**ENVIRONMENTAL
ASSESSMENT**

RECEIVED

OCT 17 1996

OSTI

**WELD-WINDSOR
115-kV TRANSMISSION LINE
PROJECT**

Weld County, Colorado

**U.S. DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION
ROCKY MOUNTAIN REGION
LOVELAND, COLORADO**

May 1996

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

MASTER

Environmental Assessment

WELD-WINDSOR 115-kV TRANSMISSION LINE PROJECT

Weld County, Colorado

**U.S. Department of Energy
Western Area Power Administration
Rocky Mountain Region
Loveland, Colorado**

DOE/EA-0195

May 1996

DISCLAIMER

**Portions of this document may be illegible
in electronic image products. Images are
produced from the best available original
document.**

TABLE OF CONTENTS

	<u>Page No.</u>
1.0 PURPOSE AND NEED	1
1.1 Introduction	1
1.2 Purpose and Need	4
1.3 Public Involvement	4
2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION	5
2.1 No Action	5
2.2 Location Alternatives: Constructing a New Line on New Right-of-Way ..	5
2.3 Reconductoring the Existing Line	5
2.4 Proposed Action	6
ROW Needs	8
Construction	8
Schedule	9
Operation and Maintenance	10
Abandonment	10
3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES	17
3.1 Soils	18
3.2 Floodplains and Wetlands	18
3.3 Vegetation and Wildlife	19
3.4 Threatened and Endangered Species and Species of Special Concern ..	20
3.5 Land Use	20
3.6 Visual Quality	21
3.7 Cultural Resources	22
3.8 Electrical Characteristics and Effects	22
3.9 Summary of Impacts	25
4.0 REFERENCES, AGENCIES AND ORGANIZATIONS CONTACTED	28
5.0 LIST OF AGENCIES/INDIVIDUALS TO WHOM COPIES OF THE EA WERE DISTRIBUTED.	29
APPENDIX A - AGENCY LETTERS	

LIST OF FIGURES

PageNo.

Figure 1	Weld-Windsor Transmission Line Project, Weld County, Colorado (Bracewell, CO 7.5' Quad)	2
Figure 2	Weld-Windsor Transmission Line Project, Weld County, Colorado (Greeley, CO 7.5' Quad)	3
Figure 3	Structure Type	7

LIST OF TABLES

Page No.

Table 1	115-kV Transmission Line Design Characteristics	12
Table 2	Typical Personnel and Equipment for Transmission Line Construction	13
Table 3	Standard Construction Practices	14
Table 4	Calculated Corona Effects for the Weld-Windsor 115/115-kV Double Circuit Transmission Line Project	23
Table 5	Calculated Field Effects for the Weld-Windsor 115/115-kV Double Circuit Transmission Line Project	24
Table 6	Summary of Environmental Impacts and Proposed Mitigation for the Weld-Windsor 115-kV Double Circuit Project	26

SUMMARY

The Western Area Power Administration (Western), is proposing to rebuild a 3.0-mile segment of the existing Flatiron-Weld 115-kV transmission line in Weld County between the Windsor Substation and the Weld Substation. The line would be reconducted with new conductor on new wood pole double circuit structures. The new structures would support a double circuit transmission line configuration. The first circuit would be owned by Western and the second owned by Public Service Company of Colorado (PSCO). Twenty-eight existing wood pole H-frame structures would be removed and replaced with twenty-three new wood pole double circuit structures, one steel pole and two wood laminate angle structures. The proposed double circuit transmission line would be constructed on the existing Flatiron-Weld 115-kV transmission line right-of-way (ROW). The existing transmission line would be deenergized, dismantled and removed before the new double circuit transmission line was constructed.

Alternatives considered included no action, constructing PSCO's circuit on new right-of-way, and reconductoring Western's existing line on the same structures. The proposed action was selected because it provided an opportunity to share structures with Public Service Company of Colorado and, overall, would minimize costs and environmental impacts.

The existing 75-foot ROW provides for replacing structures and stringing new transmission line, therefore no new easements would be acquired by either Public Service or Western. Following construction, the ROW would continue to be used by landowners for purposes that do not create a safety hazard or interfere with the rights of Western. Western would have rights to do preventive maintenance and emergency repair on the line. Maintenance would include routine aerial and ground patrols as well as periodic (every 5 years) climbing inspections. Existing right-of-way and access would be used for construction and maintenance. Construction is planned for 1996.

The project would affect a rural area, primarily irrigated and dryland farmland. The transmission line crosses within 500-feet of seven rural residences. The project would have minor affects on existing natural or human resources. The project would have minor benefits for agricultural operations by minimizing the number of structures and guy wires present in agricultural fields. Wood laminate structures would be used wherever turning structures were needed and would replace three-pole wooden structures currently present on the line. One steel pole structure would be used where the circuits enter the Weld Substation. Any radio or television interference or induced shocks on fences or buildings would be corrected by Western. The electric and magnetic effects associated with the existing line or the new double circuit are not anticipated to cause adverse effects on public health or safety.

There are very minor environmental effects associated with the proposed project. See Table 6, page 26 for a summary of these effects.

1.0 PURPOSE AND NEED

1.1 Introduction

As part of Western's overall plans for providing reliable electrical power to northern Colorado, Western is planning several minor modifications, in cooperation with Public Service Company of Colorado (PSCO), to its facilities in the Greeley area. Both Western and PSCO have committed to an equitable exchange of facilities and relocation of transmission paths in lieu of constructing new facilities or duplicating existing facilities. To accomplish this Western:

- o Has transferred ownership of the Greeley Substation to PSCO.

Currently PSCO owns and operates most of the equipment at this facility. The transaction involved only a land title exchange.

- o Has transferred ownership to PSCO for a 3.5 mile portion of the Weld-Greeley 115-kV single circuit between PSCO's Weld Substation and 4th Street and 35th Avenue in Greeley.

This transaction involved only a land title exchange.

- o Proposes to build a new 2.8 mile section of 115-kV double circuit transmission line between Western's Kodak East Tap and Weld Substation.

This will enable Western to share structures with PSCO to make better use of Western's existing right-of-way. One of the circuits would replace a portion of Western's Flatiron-Weld 115-kV transmission line which is in need of reconductoring, and the second circuit would provide a second source of power for PSCO's Johnstown 115-kV transmission line by connecting it to PSCO's Weld Substation.

In exchange, PSCO has provided Western;

- o One circuit of their existing 14.5 mile Weld-Rosedale 115-kV double circuit.

Western also plans to dismantle and remove the remaining 1.5 mile segment of the Weld-Greeley 115-kV transmission line and the entire 4.5 mile Greeley-Rosedale 115-kV line (Figures 1 and 2). These two lines cross through many residential neighborhoods in Greeley and have several easement encroachments which makes it difficult to service and also presents a potential electrical hazard to landowners along the right-of-way.

