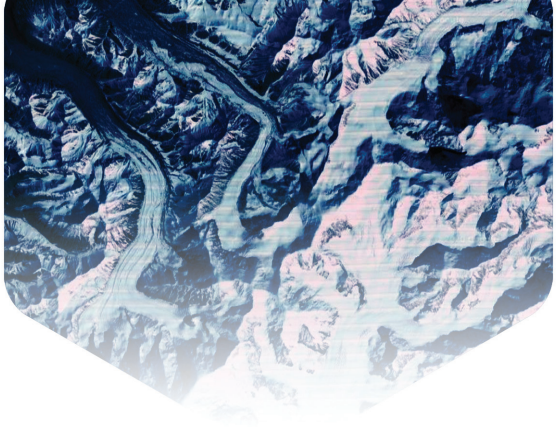
CLIRIO

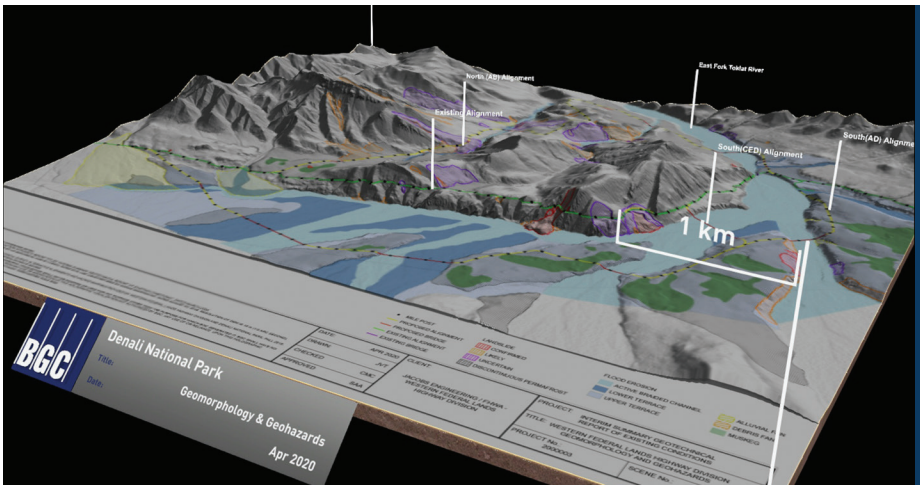


FHWA Denali Case Study

Effective project collaboration with remote participants.

Client: Western Federal Lands and Denali National Park. Denali is six million acres of wild land, bisected by one ribbon of road. The Office of Federal Lands Highway (FLH), of the US Department of Transportation(USDOT) Federal Highway Administration (FHWA) was established to promote effective, efficient, and reliable administration for a coordinated program of federal public roads and bridges; to protect and enhance our Nation's natural resources; and to provide needed transportation access for Native Americans.

Challenge: The current route through the park is continually impacted by landslides and in the area of Polychrome Pass, landslides are becoming more severe and threaten to permanently close the existing road. To understand the risks associated with the existing and alternate proposed road alignments, an assessment of the initial investment, the long-term maintenance requirements for the next 50 years, and the risks of failure for each of the road alternatives to meet performance objectives needed to be considered. Technical experts from within government and private consulting engineering practice were slated to meet at Denali in Alaska to study the site and the proposed alternatives. However, conducting an in-person, expert-based risk assessment (EBRA) meeting was no longer possible due to Covid 19. The schedule did not have flexibility for an uncertain delay.



"My first experience, with 4 other expert panel members, allowed us to see and discuss specific features or details shown on the model that could not have happened otherwise. During the post-COVID shelter-in-place order, I was equally impressed with the ability to engage with colleagues that were equipped with the same model and HoloLens apparatus, just as effectively as when we were meeting in person. A very effective tool indeed!"

—Kenneth A. Johnson, PhD, CEG, PE, WSP, USA.

Solution: Clirio software was employed to assist in coordinating a remote, virtual technical review using holographic visualization. HoloLens augmented reality headsets were sent to eleven review committee members located across North America. Clirio created a set of project visualizations using data provided. EBRA committee members viewed holographic representations of the site, including key geological features and relevant terrain data. The scenes consisted of terrain and geological data combined with existing and proposed highway alignment options.

Result: The meeting was successfully accomplished on schedule and in a safe, remote manner that did not compromise the outcome. The meeting also was executed at a lower cost than originally planned, as the cost of Clirio support was less than the original travel and in-person meeting budget. It brought experts to the field in a way that was not previously possible due to the remoteness of the site and created a deeper understanding of the issues than could be accomplished with 2D drawings and reports. It was determined by the participants that this technology may well be an important part of infrastructure planning work in the future. Clirio helped drive a change in the way that planners, designers, engineers and scientists engage with remote sites.

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