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This tool has been updated. The 1.0 version of the tool was released on Nov 22, 2022.

Climate and Economic Justice Screening Tool

MENU

Methodology

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Previous versions

The tool highlights disadvantaged census tracts across all 50 states, the District of Columbia, and the U.S. territories. Communities are considered disadvantaged:

- If they are in census tracts that meet the thresholds for at least one of the tool's categories of burden, or
- If they are on land within the boundaries of Federally Recognized Tribes

Categories of Burdens

The tool uses datasets as indicators of burdens. The burdens are organized into categories. A community is highlighted as disadvantaged on the CEJST map if it is in a census tract that is (1) at or above the threshold for one or more environmental, climate, or other burdens, and (2) at or above the threshold for an associated socioeconomic burden.

In addition, a census tract that is completely surrounded by disadvantaged communities and is at or above the 50% percentile for low income is also considered disadvantaged.

Census tracts are small units of geography. Census tract boundaries for statistical areas are determined by the U.S. Census Bureau once every ten years. The tool utilizes the census tract boundaries from 2010. This was chosen because many of

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the data sources in the tool currently use the 2010 census boundaries.

Climate change

*Communities are **identified as disadvantaged** if they are in census tracts that:*

ARE at or above the 90th percentile for expected agriculture loss rate OR expected building loss rate OR expected population loss rate OR projected flood risk OR projected wildfire risk

AND are at or above the 65th percentile for low income

Energy

*Communities are **identified as disadvantaged** if they are in census tracts that:*

ARE at or above the 90th percentile for energy cost OR PM2.5 in the air

AND are at or above the 65th percentile for low income

Health

*Communities are **identified as disadvantaged** if they are in census tracts that:*

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ARE at or above the 90th percentile for asthma OR diabetes OR heart disease OR low life expectancy

AND are at or above the 65th percentile for low income

Housing

*Communities are **identified as disadvantaged** if they are in census tracts that:*

Experienced historic underinvestment OR are at or above the 90th percentile for housing cost OR lack of green space OR lack of indoor plumbing OR lead paint

AND are at or above the 65th percentile for low income

Legacy pollution

*Communities are **identified as disadvantaged** if they are in census tracts that:*

Have at least one abandoned mine land OR Formerly Used Defense Sites OR are at or above the 90th percentile for proximity to hazardous waste facilities OR proximity to Superfund sites (National Priorities List (NPL)) OR proximity to Risk Management Plan (RMP) facilities

AND are at or above the 65th percentile for low income

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Transportation

*Communities are **identified as disadvantaged** if they are in census tracts that:*

ARE at or above the 90th percentile for diesel particulate matter exposure OR transportation barriers OR traffic proximity and volume

AND are at or above the 65th percentile for low income

Water and wastewater

*Communities are **identified as disadvantaged** if they are in census tracts that:*

ARE at or above the 90th percentile for underground storage tanks and releases OR wastewater discharge

AND are at or above the 65th percentile for low income

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Workforce development

*Communities are **identified as disadvantaged** if they are in census tracts that:*

ARE at or above the 90th percentile for linguistic isolation OR low median income OR poverty OR unemployment

AND more than 10% of people ages 25 years or older whose high school education is less than a high school diploma

Tribes

Federally Recognized Tribes, including Alaska Native Villages, are also considered disadvantaged communities.

Datasets used in v1.0 methodology

The tool's datasets are public and consistent nationwide. They come from different sources and are high quality. The Council on Environmental Quality (CEQ) chose them based on relevance, availability, and quality. They identify climate, environmental, and other burdens on communities.

This product uses the Census Bureau Data API but is not endorsed or certified by the Census Bureau.

Share data sources with CEQ

NEW

Census tract information and demographics

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Used to identify and locate each tract in a state and county. The demographic information, race/ethnicity and age, are included to better characterize the people living in the tract.

Note: The demographics are included as information only and are not considered as a part of the tool's methodology.

Used in: All categories

Responsible party: U.S. Census

Source: American Community Survey from 2015-2019

Available for: All U.S. states, the District of Columbia, and U.S. territories

Low income

Percent of a census tract's population in households where household income is at or below 200% of the Federal poverty level, not including students enrolled in higher education.

Used in: All categories except for the workforce development category

Responsible party: U.S. Census

Source: American Community Survey from 2015-2019

Available for: All U.S. states, the District of Columbia, and Puerto Rico

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Expected agriculture loss rate

Expected agricultural value at risk from losses due to fourteen types of natural hazards. These hazards have some link to climate change. They are: avalanche, coastal flooding, cold wave, drought, hail, heat wave, hurricane, ice storm, landslide, riverine flooding, strong wind, tornado, wildfire, and winter weather. The rate is calculated by dividing the agricultural value at risk by the total agricultural value.