Building the new double circuit 115-kV transmission line between Kodak East Tap and Weld and removing the previously identified transmission lines, would be the only actions resulting in any physical changes or effects on the environment. This EA addresses rebuilding the Flatiron-Weld Transmission line as a double circuit between Eask Kodak Tap and Weld Substation.

The removal of the Weld-Greeley 115-kV line section and the Greeley-Rosedale 115-kV transmission line is the subject of a separate environmental analysis and NEPA process. Removing the 115-kV lines from the residential neighborhoods would have primarily positive impacts on the environment. On December 13, 1993 Western determined that this type of action meets the definition of a "categorical exclusion" under DOE guidelines for the National Environmental Policy Act and therefore does not require further documentation.

1.2 Purpose and Need

The Flatiron-Weld 115-kV transmission line is a principal part of Western's Northern Colorado transmission system. The transmission line was constructed in 1950 as part of the Colorado-Big Thompson Project to serve communities in Northeastern Colorado. Originally designed and built with wood pole H-frame structures and 477 KCM ACSR conductor, the Flatiron-Weld transmission line was reconducted in 1959 with 795 KCM ACSR to accommodate increased loads in the area. The new conductor was strung at a higher tension on the existing H-frames to meet minimum ground clearance criteria. Over time, the increased tension created problems at the points where the conductor is clamped to the insulators. Excessive vibrations caused the outer strands of the conductors to break at the suspension shoes.

In 1990, Western reconducted and repaired 22 miles of the Flatiron-Weld transmission line, between Flatiron Switchyard and Windsor Substation, which corrected the problem. However, a 3-mile section of transmission line between Windsor Sustation and Weld Substation was not reconducted. The purpose of the project is to recondutor the existing conductor while meeting PSCO's future needs by sharing Western's ROW and providing a second source of power for PSCO's Johnstown 115-kV line by connecting if with Weld Substation.

1.3 Public Involvement

Only eight landowners would have lands affected by the proposed action. Western's Realty Specialists met with individual landowners to discuss the project and their concerns. The draft Environmental Assessment was sent to the State of Colorado agencies and others for review in early 1996 (Chapter 5.0). No additional public involvement is planned.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

Western considered four alternatives including; the no action alternative, system alternatives, routing alternatives, and design alternatives. The environmental consequences of these alternatives are considered and discussed in the following sections.

Energy conservation was not considered as an alternative for this project since energy conservation affects primarily demand for energy. The purpose and need for this project is to correct a physical problem with deteriorating conductor. As part of its marketing policies, Western encourages energy conservation through the promotion of efficient and economic uses of energy, and through the use of renewable resources such as hydro, wind, solar and geothermal energy sources. Energy conservation programs have the advantage of reducing energy consumption and having no significant environmental impacts. However, the purpose and need for this project can not be met by energy conservation.

2.1 No Action

Under the No Action Alternative, Western would not rebuild the 115-kV transmission line between the Weld and Windsor Substations, but would only perform essential maintenance activities as needed. Structures, hardware, and conductor would be repaired and/or replaced as required during regular maintenance operations and in response to emergency outages on the line. These repairs would have to be made with increasing frequency as the line increases in age.

The No Action Alternative was eliminated because the continuing deterioration of the line could result in loss of system reliability and power outages.

2.2 Location Alternatives: Constructing a New Line on New Right-of-Way

Reconductoring the existing Weld-Windsor transmission line and constructing a new circuit from Windsor to Weld on new ROW for PSCO was eliminated as an alternative due to overall costs and environmental considerations. Developing a new right-of-way would have a greater adverse effect on the environment than rebuilding on Western's existing right-of-way. This is especially true for effects on local agricultural operations since irrigation and field orientation have been designed around the existing right-of-way.

2.3 Reconductoring the Existing Line

Reconductoring the Weld-Windsor transmission line utilizing the existing wood-pole H-frame structures is a viable alternative and was originally considered for this segment

of transmission line. The transmission line between Flatiron Switchyard and Windsor Substation was reconducted and repaired in the summer of 1990. The section between Windsor Substation and Weld Substation was not reconducted because Western had the opportunity to replace and upgrade the line and share costs with PSCO. If Western selected reconductoring as the preferred alternative, PSCO would need to construct 3 additional miles of new single circuit 115-kV transmission line, on new ROW, to complete its Weld-Johnstown transmission line system and Western would reconductor the Weld-Windsor 115-kV circuit. Due to the greater overall costs to both utilities and the greater cumulative environmental impacts resulting from two separate construction projects, this alternative was eliminated.

2.4 Proposed Action

Western's proposed action is to;

- o Rebuild and maintain a 2.8 mile portion of the Flatiron-Weld 115-kV transmission line(between Kodak East Tap and Weld Substations) as a double circuit (Figure 1).
- o Reconductor and transfer ownership of 0.57 mile of the existing transmission line between the East Kodak Tap and the Windsor Substation to PSCO (Figure 1).

The new double circuit transmission line would be constructed on Western's existing 75-foot ROW. The existing wood pole H-frame structures, constructed in 1950, would be removed and replaced with a wood pole double circuit structure configuration (Figure 3). Steel pole and wood laminate structures would be used at angle or stress points. At this time, only one steel structure is proposed. A steel structure would be used at the angle poin twhere PSCO's circuit connects to Weld Substation. The double circuit transmission line would extend 2.8 miles from the Kodak East Tap to the Weld Substation. The Kodak East Tap to Windsor Substation 115-kV line would be disconnected from Western's system, and reconnected as part of PSCO's Johnstown-Weld 115-kV circuit. The same structures would be used along this 0.57 mile segment but the structures would be reconducted with new conductor and some structures replaced.

Additional minor facility changes would include removing equipment at the Windsor Substation, and installing two wood four-pole structures and two new line switches near the existing Kodak West Tap (to be renamed the Windsor Tap).. One line switch would be located west of the tap and the other line switch would be located north of the tap on the tapline (Figure 1).

SEE DRAWING KOK-WLD 6002
FOR STEEL ANGLE DETAILS AND
41 1012 FOR GROUNDING DETAILS

OVERH
SEE DR
LIST

HEAD GROUND WIRE DETAIL
DRAWING 41 1019 FOR DETAILS AND MATERIAL

PART NO.	QUANTITY	STRUCTURE MATERIAL
1	2	POLE, SEE BIDDING SCHEDULE FOR HEIGHT
5	1	X-BRACE, COMPLETE WITH FITTINGS, 3 3/8" X 4 3/8" (HUGHES BROS. NO. 1042 OR EQ.)
30	AS REQUIRED	NO. 2 AWG 30% CONDUCTIVITY, COPPER CLAD WIRE ATTACHED WITH 2-INCH STAPLES

NOTES

1. POLES SHALL BE CLASS 1 DOUGLAS FIR OR SOUTHERN YELLOW PINE.
2. EXCEEDMENT "E" SHALL BE $L / 10 + 2$ FEET, WHERE "L" IS THE OVERALL LENGTH OF POLE.

