts, therefore reducing overall cumulative impacts on cultural resources.

Cumulative effects on cultural resources can also occur through natural erosion and weathering of lands containing archaeological sites. Cumulative impacts of the Proposed Project may include the disturbance and loss of unidentified cultural resources that could increase knowledge about past use of the area or an increase in visitation that may result in vandalism to the archaeological resources. Cumulative impacts may also result from gain in scientific discovery of new sites identified by construction and maintenance crews and the general public due to an expected increase in visitation to the area.

4.16.4 American Indian Concerns

As of the publication of the Draft EIS, no sites of concern have been identified.

4.16.5 Socioeconomics

Currently there are no other future foreseeable projects within the Cassia-Minidoka socioeconomic analysis area that when added to past actions and the Proposed Project would result any measurable cumulative affects.

4.16.6 Lands and Realty

Cumulative effects to land use issues are not expected from the Proposed Project, past actions, or future foreseeable actions.

4.16.7 Recreation

Past BLM management, road and trail building activities, and the development of other recreation amenities have contributed to increase recreation opportunities and accessibility in the vicinity of Cotterel Mountain. In addition, the Idaho Transportation Department is proposing to reconstruct and pave a portion of the City of Rocks Back County Byway between Elba and Almo, Idaho. Completion of this road reconstruction project could likely result in an increase in the number of visitors to the City of Rocks area. Increased visitation to the City of Rocks could result in a rise of visitor use of Cotterel Mountain. At periods of high use, the campgrounds at the City of Rocks are often full. Visitors that do not obtain a campsite may search for appropriate dispersed camping sites in the vicinity of the City of Rocks, which could include Cotterel Mountain. An increase in dispersed camping could result in localized disturbances to wildlife, vegetation and soils.

Nationwide the popularity of OHV use has been increasing (Motorcycle Industry Council 2003). A representative increase in off-highway motorcycles and ATV use would also be expected at the local level. The potential for the Proposed Project in combination with past projects and future foreseeable projects would not likely have cumulative impacts to the current ROS designation of semiprimitive motorized.

4.16.8 Livestock Grazing

Cumulative impacts could include increased concentration of livestock use, rangeland deterioration, and altered fire regimes. Construction on Cotterel Mountain would disturb vegetation and soil and create an environment that is susceptible to noxious weeds and invasive species establishment. If these species increase and become more dominant, they can alter the spatial distribution of livestock grazing. As key forage species (bluebunch wheatgrass and Idaho fescue) are replaced by invasive species that are less palatable (cheatgrass and bulbous bluegrass), livestock would begin to use those sites less and concentrate in areas with better forage (Bailey 1995). Concentrated livestock grazing can increase the mechanical effects on the soil, including hoof sheer and soil compaction, which could lead to further spread of invasive species, and decrease native reestablishment and the overall foragability of the site (Bailey *et al.* 1996).

In addition, the spread of invasive species and the construction of the road systems could alter fire patterns. Based on the historic species composition and distribution on Cotterel Mountain, fire occurrences have primarily been low frequency, fire return intervals between 40 to 60 years (Marquez 2004), low intensity mosaic burns. As invasive species populations increase, fuel loads within the system are augmented, which increases the probability and intensity of fire within the area. Constructed roads also affect the distribution of fire by acting as firebreaks. In doing so, natural fire patterns could be altered to produce more frequent, high intensity homogeneous burns. This could have positive affects by altering sagebrush or juniper/mountain mahogany to grasslands, but it would also cause the suspension of use on AUMs associated with fire rehabilitation projects.

4.16.9 Visual Resources

Past and current projects have created the existing visual conditions in the Cotterel Mountain area. The Proposed Project would have a cumulative impact on the visual resource. Each of the action alternatives would have varying degrees of impacts to visual resources beyond the Proposed Project area by failing to maintain the existing character of the landscape.

No other planned projects are expected to occur in the immediate area surrounding the Proposed Project, except for improvement projects for range and wildlife. Such improvement projects would not contribute to the cumulative impact on the visual resource.

Several other wind power projects are proposed for southern Idaho along the Snake River Plain. If these projects are constructed, wind turbines would become a more common sight in southern Idaho. Residents and frequent visitors to the region could view the turbines of one or more wind power projects in a single day. Over time, they would likely experience repetitive views of wind turbines through their local travels over a period of time. Consequently, some local residents and those traveling through the area might perceive a change to the overall character of the Snake River Plain landscape.

4.16.10 Hazardous Materials

The Proposed Project and future foreseeable projects in the area would be required to use BMP to avoid impacts to the environment from hazardous materials. When combined with past actions, there would not be any cumulative impacts due to hazardous materials.

4.16.11 Fire Management

The Proposed Project would have cumulative impacts by reducing the tools available to resource managers to treat surface fuels on district efforts to meet fuel reduction targets set by the National Fire Plan. This impact could extend beyond the boundary of the Proposed Project area by increasing the risk of large fires that may spread beyond the Proposed Project area boundary. Prescribed fire use may no longer be an acceptable method to achieve resource objectives in and adjacent to the Proposed Project area. The presence of the Proposed Project could increase the complexity of developing a prescription to the point where it would not be feasible.

Cumulative suppression impacts could occur due to the hazards associated with wind farm infrastructure. Aerial suppression resources would not be appropriate due to turbine towers. Engine and hand crews would experience increased overhead hazards in the Proposed Project area. Construction of the Proposed Project would likely limit suppression within and adjacent to the Proposed Project area to indirect tactics in the event of a wildfire, resulting in larger fires in the Cotterel Mountain area. Larger fires may be either beneficial or harmful depending on the fuel type burned.

4.17 UNAVOIDABLE ADVERSE EFFECTS

The Proposed Project design features, BMP, and compensatory off-site/mitigation would avoid or minimize many of the potential adverse effects. However, not all adverse effects can be avoided, nor would mitigation 100 percent effective in remediating all impacts. There would be at least a minimal amount of unavoidable adverse impact on all resources present in the Proposed Project area for at least a short time, due to the presence of equipment and humans in the area and the time necessary for restoration to be effective. Unavoidable impacts associated with the Proposed Project would include:

- Soil compaction for road construction.
- Loss of vegetation.
- Loss of mule deer winter range.
- Potential impacts to birds and bats.
- Potential impacts to sage-grouse and their habitat.
- Loss of livestock forage.
- Changes to the viewshed of the Cotterel Mountain ridgeline from siting wind turbines and construction of roads.
- Visual alternation of the nighttime environment due to turbine lighting.
- Potential loss of aerial fire fighting options along the Cotterel Mountain ridgeline.

4.18 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

An irreversible and irretrievable impact is defined as a permanent reduction or loss of a resource that once lost cannot be regained. Most energy development projects, such as gas, oil, or coal fire plants, result in an irreversible and irretrievable commitment of the power-generating resources (fuel). Wind is a renewable resource that would not be depleted or altered by the Proposed Project and could offset the need to consume fossil fuels.

The loss of productivity (i.e., forage wildlife habitat) from lands used for the siting of the Proposed Project features (i.e., turbines roads, substations) would be an irreversible and irretrievable commitment of habitat resources for wildlife species, such as sage-grouse, dependent upon mature shrub-steppe plant communities. These vegetation communities may take 20 to 40 years or more to recover following decommissioning of the Proposed Project. Therefore, the majority of the land disturbed by the Proposed Project would not be returned to useful production for up to 50 to 70 years, if the Proposed Project does not go beyond 30 years.

There would be an irreversible and irretrievable commitment of the energy used during manufacture of the turbine and other Proposed Project components as well as during construction, drilling, production, and restoration associated with the Proposed Project. Foundations or other facilities greater than six inches below ground surface would be permanent and abandoned in place. They cannot be recovered due to practical or economic considerations and they would be irreversibly and irretrievably committed.

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CHAPTER 5

CONSULTATION AND COORDINATION

5.0 CONSULTATION AND COORDINATION

The Cotterel Mountain Wind Power Project is being proposed on public lands primarily managed by the Burley Field Office of the Idaho Bureau of Land Management (BLM). However, a variety of other organizations, agencies and people maintain an interest in the area or use the area for specific purposes. These include, but are not limited to: Idaho Department of Fish and Game (IDFG); U.S. Fish and Wildlife Service (USFWS); Idaho Department of Lands (IDL); Cassia County; the Shoshone-Bannock Tribes; the Shoshone-Paiute Tribes; communications site rights-of-way holders; Bonneville Power Administration (BPA); Idaho Power; and certain grazing permittees. BLM established a coordinated effort for participation in the analysis process by:

- Inviting USFWS, IDFG, and BPA to cooperate in the preparation of this document;
- Through organizing an the Interagency Wind Energy Task Team (IWETT);
- Through formal consultation with the Tribes;
- Through contacting, meeting with and providing information to various groups and local governments; and
- By seeking the active participation of the public and existing permittees in the scoping process and throughout the analysis process.

This chapter addresses the consultation and coordination that has taken place, in both an informal and formal setting, with the Shoshone-Bannock Tribes, the Shoshone-Paiute Tribes, federal, state and local government, interest groups and the general public.

5.1 SPECIFIC CONSULTATION ACTIONS

5.1.1 Formal and Informal Government-to-Government Consultation with Tribes

During the initial public scoping period, a meeting was held on January 16, 2003 with the Shoshone-Bannock Land Use Policy Commission (Commission) to provide information on the Proposed Project, answer questions, and solicit Tribal input. During that meeting, it was suggested by the Commission that the Proposed Project be presented to the Tribal Business Council (Council). A meeting was subsequently scheduled and held with the Council on March 12, 2003. Prior to the start of the public scoping period, Mike Heckler of Windland, Inc. (Windland) met with Delbert Farmer, a former Council member, as well as Diane Yupe and LaRea Buckskin of the Heritage Tribal Office (HETO) to provide information on the Proposed Project. Members of the Tribal Environmental Staff attended a field tour of the Proposed Project area on September 22, 2003 and comments on the Proposed Project were received by the BLM in a letter dated October 17, 2003. Table 5.1-1 lists chronologically meetings and consultation with the Shoshone-Bannock Tribes. Subsequent to the formation of the BLM, Twin Falls District on October 1, 2004, formal consultation was initiated with the Shoshone-Paiute Tribes through the Wings and Roots process on October 29, 2004. Since that date, the Burley Field Office Staff along with the Twin Falls District Manager have also participated in consultation through the Wings and Roots process on December 2, 2004, January 20, 2005 and February 23, 2005.

Table 5.1-1. Consultation with the Shoshone-Bannock Tribe.

Date	Type of Contact
July 8, 2002	Informational meeting between Windland; Delbert Farmer, former Council member; and Diane Yupe and LaRea Buckskin of HETO
January 16, 2003	Meeting between the BLM and the Shoshone-Bannock Land Use Policy Commission
March 12, 2003	Meeting between the BLM and the Tribal Business Council
September 22, 2003	Field tour of the Proposed Project area
October 17, 2003	Letter from the Shosone-Bannock Tribes commenting on the Proposed Project.
February 3, 2004 March 9, 2004 April 6, 2004 May 11, 2004	Meetings with Shoshone-Bannock Land Use Policy Commission
April 15, 2004	Formal Consultation with Fort Hall Tribal Business Council
June 8, 2004	Meeting with Tribal Environmental Staff

5.1.2 Intergovernmental (State and Local) and Interest Group Coordination

Members of state, county, and city governments and interest groups were contacted about the Proposed Project and invited to comment. In response, the IDL and IDFG submitted comment letters to the BLM identifying their preliminary concerns through the public scoping process. In addition, comment letters were received from the Western Watersheds Project, Advocates for the West, Land and Water Fund of the Rockies, Idaho Conservation League, Prairie Falcon Audubon Society and the Sierra Club, Sawtooth Group. Table 5.1-2 documents chronologically consultation with state, county, and city governments and other interest groups.

Initial public scoping was conducted to help identify issues to be addressed in developing a full range of alternatives. Prior to the publication of the Notice of Intent (NOI) in the Federal Register, BLM agency representatives, at the request of local interest groups, provided preliminary information on the Proposed Project, and answered questions. These groups included: IDFG; the Albion Joint Management Association; the Cassia County Public Lands Committee; the Mini-Cassia Chamber of Commerce; the Burley Lions Club; the Cassia County Commissioners; and the Upper Snake River District Resource Advisory Council (RAC). This pre-National Environmental Policy Act (NEPA) planning process facilitated a free-flow exchange of ideas, and a chance to educate interested and involved parties on wind as an energy resource and the trade-offs in terms of consequences to the environment as opposed to benefits from power generation. Consultation and project updates continued with these groups and others subsequent to the publication of the NOI and the beginning of the NEPA process. Additional groups and governments involved in the process were: the Cities of Albion, Malta, Declo and Burley; the Rotary Club; the Cassia Soil and Water Conservation Group; the C-Plan Committee; the North and South Cotterel Grazing Associations; and the Twin Falls District RAC.

5.1.3 Resource Advisory Council (RAC)

Resource Advisory Councils are advisory boards established by the Governor of Idaho to coordinate with the BLM and provide input on important issues. A RAC consists of members of the public, each representing one or more of the many resources the BLM manages. Early on in this analysis process, the Upper Snake River District RAC was presented with the Proposed Project and invited to participate in the analysis. They were first introduced to the project at a RAC meeting on November 19, 2002 where they were given a presentation on the proposal and information was shared. They were given project updates periodically until the Burley Field Office became part of the new Twin Falls District on October 1, 2004, at which time the new Twin Falls District RAC became involved. They in turn were presented with the Proposed Project and invited to participate at a RAC meeting on November 9, 2004. They have been periodically updated and are scheduled for an on-site tour in May of 2005.

5.1.4 Cassia County Public Lands Committee

The Cassia County Public Lands Committee is a local working group that expressed an interest in the Proposed Project. The committee is somewhat unique being one of only two such committees in the State of Idaho. It is comprised of citizens and local county officials that have varying interests in Federal actions and public lands. They meet regularly with the BLM and the U.S. Forest Service to discuss and provide input on the important issues that affect public lands within Cassia County. This group has also been presented with project updates throughout the analysis process.

5.1.5 Congressional Staffs

Local Congressional Staffs were briefed on the Proposed Project by Field Office Manager, Theresa Hanley at a meeting in Twin Falls in December of 2002. Members of the Burley Field Office Staff also briefed the BLM Acting State Director, along with several members of his staff on the project in October of 2002, and obtained their concurrence for the necessity for the preparation of a Resource Management Plan amendment and Environmental Impact Statement (EIS) for the Proposed Project. Wendy Reynolds, the current Field Office Manager for the Burley Field Office, conducted a briefing and on-site tour of the proposed Cotterel Mountain Proposed Project area with congressional representatives, Heather Teal, Linda Culver and Mike Matthews on August 23, 2004.

Table 5.1-2. Consultation with State, County, and City Government.

Date	Type of Contact
June 25, 2002	BLM and Windland give a presentation on the Proposed Project to the Mini-Cassia Chamber of Commerce
August 20,2002	Sensitive species information request to the IDFG Conservation Data Center
August 22, 2002	URS Group, Inc. (URS) and Windland hold meeting with the IDFG Magic Valley Region Staff to disclose the features of the Proposed Project.
September 27, 2002	BLM and Windland give a presentation to the Burley Lion's Club
November 19, 2002	Upper Snake River District RAC Mtg. (presentation on Proposed Project)
December of 2002	Local Congressional Staffs were briefed by BLM Field Office Manager, Theresa Hanley
January 7, 2002	Scoping comments from Idaho Department of Lands
February 3, 2003	IDFG attendance at agency scooping meeting
February 10, 2003	BLM gives a project briefing to the South Cotterel Grazing Assoc.
February 11, 2003	BLM contacts Mayors and/or City Councils of Malta, Declo and Burley to consult on the Proposed Project
February 19, 2003	BLM gives a project briefing to the North Cotterel Grazing Assoc.
February 21, 2003	Scoping comment letter from IDFG
February 25, 2003	BLM and Windland give a presentation to the Albion City Council
February 27, 2003	Resource Advisory Council Meeting (project update)
April 11, 2003	BLM updates IDFG on the Proposed Project
May 1, 2003	IDFG participates in a field tour with BLM and USFWS
August 20, 2003	IDFG attendance at Interdisciplinary team Proposed Project area field trip
November 24, 2003	Resource Advisory Council Meeting (project update)
January 12, 2004	BLM updates IDFG on Proposed Project
January 13, 2004	BLM briefs C-Plan Committee on Proposed Project
January 27, 2004	IDL and Cassia County Commissioners invited to be cooperating agencies, IDFG invited to be a participating agency
February 25, 2004	Resource Advisory Council Meeting (project update)
March 22, 2004	Cassia County Commissioners Meeting (project update)
April 26, 2004	Cassia County Commissioners Meeting (project update)
May 20, 2004	Resource Advisory Council Meeting (project update)
July 16, 2004	BLM conducts field tour for Cassia County Public Lands Committee
October 25, 2004	Cassia County Commissioners Meeting (project update)
October 26, 2004	BLM gives a presentation to the Burley Rotary Club
November 9, 2004	Twin Falls District Resource Advisory Council Meeting (presentation on Proposed Project)

5.1.6 Consultation with Federal Agencies

The USFWS supplied a comment letter during the public scoping process. A scoping meeting specific to wildlife issues was held with the USFWS, with IDFG present, at the BLM Burley Field office on February 3, 2003. Representatives from the USFWS also attended an interdisciplinary resource team field trip to the Proposed Project area on August 20, 2003. Table 5.1-3 lists chronologically the consultation completed with Federal Agencies.

The BLM and USFWS operate under an interagency agreement in a cooperative approach to fish and wildlife management. The BLM enters into consultation with the USFWS pursuant to Section 7 of the *Endangered Species Act of 1973, as amended.* The consultation process includes both "informal" and "formal" consultation. A biological evaluation process is used by these agencies to identify which listed or proposed species could be affected by the proposed action, to evaluate the possible effects, and to determine if formal consultation is required. Because of the presence of bald eagle known to use the Proposed Project area, formal consultation is being conducted with the USFWS and a Biological Assessment is being prepared relative to the bald eagle. A Biological Opinion based on the findings in the Biological Assessment will be issued by the USFWS and made a party of the Record of Decision of this analysis.

Table 5.1-3. Consultation with Federal Agencies.