Used in: Climate change category

Responsible party: Federal Emergency Management Agency (FEMA)

Source: National Risk Index from 2014-2021

Available for: All U.S. states and the District of Columbia

Expected building loss rate

Expected building value at risk from losses due to fourteen types of natural hazards. These hazards have some link to climate change. They are: avalanche, coastal flooding, cold wave, drought, hail, heat wave, hurricane, ice storm, landslide, riverine flooding, strong wind, tornado, wildfire, and winter weather. The rate is calculated by dividing the building value at risk by the total building value.

Used in: Climate change category

Responsible party: Federal Emergency Management Agency (FEMA)

Source: National Risk Index from 2014-2021

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Available for: All U.S. states and the District of Columbia

Expected population loss rate

Expected fatalities and injuries due to fourteen types of natural hazards each year. These hazards have some link to climate change. They are: avalanche, coastal flooding, cold wave, drought, hail, heat wave, hurricane, ice storm, landslide, riverine flooding, strong wind, tornado, wildfire, and winter weather. Population loss is defined by the Spatial Hazard Events and Losses and National Centers for Environmental Information's (NCEI). It reports the number of fatalities and injuries caused by the hazard. An injury is counted as one-tenth (1/10) of a fatality. The NCEI Storm Events Database classifies both direct and indirect injuries. Both types are counted as population loss. The total number is divided by the population in the census tract to get the population loss rate.

Note: this burden only applies for census tracts with populations greater than 20 people.

Used in: Climate change category

Responsible party: Federal Emergency Management Agency (FEMA)

Source: National Risk Index from 2014-2021

Available for: All U.S. states and the District of Columbia

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NEW Projected flood risk

A high precision, climate-adjusted model that projects flood risk for properties in the future. The dataset calculates how many properties are at risk of floods occurring in the next thirty years from tides, rain, riverine and storm surges, or a 26% risk total over the 30-year time horizon. The risk is defined as an annualized 1% chance. The tool calculates tract-level risk as the share of properties meeting the risk threshold. The risk does not consider property value.

Used in: Climate change category

Responsible party: First Street Foundation

Source: Climate Risk Data Access from 2022

Available for: All U.S. states, the District of Columbia, and Puerto Rico

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NEW Projected wildfire risk

A 30-meter resolution model projecting the wildfire exposure for any specific location in the contiguous U.S., today and with future climate change. The risk of wildfire is calculated from inputs associated with fire fuels, weather, human influence, and fire movement. The risk does not consider property value.

Used in: Climate change category

Responsible party: First Street Foundation

Source: Climate Risk Data Access from 2022

Available for: All contiguous U.S. states and the District of Columbia

Energy cost

Average household annual energy cost in dollars divided by the average household income.

Used in: Energy category

Responsible party: Department of Energy (DOE)

Source: LEAD Tool from 2018

Available for: All U.S. states, the District of Columbia, and Puerto Rico

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PM2.5 in the air

Fine inhalable particles with 2.5 or smaller micrometer diameters. The percentile is the weight of the particles per cubic meter.

Used in: Energy category

Responsible party: Environmental Protection Agency (EPA) Office of Air and Radiation (OAR)

Source: Fusion of model and monitor data from 2017 as compiled by EPA's EJScreen, sourced from EPA National Air Toxics Assessment (NATA) and the U.S. Department of Transportation (DOT) traffic data

Available for: All U.S. states and the District of Columbia

Asthma

Share of people who answer "yes" to both of these questions: "Have you ever been told by a health professional that you have asthma?" and "Do you still have asthma?".

Used in: Health category

Responsible party: Centers for Disease Control and Prevention (CDC)

Source: PLACES data from 2016-2019

Available for: All U.S. states and the District of Columbia

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Diabetes

Share of people ages 18 years and older who have been told by a health professional that they have diabetes other than diabetes during pregnancy.

Used in: Health category

Responsible party: Centers for Disease Control and Prevention (CDC)

Source: PLACES data from 2016-2019

Available for: All U.S. states and the District of Columbia

Heart disease

Share of people ages 18 years and older who have been told by a health professional that they had angina or coronary heart disease.

Used in: Health category

Responsible party: Centers for Disease Control and Prevention (CDC)

Source: PLACES data from 2016-2019

Available for: All U.S. states and the District of Columbia

Low life expectancy

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Average number of years people have left in their lives.

