



Home Fire Campaign

Home Fire Risk Map: Four Step Training Tutorial

The Home Fire Risk Map is a comprehensive planning resource created by DataKind DC, a non-profit, data analytics team. This mapping tool was built to improve regional in-home visit and smoke alarm installation targeting and is meant to replace the ArcGIS mapping tool for the Home Fire Campaign. The Home Fire Risk Map was designed in collaboration with the American Red Cross to be used by staff, volunteers and partners. The map helps identify vulnerable communities across the United States that are most at-risk for serious home fires based on data collected from the Client Assistance System (CAS 2.0), the Home Fire Campaign (HFC), the National Fire Incident Reporting System (NFIRS), the American Community Survey, and the American Housing Survey.

The targeting process outlined in this document begins at the national level and then guides the user as they zero-in on particular regions, cities, and neighborhoods based on logical, data driven methodologies. Please note that the models used to build this map utilize the best available data to estimate the presence of smoke alarms and to better understand the geographic frequency of fire incidents, fatalities and injuries but in some cases might not capture all aspects of risk. Users are encouraged to consult local partners, especially those involved in fire response activities, before making any final decisions regarding smoke alarm installation locations in order to best serve their communities.

The [Home Fire Risk Map](#) replaces the [ArcGIS Mapping Tool](#) for Home Fire Campaign rally planning. The ArcGIS tool will be updated monthly and will display in-home visit locations by the Red Cross and its partners. **Beginning in FY17, the Home Fire Risk Map should be used to prioritize at-risk census tracts for smoke alarm installations in each Red Cross region.**

Please carefully review the step-by-step guidance listed below and the [video tutorial](#) before use.

Definitions:

Home Fire Risk is determined by comparing available data on home fire incidents, especially fire fatalities and injuries, against the prevalence of working smoke alarms in communities across the United States. In places where there is limited access to this type of data, algorithmic logic is used to extrapolate risk based on demographic, socio-economic and housing stock similarities.

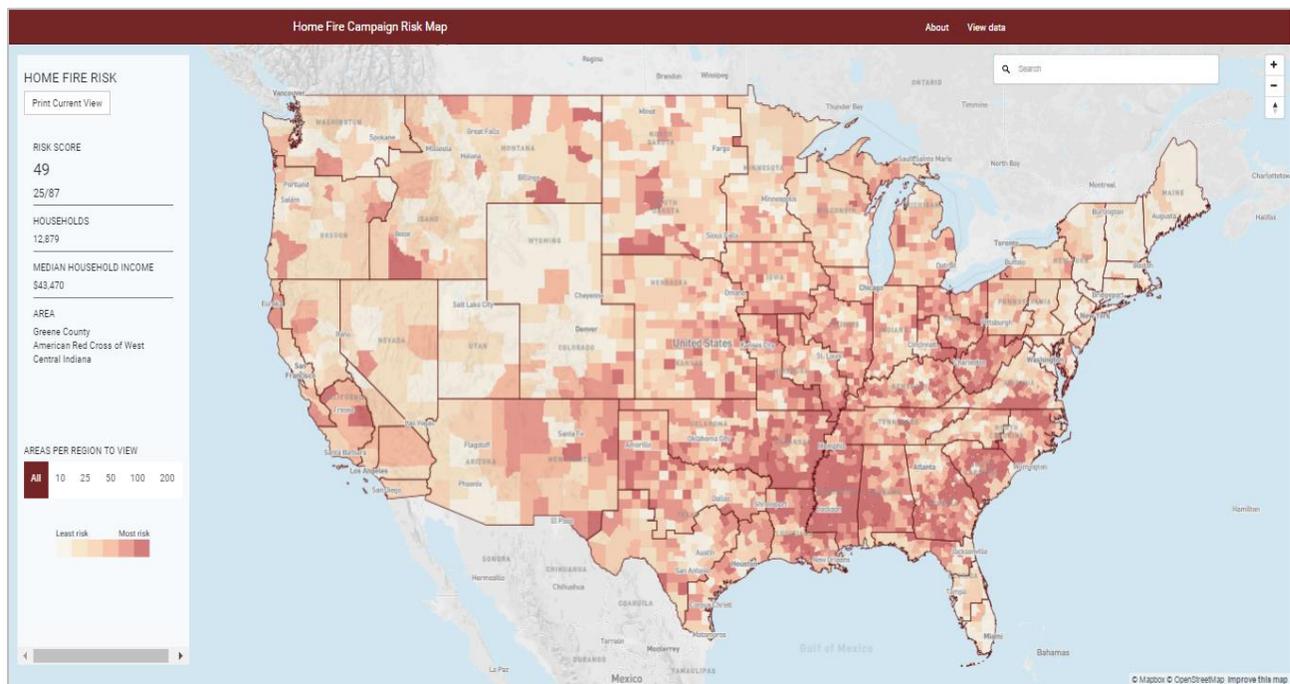
Home Fire Risk Score is the numeric indicator of home fire risk, organized by census tract boundaries and based on the Home Fire Risk information referenced above. A higher risk score indicates the increased likelihood of home fire deaths and injuries in a particular community. For instance, a census tract with a risk score of 68 is at a comparatively higher risk than a census tract with a risk score of 42. Each census tract is rank ordered within regional boundaries where 1 indicates the area with the greatest risk.