**Figure 3 - STRUCTURE TYPE
Weld-Windsor
Transmission Line Project**

UNITED STATES DEPARTMENT OF ENERGY WESTERN AREA POWER ADMINISTRATION HEADQUARTERS - GOLDEN, COLORADO		
TRANSMISSION LINE STRUCTURES H2PX WOOD POLE STRUCTURES OUTLINE AND DESIGN LOADS		
DESIGNED _____	RECOMMENDED _____	
DRAWN _____	APPROVED _____	
CHECKED _____	CHIEF, TRANSMISSION LINE BRANCH	
OCTOBER 9, 1995	KOK-WLD	6004

ROW Needs

The proposed double circuit transmission line would be constructed on the existing Flatiron-Weld 115-kV transmission line ROW. The existing ROW is 75 feet and provides adequate ROW for the proposed double circuit configuration. Western's current easements provide for rebuilding and attaching additional conductors. Therefore, no new ROW easements will be acquired.

Construction

Conventional transmission line construction would be used for this project. Access would be required to all existing and proposed transmission line structure locations. Western would coordinate with landowners and would provide advanced notice before construction. Table 2 lists personnel and equipment needed for transmission line construction. Table 3 lists Western's Standard Construction Practices. Construction would proceed in the following sequential manner:

1. **Surveying.** The transmission line ROW would be surveyed. The survey would locate the transmission line along the centerline, determine profiles, and locate structures. Gates would be installed in existing fences.
2. **Materials Handling and Hauling.** Construction materials would be stored at a temporary staging area. The staging area would serve as a reporting location for workers, parking space for vehicles, and as a storage area for materials. Materials would be hauled to the staging area using existing roads and streets.
3. **Line Removal.** The existing Weld-Windsor 115-kV transmission line would be removed before the new double circuit transmission line was constructed. Electrical service in the region would be maintained by utilizing the existing electrical system to provide backup service to the two substations.

The existing transmission line would be deenergized and the conductor would be removed followed by removal of all hardware. Conductor would be wound on reels located at preselected sites.

Transmission line structures would then be removed. In some areas the poles may be cut at ground level, with the below ground portion left in place. In other areas, such as cultivated fields, the poles would be pulled completely out of the ground and removed. The holes would be backfilled and compacted. Some poles and conductor may be salvaged or sold by the contractor. Some poles may eventually be disposed of in approved landfills. Western's Realty Specialists will consult with each individual landowner regarding their preferences on pole removals.

3. **Structure Assembly.** A truck-mounted auger would dig holes for the new structures. Excess soil material would be spread evenly around the base or would be removed. Erection crews would then assemble new structures at individual sites, or, portions of the structures may be assembled at the staging area and then hauled to the site. The holes would be backfilled and compacted. Steel poles would require concrete in the holes for foundations. Insulators and hardware would be hung on the new structures. Insulators may be dark-colored porcelain or polymer. CorTen steel (a weathered steel that is dark brown in color) would be used for single steel poles. All new conductor would be non-specular.
4. **Conductor Stringing.** Reels of conductor would be delivered to wire-handling sites, located at each end of the project. The conductor pulling, sagging and clipping operations would take place quickly. Tension-stringing methods, which do not allow the conductor to touch the ground, would be used. Steel-pulling cables would be pulled down the line to large pulleys hanging from the insulator strings attached to the structures. These pulling cables and pulleys would pull the line under tension for the entire length of the project.
6. **Cleanup and Restoration.** Old wood poles, waste construction materials and rubbish from all construction areas would be collected, hauled away, and disposed of at approved sites. All disturbed areas not returned to cultivation would be reseeded to minimize erosion. The intent would be to restore all construction areas as near as feasible to their original condition. Any damaged gates or fences would be repaired.
7. **Safety Program.** Western would require the contractor to prepare and conduct a safety program (subject to Western's approval) in compliance with all applicable Federal, state, and local safety standards and requirements, and Western's general practices and policies.

Schedule

Construction would be scheduled if possible to avoid impacting crops. Given that crops in the project area are irrigated, late fall or early winter would be the period least likely to affect crop production. If construction must occur during crop production, landowners would be compensated for lost revenues. The project is scheduled for construction in 1996. The project must be completed by December 31, 1996. The following project schedule outlines major project milestones:

- Complete Final Design -- Summer 1995
- Issue Environmental Assessment for State review -- early 1996
- Select Construction Contractor -- Spring 1996
- Complete Construction -- Fall and Winter 1996

Operation and Maintenance

The day to day operation of the transmission lines would be directed by system dispatchers in power control centers. These dispatchers use communication facilities to operate circuit breakers that control the transfer of power through the lines. These circuit breakers also operate automatically to ensure safety, for example, in the event of a structure or conductor failure.

Western's preventive maintenance program for transmission lines would include routine aerial and ground patrols. Aerial patrols would be conducted four times per year. Ground patrols would be conducted once a year to detect equipment needing repair or replacement (i.e., structures, insulators, and conductors). In addition, climbing inspections would be conducted on an on-going basis, with each structure being climbed and inspected once every 5 years.

Maintenance may include repairing damaged conductors, inspection and repair of structures, and replacing damaged and broken insulators. In addition to maintaining the structures, conductors, and ROW, Western would maintain gates installed by Western on access roads and maintain the access roads to minimize erosion. Transmission lines are sometimes damaged by storms, floods, vandalism, or accidents and require immediate repair. Emergency repair would involve prompt movement of crews to repair the damage and replace any equipment. If access roads are damaged as a result of the repair activities, Western would repair them as required.

Various practices may be used at structures and along the transmission line ROW to prevent undesirable vegetation. Because of the semiarid, agricultural nature of the project area, very minor and infrequent measures would be necessary to control vegetation. Herbicides would not normally be used within the transmission line ROW, unless requested by the landowner for the purposes of reducing noxious weeds around transmission line structures.

Abandonment

At the end of the useful life of the proposed project (50 years); the transmission lines would either be replaced or removed. In either case, the ground wires, conductors, insulators, and hardware would be dismantled and removed from the ROW. The structures would be removed along with any concrete foundations. Areas disturbed during the dismantling process would be regraded and reseeded.

insulators, and hardware would be dismantled and removed from the ROW. The structures would be removed along with any concrete foundations. Areas disturbed during the dismantling process would be regraded and reseeded.

