

# Orinda Citywide Evacuation Analysis Methodology

## Posted January 2023

In January 2023 Orinda posted its emergency evacuation analysis. Starting on page 5 (Analysis Methodology), the document states:

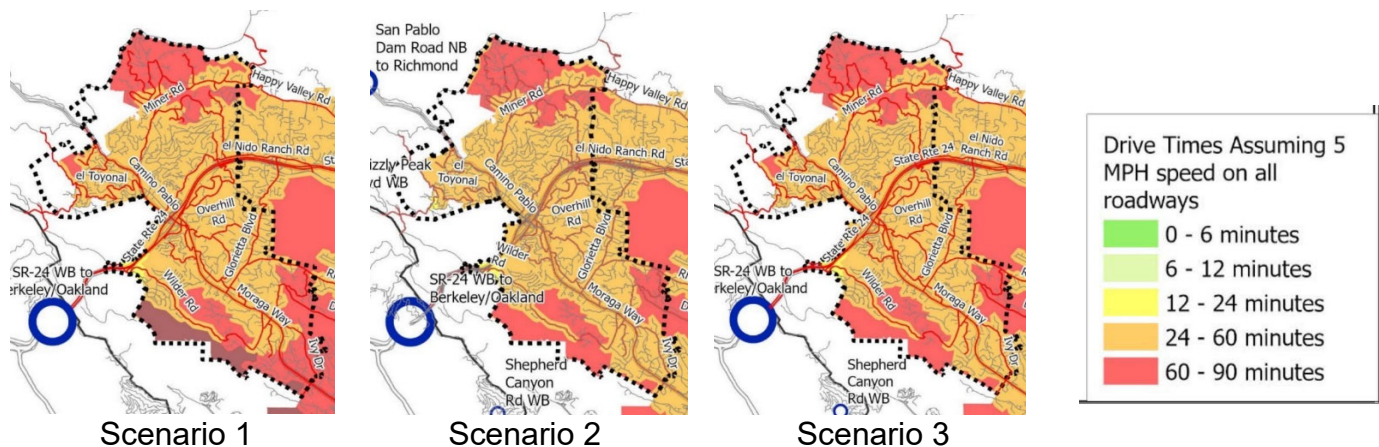
The goal of this analysis is to identify evacuation routes that are most likely to be congested in a citywide emergency, as well as the residential areas that are likely to face the most evacuation constraints. This section details the method and assumptions used to identify these routes and areas.

### Assumptions

The citywide evacuation analysis considers three scenarios which differ in terms of their hazard area location. The generalized hazard area for each scenario is informed primarily from MOFD recommendations of where wildfires that would affect Orinda are most likely to originate, although the hazard area in each scenario is not an specific wildfire origin, spread, or perimeter. Instead, the hazard area in each scenario is defined by which evacuation routes out of Orinda are considered safe to use, based on their proximity to the following three hazard areas:

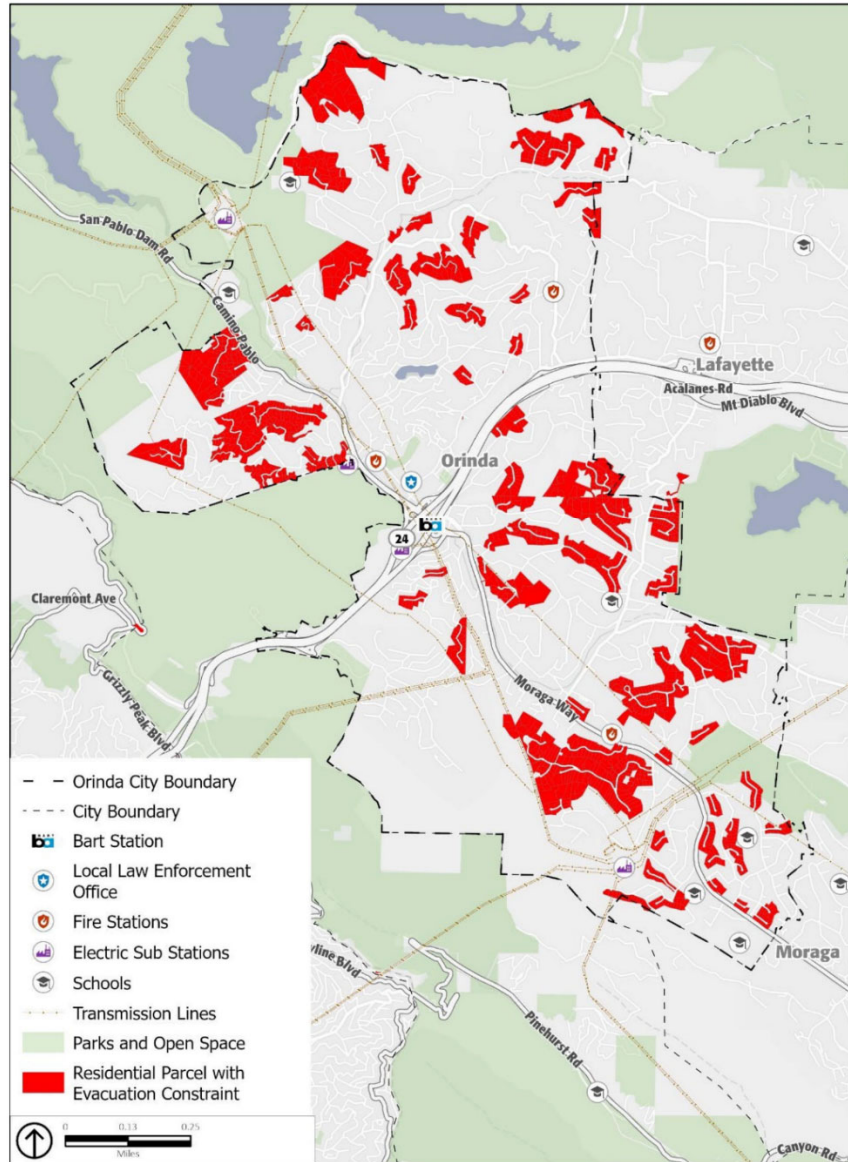
1. Hazard area is south or west of Orinda, spanning from San Pablo Dam Road in the north to open spaces southwest of Orinda.
2. Hazard area is Lafayette Reservoir immediately east of Orinda.
3. Hazard area is north of Orinda, spanning from the Berkeley Hills to Briones Regional Park.

