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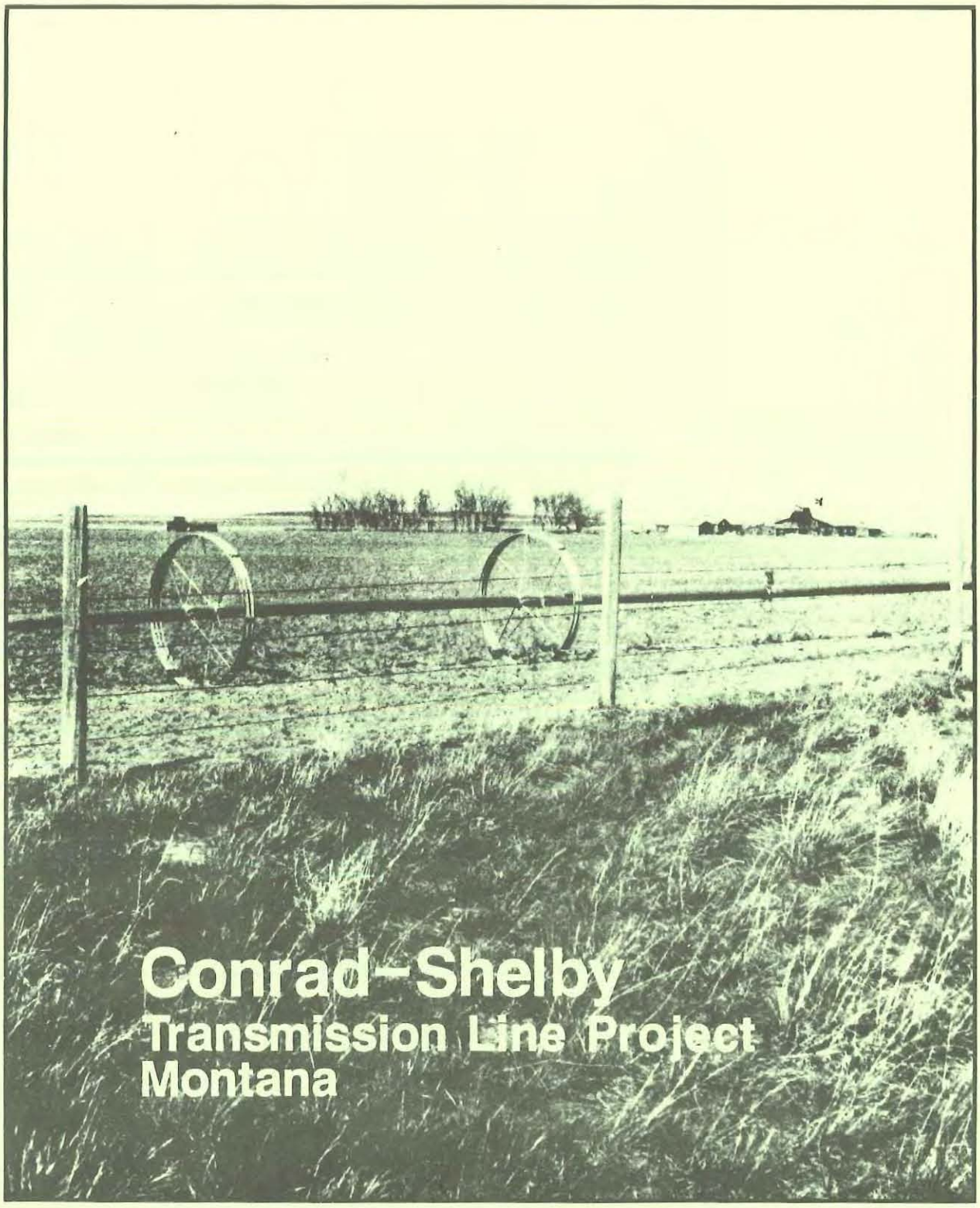

Conrad-Shelby
Transmission Line Project
Montana

Final Environmental Impact Statement

U.S. Department of Energy

1987

FINAL

ENVIRONMENTAL IMPACT STATEMENT

CONRAD–SHELBY
TRANSMISSION LINE PROJECT

US DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION

1987

FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS)

CONRAD–SHELBY TRANSMISSION LINE PROJECT

PONDERA & TOOLE COUNTIES, MONTANA

Lead Agency: U.S. Department of Energy, Western Area Power Administration

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ABSTRACT

The Western Area Power Administration (Western) proposes to construct, operate, and maintain approximately 29.8 miles of new 230–kV transmission line between Conrad and Shelby, Montana. The project also includes relocation of approximately 4.9 miles of the existing Havre–Shelby 115–kV transmission line, construction of a new 230/115–kV substation (Shelby No. 2) and construction of approximately 2.6 miles of new 115–kV transmission line to interconnect the proposed Shelby No. 2 and existing Shelby No. 1 substations. The project involves a total of approximately 36 miles of new transmission line. The area is presently served by a single transmission loop consisting of 115–kV and 161–kV facilities. This system is in urgent need of improvements to correct low voltages, overloaded facilities, and loss of service that has been experienced and which will worsen as loads grow in the area. The proposed action would provide improved service to area loads and system reliability, contribute to energy conservation, and provide additional flexibility for future expansion when and if it becomes necessary. Alternatives considered include no action, energy conservation, other generation sources, other transmission systems and technologies, and the proposed action with routing and design alternatives. Unavoidable adverse effects of the proposed action would be construction related impacts on land use, visual, and biological resources.

PREFACE

The Environmental Impact Statement (EIS) prepared for the Conrad–Shelby Transmission Line Project consists of the Draft Environmental Impact Statement (DEIS) (U.S. Department of Energy, 1986) and this document, the Final Environmental Impact Statement (FEIS). The two documents are intended to be reviewed together.

The DEIS, issued in November 1986, contains a statement of purpose and need for the proposed project, a discussion of the scoping process and project–related studies, a discussion of alternative actions, and an analysis of the affected environment and environmental consequences of the proposed action for routing alternatives studied. The DEIS underwent extensive public review by government agencies, organizations and individuals during an official comment period that included public hearings in the project area.

This document contains:

1. A comprehensive summary of the DEIS and FEIS.

2. A description of the public review process, comments from letters and hearings on the DEIS, and Western's responses to comments (Chapter I).

3. National Historic Preservation Act Consultation (Chapter II).

4. Corrections and revisions of data in the DEIS (Chapter III).

Copies of the FEIS have been sent to all agencies, organizations, and individuals listed in Chapter VI of the DEIS, and to all agencies, organizations, and individuals who have since requested copies.

TABLE OF CONTENTS

LIST OF TABLES

PAGE

LIST OF FIGURES

PAGE

SUMMARY

A. Introduction

The Western Area Power Administration (Western) is proposing to construct, operate, and maintain a 230–kV transmission line between Conrad and Shelby, Montana including a new 230/115–kV substation near Shelby, which would be interconnected with the existing Shelby 115/69–kV substation. This environmental impact statement (EIS) was prepared in compliance with the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations for the implementation of the procedural requirements of NEPA, the Department of Energy guidelines for compliance with NEPA, and other applicable legislation.

B. Need and Purpose

The electrical needs of the Cut Bank–Shelby area in north central Montana are presently served by a 115–kV transmission loop beginning at the Rainbow Substation near Great Falls and running northwest to Conrad and Cut Bank, and then east to Havre (Figure I–1, DEIS). A segment of 161–kV transmission line completes the loop to the Rainbow Substation. A portion of the loop receives support from the Great Falls–Conrad 230–kV transmission line. Subtransmission service in the Cut Bank–Shelby area is supported by a 69–kV system. Power simulation studies and operational experience have both demonstrated an urgent need for improvements to the 115–kV transmission system. Low voltages, overloaded facilities, and loss of load conditions presently occur with an outage of the Conrad–Cut Bank (Valier) 115–kV line, Havre–Rudyard 115–kV line, or Havre 161/115–kV transformer. In the future, system voltages and facility loadings will be unacceptable during both outage and system intact conditions.

The proposed action would: 1) provide improved service to area loads, 2) improve system reliability, 3) contribute to energy conservation, and 4) provide flexibility for future system expansion.

C. Alternatives Including the Proposed Action

The categories of alternatives considered for meeting the stated need are no action, energy conservation, other generation sources, other existing or planned systems, other technologies, other ac overhead systems, and the proposed action with routing and design alternatives.

In this EIS, the no action alternative has been interpreted to mean that no new transmission or generation facilities would be constructed by Western between Conrad and Shelby. The consequences of the no action alternative would be: 1) during an outage of the Havre–Rudyard or Conrad–Valier segments of the 115–kV loop, loads in the Cut Bank–Shelby area would experience low voltage, overload, and loss–of–load conditions,

and 2) the existing 115–kV line would not be able to support area electrical loads under system intact conditions as early as 1990.

In order to deal with these adverse effects, the local utilities could be forced to undertake selective load curtailments, rolling black–outs, planned voltage reductions, and/or refuse to service new loads. These measures are considered to be unacceptable in terms of normal utility practices.

Western encourages energy conservation, which refers to the elimination of wasteful or unnecessary uses of energy and has the advantage of reducing energy consumption with no documented adverse environmental impacts. While conservation measures employed by Western and its customers will result in some energy savings and reduction in loads, they will not reduce area loads or area load growth in amounts sufficient to eliminate the need for the proposed line between Conrad and Shelby.

Consideration was given to the potential for new electrical generation in the region as an alternative to the proposed action. Generation of electricity for the area is adequate, but reliable delivery is limited by the existing transmission system. Hence, new generation is not a viable alternative.

Another alternative for meeting the stated need would be for Western to transfer energy from Conrad to Shelby using other existing or planned transmission systems. Western presently has contractual rights to use transmission capacity available on certain lines owned by other utilities in the project area. However, some of these facilities are loaded to or above capacity under present system conditions and can no longer provide adequate, reliable service to area loads during peak system intact or outage conditions. None of the other area utilities plan to construct any additional high voltage lines to correct this problem. Therefore, there are no existing or planned transmission facilities owned by other utilities which could meet the stated need for Western's system.

A direct current (dc) transmission system was considered as a possible alternative to an alternating current (ac) system, but a dc system with the power transfer capability of a 230–kV ac line would cost approximately two to three times as much as an ac line, with no apparent environmental benefits. Underground systems were also evaluated but eliminated because of technical complications, economic and environmental costs, and accessibility, although some aesthetic impacts would be avoided. No other method is presently available for the economical bulk–power transmission of electric energy from a generating source to load centers.

Overhead ac systems other than the proposed action were also considered. These included: 1) capacitor additions at Shelby–Cut Bank, 2) a Conrad–Cut Bank 230–kV line, and 3) a Havre–Shelby 230–kV line. A comparison of these options to the proposed action indicated that the proposed action offered the best combination of costs, savings in transmission line losses, and provision of a third transmission source to area loads.

After investigating the above alternatives, Western concluded that the most reasonable alternative for meeting the stated need and purpose would be a new overhead ac line constructed between Conrad and Shelby. Design alternatives for voltage, structures, and conductor were considered. Results of design–alternative evaluations are incorporated in the following description of the proposed action and routing alternatives.

D. Proposed Action

Western proposes to construct, operate, and maintain a single–circuit overhead 230–kV transmission line between Conrad and Shelby, and local reroutes of existing 115–kV transmission lines. The proposed project would consist of the construction of about 29.8 miles of new 230–kV transmission line on single–pole steel or concrete structures between Western's newly completed Conrad 230/115–kV substation and a new Shelby 230/115–kV substation (Shelby No. 2). The proposed Shelby substation would be built on approximately 5 acres of land about 2.5 miles south of the existing Shelby substation (Shelby No. 1). About 4.9 miles of the existing Havre–Shelby 115–kV Transmission Line would be removed where it passes through or near the Toole County Fairgrounds, and several residences and/or businesses. It would be replaced by about 3.5 miles of new transmission line constructed to 230–kV standards and terminated in the new Shelby substation. The existing and new Shelby substations would be interconnected by about 2.6 miles of new single–pole 115–kV transmission line. Glacier Electric Cooperative would probably reroute its Cut Bank–Shelby 115–kV transmission line from the existing Shelby substation to the new substation. Environmental impacts associated with this reroute would be studied and mitigated by Glacier Electric Cooperative. The single–pole structures would be 65 feet to 125 feet tall, and span lengths would be from 700 feet to 1,200 feet. The conductor would be a nonspecular type to reduce light reflection. Use of single–pole structures, along with routing of the lines along field boundaries would help to minimize disturbance to agricultural land in the rural project area.

Construction of the proposed project is scheduled to begin in October 1987 and the system is expected to be operating in December 1988. The anticipated useful life of the project is defined as 100 years.

E. Alternative Corridor and Substation Comparison

The siting and impact assessment of the Conrad to Shelby 230–kV Transmission Line Project was accomplished through a rigorous, systematic process involving six major phases: 1) determining the scope of the environmental studies and assessments to be conducted, 2) conducting resource sensitivity analyses to identify opportunities and constraints to transmission line siting, 3) selecting alternative corridors and substation sites for detailed study, 4) assessing the potential impact of constructing and operating the project at each alternative location and methods for avoiding or reducing those impacts, 5) identifying the "least impact" location and selecting a proposed or "preferred" route for the project, and 6) preparing the EIS for review and obtaining other required environmental reviews and approvals.

Environmental studies including regional–scale and corridor–scale studies were conducted for several alternative transmission line routes between Conrad and Shelby and for substation sites south of Shelby. The principal studies, through which the environmental baseline for impact assessment and mitigation planning was developed, inventoried existing conditions for land use, agricultural, visual, and socioeconomic resources in the human environment; archaeological, historic, and Native American resources in the cultural environment; and air, geologic, paleontologic, hydrologic, soils, vegetation, and wildlife resources in the natural environment. In addition, studies were

also conducted to analyze potential electrical, biological, health, and safety effects from the proposed project.

An extensive public involvement program was conducted which began early in the planning process with scoping meetings and agency contacts to provide information on the proposed project and to solicit early input regarding environmental issues. Further public workshops were held to obtain data for the environmental studies and solicit input on alternative routes and substation sites, including refinement to the "least impact" alternative.

F. Public Involvement And Review Process

An extensive program was conducted early in the planning process to provide information on the proposed project to agencies, groups and individuals; solicit input and obtain data for the environmental studies; identify issues and concerns about the project; and obtain input on the alternative routes and substation sites, including refinements to "least impact" alternatives.

The public review process for the DEIS consisted of soliciting comments from approximately 90 government agencies, institutions, organizations, and individuals to whom the document was sent. Comments were received in the form of letters and remarks made during the public hearings conducted by Western in Conrad and Shelby, Montana.

In response, 14 letters were received commenting on the DEIS. One person presented oral comments for the record at the public hearings. Responses to specific comments are provided in Chapter I of this FEIS.

