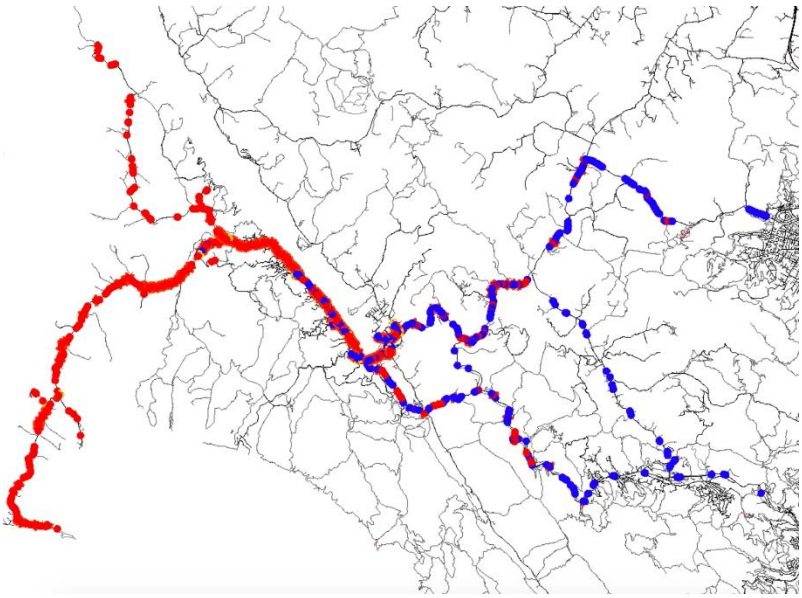
West Marin Wildfire Evacuation Simulations

Recently, we conducted traffic simulations to test two strategies for evacuation of residents for the West Marin region. First, phased evacuation was tested in Inverness to assess its efficiency, because all residents living in the community only have one way out--Sir Francis Drake Blvd. Residents were divided into four subgroups according to their distance from the destination. The simulation results show that phased evacuation can reduce the total evacuation time for all residents if they start at different times, which allows them to arrive at the destination faster than if all residents depart at the same time.



The second simulation tested the evacuation delay created by considering tourists from Point Reyes National Seashore Park. We collected traffic counts from the National Park Service's Visitor Use Statistics, and introduced 757 tourists in Pierce Point Road and 1,560 tourists in Sir Francis Drake BLVD at three different places for a one day simulation, including the southern part of Inverness with 484 local residents, whole Inverness village with 1379 local residents, and the larger area for Inverness and Point Reyes Station with 2,247 local residents. After simulation, we calculated the delay for each local resident caused by tourists. The longest delay is 10 minutes for residents in the southern part of Inverness, 60 minutes' delay for residents in the whole area of Inverness, and 60 minutes' delay for residents in the larger area of Inverness and Point Reyes Station.

To validate the simulations for the West Marin region, we held a meeting with stakeholders and local residents in West Marin on March 4th at the Dance Palace in Point Reyes Station to present our wildfire simulation models of evacuation strategies that included both residents and tourists in the area. We received insightful feedback from participants representing Marin County Fire Department, Marin County Sheriff's Office, Marin Wildfire Prevention Authority, local disaster councils, and residents.

We plan to edit some parameters and improve the traffic simulation based on the advice of community residents and other stakeholders. Our approach will involve iterative processes with stakeholders and local communities to enhance simulation models and gather feedback regarding their actual experience with risk conditions in the region.