All three scenarios assume all residents are evacuating out of Orinda, BUT **the analysis does not model wildfire behavior or make any assumptions about the potential timing of when evacuation routes would be impacted.**



24-60 minutes to evacuate most homes in Orinda with many homes being in dead end cul-de-sacs with only one way out.

FIGURE 13: STEP FOUR (ALL SCENARIOS): RESIDENTIAL AREAS WITH A SINGLE POINT OF INGRESS OR EGRESS



Source: Evacuation analysis by PlaceWorks and City of Orinda, 2022.

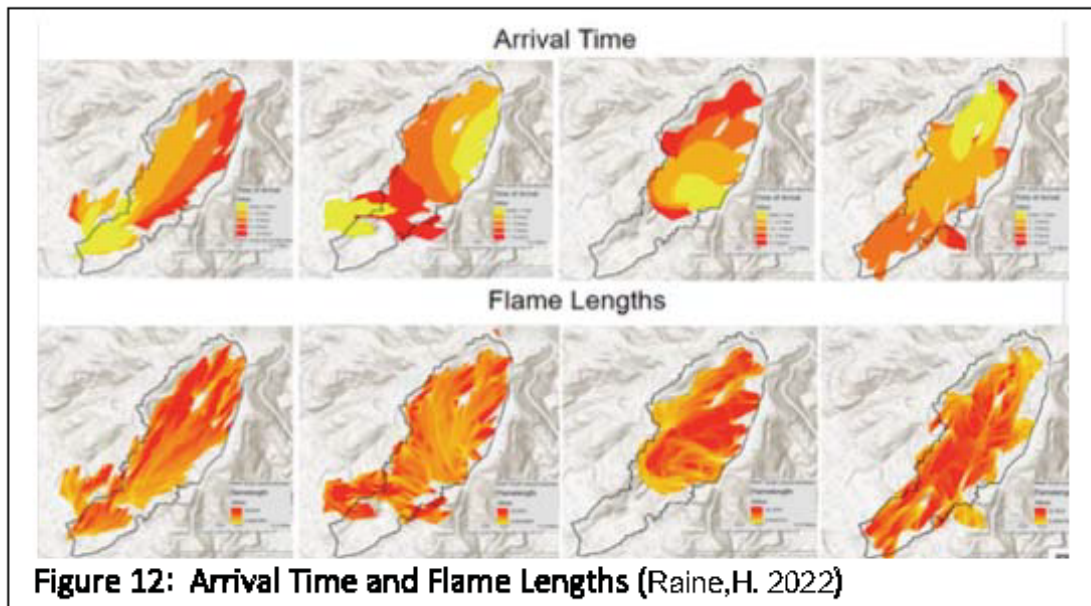
In his October 2022 proposal to the city, Orinda resident and wildfire modeling and prevention expert Dr. John Radke demonstrated how wildfire spread can be modeled.

## Fire Spread Modeling

(from Radke Proposal October 2022)

### Task 10: Virtual Fire Model Scenarios in all *Fireshed* Neighborhoods

Once validation of the fuels is complete we will run city-wide wildfire model simulations in both FlamMap and FARSITE for various ignition sites with Red Flag Warning weather conditions. Weather and *fuel moisture codes* (FMCs) will be consistent with Red Flag Warning conditions (Diablo Wind Events), or high fire danger, extrapolated from historic red flag weather conditions: temperatures of 70-95°F, humidity 10-30%, and wind speeds 15-35MPH, and Wind Orientation. Iterative fire modeling scenarios (Figure 12) can be applied on a city-scale to support hazard area identification. Both ignition points and spotting probabilities will be discussed with the Technical Advisory Committee.



Note that the example in the proposal assumed wind speeds of 15-35mph. In the 2017 Tubbs Fire in Sonoma sustained winds of 70mph were recorded. In the 2024 and 2025 fires in Los Angeles, gusts approaching 100mph were recorded.

Orinda needs to understand the threat to life caused by ever-increasing wildfire. Loss of property and availability of insurance is important, but loss of life is paramount.