G. Affected Environment

1. Human Environment

The majority of lands within the study area are in private ownership. Publicly owned lands fall under the jurisdiction of the U.S. Bureau of Land Management (BLM), the Montana Department of State Lands, and Pondera and Toole counties.

The predominant land use in the study area is agriculture. This part of north–central Montana is generally included in the area known as the "Golden Triangle" due to the rich agricultural productivity of the region.

Approximately 50 percent of the agricultural lands within the study area are nonirrigated croplands comprised primarily of wheat and barley fields. Irrigated lands producing similar crops comprise 20 to 25 percent of the study area, primarily in Pondera county. On irrigated cropland, the trend is toward center pivot or wheel–type sprinkler systems, while flood irrigation occurs mainly near rivers and drainages. The remainder of the study area is in range or undeveloped lands associated with steep slopes along drainages.

Urban areas within the study area include Conrad and Shelby. Oil and gas wells are dispersed. Military facilities associated with the U.S. Air Force's ICBM Minuteman missile system also occur within the study area.

No class A (outstanding) scenic quality areas occur in the study area. Landscapes are predominantly class C, representing landscapes common to the area. The Marias River corridor is designated class B (above average) scenery. Residential, highway, and recreation foreground (0 – 1/4 mile) views occupy 20 to 30 percent of the study area.

2. Cultural Environment

There are no known archaeological sites in the study area which are listed in or eligible for the National Register of Historic Places (NRHP). One historic site, the Conrad City Hall, is listed on the NRHP. The intensive survey of the environmentally preferred corridor and access road easements, and the visual impact survey adjacent to the corridor, identified 21 sites including 1 that was previously recorded. These resources include 13 prehistoric (9 stone circle(s), 2 stone circle/stone alignment, 2 stone circle/cairn), 7 historic (6 homesteads, 1 historic trash dump), and 1 historic/prehistoric (historic trash scatter and prehistoric biface). Additional information regarding cultural resources consultation and eligibility determinations may be found on page II–1 of this FEIS.

3. Natural Environment

The project study area in north–central Montana is characterized by cold winters and warm summers. The mean minimum January temperature is about 6 °F, and the mean maximum July temperature is 82 °F in Shelby. Mean annual precipitation averages 12 to 13 inches, with 60 percent of total rainfall occurring between May and August.

The study area lies along the western edge of the Great Plains Physiographic Province. Area seismicity damage–risk is classified as moderate. The only bedrock unit exposed in the study area is the Kevin Shale Member of the Marias River Formation. The Kevin Member is overlain by glacial till which ranges in composition from clays to pebbles, cobbles, and boulders in a sand and silt matrix. There are seven soil map units delineated within the study area. Three of these map units have associated erosion potential, reclamation sensitivity, and engineering constraint problems. Slumping potential exists in areas of steep slopes along well–incised drainages (coulees). Although fossiliferous strata occur within the study area, the potential for significant paleontological resources is low.

The study area lies within the Marias River Basin, a subbasin of the Missouri River Basin, and is drained by the Marias and Dry Fork of the Marias Rivers which are fed by numerous small coulees. Streamflows exhibit dramatic seasonal fluctuations and ice jams exert significant control over flow in the Marias River. Surface water quality is good. Ground water from deeper formations is highly mineralized but alluvial deposits are important sources of good quality ground water.

The vegetative communities present within the study area are prairie, shrublands, breaks, cropland, and riparian. Most of the natural vegetation is prairie although the majority of the upland prairie communities have been plowed and converted to cropland. Two main noxious weed species, spotted knapweed and leafy spurge, have been identified as needing control in the study area. Although the possibility exists that federal– or state–protected plant species may occur, none have been identified.

Cropland, grassland, wetland, and riparian are the four wildlife habitat types occurring within the study area. Big game species are mule deer, white–tailed deer, and pronghorn antelope. Upland game birds include pheasant, partridge, and grouse and waterfowl include geese and ducks. Three species listed as endangered by the U.S. Fish and Wildlife Service (USFWS) may occur in the study area. The peregrine falcon and bald eagle are potential migrants through the area. The black–footed ferret is a potential resident of prairie dog towns.

Significant floodplains occur in the major drainages (Marias and Dry Fork of the Marias Rivers) as do riverine wetland systems. Palustrine wetlands in the study area include marshes and wet meadows, potholes and mudflats, sloughs and river overflows, and seasonal natural ponds, springs, and seeps. Notably missing are lacustrine systems (bodies of water larger than 20 acres).

H. Environmental Consequences

1. Impact Assessment/Mitigation Planning Process

Environmental consequences from the proposed action and alternatives are the residual impacts derived through a process that first identified, and subsequently evaluated and integrated, initial impacts and appropriate mitigation measures. The process involved assessing impacts by: 1) comparing the proposed project with the pre–project environment, 2) determining mitigation that would avoid, effectively reduce, or eliminate impacts, and 3) identifying "residual" impacts, or impacts remaining after the application of mitigation.

Study area–specific impact types and levels as well as mitigation measures were first identified for each resource. Impacts were then evaluated using "reference centerline" routes which were located within each of the identified alternative corridors such that they occupied the least environmentally sensitive areas. Initial and residual impacts were established on a resource by resource basis for each of the alternative routes. Routes were then compared to identify the "environmentally preferred route".

2. Impacts to the Human Environment

Land use concerns expressed by Pondera and Toole counties, interested agencies, and the public during the project scoping process included potential effects on agricultural practices, interference with aviation and military communication facilities, potential for closely paralleling other linear features such as roads, and possibilities for following section lines and field boundaries.

Within the study area, potentially high and high–to–moderate impacts were assigned for the following situations:

* Agricultural areas where the project: 1) follows field edges of a sprinkler–irrigated field, 2) crosses flood–irrigated fields in any location, 3) crosses potentially irrigable land on a diagonal, or 4) where guyed angle towers would be located within cultivated fields. High impacts considered to be unacceptable would result from mid–field or diagonal crossing of sprinkler–irrigated fields.

* Urban and residential areas where the project would create a conflict with expansion of residential uses, or cause a direct conflict with commercial, industrial, or transportation uses.

Moderate–to–high or moderate impact levels were assigned for situations where:

* The line would cross nonirrigated cropland along field edges, mid–field, or diagonally.

* The line would follow field edges of potentially irrigable land.

* A conflict with expansion of commercial and industrial facilities would result.

Low impacts were assigned to rangeland locations, taking into consideration the potential for noxious weed establishment in areas disturbed by construction activities.

The most significant potential land use impacts occurring along the alternative routes are physical conflicts with present and future agricultural activities and removal of cropland from production. Long–term impacts to agricultural resources would be interference with cultivation and weed–control operations around transmission towers, interference with sprinkler irrigation equipment, and potential conflicts with aerial applications.

Western also considered the effects of the proposed project on prime farmlands. There were no maps available showing prime farmland in Toole and Pondera Counties. The only data available was a list of soil types in Glacier and a portion of Pondera Counties that if irrigated would qualify as prime farmland. Within the project study area, soil types are such that irrigation is required to be considered prime farmland. There is no nonirrigated prime farmland in the study area.

For purposes of alternative corridor selection, irrigated farmland was used as an approximation for prime farmland. Thus, on the Generalized Constraint Areas and Land Use maps (Figures II–8 and III–1) in the DEIS, the irrigated cropland illustrated was also considered prime farmland. It should be noted, that the maps of irrigated farmland include a significant portion of non–prime farmland. The proposed route crosses one–half mile of prime farmland and impacts to the resource would be minimized by spanning those fields. Sprinkler irrigated farmland was assigned the highest levels of sensitivity to transmission line routing and therefore, by extension, so were prime farmlands. The proposed route had the least potential impact to irrigated/prime farmland of all of the alternatives considered.

The socioeconomic impact assessment focused on issues, concerns, and questions raised by landowners, elected officials, and agency representatives in the study area in meetings and conversations conducted as part of the environmental study process. Such comments are taken to be representative of the social and economic issues that are important to local people in relation to this project. These issues were evaluated in light of project construction and operation requirements in order to determine potential effects on community economies and social structures.

Benefits of the project to local residents would include increased confidence in the reliability of electric service delivery, and decreased costs associated with equipment failures (e.g. water pumps, irrigation systems, residential heating systems). Effects on the local economies of Conrad and Shelby are considered positive. These effects are short-term, lasting only through the construction period. Negative effects include impacts to individual landowners, and to a minor degree, effects on the local tax base. There would be very minor effects on the tax base of Pondera and Toole counties resulting from removal of land from the tax base for the substation facilities. The project would cause localized reductions in productivity by impeding current agricultural practices of affected landowners but regional productivity would not be affected.

Visual impacts were considered to be adverse, direct, and long-term. Typical impacts included those affecting the quality of any scenic resource; the view from any residential, commercial, institutional, or other visually sensitive land use; the view from any established or planned park, recreation, or preservation areas; and visual contrast resulting from conflicting tower types and/or materials.

Visual intrusion of the transmission line would continue throughout the life of the proposed project. Nonspecular (non-shiny) conductors would be used for the proposed project, reducing conductor visibility as much as possible. Structures would be placed in a manner which allows sensitive features to be avoided or spanned, wherever possible. These mitigation measures can reduce site-specific visual impacts to some degree, but would not effectively reduce initial impacts to lower levels (i.e., high impacts would not be reduced to moderate).

3. Impacts to the Cultural Environment

Impacts to archaeological resources, which are nonrenewable, would be adverse and permanent. Construction and operation activities could result in impact types affecting: archaeological resources physically and/or visually; sites or districts eligible for inclusion in the National Register of Historic Places (NRHP); or sites or areas identified as having special archaeological value. Impact levels were probability levels determined by a predictive model.

Types of impacts to historical resources were identified as direct physical impacts resulting from construction-related activities; indirect physical impacts resulting from increased access; and visual impacts created by the presence of towers and lines during the life of the project.

Three types of impacts to Native American cultural resources were assessed: physical, visual, and aural. No specific identification of Native American cultural resources are disclosed in this document because of Native American concerns for the sacred nature of many sites, and the desire to protect the resources.

4. Impacts to the Natural Environment

Primary types of impacts on air resources are increased total suspended particulate (TSP) levels from construction activities and increased emission of nitrogen oxide, hydrocarbons, carbon monoxide, and sulfur dioxide from construction and maintenance vehicles. Dust impacts could result from grading tower sites and access trails, clearing of brush and tree debris, and from vehicle movement during construction.

Air resource impacts anticipated during construction and maintenance of the proposed transmission line are highly transient in nature and of a very short duration. The impacts are therefore considered to be low in magnitude and should not prevent the maintenance of air quality standards.

The principle geologic and hydrologic environmental impacts and construction constraints assessed for the proposed project were: 1) potential slope failure (slumping) on and adjacent to steep slopes, 2) soil erosion on steep slopes, and 3) construction of structure foundations in unconsolidated deposits (alluvium and colluvium), areas with high water tables, and areas subject to periodic flooding. Potential soil related hazards were determined to be water erosion, wind erosion, compaction sensitivity, reclamation sensitivity, and engineering constraints. Spanning or rerouting to avoid sensitive features and upgrading tower foundations to insure stability in areas of soft subsurface conditions, high water tables, or flooding potential would effectively reduce environmental impacts and overcome construction constraints.

The proposed transmission line traverses floodplains along the Marias and Dry Fork of the Marias Rivers and Pondera Coulee. These waterways cross the study area in a generally west to east direction, making a crossing by the north-south transmission line inevitable. Potential impacts to these floodplains would be minimized by careful routing and structure placement. The Pondera Coulee floodplain would be spanned. Only one structure would be sited in the Dry Fork of the Marias River floodplain. The Marias River floodplain is fairly extensive and would require five structures. The structures are about three feet in diameter at the base. There would be no impacts on flood heights or flows and the line would be designed to withstand all reasonably anticipated structural loads. Western has determined that no practicable alternative to locating in a floodplain is available, consistent with the policy set forth in Executive Order 11988. The action conforms to applicable State and local floodplain protection standards. The proposed project would not result in any wetland losses.

Typical impacts to biological resources include any impact that affects any officially classified threatened or endangered species or critical habitat; affects any relatively undisturbed, rare or unique vegetation types, species or communities; creates a barrier to the migration or movement of any wildlife species; alters the diversity of biotic communities or populations of plants or animal species; affects important habitat, or areas of low revegetation potential; or decreases potential for wildlife.

Unmitigable high impact levels to vegetation were not encountered in the study area owing to the lack of large, critically sensitive areas of vegetation. No unique, threatened, or endangered plant species has been identified. The wetlands associated with lakes, marshes, and streams are small and easily avoided by careful routing. Many small potholes and surface depressions which could support wetlands vegetation have been altered by agricultural practices (plowing, ditching, and irrigation), and others are grazed by livestock.

Short–term impacts to wildlife occur during the construction phase. They include disturbance of animals by noise and the presence of humans as well as temporary loss of habitat owing to construction activities. Long–term impacts are those that result from the long–term presence of the transmission line. They include loss of birds from collisions with structures and wires as well as permanent loss or alteration of habitat owing to construction of the line.

The removal of grassland and cropland wildlife habitat for structure sites would not result in significant long–term biological impacts. The transmission lines in the area around the proposed Shelby substation would present a potential collision hazard for migratory waterfowl which use seasonal wetlands in that area.

I. Electrical Effects

The electrical effects considered were those resulting from corona and electric fields. Corona is the electrical breakdown of the air into charged particles. Effects of corona, which are greatest during wet weather, include audible noise, visible light, photochemical oxidants, and radio and television interference. No significant adverse effects from audible noise, visible light, or photochemical oxidants are anticipated. Impacts from radio and television interference, if they occur, are expected to be minimal and would be mitigated by Western.

Field effects from electrical and magnetic fields created by the proposed transmission line include induced currents and voltages. Although there are no Federal standards for electrical fields from transmission lines, maximum field strengths of the proposed transmission line would be within the recommended limits set by states (including Montana) that have established such limits. Also, the induced short–circuit current to the largest anticipated vehicle under the proposed line would be less than the National Electric Safety Code criterion of 5 mA.

Primary shocks from steady–state current would not be possible from the induced currents because of the relatively low field strengths and grounding practices of Western. Secondary shocks are not likely to occur very often; when they do, they would represent a nuisance rather than a hazard. Spark discharges from induced voltages could occur on objects inadequately grounded under the proposed line; however, shock of this type would be rare.

Whether long–term direct exposure to electric fields from transmission lines causes biological or health effects in humans is controversial. Research results are contradictory and inconclusive. The electric–field levels of the proposed line would be less than levels at which effects have been reported and below the perception levels for humans. No adverse health or biological effects are anticipated.