TABLE 1

**115-kV Transmission Line Design Characteristics
(Approximate Figures)**

Description	Single-Circuit H-Frame, Wood Pole (Existing)	Double-Circuit H-Frame, Wood Pole (Proposed)
Voltage	115-kV	115/115-kV
ROW width	75 feet	75 feet
Span between structures (average)	400 feet	570 feet
Number of structures	28	23 + 2 steel angle structures
Height of structure (average)	60 feet	70 feet
Height of structure (typical range)	43 to 79 feet	65-85 feet
Structure base area (permanent)	45 square feet	45 square feet
Land disturbed at structure base during construction (temporary)	900 square feet	900 square feet
Minimum ground clearance beneath conductor (at maximum sag at 120 degrees F)	23 feet	23 feet
Maximum height of machinery that can be operated safely under line	16 feet	23 feet
Circuit configuration	horizontal	horizontal double circuit with inverse phasing
Conductor size (circular mils)	477,000	795,000

TABLE 2

Typical Personnel and Equipment for Transmission Line Construction

Activity	Number of Persons	Equipment
Surveying	4	pickup truck
Site preparation	2	blade, pick-up truck
Construction yard preparation	2	blade, pick-up truck
Materials hauling	8-12	tractor trailer, hydrocrane, flatbed truck, pick-up truck
Foundation excavation	4-8	tractor with auger, backhoe, pickup truck
Structure assembly	6-12	hydrocrane, flatbed truck, pickup truck
Structure demolition	6-12	hydrocrane, flatbed truck, pickup truck
Structure erection	4-6	crane (50 to 100 ton capacity), pickup trucks
Groundwire and conductor stringing	5-10	reel trailer, tensioner, puller, digger, winch truck, bucket trucks, pickup truck
Cleanup	3-6	Flatbed and pickup trucks
Seeding	1-2	hydroseeder or pickup trucks

Note: Most of the activities above are expected to progress sequentially, and the peak number of people at any one time during transmission line construction is expected to be 15 to 20 people.

TABLE 3

Standard Construction Practices

-
1. The contractor shall limit the movement of crews and equipment to the ROW, including access routes. The contractor shall limit movement on the ROW to minimize damage to grazing land, crops, orchards, and property, and shall avoid marring the lands. The contractor shall coordinate with the landowners to avoid impacting the normal function of irrigation devices during project construction and operation.
 2. When weather and ground conditions permit, the contractor shall obliterate all construction caused deep ruts that are hazardous to farming operations and to movement of equipment. Such ruts shall be leveled, filled and graded, or otherwise eliminated in an approved manner. Ruts, scars, and compacted soils in hay meadows, alfalfa fields, pastures, and cultivated productive lands shall have the soil loosened and leveled by scarifying, harrowing, discing, or other approved methods. Damage to ditches, tile drains, terraces, roads, and other features of the land shall be corrected. At the end of each construction season and before final acceptance of the work in these agricultural areas, all ruts shall be obliterated, and all trails and areas that are hard-packed as a result of construction operations shall be loosened and leveled. The land and facilities shall be restored as nearly as practicable to the original condition.
 3. Water turnoff bars or small terraces shall be constructed across all ROW trails on hillsides to prevent water erosion and to facilitate natural revegetation on the trails.
 4. The contractor shall comply with all Federal, state, and local environmental laws, orders and regulations. Prior to construction, all supervisory construction personnel will be instructed on the protection of cultural and ecological resources. To assist in this effort, the construction contract will address: a) Federal and state laws regarding antiquities and plants and wildlife, including collection and removal; and b) the importance of these resources and the purpose and necessity of protecting them.
 5. The contractor shall exercise care to preserve the natural landscape and shall conduct his construction operations so as to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings in the vicinity of the work. Except where clearing is required for permanent works, approved construction roads, or excavation operations, vegetation shall be preserved and

shall be protected from damage by the contractor's construction operations and equipment.

6. On completion of the work, all work areas except access trails shall be scarified or left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion. All destruction, scarring, damage, or defacing of the landscape resulting from the contractor's operations shall be repaired by the contractor.
7. Construction trails not required for maintenance access shall be restored to the original contour and made impassable to vehicular traffic. The surfaces of such construction trails shall be scarified as needed to provide a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion.
8. Construction staging areas shall be located and arranged in a manner to preserve trees and vegetation to the maximum practicable extent. On abandonment, all storage and construction materials and debris shall be removed from the site. The area shall be regraded, as required, so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion.
9. Borrow pits shall be so excavated that water will not collect and stand therein. Before being abandoned, the sides of borrow pits shall be brought to stable slopes, with slope intersections shaped to carry the natural contour of adjacent, undisturbed terrain into the pit or borrow area, giving a natural appearance. Waste piles shall be shaped to provide a natural appearance.
10. Construction activities shall be performed by methods that prevent entrance or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into streams flowing or dry water courses, lakes, and underground water sources. Such pollutants and wastes include, but are not restricted to, refuse, garbage, cement, concrete, sanitary waste, industrial waste, radioactive substances, oil and other petroleum products, aggregate processing tailings, mineral salts, and thermal pollution.
11. Dewatering work for structure foundations or earthwork operations adjacent to, or encroaching on, streams or water courses will not be performed without prior approval from appropriate state agencies.
12. Excavated material or other construction materials shall not be stockpiled or deposited near or on stream banks, lake shorelines, or other water course

perimeters where they can be washed away by high water or storm runoff or can in any way encroach upon the actual water source itself.

13. Waste waters from construction operations shall not enter streams, water courses, or other surface waters without use of such turbidity control methods as settling ponds, gravel-filter entrapment dikes, approved flocculating processes that are not harmful to fish, recirculation systems for washing of aggregates, or other approved methods. Any such waste waters discharged into surface waters shall be essentially free of settleable material. Settleable material is defined as that material that will settle from the water by gravity during a 1-hour quiescent period.
14. The contractor shall utilize such practicable methods and devices as are reasonably available to control, prevent, and otherwise minimize atmospheric emissions or discharges of air contaminants.
15. Equipment and vehicles that show excessive emissions of exhaust gases due to poor engine adjustments, or other inefficient operating conditions, shall not be operated until corrective repairs or adjustments are made.
16. Burning or burying of waste materials on the ROW or at the construction site will not be allowed. The contractor shall remove all waste materials from the construction area. All materials resulting from the contractor's clearing operations shall be removed from the ROW.
17. The contractor shall make all necessary provisions in conformance with safety requirements for maintaining the flow of public traffic and shall conduct his construction operations so as to offer the least possible obstruction and inconvenience to public traffic.
18. Western will apply necessary mitigation to eliminate problems of induced currents and voltages onto conductive objects sharing a ROW, to the mutual satisfaction of the parties involved. Western will install fence grounds on all fences that cross or are parallel to the proposed line.
19. The contractor will span the riparian areas located along the ROW and avoid physical disturbance to riparian vegetation. Equipment and vehicles will not cross riparian areas on the ROW during construction and operation activities. Existing bridges or fords will be used to access the ROW on either side of riparian areas.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The study area encompasses 4 square miles including portions of section 5 and 6 in T5N R66W and sections 1 and 2 in T5N R67W in Weld County, Colorado (Figures 1 and 2). The study area is rural in character consisting primarily of irrigated cropland and farmsteads. Other land uses include a dairy, a county park and the Weld and Windsor substations. The nearest community is Greeley, Colorado, located 2.5 miles east of the Weld Substation.

