

# **COVER SHEET**

FEDERAL ENERGY REGULATORY COMMISSION

FINAL ENVIRONMENTAL IMPACT STATEMENT  
FOR HYDROPOWER LICENSE

Lake Elsinore Advanced Pumped Storage Project  
Docket No. P-11858-002

Executive Summary  
Pages xxi through xxx  
FEIS

## EXECUTIVE SUMMARY

On February 2, 2004, the Elsinore Valley Municipal Water District (Elsinore Valley MWD) and the Nevada Hydro Company, Inc. (Nevada Hydro), or co-applicants, filed an application for an original license with the Federal Energy Regulatory Commission (Commission or FERC) for constructing and operating the 500-megawatt Lake Elsinore Advanced Pumped Storage Project (LEAPS Project). The project would occupy 2,412 acres of federal lands, including lands managed by the U.S. Department of Agriculture, Forest Service (USFS), Cleveland National Forest; U.S. Bureau of Land Management; and the Department of Defense (Camp Pendleton). The USFS is reviewing an application for special use permit for constructing the Talega-Escondido/Valley-Serrano 500-kilovolt transmission interconnection, including transmission lines associated with the LEAPS Project, as a transmission line only project. The USFS is a cooperating agency in preparing this environmental impact statement (EIS) for the LEAPS Project (FERC No. 11858), including both the pumped-storage facilities and the transmission lines.

This final EIS evaluates the potential natural resource benefits, environmental effects, and economic costs associated with granting a FERC license for the entire LEAPS Project and granting a USFS special use permit for the transmission lines associated with the project. The alternatives examined include the following: (1) no action (likely construction of a simple-cycle combustion turbine and denial of the special use permit); (2) the co-applicants' proposed action; and (3) a staff alternative.

As described in detail in section 2.3, the co-applicants' proposed action consists of an upper reservoir in Morrell Canyon, a powerhouse at the Santa Rosa location, and a transmission line that would cross the Cleveland National Forest. The co-applicants propose numerous measures to address the potential effects of the proposed LEAPS Project on environmental resources in the project area. We describe these proposed measures in detail in section 2.3.6. The staff alternative that comprises an upper reservoir at the Decker Canyon site, a powerhouse at the Santa Rosa location, and a transmission alignment is described in detail in section 2.4.3. The staff alternative includes most of the co-applicants' protection, mitigation, and environmental measures, except for those measures associated with the Morrell Canyon upper reservoir site and the installation of fish screens. We have modified several of the co-applicants-proposed measures and added others.

The co-applicants' proposal to locate the upper reservoir in Morrell Canyon would disrupt flows in the San Juan Creek drainage, displace Lion Spring, and remove more than 20 acres of southern coast live oak riparian forest. Recreational use at this location would be adversely affected because Morgan Trail, which accesses the San Mateo Wilderness Area, would need to be relocated either temporarily or permanently depending on the final design of this facility and because two of the most-used hang gliding launch sites (E and Edwards) would be closed or subjected to use restrictions during construction. To avoid these potential adverse effects, the staff alternative would locate the upper reservoir in Decker Canyon. There would be no need to install a stream bypass conveyance system at this location because the footprint of the reservoir is situated at the very top of the watershed, with no established stream network entering the site. Only 5 acres of southern coast live oak would be affected and less off-site mitigation for habitat loss would be required, and no rare plant species would be affected. Locating the upper reservoir at the Decker Canyon location would avoid construction effects on the use of the E and Edwards hang gliding launch sites. Table ES-1 compares the potential effects at the proposed Morrell Canyon and Decker Canyon locations.

As described in the draft EIS, the co-applicants proposal to connect to the proposed underground powerhouse at the Santa Rosa location via an above-ground transmission line along the South Main Divide Road would have adversely affected the egress from the community of Rancho Capistrano in the case of a wildfire and would have precluded hang gliding activities at the USFS permitted launch sites. In the draft EIS, we included an underground powerhouse at the Ortega Oaks site and a mid-slope transmission alignment in a staff alternative to the co-applicants' proposal. The Ortega Oaks site combined with routing the transmission lines along a mid-slope alignment and west of the USFS-

permitted launching sites lessened the potential effects on hang gliding opportunities and provided an opportunity to provide a formal landing area.

