

Vegetation 5/

Affected Environment

The effects study area for vegetation is bounded on the north by NM 567, to the east by private lands of Carson, New Mexico, to the south by the Carson National Forest boundary, and the west by the Rio Ojo Caliente (Figure 14). The study area is mainly on the Tres Piedras Ranger District of the Carson National Forest. A small portion of the El Rito Ranger District is included north of U.S. 285. An additional portion of the study area is located along U.S. 285 north of the existing microwave tower to the existing power line coming south from Tres Piedras, New Mexico.

The general landform is a gentle sloping plain declining either to the east toward the Rio Grande Gorge or to the west toward the Rio Ojo Caliente. The area is bisected by intermittent drainages and high points such as Cerro Azul or Mesa Vibora. The north-facing slopes have subtle changes in vegetation indicating changes in moisture and slight changes in temperature.

The predominant vegetation type in the study area is piñon-juniper woodland. Elevations of the higher points in the vicinity reach 7,000 feet, with Cerro Azul being the highest at 7,455 feet. The majority of the area is less than 7,100 feet, ranging from 6,400 feet to 7,000 feet along NM 567 and continuing to climb to about 7,200 feet along the northern portion of the study area. Elevation differences give rise to woodlands that have varied mixes of piñon and juniper trees—piñon being more common at higher elevations and juniper at lower elevations.

The lower areas are predominately vegetated with one-seed juniper (*Juniperis monosperma*) and some piñon pine (*Pinus edulis*). As the landscape rises, the presence of Utah juniper (*Juniperis osteosperma*) and Rocky Mountain juniper (*Juniperis scopulorum*) become more evident and one-seed juniper decreases. Rocky Mountain juniper becomes the dominant species at the highest elevations of the piñon-juniper vegetation type.

The landform and sandy soils suggest a varied vegetation cover. At first inclination, it is assumed the area is uniformly covered with piñon-juniper. However, the southern portions of the study area near Ojo Caliente are largely juniper with scattered piñon, while the higher areas are predominantly piñon trees with scattered juniper. The undisturbed areas north of the existing power line corridor are piñon with scattered juniper. Much of the area has been harvested for personal use firewood and commercial firewood. These harvests modified the canopy composition with the mix now approaching parity of the tree species. Table 13 provides an estimation of the number of acres of vegetation type within the study area. Figure 14 displays vegetation cover for the study area.

With several site visits to the locations where the alternative routes would traverse, an evaluation of the current vegetation conditions was made for this analysis. Ground cover is approximately 60 percent and consists of many different types of grasses and forbs. Predominate grasses are prairie junegrass, mutton grass, western wheatgrass and needle grasses. Bare ground amounts to about 40 percent.

Table 13. Amount of each vegetation type within the study area

Vegetation Type	Acres
Piñon-juniper	114,764*

Vegetation Type	Acres
Sagebrush	59,467
Low elevation grassland	9,919

** Figures do not reflect changes due to recent bark beetle infestation.*

The vegetation is varied with a high percentage of big sagebrush in the understory. Much of the area has piñon pine and juniper seedlings. Dead and down material is scattered with the exception of areas where trees have been felled or fallen through natural causes. Under tree crowns, needles and fallen material have accumulated.



Figure 13. View of common vegetation in the study area. Note bare ground, big sagebrush and scattered piñon trees.