The description of the affected environment is organized into the following subject areas:

- 3.1 Soils
- 3.2 Floodplains and Wetlands
- 3.3 Vegetation and Wildlife
- 3.4 Threatened and Endangered Species
- 3.5 Land Use
- 3.6 Visual Quality
- 3.7 Cultural Resources
- 3.8 Electrical Characteristics

Other environmental resource areas that were considered, but are not described in detail in this analysis include the following:

- o Air Quality -- The project would have very minor, local, short-term effects on air quality primarily associated with short-term emissions from construction vehicles and fugitive dust from construction.
- o Climate -- The project would not affect climate.
- o Geology and Topography -- With the exception of soils, the project would not affect the physical environment.
- o Water Resources -- The project would not affect surface water or ground water resources.
- o Socioeconomics -- The construction and operation of this project would have no measurable effects on population, employment, or other socioeconomic factors. Income would be generated on a small scale by the contractor for materials purchased in the local economy or from lodging, food, retail and gas sales. Western does not pay property tax.

- o Recreation -- No major recreation areas or facilities occur along the transmission line. Riverside Park, a Weld County picnic facility, is located 0.5 mile northeast of the Windsor Substation. It would not be affected by construction or operation of the project.

3.1 Soils

The project area lies within the Colorado Piedmont portion of the Great Plains. The transmission line traverses rolling upland terraces. Soils are well developed and highly productive, supporting irrigated cropland. About 1.5 miles of the project crosses irrigated cropland, about one half of this area is classified as "prime" farmland (national importance) the other half is considered irrigated farmland (state importance). The remaining 0.7 miles cross dry farmland.

Soils in the project area generally have low erosion potential. Erosive soils are limited to small ravines flowing from south to north to the Cache La Poudre River. The project would span these ravines. Landslide potential is low.

Construction would adversely affect soils if construction occurred during wet conditions when heavy construction equipment could cause rutting or compaction. Rutting could change drainage patterns resulting in areas of standing water. Compaction could limit the productivity of these soils by limiting drainage and the available water capacity for crops. These effects may result in smaller crop plants and/or lower crop yields. Productivity could also be affected if subsoils and topsoil were mixed. Subsoils excavated from foundation holes may contain excess salts as the result of irrigation and leaching. Excess salts could be detrimental to crops.

Impacts to soils would be minimized by scheduling construction when soils are dry and crops are not in the fields. Western's standard construction practices require that areas where equipment causes scarring, rutting, or compaction be scarified and recontoured. Topsoil would be segregated, stockpiled and spread at the base of the structure. Subsoil may be used to fill structure holes during removal of the existing Weld-Windsor line. Excess soil may also be disposed of offsite.

3.2 Floodplains and Wetlands

The project area is in the Cache La Poudre River Basin. The project is outside of the 100-year base flood of the Cache la Poudre River and its major tributaries, therefore, floodplains would not be affected (HUD 1979). A small unnamed tributary drainage lies immediately west of the Weld Substation. The drainage flows from south to north between the North Boomerang Extension Ditch and the Jones Ditch for about 1.25 miles. This small drainage captures irrigation runoff and is dammed. The dam

provides for permanent water along a 1500-foot section adjacent to the substation and has created a man-made wetland (marsh) next to the Weld Substation.

The Weld-Windsor transmission line crosses this drainage and one other small intermittent drain. Western would not require the placement of any new structures in the wetland. PSCo may require three additional structures to connect their circuit to Weld Substation. However only one structure would be near the wetland and there is ample space to construct a new structure outside of the wetland. No adverse effects to the wetland are anticipated.

3.3 Vegetation and Wildlife

Natural vegetation along the existing transmission line corridor is limited to croplands, small ravines and patches of upland areas surrounded by large irrigated crop fields. These pockets of natural vegetation occur in areas generally unsuitable for irrigation. The dominant vegetation type is grassland. Small drainages that capture irrigation runoff often support small trees, primarily cottonwood, boxelder and chokecherry.

A freshwater marsh, occurs immediately west of the Weld Substation in an intermittent tributary to the Cache La Poudre River. The drainage is dammed north of the substation forming a small pond and permanent backwater area on Western's property. The wetland is about 5 acres in size. Dominant species include cattails, bulrushes, and knapweed.

A variety of animals are expected to occupy or frequent the freshwater marsh including; mule deer, raccoons, muskrats, striped skunks, foxes, coyotes, as well as a variety of mice and voles. Common birds include meadow larks, red-winged blackbirds, marsh hawks, and resident waterfowl such as mallards and green-winged teal. Impacts to wildlife within the marsh would be limited to temporary displacement.

The existing transmission lines currently present a collision hazard for birds and waterfowl using the marsh. The proposed action is not expected to affect this hazard either positively or negatively since Western will not be changing the conductor or structure configuration into the Weld Substation. However, PSCO will bring one additional set of wires into the substation. This will increase the existing hazard.

No significant impacts to wetland vegetation is expected. Seven transmission line structures are currently located adjacent to, but not in, the wetland. Western would not require additional structures or construction in the wetland. The new conductor would be hung on structures already in place.

The project would result in no net change to native vegetation. The rebuilt Weld-Windsor transmission line would span existing drainages and small hills where native

vegetation is present. Fall or winter construction would minimize any impacts to vegetation associated with vehicular access provided construction occurs during dry conditions.

3.4 Threatened and Endangered Species and Species of Special Concern

Great blue heron, listed by the Colorado Natural Heritage Inventory as a species of concern, may occur near the study area along the Cache La Poudre River. Several raptors including marsh hawks, great-horned owls, and prairie falcons may occasionally hunt the wetland west of Weld Substation. Bald eagles winter along the Cache La Poudre River but would not frequent habitats in the study area.