Note: The tool reverses the percentiles for this burden. This means that census tracts with lower numbers have higher life expectancies and that census tracts with higher numbers have lower life expectancies.

Used in: Health category

Responsible party: Centers for Disease Control and Prevention (CDC)

Source: U.S. Small-Area Life Expectancy Estimates Project (USALEEP) from 2010-2015

Available for: All U.S. states and the District of Columbia

NEW Historic underinvestment

Census tracts that experienced historic underinvestment based on redlining maps created by the federal government's Home Owners' Loan Corporation (HOLC) between 1935 and 1940. The tool uses the National Community Reinvestment Coalition's methodology for converting boundaries in the HOLC maps to census tracts. Census tracts meet the threshold when they have a score of 3.25 or more out of 4.

Note: The historic underinvestment burden is **not available** for tracts that were not included in the original HOLC maps because there is no underlying data.

Used in: Housing category

Responsible party: National Community Reinvestment Coalition (NCRC)

Source: Dataset of formerly redlined areas using digitize

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maps from the Home Owners Loan Corporation (HOLC), using 2010 census boundaries

Available for: Metro areas of U.S. that were graded by the Home Owners' Loan Corporation

Housing cost

Share of households that are both earning less than 80% of Housing and Urban Development's Area Median Family Income and are spending more than 30% of their income on housing costs.

Used in: Housing category

Responsible party: Department of Housing and Urban Development (HUD)

Source:
Comprehensive Housing Affordability Strategy dataset from 2014-2018

Available for: All U.S. states, the District of Columbia, and Puerto Rico

NEW Lack of green space

Share of land with developed surfaces covered with artificial materials like concrete or pavement, excluding crop land used for agricultural purposes. Places that lack green space are also known as nature-deprived.

Used in: Housing category

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Responsible party: Data from Multi-Resolution Land Characteristics (MRLC) consortium; data analysis provided by The Trust for Public Lands and American Forests

Source: Percent Developed Imperviousness (CONUS) from 2019

Available for: All contiguous U.S. states and the District of Columbia

NEW Lack of indoor plumbing

Housing without indoor kitchen facilities or complete plumbing facilities.

Used in: Housing category

Responsible party: Department of Housing and Urban Development (HUD)

Source: Comprehensive Housing Affordability Strategy dataset from 2014-2018

Available for: All U.S. states, the District of Columbia, and Puerto Rico

Lead paint

Share of homes built before 1960, which indicates potential lead paint exposure. Tracts with extremely high home values (i.e. median home values above the 90th percentile) that are less likely to face health risks from lead paint

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exposure are not included.

Used in: Housing category

Responsible party: U.S. Census

Source: American Community Survey from 2015-2019

Available for: All U.S. states, the District of Columbia, and Puerto Rico

NEW Abandoned mine land

Presence of an abandoned mine left by legacy coal mining operations.

Used in: Legacy pollution category

Responsible party: Department of the Interior (DOI)

Source: Abandoned Mine Land Inventory System (e-AMLIS) from 2017

Available for: All U.S. states and the District of Columbia

NEW Formerly Used Defense Sites

Properties that were owned, leased, or possessed by the United States, under the jurisdiction of the Secretary of Defense prior to October 1986.

Used in: Legacy pollution category

Responsible party: U.S. Army Corps of Engineers

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Source: Formerly Used Defense Sites (FUDS) from 2019

Available for: All U.S. states and the District of Columbia

Proximity to hazardous waste facilities

Number of hazardous waste facilities (Treatment, Storage, and Disposal Facilities and Large Quantity Generators) within 5 kilometers (or nearest beyond 5 kilometers), each divided by distance in kilometers.

Used in: Legacy pollution category

Responsible party: Environmental Protection Agency (EPA)

Source:
Treatment, Storage, and Disposal Facilities (TSDF) data from 2020 calculated from EPA's RCRA database as compiled by EPA's EJScreen

Available for: All U.S. states, the District of Columbia, and Puerto Rico

Proximity to Superfund sites

Number of proposed or listed Superfund or National Priorities list (NPL) sites within 5 kilometers (or nearest one beyond 5 kilometers), each divided by distance in kilometers.

Used in: Legacy pollution category

Responsible party: Environmental Protection Agency (EP/

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Source: CERCLIS database from 2020 as compiled by EPA's EJScreen

Available for: All U.S. states, the District of Columbia, and Puerto Rico

Proximity to Risk Management Plan (RMP) facilities

Count of Risk Management Plan (RMP) facilities within 5 kilometers (or nearest one beyond 5 kilometers), each divided by distance in kilometers. These facilities are mandated by the Clean Air Act to file RMPs because they handle substances with significant environmental and public health risks.