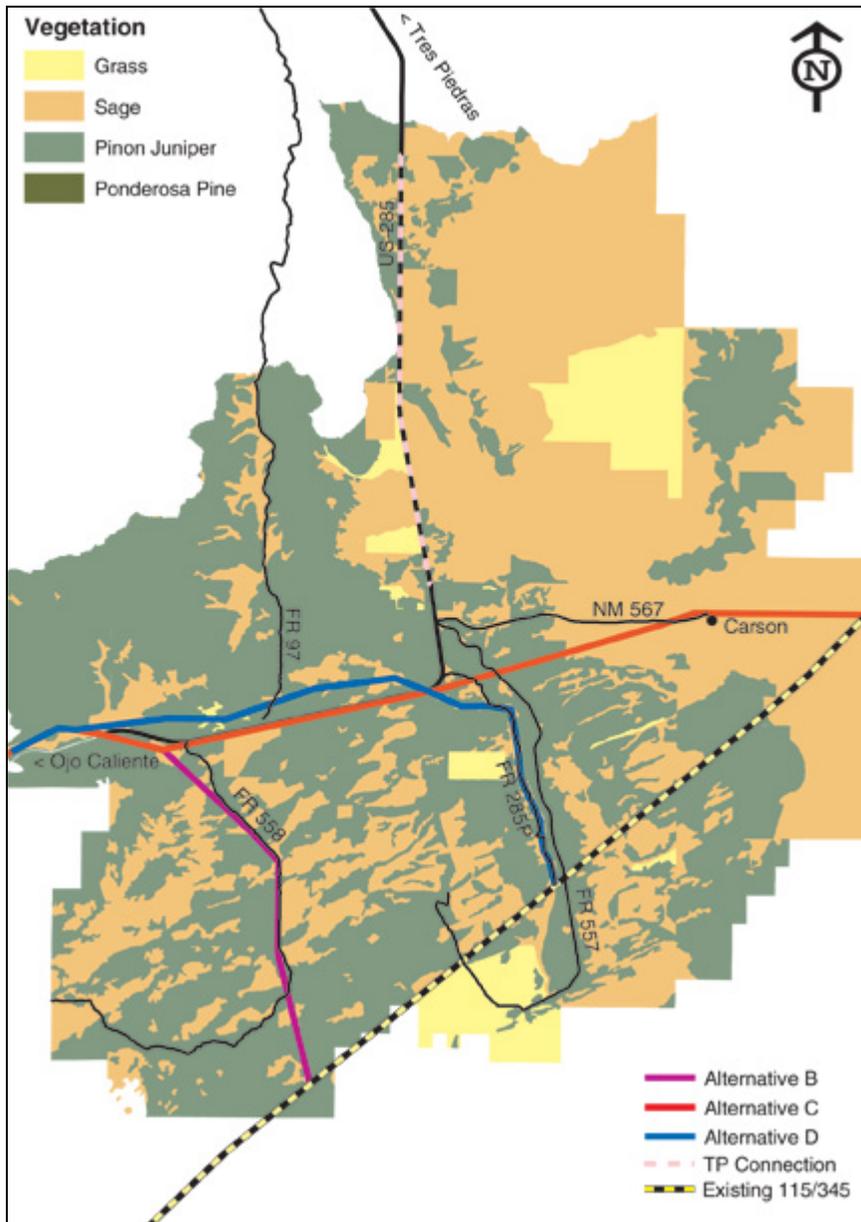


Figure 14. Distribution of vegetation in the study area.

The study area has been experiencing a drought for the past 5 years. Climatic conditions also play an important part in grazing management and watershed conditions. An outbreak of *Ips* beetle in 2002 and 2003 has killed and continues to kill many of the piñon pine trees in the vicinity of the alternative power line locations. In the lower elevations nearer to Ojo Caliente the mortality on piñon is approaching 100 percent (Figure 15).

With the implementation of any of the action alternatives, a mitigation measure is included that would help slow the spread of the *Ips* beetle from green trees that must be cut down and may be infected (MM VG2). During construction, green trees will be bucked no longer than 18” and

immediately covered with heavy black plastic and edges secured to the ground with an earthen berm. The plastic must remain in place for a minimum of 2 weeks—not to exceed 45 days.



Figure 15. Current effects of the bark beetle infestation in the study area.

A nonnative plant found in the study area is downy brome or cheatgrass (*Bromus tectorum*). A winter annual, this plant is an invader species from the Mediterranean area of Europe. The plant grows rapidly in the spring, goes to seed, dries and remains standing. The plant in the dry state is extremely flammable. This plant has the potential to spread across the study area. A change in fire conditions (dry flammable standing material) can cause a change in the vegetation in the area.

Nonnative invasive plant species are best not introduced to an area. One effective method of preventing introduction is to clean the undercarriage of equipment and vehicles entering an area. Cleaning is normally done with a high-pressure spray washer with containment of the wash water and disposal of the materials in the wash water. Kit Carson Electric Cooperative will be responsible for control of any invasive or noxious plants established through construction or maintenance of a utility corridor (MM VG3). Prior to implementation the Forest Service and BLM will approve control or eradication methods. Imported materials such as gravel or fill for the substation will be from sources with no noxious weed occurrence.

Past, Present and Reasonably Foreseeable Activities

The cumulative effects area for the analysis for vegetation has had some type of human use for thousands of years. Cultural resource sites have been located throughout the area near Ojo Caliente and along the Comanche Rim. In addition to prehistoric sites, evidence of historic settlement and abandoned railroad grades exist. Present, historic and prehistoric uses include hunting, farming, removal of firewood, fence posts, collection of piñon nuts and other plant material for foodstuffs, and both domestic sheep and cattle grazing.