Date	Type of Contact
August 20, 2002	URS requests project specific species list from USFWS
September 20, 2002	URS and Windland held meeting with USFWS Eastern Idaho Field Office, Chubbuck, Idaho to disclose the features of the Proposed Project.
September 27, 2002	BLM received project specific species list from USFWS
November 11, 2002	BLM requested revised project species list from USFWS
December 5, 2002	BLM received revised project specific species list from USFWS
December 16, 2002	BLM sends letter to USFWS to initiate consultation on the Proposed Project.
January 2, 2003	BLM receipt of letter from USFWS providing clarification on the necessity for a biological assessment.
February 3, 2003	USFWS attendance at agency scooping meeting
May 1, 2003	USFWS participates in a field tour of the Proposed Project area with BLM and IDFG
August 20, 2003	USFWS attendance at interdisciplinary team Proposed Project area field trip
November 12, 2003	BLM and Windland consult with BPA regarding power transmission interconnection issues
January 27, 2004	USFWS and BPA invited to be cooperating agencies
May 19, 2004	USFWS attends coordination meeting with BLM
July 14, 2004	BLM gives tour of Proposed Project area to Jeff Foss, USFWS
September 10, 2004	USFWS participates in an interagency coordination meeting with BLM, IDFG and representatives of Windland and Shell WindEnergy, Inc.
November 18, 2004	BLM and Windland meet with Bureau of Reclamation (BOR) to consult on possible power transmission line routing across BOR lands

5.1.7 Interagency Wind Energy Task Team (IWETT)

Following an interagency coordination meeting with BLM, IDFG, USFWS and representatives from Windland, Inc. and Shell WindEnergy, Inc., the IWETT was formed consisting of members from BLM, IDFG, USFWS and URS Group, Inc. The IWETT was chartered to assist in the Proposed Project analysis process as described below:

- Review baseline technical wildlife reports and data and identify additional data needs, if appropriate;
- Assist and contribute to the development of mitigation measures;
- Assist and contribute to the development of adaptive management strategies;
- Assist with development and/or further enhancement of a range of alternatives;
- Provide technical input for the environment consequences (impacts) section of the Draft EIS; and
- Define what constitutes an adequate project-monitoring program.

The IWETT met eight times over the course of several months to address these issues and assignments. Table 5.1-4 lists a chronology of IWETT coordination and consultation.

Table 5.1-4. Interagency Wind Energy Task Team Consultation.

Date	Event
October 15, 2004	IWETT Meeting #1
October 20, 2004	IWETT Meeting #2
October 28, 2004	IWETT Meeting #3
November 22, 2004	IWETT Meeting #4
December 2, 2004	IWETT Meeting #5
December 14, 2004	IWETT Meeting #6
December 21, 2004	IWETT Meeting #7
March 29, 2005	IWETT Meeting #8

5.1.8 Initial Public Scoping-Mailing List

At the beginning of the project a mailing list was developed to send out project publications to individuals, organizations, and agencies. The mailing list included names and addresses from the lead agency, BLM existing mailing lists, potentially affected federal, state and local agencies, organizations, Tribes, and other interested private parties. This mailing list had approximately 115 interested parties. During the course of the project analysis, the mailing list has grown to include approximately 250 interested parties and is expected to continue to expand.

The initial mailing list was used to include interested parties during the course of the project through newsletters. A Public Scoping Notice Newsletter was prepared and mailed on December 19, 2002. The Notice invited the public to participate in the scoping process and to comment on the planning criteria. A BLM mailing address and email address were provided in the scoping newsletter with a pre-addressed comment form, for the public to send into the BLM with comments on the Proposed Project. This first Newsletter served to inform the recipients of the public scoping process for the preparation of the Draft EIS and Land Use Plan Amendment and the scheduled scoping meetings for the Proposed Project. It also included background information on the Proposed Project, the purpose and need for the proposed action, and preliminary resource issues.

A second newsletter was published and mailed in July of 2003. This newsletter provided an update on the progress of the EIS process, studies that had been completed, and an updated schedule.

5.1.9 Public Scoping Meetings

Public scoping meetings were held in Albion, Idaho on January 7, in Burley, Idaho on January 8, and in Boise, Idaho on January 9, of 2003. A total of 135 individuals attended the three meetings.

The scoping meetings were held in an "Open House" format and featured informal, one-on-one question and answer interactions by BLM and URS interdisciplinary resource team members. Representatives of Windland were also on hand to answer technical questions about the Proposed Project. Attendees signed a registration sheet as they entered the room. The interdisciplinary resource team members then escorted attendees to stations set up around the room. At each station were display boards with information about the Proposed Project. Information presented on the display boards included; resource issues; planning criteria; Proposed Project design; visual simulations; equipment diagrams; and an initial proposed schedule for completing the planning process. Attendees were encouraged to provide written comments and questions on the Proposed Project on provided forms and leave them at the meeting or mail them to the BLM. Table 5.1-5 lists the agencies, groups and individuals who responded during the scoping process.

Table 5.1-5. Agencies, Groups and Individuals Who Responded During the Scoping Process.

Agencies	
Federal	**State of Idaho**
U.S. Fish and Wildlife Service	Idaho Department of Lands
	Idaho Department of Fish and Wildlife
Citizens Groups	
Advocates for the West	Idaho Conservation League
Renewable Northwest Project	Western Watersheds Project
NW Energy Coalition	Prairie Falcon Audubon Society
Land and Water Fund of the Rockies	Sierra Club, Sawtooth Group
Individuals	
Bennie Smyer	Kent Klosterman
Bill Eastlake	Kevin A. Larson
Bob Bean	Len F. Marrs
Bob Bronson	Leo Bell
C.H. Nellis	LeRoy Jarolimek
Candiodo Pena	Mark Grigg
Charles R. Ward	Mark Iverson
Curtis E. Cannell	Mark Ohrenschall
Curtis Richins	Mr. & Mrs. Bruce Bristol
David Westfall	Nick Rokich
Dean Richins	Norman Anderson
Dean Sullivan	Norman Dayley
Donald Dean	Philip Wheeler
Fran Allans	Robert Blurton

Table 5.1-5. Agencies, Groups and Individuals Who Responded During the Scoping Process.

Gale R. Ward	Ryan Hawther
Harry R. Badger	Tammy Lien
Jack Enterkine	The Chatburn Family
Janet Powers	Thomas Bacon
Jay L. Black	Thomas C. Ward
Jim Powers	Tom Geary
Jon Fillmore	Victoria Francis
Jon P. Fillmore	
Julie Kreiensiecu	
Karl Simonson	
Keith Amende	
Kelly Adams	

5.2 LIST OF PREPARERS

Personnel contacted or consulted during preparation of this Draft EIS are listed in Table 5.2-1. The list of preparers and participants is given in Table 5.2-2.

Table 5.2-1. Personnel Contacted or Consulted for the Cotterel Wind Power Project.

Agency or Organization	Name	Position
Bureau of Land Management		
Burley Field Office	Wendy Reynolds	Burley Field Office Manager (July, 2003 –Present)
	Bernie Jansen	Acting Burley Field Office Manager (March 2003 – July 2003)
	Theresa Hanley	Burley Field Office Manager (Nov 1999 – March 2003)
	Scott D. Barker	Project Manager
	Kenneth Knowles	Environmental Protection Specialist
	Peggy Bartels	Wildlife Biologist
	John C. Lytle	Archeologist
	Felicia Burkhardt	GIS Coordinator
	Elena Shaw	Rangeland Management Specialist/Lead
	Nancy Ady	Rangeland Management Specialist
	Dennis Thompson	Outdoor Recreation Planner
	Jim Tharp	Natural Resource Specialist
	Bill Rice	Civil Engineer
	Steve Davis	Hydrologist
	Forrest Griggs	Geologist

Table 5.2-1. Personnel Contacted or Consulted for the Cotterel Wind Power Project.

Agency or Organization	Name	Position
Upper Snake River District (now known as the Idaho Falls District)	Joe Kraayenbrink	Upper Snake River District Manager
	David Howell	Public Affairs Specialist
	Kathe Rhodes	Environmental Coordinator
Twin Falls District	Howard Hedrick	Twin Falls District Manager
	Paul Oakes	Planning and Environmental Coordinator
	Sky Buffat	Public Affairs
Idaho State Office	Kurt Kotter	Associate State Director
	Susan Giannettino	Deputy State Director Resource Services Division
	John Augsburger	Wildlife Biologist
	Signe Sather-Blair	Wildlife Biologist
	John Martin	Economist
	Jack Peterson	Resource Management Specialist
	Gary Wyke	Planning Coordinator
Washington Office 350	Tom Hurshman	National Project Manager
	Ray Brady	National Program Lead
U.S. Fish and Wildlife Service	Sandi Arena	Wildlife Biologist
	Deb Mignogno	Supervisor Eastern Idaho Field Office
	Mark Robertson	Boise Office
	Jeff Foss	Boise Office
	Dr. Benjamin Tuggle	Washington Office
	Steve Bouffard	Refuge Manager Minidoka Refuge
Idaho Department of Fish and Game	Mike McDonald	Environmental Staff Biologist Magic Valley Region
	David Parrish	Magic Valley Regional Supervisor
	Bruce Haak	Non-Game Biologist Southwest Region
	Randy Smith	Biologist Magic Valley Region
	Greg Servheen	Biologist Boise Office
	Tracy Trent	Supervisor Boise Office

Table 5.2-2. List of Preparers and Participants for the Cotterel Wind Power Project.

Name	Education/Experience	Draft EIS Responsibility
BLM Interdisciplinary Team		
Scott D. Barker	BS Forest Management 30 Years Experience	Project Management Team Leader Visual Resources
Wendy Reynolds	15 Years Experience	Burley Field Office Manager (July, 2003 –Present)
Theresa Hanley	BA/MA Anthropology 15 Years Experience	Burley Office Field Manager (Nov 1999 – March 2003)
Bernie Jansen	BS Range Science, Jun 1967 30+ Years Experience	Acting Burley Field Office Manager (March 2003 – July 2003)
Paul Oakes	BA Biology 33 Years Experience	Planning/NEPA Coordination
Kathe Rhodes		NEPA Coordination
Peggy Bartels	BS/MS Wildlife Biology 9 Years Experience	Wildlife Biology
John C. Lytle	BA/MA Anthropology 28 Years Experience	Cultural Resources
Kenneth Knowles	BS Conservation/Biology MS Range Management 30 Years Experience	Hazardous Materials and Noxious Weeds
Felicia Burkhardt		GIS
Elena Shaw	BS Range Science 22 Years Experience	Rangeland Resources
Nancy Ady	BS Range & Animal Science BS Horticulture 10 Years Experience	Rangeland Resources
Dennis Thompson		Recreation, Visual Resources
John Augsburger	BS Wildlife Management MS Wildlife Science 31 Years Experience	Wildlife Biology
Bill Rice		Engineering
Steve Davis	BS Zoology (Fisheries & Wildlife) 20 Years Exper.	Hydrology
Forrest Griggs	BS Geology 3 Years Experience	Geology
John Martin	MS Agricultural and Natural Resources Economics 30 Years Experience	Socio-Economics
Jim Tharp	BS Wildlife Management 17 Years Experience	Natural Resource Specialist/ Ecologist
David Howell		Public Affairs
Sky Buffat		Public Affairs
URS Corporation		
Aaron English	BS Wildlife Biology 13 Years Experience	Project Manager

Table 5.2-2. List of Preparers and Participants for the Cotterel Wind Power Project.

Name	Education/Experience	Draft EIS Responsibility
Suzy Cavanagh	MS Geology 6 Years Experience	Geology, Soils, Hydrology
Brandt Elwell	MS Forestry/BS Geography 11 Years Experience	GIS Analyst, Vegetation, Visual Resources
Dautis Pearson	BA General Biology 22 Years Experience.	Land Use, Recreation, Visual Resources,
Mike Kelly	BA/MA Anthropology 24 Years Experience	Cultural Resources
Sarah McDaniels	BA International Studies MA Anthropology 5 Years Experience	Cultural Resources
Bridget Canty	BS Biology 9 Years Experience	Avian Resources
Katie Carroz	MA Economics 6 Years Experience	Socioeconomics
Lisa Kuchera	BS Geographic Information Management 8 Years Experience	Hazardous Materials
Kavi Koleini	BS Environmental Science 6 Years Experience	Visual Resources Fire Management
Sandra Steele	BBA Management 17 Years Experience	Document Production, Coordination, Quality Assurance
Dave Schwarz	PhD. Geology 14 Years Experience	Quality Assurance, Technical Editing, Visual Resources
Charles Baun	MS Natural Resource Management BS Biology/Chemistry 6 Years Experience	Avian database management, vegetation, wildlife resources
T.R.E.C Inc.		
Tim Reynolds	Ph.D. Zoology 30 Year Experience	Avian Surveys
Kent Fothergill	BS Biology 20 Years Experience	Avian Surveys
Visual Genesis		
Jason Pfaff	BS Landscape Architecture 11 Years Experience	Visual Resources
Ted Bierman	BS Cartography 4 Years Experience	Visual Resources
ABR Inc		
Brian Cooper	MS Biology 20 Years Experience	Radar Surveys
Maul Foster Alongi		
Lynn Sharp	BA Biology MS Zoology 30 Years Experience	Avian and Wildlife Resources

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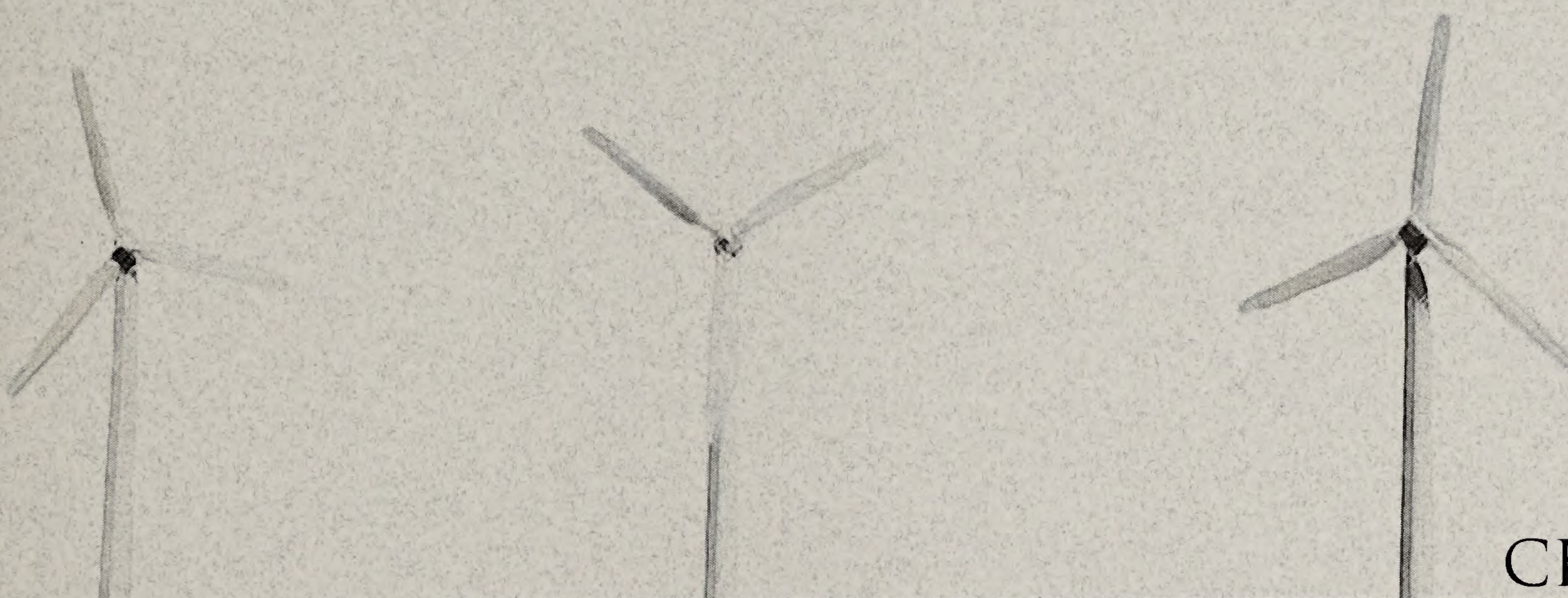

CHAPTER 6

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APPENDIX A

NOI PUBLISHED IN FEDERAL REGISTER

COMMENT DUE DATE: Your comments are best assured of having their full effect if received on or before February 18, 2003.

Dated: December 12, 2002.

Charles W. Grim,

Assistant Surgeon General, Interim Director.

[FR Doc. 02–31912 Filed 12–18–02; 8:45 am]

BILLING CODE 4160–16–M

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR–4739–N–49]

Notice of Proposed Information Collection: Comment Request; Applications for Housing Assistance Payments

AGENCY: Office of the Assistant Secretary for Housing—Federal Housing Commissioner, HUD.

ACTION: Notice.

SUMMARY: The proposed information collection requirement described below will be submitted to the Office of Management and Budget (OMB) for review, as required by the Paperwork Reduction Act. The Department is soliciting public comments on the subject proposal.

DATES: *Comments Due Date:* February 18, 2003.

ADDRESSES: Interested persons are invited to submit comments regarding this proposal. Comments should refer to the proposal by name and/or OMB Control Number and should be sent to: Wayne Eddins, Reports Management Officer, Department of Housing and Urban Development, 451 7th Street, SW., L'Enfant Plaza Building, Room 8003, Washington, DC 20410.

FOR FURTHER INFORMATION CONTACT: Willie Spearmon, Director, Office of Housing Assistance and Grant Administration, Department of Housing and Urban Development, 451 7th Street SW., Washington, DC 20410, telephone (202) 708–3000 (this is not a tollfree number) for copies of the proposed forms and other available information.

SUPPLEMENTARY INFORMATION: The Department is submitting the proposed information collection to OMB for review, as required by the Paperwork Reduction Act of 1995 (44 U.S.C. Chapter 35, as amended).

This Notice is soliciting comments from members of the public and affected agencies concerning the proposed collection of information to: (1) Evaluate whether the proposed collection is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; (2) Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information; (3) Enhance the quality, utility, and clarity of the information to be collected; and (4) Minimize the burden of the collection of information on those who are to respond; including the use of appropriate automated collection techniques of other forms of information technology, *e.g.*, permitting electronic submission of responses.

This Notice also lists the following information:

Title of Proposal: Applications for Housing Assistance Payments.

OMB Control Number, if applicable: 2502–0182.

Description of the need for the information and proposed use: Vouchers are submitted by owners/agents to HUD or their Contract Administrators (CA)/Performance Based Contract Administrators (PBCA) each month to receive assistance payments for the difference between the gross rent and the total tenant payment for all assisted tenants. In the instance of special claims, vouchers are submitted by owners/agents to HUD or their CA/PBCA to receive an amount of offset unpaid rents, tenant damages, vacancies, and/or debt service losses.

Agency form numbers, if applicable: HUD–52670; HUD–52670A, Part 1; HUD–52670A, Part 2; HUD–52671A/B/C/D.

Estimation of the total numbers of hours needed to prepare the information collection including number of respondents, frequency of response, and hours of response: The estimated total number of hours needed to prepare the information collection is 178,585; the number of respondents is 43,064 generating approximately 394,821 annual responses; the frequency of response is on occasion and monthly; and the estimated time needed to prepare the response varies from 20 to 30 minutes.

Status of the proposed information collection: Revision of a currently approved collection.

Authority: The Paperwork Reduction Act of 1995, 44 U.S.C. Chapter 35, as amended.

Dated: November 22, 2002

John C. Weicher,

Assistant Secretary for Housing—Federal Housing Commissioner.

[FR Doc. 02–31908 Filed 12–18–02; 8:45 am]

BILLING CODE 4210–27–M

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[ID–077–03–1430–ER–D025; IDI–33676]

Notice of Intent To Prepare an Environmental Impact Statement/Land Use Plan Amendment

AGENCY: Burley Field Office, Upper Snake River District, Bureau of Land Management (BLM), Cassia County, Idaho.

ACTION: Notice of Intent to prepare an Environmental Impact Statement (EIS) and to Amend the Cassia Resource Management Plan (RMP).

