Study 34 - Alternative Northerly Transmission Alignments
Lake Elsinore Advanced Pumped Storage Project
Riverside County, California

1.0 INTRODUCTION

The Federal Energy Regulatory Commission (FERC) has requested that The Nevada Hydro Company (Nevada Hydro) conduct a study of the northern most transmission line segment of the proposed Lake Elsinore Advanced Pumped Storage (LEAPS) Project (FERC Project Number 14227). In 2007, FERC prepared a Final Environmental Impact Statement (EIS) for the project that considered three alternative routes for the proposed connection to the existing Valley Serrano (V-S) transmission line, once the line exits from the Cleveland National Forest (CNF) heading generally east. The three proposed routes considered in the EIS are shown on the attached Exhibit 1 as

- A route remains in the CNF and ties to the V-S line within the CNF (FERC Alternative 1)
- A route passing through Alberhill Ranch, tying to the V-S line above Lee Lake (FERC Alternative 2)
- A route passing through the undeveloped area between Glen Eden Road and Horse Thief Canyon Road (FERC Alternative 3)

Each of these routes are described in more detail below.

FERC requested that the Nevada Hydro take a fresh look at these routes, considering current and planned development near the proposed and alternative segments and summarize the potential effects of each transmission segment on land use, visual, terrestrial, and cultural resources.

A detailed project description may be found in Volume 1, Exhibit A “Project Description” of the Final License Application to FERC submitted in October 2017 as Project Number 14227 and available at www.leapshydro.com.

2.0 ALTERNATIVE ROUTE DESCRIPTIONS

FERC Alternative 1 – Northerly route remains in the CNF and ties to the V-S line in the CNF

This route would extend the line corridor from proposed Tower 43 northwesterly to a point where it would intersect with the V-S line, all within the CNF.

The access route to the V-S line is via Interstate 15 to Dos Lagos Drive, westerly to Knabe Road, southerly to Bedford Motor Way and westerly on Bedford Motor Way. This road is a one-lane paved road for approximately one-half mile, then becomes a one-lane, rugged dirt, US Forest Service Road (6S05). This road continues in a southerly direction for approximately 28 miles and connects to Ortega Highway (State Route 74).

From Knabe Road, the route proceeded on Bedford Motor Way and USFS Road 6S05 approximately 6.5 miles to the point where the V-S line crosses the road. The elevation change from the intersection of Knabe Road and Bedford Motor Way to the V-S line was approximately 2815 feet (925 MSL to 3740 MSL), resulting in an average grade of about 8.2%. In the vicinity of the V-S line, although the physiography is very rugged and steep, there exist two spots that could conceivably be graded for use as a switchyard at latitude 33°45'33" North, longitude 117°32'36" West.

Advantages of FERC Alternative 1:

The entire LEAPS project would be constructed within the CNF, with the exception the portion of the pipeline connecting Lake Elsinore and the Upper Reservoir that extends easterly from the CNF boundary into Lake Elsinore. Except for this portion, a Special Use Permit from the U.S. Forest Service to construct and operate the project would cover the entire project. No acquisition of private property would be required, and the corridor would not cross Interstate 15 (I-15).

Disadvantages of FERC Alternative 1:

The access via USFS Road 6S05 to a switchyard site near where the road crosses under the V-S line would be extremely difficult. The average grade of the road is 8.2%, but the grade in portions of the road approaches 15%. It is a four-wheel-drive road and is fairly narrow with steep slopes on both sides.

To build an approximately 10-acre switchyard site in this mountainous terrain would be a significant challenge. First, the road would have to be graded, widened, and paved to get construction equipment to the switchyard site. Some equipment could conceivably be brought in by helicopter, but daily access to the site would require that the road be improved.

In addition, the grading required to provide a 10-acre pad with corresponding cut and fill slopes would be challenging. We estimate that approximately 100,000 cubic yards of cut and 20,000 cubic yards of fill would be generated. Since it would be extremely difficult to get ready-mix concrete trucks to the site, an on-site batch plant would be required. Again, getting the batch plant components to the site for assembly would be a serious challenge, but some of the components potentially could be brought in by helicopter.