Historic, prehistoric, and recent use by humans, and natural events, including insect and disease occurrence, have all contributed to the current vegetation conditions. Climatic conditions, wet and drought cycles have also altered the condition. During wetter periods, tree numbers increase and grass cover decreases. During drought, tree numbers decrease and grass cover increases.

Prior to European influence, piñon-juniper woodlands were typically “savanna-like,” with trees more sparsely distributed or in clumps across the landscape. In piñon-juniper, grass and shrub understories were more dominant plant communities than they are today. In the late 1800s and early 1900s prior to designation as a national forest, large herds of domestic cattle and sheep

grazed the area. Overstocking caused a loss of ground cover and possibly some plant species were extirpated. Current species composition may not replicate what was historically growing in the area in the early 1800s. The same species may still be there, but the relative amounts may be different.

For the benefit of livestock grazing, the Forest Service converted piñon-juniper woodlands to grassland sometime in the late 1940s to 1960s. Large blocks were “pushed” or “chained” and reseeded with mostly crested wheatgrass. Since their conversion, these areas have grown predominately into big sagebrush, interspersed with grasses and some tree reestablishment. The Carson National Forest Land Management Plan (forest plan) currently identifies and manages these “pushes” as revegetation areas.

Piñon-juniper historically had a natural fire regime of 5- to 10-year cycles. Low burning ground fires would travel through the understory, killing small trees in competition with larger ones and stimulating grass growth. A fire suppression policy for the past 50 years has contributed to the increase in numbers of both piñon and juniper trees in the general area of the alternative power line locations, with a corresponding reduction in the amount of grass. However, in some of the revegetation areas, sagebrush and other shrubs have increased and crowded out the grasses. An increase in the number of trees and a decrease in grass cover have contributed to a reduction in overall ground cover.

The absence of wildfire has also affected the composition of low elevation grasslands in the area. Without cyclic burning, sagebrush is outcompeting the grass species, creating vast areas of sagebrush with little grass or forb understory.

Over the last 75 years, various activities requiring the use of motorized vehicles have historically occurred in the area. Almost 47 miles of paved highway (U.S. 285 and NM 567) run through the study area and a considerable network of 620 miles of unpaved roads also exist. The Carson National Land and Resource Management Plan (hereafter, the forest plan) designates areas on the forest where use of vehicles off of designated roads is restricted. National Forest System lands within the study area are open to off-road vehicle travel. Public access to and around any of the alternative utility corridors is basically unlimited. Motorized travel is restricted on BLM lands to existing roads and trails.

Current uses include open road and off-road use for firewood cutting and recreation. All terrain vehicle (ATV) activity is increasing and it is not uncommon to find closed roads in the area being reopened by ATV users. The primary vegetation affected by these user-made roads is sagebrush and plants associated with this vegetation type.

Livestock grazing takes place on two grazing allotments on the national forest (TCLP and Cerro Azul) and one on BLM (505 Ojo Caliente). The current cattle permits are valid and winter grazing is expected to continue for the next 10 years at the same or reduced levels.

Two power line corridors currently run through the study area. A 345 kV and a 115 kV run parallel in the same corridor crossing Black Mesa through Carson and crossing the Rio Grande to Taos. The second corridor is the existing 25 kV line originating at the Los Cordovas substation just west of Taos and running through the Carson area, along NM 567, through Drake Ranch, and along U.S. 285 to the Ojo Caliente area. Both of the corridors predate the Carson National Forest Plan. These existing corridors cross piñon-juniper, revegetation areas and low elevation grasslands. The presence of these lines provides a fairly accurate prediction of what the effects

would be on vegetation if one of the action alternatives or the option were implemented. The effects of these lines will be included in the cumulative effects analysis for Alternatives B-D and the Option.

Private lands within the study area are concentrated either outside of the national forest boundary or scattered close to Ojo Caliente. Several parcels of private land have distribution lines to the property. The properties near Ojo Caliente have a power line accessing the existing line and crossing U.S. 285. There is only one parcel south of U.S. 285 where there might be a foreseeable need to extend the current lines across National Forest System lands to access other private lands.