Basic Requirements:

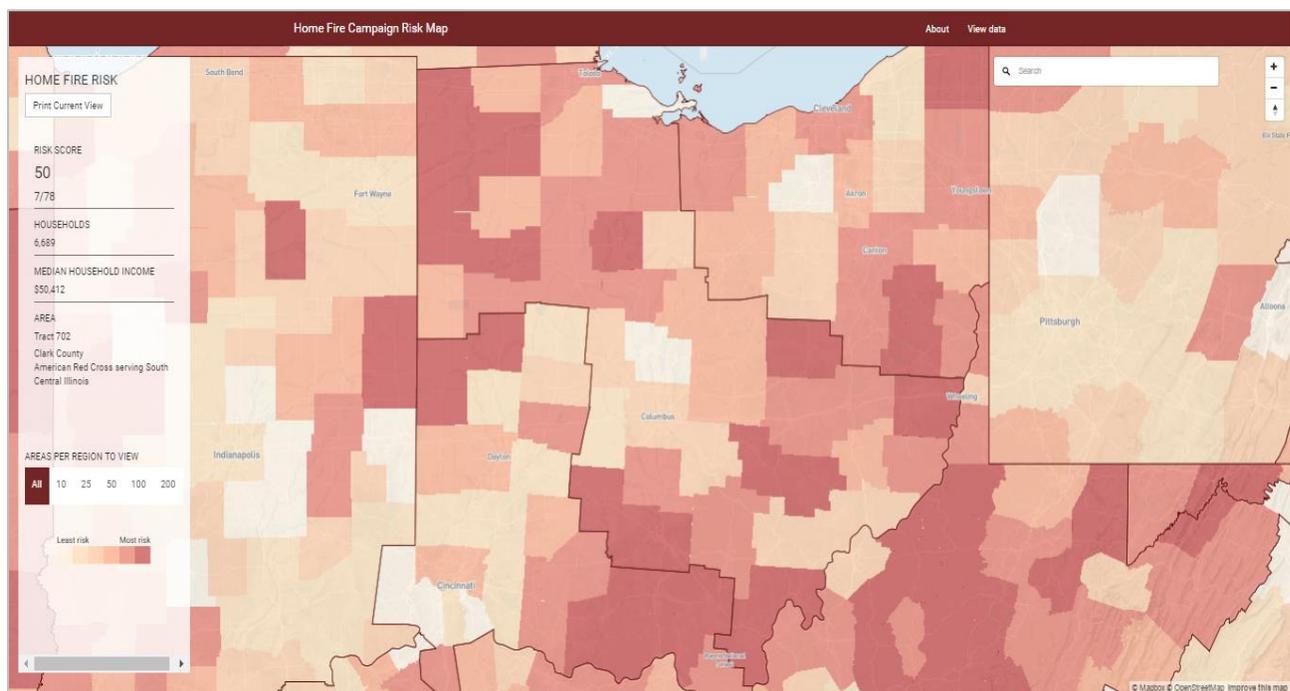
All users require a computer with high-speed Internet access.

