

**High Park Fire Area Flood Mitigation Support – Rist Canyon and Empire Gulch
Larimer County, Colorado**

Client: Mr. Mark Peterson, P.E.
Larimer County
Engineering Department
P.O. Box 1190
Fort Collins, CO 80521
(970) 498-5714



The High Park Fire in the mountains west of Fort Collins, Colorado was caused by a lightning strike and was first detected on the morning of June 9, 2012. The fire was declared 100 percent contained on June 30, after burning 87,284 acres. Beginning in November 2012, Anderson Consulting Engineers (ACE) participated in rapid response efforts as part of the High Park Fire Area Flood Mitigation Project. ACE consulted with Larimer County and CWCB staff to identify post-wildfire needs in areas affected by the fire, and developed a scope of work to **determine post-wildfire flood hazards and evaluate flood mitigation alternatives for protecting public infrastructure and homes** from loss or damage. Additionally, ACE participated in High Park Fire **coordination meetings** organized by Larimer County, which **included stakeholders such as the NRCS, USFS, CDOT, Colorado State Forest Service, Larimer County, City of Fort Collins, and the City of Greeley.**

ACE, AVI Consulting, and Larimer County Staff conducted **field reconnaissance and field surveying** of existing stream channels, road crossings, and conveyance structures. Utilizing pre- and post-High Park Fire hydrology developed by the NRCS, flood events were identified for the design of upgrades to existing infrastructure.



For Rist Canyon in Larimer County, eight crossings of Larimer County Road 52E (LCR 52E) were determined to be insufficient for conveying anticipated post-fire flow events. ACE **analyzed the hydraulics** associated with a 25-year flow event to **design upgrades to the existing culvert infrastructure** and to **design erosion countermeasures** for the new culvert crossings.



Whale Rock Road – Rist Canyon

Empire Gulch conveys flow through the Mill Canyon Estates subdivision in Larimer County. Following the High Park Fire, residences to the north of the gulch experienced flooding as a result of increased post-High Park Fire flow events and an undersized channel. ACE **analyzed the hydraulics** associated with the 100-year post-High Park Fire flow event to **design an improved channel** capable of safely conveying flood flows through the subdivision.



Empire Gulch – Pre- and Post-Construction