In comments on the draft EIS, the co-applicants and others point out that Riverside County approved a subdivision of 100 single family residential lots at Ortega Oaks in April 2004, including the 58-acre site included in the staff alternative for the powerhouse and substation. The co-applicants also filed a report on the comparative geological and geotechnical conditions at the three powerhouse sites (Genterra, 2006). This report concludes that the Ortega Oaks site offers the least desirable subsurface conditions of the three sites. Hang gliding advocates commented that the proposed 5-acre formal landing area at Ortega Oaks would be inadequate and the staff alternative would still present hazards associated with an aboveground substation and the above-ground electrical distribution lines.

In response to the draft EIS and comments on the draft EIS, the co-applicants revised their proposed transmission alignment. In response to comments on the draft EIS, we also revised the staff alternative transmission alignment and powerhouse location. Given the proximity to the existing residential community adjacent to the Ortega Oaks site, the approved subdivision of lands that comprise the site, and the fact it would not eliminate hazards to hang gliders, we have revised the staff alternative to include a powerhouse at the Santa Rosa location. Locating the powerhouse at the Santa Rosa site would avoid conflicts with existing and planned high-density residential communities at Ortega Oaks. This alternative also would provide a clear path for hang gliding from the USFS-permitted launch sites along South Main Divide Road and the existing informal landing site at Ortega Oaks and would place the above ground substation away from the existing landing site. Table ES-1 compares the potential effects of the Santa Rosa and Ortega Oaks powerhouse locations.

As described in the draft EIS, both the co-applicants' proposed and staff alternative alignments would have created conflicts with commercial enterprises along the northern segment of the transmission alignments. Both the co-applicants' proposed and staff alternative alignments now avoid those conflicts. Both also include underground segments of about 3 and 2.1 miles, respectively, to reduce potential effects on egress from the Rancho Capistrano community and on hang gliding activities at the USFS permitted hang gliding launch sites. The staff alternative transmission alignment also reduces conflicts with the Cleveland National Forest Land Management Plan and USFS fire suppression activities. The co-applicants' proposed alignment reduces conflicts with residential subdivisions along the southern segment and would generally be less visible to area residents. The southern segment of the staff alternative transmission alignment avoids the San Mateo Wilderness area but runs near private residential properties, including the La Cresta community. The two routes are the same along about 4 miles of the southern end of the alignment to the connection with the SDG&E line. Table ES-1 compares the effects of the co-applicants' proposed transmission alignment and the staff alternative transmission alignment.

We considered whether to include in the staff alternative the burial of the entire 32-mile-long transmission line and the 2-mile connection to the powerhouse or burying portions along the northern and southern alignments. Burying the entire line would eliminate most of the visual effects (there would still be above ground substation connections) but would be cost prohibitive at an incremental cost in excess of \$350 million. However, we recognize that there may be locations near the alignment (such as Sycamore Creek or Glen Eden Sun Club) where the acquisition of easements may displace residents and where additional underground segments may be a feasible solution.

Overall, the staff alternative transmission alignment would reduce conflicts with USFS management plan and fire suppression activities, hang gliding activities, and commercial enterprises. We recognize that the co-applicants' proposed alignment is the less visible from key viewpoints in the wilderness area, along Ortega Highway, and from Lake Elsinore, but it would still interfere with USFS fire suppression activities in several areas and would cross back-country non-motorized areas of the Cleveland National Forest.

We estimate that the cost of building and operating either the co-applicants' proposal or the staff alternative would exceed their economic benefits during the project's first year of operation. The proposed LEAPS Project is estimated to cost \$120,172,600 (\$77.03/MWh) more annually than alternative power and the staff alternative is estimated to cost \$124,841,500 (\$80.03/MWh) more than alternative power annually. Although there are several reasons why the staff cost estimate is higher than the co-applicants' estimate, the main one is that our estimated cost to construct the project is higher than the co-applicants'. Because of the limited subsurface data available, we have significantly increased the co-applicants' cost estimate in several areas because we do not think the co-applicants' cost estimate properly accounts for the site-specific geological and groundwater conditions. During the final design process, the co-applicants' propose to conduct more detailed geotechnical studies. If the site information the co-applicants gather shows the site conditions are better than what we assumed, they may be able to build the project for less than the cost we estimate.