SUMMARY: Notice is hereby given that the BLM is proposing to prepare a land use plan amendment and environmental impact statement (EIS) to consider the proposed Cotterel Mountain Wind Energy Project (Project), located southeast of the town of Albion in Cassia County, Idaho. Windland, Inc. (Windland) of Boise, Idaho proposes to construct and operate the 200-megawatt (MW) wind-driven power generation facility. The EIS will analyze the potential environmental impacts of the construction and operation of the wind project itself, as well as related transmission facilities and roads. This planning activity would amend the Cassia RMP and deals with the 40,967 acres of public land in the Cotterel Mountain Management Area of the RMP and more specifically with approximately 4,600 acres running north and south along the ridge line of the mountain that would be directly affected by the proposed project. The planning process will comply with the Federal Land Policy and Management Act of 1976 (FLPMA) and the National Environmental Policy Act of 1969 (NEPA). The BLM will work closely with interested parties to identify the management decisions that are best suited to the needs of the public. This collaborative process will take into account local, regional, and national needs and concerns. This notice initiates the public scoping process to identify specific issues and develop planning criteria. The scoping process will include an evaluation of the needs and interests of the public.

DATES: The scoping comment period will commence with the publication of this notice. Formal scoping will end 60 days after publication of this notice. Comments regarding issues and planning criteria should be received on or before the end of the scoping period at the address listed below. Public meetings or open houses will be held. In order to ensure local community participation and input, public meetings will most likely be held in Albion, Burley and Boise, Idaho. Specific dates and locations for public participation will be published in local newspapers and broadcast on local community calendars. Meetings and open houses will provide opportunity for the public to work collaboratively with the BLM to identify issues to be addressed in the planning process.

ADDRESSES: Comments regarding the proposed development of a wind-driven power generation facility should be sent to: Project Manager, Cotterel Mountain Wind Project, Bureau of Land Management, Burley Field Office, 15 East 200 South, Burley, Idaho 83318. Comments, including names and street addresses of respondents, will be available for public review at the above address during regular business hours, 7:45 a.m. to 4:30 p.m., Monday through Friday, except holidays, and may be published as part of the EIS. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

SUPPLEMENTARY INFORMATION: Windland, Inc., a Boise based company, is proposing to install approximately 130 wind turbines, each having a generating capacity between 1.3 and 1.8 megawatts, on a site covering approximately 7 square miles on the Cotterel Mountains southeast of Burley, Idaho. The proposed project area is within the Burley Field Office, Upper Snake River District of the BLM. The 130 turbines situated on towers approximately 250 feet in height would produce a maximum of 200 megawatts of power, enough to provide electricity for 40,000 homes. Power from the project would be collected by an underground cable system and then fed into one of two proposed substations to be located on the project site. The fenced substation sites would occupy approximately two to four acres each. From the substation sites, power from the project would then be transported to one of two existing 138-kilovolt (kV) power transmission lines that are in the vicinity of the proposed project area, via new overhead transmission facilities. Other facilities required as part of the proposed project are small pad mounted transformers located at the base of each wind turbine tower, access roads and one operation and maintenance building. The area permanently occupied by the project after final reclamation of disturbed areas would total approximately 68 acres. The project is scheduled to begin construction as early as June 2004, followed by commercial operation as early as November 2005 and would operate year-round for at least 30 years.

The purpose and need for the proposed project are to (1) provide wind-generated electricity from a site in Idaho to meet existing and future demands for electricity; and (2) to develop energy generation facilities that are consistent with the President's National Energy Policy which encourages the development of renewable energy resources, including wind energy, as part of an overall strategy to develop a diverse portfolio of domestic energy supplies for the nation's future.

Public Participation: Potential issues that have been identified to date include, but are not limited to the following general categories: Wildlife (including birds); vegetation (including weeds and invasive plant species); threatened, endangered and sensitive species; public access; visual concerns; cultural resources; Tribal concerns; rangeland resources; geology and soils; hydrology; recreation resources; hazardous materials; air quality; noise; and socio-economics. The BLM has established a 60-day scoping period during which, affected tribes, landowners, concerned citizens, special interest groups, local governments, and any other interested parties are invited to comment on the scope of the EIS. Scoping will help the BLM identify the full range of issues that should be addressed in the EIS. The Draft EIS/Draft plan amendment, which is scheduled for completion in the fall of 2003, will be circulated for public review and comment. The BLM will consider and respond in the Final EIS/proposed planned amendment to comments received on the draft. The Final EIS and proposed plan amendment are expected to be published early in 2004.

FOR FURTHER INFORMATION CONTACT: Scott Barker, Project Manager, Burley Field Office, 15 East 200 South, Burley, Idaho 83318, telephone (208) 677–6678.

Dated: October 28, 2002.

Theresa Hanley,

Burley Field Office Manager.

[FR Doc. 02–32060 Filed 12–18–02; 8:45 am]

BILLING CODE 4310–GG–P

DEPARTMENT OF THE INTERIOR

Bureau of Reclamation

Agency Information Collection Activities Under OMB Review

AGENCY: Bureau of Reclamation, Interior.

ACTION: Notice of data collection submission.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. § 3501 *et seq.*), the Bureau of Reclamation (we, our, or us) has forwarded a request for renewal (with revisions) of an existing approved information collection to the Office of Management and Budget (OMB): Crop Acreage and Yields and Water Distribution (Water User Crop Census Report [Form 7–332], and Crop and Water Data [Form 7–2045]), OMB Control Number: 1006–0001. We request your comments on the revised Crop Acreage and Yields and Water Distribution Forms and specific aspects of the information collection.

DATES: Your written comments must be received on or before January 21, 2003.

ADDRESSES: Send comments regarding the information collection to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attention: Desk Officer for the Department of the Interior, 725 17th Street, NW., Washington, DC 20503. A copy of your comments should also be sent to Ms. Diana Trujillo, Bureau of Reclamation, Water Resources Office, D–5300, PO Box 25007, Denver, CO 80225.

FOR FURTHER INFORMATION CONTACT: For further information or for a copy of the forms contact Diana Trujillo, Bureau of Reclamation, (303) 445–2914.

SUPPLEMENTARY INFORMATION: This is notice that a request for review, comment, and approval of a revised currently approved collection has been forwarded to OMB. A **Federal Register** Notice with a 60-day comment period soliciting comments on this collection of information was published on July 17, 2002 (67 FR 46998). No public comments were received by Reclamation.

We have revised the currently approved collection to reflect industry standards concerning units used to measure yields for certain crops (*i.e.*, using pounds instead of bales for cotton lint and using pounds instead of tons for hops). Other changes include:

• In Section II–e on both forms, "Acres irrigated by", we are adding the option to choose "Flood" along with the

APPENDIX B

INSTRUCTION MEMORANDUM 2003-20 FROM THE INTERIM WIND ENERGY DEVELOPMENT POLICY

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

October 16, 2002

In Reply Refer To:
2800 (WO 350) P
Ref. IB No. 2001-138,
IM No. 2002-011, IM No. 2002-189
and IM No. 2002-196

EMS TRANSMISSION 10/17/2002
Instruction Memorandum No. 2003-020
Expires: 09/30/2004

To: All Field Officials

From: Director

Subject: Interim Wind Energy Development Policy

Program Area: Right-of-Way Management, Wind Energy

Issue: This Instruction Memorandum (IM) provides interim guidance on processing right-of-way applications for wind energy site testing and monitoring facilities, as well as applications for wind energy development projects on public lands administered by the Bureau of Land Management (BLM).

Background: The President's National Energy Policy encourages the development of renewable energy resources, including wind energy, as part of an overall strategy to develop a diverse portfolio of domestic energy supplies for our future. The BLM prepared a National Energy Policy Implementation Plan that included a variety of tasks related to the development of energy resources on the public lands, including renewable energy resources. The Implementation Plan and specific tasks were previously distributed by Information Bulletin No. 2001-138, dated August 15, 2001, and IM No. 2002-011, dated October 12, 2001. While the current contribution of renewable energy resources to our energy supply is relatively small, wind energy and other renewable energy generating sectors of our economy are the fastest growing in the United States. Continued growth in wind energy development will be extremely important in delivering larger supplies of clean, domestic power for America's growing economy.

The United States has significant potential for wind energy development, especially on Federal lands in the west. The recent extension of the Federal wind energy production tax credit and a variety of State-level tax credits and other incentives, including renewable energy portfolio standards in several States, has generated a renewed interest in commercial wind energy projects on Federal lands. The BLM currently administers some 25 wind energy right-of-way authorizations on public lands in California and Wyoming that encompass a total of approximately 5,000 acres and generate a total of about 500 megawatts of electrical power. The interest in wind energy development has recently increased and new project proposals on public land have been identified in several States. These existing project proposals and future proposals will create a significant workload that will demand a commitment of resources and a priority to the timely and consistent processing of right-of-way applications for the use of public lands for wind energy site testing and monitoring activities and for commercial wind energy development.

Policy/Action:

Inventory and Planning: It is BLM's general policy to encourage the development of wind energy in acceptable areas. Wind energy site testing and monitoring activities are usually in conformance with and can be accommodated by existing land use plans without a need for a land use plan amendment. These existing land use plans identify wilderness and wilderness study areas, Areas of Critical Environmental Concern (ACEC), visual resource management areas, national scenic or historic trails, National Landscape Conservation System units, critical habitat areas, and other special management areas where land use restrictions apply to a variety of uses, including wind energy site testing and monitoring. However, commercial wind energy development activities in some cases may not be in conformance with existing land use plans and it may be appropriate to amend the land use plan as a concurrent action with the same analysis for the wind energy development proposal. In both cases, however, right-of-way applications for wind energy site testing and monitoring or wind energy development projects will be processed in a timely manner.

Wind energy development provides many environmental advantages over other types of energy resource development, however, wind energy development also results in some adverse impacts, including visual resource impacts and wildlife and wildlife habitat disturbance. Wind energy projects also require some infrastructure such as access roads, transmission lines, and other support facilities. Although land use plans combined with appropriate levels of environmental analysis will be used to assess individual wind energy project proposals, the BLM's overall wind energy policy is to minimize negative impacts to the natural, cultural, and visual resources on the public lands. Negative impacts can be minimized by avoiding special management areas with land use restrictions, avoiding major avian (bird) migration routes and areas of critical habitat for species of concern, establishing siting criteria to minimize soil disturbance and erosion on steep slopes, utilizing visual resource management guidelines to assist in proper siting of facilities, avoiding significant historic and cultural resource sites, and mitigating conflicts with other uses of the public lands.

In areas where land use plans are being revised there may be benefits to specifically address wind resource potential, public concerns, and opportunities for wind energy development within the land use planning area. Supplemental planning guidance regarding wind energy and rights-of-way is provided by IM No. 2002-196, dated June 25, 2002. Field Offices are encouraged to incorporate wind energy resource development potential in these planning efforts to facilitate the processing of future wind energy applications. The land use plan revision process would address the environmental and local community issues associated with commercial wind energy.

This would provide an opportunity to potentially reduce the amount of additional environmental review and documentation required to process a specific application in the future. A programmatic amendment to one or more land use plans could also potentially be used to address wind energy resources on a larger scale.

The BLM and the Department of Energy's National Renewable Energy Laboratory (NREL) have established a partnership to conduct an assessment of wind energy and other renewable energy resources on public lands in the western U.S. The objective of this collaborative effort is to assist in the inventory of high-potential wind energy resources to support BLM land use planning efforts. This GIS-based assessment and analysis information is available through the BLM National Science and Technology Center (NSTC) or available from the Department of Energy internet site (www.eren.doe.gov/windpoweringamerica/where is_wind.html). Information on renewable energy resources, including wind energy, is also available at www.energyatlas.org. Field Offices are encouraged to use this information as the inventory base for addressing wind energy resource development opportunities and to assess the affects of other resource uses on wind energy resources. The National Wind Coordinating Committee also has information available on an internet site (www.nationalwind.org/pubs/permit/permitting2002) that can assist in the permitting and environmental review process associated with wind energy right-of-way applications on the public lands.

The U.S. Fish and Wildlife Service is currently developing guidelines to assist the wind industry in avoiding or minimizing impacts on wildlife by wind energy development. These guidelines contain a procedure for pre-development evaluation of potential wind resource areas based on their impact on wildlife, and recommendations for siting, designing, constructing, and operating wind turbines within areas with wind energy resource potential. A draft of the guidelines will be available in the fall of 2002. The pre-development evaluation procedure was developed by a team of Federal, state, university and industry biologists to rank potential wind development sites in Montana, and is already in use in that area. That process is being modified for use nationwide by the Fish and Wildlife Service. BLM Field Offices will be provided a copy of the guidelines and are encouraged to use this tool when it becomes available for evaluating areas for potential wind energy development.

Applications: All wind energy and wind energy related facilities will be applied for under Title V of the Federal Land Policy and Management Act (FLPMA) and Title 43, Section 2802 of the Code of Federal Regulations (CFR). Wind energy site testing and monitoring will not be authorized by a land use permit under the 43 CFR 2920 regulations. Existing 2920 permits that may have previously been issued will, however, be recognized for the term of the existing permit.

Applications for a right-of-way grant may be submitted for one of the following three (3) types of wind energy projects:

1) a site-specific wind energy site testing and monitoring right-of-way grant for individual meteorological towers and instrumentation facilities with a term that is limited to 3 years;

2) a wind energy site testing and monitoring right-of-way grant for a larger site testing and monitoring project area, with a term of 3 years that may be renewed consistent with 43 CFR 2803.6-5 and the provisions of this IM beyond the initial 3-year term; and

3) a long-term commercial wind energy development right-of-way grant with a term that is not limited by the regulations, but usually in the range of 30 to 35 years.

Applications for any of the above projects will be submitted using Form SF-299, Application for Transportation and Utility Systems and Facilities on Federal Land, consistent with the requirements of 43 CFR 2802.3. The BLM authorized officer should encourage wind energy applicants to schedule preapplication meetings (43 CFR 2802.1) with BLM to assist in the preparation and processing of applications, identify potential issues and conflict areas, identify any environmental or cultural resource studies that may be needed, assess public interest and concerns, identify other authorized uses, identify other general recreation and public uses in the area, discuss potential alternative site locations, and discuss potential financial obligations that the applicant must be willing to assume. Early public notification and involvement of local communities and other interests is also important in increasing public acceptance and avoiding potential conflicts, especially in areas where other uses exist on the public lands.

All wind energy right-of-way applications and authorizations are subject to appropriate cost recovery and rental fees as required by 43 CFR 2808.1 and 43 CFR 2803.1-2. The policy guidance on rental fees contained in this IM is based on comparable payment practices for existing wind energy right-of-way authorizations on Federal and non-Federal lands and was developed in consultation with BLM staff and others with appraisal expertise.

Right-of-way applications for wind energy site testing and monitoring or for wind energy development projects will be identified as a high priority Field Office workload and will be processed in a timely manner. This priority is consistent with the President's National Energy Policy and adequate resources should be provided to review and process the application. The processing time frames for right-of-way applications as required by BLM Manual 2801.35 will be followed for all wind energy applications. Site testing and monitoring right-of-way applications will usually be minor cost recovery category actions and should be processed within a 30-day time frame, consistent with the requirements of the Manual. The Manual requires that the authorized officer notify the right-of-way applicant in writing if processing will take longer, the reasons for the delay, and an estimate of the time frame for processing the application. The BLM Washington Office (WO-350) will also assign a right-of-way Project Manager, if requested by the State Director, to coordinate the processing of any major wind energy development right-of-way application.

Authorizations:

1) Right-of-Way Grants for Site Specific Wind Energy Testing and Monitoring Facilities: A site-specific right-of-way grant (Form 2800-14) will be used to authorize small individual site-specific meteorological towers and instrumentation facilities. The term of a site-specific right-of-way grant will be limited to 3 years and will not be extended or renewed. Numerous site-specific right-of-way grants for wind energy site testing and monitoring may be issued to various right-of-way holders in the same area and do not establish any exclusive or preferential rights regarding future wind energy development. In addition, the BLM retains the right to authorize other compatible uses of the public lands in the area (43 CFR 2801.1-1(a)(2)).

<u>Rental:</u> The annual rental fee for a site-specific right-of-way grant for wind energy site testing and monitoring will be a minimum of $50 per year for each meteorological tower or instrumentation facility location and include no additional rental fee for the acreage of each site location. The area authorized for these facilities shall be the minimum necessary for construction and maintenance of the temporary facility. Some BLM Field Offices have existing site-location rental fees for temporary facilities on the public lands that can be used for wind energy site testing and monitoring facilities. In some cases these fees will exceed the minimum $50 per year fee. The rental fee for a site testing and monitoring right-of-way grant is paid annually, in advance, on a calendar year basis consistent with the regulations (43 CFR 2803.1-2(a)).

2) Right-of-Way Grants for Wind Energy Site Testing and Monitoring Facilities that Encompass a Site Testing and Monitoring Project Area: A right-of-way grant (Form 2800-14) that includes provisions for renewal beyond the 3-year term (43 CFR 2803.6-5) will be used to authorize wind energy site testing and monitoring facilities that encompass a site testing and monitoring project area. The holder of the site testing and monitoring right-of-way grant retains an interest in the site testing and monitoring project area, but will be required to submit an amended right-of-way application (43 CFR 2803.6-1) and Plan of Development (POD) to BLM for review, analysis, and separate approval for any future wind energy development. The interest retained by the holder of the grant is only an interest to preclude other wind energy right-of-way applications during the 3-year term of the grant. The lands within the grant area will not be available for other wind energy right-of-way applications. The holder of the site testing and monitoring right-of-way grant has established no right to development and is required to submit a separate application to BLM for analysis, review, and decision. The BLM retains the right to authorize other compatible uses of the public lands. The lands involved in the site testing and monitoring right-of-way grant will be defined by aliquot land descriptions and be configured to involve a reasonable amount of land that may support a possible right-of-way application for a wind energy development project in the future.

The site testing and monitoring right-of-way grant for the site testing and monitoring project area will be issued for an initial term of 3 years. This term will be extended or renewed (43 CFR 2803.6-5) only if an amended right-of-way application and POD is submitted for a wind energy development project prior to the end of the 3-year term of the initial grant. The requirement for submittal of a POD with the amended right-of-way application is consistent with the provisions of 43 CFR 2802.4(h). The holder of the site testing and monitoring right-of-way grant is required to submit, prior to the end of the 3-year term of the grant, an amended right-of-way application for development to retain the interest in the site testing and monitoring project area. (See the Due Diligence section of this IM regarding additional provisions for a site testing and monitoring right-of-way grant.)

Rental: The annual rental fee for a site testing and monitoring right-of-way grant for a site testing and monitoring project area will be based on the total public land acreage of the project area included in the right-of-way grant. The rental fee for the total public land acreage of the grant will be $1,000 per year or $1 per acre per year, whichever is the greater. There is no additional fee for the installation of each meteorological tower or instrumentation facility located within the site testing and monitoring project area. This rental fee is based on the value for the use of the area for site testing and monitoring and the value of the option held by the holder that precludes other wind energy right-of-way applications during the 3-year term of the grant, comparable to similar option payments on private lands. The rental fee for a site testing and monitoring right-of-way grant is paid annually, in advance, on a calendar year basis consistent with the regulations (43 CFR 2803.1-2(a)).