Adverse electrical effects on agriculture are not anticipated because the electrical fields from the proposed transmission line would be well below levels where most effects have been observed on honeybees or crops. Where honeybee hives are located in proximity to conductor low points, Western will work with beekeepers to avoid any adverse affects.

Magnetically induced currents and voltages from the proposed transmission line would be minimized because of grounding practices of Western and available mitigating techniques that would be applied. It is highly unlikely that exposures to the magnetic fields from the proposed line would have adverse biological or health effects because of the low levels generated, which are equal to or less than those of appliances in the home. Reversion of pacemakers is the most substantial effect noted to wearers of pacemakers and is not considered a serious problem. To date, no evidence has been found that magnetic fields generated by transmission lines have caused a serious problem to the wearer of a pacemaker (Appendix D of the DEIS).

J. Environmentally Preferred Route

The least potential impact or "environmentally preferred" route was identified through an assessment of the environmental data and public input. Included in the preferred route selection was a review of the impact characterizations, significant unavoidable adverse impacts, individual routing preferences, and agency/public comments regarding the locations and cumulative environmental consequences of each alternative route.

The preferred route is approximately 36 miles long. It proceeds north out of the Conrad substation, east for approximately 6 miles, and then north for approximately 23 miles to the proposed Shelby substation site. The connection to the existing Havre–Shelby line is approximately 3.5 miles to the east, and the 115–kV connection to the existing Shelby substation is approximately 2.6 miles to the north.

Summaries of the environmental data compiled and comparisons made for the alternative routes between Conrad and Shelby are presented in Table II–9 and Table II–11 of the DEIS. A summary of assessment criteria, corridor selection issues and impact assessment issues is presented in Table II–6 of the DEIS.

The locations of the alternative corridors and routes, and the Shelby substation siting area are shown in Figure II–9 (DEIS). The environmentally preferred corridor is also shown in Figure II–10 (DEIS).

Based on the corridor selection process and adjustments resulting from public comment, no significant unavoidable adverse impacts would remain for earth resources, floodplains and wetlands, or park, preservation, and recreation land use resources. Remaining significant unavoidable adverse impacts were identified for land use, visual, biological, and cultural resources.

1. Land Use

The construction and operation of the proposed line would remove approximately 0.43 acre of cropland from production for the life of the project. The new Shelby substation site would remove 5 acres of non–irrigated cropland from production. An additional impact zone of unknown extent would exist in the vicinity of the new Shelby substation because of the convergence of new lines into the substation.

2. Visual Resources

Visual impacts would occur along the proposed transmission line corridor where 24 residences are located within 0.5 mile of the preferred route and at the proposed Shelby substation where one residence is located within 0.5 mile of the proposed site. Visual impacts would also occur where the preferred route crosses I–15 and Sollid Road south and east of Conrad, and where the preferred route is in the foreground of I–15 south of Shelby.

3. Biological Resources

Moderate impacts have been identified for a potential waterfowl collision zone where the proposed new Shelby substation and associated connecting lines would present a direct long–term and adverse collision hazard for migratory waterfowl which use the seasonal wetlands of the area. The level of collision hazard cannot be accurately quantified. Given that the water occurring within potholes and depressions in this zone is of a transitory nature (present during portions of an estimated 4 years out of ten) and localized extent, the presence of the proposed substation and associated lines could impact individuals within a species but would not be expected to have a significant overall adverse affect upon any given species.

4. Cultural Resources

Although there is potential for significant impacts to archaeological and historic resources, unavoidable adverse impacts cannot be identified until the results of the intensive cultural resources survey are assessed and consultation for eligibility and effect between Western and the SHPO is completed. Western is conferring with the SHPO to determine procedures for mitigation of adverse impacts to significant cultural resources. Additional information regarding cultural resources consultation and eligibility determinations may be found on page II–1 of this FEIS.

I. PUBLIC COMMENTS AND RESPONSES

A. Introduction

This chapter describes the public review process for the Draft Environmental Impact Statement (DEIS) for the Conrad–Shelby Transmission Line Project. Public comments were solicited from agencies, organizations, and individuals, and were received in the form of letters and statements at public hearings. Table I–1 provides an index to comments and responses.

B. Public Review Process

The Environmental Protection Agency (EPA) published a Notice of Availability of the DEIS on November 14, 1986. Western distributed press releases to all news media in its marketing area in Montana and published a notice of the filing, and dates and locations of public hearings in local newspapers in the project area during the week preceeding the public hearings. Letters announcing the availability of the DEIS and public hearings schedule were mailed to affected landowners and others in the project study area. The public comment period ended on December 29, 1986.

Copies of the DEIS were sent to approximately 90 Federal, state, and local government agencies, institutions, organizations, and individuals for review and comment. In response, a total of 14 letters were received by Western, and are reproduced with Western's responses in Table I–2 of this document.

Western reviewed and carefully considered all comments, and responded to those substantive comments that presented new data, questioned findings or analyses, or raised questions or issues relevant to the potential environmental impacts of the proposed project and alternatives, as required by the National Environmental Policy Act and related regulations.

Formal public hearings on the DEIS, at which one person presented an oral comment for the record (Table I–3, this document), were conducted by Western in Conrad and Shelby, Montana, on December 10 and 11, 1986. Hearing transcripts are available for review at the following locations:

Western Area Power Administration
Billings Area Office
2525 4th Avenue North
Billings, MT 59101

Western Area Power Administration
Office of Environmental Affairs
1627 Cole Boulevard
Golden, CO 80401

TABLE I–1. INDEX TO PUBLIC COMMENTS

TABLE I–2. COMPLETE LETTERS AND RESPONSES

1

United States Department of Agriculture
Soil Conservation Service
Federal Building, Room 443
10 East Babcock Street
Bozeman, MT 59715

December 9, 1986

Mr. James D. Davies, Area Manager
Western Area Power Administration
Billings Area Office
P.O. Box EGY
Billings, MT 59101

Dear Mr. Davies,

A We have reviewed the draft EIS, for the Conrad-Shelby Transmission Line Project and have no comments to offer.

Sincerely,

GLEN H. LOOMIS
State Conservationist

cc: Ron Batchelor

A Comment noted.

DEC 11 '86

B3200 Geog file

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

2

United States Department of the Interior

BUREAU OF MINES

WESTERN FIELD OPERATIONS CENTER
EAST 360 3RD AVENUE
SPOKANE, WASHINGTON 99202

November 21, 1986

NOV 24 '86

B220

Mr. James D. Davis
Area Manager
Western Area Power Administration
Attention: B2000
P.O. Box EGY
Billings, Montana 59101

Dear Mr. Davis:

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE CONRAD-SHELBY TRANSMISSION LINE PROJECT, MONTANA, DOE/EIS-0124-D

A The subject draft document with cover letter from your office was forwarded to this office from the U.S. Bureau of Mines' Intermountain Field Operations Center in Denver. We have reviewed the Draft Environmental Impact Statement for Western Area Power Administration's proposed Conrad-Shelby 230-kV Transmission Line Project, and we do not anticipate any adverse impacts of the project to the area's mineral resources.

For your future information, this office has the responsibility of reviewing environmental impact statements for the states of Montana, Idaho, Nevada, Oregon, Washington, California, and Hawaii.

Sincerely,

D'Arcy P. Banister, Supervisor
Minerals Involvement Section
Branch of Engineering Studies

A Comment noted.

I-4

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

3

United States Department of the Interior

OFFICE OF ENVIRONMENTAL PROJECT REVIEW
DENVER FEDERAL CENTER, BUILDING 67, ROOM 188
P.O. BOX 25007
DENVER, COLORADO 80225-0007

TAKE PRIDE IN AMERICA

December 24, 1986

ER 86/1383

Mr. James D. Davies, Area Manager
Billings Area Office
P.O. Box EGY
Billings, MT 59101

Dear Mr. Davies:

The Department of the Interior has reviewed the Draft Environmental Impact Statement for the proposed Conrad-Shelby 230-kV Transmission Line Project, Pondera and Toole Counties, Montana, and offers the following comments.

Fish and Wildlife Resources

A We agree with the report's assessment (Page IV-41) that the Shelby substation and connecting lines present a direct long-term and adverse collision hazard for migratory waterfowl and is a significant unavoidable adverse impact of the project. This impact results from the presence of temporary and seasonal wetlands, some of which are covered by Fish and Wildlife Service wetland easements. (These wetlands serve as feeding and resting habitat for waterfowl and other migratory birds during the spring and fall migrations.) We disagree with statements in the report that the seasonal disappearance of these wetlands lessens the impact or the significance of losses to migratory bird populations. As stated on Page IV-27, "Potential impacts are evaluated as moderate because no larger permanent bodies of water occur within the area." The significance of the impact will depend on the number of birds using the area during the migrational period and the probability of strikes occurring. The absence of further losses to breeding waterfowl is fortunate, but does not lessen the importance of loss of birds during migration, especially preceeding the breeding season. Although these wetlands are temporary in nature, and the migrational use is a short timeframe each spring and fall, there will be large numbers of birds involved, and thus the potential for significant losses due to collision is high.

B We note that Western Area Power Administration (WAPA) has not made a commitment to mitigate for losses due to anticipated bird strikes. We believe Table II-7 should contain a strong commitment to mitigate for these losses and that specific mitigation measures should be presented which would show how waterfowl production to offset losses caused by the project (or other effective mitigation) will be accomplished.

Required mitigation for losses incurred could involve either of the following: (1) the re-establishment of drained or destroyed wetlands in areas away from the project site that have permanent sources of water, or (2) habitat improvements, such as nesting structures or water management structures at existing wetlands, also at locations removed from the project corridor. We recommend you contact personnel from the Benton Lake National Wildlife Refuge to discuss specific proposals.

A The DEIS does not state that "the seasonal disappearance of these wetlands lessens the impact or the significance of losses to migratory bird populations". While the seasonality (an event occurring within a single year) of these wetlands was considered during the impact assessment, more importance was placed upon the probability that water is only present during portions of an estimated 4 years out of ten (40 percent of the time) as stated on pages xi, IV–27, and IV–41 of the DEIS. The fact that in six years out of ten no water is present in these depressions means that migrating waterfowl will not use them during 60 percent of the migrating, breeding, and wintering seasons. The waterfowl collision hazard will therefore be lowered by 60% relative to that which would occur if water was present 10 years out of 10. In years when water is present, impacts will also be reduced as a result of these areas being cultivated and planted to grains as described on pages III–23 and III–29. The impact will depend on the number of birds using the area and the probability of strikes occurring. The fact that these are small isolated, intermittent wetlands with no large permanent bodies of water nearby, and lacking significant natural vegetation, reduces their potential to support large numbers of migratory birds. Even in wet years, it is doubtful that the ponds support large numbers of migratory waterfowl.

B Western will mitigate impacts resulting from the proposed transmission line where they can be identified and reasonable means exist to mitigate. A long term monitoring program, for accurately predicting the number of collisions which could occur is not warranted for the following reasons: 1) Studies done by Faanes (1983) and others as well as the assessment performed for this project, indicate that the waterfowl mortality rate in the area of the proposed Shelby substation would not be biologically significant; 2) The DFWP has indicated that the potential for significant impacts to migratory waterfowl is low (see DFWP comments below); and 3) the cost of such a study would be prohibitive in terms of the anticipated benefits. Western is willing to consider other recommendations for accurately determining impacts to birds. In addition, Western will initiate

I-5

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

3

Mr. James D. Davies 2

C The report repeats the idea that these wetlands are "potholes," without wetland vegetation and year-round water (Page III-29). In fact, they are wetlands, by definition, and their seasonality is part of their productivity and value to migratory waterfowl.

Threatened/Endangered Species

D We have no additional substantive comments, since our previous comments have been incorporated and informal consultation on potential impacts of the project on listed species is ongoing.

Indian Reservations

E The location of the proposed transmission line is nearly 20 miles east of the Blackfeet Indian Reservation and nearly 90 miles west of the Rocky Boy's Reservation. As such, this office does not believe any environmental impact will occur on either of the Indian Reservations.

It is apparent, however, that the electrical needs of Browning, Montana, which is on the Blackfeet Reservation, are served by the great Falls-Conrad-Cut Bank-Shelby-Havre-Great Falls transmission loop. If this loop in its present state has intermittent low voltage, overloaded facilities, and a possible loss of load condition under moderate to heavyloads, it appears advantageous to upgrade the system now. Future growth and increased electrical consumption will only increase the problem.

In this manner, unscheduled power outages can be minimized and the people on the Reservation as well as adjacent towns will all benefit.

Water Resources

F Assessment of the potential for impacts from the construction and use of the proposed Shelby No. 2 substation should include discussion of the cooling systems for transformers, circuit breakers, and switches. If liquid coolants are to be used, the statement should address the need to provide containment for leaks or spills of the cooling agents from the devices or from facilities for storing, processing, and handling the coolants, to protect ground-water quality.

Bureau of Reclamation Facilities

G The transmission corridors identified in the DEIS do not cross any Reclamation project lands. However, the proposed lines would cross the Marias River a short distance upstream of the headwaters of Lake Elwell, which is a Reclamation facility. Over the past decade, the Marias River Basin has had a severe noxious weed problem, especially with knapweed and leafy spurge. The weeds and their seeds are transported from the upper basin by the river and settle in the upper reaches of the reservoir. Here, they germinate and form hard to control stands in the fluctuating zone of the reservoir. The weed seeds are spread from this area by various means (livestock, wildlife, vehicles, etc.) into the surrounding rangeland and croplands. It has been estimated that the loss of livestock forage on Montana rangelands alone is approximately 4.5 million dollars as a result of the invasions of spotted knapweed. The Bureau of Reclamation has spent in excess of $100,000 controlling noxious weeds on the public lands surrounding Lake Elwell.

interagency consultation with DNRC, U.S. Fish and Wildlife Service (FWS) and Montana Department of Fish, Wildlife and Parks (DFWP) to determine a suitable means of mitigation, if significant evidence of waterfowl mortality due to collisions with the line is found.

C The statement on page III–29 does not exclude these potholes or depressions from a wetland classification. Under the system adopted by the U.S. Fish and Wildlife Service (Cowardin, 1979) these depressions are classified as wetlands in combination with the special modifier "farmed". The modifier "farmed" indicates that "the soil surface has been mechanically or physically altered for production of crops". This removal of natural wetland vegetation in company with the absence of water in most years reduces their productivity and value to migratory waterfowl.