Prairie dog colonies potentially provide habitat for the federally-listed endangered black-footed ferret. A large prairie dog colony (greater than 600 acres) occurs in native grassland west and north of the Windsor Substation. This colony occurs beyond the project study area and would not be affected by the proposed action. The proposed action is not expected to affect any special status species. Western, in consultation with U.S. Fish and Wildlife Service has determined that the proposed action would not adversely effect threatened and endangered species (see Appendix A, U.S. Fish and Wildlife 1993).

3.5 Land Use

Currently land in the project area is zoned agriculture. Future land uses include residential and commercial development of lands east of the Weld Substation. No changes in land use are anticipated for the 3.0 mile segment along the transmission line. Land ownership is private. Ten privately owned parcels/farms, involving eight landowners, occur along the transmission line. Seven rural residences occur within 500 feet of the Weld-Windsor transmission line. One agricultural products facility, the Hertzke Dairy, occurs near the Windsor Substation. Riverside Park, a county facility, is located approximately 0.5 mile from the transmission line.

The majority of croplands in the project area are irrigated by either center pivot or flood irrigation. Most of the farmland in the study area is designated as "prime farmland" (Important Farmlands of Weld County, Colorado, USDA, 1979). Crops consist primarily of corn and beans under rotational planting. Some alfalfa and pasture land is present near the dairy and crops near the Windsor Tap consist of small grains on dryland. The project would cross approximately 38 acres. Transmission line structures would permanently affect 1,125 square feet, or about two-hundredths of an acre.

Replacing wood pole H-frame structures with similar H-frame structures along the same right-of-way should not adversely affect agricultural activity. Two steel structures would replace existing three-pole turning structures, which require extensive guy wires.

Removal of the guy wires would provide better turning conditions for farm equipment. The proposed action would reduce the number of structures from 28 to 23 structures which would also improve turning conditions for farm equipment.

The taller transmission line structures may slightly affect flying conditions for aerial applicators (crop dusters) applying insecticides on the fields. The new wood structures would be 10 feet taller than the existing structures, and may require pilots to descend at steeper angles to reach the fields. Given the nearness of the project to the Weld Substation where several transmission lines converge, local crop dusters are likely to be familiar with this hazard. The transmission line would be marked with aerial markers where transmission lines intersect.

The proposed action is not expected to affect irrigation activity or other farm management practices. Any irrigation ditches or channels damaged by construction would be repaired. Any areas where equipment caused rutting, scarring or compaction would be scarified and recontoured to minimize impacts to crop production.

Western does not routinely control vegetation around structures. If weeds became a concern, Western would control vegetation at the landowners request. Control measures would utilize best management practices. Any application of herbicide would be done by a certified applicator.

3.6 Visual Quality

Visual resources along the transmission line are characterized by rolling terrain broken by roadways, buildings and transmission lines. In the vicinity of the Weld and Windsor Substations several large transmission lines converge. The existing transmission line is the least intrusive of the lines because the wood poles are generally smaller and less conspicuous than the steel structures. The proposed rebuilt transmission line will also be on wood poles and should not alter visual quality in the vicinity over existing conditions. The new structures are ten feet taller but fewer in number (23 versus 28) and therefore may improve visual quality from some viewpoints. The configuration of the new structures is somewhat more complex than the existing structures. See Figure 3 for a drawing of the proposed structures.

Sensitive viewpoints include farms, rural residences, Riverside Park, and Colorado State Highway 34. The transmission line is visible from the park and Highway 34.

At Riverside Park the structures would be more visible than from Highway 34 since they will be viewed from the north and will be backlit by sunlight. However, Riverside Park's viewshed is primarily vistas to the west and northwest, where views of the Front Range and the Cache La Poudre River can be seen. The transmission line is visible only when looking south from the picnic area.

3.7 Cultural Resources

Western conducted a Class III intensive field survey of the transmission line ROW (40.9 acres) and did not identify any cultural resources. The Colorado State Historic Preservation Office has concurred with Western's determination that cultural resources would not be adversely affected by this project (See Appendix A, Agency Letters).

3.8 Electrical Characteristics and Effects

Potential electrical effects associated with transmission lines and substations include ozone generation, radio and television interference, audible noise, electric and magnetic field interference and safety concerns.

Corona effects (ozone generation, communication interference and audible noise) are not expected for a 115/230-kV double circuit line. If radio or television interference occurred, Western would take corrective actions to minimize effects to acceptable levels.

Other electrical effects include safety concerns for accidental fire and electrical shocks. Persons working near the line should exercise caution not to contact the conductors with long metallic objects such as irrigation pipe. Such contact would produce an electrical shock. Western would correct any induced shocks on fences or buildings associated with the new double circuit.

Recent scientific studies suggest that there may be a health hazard associated with long-term exposure to electromagnetic fields including power lines. The evidence however, has not established a cause and effect relationship. The consensus of opinion of major researchers regarding the link between magnetic and electric field exposure and health effects continues to center on the need for further research.

The electric and magnetic field configurations for this three-mile segment of transmission line are illustrated in Table 4 and 5. The table illustrates the existing fields given the existing 115-kV H-frame configuration and fields for the proposed double circuit configuration. The electric and magnetic fields in Table 5 include calculated effects for both the segment parallel to the Ault-St Vrain 230-kV line (near the Windsor Substation where only reconductoring would occur) and for the segment of transmission line with the new double circuit.

TABLE 4

**Calculated Corona Effects for the Weld-Windsor
115/115-kV Double Circuit Transmission Line Project¹**

	Voltage, kilovolts (kV)	ROW Width, feet	Average Conductor Height Above Ground, feet	Average Wet-weather Audible Noise at Edge of ROW, decibels A-weighted (dBA)	Average Fair-weather Audible Noise at Edge of ROW, decibels A-weighted (dBA)	Average Wet-weather Radio Interference (RI) at Edge of ROW, decibels above 1 microvolt per meter (dBμV/m)	Average Fair-weather Radio Interference (RI) at Edge of ROW, decibels above 1 microvolt per meter (dBμV/m)	Wet-weather Television Interference (TVI) at Edge of ROW, decibels above 1 microvolt per meter (dBuV/m)	Maximum Incremental Ozone-levels at Ground Level, parts per billion (ppb) ²	
Existing Weld-Windsor 115-kV system with 795 ASCR conductor H-frame wood pole, single circuit (1 ckt.) configuration	115	75	32	19.3	-5.7	35.2	18.2	-3.1	0	
Proposed Weld-Windsor 115-kV system with 795 ASCR conductor H-frame wood pole double circuit (2 ckt.) configuration	115	75	32	24.9	-.1	39.7	22.7	0	.0237	South edge of ROW
			32	24.9	-.1	40.2	23.2	.6	.0	North edge of ROW

¹ Since corona effects are produced as a result of system voltage, the corona effects will be the same for all system currents (loads).