Step-By-Step Guidance for Neighborhood Targeting:

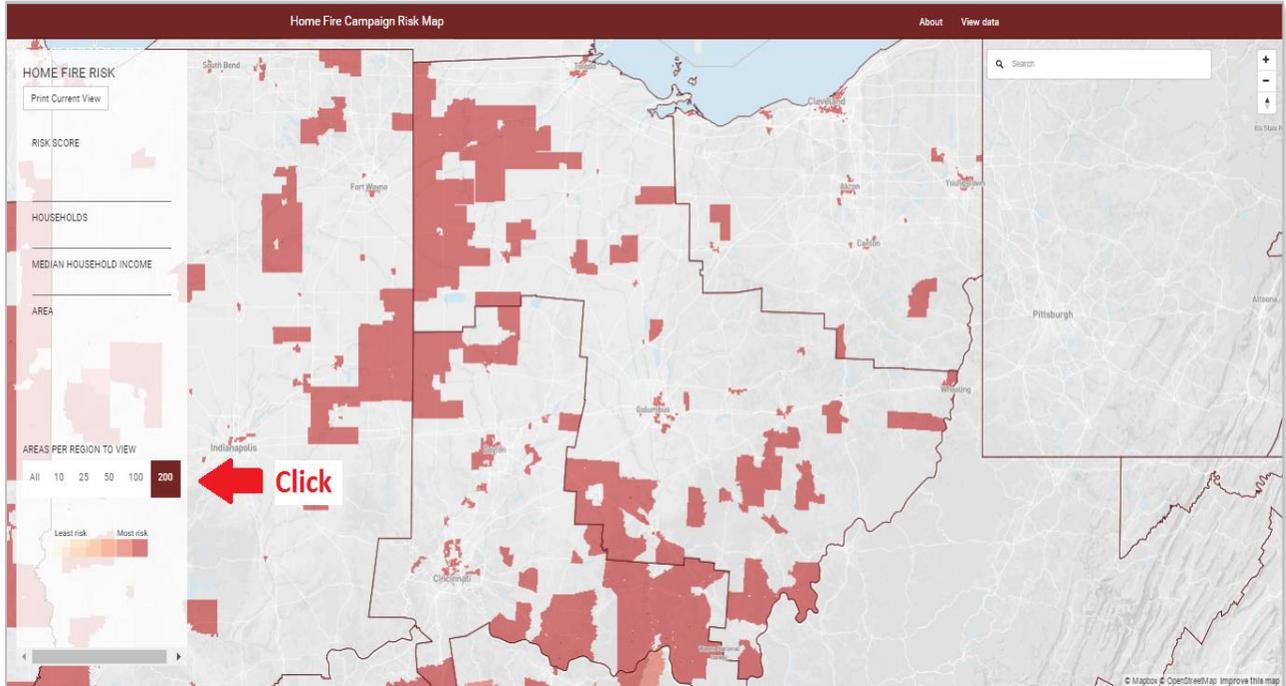
1. Click [here](#) to launch the Home Fire Risk Map.



