intersection are close, one vehicle might take one alternative, and the next vehicle might take the other. Driver-familiarity parameters are available in Paramics™ to adjust the degree to which a driver can look ahead in making route decisions. The overall effect is traffic behavior that is near in appearance to real traffic.

4 Case study: Emigration Canyon, Utah

Emigration Canyon is a rapidly developing area immediately east of Salt Lake City, Utah. The primary vegetation in the canyon is Gamble Oak (*Quercus gambelli*), which is capable of supporting flames with a height ranging from 50 to 100 feet moving at 8 to 10 miles per hour in high winds. The main road follows the canyon floor, but our study focuses on an offshoot planned urban development called Emigration Oaks (figure 3). Emigration Oaks has been the source of an ongoing debate about the proposed construction of a second access road to improve emergency access. The controversy stems from the fact that the road will increase through-traffic and potentially compromise ecological resources such as the creek. Without the second access road, approximately 250 homes along a 6-mile long dendritic road network will rely on one exit (250 homes per network exit). For comparison purposes, the neighborhood at the origin of the Oakland–Berkeley Fire in 1991 that resulted in significant evacuation problems and 25 fatalities (OES, 1992) had approximately 300 homes and 4 exiting roads (75 homes per exiting lane)—although some exits were blocked by the fire.

In the last few years, residents in Emigration Oaks have become increasingly concerned about possible evacuation problems as new homes are constructed. In addition to the limited access, cellular phones do not work well in the canyon, and there is no installed notification system. This makes notifying the residents an equally
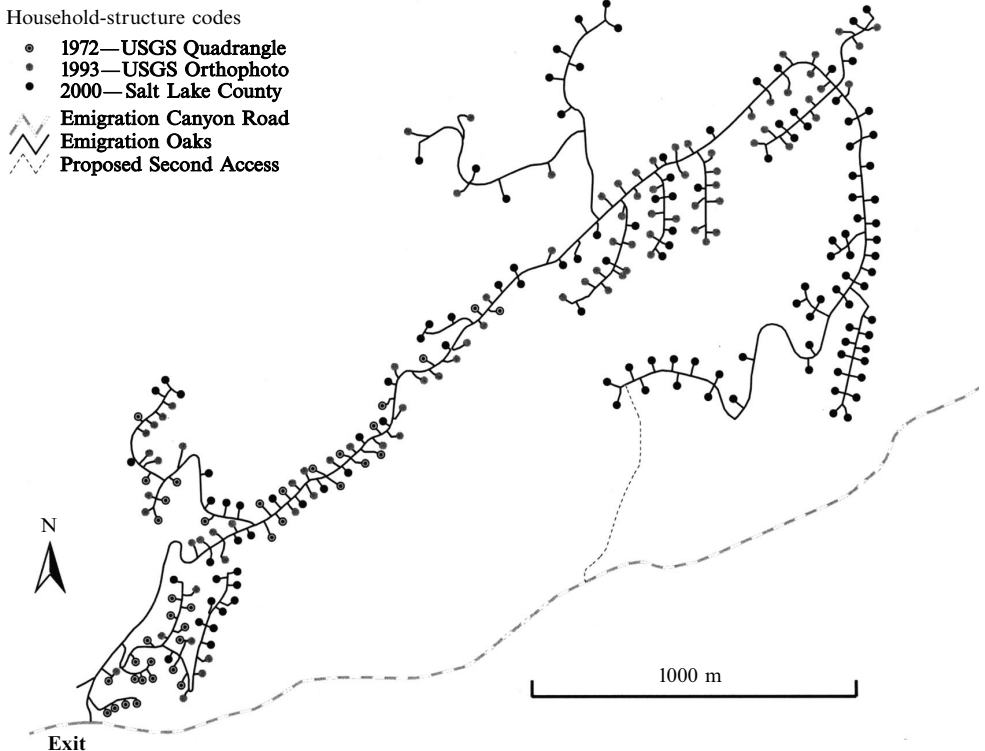

Figure 3. The Emigration Oaks neighborhood in Emigration Canyon (250 homes, 1 exit).