² Calculation assumes a 1.0 mph perpendicular wind and a 0.05 inch/hr rain.

TABLE 5

**Calculated Field Effects for the Weld-Windsor 115/115-kV
Double Circuit Transmission Line Project**

		EXISTING SEGMENT A Weld-Windsor 115-kV single circuit on 75-ft ROW with 795 conductor parallel to Ault-Ft. St. Vrain 230-kV single circuit with 1275 ASCR conductor		EXISTING SEGMENT B Weld-Windsor 115-kV system with 795 conductor and 75 ft ROW		PROPOSED SEGMENT A Weld-Windsor 115-kV single circuit on 75-ft ROW with 795 ASCR conductor parallel to Ault-Ft. St. Vrain 230- kV single circuit with 1275 conductor		PROPOSED SEGMENT B Weld-Windsor 115-kV double circuit with 795 conductor on 75-ft ROW	
		1	2	1	2	1,4	2,4	1,4	2,4
		H-frame Wood Pole ³	H-frame Wood Pole ³	H-frame Wood Pole ³	H-frame Wood Pole ³	H-frame Single Circuit	H-frame Single Circuit	H-frame Double Circuit	H-frame Double Circuit
Voltage, kilovolts (kV)		115	115	115	115	115	115	115/115	115/115
Current, amperes (A) ⁵		231	312	231	312	231	312	235/155	317/233
Minimum Conductor height above ground, feet		26	26	26	26	26	26	26	26
Maximum electric field, kilovolts per meter (kV/m)		1.56	1.56	1.31	1.31	1.76	1.76	.809	.809
Electric field at edge of ROW, kilovolts per meter (kV/m)	NORTH EDGE	.86	.86	.74	.74	.72	.72	.37	.37
	SOUTH EDGE	1.24	1.24	.74	.74	1.5	1.5	.39	.39
Maximum magnetic field, Gauss (MG)		67.5	72.9	46.8	63.2	70.7	82.9	19.3	25.8
Magnetic field at edge of ROW, Gauss (MG)	NORTH EDGE	31.0	36.8	17.0	22.9	16.7	20.1	6.8	8.8
	SOUTH EDGE	67.4	67.5	17.0	22.9	66.2	67.2	3.6	5.3

¹ Predicted maximum current with power system intact.

² Predicted maximum current based on an outage of one line or other element in power system

³ Single-circuit (1 ckt).

⁴ The transmission line design criteria would be based on maintaining a minimum conductor to ground height of 26 feet with a conductor temperature of 80°C. This condition would be expected to occur with a 795 MCM conductor maximum current of 890 amperes based on a conductor temperature rise of 40°C above a 40°C ambient air temperature. It is not anticipated that actual system operating currents would ever reach this conductor maximum.

⁵ All the given system operating currents are projected values calculated from the system planning studies used to authorize the project.

⁶ Fields on Western's ROW are based on a current of 900 amps flowing in the Ault-Ft. St. Vrain 230-kV line for both systems intact and one element outage condition.

Electrical and magnetic fields for the segment of the Proposed Action paralleling the Ault-St. Vrain 230-kV transmission line (the reconductored segment extending 0.57 mile east of the Windsor Substation) would be slightly higher than current conditions. However both the electric and magnetic fields would be less than currently present for the existing transmission line along the new double circuit. This is because Western is proposing to construct the new double circle using "inverse phasing". Inverse phasing reverses the orientation of the phases on the second circuit so the phases "cancel out" rather than "amplify" the electric and magnetic fields.

Neither the electric and magnetic effects associated with the existing transmission line or the new 115-kV double circuit are anticipated to cause adverse impacts to public health and safety. Additional information on electric and magnetic fields is available from Western upon request.

3.9 Summary of Impacts

A summary of impacts for the proposed action are provided in Table 6. There are very minimal environmental effects associated with the proposed project.

TABLE 6

**Summary of Environmental Impacts and Proposed Mitigation for the
Weld-Windsor 115-kV Transmission Line Double Circuit Project**

RESOURCES	EFFECTS	MITIGATION
*Air Quality	minor increases in NOX, hydrocarbons and fugitive dust	Not required.
Soils	possible contamination of topsoil with subsoil	segregate and spread topsoil, or remove subsoil from cultivated areas
	possible rutting and/or compaction	construct during dry conditions, scarify, recontour
Floodplains/Wetlands	possible sedimentation of wetland and downstream pond	construct during dry conditions, divert any muddy water to vegetated areas, use silt fencing
Vegetation and Wildlife	minor loss of disturbed vegetation (.001 ac), minor increase in collision hazard for birds	not required
Threatened and Endangered Species	none	none
Land Use (Agriculture)	fewer number of structures, fewer guyed structures, better turning conditions for equipment	not required
	minor changes in flying conditions for aerial applicators	not required

RESOURCES	EFFECTS	MITIGATION
	potential loss of crops	construct in fall and winter if possible, if not compensate for lost revenue
*Recreation	none	none
Visual Quality	fewer number of structures, slightly more visible due to structure configuration	use nonspecular conductor, use dark colored insulators
Cultural Resources	none	none
*Socioeconomics	minor increase in retail sales revenue	not required
Electrical Characteristics and Effects	possible radio/TV interference, induced shocks	correct radio/TV interference, ground fences and gates

*Issues associated with these resources are not discussed in detail in the text but are included here for completeness.

4.0 REFERENCES, AGENCIES AND ORGANIZATIONS CONTACTED

Colorado Agricultural Statistics. 1991. 95 pp.

Colorado Department of Agriculture, Colorado Agricultural Statistics Service,
Lakewood, Colorado.

Colorado Division of Wildlife, Fort Collins, Colorado.

Colorado Historical Society, State Historic Preservation Officer, Denver, Colorado.

Colorado Department of Agriculture, Colorado Agricultural Statistics Service,
Lakewood, Colorado.

U.S. Department of Agriculture. 1979. Important farmlands of Weld County, Colorado.

U.S. Department of Housing and Urban Development. National Flood Insurance
Program. 1979. Flood Insurance Rate Map for Greeley, Colorado and Unincorporated
areas of Weld, County, Colorado.

U.S. Fish and Wildlife Service, Fish and Wildlife Enhancement, Golden, Colorado.