Despite the higher cost of the staff alternative compared to no action, it would have the benefit of allowing the co-applicants to construct and operate the project as a peak energy resource and as part of a long-term solution to southern California's transmission congestion bottlenecks. The Talega-Escondido/Valley-Serrano transmission line could provide up to 1,000 MW of import capability into the San Diego area with up to 500 MW of this imported power being supplied by the LEAPS Project during high-demand periods. Pumped storage stores power during off-peak periods that can be provided rapidly during on-peak periods, which could provide a valuable addition to the regional system.

Based on our independent analysis of the LEAPS Project, including our consideration of all relevant economic and environmental concerns, we select the staff alternative as our preferred alternative and conclude that our preferred alternative represents the best balance between developmental and non-developmental resources.

Table ES-1. Summary of key differences in the potential effects of the co-applicants' proposal and the staff alternative. (Source: Staff)

Resource/Issue	Upper Reservoir Comparison	
	Morrell Canyon (co-applicants)	Decker Canyon (staff)
Area of effect	130-acre footprint; daily fluctuations of 40 feet and weekly fluctuations of 75 feet	120-acre footprint; daily and weekly fluctuations would be on the same order of magnitude as the upper reservoir at Morrell Canyon
Fill materials	2.6 million cubic yards of fill needed for dam	3.0 million cubic yards of fill needed for dam
Groundwater	Construction of tunnels for high pressure conduits could affect groundwater; design review of collection system for Lion Spring and effects on groundwater	Construction of tunnels for high pressure conduits could affect groundwater; no collection system would be required
Seismic hazards	Faults may control surface flows at the Morrell Canyon site	No faults have been identified at the Decker Canyon site and subsurface flow does not appear to be controlled by the presence of faults
Surface water	Upper reservoir would interrupt stream flow	Same

**Upper Reservoir Comparison**

<b>Resource/Issue</b>	<b>Morrell Canyon (co-applicants)</b>	<b>Decker Canyon (staff)</b>
Wetland and riparian habitat	Would affect 1.7 acres of waters of the U.S. and 4.8 acres of waters of the state, including Lion Spring; loss of these waters and associated riparian habitat would affect plant diversity and wildlife species; effects on downstream areas would be minimized by the water conveyance system under the reservoir	Would affect 0.3 acre of waters of the U.S. and 0.9 acre of waters of the state; no effects on springs or seeps; smaller effects on downstream areas because drainage area is smaller
Oak woodland communities	Would convert about 20 acres of southern coast live oak forest (500 to 600 individual trees over 8 diameter at breast height [dbh]) to project use; would need to plant 20 acres to mitigate	Would convert about 5 acres of southern coast live oak forest to project use so effects would be similar to Morrell Canyon but on a smaller scale; would only need 5 acres to mitigate
Special status wildlife	Would convert 80 acres of chamise chaparral and 20 acres of southern coastal live oak to project facilities	Would convert 95 acres of chamise chaparral and 5 acres of southern coastal live oak to project facilities
Mountain lion	Would remove 100 acres of suitable mountain lion habitat from Core B; project operation and maintenance would not likely increase disturbance or risk of interaction over levels that currently result from traffic on South Main Divide Road and use of Morgan Trail	Would remove 100 acres of suitable mountain lion habitat from Core B; project operation and maintenance would represent a very small increase in disturbance, because no trails currently provide for recreation at Decker Canyon site
Munz's onion	No suitable habitat at reservoir site; however, South Main Divide Road in vicinity passes through a soil type that is known to support occurrences of this species	Same
Developed recreation facilities	Footprint would not include Morgan Trail trailhead with minimal effect on users of the trailhead during construction but trail would need to be re-routed either temporarily or permanently depending on final design	Morgan Trail would not have to be rerouted and because visitation is low, increased traffic on South Main Divide Road would have minimal effect on Morgan trailhead users
Dispersed recreation	Would affect hang gliders using the 2 most suitable of the 9 launch sites and waterside setting offered at Lion Spring  Would eliminate a natural looking canyon with oak woodland vegetation and replace it with a reservoir surrounded by a chain link fence; inconsistent with Retention VQO	Would avoid effects on two most popular hang glider launch sites  The existing aesthetic resources within Decker Canyon are subordinate to Morrell Canyon and construction effects associated with building a reservoir in this location would be less than those at the Morrell site; development of the alternative site would not build over a mature oak-woodland riparian area (Lion Spring)
Traffic	Would achieve a balance of excavation to fill within the entire project site	Same