D Western has submitted a biological assessment to the U.S. Fish and Wildlife Service with a determination that the proposed project would not jeopardize the continued existence of any listed threatened or endangered species nor result in the destruction or adverse modification of habitat critical to such species. Concurrence with that determination is expected. As part of its overall mitigation plan for the proposed project, Western would install aviation marker balls on the overhead groundwires at the Marias River crossing to reduce the possibility that migratory bald eagles and peregrine falcons could collide with the line in inclement weather, and avoid disturbance to a small prairie dog town to preclude harm to any black–footed ferrets that may inhabit the town. Based upon consultation with the U.S. Fish and Wildlife Service, Western was not required to conduct a black–footed ferret survey of the prairie dog town because it is very small (less than 11 acres), isolated from any other prairie dog towns, has been heavily impacted by eradication attempts by the landowners, is already susceptible to raptor predation, and all physical disturbance to the town would be avoided by the proposed project. Also see response I to the Montana Department of Natural Resources and Conservation comments.

E Comment noted.

F As a normal course of action, Western develops Spill Prevention, Control, and Countermeasure Plans as necessary for its substations. Any measures necessary to contain a potential spill at the Shelby No. 2 Substation will be implemented.

G Western's commitment to developing a weed control program and an indication of initial consultation was stated in Table II–7, on pages II–34 and III–23. Western has contacted the weed control officials in Pondera and Toole Counties and is developing a weed control program for the proposed project. Western will also coordinate with Marias River Basin Weed Control, Inc.

I – 6

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

3

Mr. James D. Davies 3

In recognition of the problems posed by noxious weeds, the Montana Legislature passed the County Noxious Weed Management Act which requires each county to prepare and implement a weed control plan. The act also listed the noxious weed species which were to receive emphasis in the control plans. Furthermore, the legislature passed the Montana Noxious Weed Trust Fund Act to assist the counties in funding their weed control programs.

Several years ago, the Marias Basin Weed Control, Incorporated was formed to address the weed problem, basinwide. This group is composed of representatives of four counties, state and federal agencies, the railroad, and private landowners. Because of the weed problems and the concerted effort being made to control them, we recommend that a noxious weed control program be developed by WAPA for their right-of-way and that it be included in the FEIS. To assist WAPA in developing a weed control program we suggest they contact: Ms. Kathy Aspevig, Coordinator, Marias River Basin Weed Control, Inc. 102 Second Street, S.E., Cutbank, Montana 59427, phane (406)434-5234.

Sincerely,

Robert F. Stewart
Regional Environmental Officer

I – 7

4

U.S. Department of Housing and Urban Development
Denver Regional Office, Region VIII
Executive Tower
1405 Curtis Street
Denver, Colorado 80202-2349

December 3, 1986

Mr. James D. Davies
Area Manager
Western Area Power Administration
P.O. Box EGY
Billings, MT 59101

Dear Mr. Davies:

This is in response to your November 4, 1986, letter requesting comments on the Draft Environmental Impact Statement (DEIS) for the Conrad-Shelby 230-KV Transmission Line Project in Pondera and Toole Counties, Montana.

A Your DEIS (preferred route) has been reviewed for the areas of responsibility assigned to the Department of Housing and Urban Development. This review considered the proposal's impacts on urbanized areas, and within these parameters, we find this document adequate for our purpose.

If we may be of further assistance, please contact Mr. Myron Eckberg, Environmental Specialist, at (303) 844-3102.

Sincerely,

Robert J. Matuschek
Director
Office of Community
Planning and Development

A Comment noted.

I–8

5 A

U.S. Department of Transportation
Federal Aviation Administration

Northwest Mountain Region
Colorado, Idaho, Montana, Oregon, Utah, Washington, Wyoming

17900 Pacific Highway South
C-68966
Seattle, Washington 98168

DEC 2 1986

Mr. James D. Davies, Area Manager
Western Area Power Administration
P.O. Box EGY
Billing, Montana 59101

Dear Mr. Davies:

A We have reviewed your draft environmental impact statement on the proposed Conrad-Shelby Transmission Line Project and do not foresee any impact on aviation or its activities.

B Please be advised of the Federal Aviation Regulation Part 77 requirement to file FAA Form 7460-1 before beginning construction.

Thank you for the opportunity to comment on your proposed project.

Sincerely,

Kenneth Thomasson
Acting Policy and Planning Officer

A Comment noted.

B Western is aware of this requirement and will file a FAA Form 7460–1 prior to beginning construction.

I–9

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

5 B

U.S. Department of Transportation
Federal Aviation Administration

Airports District Office
FAA Building, Room 2
Helena Regional Airport
Helena, Montana 59601

OFFICE DIE 1 87
NOV 26 '86
B2000

November 24, 1986

Mr. James D. Davies
Area Manager
Department of Energy
Western Area Power Administration
P. O. Box EGY
Billings, Montana 59101

Dear Mr. Davies:

Thank you for the opportunity to review the DEIS for the proposed Conrad-Shelby 230 kV Transmission Line Project, Montana DOE/EIS-0124-D.

A Our records do not indicate that the proposed development has been reviewed from an airspace perspective. We have enclosed a copy of FAA Form 7460-1, Notice of Proposed Construction. Planned development requiring filing is identified on the front page.

Please call me at (406) 449-5230 if you have any questions.

Sincerely,

Susan S. Alexander
Susan S. Alexander
Planning/Program Officer

1 Enclosure

See comment B above

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

6

United States Environmental Protection Agency
Region 8, Montana Office
Federal Building
301 S. Park, Drawer 10096
Helena, Montana 59626-0096

EPA

JAN 2 '87

REF: 8MO

December 20, 1986

B2000 B2E4 1/5/87

Mr. James D. Davies
Western Area Power Administration
Attention: B2000
P. O. Box EGY
Billings, Montana 59101

Dear Mr. Davies:

Under authority of Section 309 of the Clean Air Act we have reviewed your Agency's Draft Environmental Impact Statement (DEIS) for the Conrad-Shelby Transmission Line.

A The statement and attached maps indicate there will be minor encroachment or impact upon wetland areas. We request that efforts be made to minimize these impacts and that unavoidably lost wetlands will be mitigated.

B We do not believe the activities described in the DEIS will violate any EPA environmental standards. According to EPA's system for rating draft impact statements, this DEIS is rated LO (Lack of Objections).

If you have any questions or concerns, please call Dick Montgomery at 449-5486 in Helena.

Sincerely,

for John F. Wardell, Director
Montana Office

A No wetlands would be lost due to the proposed project. No fill material would be deposited in wetlands (see response A to the Office of Environmental Project Review comments).

B Comment noted.

7

MONTANA BUREAU OF MINES AND GEOLOGY
MONTANA COLLEGE OF MINERAL SCIENCE AND TECHNOLOGY
BUTTE, MONTANA 59701
406/496-4180

Office of the Director

MEMORANDUM

December 15, 1986

TO: Wayne A. Wetzel, Chief, Facitity Siting Bureau
Department of Natural Resources and Conservation
1520 East Sixth
Helena, MT 59620

FROM: Edward T. Ruppel, Director, Montana Bureau of Mines and Geology

SUBJECT: **DEIS, Conrad - Shelby Transmission Line Project**

Attached are comments from Bureau scientists familiar with the area.

Conrad - Shelby Transmission Line

Comments on Earth Resources p. 111-14 to 111-17 and IV p. 21-22

A The section on Earth Resources covers the geology pretty well. A minor point - they cite our Mining Directory as a source of information that "no metal mineral" in the study area. Lack of entries doesn't really indicate no metals. Also, I wonder if their stratigraphic column isn't really modified from Bill Cobban's Professional Paper 974.

B

C

D I guess a DEIS doesn't have to look at hazards. I would be very surprised if there are not many landslides developed on the Kevin Member.

A Comment noted.

B Within the boundaries of the study area, no mining of metal minerals or metal minerals of economic value are known to exist.

C The following sources (provided in Appendix B of the DEIS) were used to develop the stratigraphic column in Figure III–4: Cobban, W.W, et al, 1976 and Holmes, K.H., and T.E. Bretz, 1951.

D Slope stability (slumping potential) was an integral part of the geologic hazard and geologic impact assessment process as described on pages IV–20 and IV–21, Table IV–2 (page IV–23), and Table II–6, page 7 of 9.

7

Conrad - Shelby Transmission Line

Comments on Earth Resources p. 111-14 to 111-17 and IV p. 21-22

E The DEIS correctly states that the primary source of regional seismicity is the Intermountain Seismic Belt to the west. However, the report fails to mention that significant earthquakes have been located 10 km west of the study area (SE of Cutbank) and 30 km east of the study area. At least six earthquakes have been located within 50 km of the study area. It appears that the NOAA hypocenter data file was never searched for this region and Montana Bureau of Mines and Geology Memoir 51 was not checked. The potentially active faults and seismic hazards of this region are virtually unknown thus making the record of historic seismicity an important clue to potential seismic hazards.

Conrad - Shelby Transmission Line

Comments on Earth Resources p. 111-14 to 111-17 and IV p. 21-22

F No significant comments from Hydrology Division - appears to be very general - very few references cited; but probably adequate for the DEIS.

E According to the literature (Montana Bureau of Mines and Geology Memoir 51), the seismic events recorded in the proximity of the Cut Bank area registered an intensity of 3, a value similar to vibration caused by passing of light trucks. The first minor damage associated with seismic loading occurs 2 orders of magnitude higher than the events recorded at Cut Bank (ie. 20 times the loading). Therefore, these events are of minor significance for the purpose of constructing a transmission line. However, it should be noted that potential hazards related to seismic events may exist as a result of the geologic conditions present in the area. In the event that there is a reoccurrence of seismic activity, small scale landslides (slumping) may occur in areas of poor slope stability.

F Comment noted.

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

8A

DEPARTMENT OF COMMERCE

TED SCHWINDEN, GOVERNOR — 1424 9TH AVENUE

STATE OF MONTANA

(406) 444-3494 — HELENA, MONTANA 59620 0401

December 10, 1986

RECEIVED
DEC 11 1986
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION

Wayne Wetzel, Chief
Facility Siting Bureau
Department of Natural Resources
And Conservation
1520 East Sixth Avenue
Helena, Montana 59620

Dear Mr. Wetzel:

In response to your letter of December 9, 1986 I am forwarding you a copy of our agency's comments with respect to the Draft Environmental Impact Statement for the Conrad-Shelby Transmission Line Project. These comments have previously been sent to the Area Manager of the Western Area Power Administration as noted on the attached correspondence.

Yours Truly,

Richard A. Howell, Manager
Special Projects
Transportation Division

Enclosure: 1

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

8B

DEPARTMENT OF COMMERCE

TED SCHWINDEN, GOVERNOR — 1424 9TH AVENUE

STATE OF MONTANA

(406) 444-3494 — NOV 10 '86 — HELENA, MONTANA 59620-0401

November 7, 1986

Area Manager
Western Area Power Administration
Attn: B2000
P.O.Box EGY
Billings, Montana 59101

B2000 RDH 11/10
B2200 [illegible] 11/9
B2300 [illegible] 11/12
Sent — B2254

Subject: Conrad-Shelby Transmission Line Project Montana DEIS

Dear Mr. Davies:

The Transportation Division of the Montana Department of Commerce conducted a review of the subject project DEIS. Our comments resulting from this review are presented as follows:

A 1. The crossings proposed in the preferred alternative would appear to accommodate rail operations if they are built to accepted standards.

B 2. Problems with shortwave radio reception may need mitigation.

With respect to these concerns it is imperative that sufficient height and width clearances be maintained.

C The rail line in question between Conrad and Shelby is an active Burlington Northern mainline projected to grow in volume use. Abandonment is not considered likely in the near future.

Thank you for this opportunity to comment.

Yours Truly,

Richard A. Howell, Manager
Special Projects
Transportation Division

A Western constructs its transmission lines to meet or exceed National Electric Safety Code standards. The proposed transmission line crossing will accommodate all normal rail operations.

B If complaints of shortwave or other radio or television interference are received, they will be resolved by Western, as indicated on page IV–32 of the DEIS.

C Comment noted

9

Montana Department of Fish, Wildlife & Parks

December 22, 1986

1420 East 6th Avenue
Helena, MT 59620

Mr. Wayne Wetzel
Facility Siting Bureau
Dept. of Natural Resources
and Conservation
1520 East 6th Avenue
Helena, MT 59620

Dear Wayne:

Enclosed are some comments on the WAPA Conrad-Shelby Transmission Line EIS. They were prepared by Gary Olson, our Wildlife Biologist in the area.

In general, the EIS is rather weak in its description of wildlife use in the area and the impacts section is too generic to give a picture of the specific impacts to be expected.

Thank you for the opportunity to comment.

Sincerely,

Robert R. Martinka / RRM

Robert R. Martinka
Resource Assessment

RRM/bfs

Enclosure

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

9

12/18/86

TO: Bob Martinka
FROM: Gary Olson
RE: WAPA Conrad-Shelby Transmission Line Project

A I met with WAPA people and Scott McCollough (DNR) on December 11 in Shelby; we spent most of the morning looking at various sites along the project line. From what I have seen, there are few measurable impacts to wildlife as a result of this project. The proposed line does not cross any critical riparian or breaks habitat, and the pothole area north of the Marias River is wet only part of the time. When the potholes are wet I doubt whether they contribute much in the way of good waterfowl habitat, since the entire area is intensively farmed, and litle dense nesting cover exists.

B I had not reviewed the EIS prior to the field trip. There are some items that need to be cleaned up in the document, however. If I had read the EIS and not inspected the actual site I would have an entirely different attitude about this project. For instance, mule deer aren't mentioned as one of the typical residents of grassland habitats (III-23) and the references used in this section are mostly very sketchy. An example would be the discussion of big game in III-25. The reference used is an exerpt from Deer of North America; I would think this is a bit broad for a specific reference to the Marias River in Montana. The same was done for whitetail and antelope.

C The discussion of upland game birds in III-25 would lead me to believe that those populations exist only because of plants of game farm birds each year. This, of course, is not the case. In the section on furbearers (III-26) they again,have used a very general reference and make no mention of mink or beaver. The discussion of the preferred route in III-26 mentions different wildlife habitats, including winter ranges, but gives the reader no clue as to the source.

D In the environmental consequences section (IV-26) various impacts to wildlife are discussed. I can't determineout whether or not there will be any impacts to various wildlfe species based on their discussion of potential effects. They don't come out and say one way or the other; too many "weasel" words!

In general, I would say that this document needs to be tightened up in the wildlife sections to be of much value for someone reading it that has not seen the study area. The references used are either much too broad for the specifics of a power line corridor or they are not mentioned at all. The reader needs to be able to from an opinion about project effects on wildlife and I found this very difficult to do.

A Comrnent noted.

B The species identified in the discussion on page III–23 of the DEIS under Grassland is a partial list intended to familiarize the reader with the habitat type present in the study area. Mule deer, whitetail deer, and antelope are discussed in greater detail in the appropriate section under Big Game on page III–25.

The references cited in the DEIS include a literature search of available material and interviews with agency personnel familiar with the area. These references are listed in Appendix B.