Each type of site testing and monitoring authorization will contain appropriate stipulations, including but not limited to road construction and maintenance, vegetation removal, and number and location of wind monitoring sites. Biological and cultural resource surveys and studies may also be required during the term of the site testing and monitoring authorization to collect information for future resource assessments. A bond is discretionary by the authorized officer (43 CFR 2803.1-4), but will usually not be required for a site testing and monitoring authorization. If a bond is required, the amount of the reclamation bond will consider potential reclamation and administrative costs to BLM.

The wind inventory data collected and held by the right-of-way grant holder is proprietary information and will be protected by the Privacy Act and may be withheld under the Freedom of Information Act to the extent allowed by Federal law. However, sufficient detailed wind data will be required to be provided to the BLM, at the time an amended right-of-way application for development is submitted, to support the environmental analysis and review of the proposed development. This data becomes public information for analysis and decision making purposes related to the processing of the amended right-of-way application for a wind energy development project. Biological and cultural resource studies and data collected by the right-of-way grant holder will also be required to be provided to the BLM and becomes public information to the extent allowed by Federal law.

Site testing and monitoring authorizations may be assigned consistent with the provisions of the regulations (43 CFR 2803.6-3). However, all assignments shall be approved by the BLM authorized officer and the qualifications of all assignees must comply with the Due Diligence section of this IM and the requirements of the regulations (43 CFR 2802.3(a)(4) and 43 CFR 2802.4(a)(5)). A partial assignment of a site testing and monitoring authorization shall not hinder the BLM management of the authorization or the associated public lands.

3) Right-of-Way Grants for Commercial Wind Energy Development Facilities: A right-of-way grant (Form 2800-14) will be used to authorize all facilities, held by the holder of the grant, on the public lands related to a commercial wind energy development project. This authorization will include the wind turbine facilities, as well as the access roads, electrical and transmission facilities, and other support facilities. The lands involved in the right-of-way grant will be defined by aliquot legal land descriptions and be configured to minimize the amount of land involved, while still allowing an adequate distance between turbine positions and reasonable right-of-way boundaries. In the absence of any specific local zoning and management issues, no turbine shall be positioned closer than five (5) rotor-diameters from the center of the wind turbine to the right-of-way boundary in the dominant upwind or downwind direction, unless it can be demonstrated that site conditions, such as topography, natural features, or other conditions such as offsets of turbine locations warrant a lesser distance. In cases where the applicant holds a long-term lease right on adjacent Federal or non-Federal lands for wind energy development or the adjacent non-Federal landowner provides a setback waiver, this setback requirement may be reduced to 1.5 times the total height of the wind turbine. Further, no turbine shall be positioned closer than 1.5 times the total height of the wind turbine to the right-of-way boundary in any other direction.

The wind energy development right-of-way authorization will contain appropriate stipulations, including but not limited to road construction and maintenance, vegetation removal, a POD for wind turbine installation and operations, wildlife and avian resources mitigation and monitoring, and site reclamation.

The right-of-way holder should also be encouraged, through terms and conditions of the right-of-way authorization, to work with BLM to increase the public acceptance and awareness of the benefits of wind energy development by providing information and public points of access near the development where safe and appropriate. These measures could include footpaths among the turbines, onsite interpretive resources, and photo locations. The BLM and right-of-way holder can provide a positive message on the responsible use of renewable resources and the multiple resource uses of the public lands.

A bond is discretionary by the authorized officer (43 CFR 2803.1-4), but will usually be required for wind energy development right-of-way grants to ensure compliance with the terms and conditions of the authorization and the requirements of the regulations, including reclamation. The reclamation provisions within the POD should include not only removal of turbines and other structures, but also the rehabilitation of access roads and the revegetation of disturbed areas. The amount of the reclamation bond will consider potential reclamation and administrative costs to BLM. Bonds in the amount of $2,500 per wind turbine have recently been required for most wind energy development projects on public lands.

The term of the grant is not limited by the regulations, however, the terms of most existing grants for major wind energy development projects recognize the overall costs and useful life of wind energy facilities (43 CFR 2801.1-1 (h)) and are generally in the range of 30 to 35 years. The grant may be renewed consistent with the provisions of the regulations (43 CFR 2803.6-5). The BLM also retains the right to authorize other compatible uses of the public lands within the right-of-way grant during the term of the grant.

Rental: Rent for commercial wind energy development right-of-way grants will consist of two components: 1) an annual minimum rent and 2) an annual production rent once the project is in commercial production. The rent for any calendar year shall not be less than the minimum rent.

Minimum Rent: The annual minimum rent for a commercial wind energy development right-of-way grant on public land will be $2,365 per megawatt and is based on the total anticipated installed capacity of the wind energy project on public land based on the approved Plan of Development (POD), a capacity factor of 30 percent, a royalty of 3 percent, and an average purchase price of $0.03 per kilowatt hour. These factors only apply to the calculation of the minimum rent and do not establish any basis for the calculation of actual production rental fees during commercial wind energy operations. The minimum rent is a fixed Bureauwide rent based on the following formula:

Annual minimum rent = (Anticipated total installed capacity in kilowatts as identified in the approved POD) x (8760 hours per year) x (30 percent capacity factor) x (3 percent royalty) x ($0.03 average price per kilowatt hour)

Example for one megawatt (1,000 kW) of anticipated total installed capacity:

Annual minimum rent = (1,000 kW) x (8760 hours) x (0.30 capacity) x (0.03 royalty) x ($0.03 per kWh) or $2,365 per megawatt of anticipated total installed capacity.

The annual minimum rent will be phased in as follows:

First year - 25 percent of the total minimum rental fee or $591 per megawatt;
Second year - 50 percent of the total minimum rental fee or $1,182 per megawatt;
Third year - 100 percent of the total minimum rental fee or $2,365 per megawatt.

The full annual minimum rental fee will apply at any time prior to 3 years, upon the start of commercial operations of the project. The minimum rental fee is paid annually, in advance, on a calendar year basis consistent with the regulations (43 CFR 2803.1-2(a)).

Production Rent: In addition to the minimum rent, a wind energy production rental fee will be required as part of the development right-of-way grant and will apply for any operations greater than the annual minimum rent. The wind energy production rental fee formula will be determined by the authorized officer at the time of issuance of the right-of-way grant using comparative market surveys, appraisals, or other reasonable methods. The site-specific appraisal will use a percent of gross proceeds methodology based on actual sale prices of electricity and market supported royalty rates. Gross proceeds will include any revenue from the sale of wind energy production from public land, including revenue from the sale of production credits (Renewable Energy Credits). The BLM will discourage the use of a separate "turbine installation fee" (an additional one time payment for each turbine installation) as part of the wind energy production rental fee.

Any production rental fee, above the annual minimum rent, will be paid by the holder of the development right-of-way grant 30 days after the end of the calendar year based on the actual production during the calendar year. The holder of the right-of-way grant shall provide, with the rental payment, documentation of the amount of power produced for the calendar year and evidence of gross income received from that production. Information provided by the holder on compensation provisions of a Power Purchase Agreement or other financial information will be held as proprietary by BLM and will be protected to the extent allowed by Federal law.

All wind energy right-of-way holders are subject to rent in accordance with this IM, unless they are specifically exempt from rent by statute or regulation. Some holders or facilities may be exempt from rent pursuant to the Rural Electrification Act of 1936, as amended (43 CFR 2803.1-2 (b)(1)).

The right-of-way grant may be assigned consistent with the provisions of the regulations (43 CFR 2803.6-3). However, all assignments shall be approved by the BLM authorized officer and the qualifications of all assignees must comply with the Due Diligence section of this IM and the requirements of the regulations (43 CFR 2802.3(a)(4) and 43 CFR 2802.4(a)(5)). A partial assignment of the grant shall not hinder the BLM management of the grant or the associated public lands.

All final decisions issued by the Authorized Officer in connection to the authorization of any of the above described wind energy projects are appealable under 43 CFR part 4 (43 CFR 2804.1(a)). It should also be noted that right-of-way grants are issued as full force and effect decisions (43 CFR 2804.1(b)) and will remain effective during any appeal period.

Competitive Interest: The right-of-way regulations (43 CFR 2803.1-3) provide authority for offering public lands under competitive bidding procedures for wind energy right-of-way authorizations. However, except for the limited competitive procedure identified below, site testing and monitoring or wind energy development right-of-way applications will be processed on a first come basis. The processing of wind energy right-of-way applications on a first come basis is consistent with the President's National Energy Policy and will encourage the access to public lands for renewable energy resource assessments and development. BLM will only initiate a competitive process if a land use planning decision has specifically identified an area for competitive leasing, or if two applicants have current Power Purchase Agreements or Interconnect Agreements with utility transmission providers for a specific project area. If two applicants can provide adequate documentation of current Power Purchase Agreements or Interconnect Agreements, BLM will actively encourage the applicants to form a joint partnership or cooperative agreement which establishes compatible use of the site between the applicants. If the applicants choose not to form a joint partnership or cooperative agreement, BLM will initiate a competitive process to determine the successful applicant. Competitive bidding will follow the procedures required by the regulations.

As indicated above, wind energy right-of-way applications will be handled on a first come basis. An applicant, however, must submit a complete and acceptable application and provide a cost recovery payment to BLM to establish a priority application. Pending applications will be processed consistent with the guidance provided by this IM prior to the acceptance of new applications for the same lands, unless the new applicant can provide adequate documentation of a current Power Purchase Agreement or Interconnect Agreement. The holder of a right-of-way grant for site testing and monitoring of a site testing and monitoring project area is required to submit, prior to the end of the 3-year term of the grant, an amended right-of-way application for wind energy development to retain an interest in the project area. The lands within the grant area will not be available for other wind energy right-of-way applications. If the holder of the site testing and monitoring right-of-way grant does not submit an amended right-of-way application for development, prior to the end of the 3-year term of the site testing and monitoring right-of-way, the site testing and monitoring right-of-way grant will terminate and the lands will be available for other wind energy applications.

Due Diligence: Some concerns have been raised regarding the potential for land speculators to obtain right-of-way grants and control valuable wind energy resource areas, with the potential to negatively impact the development of wind energy on the public lands. These concerns can be mitigated by applying the applicant qualification requirements of the regulations (43 CFR 2802.3(a)(4) and 43 CFR 2802.4(a)(5)) and requiring certain due diligence provisions in the right-of-way authorization for site testing and monitoring or wind energy development.

The regulations clearly provide authority to require that the application include information on the applicant's technical capability to construct, operate, and maintain the wind energy facilities (43 CFR 2802.3(a)(4)). This technical capability can be demonstrated by international or domestic experience with wind energy projects or other types of electric energy related projects on either Federal or non-Federal lands. The applicant should also be able to provide information on the availability of sufficient capitalization to carry out development, including the preliminary study phase of the project, as well as the site testing and monitoring activities. Actual development or ownership of similar sized wind energy facilities or other types of electric energy related facilities within the last five years by the applicant would generally constitute evidence of financial capability. However, applicants in bankruptcy or other related financial difficulties may not be able to meet the due diligence provisions of the right-of-way authorization. The regulations provide the authority to deny the application if the applicant cannot demonstrate adequate technical ability to construct, operate, and maintain the wind energy facilities (43 CFR 2802.4(a)(5)).

Due diligence is encouraged by the limited 3-year term of the site testing and monitoring right-of-way authorization. The site testing and monitoring right-of-way grant for a site testing and monitoring project area can only be extended or renewed if an amended right-of-way application and Plan of Development is submitted for a wind energy development project prior to the end of the 3-year term of the grant. In addition, the site testing and monitoring authorization and the wind energy development authorization shall include a due diligence requirement for installation of facilities consistent with an approved Plan of Development. If monitoring facilities, under a site testing and monitoring right-of-way authorization, have not been installed within 12 months after the effective date of the authorization or consistent with the timeframe of the approved Plan of Development, the holder shall provide BLM just cause as to the nature of any delay, the anticipated date of installation of facilities, and evidence of progress toward site monitoring activities. If construction of wind energy facilities, under a wind energy development authorization, has not commenced within 2 years after the effective date of the grant or consistent with the timeframe of the approved Plan of Development, the right-of-way holder shall provide BLM just cause as to the nature of any delay, the anticipated date of construction, and evidence of progress toward commencement of construction. Failure of the holder to comply with the due diligence provisions of either the site testing and monitoring authorization or the wind energy development authorization provides the authorized officer the authority to terminate the authorization (43 CFR 2803.4(b)). The rental fee provisions outlined in this IM also mitigate to some extent the concerns regarding due diligence.

Environmental Review:

1) Site Testing and Monitoring Application: The scope of the environmental analysis required by the National Environmental Policy Act (NEPA) for a wind energy site testing and monitoring right-of-way application includes direct, indirect, and cumulative effects of the proposed site testing and monitoring related facilities. The site testing and monitoring right-of-way authorization is for a limited term (3 years) and usually includes only a few wind monitoring towers with instruments attached to measure various meteorological parameters such as wind speed, wind direction, and temperature at various heights above the ground. The footprint for each monitoring tower is small and the need for site clearances should be limited to the areas of proposed surface disturbance and associated areas of potential effect. However, the potential impacts to avian (bird) and bat species from the installation of meteorological towers and associated guy wire supports should be addressed in the environmental analysis. The analysis will require compliance with the requirements of the Endangered Species Act, the Migratory Bird Treaty Act, the National Historic Preservation Act and other appropriate laws.

The environmental review should not address wind energy development facilities, as the installation of wind turbines are not proposed during site testing and monitoring. The reasonable foreseeable development discussions in the environmental analysis for a site testing and monitoring right-of-way application should focus on anticipated installation of additional wind monitoring facilities during the term of the right-of-way grant. Typically only a small number of wind energy site testing and monitoring authorizations ever lead to actual wind energy development projects. Therefore, the reasonable foreseeable development discussion should not focus on uncertain future development scenarios. However, the cumulative impacts of other wind energy site testing activities and any other reasonable foreseeable activities that potentially impact the same environmental resources in the area are required to be addressed in the environmental analysis.

In some instances, the level of analysis for site testing and monitoring may be completed with a land use plan conformance determination and a Determination of NEPA Adequacy (DNA), rather than a categorical exclusion or environmental assessment record and Finding of No Significant Impact. Guidance on the use of the DNA process for the review of temporary wind energy site testing and monitoring facilities is found in IM 2001-062, dated December 29, 2000.

The holder of a site testing and monitoring right-of-way grant for a site testing and monitoring project area is limited in term to 3 years and the holder is required to submit an amended right-of-way application for any wind energy development project. The right-of-way regulations (43 CFR 2803.6-1) require that the application be submitted and processed consistent with the provisions of 43 CFR 2802 as a separate and distinct application. The holder of the site testing and monitoring right-of-way grant has established no right to development and is required to submit a separate application to BLM for analysis, review, and decision. The proposed wind energy development project will be evaluated upon the submittal of an actual application for the development project. These are not connected actions under the CEQ NEPA regulations (40 CFR 1508.25), as the site testing and monitoring authorization does not automatically trigger any wind energy development project. The site testing and monitoring activities can proceed regardless of whether any future right-of-way application is received for a wind energy development proposal and regardless of any decision that may be made by BLM regarding that application. The site testing and monitoring authorization is independent of any application that may be made in the future for wind energy development.

2) Commercial Wind Energy Development Application: The scope of the NEPA analysis and the compliance requirements with the Endangered Species Act, the Migratory Bird Treaty Act, the National Historic Preservation Act, and other laws for a wind energy development right-of-way application will be broader than a site testing and monitoring application, as the installation of wind turbines, access roads, and electrical transmission facilities will be addressed in the analysis. However, the footprint of wind energy facilities are typically smaller than other types of energy production facilities. The level of site clearances should be limited to the areas of proposed surface disturbances and associated areas of potential effect, including the access roads to wind turbine locations and the electrical transmission and other support facilities. The wind energy development facilities, however, may extend over a large geographic area and have a broad area of influence. The potential impact from these facilities may, therefore, extend beyond the small footprint of the individual wind turbine locations and it may be necessary to provide setbacks from important avian, bat or other wildlife use areas.

The reasonable foreseeable development discussion in the environmental analysis for a development project should focus on the potential for installation of additional wind turbines and increased production and electrical transmission from the project area. In addition, the cumulative impacts of other wind energy projects and any other reasonable foreseeable projects that potentially impact the same environmental resources in the area are required to be addressed in the environmental analysis. A comprehensive Environmental Assessment (EA) will usually be required, however, an Environmental Impact Statement (EIS) may be required if significant public controversy or a determination of significant adverse impacts is made. It may also be possible to combine the required environmental review process for a wind energy development project with applicable State or local environmental procedures for energy facility siting. This would both streamline the process and be consistent with Departmental policy on intergovernmental cooperation.

Although wind energy facilities may not have as significant an adverse impact on surface resources compared to other conventional electrical generation or energy production facilities, there is some concern over adverse noise impacts of rotor blades, visual resource impacts, and potential avian and bat issues. Many of these problems have been resolved or greatly reduced through technological development and the proper siting of wind energy turbines. Potential avian and bat mortality remains a concern of many individuals, however, the use of non-perch towers, new blade designs and reduced rpm rotation has reduced these potential adverse impacts. Raptor impacts from wind energy facilities can be a potential concern. In particular, wind energy turbines located on ridges and upwind slopes can utilize the same updrafts that are commonly used by soaring birds, including but not limited to raptors. Each proposed development site, however, is unique and will require an analysis of avian and bat concentration and movement patterns to determine the potential effects from wind energy development. This analysis should include an examination of the proposed development site to identify major avian and bat feeding, roosting and resting areas, including raptor use areas and Important Bird Areas (IBAs), as well as wetlands, rookeries, and low-level flight paths. This analysis should determine appropriate setbacks to protect these important avian and bat habitats. Care should be taken to identify the ranges and movement patterns of avian and bat species, including threatened and endangered species and other species of management concern. Current information on avian issues is available from the Department of Energy's National Renewable Energy Laboratory (NREL), National Wind Technology Center internet site (www.nrel.gov/wind/avian.html). Information on visual resource management requirements that may assist in addressing wind energy siting issues is available from the BLM National Science and Technology Center (NSTC) internet site (www.blm.gov/nstc/VRM).

LR 2000 Data Entry: A new commodity code (974) has been established to identify wind energy related right-of-way authorizations and to track these uses within LR 2000. Please refer to IM No. 2002-189, dated June 13, 2002, for guidance on the use of this new commodity code.

Time Frame: Effective immediately upon receipt. This interim policy does not apply to wind energy site testing and monitoring authorizations or wind energy development projects authorized prior to the effective date of this IM. However, pending applications and existing wind energy right-of-way authorizations may be amended at the request of the applicant or the holder to include the provisions of this IM. This includes the opportunity for the holder of a right-of-way grant for site testing and monitoring to submit an amended right-of-way application and Plan of Development to BLM for review, analysis, and separate approval for a future wind energy development project consistent with the provisions of this IM. Any amendment of an existing wind energy right-of-way grant that includes an adjustment of rental provisions consistent with this IM, will be effective at the next billing date after the amendment. There will be no refund or credits applied for previous rental payments.