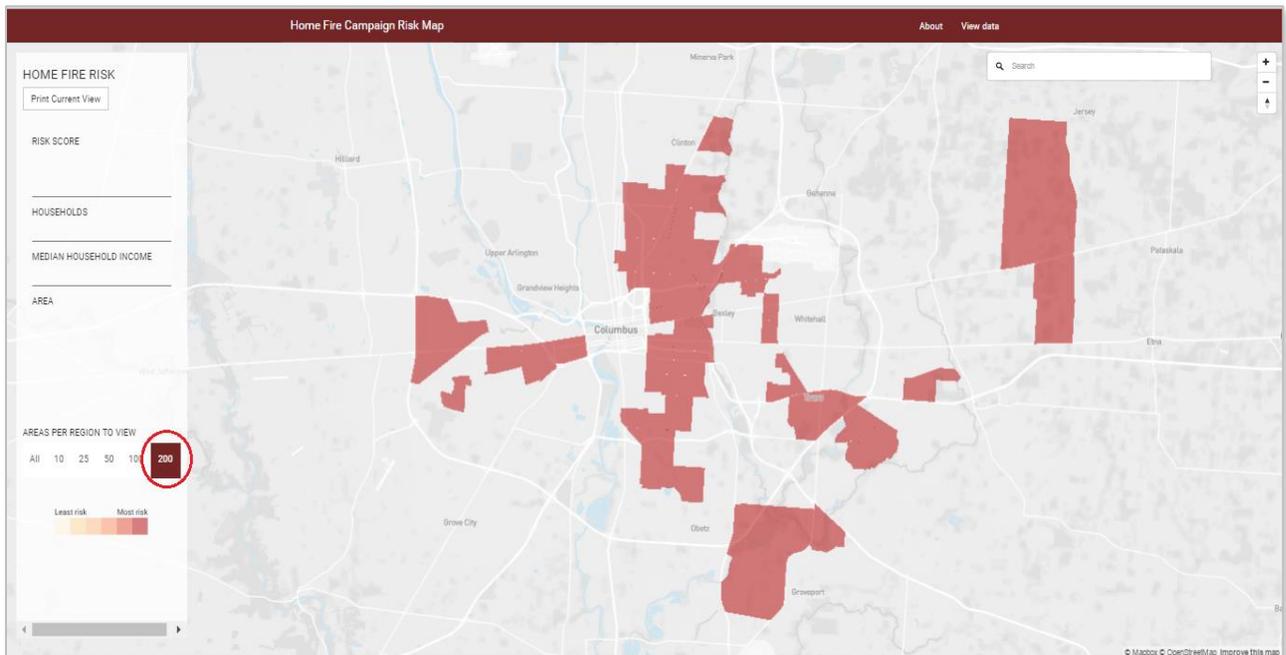
2. Once the website has loaded, use your computer mouse to grab and move the map until it is centered over your state or region. You may need to zoom in or out by using the +/- icons located in the upper right corner of the screen. Most regions will initially display Home Fire Risk at the county level as the census tract level requires the user to zoom in to a particular city or town before it is able to fully display.



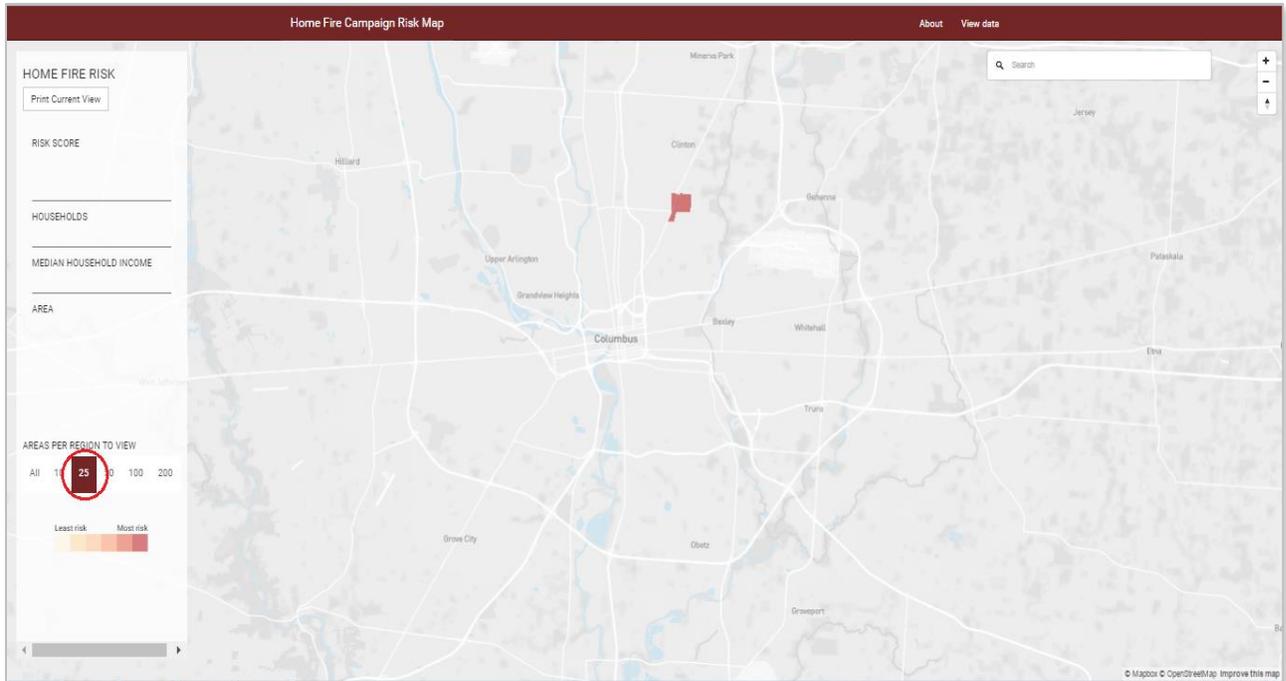
- After you have located and zoomed in on your region's geographical boundaries, give the map a moment to load fully before selecting a group of high-risk census tracts to display. Select your region's top 200 at-risk tracts using the menu on the left. Clicking on a top risk tract grouping will automatically switch the view from the county level to the census tract level for the specified number of at-risk locations. Census tracts are closely tied to population with an average of 4,000 residents (the range is between 1,200 to 8,000 persons). Areas that are densely populated will typically have much smaller census tracts than rural areas. Larger size does not equate to a greater amount of risk for the purposes of home fire risk mapping.



