

### About the Measure

<b>Domain:</b>	Social Determinants of Health
<b>Measure:</b>	Environmental Justice Screening and Mapping Tool
<b>Definition:</b>	The EJSCREEN is created on nationwide constant data and an approach that combines environmental and demographic indicators in maps and reports.
<b>Purpose:</b>	<p>EJSCREEN allows users to access environmental and demographic information for locations in the United States at the Census block level. Users can compare selected locations to the rest of the state, EPA region, or the nation.</p> <p>This can help to highlight geographic areas and the extent to which these areas may be candidates for further review, including additional consideration, analysis or outreach. The tools also allow users to explore locations at a detailed geographic level, across broad areas or across the entire nation.</p>
<b>Essential PhenX Measures:</b>	Current Address
<b>Related PhenX Measures:</b>	Neighborhood Concentrated Disadvantage, School Social Environment, Healthy Food Environments
<b>Measure Release Date:</b>	

### About the Protocol

<b>Protocol Release Date:</b>	
<b>PhenX Protocol Name:</b>	Environmental Justice Screening and Mapping Tool (EJSCREEN)
<b>Keywords:</b>	Environmental Justice, Screening, Mapping Tool, EJSCREEN
<b>Protocol Name from Source:</b>	Environmental Protection Agency (EPA) Environmental Justice Screening and Mapping Tool (EJSCREEN)
<b>Description:</b>	EJSCREEN is an environmental justice mapping and screening tool that provides a nationally consistent dataset and approach for combining environmental and demographic indicators. EJSCREEN users choose a geographic area, that can be as small as a Census block; the tool then provides demographic and environmental

information for that area. All of the EJSCREEN indicators are publicly-available data. EJSCREEN provides a way to display this information and includes a method for combining environmental and demographic indicators into EJ indexes.

The 11 EJ Index names are:

1. National Scale Air Toxics Assessment Air Toxics Cancer Risk
2. National Scale Air Toxics Assessment Respiratory Hazard Index
3. National Scale Air Toxics Assessment Diesel PM (DPM)
4. Particulate Matter (PM2.5)
5. Ozone
6. Lead Paint Indicator
7. Traffic Proximity and Volume
8. Proximity to Risk Management Plan Sites
9. Proximity to Treatment Storage and Disposal Facilities
10. Proximity to National Priorities List Sites
11. Proximity to Major Direct Water Dischargers

There are six demographic indicators:

1. **Percent Low-Income:**
  - o The percent of a [block group](#)'s population in households where the household income is less than or equal to twice the federal "poverty level."
2. **Percent Minority:**
  - o The percent of individuals in a block group who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino. That is, all people other than non-Hispanic white-alone individuals. The word "alone" in this case indicates that the person is of a single race, not multiracial.
3. **Less than high school education:**
  - o Percent of people age 25 or older in a block group whose education is short of a high school diploma.
4. **Linguistic isolation:**
  - o Percent of people in a block group living in linguistically isolated households. A household in which all members age 14 years and over speak a non-English language and also speak English less than "very well" (have difficulty with English) is linguistically isolated.
5. **Individuals under age 5:**
  - o Percent of people in a block group under the age of 5.
6. **Individuals over age 64:**
  - o Percent of people in a block group over the age of 64.

EJSCREEN provides two indexes that are based on the above demographic indicators:

- **A Demographic Index** is based on the average of two demographic indicators; Percent Low-Income and Percent Minority.

Each EJ index combines demographic indicators with a single environmental indicator. From the map, the user can select an area to generate a downloadable report from a selected area and compare it to the state, EPA region or the nation. The report includes data that the user can use to compare populations with any of the indexes.

**Specific Instructions:**

None

<b>Protocol:</b>	Learn to Use EJSCREEN: <a href="https://www.epa.gov/ejscreen/learn-use-ejscreen">https://www.epa.gov/ejscreen/learn-use-ejscreen</a> <a href="https://ejscreen.epa.gov/mapper/help/ejscreen_help.pdf">https://ejscreen.epa.gov/mapper/help/ejscreen_help.pdf</a>
<b>Selection Rationale:</b>	EJSCREEN was chosen because it utilizes standard and nationally-consistent data and enable users to access environmental and demographic information, at high geographic resolution, across the entire country.
<b>Source:</b>	United States Environmental Protection Agency. EJSCREEN. Available at <a href="https://www.epa.gov/ejscreen">https://www.epa.gov/ejscreen</a>  Demographic information that is obtained from the U.S. Census Bureau's American Community Survey (ACS). The 2018 version of EJSCREEN includes 2012-2016 ACS 5-year summary file data, which is based on 2014 Census boundaries.
<b>Availability:</b>	Publicly available
<b>Life Stage:</b>	Any Age
<b>Language:</b>	English
<b>Participant:</b>	Not applicable: derived from publicly available secondary data.
<b>Personnel and Training Required:</b>	None
<b>Equipment Needs:</b>	Access to the internet.
<b>General References:</b>	U.S. Environmental Protection Agency (EPA), 2017. EJSCREEN Technical Documentation. For more information: <a href="http://www.epa.gov/ejscreen">www.epa.gov/ejscreen</a>  Driver A, Mehdizadeh C, Bara-Garcia S, Bodenreider C, Lewis J, Wilson S. Utilization of the Maryland Environmental Justice Screening Tool: A Bladensburg, Maryland Case Study. Int J Environ Res Public Health. 2019 Jan 26;16(3).  Rowangould D, Rowangould G, Craft E, Niemeier D. Validating and Refining EPA's Traffic Exposure Screening Measure. Int J Environ Res Public Health. 2018 Dec 20;16(1).  Cifuentes P, Reichard J, Im W, Smith S, Colen C, Giurgescu C, Williams KP, Gillespie S, Juarez PD, Hood DB. Application of the Public Health Exposome Framework to Estimate Phenotypes of Resilience in a Model Ohio African-American Women's Cohort. J Urban Health. 2019 Mar;96(Suppl 1):57-71.

<b>Mode of Administration:</b>	Secondary Data Analysis										
<b>Derived Variables:</b>	None										
<b>Requirements:</b>	<table border="1"> <thead> <tr> <th><b>Requirements Category</b></th> <th><b>Required (Yes/No):</b></th> </tr> </thead> <tbody> <tr> <td>Major equipment</td> <td>No</td> </tr> <tr> <td>Specialized training</td> <td>No</td> </tr> <tr> <td>Specialized requirements for biospecimen collection</td> <td>No</td> </tr> <tr> <td>Average time of greater than 15 minutes in an unaffected individual</td> <td>No</td> </tr> </tbody> </table>	<b>Requirements Category</b>	<b>Required (Yes/No):</b>	Major equipment	No	Specialized training	No	Specialized requirements for biospecimen collection	No	Average time of greater than 15 minutes in an unaffected individual	No
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Major equipment	No										
Specialized training	No										
Specialized requirements for biospecimen collection	No										
Average time of greater than 15 minutes in an unaffected individual	No										
<b>Annotations for Specific Conditions:</b>	No annotations at this time.										
<b>Process and Review:</b>	Not applicable										