Budget Impact: The application of this interim policy will have some impact on budget. The BLM's proposed FY 2003 budget includes some increased funds for energy related workload, including wind energy, and the development of the FY 2004 budget has identified wind energy workload needs. However, wind energy right-of-way applications are subject to the cost recovery provisions of the regulations and most applications for a development right-of-way will probably meet the criteria for full cost recovery. In addition, BLM monitoring activities are also subject to the cost recovery provisions of the regulations. Workload impacts should be clarified through the streamlined procedures identified by this IM and by the priority established for processing wind energy right-of-way applications. There is also a positive impact through the implementation of consistent procedures in the processing of wind energy right-of-way applications under the existing FLPMA regulations.

Manual/Handbook Sections Impacted: This Instruction Memorandum and policy affect BLM Manual 2801, Right-of-Way Management and Handbook H-2801-1.

Coordination/Contacts: This interim policy was developed with the assistance of a BLM wind energy working group of Field Office representatives and coordinated at the BLM Assistant Director level. BLM State Offices and the U.S. Forest Service were also provided an opportunity to review the policy and provide input prior to finalization. The Department of Energy, National Renewable Energy Laboratory and the BLM National Science and Technology Center provided assistance in addressing technical issues. Wind energy issues have also been the focus of a series of Renewable Energy conferences held by the Department of the Interior and the BLM and also discussions with the Western Governor's Association. The Western State Land Commissioners Association was also provided an opportunity to provide comments on the policy issues. Contacts were also made with wind energy industry representatives and other external groups to discuss wind energy issues.

For Further Information: Any questions concerning the content of this IM should be directed to the WO, Lands and Realty Group 350 and the attention of Ray Brady, Group Manager at (202) 452-7773 or by Email at ray_brady@blm.gov.

Signed by:	Authenticated by:
Kathleen Clarke	Barbara J. Brown
Director	Policy & Records Group, WO-560

APPENDIX C

BLM BEST MANAGEMENT PRACTICES

BEST MANAGEMENT PRACTICES

These BMPs are a compilation of measures taken from the guide stipulations in BLM Manual Handbook H-2801-1, site-specific stipulations developed for other projects, and site-specific stipulations developed for this project. They are subject to change, and may be modified to include BMPs from BLM's National Programmatic Wind EIS.

PROJECT PLANNING, DESIGN AND COMPLIANCE

1. The holder shall construct, operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with the plan(s) of development, which was (were) approved and made part of the grant on (date of grant). Any relocation, additional construction, or use that is not in accord with the approved plan(s) of development, shall not be initiated without the prior written approval of the authorized officer. A copy of the complete right-of-way grant, including all stipulations and approved plan(s) of development, shall be made available on the right-of-way area during construction, operation, and termination to the authorized officer. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.

2. The holder shall submit a plan or plans of development that describe in detail the construction, operation, maintenance, and termination of the right-of-way and its associated improvements and/or facilities. The degree and scope of these plans will vary depending upon (1) the complexity of the right-of-way or its associated improvements and/or facilities, (2) the anticipated conflicts that require mitigation, and (3) additional technical information required by the authorized officer. The plans will be reviewed, and if appropriate, modified and approved by the authorized officer. An approved plan of development shall be made a part of the right-of-way grant.

3. The holder shall contact the authorized officer at least 14 days prior to the anticipated start of construction and/or any surface disturbing activities. The authorized officer may require and schedule a preconstruction conference with the holder prior to the holder's commencing construction and/or surface disturbing activities on the right-of-way. The holder and/or his representative shall attend this conference. The holder's contractor, or agents involved with construction and/or any surface disturbing activities associated with the right-of-way, shall also attend this conference to review the stipulations of the grant including the plans(s) of development.

4. The holder shall designate a representative(s) who shall have the authority to act upon and to implement instructions from the authorized officer. The holder's representative shall be available for communication with the authorized officer within a reasonable time when construction or other surface disturbing activities are underway.

5. The authorized officer may suspend or terminate in whole, or in part, any notice to proceed which has been issued when, in his judgment, unforeseen conditions arise which result in the approved terms and conditions being inadequate to protect the public health and safety or to protect the environment.

6. The holder shall not initiate any construction or other surface disturbing activities on the right-of-way without the prior written authorization of the authorized officer. Such authorization shall be a written notice to proceed issued by the authorized officer. Any notice to proceed shall authorize construction or use only as therein expressly stated and only for the particular location or use therein described.

7. The holder shall perform the necessary transportation studies and recommend a road standard to meet the purpose of the road. This standard and the topography, soils, and geologic hazards of the lands crossed will define the level of survey and design necessary. Accepted standards for road design, including the BLM Manual Section may be used.

8. The holder shall obtain the services of a licensed professional engineer to locate, survey, design, and construct the proposed road as directed by the authorized officer. The road design shall be based on the (1) width, (2) maximum grade, and (3) design speed of the road.

9. The holder shall submit standard or typical cross sections of the road to be constructed, maintained, or reconstructed as directed by the authorized officer. The cross sections should include, but are not limited to, the proposed road width, ditch dimensions, cut and fill slopes, and typical culvert installation.

10. As directed by the authorized officer, the completed subgrade shall be submitted to the Bureau for approval prior to the placement of any surfacing.

11. As directed by the authorized officer, surfacing shall be designed to accommodate anticipated loading and traffic volumes and shall provide for future maintenance.

12. The design and location of all facilities shall be approved by the authorized officer prior to construction.

13. The road proposed as part of this authorization shall be constructed and maintained in accordance with the BLM standards prescribed for a collector type road.

RESOURCE PROTECTION

1. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the

authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

2. Use of pesticides shall comply with the applicable Federal and state laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, the holder shall obtain from the authorized officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the authorized officer. Emergency use of pesticides shall be approved in writing by the authorized officer prior to such use.

3. The holder shall be responsible for weed control on disturbed areas within the limits of the right-of-way. The holder is responsible for consultation with the authorized officer and/or local authorities for acceptable weed control methods (within limits imposed in the grant stipulations).

4. The prevention and spread of noxious and invasive weeds is a high priority to nearby communities and BLM received numerous comments on weeds during public scoping. Under EO 13112, Federal agencies shall not fund, or authorize actions likely to cause or promote the introduction or spread of invasive species in the United States. Windland would prepare a noxious and invasive weed plan as part of the project. The weed plan would include preconstruction weed inventories and a post construction monitoring plan to prevent and treat the spread of weeds. Construction equipment would be cleaned and free of weeds prior to coming onto the construction site. Windland would locate an intermediate wash station midway through the project area to prevent lower elevation weed species from moving up the Cotterel ridgeline. Only certified weed free straw and hay would be used as mulch or for temporary erosion control measures.

5. The holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the authorized officer and the respective installing authority if known. Where General Land Office or Bureau of Land Management right-of-way monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of

the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the authorized officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.

SURVEY AND STAKING

1. The holder shall place slope stakes, culvert location and grade stakes, and other construction control stakes as deemed necessary by the authorized officer to ensure construction in accordance with the plan of development. If stakes are disturbed, they shall be replaced before proceeding with construction.

2. No surface disturbance or construction activity will be allowed within 100 feet of any cultural sites which are clearly marked as specified by the authorized officer. Any deviation from this requirement shall have the prior written approval of the authorized officer.

3. The holder shall set center line stakes to identify the location of the proposed road as directed by the authorized officer.

4. Cut and fill slope stakes shall be set as directed by the authorized officer.

5. The holder shall identify and physically mark the boundaries of all construction work areas (e.g., construction right-of-way, extra work space areas, storage and contractor yards, borrow and disposal areas, access roads, etc.) that would be needed for safe construction. The applicant must ensure that appropriate cultural resources and biological surveys have been conducted.

CONSTRUCTION MEASURES

1. Suitable topsoil material removed in conjunction with clearing and stripping shall be conserved in stockpiles within the right-of-way. Topsoil shall be stripped to an average depth of 4-6 inches. If deep soils are available, segregate 6-12 inches of topsoil and stockpile accordingly.

2. The holder will rip severely compacted areas to a depth of 12”. In areas where topsoil has been segregated, rip the subsoil before replacing the segregated topsoil.

3. Excavation and embankment quantities shall be balanced as nearly as design and construction considerations allow. Any waste and/or borrow needs shall be specifically identified by the holder.

4. Excess excavated, unsuitable, or slide materials shall be disposed of as directed by the authorized officer.

5. Waste rock from road and turbine pad construction would be hauled to the rock crushing plant to create material to be used for road surfacing. Excess rock would be hauled off site and disposed of at an approved facility.

6. Clearing and grubbing debris shall not be placed or permitted to remain in or under any embankment sections. Clearing and grubbing debris may be placed under waste material with a minimum of 3 feet of cover as directed by the authorizing officer.

7. Earthwork areas shall be cleared of vegetation and the topsoil stockpiled for future rehabilitation. Prior to fill construction, the existing surface shall be sloped to avoid sharp banks and allow equipment operations. No fills shall be made with water saturated soils. Materials shall be placed in uniform layers not to exceed 12 inches in thickness. Construction equipment shall be routed evenly over the entire width of the fill to obtain a thorough compaction.

8. Holder shall remove only the minimum amount of vegetation necessary for the construction of structures and facilities. Topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation.

9. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of six (6) inches deep, the soil shall be deemed too wet to adequately support construction equipment.

10. The holder shall conduct all activities associated with the construction, operation, and termination of the right-of-way within the authorized limits of the right-of-way.

11. Construction holes left open over night shall be covered. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through and into a hole.

12. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.

13. Holder shall limit excavation to the areas of construction. No borrow areas for fill material will be permitted on the site. All off-site borrow areas must be approved in writing by the authorized officer in advance of excavation. All waste material resulting from construction or use of the site by holder shall be removed from the site. All waste disposal sites on public land must be approved in writing by the authorized officer in advance of use.

FENCING, CATTLEGUARDS AND CULVERTS

1. Cattleguards shall be 5 feet by 16 feet and as a minimum meet the requirements of BLM Manual Section 9113.25. They shall be set on (timber, precast concrete, cast-in-place concrete) bases at right angles to the roadway. Backfill around cattle guards shall be

thoroughly compacted. A bypass gate shall be built adjacent to each cattleguard structure. Gate materials, dimensions, and construction shall conform to the requirements as specified by the authorized officer.

2. Fences, gates, and brace panels shall be reconstructed to appropriate Bureau standards and/or specifications as determined by the authorized officer.

3. The holder shall furnish and install culverts of the gauge, materials, diameter(s), and length(s) indicated and approved by the authorized officer. Culverts shall be free of corrosion, dents, or other deleterious conditions. Culverts shall be placed on channel bottoms on firm, uniform beds which have been shaped to accept them and aligned to minimize erosion. Backfill shall be thoroughly compacted. No equipment shall be routed over a culvert until backfill depth is adequate to protect the culverts.

4. As directed by the authorized officer, construction stakes shall be set for each culvert to show location as well as inlet and outlet elevations, diameter, and length.

5. As directed by the authorized officer, the holder shall submit a complete culvert list to reflect the drainage plan for the road. The list shall include, but not be limited to, size(s), lengths, and locations of the culverts.

6. The minimum diameter for culverts shall be 18 inches.

7. All roads and parking areas shall be constructed to provide drainage and minimize erosion. Culverts shall be installed if necessary to maintain drainage. All areas to be used for roads and parking shall be surfaced with gravel.

8. Culverts and lateral ditches shall be staked for location, skew, and elevation as directed by the authorized officer.

ACCESS

1. Specific sites as identified by the authorized officer (e.g., archaeological sites, areas with threatened and endangered species, or fragile watersheds) where construction equipment and vehicles shall not be allowed, shall be clearly marked onsite by the holder before any construction or surface disturbing activities begin. The holder shall be responsible for assuring that construction personnel are well trained to recognize these markers and understand the equipment movement restrictions involved.

2. The holder shall provide for the safety of the public entering the right-of-way. This includes, but is not limited to, barricades for open trenches, flagmen/women with communication systems for single-lane roads without intervisible turnouts, and attended gates for blasting operations.

3. The holder shall permit free and unrestricted public access to and upon the right-of-way for all lawful purposes except for those specific areas designated as restricted by the authorized officer to protect the public, wildlife, livestock, or facilities constructed within the right-of-way.

4. Construction-related traffic shall be restricted to routes approved by the authorized officer. New access roads or cross-country vehicle travel will not be permitted unless prior written approval is given by the authorized officer. Authorized roads used by the holder shall be rehabilitated or maintained when construction activities are complete as approved by the authorized officer.

5. Existing roads and trails on public lands that are blocked as the result of the construction project shall be rerouted or rebuilt as directed by the authorized officer.

6. If 'cross country' access is necessary, clearing vegetation or grading a roadbed will be avoided whenever practicable. All construction and vehicular traffic shall be confined to the right-of-way or designated access routes, roads, or trails unless otherwise authorized in writing by the authorized officer. All temporary roads used for construction shall be rehabilitated after construction is completed. Only one road or access route will be permitted to each site requiring access.

7. The holder shall inform the authorized officer within 48 hours of any accidents on federal lands that require reporting to the Department of Transportation as required by 49 CFR Part 195.

8. Plan for safe and accessible conditions at all roadway crossings and access points during construction and restoration.

POWERLINE CONSTRUCTION

1. Unless otherwise agreed to by the authorized officer in writing, power lines shall be constructed in accordance to standards outlined in Avian Power Line Interaction Committee (APLIC). 1996. "Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996". Edison Electric Institute and the Raptor Research Foundation. Washington, D.C. (see Attachment #1 – Excerpts and Figures from the above Cited Publication). The holder shall assume the burden and expense of proving that pole designs not shown in the above publication are "eagle safe". Such proof shall be provided by a raptor expert approved by the authorized officer. The BLM reserves the right to require modifications or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

2. The holder shall use nonreflecting lines and conductors at the following location(s): (to be determined)

3. The holder shall evenly spread the excess soil excavated from pole holes within the right-of-way and in the immediate vicinity of the pole structure.

ENVIRONMENTAL COLORATION

1. The holder shall coordinate with the authorized officer on the design and color of the towers, blades, poles and transmission lines to achieve the minimum practicable visual impacts.

2. All above-ground structures not subject to safety requirements or other painting requirements specified by the authorized officer, shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates 'Standard Environmental Colors' designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this right-of-way is (to be determined).

EARTHWORK AND EROSION CONTROL

1. The holder shall recontour disturbed areas, or designated sections of the right-of-way, by grading to restore the site to approximately the original contour of the ground as determined by the authorized officer.

2. The holder shall recontour the disturbed area and obliterate all earthwork by removing embankments, backfilling excavations, and grading to re-establish the approximate original contours of the land in the right-of-way.

3. The holder shall uniformly spread topsoil over all unoccupied disturbed areas. Spreading shall not be done when the ground or topsoil is frozen or wet.

4. The holder shall construct water bars on all disturbed areas to the spacing and cross sections specified by the authorized officer. Water bars are to be constructed to: (1) simulate the imaginary contour lines of the slope (ideally with a grade of one or two percent); (2) drain away from the disturbed area; and (3) begin and end in vegetation or rock whenever possible.
5. As directed by the authorizing officer, all road segments shall be winterized by providing a well-drained roadway by water baring, maintaining drainage, and any additional measures necessary to minimize erosion and other damage to the roadway or the surrounding public lands.

6. Temporary erosion and sediment control devices, including slope breakers and sediment barriers, will be installed promptly after soil disturbance. These devices will be inspected on a daily basis in areas of active construction; on a weekly basis in areas with no active construction; and within 24 hours of each 0.5-inch or greater rainfall. Temporary slope breakers (*e.g.*, hay bales, silt fence, earthen berms) will be constructed and maintained

according to the specifications and recommendations of the BLM. Windland will install temporary sediment barriers such as silt fence or staked straw bales, on either side of a water body channel across the width of the construction ROW; around spoil and topsoil stockpiles; and, at the edge of the ROW to contain topsoil or spoil material and flow of sediment into adjacent areas. Sediment barriers will be maintained as necessary to ensure effectiveness during construction. In steep terrain, temporary sediment barriers will be installed during clearing to prevent the movement of disturbed soil off the right-of-way. Temporary slope breakers consisting of mounded and compacted soil will be installed across the right-of-way during grading.

7. Surface water quality would be protected from impacts of construction with sediment barriers that would be maintained until satisfactory reclamation is established.

SEEDING AND MULCHING

1. The holder shall prepare a seedbed by (scarifying the disturbed area) (distributing topsoil uniformly) (disking the topsoil) as directed by the authorized officer.

2. The holder shall seed all disturbed areas with the seed mixture(s) listed below. The seed mixture(s) shall be planted in the amounts specified in pounds of pure live seed (PLS)/acre. There shall be <u>no</u> primary or secondary noxious weed seed in the seed mixture. Seed shall be tested and the viability testing of seed shall be done in accordance with State law(s) and within 6 months prior to purchase. Commercial seed shall be either certified or registered seed. The seed mixture container shall be tagged in accordance with State law(s) and available for inspection by the authorized officer.

   Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area. (Smaller/heavier seeds have a tendency to drop to the bottom of the drill and are planted first. The holder shall take appropriate measures to ensure this does not occur.) Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre noted below are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of the 2nd season after seeding. The authorized officer is to be notified a minimum of 14 days prior to seeding of the project.

   <u>Seed Mixture</u>

   - Species of Seed Variety Pounds/acre PLS (seed mix to be determined)
   - Total <u>(to be determined)</u> lbs/acre PLS
   - Pure Live Seed (PLS) formula: % of purity of seed mixture times % germination of seed mixture = portion of seed mixture that is PLS.

3. The holder will apply clean, weed-free straw mulch to all disturbed areas. Mulch will be applied concurrent with or immediately after seeding, where necessary to stabilize the soil surface and to reduce wind and water erosion. Mulch will be uniformly spread over at least 75 percent of the ground surface in disturbed areas to minimize the effects of water and wind erosion and to preserve moisture in areas requiring vegetation. Mulch will be anchored by disking or punching, depending the percent slope.

FIRE PROTECTION

1. The holder shall prepare a fire prevention and suppression plan, that shall be reviewed, modified and approved, as appropriate, by the authorized officer. The holder shall take into account such measures for prevention and suppression of fire on the right-of-way and other public land used or traversed by the holder in connection with operations of the right-of-way. Project personnel shall be instructed as to individual responsibility in implementation of the plan.

2. During construction, operation, maintenance, and termination of the right-of-way, during the period from July 1 to Sept. 15, vehicles, gas-powered equipment, and flues shall be equipped with spark arresters approved by the authorized officer.

3. The holder shall maintain a fire watch with fire-fighting equipment during construction at the following locations: <u>(to be determined)</u> as required by the authorized officer.

4. When requested by the authorized officer, the holder shall make his equipment already at the site with operators, temporarily available for fighting fires in the vicinity of the project. Payment for such services will be made at rates determined by the authorized officer.

LIABILITY AND BONDING

1. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2803.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from fire or soil movement (including landslides and slumps as well as wind and water-caused movement of particles) caused or substantially aggravated by any of the following within the right-of-way or permit area:

   (1) Activities of the holder, including but not limited to construction, operation, maintenance, and termination of the facility.

   (2) Activities of other parties including but not limited to:

      (a) Land clearing and logging.
      (b) Earth-disturbing and earth-moving work.
      (c) Blasting.
      (d) Vandalism and sabotage.

The maximum limitation for such strict liability damages shall not exceed (to be determined) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from the negligent acts or omissions of the United States.