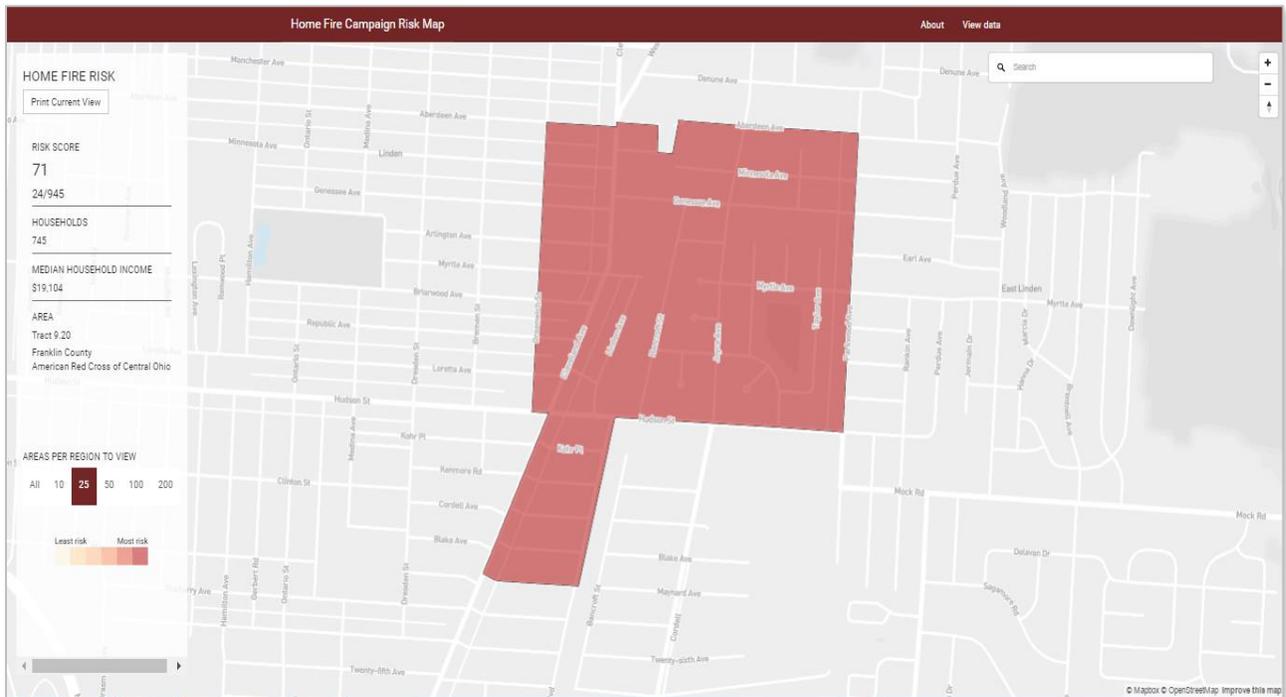
- To prioritize at-risk locations, toggle between the various risk groups, or return to the “All” view and use the search bar to query a particular city where you can search for high-risk areas based on tract color. Census tracts in the top 200 and those shaded in darker red should be prioritized for in-home fire safety visits and smoke alarm installations. You can hover over a location with your computer mouse for further information including the tract's Home Fire Risk Score and its rank compared to all other census tracts within the region's jurisdiction.