Forest Plan

The Carson Land Management Plan (hereafter the forest plan) provides discussion and broad direction for the different management areas. [5] The alternative power line locations cross the following management areas within the boundaries of the Carson National Forest: Management Area 8 – Piñon-Juniper; Management Area 11 – Revegetation Areas; and Management Area 12 – Sagebrush.

The predominate management area (MA) is MA 8 - Piñon-Juniper. The MA 11 - Revegetation Areas has, for the most part, converted to sagebrush. Some revegetation areas have piñon and juniper trees growing back in them. The following table gives some highlights for Management Areas 8 and 12.

Table 14. Forest plan management areas and their management highlights

MA	Desired Condition	Management Highlights	Fire	Other
8	Maintain 50 percent or more piñon acres in balanced age class distribution. In juniper areas there will be at least 10 large trees per acre with more than 25 percent living crown. Good habitat for plain titmouse and elk.	Piñon pine, Utah, one-seed and Rocky Mountain juniper comprise the tree canopy. Area is characterized by dry and warm climatic conditions.	Fire occurrence is low.	Do not harvest ponderosa pine [found in this MA].
12	Activities and uses remain visually subordinate to the characteristic landscape and may visually dominate the landscape. Quality habitat for elk and Brewer’s sparrow.	Year long habitat for many species of small game. Two-track unmaintained roads are numerous and useable only during dry periods of the year.	Use fire to maintain production of grass when appropriate.	Primary use is wintering use by big game and livestock grazing.

Bureau of Land Management

There are approximately 2 miles of existing line on BLM lands where some vegetation disturbance has occurred. All but 2 of the 22 poles currently located on BLM lands are in the piñon-juniper grasslands, which correspond to TEU 153 and MA 8 on national forest. There are

2.2 miles of two-track roads in the vicinity of the line on BLM lands, but are not always directly under the line. It is unknown if they became established as a result of the original construction. It is assumed that they would serve as the access if maintenance were required. The total disturbance estimated to have occurred for the construction of the existing 25 kV line is approximately 6.7 acres.

Development of the proposed substation on BLM lands is also common to all action alternatives. The substation would require vegetation removal, leveling and hardened surfacing (graveling) of approximately 1.5 acres. The site characteristics are generally juniper grasslands.

Environmental Consequences

The activities proposed in Alternatives B-D that would affect vegetation in the project area are those that cause the temporary or permanent removal of vegetation cover. These activities include: transport and installation of power poles; line pulling; periodic maintenance of the completed system; and construction and permanent installation of a substation.

The nature of the project is such that a fully cleared corridor is not always necessary. Generally the lines would remain well above the tops of most trees. Areas where trees would have to be removed would be to allow for pole delivery access or pole placement and possibly where the point of maximum line sag between poles would be too close to treetops. Generally access routes within the corridor would be approximately 15 feet wide.

By examining the existing electrical lines and their corridors in the area traversing through the same vegetation types, impacts of a similar proposal are fairly obvious. In areas where access was restricted to construction and maintenance, the environmental effects are minor. Although old access ways may be visible, they have for the most part revegetated very well.

Where access ways to existing lines remain in use, the effects of a typical back country, two-track road are apparent. Depending on the location and soil type, these effects are generally the presence of very little vegetation. The most noteworthy effects on vegetation would be where new access is required by an alternative and that access way should become part of long-term use, or a permanent, two-track road.

Access to pole locations, preparation of pole sites, line pulling and line maintenance would require the use of vehicles or equipment. Road or other vehicle access should be limited in order for disturbed areas to recover to natural ground cover. Use of existing National Forest System and BLM roads and existing two-track roads for pole location, line stringing and maintenance would be emphasized under any of the action alternatives (MM VG1). Table 15 displays the approximate number of acres of disturbance to vegetation relative to pole placement and removal, as well as accessing the line. Adjacent BLM and private lands are assumed to have the same vegetation.

Table 15. Potential disturbance (acres) from the establishment of new two-track access and area cleared for pole placement for piñon-juniper and sagebrush vegetation type

Vegetation Type	Alternative				Option*
	A	B	C	D	
Piñon-Juniper	0	11.3	12.0	20.9	-
Sagebrush	0	6.1	16.1	12.4	-

Vegetation Type	Alternative				Option*
	A	B	C	D	
Total	0	17.5	28.1	33.3**	-

*The Option is within the U.S. 285 right-of-way and similar disturbances are already occurring from mowing.

