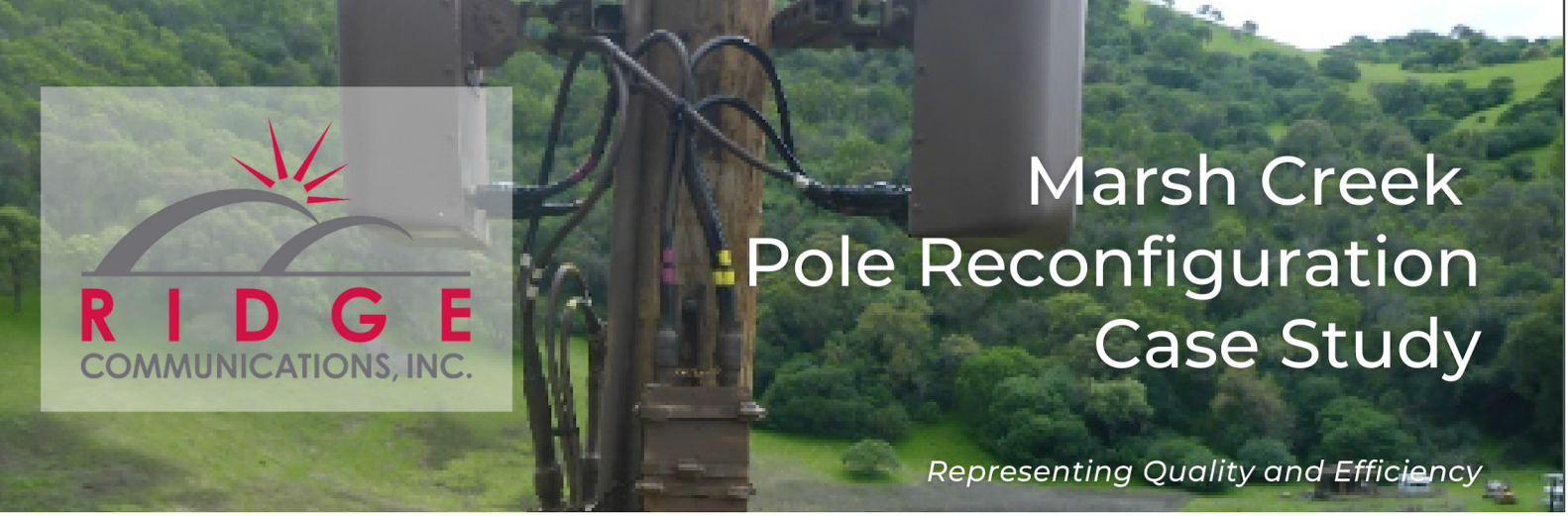

Marsh Creek Pole Reconfiguration Case Study

Representing Quality and Efficiency

AT A GLANCE

Safety inspections performed on the Marsh Creek DAS Network in Contra Costa County, California, determined that the clearance between antennas on five nodes and PG&E's secondary power service was not in compliance with CPUC Rule G.O. 95 requirements. The responsible Tier-1 wireless carrier requested Ridge Communications provide a proposal for the resolution.

KEY METRICS

- Lower RF Antennas
- Establish compliance with CPUC G.O. 95 requirements
- Complete by deadline

5

Sets of RF Antennas Relocated

CHALLENGE

A Tier-1 wireless carrier's RF Antennas on five poles were not in compliance with safety requirements and therefore had to be either lowered or placed on new poles. Ridge performed a field survey of the five poles and identified a few challenges. They determined that the secondary PG&E powerlines were in place to provide service to each node, but because of the limited height of the poles, the secondary power service was in conflict with G.O. 95 clearance requirements. PG&E power lines were installed at the highest possible point on the top. There were limited options to increase the clearance between the antennas and the power lines, and to complicate this further, all of the five poles in question crossed and paralleled Marsh Creek Road.

The Ridge proposal included a plan and budget for correcting the infractions, including engineering, make ready, JPA, wind load calculations, permitting, and implementation. The proposal had two options for resolving the violations: 1) Lower the antennas and all of the communication lines beneath them, or 2) Place new poles of sufficient height to maintain proper clearances and transfer all the attachments on the existing poles to the new poles.

Detailed Planning

Professional Relationships

On Schedule Completion

SOLUTION

Ridge worked with the Tier-1 wireless carriers RF engineer to approve the new antenna heights. Ridge's field survey of the attachment heights for the communication lines showed that there would be no clearance infractions alongside or across Marsh Creek Rd. as long as the Ridge construction team could adequately tension the lines after lowering them.

SOLUTION (continued)

To lower the many existing communications lines belonging to four major telecommunication and internet providers, Ridge would have to reduce the heights of attachment for their dead ends and shorten their down guys requiring close coordination with the carriers operations team. Each node would be taken out of service while the antennas were lowered. The carrier's operations team agreed to allow the work to be done during daylight hours.

Ridge produced the before/after pole profile drawings, ready details, wind loading calculations, and MOP (method of procedure) for each pole/antenna relocation. Because Marsh Creek Road is a two-lane highway with narrow to non-existent shoulders, Ridge's work would require one of the two traffic lanes to be closed during the work. Ridge produced traffic control plans for each location, showing tapers closing and opening the affected traffic lane, providing signage, and employing flaggers. The traffic control plans were submitted to Contra Costa County for approval. Once approved permits were in hand, Ridge could schedule the work.

RIDGE
COMMUNICATIONS, INC.

Unexpected Challenges to Overcome

While the County approved the traffic plans and the general concept for the work, they would not issue the permits. When the responsible Tier-1 wireless carrier originally obtained planning approval for the DAS sites and network, they were required to communicate regular compliance review reporting to the County Planning office as a condition of approval. Because the compliance review communication was delayed, the permits were also delayed. While the County wasn't going to require the sites to go through planning approval again, the carrier was still required to submit compliance reviews for the sites before the permits would be issued. The compliance review packages would require a considerable amount of documentation, including details on the carriers' compliance with each condition of approval along with the original approved planning documents and drawing.

Fortunately, the Ridge site acquisition team has a long-standing relationship with the responsible Tier-1 wireless carrier and has the resources and experience to put the packages together and shepherd them through to approval. Time was critical since the wireless carrier had a deadline for remediation of the clearance infractions.

Another challenge arose: one item that had to be part of the compliance review package was the original planning approval documents, including the PE-stamped construction drawings for each node site. The responsible carrier couldn't locate copies of any of them. However, this challenge was quickly overcome because the Ridge Project Manager knew the A&E that did the drawings and managed the planning and permitting process.

Once Ridge had the complete compliance review packages put together, the Ridge site acquisition team submitted them to Contra Costa County and ultimately received approval along with the traffic control permits for the antenna work.

With permits in hand, Ridge and the carrier scheduled the work to take place over one week. This was a tight schedule - five days, five sites, one site per day – nothing could go wrong, or the deadline would not be achieved.

The Ridge construction teams, aided by a third-party professional traffic control group, started the work. At each location, service and power were turned off, lines and antennas were lowered, new connections to each antenna were made and tested, lowered lines were measured to ensure compliance with G.O. 95 clearances, and the sites returned to service. Ridge was responsible for ensuring the proper RF emission safety signage was in place, documenting the project by taking photos and measurements, and creating close-out packages.

RESULTS

The clearance infractions were successfully eliminated, and the Tier-1 wireless carrier was able to report the resolution to the California Public Utilities Commission before the deadline for correction was breached.