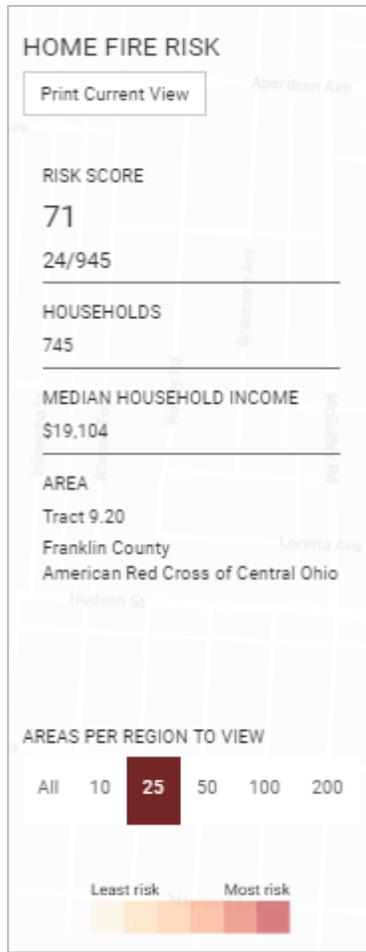
In the picture below, the most at-risk census tract in Columbus, Ohio has been isolated by toggling through the risk tract groupings. This particular location falls within the top 25 at-risk areas in the Ohio Buckeye Region.



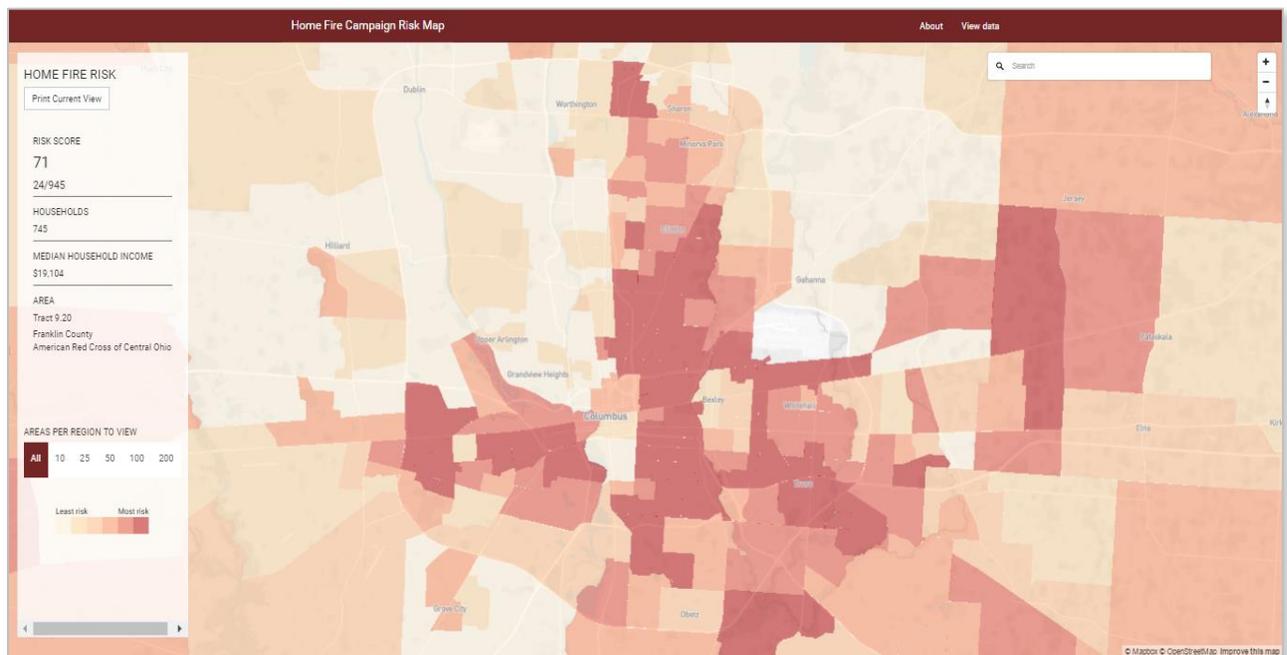
The zoom feature can be used to display the exact boundaries of a high-risk census tract, and the “Print Current View” feature located in the details section on the left of the screen allows users to conveniently save a PDF file for printing, or for future reference.



