

## Appendix: Data and Methods

This report utilizes multiple data sources and methodologies to analyze the impacts of the Eaton wildfire on African Americans in Altadena and their housing characteristics.

### Community and Neighborhood Trends and Characteristics

To examine the historical trajectory of Altadena, we used data from the decennial enumeration conducted by the U.S. Census Bureau. This once-every-ten-year count provides population and housing statistics at multiple geographic levels, including Los Angeles County, Altadena (a census-designated unincorporated place), and the census tracts and blocks within Altadena. While some of this data have been digitized and is accessible through platforms like Data.Census.gov, Social Explorer and the National Historical Geographic Information System (NHGIS), other data—particularly from earlier decades—are only available in published reports archived by the U.S. Census Bureau and the National Archives. A notable challenge with using the decennial census is that definitions and geographic boundaries often change from decade to decade.

For more recent years, we rely on the American Community Survey (ACS), as the U.S. Census Bureau stopped collecting detailed non-basic information in 2010. The ACS is a continuous sampling and collection program that provides annual demographic, housing, and economic statistics). Tabulated statistics are available for various geographic levels, including counties, places, tracts, and block-groups. However, statistics for smaller geographies are only accessible through pooled five-year samples.

To analyze home values and lending patterns, we used two additional data sources. The first is the Home Mortgage Disclosure Act (HMDA) dataset, a micro-level (individual level) resource containing records of loan applications and mortgages reported by financial institutions under the 1975 HMDA. This dataset includes details about loan applicants, such as their race, and for this study, we use the 2023 records. The second source is parcel records from the Los Angeles County Assessor, which provide detailed information on individual properties. For this analysis, we used records from 2023. Unfortunately, these parcel records do not include data on race.

### Methodology for Estimating Households in Evacuation Zones

#### *Defining Impacted Communities*

Impacted communities are defined as those located within the mandatory evacuation zones and evacuation warning zones established by CalFire on January 8, 2025, at 2 p.m. PST. According to CalFire:

- **Evacuation Order Zones:** Areas facing an immediate threat to life where residents are legally required to leave immediately, and the area is closed to public access.

- **Evacuation Warning Zones:** Areas facing a potential threat to life and/or property where individuals requiring additional time to evacuate, as well as those with pets and livestock, are advised to leave immediately.

To estimate the number and proportion of different racial/ethnic groups by households in these evacuation zones, we used 2020 Decennial Census Block data and overlaid it with the evacuation zones using GIS. Given that all of Altadena was under a mandatory evacuation order, this analysis examined all census blocks within Altadena. We compared the place-level information for Altadena to our estimates based on census blocks within all of Altadena to verify our data.

### **Methodology for Estimating Households Within Fire Perimeter**

To estimate the number and proportion of black households and non-Black households within the Eaton Fire perimeter, we used 2020 Decennial Census Block data and a GIS shapefile of the Eaton Fire Perimeter derived from Cal Fire (as of January 11, 2025). Using GIS, we overlaid the fire perimeter onto the census blocks. Areal weighting was applied to account for the proportion of each census block that falls within the fire perimeter. This approach enabled us to calculate household estimates by race within the fire perimeter. The calculated households were then summed. Using the total counts of all households, as well as Black and non-Black households in Altadena, we estimated the share of those households within the fire perimeter relative to the counts for all of Altadena.

### **Methodology for Estimating Destroyed or Majorly Damaged Housing Units by Race in the Eaton Fire Perimeter in Altadena**

This analysis utilizes two primary data sources. The first is the Cal Fire Damage Inspection (DINS) database, which provides field damage inspection data, including geolocated points for destroyed structures within the Eaton fire perimeter. As of January 21, 2025, the dataset includes preliminary assessments of damages to structures, with ongoing updates that may result in changes to the reported figures. A total of 15,129 structures were assessed in the Eaton fire perimeter in Altadena.

The second data source is the 2020 Decennial Census, which offers block-level data for Altadena. This dataset includes information on total households and households categorized by race and ethnicity (e.g., Black, Latino, Asian, Non-Latino White, and other groups).

To estimate the number of destroyed housing units and households by race, we applied a multi-step process combining spatial and statistical analysis.

First, each destroyed home identified in the Cal Fire dataset was assigned to a specific census block through a spatial join. This process utilized the latitude and longitude of each destroyed structure to match it to the corresponding block polygon derived from Census TIGER/Line shapefiles. The Cal Fire database includes structure types (e.g., single-family residence,

multi-family residence, commercial) and categorizes damages by percentage into the following categories:

- Destroyed (>50%)
- Major (26-50%)
- Minor (10-25%)
- Affected (1-9%)
- Inaccessible
- No Damage

For this analysis, we focused exclusively on residential structures (both single-family and multi-family residences) that were either destroyed (>50%) or classified as majorly damaged (26-50%). The total number of such residential structures was aggregated at the block level, providing a count of destroyed and majorly damaged homes for each block.

Next, the aggregated block-level data on destroyed homes was merged with 2020 Census data, which includes total households, Black households, and non-Black households. For each block, the percentage of Black households and non-Black households was calculated. These percentages were then used to estimate the number of destroyed homes by multiplying the respective percentages by the total number of destroyed residential structures in each block.

The estimated numbers of destroyed homes were subsequently summed across all blocks within the Eaton fire perimeter in Altadena. These totals were then merged with data for all of Altadena, which includes information on total, Black, and non-Black households. This enabled a broader comparison of destroyed homes to the total number of homes in Altadena. To assess the overall impact on Altadena, we estimated the proportion of destroyed and damaged homes for total, Black, and non-Black households by assuming that the impacted homes are proportionate to the racial distribution in the decennial census.

#### *Notes on Interpretation*

These estimates represent a preliminary assessment based on the probabilistic assignment described above. This is a first-order approximation and does not adjust for the number of housing units in multi-family structures. These calculations assume a uniform distribution of racial/ethnic composition within each block, which may not capture intra-block variations. As field inspections continue, the reported data on destroyed structures may be updated, potentially impacting the results. Future research is needed to refine these methods and produce more precise statistics.