**Upper Reservoir Comparison**

<b>Resource/Issue</b>	<b>Morrell Canyon (co-applicants)</b>	<b>Decker Canyon (staff)</b>
Cultural resources	Would destroy or damage four prehistoric archaeological sites	No known sites at Decker Canyon location

**Powerhouse Site Comparison**

<b>Resource/Issue</b>	<b>Santa Rosa (Co-applicants and Staff)</b>	<b>Ortega Oaks</b>	<b>Evergreen</b>
Area of effect	30-acre site, 20-acre laydown, 340 depth of excavation  327,500 cubic yards (includes 207,000 from the powerhouse cavern; 35,000 from the transformer gallery; 32,000 from the surge shaft; 500 from the vent shaft; and 53,000 from the powerhouse access shaft)	58 acres, inclusive of laydown; 320 depth of excavation; groundwater 30 to 70 feet  There will be similar values to Santa Rosa but about 33 percent more excavation for the tailrace tunnel, which would be about 86,450 cubic yards since the Santa Rosa tailrace tunnel is 65,000 cubic yards; also, the depth of excavation is slightly less than that of Santa Rosa	75 acres, 30-acre laydown, 290 depth of excavation  There will be similar values to Santa Rosa but about 10 percent less excavation for the tailrace tunnel, which would be about 58,500 cubic yards since the Santa Rosa tailrace tunnel is 65,000 cubic yards; also the depth of excavation is less than that of Santa Rosa
Special status plants	Construction of the powerhouse could affect Coulter's matilija poppy	Construction of tunnel between upper reservoir and powerhouse could affect Coulter's matilija poppy	No rare plants identified in vicinity of Evergreen powerhouse location
Wetland and riparian habitat	Would affect about 0.4 acre of waters of the U.S. and state	Same as Santa Rosa.	Would affect less than one-tenth of an acre of waters of the U.S. and state
Special status wildlife	Would affect 30 acres of coastal sage scrub and 20 acres of non-native grassland	Would affect 53 acres of non-native grassland and 5 acres of coastal sage scrub	Would affect 55 acres of non-native grasslands and 20 acres of coastal sage scrub
Future recreation use	Location of substation and above ground transmission lines from this location would affect hang gliding activities	Would affect use of hang gliding landing site during construction; would provide formal hang gliding landing site following construction	Would displace informal disperse recreational use at site
Land Use and Property values	Would permanently change use to utility and recreation use and preclude residential use specified in General Plan; would purchase, modify, and reuse adjacent private property (Santa Rosa Mountain Villa apartments) and buffer would reduce effect on property values	No effect on adjacent residential property values at Ortega Oaks	Either raze or use current Lakeland Childcare Center at the Lakeland Village Plaza for construction office resulting in displacement of child-related businesses and purchase/raze one single family home

<b>Powerhouse Site Comparison</b>			
<b>Resource/Issue</b>	<b>Santa Rosa (Co-applicants and Staff)</b>	<b>Ortega Oaks</b>	<b>Evergreen</b>
Aesthetics	The powerhouse would be underground but the substation would be visible from surrounding residential and commercial properties	The powerhouse would be underground but the substation would be visible from the heavily used Ortega Highway	Same as Santa Rosa.
Aesthetics (cont).	All construction activities within this area would conflict with the Partial Retention VQO designated by the USFS; these effects would be short term and last for the duration of the construction	Construction activity at Ortega Oaks site would be visible from the Ortega Highway and a small portion of Grand Avenue in Lakeland Village; two prominent viewpoints to commuters in the area	Similar effects on the aesthetic resources as described above with respect to the proposed Santa Rosa site
Cultural Resources	Would affect two historic sites and one prehistoric archaeological site; could affect two historic buildings (vibration) and penstock	Would directly affect one prehistoric site	No known sites at Evergreen location