2. The holder shall be responsible for repairing/replacing any resources lost by grazing permittees or the United States as a result of the project. Resources may include, but not be limited to, stock water pipelines, livestock, forage for livestock grazing, spring (water) production, and the ability to graze livestock. Any lost resources would be repaired or replaced in kind or by mutually agreed on compensation.

3. A bond, acceptable to the authorized officer, shall be furnished by the holder prior to the issuance of a notice to proceed or at such earlier date as may be specified by the authorized officer. The amount of this bond shall be determined by the authorized officer. This bond must be maintained in effect until removal of improvements and restoration of the right-of-way have been accepted by the authorized officer.

4. Should the bond delivered under this grant become unsatisfactory to the authorized officer, the holder, shall, within 30 days of demand, furnish a new bond.

ROAD AND CONSTRUCTION SITE MAINTENANCE

1. If snow removal from the road is undertaken, equipment used for snow removal operations shall be equipped with shoes to keep the blade two (2) inches off the road surface. Holder shall take special precautions where the surface of the ground is uneven and at drainage crossings to ensure that equipment blades do not destroy vegetation.

2. Holder shall maintain the right-of-way in a safe, usable condition, as directed by the authorized officer. (A regular maintenance program shall include, but is not limited to, blading, ditching, culvert installation, and surfacing).

3. Except rights-of-way expressly authorizing a road after construction of the facility is completed, the holder shall not use the right-of-way as a road for purposes other than routine maintenance as determined necessary by the authorized officer in consultation with the holder.

4. Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. 'Waste' means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

5. For the purpose of determining joint maintenance responsibilities, the holder shall make road use plans known to all other authorized users of the road. Holder shall provide the authorized officer, within 30 days from the date of the grant, with the names and addresses of all parties notified, dates of notification, and method of notification. Failure of the holder to share proportionate maintenance costs on the common use access road in dollars, equipment, materials, or manpower with other authorized users may be adequate grounds to terminate the right-of-way grant. The determination as to whether this has occurred and the decision to terminate shall rest with the authorized officer. Upon request, the authorized officer shall be provided with copies of any maintenance agreement entered into.

HAZARDOUS MATERIALS

1. The holder(s) shall comply with all applicable Federal, State and local laws and regulations, existing or hereafter enacted or promulgated, with regard to any hazardous materials, as defined in this paragraph, that will be used, produced, transported or stored on or within the R/W or any of the R/W facilities, or used in the construction, operation, maintenance or termination of the R/w or any of its facilities. "Hazardous material" means any substance, pollutant or contaminant that is listed as hazardous under the CERCLA of 1980, as amended, 42 U.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the RCRA of 1976, as amended, 42 U.S.C. 6901 et seq. and its regulations. The term hazardous materials also includes any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U. S. C. 2011 et seq. The term does <u>not</u> include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA section 101(14), 42 U.S.C. 9601(14), nor does the term include natural gas.

2. The holder of right-of-way No. IDI-33676 agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, <u>et</u> <u>seq</u>. or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 <u>et</u> <u>seq</u>.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way.) This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

3. The holder shall submit its contingency plan to the authorized officer prior to scheduled start up.

   a. Include provisions for oil or other pollutant spill control.
   b. The agencies responsible for contingency plans in southern Idaho shall be among the first to be notified in the event of any pipeline system failure resulting in a spill of oil or other pollutant.
   c. Provide for restoration of the affected resource.

d. Provide that the authorized officer shall approve any materials or devices used for oil spill control and any disposal sites or techniques selected to handle oil, matter, or other pollutants.

e. Include separate and specific techniques and schedules for cleanup of spills of oil or other pollutants on land or waters.

4. The holder would not refuel any equipment within 500 feet of any live water source.

AIR QUALITY

1. The holder shall meet Federal, State, and local emission standards for air quality and shall submit for the authorized officer's review a technical report addressing criteria and methodology of how the proposed facility will be located and designed to meet said standards.

2. The holder shall furnish and apply water or other means satisfactory to the authorized officer for dust control.

3. The holder will be responsible for controlling dust by reducing travel speed and/or applying dust suppressants (e.g., magnesium chloride or other agency-approved materials). Dust will be considered a nuisance/hazard when a visible plume of dust extends more than 300 feet from the source and an estimated opacity exceeding 20 percent (objects partially obscured). Additional methods of dust control that may be used by the holder include, but are not limited to:

   - Application of water or magnesium chloride to access roads or sections of the ROW as needed to suppress dust;
   - Application of water to specific activities on the ROW that generate dust plumes (i.e., trenching or blasting);
   - Curtailing of dust-generating activities during high winds;
   - Implementation of mandatory speed limits on vehicles using access roads or traveling the ROW; and,
   - Limitation of number of vehicles allowed on the ROW.

BLASTING

1. The holder would conduct pre and post blasting surveys of springs within 500 feet of the blast site. Ground vibrations would be monitored at the blast site and at these spring locations. If springs are damaged, the holder would replace a like amount of lost water or otherwise compensate the owner.

2. Limit blasting to the hours of 8 am to 5 pm M-F. Limit heavy truck traffic through communities to the same hours.

CIVIL RIGHTS

1. The holder of this right-of-way grant or the holder's successor in interest shall comply wit VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d *et seq*.) and the regulations of the Secretary of Interior issued pursuant thereto.

RIGHT-OF-WAY TERMINATION

1. Ninety days prior to termination of the right-of-way, the holder shall contact the authorized officer to arrange a joint inspection of the right-of-way. This inspection will be held to agree to an acceptable termination (and rehabilitation) plan. This plan shall include, but is not limited to, removal of facilities, drainage structures, or surface material, recontouring, topsoiling, or seeding. The authorized officer must approve the plan in writing prior to the holder's commencement of any termination activities.

RESPONSIBILITIES OF ENVIRONMENTAL INSPECTOR(S)

The Holder shall institute an environmental inspection program that shall be responsible for:

1. Ensuring compliance with the requirements of this Plan and the environmental conditions of the ROW grant authorization, the mitigation measures proposed by the applicant (as approved and/or modified by the ROW grant), other environmental permits and approvals.

2. Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance;

3. Verifying that the limits of all authorized construction work areas and locations of access roads are properly marked before clearing;

4. Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, drainages, water bodies, or areas with special requirements along the construction work area;

5. Identifying erosion/sediment control and soil stabilization needs in all areas;

6. Ensuring that the location of dewatering structures and slope breakers will not direct water into known cultural resources sites or locations of sensitive species;

7. Verifying that trench dewatering activities do not result in the deposition of sand, silt, and/or sediment near the point of discharge into a drainage or water body. If such deposition is occurring, the dewatering activity shall be stopped and the design of the discharge shall be changed to prevent reoccurrence;

8. Ensuring that subsoil and topsoil are tested in areas to measure compaction and determine the need for corrective action;

9. Advising the Construction Contractor when conditions (such as wet weather) make it advisable to restrict construction activities to avoid excessive rutting;

10. Ensuring restoration of contours and replacement of topsoil;

11. Verifying that any soils or materials imported for use have been certified as free of noxious weeds;

12. Determining the need for and ensuring that erosion controls are properly installed, as necessary to prevent sediment flow into drainages, water bodies, sensitive areas, and onto roads;

13. Inspecting and ensuring the maintenance of temporary erosion control measures at least:

    a. on a daily basis in areas of active construction or equipment operation;
    b. on a weekly basis in areas with no construction or equipment operation; and
    c. within 24 hours of each 0.5 inch of rainfall;

14. Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification;

15. Keeping records of compliance with the environmental conditions of the ROW grant, and the mitigation measures proposed by the applicant in the application submitted to the BLM; and

16. Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase.

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APPENDIX D

BEST MANAGEMENT PRACTICES SPECIFIC TO WILDLIFE

BEST MANAGEMENT PRACTICES SPECIFIC TO WILDLIFE

AVIAN/WILDLIFE MORTALITY

Turbines

- Implement lighting scheme to alert night migrants to turbines and as required by FAA regulations.

Power Lines

- Minimize the use of guy wires.
- Use bird deflectors on power transmission lines and especially within 1 mile of the Snake River.
- Use raptor deflector devices on all potential raptor perching structures.
- Install raptor perch prevention devices on aboveground power line poles.
- Avoid electrocution by placing sufficient space between power line wires.
- Aerial inspection of lines should be prohibited below 1,000 feet from November 15 through 15 March for wintering eagle protection.
- No graveled roads are allowed under transmission lines. Only unimproved 2-tracks may be used for maintenance.
- Follow guidelines for Avian Power Line Interaction Committee (1994) and take corrective actions as needed and as reviewed by the Steering Committee.

General Wildlife

- Place turbines at least 1/4 mile from golden eagle nests.
- Establish and sign speed limits for all vehicles on roads.

Effectiveness Monitoring

- The holder shall conduct fatality monitoring using methods that have been used at other constructed wind projects in the United States for a period of five years commencing at project start up. . The objective of the fatality monitoring is to estimate the number of avian or bat fatalities attributable to wind turbines and other project facilities at the proposed Cotterel Wind Power Project. Mortality will be measured by estimating the number of bird and bat carcasses in the project area whose death can be related to turbines, or other project features. All avian and bat carcasses located within survey areas, will be recorded and a cause of death determined, if possible, based on field examination.

- Carcass searches will be conducted at half of the turbines and other project facilities (substations, met towers, O&M facility) once every two weeks. Biologist trained in proper search techniques will conduct the searches. Data collected at other wind power projects have indicated that most birds and bats killed by striking turbines remain within approximately 205 feet of the turbine. Permanent (for a period of five years) square plots 410 feet on each side will be centered around each wind turbine tower. Search transects will e set at approximately 25-32 feet apart in the area to be searched.

- All carcasses located will be photographed as found and mapped on a detailed map of the project area. Carcasses will be labeled with a unique number. The U.S. Fish and Wildlife Service and the BLM will be notified by telephone or email when any carcass of a Federally listed species is found. A quarterly report will be prepared for the BLM presenting the results of each three month survey period. An annual report will be prepared summarizing the each years survey effort.

- If this monitoring identifies problem areas ("hot spots"), or areas where migratory bird and/or bat fatalities are in excess of those predicted in Chapter 4 of this document, the holder will extend the monitoring period for a term recommended by the technical steering committee and approved by the BLM authorized officer.

- The holder shall continue to conduct sage grouse lek studies in accordance with BLM protocols on leks that are within the project area for a term commensurate with the "Industry Standard" fatality monitoring described above.

HABITAT LOSS/DEGRADATION

Roads/Construction Pads/Fill/Transformers

- Rehabilitate habitats with native seedings in areas that were temporarily disturbed due to construction.
- Provide for on site inspection and monitoring of on site soil storage areas.
- Prior to removal of soils inspect proposed storage sites to determine that no sensitive plant or animal species or habitat is present.
- Stored native soils will be replaced on top of temporary use sites and will not be used as fill.
- Plant native seeds/year old sagebrush/other specialized plants in disturbed areas.
- Replace disturbed construction sites with native soil within the project area.
- Require native seed replacement where rehabilitation occurs within the project area.
- Collect native seeds from the project site for rehabilitation plantings.

General Wildlife

- Restrict all construction and operation/maintenance activities which occur within 0.5 miles of a lek between the hours of 4 am and 11 am during the lekking season (mid-March – mid-May.

INCREASED PUBLIC ACCESS

- Implement policies regarding poaching by workers.
- Post signs to indicate roads and trails for the public use.

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APPENDIX E

BLM INTERIM OFFSITE COMPENSATORY MITIGATION FOR OIL, GAS, GEOTHERMAL AND ENERGY RIGHTS-OF-WAY AUTHORIZATIONS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

February 1, 2005

In Reply Refer To:
3100/2800/1790 (310/350)P

EMS TRANSMISSION 02/02/2005
Instruction Memorandum No. 2005-069
Expires: 09/30/2006

To: All State Directors and Field Managers

From: Director

Subject: Interim Offsite Compensatory Mitigation for Oil, Gas, Geothermal and Energy Rights-of-Way Authorizations

Purpose: This Instruction Memorandum (IM) outlines interim policy for the use of compensatory (offsite) mitigation for authorizations issued by the Bureau of Land Management (BLM) in the oil, gas, geothermal and energy right-of-way programs.

Background: Provisions of the Federal Land Policy and Management Act (FLPMA), including section 302(b) (43 U.S.C. §1732(b)), and of the Mineral Leasing Act, including section 17(g) (30 U.S.C. § 226(g)), provide BLM the authority to require mitigation in the oil, gas, geothermal and energy right-of-way programs. Mitigation measures are actions the Secretary can direct to prevent unnecessary or undue degradation of the public lands and protect surface resources in the approval of surface use plans. Mitigation measures are oftentimes proposed by proponents seeking BLM authorizations. These measures, as part of a proposed action, are analyzed as part of BLM's compliance with the National Environmental Policy Act (NEPA). Mitigation, as defined by the Council on Environmental Quality (CEQ) for NEPA purposes in 40 CFR 1508.20, may include one or more of the following:

"*(a) Avoiding the impact altogether by not taking a certain action or parts of an action;*
(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and

(e) ***Compensating*** *for the impact by replacing or providing substitute resources or environments."* (emphasis added)

This IM addresses the last category—offsite compensatory mitigation of impacts by replacing or providing substitute resources or environments. The application of this IM is further limited to the oil, gas, geothermal and energy right-of-way programs.

The last time the BLM addressed offsite mitigation in national policy was during promulgation of revisions to 43 CFR 3809-Surface Management regulations for locatable (hardrock) minerals, 65 FR 69998 (November 21, 2000). The BLM explained in the preamble that in the case of minerals, "BLM will approach mitigation on a mandatory basis where it can be performed on site, and on a voluntary basis, where mitigation (including compensation) can be performed offsite" 65 FR 69998 at 70012.

Because of recent interest expressed by cooperating agencies, State governments, and the public regarding offsite mitigation in the energy programs, the BLM is providing this policy guidance.

Attachment 1 defines terms used in conjunction with compensatory mitigation. Also, other Department of the Interior agencies have well-developed compensatory mitigation policies and procedures. A discussion of those programs is contained in Attachment 2.

Policy: The BLM will approach compensatory mitigation on an "as appropriate" basis where it can be performed onsite and on a voluntary basis where it is performed offsite. Further, this IM is not intended to establish an equivalency of mitigation policy by the BLM (i.e. acre for acre).

Since this policy generally adds a new dimension in mitigation practice for both BLM and public land users, it is being issued as interim guidance. The policy will be reviewed and updated prior to the expiration date of this IM. We anticipate both internal and external feedback that will lead to improvements and policy modification.

<u>General</u>

- This IM is applicable only to oil, gas, and geothermal authorizations and energy right-of-way authorizations granted by the BLM. Energy right-of-way authorizations include oil and gas pipelines, electric transmission lines, and wind and solar energy authorizations. The IM does not apply to any other BLM program or activity.
- When an applicant's offsite mitigation proposal is part of the plan of development for an approved permit or grant, that mitigation will pass from being a voluntary proposal to becoming a requirement of the authorization. The applicant becomes committed to the offsite mitigation component once the authorization is granted.
- Offsite mitigation may be considered after application of other forms of onsite mitigation including best management practices (see also "Limitations" section).
- The BLM continues to have an obligation to ensure that actions do not result in unnecessary or undue degradation to the public lands. 43 U.S.C. §302(b).
- Offsite mitigation is to be entirely voluntary on the part of the applicant.

- When offsite mitigation is being considered as a design feature of the applicant's submission, BLM NEPA analysis should: 1) evaluate the need for offsite mitigation, 2) consider the effectiveness of offsite mitigation in reducing, resolving, or eliminating impacts of the proposed project(s), and 3) comparatively analyze the proposal with and without the offsite mitigation.
- The BLM may identify other offsite mitigation opportunities to address impacts of the project proposal, but is not to carry them forward for detailed analysis unless volunteered by the applicant.
- When applying offsite mitigation, it must be implemented in a timely manner and generally for the same or similar impacted species or habitats (for example, sagebrush/grassland for sagebrush/grassland).
- Offsite mitigation need not be permanent but should be of duration appropriate to the anticipated impact(s) being mitigated.
- This IM does not establish an equivalency requirement for offsite mitigation (no 1:1 compensation ratio).
- Any existing mandatory offsite mitigation programs used by Field Offices are to be reviewed in light of this national policy, and modified as appropriate.
- Offsite mitigation that has resulted from a formal Section 7 or Section 106 consultation is not affected by this IM.
- In cases where offsite mitigation is applied to an authorization to reduce impacts to less than "significant" for NEPA purposes the offsite mitigation must be committed and a condition of approval in the authorization issued.
- Offsite mitigation must not infringe on or affect other property rights including those of any mineral lessee of the offsite tract without agreement of affected parties.
- Offsite mitigation associated with a split estate lease must be in agreement with IM 2003-131 Permitting Oil and Gas on Split Estate Lands and Guidance for Onshore Oil and Gas Order No. 1.

Resource Management Plans

Older land use plans may not mention compensatory or offsite mitigation. Omission of such discussion does not prohibit consideration of offsite mitigation in accordance with this IM.

Endangered Species Act Section 7 Consultation

As mentioned earlier, any consultation with the U.S. Fish and Wildlife Service is subject to the applicable regulations and procedures for Endangered Species Act (ESA) consultation efforts. Any mitigation measures developed as a result of ESA consultation are not affected by the policies and procedures for use of offsite mitigation outlined in this IM.

National Historic Preservation Act Section 106 Consultation

Application of this policy to cultural resources must be consistent with the BLM's National Historic Preservation Act (NHPA) Section 106 responsibilities and individual BLM/State protocols under the BLM National Programmatic Agreement (PA). This includes any required coordination with the State Historic Preservation Office, tribes and the Advisory Council on Historic Preservation (ACHP). There are inherent limitations to the applicability of offsite mitigation to resolution of adverse effects under Section 106 of the NHPA. Cultural resources are non-renewable and may be unique, and it may not be appropriate to mitigate loss of such resource values by attempting to identify and preserve an alternative equivalent one. This is particularly true when data recovery is used as mitigation for loss of a site important for its data value, since it may result in the destruction of two sites. There are exceptions; for instance, where treatment onsite is technically impossible and an offsite resource is also at risk, or where offsite data recovery is part of an established research design and management strategy that will include onsite work.

Livestock Forage Mitigation

Impacts to livestock forage as a result of energy development are typically addressed through onsite mitigation using direct reclamation or rehabilitation techniques to re-establish the lost vegetation.

Financial Contributions toward Mitigation

In some circumstances, BLM may accept volunteered monies to pay for a larger effort to mitigate the impact of multiple actions when it is infeasible to require individual applicants to manage specific mitigation efforts. Such monies are to be used for on-the-ground projects. In order to qualify as offsite mitigation, the funds collected must be identified for specific types of mitigation projects and either the BLM or other parties may be identified as responsible for implementation of the project(s). However, it is not BLM policy to waive or forego onsite mitigation of impacts through payment of monies.

Where the effectiveness of mitigation will depend on future contributions from other applicants, such contributions cannot form the basis for a Finding of No Significant Impact or compliance with a legal limitation on effects, such as those in the Clean Air Act.

Whenever monies are handled either directly or indirectly by the BLM, pursuant to section 307(c) of FLPMA, a signed cooperative agreement will be required before any funds can be received or transferred. If a third-party organization agrees to accept voluntary funds from an applicant for funding of mitigation projects, the affected BLM office will enter into cooperative agreements with the affected parties (see BLM Manual 1511 and Manual Handbook 1511-1). The parties to the agreement must include the cooperators and the party or parties responsible for project implementation.