** These figures include removal of 6 miles of existing 25 kV distribution line along U.S. 285.

It is estimated that a two-track route with an average width of 15 feet would be established or reestablished within the utility corridor for construction and maintenance. The area of disturbance is calculated with the assumption that an area 15-feet wide within the line corridor would be affected by vehicle or equipment use or 1.8 acres per mile. In determining where the two-track route should be located, healthy trees would be avoided to the extent possible. The actual location of the line and poles in the utility corridor would generally keep the power line conductors above tree height.

Alternative A – No Action

This alternative maintains the current condition. The 25 kV line would continue to exist in its present location along with all drop and service points. There would be no construction of a 115 kV power line and no additional disturbance in the utility corridor above current disturbance. The existing vegetation within the forest varies from sagebrush to piñon-juniper. Portions of the sagebrush type have been treated to increase the grass and forbs component.

A corridor exists in the piñon-juniper, with trees averaging 20 feet in height. A two-track exists under this power line. The two-track would continue to be used as access to the line for maintenance. An evaluation of the vegetation and how it has responded to the installation, presence and maintenance of the existing line can support the analysis of effects for the alternatives that go through the same vegetation type.

The existing line goes through sagebrush where the community of Carson is located. The existing conditions illustrate that in the late 1960s portions of this area were plowed and successfully revegetated with wheatgrass but has gradually reverted to sagebrush. In addition, the old road that runs underneath the line is barely visible as it is covered with sagebrush and other grasses and forbs.

Five and a half miles west of Carson, the existing line traverses through piñon-juniper, across National Forest System lands, a small portion of private land and onto BLM lands north of Ojo Caliente. Near NM 587 and then along U.S. 285, the existing line traverses almost 10 miles in piñon-juniper with some sagebrush. For the most part, this area is characterized with good potential for revegetation. Any areas not actively used as a maintenance route or for other vehicle use are generally stable and the route is becoming obscured by vegetation. On BLM lands, there is approximately 4 acres of previously disturbed area. No changes would occur including access or the two existing service drops to the State Highway Department and to the Mesa Vista School.

Alternative B – Black Mesa-Cerro Azul Tap

This alternative would tap into the existing 115 kV line 1.5 miles east of Black Mesa in piñon-juniper. In this particular area, the soil is very sandy. Where vegetation is sparse, wind erosion has

created small “dunes.” It is estimated that pole installation and the establishment of a corridor route would result in about 4 acres of ground disturbance. However, since the area is sparsely vegetated and sandy, impacts related to vegetation removal would be minimal. The sandy nature of some of the soil inclusions would likely make revegetation in this area difficult.

This alternative would continue northwest through mostly piñon-juniper for another 7.5 miles, reaching U.S. 285 and traversing west along the highway onto BLM lands. Along this section, soil properties provide better conditions for plant growth and sagebrush and piñon-juniper are very much in evidence. Forest Road 558 and U.S. 285 would be used to access the corridor. Its conditions along this stretch appear to be more stable than to the south. A 7.5-mile, two-track corridor under the line would disturb a maximum of 14 acres. The short-term effects of vegetation removal and compaction would be greater than the southern portion of this alternative. The existing distribution line along U.S. 285 demonstrates that this area can successfully revegetate, however, continuing drought conditions and *Ips* beetle infestation may dictate the rate of reestablishment.

Alternative C – Existing Corridor

This alternative would construct a new 115 kV transmission line from Carson to Ojo Caliente within the existing distribution line corridor. Alternative C would tap into the existing 115 kV line in the vicinity of where it crosses NM 567 in Carson. Extrapolating the forest vegetation data onto private land, the line starts on sagebrush and remains in this vegetation type for 5.5 miles. Since the existing line is in the same location, an evaluation of how vegetation has responded to the installation and presence of the existing line and its maintenance can be used to determine the effects of this alternative.

Much of the TEU in this area is characterized as having sparse ground cover and a low revegetation potential due to high alkalinity. Existing conditions illustrate that in the past this area was successfully revegetated with wheatgrass. In addition, the old road that runs under the line is barely visible as it is covered with sagebrush and other grasses and forbs. Impacts of disturbing almost 10 acres to reestablish the existing two-track in the utility corridor are not considered substantial. Revegetation may not be as successful as it was in the past, particularly if native vegetation is used.