<b>Transmission Alignment Comparison</b>		
<b>Resource/Issue</b>	<b>Co-applicants' Proposed Alignment</b>	<b>Staff Alternative Alignment</b>
Area of effect	34.1 miles in length with 10.8 miles of temporary access roads and 5.2 miles of permanent access road.	33.7 miles in length with 9.3 miles of temporary access roads and 4.1 miles of permanent access road.
Fire suppression activities	Could interfere with USFS fire suppression activities.	Would avoid interference with USFS fire suppression activities.
Special status plants	Could affect Humboldt lily (Subarea 3); passes through potential habitat for Hammitt's clay-cress (Subarea 5). Pre-construction surveys could be conducted to prevent adverse effects during construction, but temporary access roads and permanent maintenance roads would substantially increase the risk of disturbance and habitat damage during project operation, if public access is not controlled.	Could affect Humboldt lily (Subarea 3); avoids potential habitat for Hammitt's clay-cress (Subarea 5). Pre-construction surveys could be conducted to prevent adverse effects during construction, but temporary access roads and permanent maintenance roads would substantially increase the risk of disturbance and habitat damage during project operation, if public access is not controlled.
Wetland and riparian habitat	Substation could affect about 1.1 acres of waters of the U.S. and state; effects from transmission towers would be minor as towers would be placed to avoid wetland and riparian habitat, but locations of access roads are unknown.	Same.

**Transmission Alignment Comparison**

<b>Resource/Issue</b>	<b>Co-applicants' Proposed Alignment</b>	<b>Staff Alternative Alignment</b>
Special status wildlife	Substations would affect 35 acres and transmission line towers would affect 30 acres of potential habitat for special status species. About 10.3 miles of temporary access roads would affect an estimated 15.7 acres, plus indirect effects of construction (edge effects) and potential for disturbance (e.g., poaching, harassment) and habitat damage during operation, if public access is not controlled. Permanent maintenance road would affect 5.2 miles (9.5 acres).	Substations would affect 35 acres and transmission line towers would affect 30 acres of potential habitat for special status species. About 9.3 miles of temporary access roads would affect an estimated 13.5 acres, plus indirect effects of construction (edge effects) and potential for disturbance (e.g., poaching, harassment) and habitat damage during operation, if public access is not controlled. Permanent maintenance road would affect 4.1 miles (7.5 acres).
Mountain lion	Would remove about 21.25 acres of suitable mountain lion habitat from Core B for about 85 towers; although mountain lions may use roads for travel, construction of 5.2 miles of permanent and 10.8 miles of temporary access roads would substantially increase the risk of disturbance (e.g., poaching, harassment) and habitat damage during project operation, if public access is not controlled. Would cross proposed linkage 1 at Temescal Wash, but tower placement should not interrupt travel corridor.	Same, except construction of 4 miles of permanent roads and 9.3 miles of temporary access roads would increase the risk of disturbance.
Bird/T-lines	Northern portion (Temescal Wash/Lee Lake) of line presents a high risk to waterfowl; central portion siting either underground or behind ridgeline would minimize risk to raptors; southern portion poses moderate risk of collision where it would cross major drainages.	Same.
Munz's onion	Would affect about 3.25 acres of potential habitat along the northern portion of the transmission line, about 23.2 acres at underground segment, and 35 acres at the northern substation. Pre-construction surveys could be conducted to prevent adverse effects during construction, but temporary access roads and permanent maintenance roads would substantially increase the risk of disturbance and habitat damage during project operation, if public access is not controlled.	Same except would affect about 15.1 acres at underground segment.

**Transmission Alignment Comparison**

<b>Resource/Issue</b>	<b>Co-applicants' Proposed Alignment</b>	<b>Staff Alternative Alignment</b>
Slender-horned spine flower, San Diego ambrosia, California Orcutt grass, San Jacinto Valley crownscale	Occurrences at Temescal Wash at Indian Creek and Alberhill (Subarea 1); vernal pool habitat may exist along southern segment of alignment (Subarea 8). Tower construction could affect about 3.25 acres of potential habitat. Pre-construction surveys could be conducted to prevent adverse effects during construction, but temporary access roads would substantially increase the risk of disturbance and habitat damage during project operation, if public access is not controlled.	Same.
Thread-leaved brodiaea	Occurrences in the vicinity of Tenaja Creek (Subarea 7). Tower construction could affect about 0.25 acre of potential habitat. Pre-construction surveys could be conducted to prevent adverse effects during construction, but temporary access roads would substantially increase the risk of disturbance and habitat damage during project operation, if public access is not controlled.	Same.
Quino checkerspot butterfly	Substation and tower construction would affect 36.75 acres within designated critical habitat and about 0.75 acre of potential habitat. Temporary access roads would substantially increase the risk of disturbance and habitat damage during project operation, if public access is not controlled.	Same.
Arroyo toad and California red-legged frog	Construction of towers at Temescal Wash (north) and Los Alamos Canyon and Tenaja Creek (south) could adversely affect about 1.25 acres of potential arroyo toad habitat; but could avoid California red-legged frog habitat through siting. No effects on critical habitat for either species, but temporary access roads would substantially increase the risk of disturbance and habitat damage during project operation, if public access is not controlled.	Same.
Southwestern willow flycatcher and least Bell's vireo	Occurrences at Temescal Wash and Tenaja Creek; construction of towers could affect about 1 acre of potential habitat. Access roads could also adversely affect habitat; temporary access roads would increase risk of disturbance and habitat damage during project operation, if public access is not controlled.	Same.