Monetary compensation can be made directly to the BLM in accordance with a formal cooperative agreement and with prior approval of the appropriate State Director. Compensation also must be properly recorded on Form 4120-9 ("Proffer of Monetary Contributions") and deposited in the appropriate 7100 (usually 7122) account for redistribution for offsite activities to offset adverse impacts for a particular action or class of actions. These accounts require assignment of specific project codes to track the contributions and subsequent expenditures. State Office Budget staff can provide assistance in establishing the project codes.

Cooperative agreements must also address the following items:

- Authority to enter into a cooperative agreement;
- Disposition of excess funds, if any;
- Project codes and tracking of funds incoming and outgoing (especially in the case of multiple contributors);
- Administrative surcharges;
- Other agency rules and requirements for cooperators; and
- Adequacy of funds for specific mitigation projects.

Field Offices are required to use a cooperative approach in approving projects where compensation funds are involved. It is usually appropriate to involve cooperators (e.g., State Game and Fish agencies) and any other directly affected parties in determining the specific mitigation projects. It is never appropriate for third parties to make these determinations without direct, local BLM involvement in the specific mitigation project. In undertaking cooperative efforts, the BLM needs to ensure compliance with the Federal Advisory Committee Act (FACA), if applicable.

Should the mitigation program provide for public input on offsite mitigation projects or the application of funds, Field Offices should be certain to comply with FACA when establishing a committee to provide it advice as a group, as opposed to the views of individual participants.

Attachment 3 is a list of "frequently asked questions" and appropriate responses for implementing this policy.

<u>Limitations</u>

Even with the most effective, state-of-the-art onsite mitigation, oil, gas, geothermal and energy right-of-way authorizations can result in impacts to the environment. The BLM will mitigate onsite impacts to the maximum extent practicable. Offsite mitigation is only appropriate when the specific conditions of a proposed project make such mitigation appropriate.

While the voluntary application of offsite mitigation is the general rule, there are circumstances where negotiation would be appropriate. In cases where one or more applicants in a specific geographic location have volunteered to perform offsite mitigation, it could be appropriate for other applicants in the same area to apply the same or similar offsite mitigation.

Timeframe: This IM is effective upon issuance. In instances where NEPA documentation is near completion for an action (e.g., preliminary Draft Environmental Impact Statement (EIS) is in the final stages of review), implementation of this policy may be modified to fit the specific circumstances so as not to delay publication of the EIS and approval of the project(s).

Budget Impact: None at this time.

Energy Impact: This IM may result in some increased costs to oil and gas and geothermal lessees, permittees, and operators and energy right-of-way holders. Because these parties would usually enter into offsite mitigation agreements voluntarily and with full knowledge of associated costs, it is unlikely that this policy would have any material adverse impact on energy supply, distribution, or use.

Manual/Handbook Sections Affected: None.

Coordination: Preparation of this IM was coordinated with WO-200, WO-300, WO-310, WO-350 and the Office of the Solicitor.

Contact: Tom Hare (WO-310) at 202- 452-5182, Ron Montagna (WO-350) at 202-452-7782, or Andrew Strasfogel (WO-210) at 202- 452-7723.

Signed by:
Kathleen Clarke
Director

Authenticated by:
Barbara J. Brown
Policy & Records Group, WO-560

3 Attachments
1 - Definitions (1 p)
2 – Departmental Compensatory Mitigation Programs (1 p)
3 - Frequently Asked Questions (4 pp)

Definitions

Compensatory Mitigation: As defined by CEQ, this means compensating for the impact by replacement or providing substitute resources or environments. This offsite mitigation can be immediately adjacent to the area impacted but can also be located anywhere in the same general geographic area. It does not have to be juxtaposed.

Mitigation: The CEQ defines mitigation to include: (a) avoiding; (b) minimizing the impacts by limiting the magnitude or degree; (c) rectifying the impact by repairing, rehabilitating, or restoring; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (e) compensating for the impact by replacing or providing substitute resources or environments.

In-lieu-fee Mitigation: Payment of funds to a natural resource management entity (e.g., an agency or third-party organization) for implementation of specific projects designed to replace or substitute resources impacted by an authorized project. For the purposes of this Instruction Memorandum, its use would always require a formal agreement among affected parties and BLM.

In-kind Compensatory Mitigation: Replacement or substitute resources that are of the same type and kind as being impacted. For example, replacement with sagebrush habitat of the same general quality and species compensation as is being impacted by the project.

On-site mitigation: Mitigation of the actual area affected by the action causing the impact. For a comparative example, the reclamation of an abandoned well pad is onsite mitigation; compensatory mitigation in another area to offset the loss of vegetation during the life of that same well pad is defined as offsite mitigation.

Out-of-kind: Replacement or substitute resources that, while related and of a different quality, species mix, or even species type, are of equal or greater overall value to the ecology of the impacted species or ecological region. Example: Replacement of lost sagebrush with improved grazing practices on related habitat but not of the exact type and species mix. The net ecological values may be the same or better, but the acreages and species composition of the habitat would be substantially different.

Departmental Compensatory Mitigation Programs

Within the Department, the Fish and Wildlife Service (FWS) developed a formal mitigation policy as published on January 23, 1981, in the Federal Register (46 FR 7656). Compensatory mitigation is an integral part of that policy primarily as a means of habitat replacement, enhancement of in-kind habitats, or any combination of these and other impact-mitigating measures. Compensation of impacts can be either on- or off-site. The authorities for this policy span numerous Acts and Executive Orders, including mineral development statutes such as the Mineral Leasing Act of 1920, the Geothermal Steam Act of 1970 and the Surface Mining Control and Reclamation Act of 1977.

To address wetland impact mitigation through a structured program commonly referred to as "wetland banking," the Department promulgated "Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks" on November 28, 1995, in the Federal Register (60 FR 58605). This policy was developed in cooperation with the Environmental Protection Agency (EPA), Natural Resources Conservation Service (NRCS), and the National Oceanic and Atmospheric Administration (NOAA) to address wetland impact mitigation through a structured program commonly referred to as "wetland banking." It represents a rather extensive means of onsite, offsite, in-kind and out-of-kind mitigation, as well as in-lieu-fee mitigation arrangements, all designed to compensate unavoidable wetlands losses.

Frequently Asked Questions

Q. "Can you provide an example of how compensatory mitigation could be applied to oil and gas operations?"

Response: A small oil and gas field has been operating for 20+ years without much change. However, over the next 10 years it is expected to expand several times its current size with many more wells, roads, and related infrastructure and with an increase in vehicular use (both public and private). Major residual impacts to crucial wildlife winter range are expected to remain even after best management practices are implemented.

Some compensatory mitigation options could include any combination of the following:

- A mitigation fund could be established in which all operators contribute. This fund could be held by the BLM or another party to be later used for specific on-the-ground mitigation projects. The projects could take several forms and include, for example, habitat enhancement in the same or general area. These projects could be located on public, private or State lands. (Note: This would require prior State Director approval before implementation.)
- Operators could choose to develop and implement offsite projects on their own, after BLM has determined that they in fact accomplish the needed mitigation.
- Critical habitats could be purchased and managed for the species of concern. These purchases could be made directly by the operators or by BLM using a mitigation fund.

Q. "How could compensatory mitigation apply to a wind energy right-of-way project on public lands?"

Response: A wind energy project is proposed on public lands that involves numerous wind turbines in excess of 200 feet in height along an exposed ridgeline, with access roads, electric transmission lines, and support facilities. Residual impacts to wildlife habitat from surface disturbance related to the facilities and visual resource impacts from the wind turbines are expected to remain even after best management practices are implemented.

Some compensatory mitigation options could include any combination of the following:

- The right-of-way holder could develop and implement offsite wildlife habitat improvement projects with the approval of BLM.
- Critical habitats or conservation easements could be purchased and managed for wildlife species of concern. These purchases could be made directly by the right-of-way holder or by BLM using contributed funds.
- The right-of-way holder could pursue rehabilitation, reclamation, or removal of existing disturbances or visual intrusions in the landscape setting to reduce the overall cumulative visual resource impacts in the area. This could involve the reclamation of existing unnecessary roads in the area, removal of abandoned buildings or other structures, cleanup of illegal dumps or trash, or the rehabilitation of existing erosion or disturbed areas.

- A mitigation fund could be established by the right-of-way holder for use by the BLM or the State game and fish department for on-the-ground wildlife habitat improvement projects in the general area. These projects could be located on public, private, or State lands. A formal cooperative agreement is required between the parties and must be approved by the State Director.

Q. "If an applicant submits a permit or right-of-way application, can he or she offer to pay a "damages" fee, and then proceed with the project as planned?"

Response: The short answer is "no." The BLM will not accept direct cash payment as a replacement of on-the-ground mitigation of impacts. However, Departmental policy does allow for collection of funds where those funds are used to improve, restore, or replace like habitats as part of a formal, structured agreement to implement a mitigation strategy determined effective in a NEPA document. The BLM has mandatory fiduciary requirements for the collection and use of such received funding (see Manual Handbook 1511-1).

Q. "As follow up to the above question, can the BLM accept an applicant's voluntarily proposed damage payments rather than do on-the-ground mitigation as is sometimes done on private lands?"

Response: No. The BLM always requires onsite mitigation of impacts using best management practices to the extent practicable. Cash payments to avoid onsite mitigation are not to be accepted and are not in accordance with Departmental or Bureau policy. However, in-lieu fee payments into a fund for mitigation projects can be an approved mechanism of compensatory mitigation. This would require a series of prior steps to be approved. As a minimum, the impact mitigation would have to be analyzed in a NEPA document; a cooperative agreement would have to be established between the BLM and affected parties; and a clear procedure developed for the use of such funds for on-the-ground development of compensatory mitigation projects directly related to cumulative or individual project impacts.

Q. "Does this compensatory mitigation policy apply to range projects developed by the BLM and funded by the 8100 accounts?"

Response: No. Range projects and other Bureau programs are not subject to this compensatory mitigation policy IM.

Q. "Does this policy apply to special recreation permits or other authorizations not related to oil and gas, geothermal, or energy rights-of-way?"

Response: No. At the current time, this policy only applies to oil, gas, or geothermal authorizations or energy rights-of-way. Expansion of the policy to other programs may be considered in the future.

Q. “How does the compensatory mitigation policy apply to impacts to cultural sites?”

Response: Consultation with the State Historic Preservation Officer and/or the Advisory Council on Historic Preservation guides any possible use of compensatory mitigation. Those consultation efforts will determine if and when compensatory mitigation is to be considered.

Q. “Does the BLM anticipate this new policy will result in a structured policy similar to the wetlands banking process?’

Response: No.

Q. “How does this policy IM apply to replacement habitat off site?”

Response: When selecting lands or resources as replacement or substitute, the lands must be located so as to protect, restore, or enhance the impacted resources. To protect any investments made as a compensatory mitigation measure, the land ownership (including lease rights) must be generally sufficient for the term of the impact and free from encumbering prior rights. It is very important that lands selected not become encumbered by a compensatory mitigation measure that would preclude or substantially affect existing rights. When compensatory mitigation occurs on non-Federal land, there must be a legally enforceable method to assure that mitigation measures would remain in place and that mitigation measure effectiveness would not be compromised until the mitigation objectives are reached. This latter point may require binding agreements with the parties involved to avoid loss of impact mitigation.

Q. “How does compensatory mitigation apply to Visual Resource Management (VRM)?”

Response: Compensatory mitigation can be considered when it is not possible to design or mitigate a project sufficiently to meet VRM classes. This could take the form of actual rehabilitation of existing disturbance or development where such remedial actions would reduce the overall cumulative impacts to the visual resources of a particular setting.

Q. “Does off-site mitigation affect the unnecessary and undue degradation provision of FLPMA?”

Response: While the offsite mitigation proposal may be used for NEPA analysis, BLM still has an obligation to ensure that an approved action does not result in unnecessary or undue degradation of public land resources.

Q. “Does compensatory mitigation include direct payments or compensation to the livestock permittee for loss of grazing uses on a grazing permit?”

Response: No. The BLM and Federal courts have consistently held that livestock grazing is a privilege and not a right. When a grazing permit or lease is reduced for whatever reason, no monetary compensation is provided by the BLM or any other BLM permittee. The only time compensation is referenced at 43 CFR 4120.3-6(c), which states in part:

"Whenever a grazing permit or lease is cancelled...the permittee or lessee shall receive from the United States reasonable compensation for the adjusted value of their interest in authorized permanent improvements placed or constructed by the permittee or lessee on the public lands covered by the cancelled permit or lease. The adjusted value is to be determined by the authorized officer. Compensation shall not exceed the fair market value of the terminated portion of the permittee's or lessee's interest therein."

APPENDIX F

APPLICANT COMMITMENT LETTER FOR COOPERATIVE AGREEMENT

windland
clean energy from wind

April 27, 2005

Wendy Reynolds
Field Office Manager
Bureau of Land Management
15 East, 200 South
Burley, Idaho 83318

Re: Voluntary Compensatory Mitigation Fund Contribution – Cooperative Agreement

Dear Ms. Reynolds:

This letter is written to document our intent to enter into a Cooperative Agreement with the Bureau of Land Management for a compensatory mitigation fund related to the proposed Cotterel Mountain Wind Energy Project.

Understanding that BLM Washington Office Instruction Memorandum 2005-069 (Interim Offsite Compensatory Mitigation for Oil, Gas, Geothermal and Energy Rights of Way Authorizations) allows for a voluntary contribution, Windland, Inc. expects to execute a such a Cooperative Agreement with BLM. We intend the annual contribution to be in an amount equal to approximately one-half of one percent of the gross revenues received from Cotterel Mountain wind farm electricity sales. For a 200 megawatt Cotterel Mountain wind farm that contribution is expected to average approximately $150,000.00 per year at today's forecasted production and electricity rates.

Of course, such a Cooperative Agreement would only become effective upon the project actually being approved, constructed and generating electricity.

Sincerely,

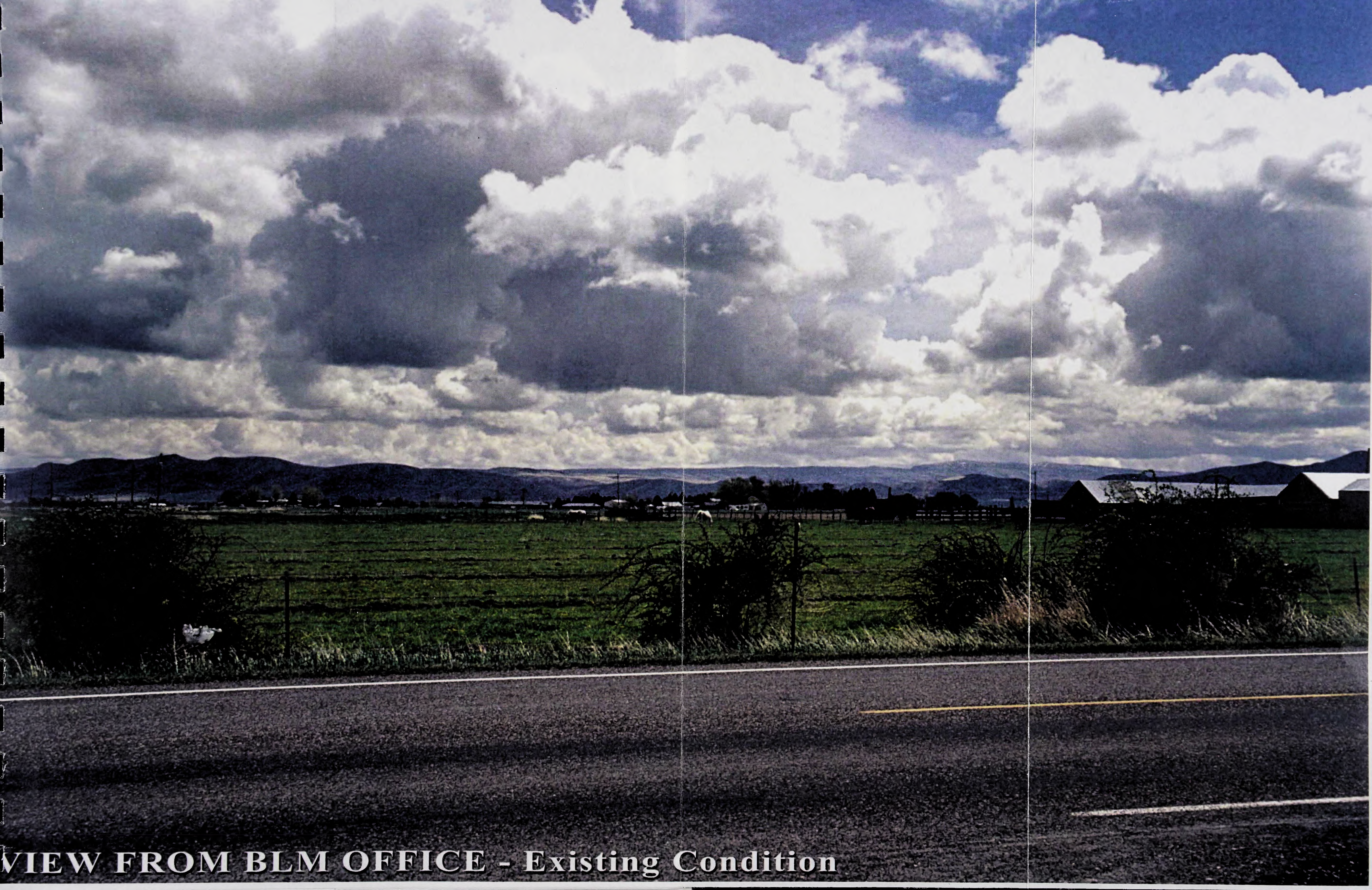
Roald Doskeland
President
Windland, Inc.