A close examination of the census tract details shows that this area has a relative Risk Score of 71 and that it is ranked 24th for overall risk out of 945 census tracts in the Ohio Buckeye Region. There are 745 households located in this census tract which together have a medium income of \$19,104.



You can redisplay risk for all areas once zoomed in at the county or city level; this will show the home fire risk for all census tracts in a local area. See the example below of home fire risk as depicted in and around Columbus, Ohio. Depending on your location, you may need to toggle through the various display options in order to best understand which areas have the greatest risk.



By clicking on the “View Data” button on the top of the page additional demographic information will be displayed along with a breakdown of the various components of the Home Fire Risk Score. Use the drop down in the upper left to view rank-ordered census tracts for your region.

View data by Red Cross Region

Ohio Buckeye Region ▼

Rank	Risk	Tract	County	Households	Median household income	Hispanic	White	Black	Risk - no smoke alarm	Risk - home fire	Risk - fire-related injury
1	79	31	Lucas County	520	\$24,571	9%	13%	74%	77	79	84
2	77	24.02	Lucas County	662	\$28,049	2%	4%	92%	75	79	78
3	77	8	Lucas County	515	\$24,922	3%	10%	82%	73	80	80
4	76	19	Lucas County	564	\$20,724	8%	20%	56%	74	72	92
5	74	127	Allen County	592	\$23,246	1%	57%	35%	72	80	71
6	74	42	Lucas County	615	\$18,646	15%	58%	26%	71	76	81
7	74	103	Lucas County	863	\$21,055	33%	47%	17%	71	72	87
8	74	20	Lucas County	679	\$21,932	13%	65%	18%	69	73	89
9	74	47.01	Lucas County	1,114	\$22,140	19%	68%	9%	70	72	87
10	74	18	Lucas County	896	\$19,276	13%	36%	49%	71	75	79
11	74	17	Lucas County	505	\$21,399	10%	31%	54%	69	71	93
12	73	9565	Ross County	1,494	\$30,491	1%	87%	5%	73	67	89
13	73	136	Allen County	440	\$20,500	0%	57%	38%	64	78	93
14	73	29	Lucas County	973	\$3,589	10%	18%	68%	76	60	92
15	73	138	Allen County	1,088	\$21,885	4%	34%	55%	77	74	60
16	73	26	Lucas County	460	\$24,697	0%	1%	95%	76	78	55
17	73	137	Allen County	390	\$21,014	1%	36%	59%	71	78	68
18	73	36	Lucas County	561	\$17,303	0%	8%	90%	86	82	15
19	72	66	Lucas County	1,070	\$24,048	2%	31%	61%	74	68	77
20	72	134	Allen County	1,042	\$18,750	4%	59%	34%	67	76	80
21	72	22	Lucas County	483	\$16,319	2%	15%	76%	81	74	38
22	71	9644	Meigs County	1,382	\$22,727	0%	95%	2%	69	70	81
23	71	9114	Muskingum County	1,443	\$23,011	1%	78%	11%	66	71	87
24	71	9336	Franklin County	746	\$20,104	1%	10%	79%	71	77	60

In addition to utilizing the Home Fire Risk Map, users should always consult local partners, especially those in the fire safety community, in order to seek out advice and assistance before making a final determination on which neighborhoods to prioritize. When planning canvassing routes for installation events, always establish safe boundaries that prevent volunteers and partners from crossing highways and other busy thoroughfares. For rural areas, driving distances and other natural obstacles should be taken into account.

Please email CPRS@redcross.org with your questions or comments regarding the Home Fire Risk Map for the Home Fire Campaign.