Five and a half miles west of Carson the vegetation changes from predominantly sagebrush to piñon-juniper. Alternative C would traverse through this common vegetation type on National Forest System lands, a small portion of private land and onto BLM lands. Adjacent to NM 587 and then U.S. 285, the line would traverse over 10 miles generally within this vegetation type, interspersed with patches of sagebrush. Almost 18 acres would be disturbed to reestablish a two-track within the existing corridor. For the most part, piñon-juniper in this area can be characterized with good potential for revegetation. Any sign of past disturbance or a maintenance route in the utility corridor is obscured by vegetation. Revegetation would be successful, although it may take longer to reestablish ground cover if current drought conditions continue.

Alternative D – 285 P Tap

This alternative would tap into the existing 115 kV line where it intersects with Forest Road 285P. Alternative D would traverse through sagebrush grasslands with scattered piñon-juniper for 4.4 miles along the bottom of an elongated swale, just south of U.S. 285 where the highway makes a

90-degree bend. This alternative could disturb as much as 8 acres for a two-track corridor under the line. However, Forest Road 285P runs along this entire stretch and would likely limit the majority of actual disturbance. FR 285P would be used to access this portion of the line for construction and maintenance. This area has a high revegetation potential, which means seeding and other activities to increase ground cover following disturbance should be successful, however, continuing drought conditions may dictate the rate of reestablishment.

Where the highway makes a 90-degree bend, Alternative D would traverse what is mostly one-seed juniper. This area exhibits little effect from the existing line, and is not likely to exhibit much of an effect from this alternative. This alternative would cross and run parallel to U.S. 285 to the west for about 6.5 miles in predominately piñon-juniper at a distance of up to one-half mile from the highway. Along this section, soil properties provide better conditions for plant growth, and sagebrush and piñon-juniper are very much in evidence. Any sign of past disturbance or a maintenance route in the existing utility corridor is obscured by vegetation. A 6.5-mile, two-track corridor under the line would disturb almost 12 acres.

In addition to the construction of a new transmission line, this alternative would entail the removal of approximately 6 miles of the existing distribution line that runs through piñon-juniper along the south side of U.S. 285. The amount of disturbance is similarly calculated to that of placing a new line in order to access the area. However, few if any trees would be removed.

West End of Transmission Line and Effects of Substation for Alternatives B-D

For Alternatives B and C, the proposed line would be within the existing 25 kV corridor, as it exits the national forest and enters BLM lands about 2 miles from the proposed substation. As it leaves the national forest, Alternative D would take a slightly different course to the north. It would then join the existing corridor about one-half mile after entering BLM lands. The two different routes traverse the same type of vegetation. Vegetation removal associated with construction of the last 1.5 miles of transmission line coming into the substation for Alternatives B, C and D would be in piñon-juniper. The amount of disturbance is similarly calculated to that of placing a new line in order to access the area. However, few if any trees would be removed.

The installation of a substation and access road on BLM land would entail permanently clearing up to a 1.5-acre area in sparsely growing juniper grasslands. Ground disturbance associated with the construction of the last 1.5 miles of line coming into the substation would be in both sagebrush and piñon-juniper. Since the sagebrush is found mostly along the edge of the dry wash, it is likely that pole sites would be located more in the piñon-juniper, and the line would span the sagebrush. Temporary disturbance would occur on a little less than 3 acres of both sagebrush and piñon-juniper combined.

Upgrading the existing line to a 115 kV transmission line would also require two pull locations that would result in temporary disturbance areas of approximately 100 feet across. The total disturbance area on BLM lands, including the poles, existing and construction access, guy wire locations, pull sites and substation would be approximately 8.7 acres under any of the action alternatives.

Option – Tres Piedras Connection

The Tres Piedras Connection would extend the existing 25 kV distribution line in the vicinity of the microwave station just north of the intersection of NM 567 and U.S. 285. It would cross the highway to the west side and proceed north along U.S. 285 where it would cross back east of the highway to connect into the existing line that comes south from Tres Piedras along U.S. 285.

This route would total 7.5 miles in a modified vegetation type that now consists of mown shrubs grasses and forbs. The soil in this area responds to seeding with drought tolerant species. The southern portion of the existing distribution line coming south from Tres Piedras runs through this vegetation type. Its corridor shows no signs of problems with revegetation. It is expected that similar effects would occur with the construction of the Tres Piedras Connection.

