

WEST MARIN EVACUATION SIMULATIONS

Recently, we conducted evacuation simulations in the West Marin region which newly incorporates residents in Tomales and tourists at Dillon Beach. By interviewing local residents and officials, we tested two cases: – one in which fire ignites around Calistoga, and an estimated 3000 or 5000 people from larger cities, like Sebastopol and Santa Rosa, will move to Tomales and Dillon Beach as shown in Figure 1. The second is when fire ignites around Point Reyes National Seashore, about 200 residents in Tomales evacuate to Santa Rosa/Petaluma, approximately 3000 tourists evacuate from Dillon Beach to Santa Rosa/Petaluma; 1380 Inverness residents and 2800 Inverness tourists evacuate to Petaluma, Novato and San Rafael; and 300 Point Reyes Station local residents evacuate to Tomales, Petaluma, Novato and San Rafael (Figure 2).



Figure 1. Evacuation from Santa Rosa and Sebastopol to Tomales and Beach

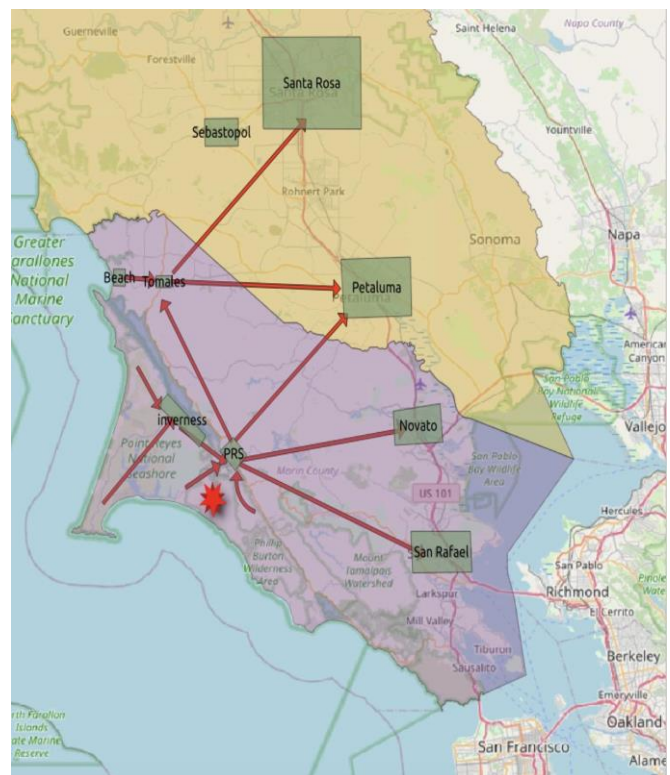


Figure 2. Evacuation from Tomales, Beach Inverness and Point Reyes Station to other big cities

After running the simulations, we calculated the evacuation time for the simulation cases. The first case shows that average evacuation time for 3000 cars is around 50 minutes, and the average evacuation time for 5000 cars is around 1h 37 minutes. The second case shows the first 2500 evacuees can depart with their expected departure time with an average of 1h evacuation time. The later 700 evacuees need to wait for a while on the origins with an average of 45 min evacuation time.

After communicating with local authorities and residents, we received valuable feedback about local conditions, including their concerns about limited resources when people evacuate from other cities to Tomales or Dillon Beach in the first case, and their advice about considering rapid fire propagation in grasslands when evacuation occurs in the second case. We will discuss this information with other fire experts in SCC group and update our simulation accordingly.