C The discussion on page III–25 of the DEIS was not meant to imply that new introductions of upland game occur each year. The intent of the statement was to convey the fact that pheasant and gray partridge were introduced to the region a number of years ago and are associated with grain farming in the area.

Although mink and beaver were not noted in the study area during field investigations, these species are known to exist in the region.

Data regarding seasonal distribution of wildlife was obtained from maps on file at the Montana Department of Fish, Wildlife, and Parks office in Great Falls.

D Impacts to big game, upland game, and fur bearers are expected to be low and short–term in nature. These impacts would occur during the construction phase of the project, as indicated on page IV–26 in the DEIS. Initial impacts to State species of special concern are expected to be moderate and long–term. Implementation of mitigation measures listed in Table II–7 would reduced initial moderate impacts to low residual impacts, as stated on page IV–27. Impacts to migratory species are addressed in response A and B to the Office of Environmental Project Review and response J to the DNRC.

10 A

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
ENVIRONMENTAL SCIENCES DIVISION

TED SCHWINDEN GOVERNOR — COGSWELL BUILDING

STATE OF MONTANA

(406) 444-3948 — HELENA MONTANA 59620

RECEIVED
DEC 12 1986
MONT. DEPT of NATURAL RESOURCES & CONSERVATION

December 11, 1986

Kevin Hart, Special Projects Coordinator
Facility Siting Bureau
DNRC
Helena, MT 59601

RE: No Response from WAPA on DHES Review of the Shelby to Conrad 230 kV Transmission Line

Dear Kevin:

Enclosed is a copy of the DHES review of the Western Area Power Administration's (WAPA) preliminary draft environmental impact statement which was made last summer. A review of the draft EIS does not show that the water quality and hazardous waste questions were answered in the detail requested by the department. Solid waste considerations were mentioned under construction (item #10 - Cleanup and Removal: page II-18), but only in a passing reference.

To enable the DHES to comply with its mandated duties, WAPA needs to answer the requested information. If the WAPA people want to deal directly with Abe Horpestad, Water Quality Bureau (444-2406) and Vic Andersen, Solid and Hazardous waste Bureau (444-2821) they can, or they can contact me.

Sincerely,

Thomas M. Ellerhoff
Technical Writer

jg

Enclosure

10 B

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

TED SCHWINDEN, GOVERNOR — COGSWELL BUILDING

STATE OF MONTANA

(406)444-3948 — HELENA, MONTANA 59620

July 10, 1986

Kevin Hart, Special Projects Coordinator
Facility Siting Bureau
DNRC
Helena, MT 59601

RE: Review of Conrad to Shelby 230 kV Transmission Line Preliminary DEIS

Dear Kevin:

The Western Area Power Administration's (WAPA) preliminary draft environmental impact statement for the construction of a 230 kV transmission line between Conrad and Shelby was reviewed by the Water Quality (WQB), Air Quality (AQB) and Solid and Hazardous Waste (SHWB) bureaus.

The following comments were made concerning the environmental health aspects of the plan:

A Water Quality - The plan mentions that the preferred route crosses the Marias River and the Dry Fork of the Marias River, in addition to one perennial stream, Pondera Coulee and 13 ephemeral streams. The Water Quality Bureau needs to know the names of all the perennial and ephemeral streams that would be crossed in all the routes, preferred and alternates. The bureau also needs to know if construction activity will temporarily alter water quality and, if so, determine if WAPA will need to apply for a short term exemption to alter water quality standards (Short Term Exemption from Water Quality Standards for Construction Activity - ARM 16.20.633 (3)).

Air Quality - Reference the enclosed letter from Warren Norton.

Solid and Hazardous Waste - Reference the enclosed memo from Vic Andersen.

If WAPA or Goodson and Associates, Inc. have any questions or comments concerning the Department of Health and Environmental Sciences review, have them call me (444-3948) or Abe Horpestad, WQB, (444-2406), Warren Norton, AQB, (444-3454) or Vic Andersen, SHWB, (444-2821).

Sincerely,

Thomas M. Ellerhoff
Technical Writer

A Western will provide DHES a list of perennial and intermittent (ephemeral) streams crossed by the transmission line as soon as a route is finalized, and apply for a short–term exemption to alter water quality standards, if necessary. Short–term minor turbidity could result from the movement of construction vehicles through small waterways. Neither wheeled nor tracked vehicles would be allowed to enter major waterways, such as the Marias and Dry Fork Marias Rivers. Western will coordinate with the Montana Department of Natural Resources and Conservation (DNRC) to develop project–specific environmental stipulations (see response "M" to DNRC comments) which will include measures to protect all water bodies which may be crossed by the proposed transmission line.

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

10 C

Office Memorandum •

STATE DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES

TO : Tom Ellerhoff

DATE: July 3, 1986

FROM : Vic Andersen VA

SUBJECT : Conrad-Shelby 230 kV Line

B No mention is made of solid waste or hazardous waste handling or disposal. The only reference to waste management I found was in the air section where they proposed burning all debris. I don't know what plans they've made for wastes. They need to address this matter and include a section in the contractor requirements, which I would like to see included in the EIS.

B The DEIS clearly states on page IV–20: "Western does not anticipate any open burning, and if so, not enough to require a state permit."

Under "Cleanup and Removal" on page II–18 of the DEIS, it is stated: "All rubbish and waste material would be hauled away and disposed of at approved sites." It is not anticipated that any hazardous wastes will be generated during project construction. If so, they will be handled like waste generated at all other Western facilities, in accordance with all applicable State and Federal laws and regulations.

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

11

DEPARTMENT OF HIGHWAYS

TED SCHWINDEN GOVERNOR — 2701 PROSPECT

STATE OF MONTANA

HELENA MONTANA 59620

December 16, 1986

RECEIVED
DEC 16 1986
MONTANA DEPT. OF NATURAL
RESOURCES & CONSERVATION

Wayne Wetzel, Chief
Facility Siting Bureau
Department of Natural Resources
and Conservation
Helena, MT 59620

CONRAD-SHELBY TRANSMISSION LINE
DRAFT ENVIRONMENTAL IMPACT STATEMENTS

Thank you for the opportunity to review the above captioned DEIS.

A The Montana Department of Highways recommends that all towers be constructed well away from public roads so that they do not constitute a hazard for out of control vehicles. On a controlled access highway, such as Interstate 15, provisions for construction and maintenance access should be coordinated through the DOH Great Falls District Office.

You are advised to obtain a Standard Right-of-Way Encroachment Permit (RW-20) for any aerial road crossings or public road access routes. These permits are available from the DOH Great Falls District Office.

It is understood that the contractor will use adequate signing at public road accesses during construction. It is also understood that the contractor will not exceed rated load limits on any structure or road segment during construction or subsequent maintenance.

If you need additional information, please contact this office.

Don Cromer

DON CROMER, SUPERVISOR
RURAL PLANNING SECTION

DC:SS:mb:2/kk

cc: Keenan Bingham
Thomas Barnard
Homer Wheeler
Steve Kologi
Bill Dunbar, FHWA

A All towers will be located outside of pubic road rights–of–way.

B Western is aware of this requirement. As in past projects, Western will coordinate with the Montana Department of Highways and obtain a permit.

C Western's construction specifications require contractors to provide adequate signing and comply with all road load limits and/or overload vehicle permitting requirements.

12

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION

TED SCHWINDEN, GOVERNOR

1520 EAST SIXTH AVENUE

STATE OF MONTANA

DIRECTOR'S OFFICE (406) 444-6699

HELENA, MONTANA 59620

DEC 24 1986

	Initials	Date
B2000	RTH	12/24/86
B2200		

December 23, 1986

James D. Davies, Area Manager
Western Area Power Administration
Billings Area Office
P.O. Box EGY
Billings, MT 59101

Dear Mr. Davies:

The Department of Natural Resources and Conservation (DNRC) submits the following comments on the Western Area Power Administration (Western) Draft Environmental Impact Statement for the Conrad-to-Shelby 230-kV Transmission Line Project (DOE/EIS 0124D).

It is our hope that this letter and the specific comments relating to economic analysis and resource impacts from the proposed project be incorporated in their entirety in the final EIS. Some comments may require Western to gather additional information to enable DNRC and the Department of Health and Environmental Sciences (DHES) to determine whether the proposed Conrad-Shelby project complies with state environmental laws.

DNRC also is forwarding comments from other state agencies. As lead agency, DNRC intends to adopt Western's draft EIS, as supplemented and amended by the state's comments, as the state's draft EIS for this project. We will be mailing our comments and a notice of adoption of Western's EIS to the public for review in January. Our final decision on whether to adopt Western's final EIS as our final EIS will depend on the adequacy of Western's responses to the concerns and information requests expressed in the attached comments. Our final EIS would also need to address comments received from the public in response to our January EIS solicitation.

Subsequent to the EIS process, DNRC will issue a report to the Board of Natural Resources and Conservation addressing any concerns that remain unresolved and will make recommendations as to whether Western's project would comply with established state standards under the Major Facility Siting Act.

12

If you have any questions regarding this material, we would be glad to meet with personnel from Western. Thank you in advance for your consideration of our concerns.

Sincerely,

Van C. Jamison

Van Jamison
Administrator
Energy Division

KJH/jb
Encs.

State of Montana
Comments on the
Conrad to Shelby Draft Environmental Impact Statement

ANALYSIS OF NEED FOR THE PROJECT

A Comment:

The glossary of the draft EIS should contain two additional definitions to help readers understand the discussion contained in Chapters One and Two. The definitions are:

Line Losses: Electric power required to overcome resistance in a transmission system, measured by the difference between the amount of power generated and the amount of power delivered to customers.

Present Worth: Also known as present value or discounted value. The value today of a sum of money expected to be earned or paid in the future. This value reflects the interest cost of delaying receipts and allows comparison of values at different times.

A Comment noted.

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B Comment:

Evaluations of both private investments and federal projects generally include a comparison of the benefits and the costs. DNRC has previously indicated to Western that information about both the benefits and costs of a project and the uncertainty of those benefits and costs is vital to Western's decision process and the explanation of decisions through an EIS. DNRC feels that analysis of costs and benefits is essential to satisfy the requirements of the National Environmental Policy Act and the Montana Environmental Policy Act.

Western presents its "economic analysis" of the proposed project and three alternatives on pages II-6 and II-7 and in Table II-1 on page II-12. DNRC considers this analysis incomplete and confusing. The analysis does not consider the main sources of benefits of either the proposed project or its alternatives. It treats line losses as a cost of the project when a reduction in line losses is one of the benefits of the project. It also includes the cost of rebuilding the Havre-Shelby 115-kV transmission line in project costs when that line is not part of the project under consideration. The result is an overstatement of the costs of the project and its alternatives with no statement of their benefits. This provides no basis for comparing the proposed project with the no-action alternative and only an incomplete basis for comparison of the four options considered.

In deciding whether the proposed project complies with the substantive provisions of the Montana Major Facility Siting Act, the Board of Natural Resources and Conservation is required to consider both its benefits and costs. DNRC therefore conducted an analysis of the benefits and costs of the proposed project and alternatives. DNRC found that the benefits of Western's proposed Conrad-Shelby 230-kV transmission line are reasonably likely to exceed the costs and that it is the lowest cost option that would solve the area's electrical problems. DNRC agrees that Western's proposed action is the best option. The reasons for this choice must be presented to the public.

B Council on Environmental Quality "Regulations for Implementing the Procedural Provisions of the National Policy Act" (40 CFR 1500–1508) do not require the preparation of a cost–benefit analysis as part of the Federal environmental process. Section 1502.23 of the regulations provides in pertinent part, that "For the purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost–benefit analysis and should not be when there are important qualitative considerations. In any event, an environmental impact statement should at least indicate those considerations, including factors not related to environmental quality, which are likely to be relevant and important to a decision." Western has contractual agreements with its customers and other power suppliers in the region to maintain a particular level of reliability of service. As described in the DEIS, joint studies by area utilities indicated the need for system improvements in the Conrad–Cut Bank–Shelby area in order to meet those reliability requirements. Several alternatives were evaluated which could provide the necessary level of reliability. Based upon the electrical and economic factors used in the studies, and reported in the DEIS, the proposed action was the best to meet the long–term needs of the area. A cost/benefit analysis as conceived by DNRC is not required by Western for its decision making process, therefore, was not included in the DEIS.

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

12

ECONOMIC ANALYSIS OF THE PROPOSED ACTION AND ALTERNATIVES

An economic analysis of the benefits and costs of a proposed project shows whether, from society's viewpoint, the benefits are likely to exceed the costs and the risks are acceptable. The actual benefits of the proposed project will depend on both future electricity demand and the future service interruptions that the project would protect against. The limited amount of information available to estimate future electricity demand and the costs of transmission problems adds an element of uncertainty. Faced with this potential for uncertainty, DNRC's economic analysis focused on determining the level of confidence with which it can be said that the benefits of the project will be greater than its costs. DNRC found the risk associated with the costs being greater than the benefits is small (DNRC 1985; DNRC 1986c).

Options Examined

DNRC estimated the possible ranges of benefits and costs for each of the options considered in Table II-1. Any estimation of benefits and costs requires a baseline for comparison. DNRC used the no-action alternative as this baseline, and the benefits and costs in comparison to no action were computed for each alternative. The uncertainty of the benefits is reflected in the range of possible values presented for each type of benefit.

Benefits of the Options

Any of the four construction options would benefit electricity consumers by preventing or delaying the dramatic deterioration of service reliability that would be experienced by customers in the Browning-Cut Bank-Shelby area if no action were taken.

Utility reliability criteria generally require that a transmission system be able to serve all loads even with any single transmission line out of service. The Browning-Cut Bank-Shelby area can barely meet this criterion at present. Load flow studies performed by Western and reviewed by DNRC's electrical engineering contractor show that by 1990 an outage on the existing 115-kV line from Conrad to Cut Bank during a high load period would result in unacceptably low voltage and loss of power to some consumers in the Browning-Cut Bank-Shelby area. Later in the 1990s an outage on the

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

12

Havre-Shelby 115-kV line would cause similar problems, and the problems would continue to worsen as power demand grows in the area (Western 1985; DNRC 1986a). If no changes were made in area's transmission system, customers could expect to experience more outages in the future than they do today.

Engineering reliability criteria could be violated in an area where loads are so small or outages are so infrequent that the cost of meeting the engineering reliability requirement is greater than the benefits. Public investment projects must normally meet certain economic standards besides the relevant engineering requirements. The proposed project should not be an exception. Specifically, the proposed project should be examined to determine whether its benefits would be greater than its costs and whether it is the best option. Since the benefits are uncertain, it is appropriate to evaluate the risks involved in making the investment.