Finally, transporting the switchyard components to the site would be a major undertaking. Transformers weigh approximately 80 tons and would have to be brought in by road. The additional costs to improve the USFS access to road to accommodate construction equipment, and to grade and construct a switchyard site at this location would be approximately $34 million compared to the construction costs for building a comparable facility at the existing proposed site near Lee Lake (also known as “Corona Lake”).

Constructing a switchyard at this site in the CNF would also likely cause a default on the existing Large Generator Interconnect Agreement with Southern California Edison, and the process to obtain a new agreement would have to restart, with significant delay and additional costs associated with the restart.

Lastly, the USFS would have to approve the major construction required to build the switchyard and additional towers in the CNF. Given the level of construction required, getting a Special Use Permit for the entire project would seem to be a very challenging undertaking.

FERC Alternative 2 – Northerly route extends through Alberhill Ranch, and ties to the V-S line above Lee Lake

This route would extend the transmission corridor from proposed Tower 43 northeasterly to an angle point southeast of Horse Thief Canyon, and then northerly through the former horse ranch at Alberhill to a point where it would intersect with the V-S line above Lee Lake, about 0.6 mile southeast of the existing proposed tie-in point.

This route would bring the transmission lines relatively close to the Horse Thief Canyon subdivision and through portions of the Pacific Clay mining operation. Moving it further away from the residential areas would force it further into the Pacific Clay mining areas. A switchyard could potentially be constructed on the Alberhill Ranch site, presently owned by Southern California Edison.

Advantages of FERC Alternative 2:

The advantages for this route are that the same construction and access methods (roads to some tower sites, helicopter construction on others) as would be used for the route proposed in the FLA, could also be used as for this portion of the route, and the Alberhill site is relatively level, which would result in much less grading during switchyard construction than for Alternative 1.

Disadvantages of FERC Alternative 2:

Pacific Clay has already expressed its strong opposition to any of its property being used for a transmission route. Further, this alternative would place the route near southeasterly edge of the Horse Thief Canyon development.

FERC Alternative 3 – Northerly route exits Cleveland National Forest through the undeveloped area between Glen Eden Road and Horse Thief Canyon Road and connects to the V-S line at the currently proposed site

This route would extend from the proposed Tower 32 northwesterly between Glen Eden and Horse Thief Canyons Roads and connect to the V-S line at the same point as the existing proposed tie-in point. The route would cross I-15 near what appears to be a vacant lot between I-15 and Temescal Canyon Road that could be used for a switchyard site.

Advantages of FERC Alternative 3:

This route has many of the same advantages as the FERC Alternative 2 route, and there appears to be a vacant property between Temescal Canyon Road and I-15 that would be large enough to accommodate a switchyard. The location of the transmission line and towers in this alternative would have to be placed to pass through this potential switchyard site.
The route could be placed approximately half way between the Glen Eden and Horse Thief Canyon developments, which would keep it approximately 0.2 mile from either development.

Disadvantages of FERC Alternative 3:

A potential problem with this alignment is a proposed development near Lee (Corona) Lake known as the "Lakeside" development. This residential development is proposed to be constructed between Lee Lake and Temescal Canyon Road and would extend beyond Lee Lake southeasterly along Temescal Canyon Road approximately one-half mile. This proposed route could effectively bisect the proposed development.

3.0 CONCLUSIONS

The route proposed in the FLA and identified in the EIS still appears to have the least number of physical obstacles to construction. Potential "tweaks" to the existing proposed route could be accomplished, especially near the Glen Eden Sun Club. The line could be moved closer to the Glen Eden property on the side of a slope that would shield it more from the Sycamore Creek community, potentially without incremental impact on Glen Eden residents. The line could also be relocated to the southwestern side of Glen Eden, putting it even farther away from Sycamore Creek, but siting of the towers at the crossing of I-15 to meet the existing proposed Lee Lake Switchyard site would be more difficult.