WINDLAND INCORPORATED 208-377-7777 10480 GARVERDALE COURT SUITE 804A BOISE, IDAHO 83704 FAX 208-375-2894

APPENDIX G

VISUAL SIMULATIONS

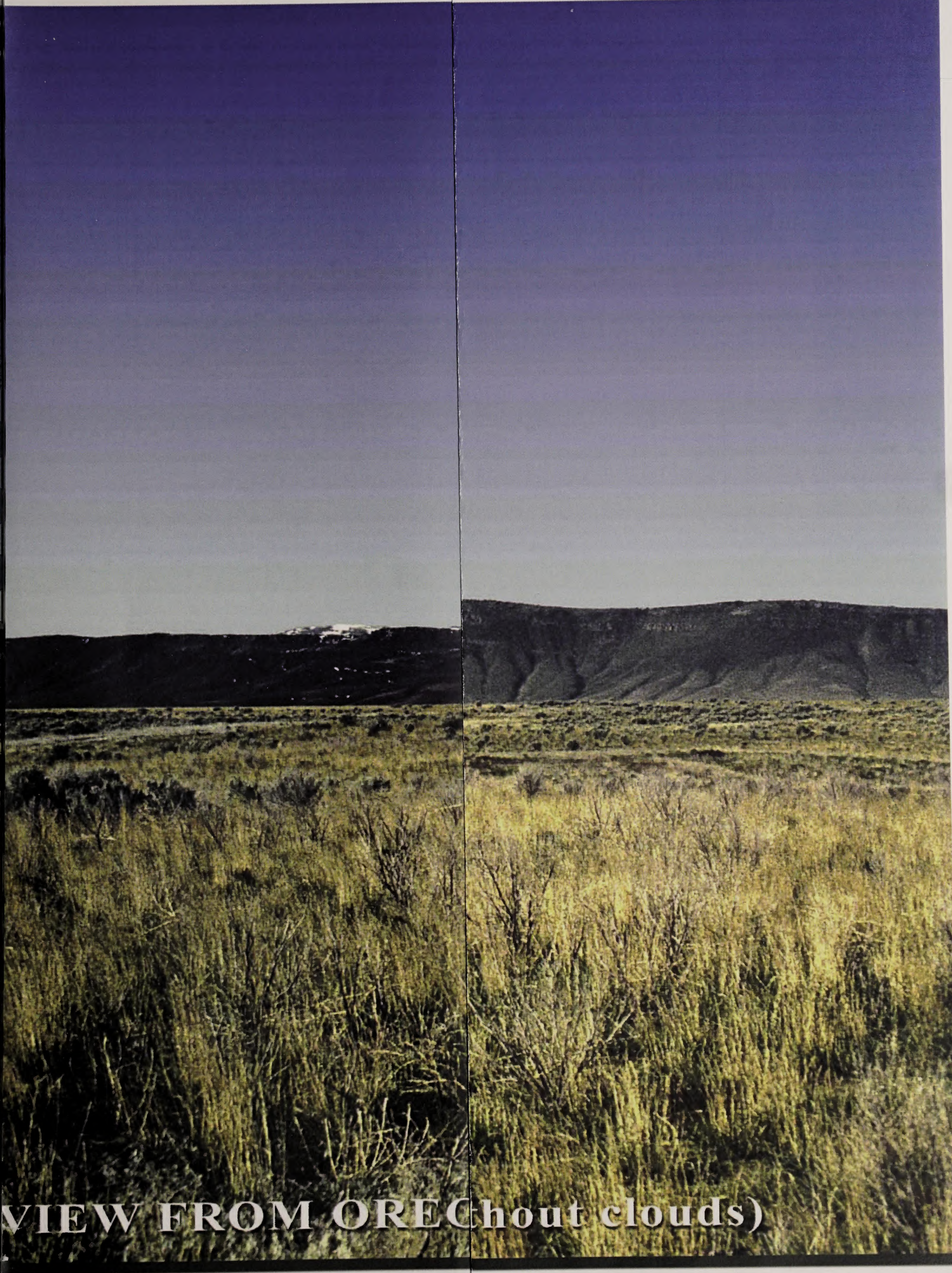
IEW FROM BLM



VIEW FROM BLM OFFICE - Existing Condition


IEW FROM BLM

VIEW FROM BLM OFFICE - Proposed Project


VIEW FROM ORE(hout clouds)

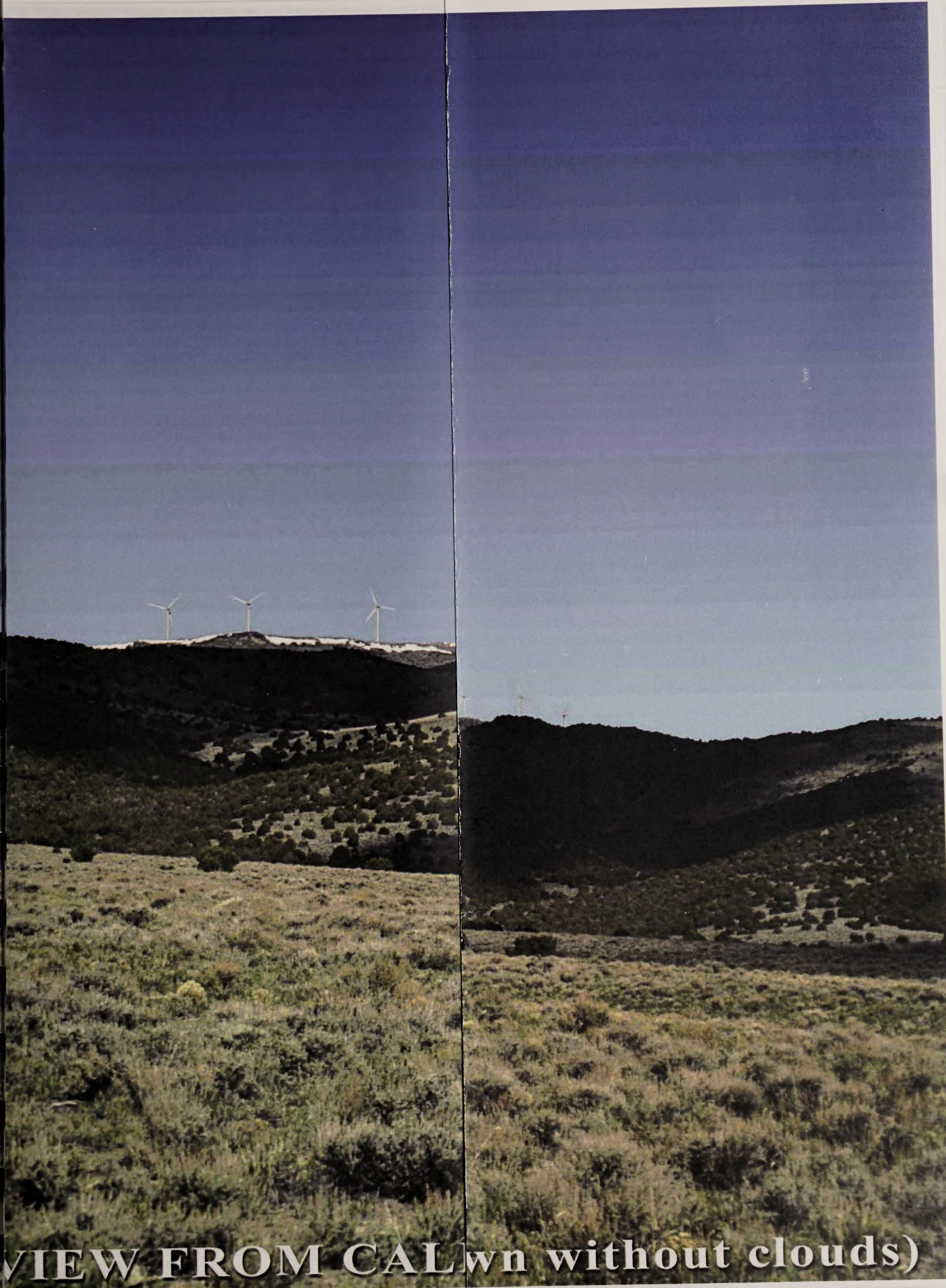
VIEW FROM OREGON TRAIL - Existing Condition (shown without clouds)


VIEW FROM ORECout clouds)

VIEW FROM OREGON TRAIL - Proposed Project (shown without clouds)

VIEW FROM CALlown without clouds)

VIEW FROM CALIFORNIA TRAIL - Existing Condition (shown without clouds)


VIEW FROM CAL wn without clouds)

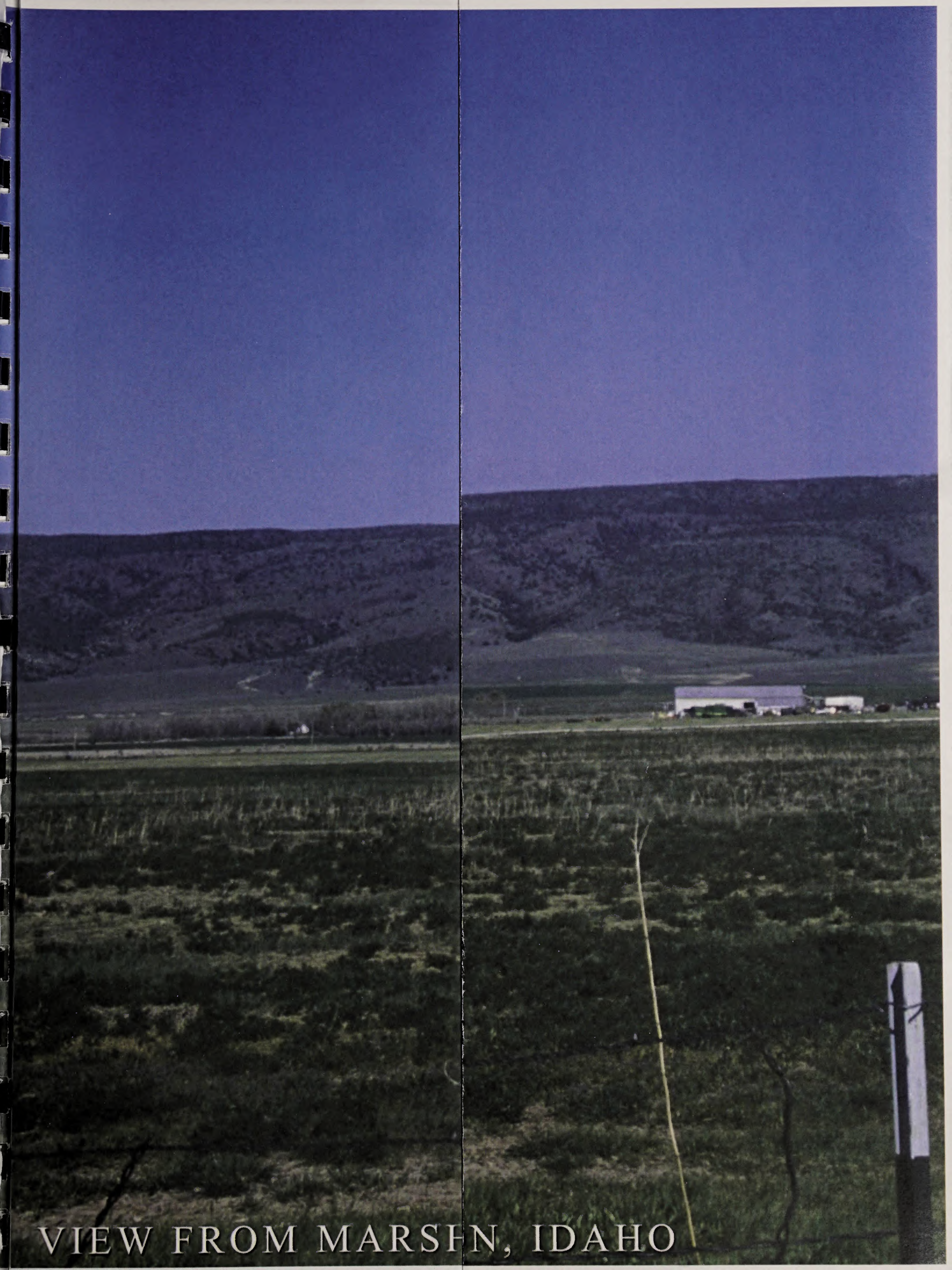
VIEW FROM CALIFORNIA TRAIL - Proposed Project (shown without clouds)

VIEW FROM CANY(OMERELLE, IDAHO

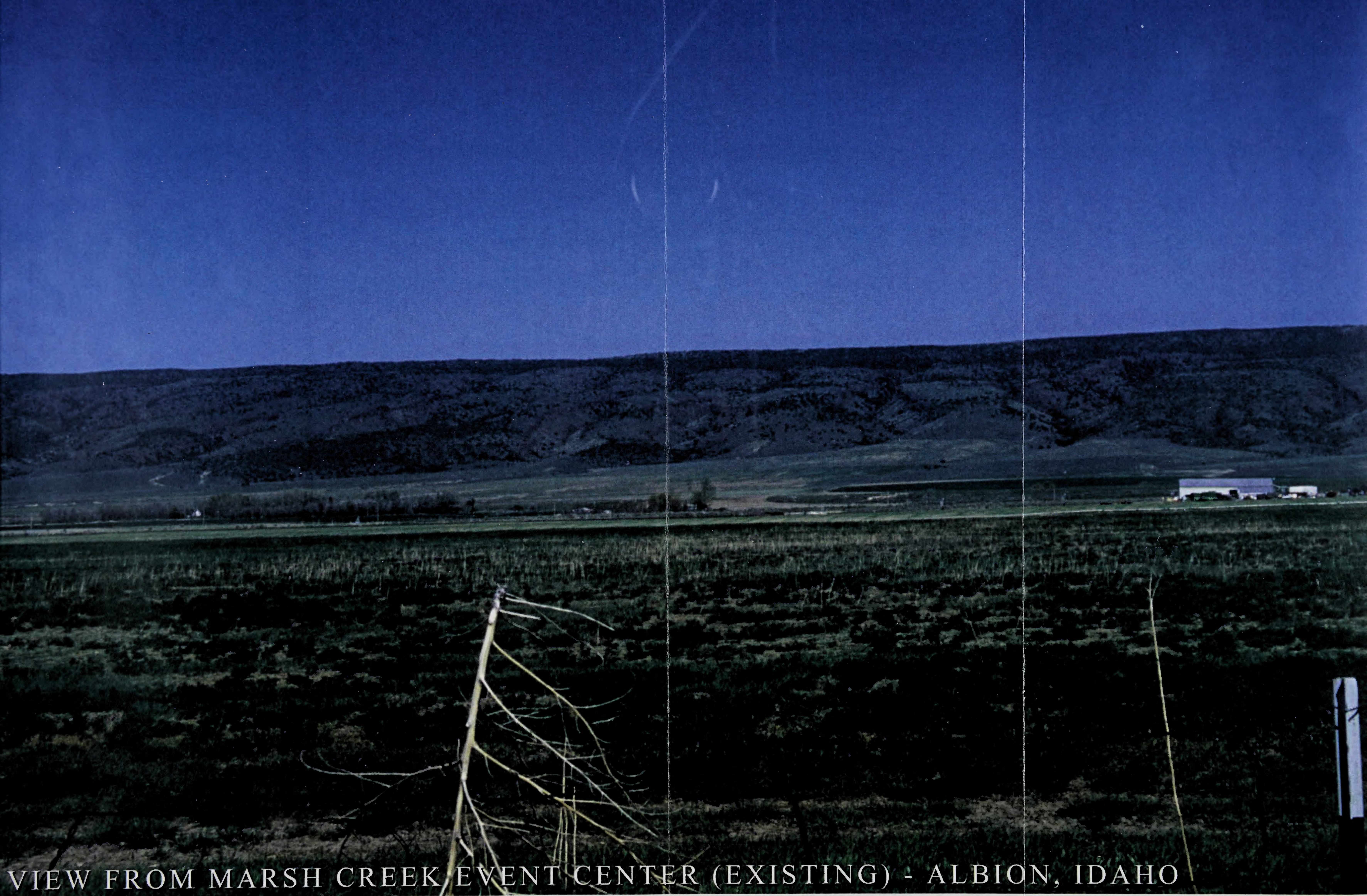
VIEW FROM CANYON ROAD OVERLOOK (EXISTING)- ROAD TO POMERELLE, IDAHO

VIEW FROM CANYC POMERELLE, IDAHO

VIEW FROM CANYON ROAD OVERLOOK (PROPOSED) - ROAD TO POMERELLE, IDAHO

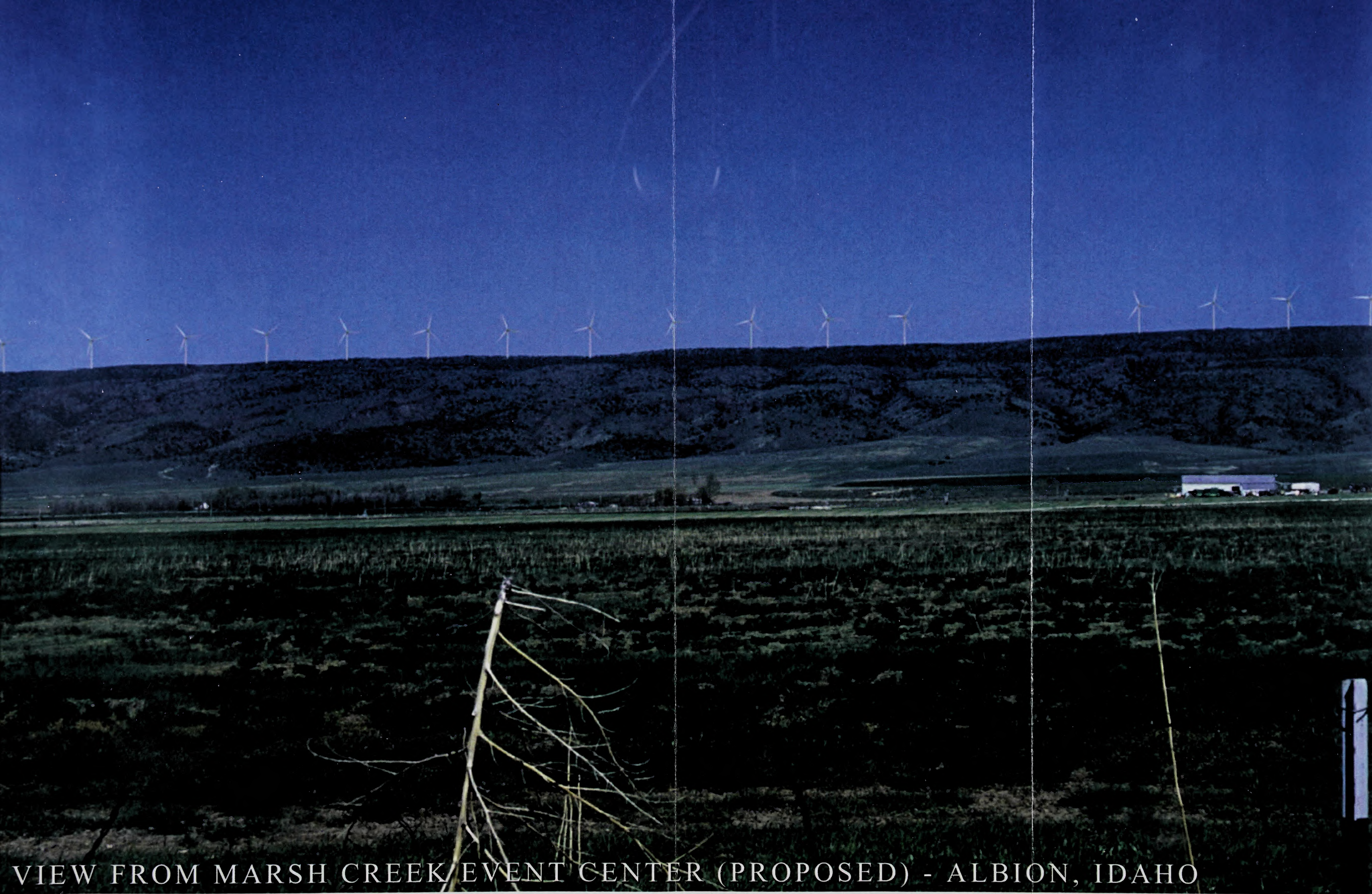


VIEW FROM MARSHN, IDAHO



VIEW FROM MARSH CREEK EVENT CENTER (EXISTING) - ALBION, IDAHO


VIEW FROM MARSDN, IDAHO



VIEW FROM MARSH CREEK EVENT CENTER (PROPOSED) - ALBION, IDAHO