Montana's substantive standards for need and minimum adverse impact for a transmission line require that three tests be met. First, there must be a problem that will be solved in a timely manner by the proposed line. If no action is taken, the utility's reliability criteria would be violated within 2 years of the date the proposed facility is to be placed in service (ARM 36.7.3506 (7)(a)). Second, the benefits of the project must exceed its costs. The value of reduced outages and improved reliability over the life of the line must be reasonably likely to exceed the cost of the line (ARM 36.7.3506 (7)(b)). Third, the proposal must be better than any reasonable alternative. The option chosen must have the lowest cost of the options that would satisfy the first two requirements.

Any of the four construction options would provide benefits. They would prevent or slow the deterioration of service reliability by enabling the system to continue to supply power at acceptable voltages even with one transmission line out of service. This would benefit electricity customers by reducing the number, duration, and costs of outages and by increasing the certainty of their electricity supply. The transmission alternatives would deliver power over new transmission lines with higher capacity and lower resistance than existing lines. This would reduce the amount of power lost in overcoming the resistance in the line and would make this additional power available to consumers.

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

12

Reduction in future outage costs

Any of the four construction options would provide benefits by reducing the costs that would be imposed on customers by transmission system failures. These costs increase with the total amount of time without service and with long individual outages. Greater demand for power in the future will increase the cost of outages. None of the options would protect consumers against system-wide outages or failures of local distribution lines.

The proposed Conrad-Shelby 230-kV line would provide reliable transmission service to the Browning-Cut Bank-Shelby area until well after 1996. Beyond this point, it would no longer provide full service in some outage situations but would still provide benefits.

The addition of capacitors at the Shelby and Rudyard substations would maintain transmission reliability in the area only through about 1996. This option would solve the reliability problem for a shorter period than the other options and would provide approximately 35 percent of the benefits estimated for the Conrad-Shelby line.

Both the Conrad-Cut Bank and Havre-Shelby options would provide full service in the face of single transmission line outages through 1996, but reliability would begin to deteriorate soon after that date. Either of these options would provide more benefits and a longer lasting solution to the reliability problem than the addition of capacitors at Shelby and Rudyard. However, they would solve the problem for a shorter time and with fewer benefits than the Conrad-Shelby option.

Outages: Precise data on local outages was not available from Western, although data representative of outages from a larger area were supplied. Western supplied and DNRC used data compiled by the Mid-Continent Area Power Pool to estimate how often customers in the Browning-Cut Bank-Shelby area would experience outages of different lengths due to transmission failures if the present system were left unaltered (DNRC 1986b). Consumers would experience additional outages and costs due to system-wide failures and distribution failures. However, only outages on the area transmission system, which would be ameliorated by the proposed line, are considered here. The total amount of time that customers might be without power each year due to transmission

failures and the likelihood of that total outage time occurring is given in Table 1.

TABLE 1
Total Annual Outage Time

Time	Probability
0-24 hours	23.5%
24-48 hours	14.0%
48-72 hours	12.8%
72-96 hours	11.0%
96 + hours	38.7%

Table 2 provides information on the likelihood of consumers experiencing long outages during the winter. It indicates that, with no action, consumers could expect an outage of at least 12 hours in 3 out of 4 years. This is the time an average Montana house would take to drop from 55 degrees to the freezing point in cold winter weather.

TABLE 2
Winter Outage Length

Duration	Probability of at least one outage per winter longer than given duration
1 hour	97.4%
6 hours	85.6%
12 hours	73.2%
24 hours	53.6%
48 hours	28.7%

Costs of outages: DNRC identified four types of significant costs of power outages (DNRC 1986c). These are (1) lost residential electric service; (2) lost, delayed or damaged industrial production, (3) damage incurred by residential customers, primarily from frozen pipes; and (4) damage incurred by commercial customers, primarily from spoilage of refrigerated and frozen food. Actual outage costs in any year will depend on the number of outages, their length and timing, load growth, and other factors.

Estimates of the values residential customers would place on lost electrical service due to the range of possible increased outages with no improvements in the transmission system are given in Table 3. (All costs are presented in 1988 dollars.)

TABLE 3
Annual Cost of Interrupted Residential Service in 1990*

Cost	Probability
$0-$130,000	10%
$130,000-$500,000	25%
$500,000-$1,300,000	30%
$1,300,000-$2,900,000	25%
more than $2,900,000	10%

*The range of these costs would be greatly reduced if households bought and used back-up generators. However, this is unlikely to be widespread unless total lost residential service averaged at least $2 million per year.

Estimates of the range of possible losses industrial customers would sustain due to increased power failures in a year if no action is taken are presented in Table 4.

TABLE 4
Annual Value of Industrial Losses in 1990

Cost	Probability
$0	10%
$1-$1,500,000	25%
$1,500,000-$3,400,000	30%
$3,400,000-$7,900,000	25%
more than $7,900,00	10%

Residential and commercial damages would occur only during long outages and only during part of the year so the damage in any given year may be zero. However, in years when long outages occur, damage can be appreciable. Unless the transmission system is improved, residential damage could be expected to occur in 3 out of 4 years, and commercial damage could be expected in about 4 out of 10 years. In years with long winter outages, residential damage would range upward from $4 million, and long outages could produce commercial damage of up to $1 million.

The actual cost of future outages is uncertain. However, the severity of outage costs and their probabilities of occurring can be combined to give estimates of the range of total benefits that could be expected from avoiding increased outages. Table 5 shows the probabilities of different levels of the benefits that might result from avoiding outages for 25 years. This is equivalent to the benefits that would be produced by the Conrad-Shelby option.

TABLE 5
Discounted Benefits from Avoided Outages over 25 years

Benefits	Probability
$0-$33 million	15%
$33-65 million	20%
$65-120 million	30%
$120-180 million	20%
$180 million or more	15%

Increased Certainty of Service

Besides avoiding the costs of specific outages, improving reliability would benefit consumers by reducing uncertainty in their lives. The value of this reduction in uncertainty was estimated using a standard technique developed to estimate the premiums people would pay to insure against various risks. This technique indicated that to insure against losses from power failures that could occur if the transmission system were not improved, typical customers would pay the average level of their losses plus .07 percent of their annual electric bills. This excess over the average loss is the value people place on increased certainty. Electricity consumers in the area all together would be willing to pay a total of $950 a year for this increase in certainty. The discounted value of this benefit over 25 years is $13,800.

Reduced Line Losses

With less power lost in overcoming line resistance, additional power is available for use by consumers. This means that additional generation capacity will not be needed as soon. Table 6 shows reductions in losses that would result from options during peak load periods.

TABLE 6
Reduction in Peak Load Line Losses (MW)

	1988	1995	After 1996
Capacitor Additions	0.30	0.39	0.35
Conrad-Shelby	2.29	4.27	3.73
Conrad-Cut Bank	2.32	3.85	3.63
Havre-Shelby	1.81	2.73	2.34

These peak savings were adjusted for average loads and the resulting values were multiplied by Western's current surplus sales rate of 12 mills/kWh. This

produces a very conservative measure of the benefits from reduced line losses. The current value of a kWh of avoided generation is at least 12 mills and will increase up to the cost of new generation facilities, currently about 50 mills/kWh, as the current area surplus of generation disappears in the 1990s. The discounted value of these savings for each of the options over 25 years is given in Table 7.

TABLE 7
Discounted Value of Savings from Reduced Line Losses

Capacitor Additions	$ 194,800
Conrad-Shelby line	$1,961,400
Conrad-Cut Bank	$1,894,800
Havre-Shelby	$1,287,900

Total Benefits of the Options

The total benefits of each option are the sum of the value of reduced outages, the value of increased certainty and the value of reduced line losses. Table 8 gives ranges of the total discounted benefits of the Conrad-Shelby and capacitor additions options and the likelihood that benefits would fall into each range. These are the alternatives with the highest and lowest benefits. The Conrad-Cut Bank and Havre-Shelby options would have fewer benefits than the Conrad-Shelby line and more than the capacitor additions option.

TABLE 8
Distribution of Discounted Value of Benefits

Benefits (millions)		Probability
Conrad-Shelby	Capacitor Additions	
$0 - $17.5	$0 - $5.6	5%
$17.5 - $35.4	$5.6 - $11.9	10%
$35.4 - $67.2	$11.9 - $23.0	20%
$67.2 - $120	$23.0 - $42	30%
$120 - $180	$42 - $63	20%
$180 - $250	$63 - $88	10%
$250 or more	$88 or more	5%

There is a 70 percent probability that the benefits of the Conrad-Shelby transmission line option will be between $35 million and $180 million. For the capacitor additions option, there is a 70 percent probability that the benefits would be between $11.7 million and $63 million.

Costs of the Options

Each option would incur capital costs at the time of construction and operation and maintenance costs (O&M) over its lifetime. The Havre-Shelby alternative would avoid the costs associated with the planned reconstruction of the existing Havre-Shelby line in 1996. Since all of the other options, including no action, assume that the Havre-Shelby line would be rebuilt in 1996, the costs of the rebuild must be subtracted from the costs of the Havre-Shelby option to give a fair comparison. The costs of the four construction options are given in Table 9.

TABLE 9
Costs of the Four Construction Alternatives

	CAPACITOR ADDITIONS	CONRAD-SHELBY	CONRAD-CUT-BANK	HAVRE-SHELBY
Costs Incurred for Construction and Maintenance				
Capital cost, 1988	$12,479,500	$11,397,400	$13,364,600	$29,411,000
Annual O&M (3.5% escalation)	$ 125,900	$ 104,000	$ 109,500	$ 159,700*
Costs Avoided by Not Rebuilding the Havre-Shelby Line in 1996 (Havre-Shelby Alternative Only)				
Capital cost, 1996**	--	--	--	$11,205,500
Annual O&M***	--	--	--	$ 60,000
Value of Costs Discounted to 1988	$14,170,000	$12,793,000	$14,834,000	$26,448,000

* Substation O&M only for Havre-Shelby

** If the Havre-Shelby line is upgraded to 230-kV specifications in 1996 instead of just being rebuilt, the avoided construction cost would be $38,915,000 and the discounted value of the cost difference would be $14,282,600.

*** O&M would be higher on the existing Havre-Shelby line than on the reconstructed line.

Economic Comparison of the Alternatives

The proposed Conrad-Shelby 230-kV line is economically preferable to the other options. The benefits of the proposed line are reasonably likely to exceed the costs and it has the greatest net benefits. Although the benefits of any transmission project are uncertain and depend on actual future

transmission outages and load growth, the probability that the benefits of the preferred alternative will be less than the costs is less than 5 percent. Even if it only solves the reliability problem through 1996, the probability that the benefits would be less than the costs would be approximately 10 percent.

The Conrad-Shelby option has the lowest cost and greatest benefits of the four construction options examined. Its cost is more than a million dollars less than the cost of the other options examined and it would provide up to three times the benefits of the other options. Although environmental costs are not included in these calculations, both Western and DNRC environmental analysis indicate it is extremely unlikely that environmental impacts would make the costs greater than the benefits or change the ranking of the options.

References

Western Area Power Administration (Western), 1985.
"Facility Development Report: Conrad-Shelby 230-kV Transmission Project." June. Division of System Studies, Billings Area Office, Billings, MT.

Department of Natural Resources and Conservation (DNRC), 1985.
"Analysis of Need for Montana Power Company's Proposed Laurel to Bridger 'B' Line." May 1985. Dan Dodds, Economist, Energy Division. Helena, MT.

Department of Natural Resources and Conservation, 1986a.
"Analysis of Conrad-Shelby Load Flows." May 1986. A technical paper prepared under contract for Energy Division by Ramesh Sood, Electrical Engineer. Helena, MT.

Department of Natural Resources and Conservation, 1986b.
"The Distribution of Transmission Outages." July 1986. A technical paper prepared for the Conrad to Shelby project. Dan Dodds, Economist. Energy Division. Helena, MT.

Department of Natural Resources and Conservation, 1986c.
"Analysis of Need and Alternatives for Western's Proposed Conrad-Shelby Project." July 1986. A technical paper prepared by Dan Dodds, Economist, Energy Division. Helena, MT.

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

12

IDENTIFICATION, ANALYSIS, AND MITIGATION OF
ENVIRONMENTAL IMPACTS FROM THE PROJECT

C Comment:

The draft EIS is unclear and misleading in its discussion of impacts and mitigation. Appendix A, Task 4F, on page A-9, describes how mitigation was identified in the route selection process. Neither the mitigation measures alluded to nor the areas where these measures will be taken are clearly described in the document.

C Locations where specific mitigation measures will be implemented cannot be finalized until an actual centerline, including exact structure locations, is determined during the engineering and construction stages of the project. The purpose of the environmental analysis is to identify the environmentally preferred corridor from selected alternative routes. The selection process is based upon potential initial and residual impacts identified within the study area. Potential mitigation measures have been identified and are described in Table II–7 in the DEIS, and will be implemented where necessary during the engineering and construction stages. The discussion of residual impacts in Chapter IV addresses impacts and associated mitigation measures on a resource by resource basis.

D Comment:

Based on field review of the proposed centerline shown in the draft EIS, DNRC noted two areas where mitigation for visual impacts should be considered.

a) Opportunities for implementing selective mitigation should be explored for the residence at the crossing of Pondera Coulee (T28N, R2W, S11, SW1/4). Here the proposed centerline is located approximately one-tenth mile from the residence. Opportunities for structure placement and/or centerline adjustments to reduce visual impacts should be explored.

b) Ground disturbance and visual impacts could be reduced by relocating an access road east of Ledger (T29N, R2W, S24, NW1/4). Relocation from the steep face of the Dry Fork to the relatively flat bench top south of the Ledger Road would accomplish this.

D a. The residence in question is an abandoned farmstead that is currently being used to store farm equipment. Mitigation for visual impacts is not warranted.

b. Western investigated an alternative access easement in the area. The landowner was consulted and indicated a preference for the proposed easement which is an existing seldom used and well sodded trail. If the easement as presently proposed is used, Western will mitigate potential erosion by providing necessary reclamation.

E Comment:

Since the maximum electric field strength of the proposed facility falls within the range reported by the literature to affect honeybees, it cannot be categorically stated that the field is unlikely to have adverse effects on any hives located beneath the line. The statement on page IV-35, paragraph 4a, directly conflicts with information provided in Appendix D. The text should be revised to reflect information about possible impacts on bee hives and Western's commitment to mitigate those impacts as specified in Appendix D, paragraph 2a.

E It is acknowledged that effects on honeybees in hives have been observed down to 2 kV/m. However, most effects are evident in electric fields of 7 to 12 kV/m (Lee, J.M., et al., 1986), more than twice the electric field for the proposed transmission line. Since the effect appears to be in the hive and related to induced hive current, the effect could be present at lower electrical fields in taller hives than those used by Rogers et al. (1982). Similarly, effects might be absent in shorter hives at higher fields. Therefore, there is uncertainty about the threshold electric field for effects on honeybees, and the possibility of such effects exists for the proposed line. Elimination of potential effects on bees is most easily accomplished by not locating hives near the low point of the conductors or by placing a grounded wire screen over hives that are located under the line (Lee, J.M., et al., 1986). Western will advise any beekeepers along the right–of–way of the potential effects of the transmission line on bees and assist them in moving or grounding their hives.