Nevada Hydro will summarize the potential effects of each alternative segment on land use, visual, terrestrial, and cultural resources, and integrate comments from members of the public, in its final study for submittal to FERC.

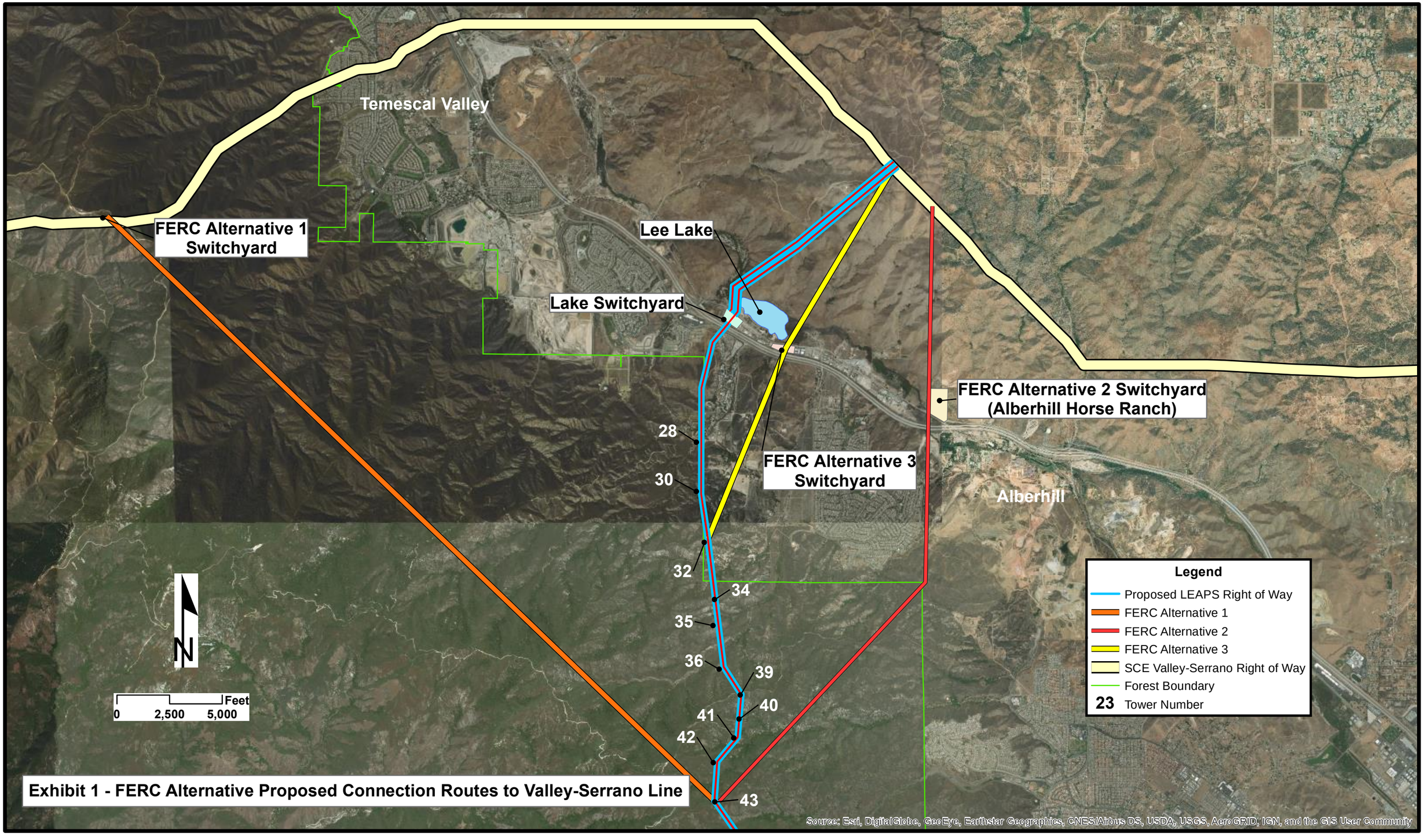

Exhibit 1 - FERC Alternative Proposed Connection Routes to Valley-Serrano Line

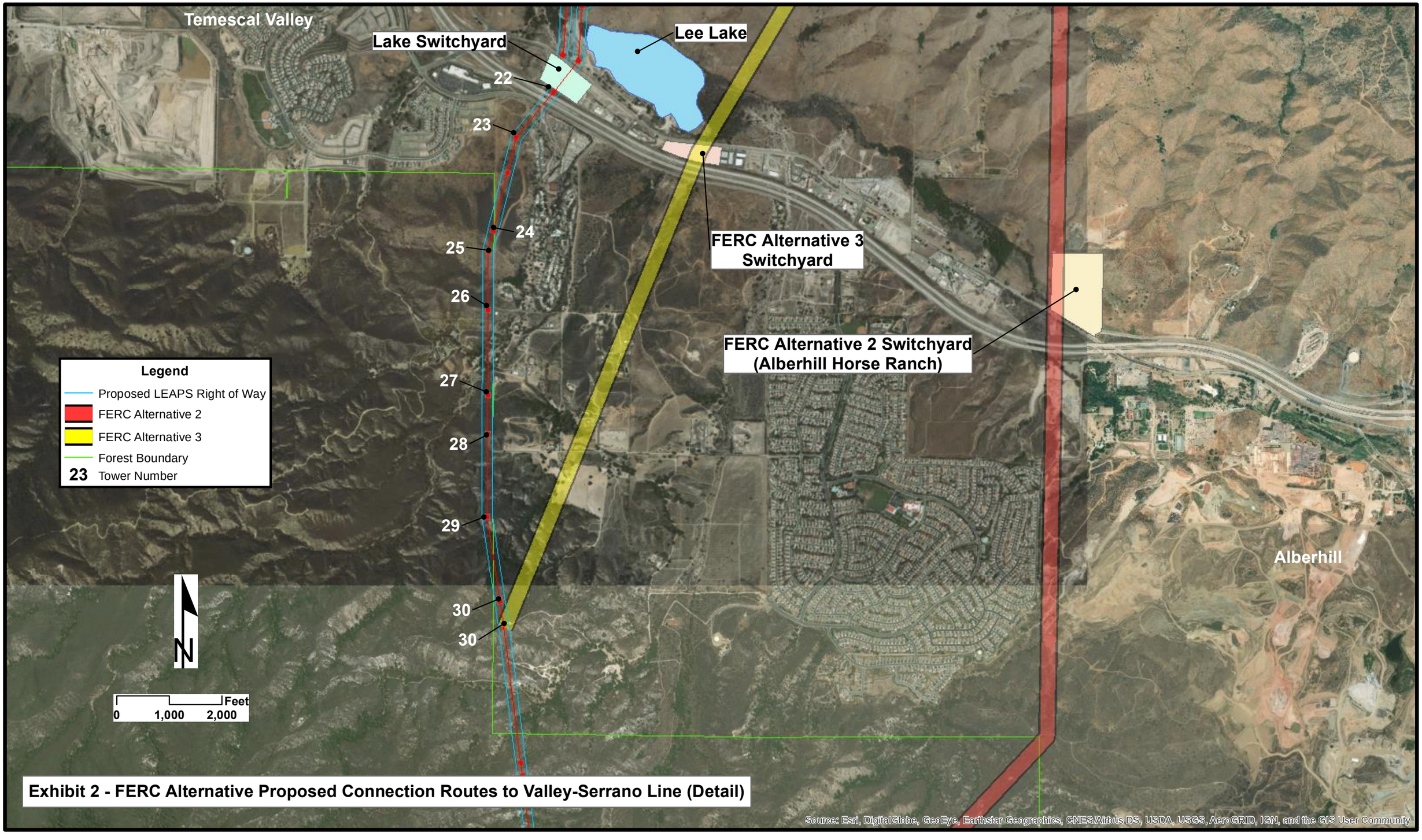

Exhibit 2 - FERC Alternative Proposed Connection Routes to Valley-Serrano Line (Detail)