Cumulative Effects of Alternatives B-D and the Option

Past, present and reasonable activities that contribute to the cumulative effects of soils are those with effects that overlap the effects of each alternative within the study area. The *Affected Environment* section described the past, present and reasonable foreseeable activities that, along with the effects of each of the alternatives, may cumulatively have an effect on soils and watershed. Past and present effects that overlap with the effects of Alternative A have already been discussed.

Past and Present Effects from:	Future Effects from:
Bark beetle (2002-2003)	Bark beetle (5-year forecast)
Nonnative plants	Nonnative plants
“Push” areas	“Push” areas converting back to natural vegetation
Drought	Drought
Paved highways	Paved highways
Unpaved roads	Unpaved roads (continued FP management)
Off-road use	Off-road use (continued FP management)
Existing power lines	Power lines
Livestock grazing	Livestock grazing (continued FP management)
Firewood gathering	Firewood gathering
Private lands	Private lands

In this analysis, the primary source of cumulative effects on vegetation is the presence of the *Ips* beetle and its effects on the piñon trees. Mortality of piñon trees from bark beetle in the study area is beyond epidemic proportions and may reach close to 100 percent throughout the lower elevations of the study area. Lower elevation areas that were once piñon-juniper woodland will convert to only juniper.

For the first few years after death of infected trees, needle drop will increase and contribute to protecting the soil’s surface with litter and adding organic matter to the soil. In 5 to 10 years, dead trees will fall, creating masses of organic matter on the ground. These areas would provide shade and moisture, improving conditions for the growth of grasses and forbs and increasing overall ground cover. During this period, firewood gatherers are likely to make their way out to areas where piñon mortality is high. It is anticipated that many of the dead trees, especially along existing roads, would be removed for firewood.

Preventing unnecessary destruction of healthy piñon trees in Alternatives B through D and the Tres Piedras Connection Option is stressed with the application of mitigation measure, MM VG1. To the extent possible, vehicles and equipment can go around healthier green trees such as in the existing corridor near Comanche Rim. If there is a choice between cutting a piñon or juniper, the latter should be selected.

Existing roads also have an impact on vegetation in the area. Almost 47 miles of paved highway (U.S. 285 and NM 567) run through the study area and a network of 620 miles of unpaved roads also exist. The Carson National Land and Resource Management Plan (hereafter, the forest plan) designates areas on the forest where use of vehicles off of designated roads is restricted. National Forest System lands within the study area are open to off-road vehicle travel. Public access to and around any of the alternative utility corridors is basically unlimited. Motorized travel is restricted on BLM lands to existing roads and trails.

Current uses include open road and off-road use for firewood cutting and recreation. All terrain vehicle (ATV) activity is increasing and it is not uncommon to find closed roads in the area being reopened by ATV users. This reduces vegetation cover, but would not have a measurable effect on either piñon and juniper trees or sagebrush.

Livestock grazing takes place on two grazing allotments on the national forest (TCLP and Cerro Azul) and one on BLM (505 Ojo Caliente). The current cattle permits are valid and winter grazing is expected to continue for the next 10 years at the same or reduced levels. Overall vegetation conditions on the Forest Service allotments are fair, with some poor conditions where extremely sandy and unproductive soils occur. Annual adjustments are made to the livestock numbers and grazing season. Due to an ongoing drought and evidence of very little forage production this summer (2003), the entry dates of October 1 for TCLP and November 1 for Cerro Azul are likely not going to be met.

Private lands within the study area are concentrated either outside of the national forest boundary or scattered close to Ojo Caliente. Several parcels of private land have distribution lines to the property. The properties near Ojo Caliente have a power line accessing the existing line and crossing U.S. 285. It is not foreseen that there will be a need to extend the current lines across national forest or BLM lands to access other private lands.

The cumulative effects area is approximately 190,500 acres. On National Forest System lands, 60 percent (114,500 acres) of the area is piñon-juniper and about 30 percent (60,000 acres) is sagebrush. The implementation of any of the action alternatives would have little if any perceptible (no more than .02 percent) effect on piñon-juniper. Table 16 provides a gross estimate of the alternatives.

Sagebrush is abundant within the cumulative effects area and is continuing to spread into what were once revegetation areas. It is not anticipated that any of the action alternatives or the option would have a measurable effect on sagebrush.

Table 16. Percent of vegetation type affected by alternative within cumulative effects area

Vegetation Type	Alternative				Option
	A	B	C	D	
Piñon-Juniper	0	.01	.01	.02	0
Sagebrush	0	.01	.05	.06	.02