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

12

F Comment:

It is impossible to determine from the draft EIS what the specific impacts to riparian vegetation will be from construction of the line. The initial problem is the lack of a clear definition of "riparian." The vegetation section refers to Section H (Floodplains and Wetlands). The wildlife section refers back to the vegetation section. Section H fails to clearly describe and define riparian vegetation. The issue is further confused by the glossary's definition of riparian.

The final EIS must correct the contradictions regarding impacts to riparian vegetation (p. III-23, line 15; p. III-29, lines 14 and 15; Figure IV-6). Does the preferred route cross riparian vegetation? Would riparian vegetation (i.e. cottonwoods) be removed?

F For the purpose of this study, the term riparian is used in a general sense (the same as prairie) to denote those vegetation communities that occur on banks, floodplains, and terraces of streams as opposed to slopes and uplands. Riparian plant communities are a complex of vegetation types that tend to be located along major drainages and rivers and coulees. Portions of the riparian areas lack vegetative cover or have been converted to cropland. The riparian vegetation complexes are of four general types:

1. Gallery or riparian forests are dominated by species of cottonwood and box elder with an understory of shrubs, forbs, and grasses. These stands of trees form a closed canopy forest or occur as isolated groves or trees surrounded by shrubs or grassland.

2. Shrub communities in the riparian zone occur in conjunction with open cottonwood trees or as dense stands dominated by willows, alders, wild plum, and other shrubs (see list in Appendix F of the DEIS). These shrub stands are most often considered a wetland type, but may occur on more mesic, well–drained sites on floodplains.

3. Wetland plant communities occur next to streams or in wet sloughs, oxbows, and depressions on floodplains.

4. Grasslands occur on the upper, drier parts of the floodplains and lower stream terraces. Grasslands contain mostly dryland grasses, forbs, and some shrubs; and have been extensively grazed.

Impacts to riparian vegetation would be minimal. These riparian zones are small, isolated and easily avoided. Significant impacts to vegetation will be circumvented by corridor selection, centerline alignment, and structure placement to avoid riparian zones. Many riparian areas in the project study area have been cultivated, reducing their habitat value.

For the purposes of impact assessment, riparian zones were divided into three sub–categories: riparian (riparian shrub communities and gallery forests), prairie floodplain (riparian grasslands), and wetlands (Figure III–9, DEIS). Low initial impacts were assigned to the prairie floodplain sub–category and moderate initial impacts were assigned to the riparian and wetland sub–categories.

The preferred route crosses 1.5 miles of the prairie floodplain sub–category, 0.1 mile of the riparian sub–category, and 0.1 mile of the wetlands sub–category.

Based on onsite inspections by Western personnel, it appears that one cottonwood tree may have to be removed.

G Comment:

The biological section is incomplete with regard to information sources used to describe baseline conditions. The draft EIS (p. II-26) states that information came from "existing data sources with supplementary field investigations." Subchapters III-G and III-H must incorporate all local references. If information is based on field studies, the methodologies must be briefly described. Figure III-10 must show sources of wildlife information. Figure III-9 should also contain information sources.

H Comment:

It is not possible to determine from the draft EIS what the impacts to wetlands will be from the proposed project. The draft EIS (p. III-28) uses the USFWS (1979) definition of wetlands. However, subsequent evaluations of the preferred route and impacts use a modified definition of wetlands (see pp. III-29, lines 18 and 19; IV-26, lines 1 and 2). The final EIS must address impacts to wetlands as defined by the USFWS and with respect to Executive Order 11990.

I Comment:

The draft EIS does not indicate whether the high impacts to eagles would be

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

12

caused by powerline collisions, disturbance, habitat loss, or all three sources. The final EIS must clarify impacts and relate mitigations (i.e. selective mitigations #10 and #12) to impacts.

J Comment:

The draft EIS does not present a clear picture of the significance of waterfowl collisions with the powerline. Pages IV-27 and IV-28 classify impacts near the Shelby substation as moderate but insignificant. The significance is evaluated on a broad basis. ("...would not be expected to have a significant overall adverse affect upon any given species.") The final EIS must also attempt to evaluate impacts on a smaller (more relevant) basis. Would waterfowl mortality be noticed by sportsmen, agency biologists, or landowners? Would mortality rise above an "acceptable" level? The last paragraph on p. III-26 should be considered during the evaluation. The insignificant classification is contradicted by the determination of significance on p. IV-41. This conflict must be resolved.

Also, page III-26 (last paragraph) states that waterfowl migrate along the Marias River. The final EIS must, therefore, address impacts of the proposed line to waterfowl migrating along the river.

K Comment:

If impacts to waterfowl are determined to be significant, the final EIS must include mitigation measures. Due to the uncertainty regarding the magnitude of line strikes (p. IV-28, line 3), a monitoring program could be proposed. Results of the program would then be evaluated for significance by interagency biological staff. A determination of significance could lead to marking the line, removing some sections of the static wire, habitat management, or habitat acquisition. (The final EIS must clarify if selective mitigation #12 includes measures for waterfowl impacts.)

L Comment:

The draft EIS is not correct and not adequate in its treatment of soil compaction problems which are likely to result from construction of the proposed project. In several places, notably page IV-2 in the Agricultural

G References and personal communications are cited in the text and listed in Appendix B of the DEIS. In addition to the personal communications cited in the DEIS, other persons contacted during the investigation are listed in Appendix A of this document. Information for Figure III–9 was derived using the methodology described below. Data for Figure III–10 was obtained from the Montana Department of Fish, Wildlife and Parks (winter ranges) and from field surveys.

The methodologies used to derive baseline data included a reconnaissance visit in October 1985, a literature search from available sources, use of aerial photographs to construct baseline maps, and meetings and interviews with local regulatory and agency personnel. A second field trip was made in May 1986 to verify data and further investigate potential impacts along the preferred route.

Field verification consisted of driving roads in the project area and recording habitat types present. Additionally, foot surveys were performed in habitats of high interest along the preferred route. These include riparian habitat along the Marias River, wetlands near the proposed Shelby substation site, and prairie dog towns. All observations of wildlife were noted.

During the reconnaissance visit in October 1985 an attempt was made to quantify waterfowl flight activity along the Marias River by Western's consultants and personnel from the U.S. Fish and Wildlife Service and the Department of Natural Resources and Conservation. However, due to the short duration (a single evening and the following morning) of the monitoring activities limited data was obtained.

H The DEIS discusses and classifies wetlands according to the Cowardin (Cowardin, 1979) system adopted by the USFWS and with respect to Executive Order 11990. The statements on pages III–29 and IV–26 discuss the condition of these areas as observed by Western's consultants. According to the Cowardin system, when a wetland has been modified by the activities of man, such as farming, the classification must also be modified to describe these influences. As described on pages III–29 and IV–26, many of these upland potholes have been altered for the production of crops, thereby reducing their value as wetland habitats (see response C to Office of Environmental Project Review comments above). Response F above discusses the DEIS's treatment of riparian wetlands. No fill material will be deposited in wetlands and no wetlands will be lost due to the proposed project.

I Although the DEIS noted the possibility of bald eagles occurring within the study area, no eagles or eagle nests were observed during field investigations. The DEIS did not identify high

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

12

Impact section and in Table II-6, unsupported statements are made that compaction impacts are short term and would last from 1-3 years. In addition, the appropriate mitigating measure--deep ripping--is mentioned only in passing on page IV-4, paragraph 6. On the other hand, the draft EIS incorrectly states that long-term soil compaction problems will be greater due to farming around the transmission structures than construction of the line itself (Table II-6 and page IV-4, paragraph 6).

All literature DNRC is aware of and results from field observation on the Great Falls-Conrad line indicates that construction of the proposed project will result in soil compaction. The problems from off-road travel by loaded cement trucks, drilling rigs, and large cranes will be more severe and longer lasting than the draft EIS recognizes. The obvious mitigating measure--deep ripping--will reduce the compaction problem and can be done immediately following line construction by equipment that will already be on the construction site. These impacts must be addressed and mitigated.

ADOPTION OF STANDARD ENVIRONMENTAL SPECIFICATIONS

M Comment:

When reviewing this project for compliance with the Montana Major Facility Siting Act, the Board of Natural Resources and Conservation will require that Western comply with the substance of the Board's Standard Environmental Specifications for Transmission Lines. A copy of these were sent to Western prior to publication of the draft EIS under separate cover. Measures to be taken during construction when crossing highways, addressing landowner concerns, archaeological and historical resource protection, reclamation, and construction monitoring efforts will be addressed. A final set of these environmental specifications should be agreed to before DNRC makes its report to the Board of Natural Resources and Conservation.

impacts to eagles. As stated on page IV–27, all residual impacts to wildlife along the preferred route are either moderate or low. As a result of discussions with the USFWS, Western would use marker balls in areas where the line crosses the Marias River in order to reduce the eagle collision hazard.

Western will adhere to specific mitigation measures 10 and 12 where appropriate. Western will avoid driving through or operating construction equipment in sensitive areas, such as prairie dog towns. No grouse leks were identified in the study area. Western conducted a field review accompanied by personnel from DNRC in December 1986 and no sensitive habitats or other areas were identified which would require further application of these mitigation measures.

The discussion referred to on pages IV–27 and IV–28 classifies impacts in the "potential waterfowl collision zone" as moderate relative to other locations along the preferred route. As stated on page IV–28, the actual impacts which may occur (i.e., the number of waterfowl collisions) cannot be quantified. Various studies of bird collisions with transmission lines have shown collision rates (collisions per observed flights) varying from 0.07% in Oregon and Washington (Meyer, 1978) to 1.08% in North Dakota (Faanes, 1983). Of the total observed waterfowl mortalities due to transmission line collisions, Faanes found that approximately 92% occurred at large waterfowl concentration areas and 4.5% occurred at waterfowl production areas similar to those near the proposed Shelby substation site. Since the wetlands in the Shelby area are likely to contain water only four years out of ten, and since the wetlands near the transmission line are only a small proportion of those in the Shelby area, waterfowl mortality due to collisions with the proposed transmission line are likely to be low. See responses A, B, and C to Office of Environmental Project Review comments.

J Marker balls would be installed along the proposed line where it crosses the Marias River.

K Western does not believe that the potential waterfowl collision hazard warrants a post–construction monitoring study.

L The statement defining expected soil compaction problems on page IV–4, paragraph 6, is supported by two sources (Bilbo, 1979; Peters, 1986).

The DEIS does not unequivocally state that compaction impacts are short term and would last from 1 to 3 years. On page IV–2, and in Table II–6, it is stated that compaction impacts "usually" or "generally" last from 1 to 3 seasons or years. Table IV–3, page IV–24 identifies a short to long duration for soil compaction in the study area. On page IV–4, paragraph 6,

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

12

COMPLIANCE WITH AIR AND WATER QUALITY AND SOLID WASTE STATUTES

N Comment:

The attached letter from the Department of Health and Environmental Sciences indicates that the draft EIS is not adequate to make determinations regarding compliance with air quality, water quality, or solid waste disposal requirements. The DHES determinations must be made before the Board of Natural Resources and Conservation can make its determination.

KJH/jb
12/18/86

additional potential impacts are attributed to the requirements for maneuvering farm equipment around structures. On Table II–6, page 1 of 9, soil compaction from farm equipment maneuvers is classified as long–term because of the continuing necessity for such maneuvers versus the 1 year period of line construction.

According to the SCS (Ferguson, 1984) compaction occurring in the top one foot of soil will be ameliorated within in one to three years by normal tillage, water, freeze–and–thaw action, etc. There are no existing data for Montana or the Great Plains region that indicate how long impacts would remain if the compaction is deeper than approximately 12 to 15 inches. No data presently exist with which to determine the actual depth of compaction from various activities, including transmission line construction. Western would deep rip any soil compacted by construction activities or compensate landowners to do so.

M Western will work with DNRC to assure that the intent of all mutually agreeable guidelines is incorporated in the construction specifications, as with their previous projects in Montana.

N See responses to comments A and B, Montana Department of Health and Environmental Sciences.

TABLE I–2 (continued). COMPLETE LETTERS AND RESPONSES

13

RECEIVED
DEC 17 1986
MONT. DEPT. of NATURAL RESOURCES & CONSERVATION
CAPITOL STATION

DEPARTMENT OF STATE LANDS

TED SCHWINDEN, GOVERNOR

STATE OF MONTANA

(406) 444 2074

1625 ELEVENTH AVENUE
HELENA, MONTANA 59620

December 16, 1986

MEMORANDUM

TO: Wayne Wetzel, Facility Siting Bureau Chief

FROM: Kelly Blake, Lands Division Administrator

RE: Comments on the Conrad-Shelby 230 kV Transmission Line E.I.S. (Western Area Power Administration)

A We have reviewed the preferred alternative in the above-referenced E.I.S. and have had department personnel at several scheduled public meetings.

The 33 mile line as proposed will utilize approximately 6 miles, more or less, of State land. This is probably the least amount of State land crossed by a said W.A.P.A. project, yet it still encompasses 20% of the project.

We are concerned that Section 501-2(s) of the M.C.A. Facility Siting Law, encourages "power marketing agencies to select public land over private land when all other factors are equal". The State needs to stress to W.A.P.A. that "School Trust lands" are not public lands and therefore should not be selected over private lands, as the above law states.

B One section of the five sections of State land in the preferred route might be environmentally sensitive. This section is where the Marias River will be crossed; Section 36, Township 31 North, Range 2 West, Toole County, W.A.P.A. has done a good job of spanning rivers in the past and therefore we do not envision problems with the crossing. We will however request W.A.P.A. to conduct a cultural resource study on the right of way corridor near the river as this area is reputed to have a history of Indian habitation. When conducting such a study we request improved communication between W.A.P.A.'s archaeological staff and DSL's archaeologist. On past projects we have been largely ignored when W.A.P.A. has done such studies on department lands. This should be the opposite case; we should know precisely what is going on, what is found and if

A Western does not select its transmission line corridors and routes on the basis of land ownership. The methodology used in route selection is clearly stated in the DEIS on page iii, Alternative Corridor and Substation Comparison and also in Chapter II on pages II–22 through II–42 and Appendix A. Because cropland is generally more sensitive than rangeland to impacts by transmission line construction, operation, and maintenance and one of Western's main goals is to minimize project impacts, routing alternatives which include a greater proportion of rangeland tend to be selected. For the Conrad–Shelby Project, 20.6 percent of the proposed route crosses State land. About 46.7 percent of the State land crossed is cropland, while 65.6 percent of private land crossed is cropland. The largest portion of State land is at the Marias River crossing.