5.0 LIST OF AGENCIES/INDIVIDUALS TO WHOM COPIES OF THE ASSESSMENT WERE DISTRIBUTED

Mr. Don Bogart
Wildlife Biologist
Colorado Division of Wildlife
317 West Prospect Street
Fort Collins, CO 80526

Mr. James B. Ruch
Director Colorado Division of Wildlife
6060 Broadway
Denver, CO 80216

Mr. Leroy W. Carlson
Colorado State Supervisor
U.S. Fish and Wildlife Service
730 Simms Street, Room 290
Golden, CO 80401

Mr. James Hartmann
Colorado State Historic Preservation Office
1300 Broadway
Denver, CO 80203-2137

Mr. Paul Grattet
Greeley City Manager
1000 10th Street
Greeley, CO 80631

Ms. Luella Kinnison
Library Director
Centennial Park Branch
2227 23rd Ave
Greeley, CO 80631

Ms. Monica Daniels-Mika
Planning Director
Weld County Planning and Zoning Department
1400 North 17 Ave
Greeley, CO 80631

Mr. and Mrs. Donald Leonard
P.O. Box 26
Estes Park, CO 80517

Connie Halton
28990 Highway 287
Greeley, CO 80634

Mr. and Mrs. Petro Giorgione
P.O. Box 757
Windsor, CO 80550

Mr. and Mrs. Robert Knox
R9 4206 East County Road 30
Fort Collins, CO 80521

Sunset Producing
4902 Kiowa Drive
Greeley, CO 80634-9329

Mr. Rick Hertzke
10601 Highway 257 Spur
Greeley, CO 80631

Mr. Ronald Rothe
Ms. Carol Pucak
0478 Stagecoach Lane
Carbondale, CO 81623

Mr. Samuel Reichert
319 9th Street
Windsor, CO 80550

Mr. and Mrs. John Wilken
Ms. Margaret Schneider
617 35th Avenue Court
Greeley, CO 80634

Ms. Deanna Swetzig
Mr. Roberty Swetzig
Ms. Barbara Swetzig
P.O. Box 96
Windsor, CO 80550-0096

Ms. Lydia Wiedeman
7611 W. 4th Street
Greeley, CO 80634

**APPENDIX A
AGENCY LETTERS**

**U.S. FISH AND WILDLIFE SERVICE
COLORADO STATE HISTORIC PRESERVATION OFFICE**

United States Department of the Interior

FISH AND WILDLIFE SERVICE FISH AND WILDLIFE ENHANCEMENT

Colorado State Office
730 Simms Street, Suite 290
Golden, CO 80401

FWE/CO: WAPA
Mail Stop 65412

Phone (303) 231-5280

FTS 554-5280

FAX (303) 231-5285

TAKE
PRIDE IN
AMERICA

3.

OFFICIAL FILE COPY
WESTERN
Loveland Area Office

MAY 8 1992

MAY 07 1992

Mr. Stephen A. Fausett, Area Manager
Department of Energy
Western Area Power Administration
Loveland Area Office
P.O. Box 3700
Loveland, Colorado 80539-3003

Dear Mr. Fausett:

In response to your letter of November 3, 1991, the U.S. Fish and Wildlife Service reviewed the proposed Western Area Power Administration transmission line replacement project in Weld County, Colorado. Based on the authority conferred to the Service by the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et. seq.) and the information provided in the Environmental Assessment for the project, we concur with your assessment that the subject 3.0-mile, 115-kV transmission line replacement between the Windsor Substation and the Weld Substation, as proposed, will "not affect" the continued existence of any federally listed threatened and endangered species.

We appreciate your concern for wildlife and the attention that WAPA has paid to listed and candidate species protection.

If the Service can be of further assistance, please contact Bernardo Garza of this office at (303) 231-5280.

Sincerely,

LeRoy W. Carlson
LeRoy W. Carlson
Colorado State Supervisor

cc: FWS/FWE; SLC
CDOW, Fort Collins, CO (Attn. Don Bogart)
Reading file
Project file

Reference: JBG*WAPAWELD.WPF

Department of Energy
Western Area Power Administration
Loveland Area Office
P.O. Box 3700
Loveland, CO 80539-3003

SEP 2 1993

OFFICIAL FILE COPY		
WESTERN		
Loveland Area Office		
SEP 20 1993 10		
No Reply Necessary	Initial	Date
Ready for Other		
Action Taken	Case No.	Date
INFO COPY TO:		
Route To	Notes	Date
10095	10095	9-23
10400	10400	

Mr. James E. Hartmann
State Historical Preservation Officer
Colorado State Historical Society
1300 Broadway
Denver, CO 80505

Dear Mr. Hartmann:

The Western Area Power Administration (Western) has considered the effects of the undertaking described below on cultural resources. Per 36 CFR 800.4, Western has determined that **no historic properties** will be affected by the undertaking. The submission of this documentation and the attached report fulfills Western's responsibilities under Section 106 of the National Historic Preservation Act.

I. Description of the Undertaking - The proposed undertaking, including locational information and specific project dimensions, is described in the attached report: **A Cultural Resource Inventory of the Proposed Reconstruction of the Weld-Windsor 115-kilovolt Transmission Line, West of Greeley, Weld County, Colorado.** The subject undertaking being considered herein is the removal and reconstruction of an existing transmission line between the Weld and Windsor Substations.

II. Methodology and Reporting - A total of 40.9 acres, consisting of 5780 feet of transmission line right-of-way, 1 acre of land at the Windsor Substation and approximately 20 acres at the Weld Substation, was intensively inventoried using a pedestrian methodology. It is expected that the potential surface disturbance will not exceed the area of inventory described within the attached report. All areas of proposed or potential surface disturbance were inventoried via pedestrian transects spaced no more than 30 meters apart.

As presented, the above referenced report fulfills the requirements for a professional cultural survey {refer to 36 CFR Part 800.4(a)(2)}.

III. Resources Located, Identified, and Evaluated (Significance Criteria Considered) - No historic properties were found that appear to possess the quality of integrity and meet at least one of the criteria necessary to be considered for inclusion within the National Register of Historic Places (36 CFR Part 60.4). No resources that appear to qualify for consideration for protection under the American Indian Religious Freedom Act (16 USC 1996) were recorded during the inventory or were already known to be present.

IV. Effects Determination and Compliance Decision - Effects determinations are the responsibility of the lead agency. Western has considered the nature of the undertaking and determined that **no historic properties** will be affected

by the undertaking. Should cultural resources be located during the construction phase of the project, all activity in the area of the discovery will cease until Western can evaluate the nature of the discovery and initiate consultation with your office. Western considers that the stipulations of Section 106 of the National Historic Preservation Act, as amended, and the implementing regulations, 36 CFR 800, have been satisfied.

If you have any questions about this determination, please telephone Rodney Jones at (303) 490-7371.

Sincerely,

Stephen A. Fausett
Area Manager

Enclosure

I concur Date 15, 1993
State Historic Preservation Officer