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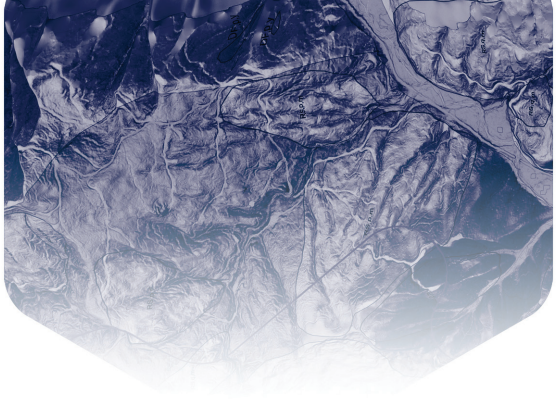

Caltrans Case Study

Getting consultation right the first time at Last Chance Grade

Client: Caltrans manages more than 50,000 miles of California's highway and freeway lanes, provides inter-city rail services, permits more than 400 public-use airports and special-use hospital heliports, and works with local agencies. Caltrans carries out its mission of providing a safe, sustainable, integrated and efficient transportation system to enhance California's economy. Caltrans approaches each project with an eye to balancing the environmental, economic and citizen impact of their decisions through rigorous study, assessment and consultation.

Challenge: Last Chance Grade is a section of Hwy 101 in northern California that is the main arterial connection to Crescent City and many smaller communities. This section of highway runs through an area prone to significant landslide hazards, with a geological survey showing over 200 active slides within the area. Since 1981, Caltrans has spent over $65M responding to landslides and repairing roadway damage. Currently, a US$50 million-dollar planning study and public consultation process is underway to find an alternative route. With a high cost of re-construction ($300 million to $1 billion) and many compromises to choose from (longer route and/or cutting down giant redwoods), this process "must be done right the first time" to avoid costly delays and overruns.

"The overall benefits of this technology for technical professionals, including engineers, geologists, biologists and other professionals, but also for non-technical stakeholders, cannot be overstated. This technology proved instrumental in conveying land use issues and challenges, and significantly accelerated several key project milestones."

—Sebastian Cohen, Area Construction Engineer, Caltrans.

Solution: Clirio software was employed to present the geological issues of the site, as well as the proposed alternatives via holographic representations of the data. This allowed non-technical stakeholders an opportunity to review and understand the implications of the various options proposed, and partake in a meaningful, constructive dialog on the issues at hand. The numerous trade-offs associated with each option were easily understood by technical and non-technical participants in a fact-based way, free from confusion over technical jargon and figures. This was highly valuable in both identifying potential impacts and issues from various project alternatives in such a manner that would have otherwise likely not been feasible or would have taken a significant amount of additional time and resources.

Result: Clirio added value to this process in several ways. First, the risk assessment process performed by the geological experts was informed by the underlying spatial information throughout critical workshop events. Next, public stakeholders experienced key information in mixed-reality, holographic 3D scenes. They were able to collaborate with other stakeholders and a facilitator, creating trust and buy-in on the complex technical information in an short period of time. This created a "common operating picture", which lead to gaining important critical support for moving the project forward. Participants said that their experience with these visualizations led to a greater understanding of the project and the issues at hand, versus having to comprehend 3D information presented in reports and engineering plans on paper. Through these benefits, the public consultation and initial planning steps were completed more efficiently and in a shorter time-frame when compared to legacy approaches.

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