B Page IV–18 of the DEIS states that an intensive survey of the preferred route was performed. The DSL was aware of the project and in fact, was consulted on a number of occasions to obtain permits to conduct the survey on State lands. In addition, DSL was invited to all of the public scoping meetings and planning workshops for the project. Copies of site forms for sites on State lands were provided to DSL on November 7, 1986. In previous projects, where State lands were involved, Western provided DSL with copies of survey and mitigation study reports. Western is fully aware that artifacts are not its property nor the property of its cultural resources contractors. In past projects, all artifacts collected have been properly curated with the University of Montana or other state–approved repository. No artifacts were collected on State lands for the Conrad–Shelby project. In the future, if requested by DSL, Western will insure that artifacts collected on State lands be returned to DSL.

13

Wayne Wetzel
December 16, 1986
Page 2

the cultural artifacts are catalogued, they should be packaged and shipped to our department. These artifacts belong to the State of Montana, not to W.A.P.A.'s cultural subcontractor.

C A final item that needs to be answered is a question brought out at the public hearing in Conrad, December 10, 1986. It appears that W.A.P.A. contradicted a statement made earlier at a scoping meeting last spring. The statement dealt with allowable irrigation under a W.A. P.A. transmission line. At the December 10, 1986, meeting our DSL representative asked whether wheel-like irrigation would be permitted and he was given an affirmative answer. Last spring, a W.A.P.A. representative stated that under no circumstances is any irrigation allowed under a W.A.P.A. transmission line. We need to have this cleared up.

D It is our feeling that the Conrad-Shelby route is pretty good, and on most of our sections they have hugged the section lines to avoid major severance problems. 50% of the State lands are in agricultural use, and this may require additional effort on our lessee' part, but we conclude that the chosen route is a good one.

jd

cc: Larry Pyke, Central Land Office
Dori Passmann, Resource Development Bureau

C Western's easement states that above–ground mechanical irrigation facilities are prohibited within the right–of–way unless written permission is granted by the Area Manager. The practice by Western for the Conrad–Shelby project would allow mechanical irrigation facilities on the rights–of–way when the system is properly grounded, a conductor is not in continuous contact with the spray, and 15 feet of conductor clearance is maintained between the conductor and the irrigation equipment.

D Comment noted.

14

MONTANA POWER COMPANY

GENERAL OFFICES: 40 EAST BROADWAY, BUTTE, MONTANA 59701 • TELEPHONE (406) 723-5421

DEC 3 '86

December 1, 1986

R2307

Area Manager
Western Area Power Administration
Attention: B2000
PO Box EGY
Billings, MT 59101

Dear Sir:

The Montana Power Company has reviewed the Draft Environmental Impact Statement (DEIS) for Western Area Power Administration's (Western) proposed Conrad-Shelby 230 kV Tranmission Line Project, Montana, DOE/EIS-0124-D.

The Montana Power Company offers the following statement of support for this project:

A The conditions described as the need for this project have been apparent in transmission system modeling studies performed by ourselves and in conjunction with Western and the Central Montana Generation and Transmission Cooperative. The potential transmission solutions identified in these studies are those contained in the DEIS. Based on the information contained in the DEIS, the proposed solution appears to be the most feasible one.

Thank you for the opportunity to review and comment on the DEIS.

Sincerely,

Donald E Olsen for

Eugene A Braun
Manager, Electrical Engineering

DEO/gah

A Comment noted.

TABLE I–3. PUBLIC HEARING COMMENTS

Speaker Name/Organization	Comment	Response
Merrill L. Peacock, Central Montana Electric Power Cooperative	Mr. Peacock described the basis for an "urgent need" for the proposed project and expressed the hope that it would be favorably endorsed by landowners and local communities.	Comment noted.

II. NATIONAL HISTORIC PRESERVATION ACT CONSULTATION

In response to State Historic Preservation Officer (SHPO) recommendations, additional cultural resource fieldwork was undertaken in September 1986. The work included recording historic site 24TL176, the Underdahl Ranch; rerecording 24PN11, a prehistoric stone circle/stone alignment site; and shovel testing 24TL93 and 24TL174, both prehistoric stone circle sites.

The Underdahl Ranch, 24TL176, is located on the north bank of the Marias River approximately 1000 feet west of the proposed transmission line route. The site was patented in 1913 and contains over 15 features dating from approximately 1909 to the present. The site was recorded, mapped, and photographed.

Site 24PN11 was originally recorded in 1979, but only a one–page form was available from the University of Montana site files. Not enough information was available to make a National Register of Historic Places (NRHP) recommendation, therefore, the site was rerecorded. A stone alignment and 13 stone circles were recorded, mapped, and photographed. Trowel tests were placed in Features 1, 4, 5, 8, 11, 12, and 13, and no cultural materials were recovered.

Site 24TL93, consisting of eight stone circles and one hearth, was shovel tested. A 35– by 35–cm. shovel test was placed within each of Features 1, 3, and 6. All excavated materials were screened through 1/4 inch mesh. No cultural materials or levels were discovered in any of the tests.

Site 24TL173, consisting of 33 stone circles and 1 cairn, was also shovel–tested. A 35– by 35–cm. shovel test was placed within each of Features 4, 6, 8, 10, 21, 24, and 28. No cultural materials or levels were discovered. The site map was revised and additional photographs were taken.

Western has determined that only one site, 24TL176, the Underdal Ranch, be designated as eligible for the NRHP. The SHPO has concurred with this determination. Final determinations of impact are being made by Western in consultation with the SHPO. The final cultural resources report will address NRHP eligibility and impact mitigation recommendations. An adjustment to the preferred route southeast of Ledger (Figure II–1, this document) was surveyed for cultural resources in May 1987. One prehistoric site, consisting of two stone circles, was recorded by the supplemental survey. Data from this survey will be included as a supplement to the final Cultural Resources Survey Report and Western will consult with the SHPO regarding any cultural properties discovered.

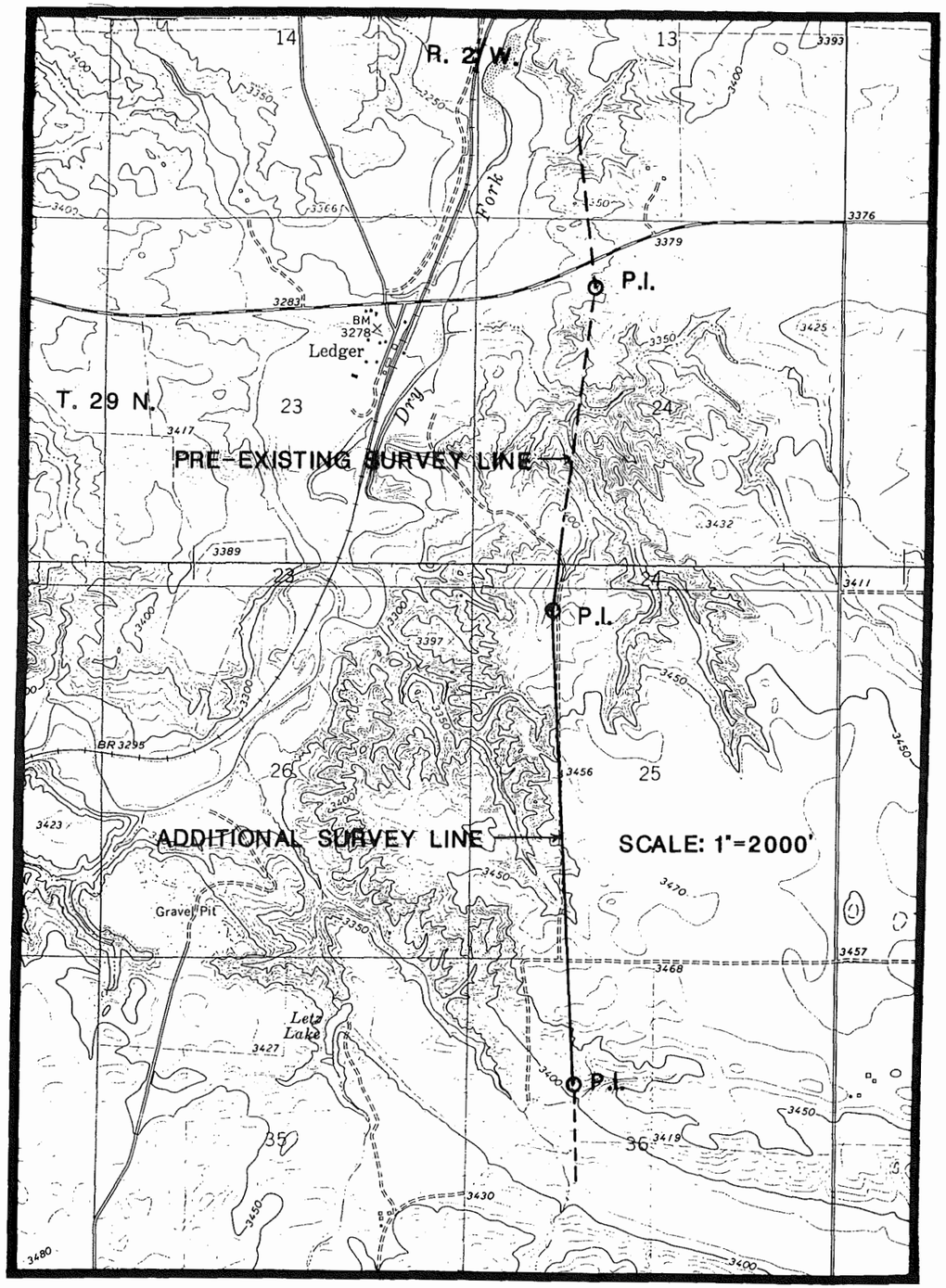

FIGURE II–1. LOCATION FOR ADDITIONAL CULTURAL RESOURCES SURVEY.

III. ERRATA AND CHANGES TO THE DEIS

Page	Paragraph/Line	Comments
Table Of Contents		Should read: "Bibliography" under Appendix B.
List of Tables	Table II–3	"230 kV" should be "230–kV".
List of Tables	Table IV–2	"Sensitivities" should be "Sensitivity".
List of Tables	Table D–2	"Linits" should read "limits".
i	1/7	"Commpliance" should read "compliance".
iii	3/4	Replace "resources" with "resource".
vii	3/6	Replace "will" with" would".
vii	5/2,3	Replace" will" with" would".
x	3/4	Replace" 115 kV" with" 115–kV".
II–9	1/2	Separate "documentedin" so that it reads "documented in".
II–26	3/6	Replace " It" with " The".
III–5	5/5	"Distance" should read "distances".
III–9	3/2	Replace the word "megafauna" with "large animals".
III–13	1/2,3	Change to "Native Americans" and "ceremonial/religious".
III–14	3/3	Rewrite sentence to read: "The study area lies within a broad anticline known as the Sweetgrass Arch which trends southeast to northwest through central Montana and into Canada."
III–15	Figure III–4	The glacial till should not be included in the Kevin Member.

Page	Paragraph/Line	Comments
III–16	5/6	"Mineral" should be "minerals".
III–17	8/5	Insert a period at the end of the sentence.
III–18	3/3	Delete the word "at".
III–19	Table III–2	Replace "MOHS" with "MHOS".
III–20	2/2	"base" should be "based".
III–22	7/1	Wetland should be number (6) etc..
III–23	4/3	Replace "No riparian communities are directly crossed by the preferred route." with "Floodplain and riparian communities are directly crossed by the preferred route in the major drainages of the Marias River and the Dry Fork of the Marias River (1.7 miles)."
III–25	4/2	Omit the word "feed."
III–28	5/3	Replace "emergents, the Palustrine systems on the floodplains, and all other..." with "emergents. The Palustrine systems occur on the floodplains and uplands and include all other...".
IV–2	2/23	Change "pesticide" to "herbicide".
IV–4	5/4	Insert "would" after the word "possible".
IV–8	Table IV–1	Under Project Need: Replace "by" with "be" in the sentence "Can generation...".
IV–12	Table IV–1	Under ROW Acquisition & Use: Replace"be" with "by" in the sentence "How will property...".

Page	Paragraph/Line	Comments
IV–17	4/8	In the last sentence insert "affected" after "significantly".
IV–22	5/1,5	Insert "of" in the first sentence of the paragraph.
IV–29	6/3	Change "Since AN levels..." to "Since AN levels are measured on a logarithmic scale, the change from 58 to 46 dBA between 50 and 600 feet represents a reduction of approximately 1/16th in perceptibility."
IV–41	1/5	Replace "committments" with "commitment".
V–1		Replace "M. Weiringa" with "M. Wieringa".
VI–1		Delete the Advisory Council on Historic Preservation.
VI–1		Change the location of the Department of Transportation from Washington, D.C. to the Regional Representative of the Secretary, Kansas City, MO.
A–5	3/9	Omit "of the".
A–8		Under Resource Quantity – replace "affect" with "affected".
B–1	Burt, W.H.	Replace "Miffline" with "Mifflin".
B–3	Loftness, M.O. 1980	Replace "fromi" with "from".
B–6	Wertheimer, N.	Replace "Childhool" with "Childhood".
B–18	Burt, W.H.	Replace "Miffline" with "Mifflin".
C–7	One–hundred–year flood	Replace "occur one" with "occur once".

Page	Paragraph/Line	Comments
D–1	1/6	Replace "At" with "A".
D–13	7/6	Remove the parentheses from "greater than 5 kV/m".
D–13	7/12	Replace "cite" with "cited".
F–5	Swans	Replace "Thundra" with "Tundra".

APPENDIX A – REFERENCES AND PERSONAL CONTACTS

REFERENCES

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PERSONAL CONTACTS

Algard, George –	Montana Department of Agriculture, Helena,Montana.
Becker, Steve –	County weed agent for Pondera County.
Burgett, D.L. –	U.S. Department of Agriculture, Soil Conservation Service, Conrad, Montana.
Fisher, Garfield –	U.S. Department of Agriculture, Soil Conservation Service, Conrad, Montana.
Fullerton, David –	U.S. Department of Agriculture, Soil Conservation Service, Conrad, Montana.
Hesquit, Julius –	County weed agent for Toole County.
Hunnington, Ken –	U.S. Fish and Wildlife Service, National Wetland Inventory, Denver, Colorado.
Mullin, Barbara –	Montana Department of Agriculture
Pearson, Robert –	U.S. Fish and Wildlife Service
Peters, Jeffery –	Certified Professional Soil Scientist; Principal, Western Ecological Services.
Peterson, Kathy –	Montana Natural Heritage Program and Montana Rare Plant Project.
Richmond, Gerald –	U.S. Geological Survey, Denver, Colorado.
Thompson, Larry –	Montana Department of Natural Resources and Conservation