

A LOW-PROBABILITY, HIGH-IMPACT FIRE

Between 2015-2020, 8.8 million acres – an area larger than the state of Maryland – burned in California. The deadliest fire in California history, the Camp Fire, provides important lessons about preparing for this “new normal.”



An aerial view of the Camp Fire, Nov. 8, 2018. Courtesy NASA Earth Observatory.

On November 8, 2018, the Camp Fire hurtled towards the town of Paradise at a dizzying speed. Sparked by a faulty PG&E transmission line, the ember storm moved 130 ft. per second – about two semi-truck lengths per second, or 80 football fields per minute. Town communication systems failed as fiber optic lines and cell towers shut down. In a matter of hours, the fire engulfed the entire town. **Eighty-six people lost their lives, making the Camp Fire the deadliest wildfire in California’s history.** It took 17 days to bring the flames under control.

Prior to 2018, the town of Paradise had prepared for an extreme wildfire and had an extensive fire safety plan in place. The town led drills, advertised its warning systems, and even wrote fire precautions into public construction projects. City leaders believed that their community was one of the best-prepared in California; Paradise had worked hard to prepare for the *most likely* fire event. However, evacuation and safety plans did not account for a wildfire that would cross Feather River – an event that had not happened for 50 years – or an ember storm driven by winds moving from east to west.

The state of California has yet to step in during these planning processes. **Evacuation planning remains a local responsibility, and can reflect smaller towns’ limitations in technology and information.** For example, post-fire traffic simulation software showed that the entire town of Paradise would need five to eight hours to evacuate under perfect conditions. Paradise did not have access to such software.

“EVERY PUBLIC WORKS PLANNER, EVERY EMERGENCY PLANNER ACROSS THE COUNTRY SHOULD BE AWARE ABOUT WHAT THOSE TYPES OF MODELS WOULD SAY FOR THEIR COMMUNITY.”

– **Marc Mattox**, Paradise’s Town Engineer

As wildfires continue to get bigger and fiercer, scientists advise preparing for low-probability, high-impact disasters like the Camp Fire. To prepare for this “new normal,” local, state, and federal authorities must work together to create and share disaster risk mapping models.



One of Paradise’s main evacuation roads, the Skyway, had recently been narrowed to reduce pedestrian injuries and calm expressway-like traffic. In recognition of this, the town created and practiced an updated disaster plan: converting the Skyway into a one-way route during emergencies. In their plans, town officials anticipated evacuating different zones at different times. But during the Camp Fire, the entire town had to leave at once, creating a bottleneck of evacuees surrounded by fast-moving flames. This screenshot from a video taken by Brynn Chatwood shows Paradise’s iconic welcome sign as Chatwood fled via the Skyway.