**Transmission Alignment Comparison**

<b>Resource/Issue</b>	<b>Co-applicants' Proposed Alignment</b>	<b>Staff Alternative Alignment</b>
Coastal California gnatcatcher	Construction of northern substation and towers could affect 38.5 acres of habitat within proposed critical habitat; access roads could also adversely affect habitat; temporary access roads would increase risk of disturbance and habitat damage during project operation, if public access is not controlled.	Same.
Stephens' kangaroo rat	Construction of northern substation and towers could affect over 38.25 acres of habitat within the Stephens' Kangaroo Rat Fee Assessment Area and Lake Mathews-Estelle Mountain Core Reserve; temporary access roads could also affect habitat and would increase the risk of disturbance and habitat damage during project operation, if public access is not controlled.	Same except includes access roads with northern substation and towers.
Developed recreation facilities	Would affect Wildomar OHV area and campground and these facilities would likely need to be closed during the first 2 years of construction (would be covered in the detailed site plan for construction)	Would avoid Wildomar OHV and campground locations; increased traffic due to construction would have minimal effects on users at these facilities
Dispersed recreation	Major effect on dispersed recreation would be in the vicinity of flight paths used by hang gliders; would present safety hazards; would result in considerable loss of hang gliding opportunities	Avoids some conflicts with hang gliding and USFS land classifications where transmission line construction would be inconsistent with USFS land management directives
Aesthetics	Towers and corridors would be visible in the foreground, middleground and background; construction activities within the Cleveland National Forest would result in features which conflict with the Retention and Partial Retention VQO standards	Would introduce line, colors, and textures into the landscape that do not currently exist and this would not be consistent with Retention VQO and would be slightly more visible from key viewpoints than the co-applicants' proposed alignment
	The linear features of the lines would contrast with the mountain and within the Cleveland National Forest be in conflict with the VQOs; the towers, conductors and resulting footprint of the corridor would be visible from highly traveled roadways	Same. Also because the lines would be lower down on the mountain they would be closer to Lakeland Village and more visible from the community of Lake Elsinore
Future recreation use	Transmission alignment would affect use by hang gliders of both launch and landing areas but avoids residential areas.	Would reduce conflicts with hang gliding uses.

**Transmission Alignment Comparison**

<b>Resource/Issue</b>	<b>Co-applicants' Proposed Alignment</b>	<b>Staff Alternative Alignment</b>
Roads	About 15.7 acres of temporary access roads could be revegetated; it is estimated that about 10.8 miles of road would be needed to service 32.1 miles of transmission line. About 5.2 miles (9.5 acres) would be needed for a permanent maintenance road along the underground segment.	About 13.5 acres of roads could be revegetated; public use could adversely affect habitat along 9.3 miles of road. About 4.1 miles (7.5 acres) would be needed for a permanent maintenance road along the underground segment.
Property values	Would adversely affect private property values up to 3 miles and 5 miles from where transmission alignment would cross or parallel private properties along northern portion and southern portion, respectively and would cross or be parallel within 0.25 mile about 8.6 miles of lands designated for residential development and may make these lands less desirable for development.	Would adversely affect private property values up to 4 miles and 9 miles from where transmission alignment would cross or parallel private properties along northern portion and southern portion, respectively and would cross or be parallel within 0.25 acres of about 15.9 miles of land designated for residential development under the General Plan and may make these location less desirable for development.
Land Use	Would be within 0.25 mile of 406 privately owned parcels and would cross or be adjacent to 6.1 miles of property zoned for residential use.	Would be within 0.25 miles of 452 privately owned parcels and would cross or be adjacent to 13.4 miles of property zoned for residential use.
Cultural resources	Northern segment could affect one prehistoric and two historic period archaeological sites; southern portion would not effect any known sites, but southern substation would affect one prehistoric site and sites in unsurveyed areas	Alignment has not been surveyed; could affect as yet unknown prehistoric sites