Used in: Legacy pollution category

Responsible party: Environmental Protection Agency (EPA)

Source: RMP database from 2020 as compiled by EPA's EJScreen

Available for: All U.S. states, the District of Columbia, and Puerto Rico

Diesel particulate matter exposure

Mixture of particles in diesel exhaust in the air, measured as micrograms per cubic meter.

Used in: Transportation category

Responsible party: Environmental Protection Agency (EP

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Source: National Air Toxics Assessment (NATA) from 2014 as compiled by EPA's EJScreen

Available for: All U.S. states, the District of Columbia, and Puerto Rico

NEW Transportation barriers

Average relative cost and time spent on transportation relative to all other tracts.

Note: this burden only applies for census tracts with populations greater than 20 people.

Used in: Transportation category

Responsible party: Department of Transportation (DOT)

Source: Transportation access disadvantage from 2022

Available for: All U.S. states and the District of Columbia

Traffic proximity and volume

Number of vehicles (average annual daily traffic) at major roads within 500 meters, divided by distance in meters.

Used in: Transportation category

Responsible party: Department of Transportation (DOT)

Source: Traffic data from 2017 as compiled by EPA's EJScreen

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Available for: All U.S. states, the District of Columbia, and Puerto Rico

NEW Underground storage tanks and releases

Weighted formula of the density of leaking underground storage tanks and the number of all active underground storage tanks within 1,500 feet of the census tract boundaries.

Used in: Water and wastewater category

Responsible party: Environmental Protection Agency (EPA)

Source: Calculated from EPA's UST Finder from 2021 as compiled by EPA's EJScreen

Available for: All U.S. states, the District of Columbia, and Puerto Rico

Wastewater discharge

Risk-Screening Environmental Indicators (RSEI) modeled toxic concentrations at stream segments within 500 meters, divided by distance in kilometers.

Used in: Water and wastewater category

Responsible party: Environmental Protection Agency (EPA)

Source:
Risk-Screening Environmental Indicators (RSEI) model

Help improve the tool

from 2020 as compiled by EPA's EJScreen

Available for: All U.S. states, the District of Columbia, and Puerto Rico

Linguistic isolation

Share of households where no one over age 14 speaks English very well.

Used in: Workforce development category

Responsible party: U.S. Census

Source: American Community Survey from 2015-2019

Available for: All U.S. states and the District of Columbia

Note: Linguistic isolation was removed for Puerto Rico based on feedback during the beta period.

Low median income

Low median income calculated as a share of the area's median income.

Note: The tool reverses the percentiles for this burden. This means that census tracts with lower numbers have higher median incomes and census tracts with the higher numbers have lower median incomes.

Used in: Workforce development category

Help improve the tool

Responsible party: U.S. Census

Source: American Community Survey from 2015-2019

Available for: All U.S. states, the District of Columbia, and Puerto Rico

Source: American Community Survey from 2010

Available for: American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands

Poverty

Share of people living at or below 100% of the Federal poverty level.

Used in: Workforce development category

Responsible party: U.S. Census

Source: American Community Survey from 2015-2019

Available for: All U.S. states, the District of Columbia, and Puerto Rico

Source: American Community Survey from 2010

Available for: American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands

Unemployment

Number of unemployed people as a share of the labor force.

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Used in: Workforce development category

Responsible party: U.S. Census

Source: American Community Survey from 2015-2019

Available for: All U.S. states, the District of Columbia, and Puerto Rico

Source: American Community Survey from 2010

Available for: American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands

High school education

Share of people aged 25 years or older who didn't graduate from high school.

Used in: Workforce development category

Responsible party: U.S. Census

Source: American Community Survey from 2015-2019

Available for: All U.S. states, the District of Columbia, and Puerto Rico

Source: American Community Survey from 2010

Available for: American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands

NEW Tribes

The Land Area Representation (LAR) dataset depicts

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American Indian land areas for Federally Recognized Tribes.

Note: The LAR dataset depicts the exterior extent of a Federal Indian land area. Not all Federally Recognized Tribes have a designated land area; therefore, they may not have an associated land area represented in the land area dataset.

Used in: Displaying land within the boundaries of Federally Recognized Tribes and point locations of Alaska Native Villages on the map

Responsible party: Bureau of Indian Affairs (BIA)

Source: Land Area Representation (LAR) dataset from 2018

Available for: Federally Recognized Tribes, including Alaska Native villages

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Want to contribute?

Check out the code on GitHub

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