

## BERKELEY HILLS TRAFFIC SIMULATION

The increasing development of residential areas in California's forested zones, combined with the escalating impacts of climate change, has turned wildfires in the Berkeley Hills into a constant crisis. The area's susceptibility, influenced by topography and Diablo winds, makes large-scale evacuations crucial for safety.

The high housing density and proximity of structures in the Berkeley Hills pose a significant risk of rapid fire spread. In order to mitigate this threat, the analysis of traffic flows and evaluation of various evacuation scenarios to enhance efficiency and safety have become crucial. Traffic simulations play a vital role in achieving these goals.

The research team is collaborating with the City of Berkeley's Office of Emergency Services and Fire Department to study the evacuation risk of traffic junctions like Marin Circle. We are assessing the complexity of evacuation, including the available resources that can be utilized for its management. In some cases, such as a nighttime scenario, these resources may be limited.



*Figure 1. Marin Circle Site Visit*

There are two main strategies currently under investigation. The first is related to managing the traffic flow around the Marin Circle. This location is crucial because a significant portion of traffic from Berkeley Hills flows in that direction, converging seven roads. Ensuring its optimal management is therefore essential to reduce time and the risk of congestion.

The second strategy aims to reduce traffic in the Berkeley Hills area by dividing it into zones and directing vehicles onto minor roads such as Euclid Ave or Spruce St. This will help to ease the load on Marin Avenue, which currently has the highest number of vehicles and

intersects with Marin Circle. It is important to note that this strategy may also impact the number of vehicles passing through Marin Circle.

These strategies reflect a proactive approach to address the evolving challenges posed by wildfires. By prioritizing traffic efficiency and safety, these ongoing efforts are focused on enhancing the resilience of the Berkeley Hills community. The strategies recognize the need for adaptive solutions that balance resource constraints and potential limitations.

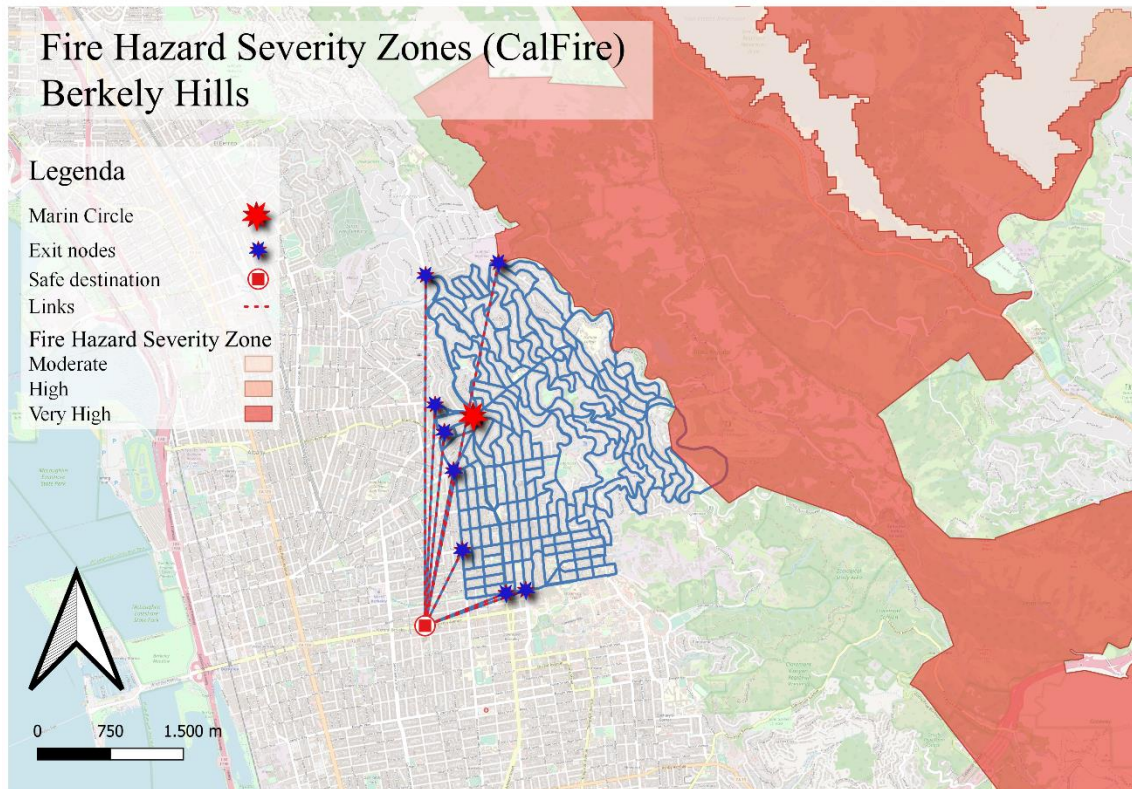


Figure 2. Fire Hazard Severity Zones - Berkeley Hills