

Utilizing EJScreen to Integrate Information About Contaminant Releases with Environmental Justice Data

Environmental Justice Reference Guide



Environmental Justice Pilot Project—
EPA's Federal Facilities Restoration and
Reuse Office (FFRRO) & Region 8

EJ at Federal Facility Superfund Sites

EPA's Environmental Justice Reference Guides provide tips to help CERCLA Superfund project team members apply guidance, tools and strategies to identify and address concerns related to environmental justice. These concerns can indicate vulnerabilities and conditions that lead to disproportionate impacts.

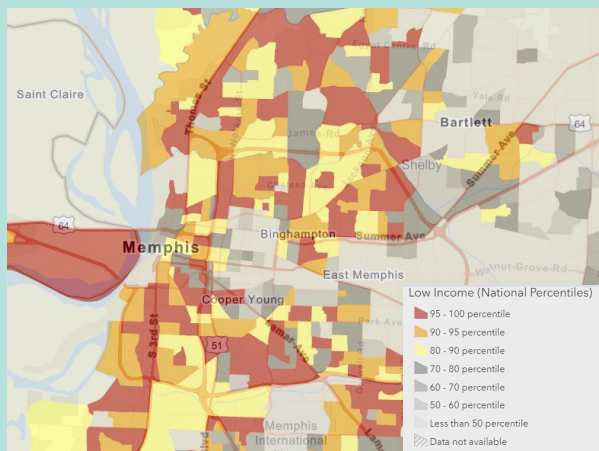
At federal facility Superfund sites, the lead agency is responsible for cleaning up the sites. Federal agencies and their facilities must comply with environmental laws and requirements in the same manner and to the same extent as any other regulated facility. EPA and state or Tribal regulators oversee site cleanups to ensure compliance with environmental laws and requirements and the protection of human health and the environment. The project team comprises the lead agency, EPA, and the state and/or the Tribe.

Mapping the location of contamination relative to communities that may be disproportionately impacted can be a powerful tool for analysis and planning. This Reference Guide¹ describes ways to combine contaminant maps with maps displaying environmental justice concerns.

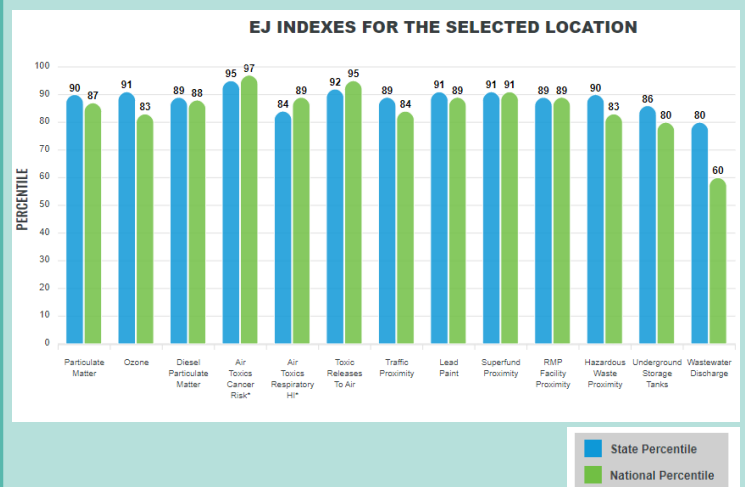
What is EJScreen?

EJScreen is EPA's environmental justice mapping and screening tool that provides EPA with a nationally consistent dataset and approach for combining environmental and demographic socioeconomic indicators. EJScreen users can focus on a specific geographic area and visualize demographic, socioeconomic, and environmental information. The tool can also be used to generate reports for user-defined geographic areas and to compare selected areas to the state or nation. The tool and associated trainings may be found at <https://epa.gov/ejscreen>.

Below is an example of how socioeconomic data is displayed on EJScreen. The map shows the percentiles of low-income households in Memphis as compared to the nation.



Below is an example of a comparison graph included in an EJScreen report that allows the user to compare EJ information from a selected area to the state and nation.

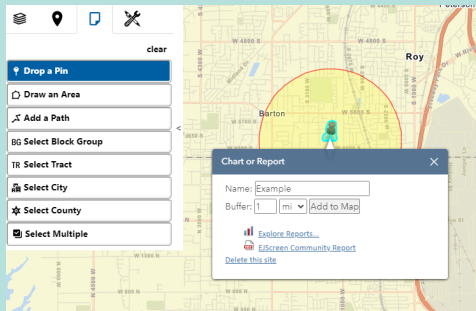


¹Note that this guide does not create any new requirements and is not enforceable.

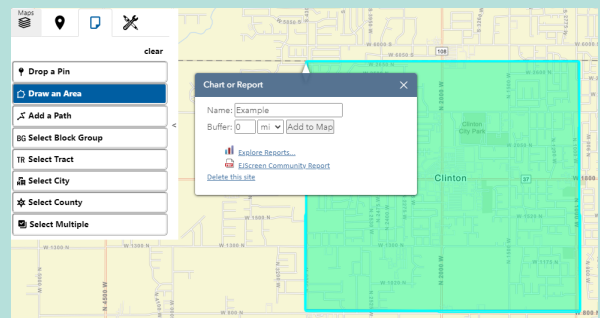
Using EJScreen to Gather Data for a Particular Area

There are multiple ways that users can define a geographic area in EJScreen to learn about a particular area. The most common methods are described below:

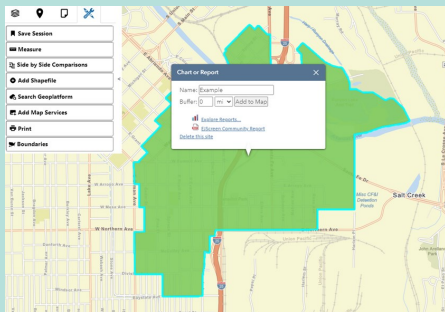
Option 1: Use the “Drop a Pin” button under the “Reports” tab and specify a buffer distance to include the surrounding areas within that distance.



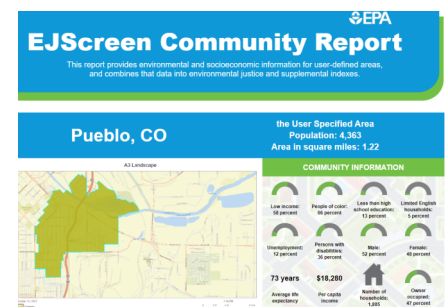
Option 2: Use the “Draw an Area” button under the “Reports” tab to select your own area. A buffer may also be utilized around the area.



Option 3: Upload a Shapefile. The shapefile should be uploaded as a .zip compatible file and must contain at least the .shp, .shx, .dbf, and .prj components. A buffer may also be utilized around the site boundary.



Once a geographic area is specified, users may generate an EJScreen Community Report to view socioeconomic and environmental information by clicking on the area and clicking the button “Get Community Report” in the popup.



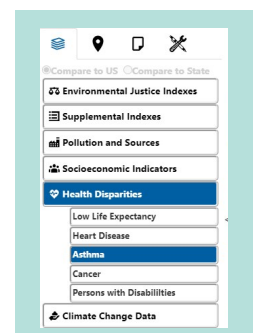
Overlaying EJ Data and Contaminant Release Information

EJScreen can also be used to better understand communities affected by nearby releases of contamination. The tool hosts a wide range of data layers from multiple publicly-available sources, which can be overlaid onto maps that show the extent of contamination. Note that this tool is not a decision-making tool, but should be utilized to add depth to our understanding of affected communities.

Step 1: Add shapefile of site boundary and shapefile of site contamination to the EJScreen map following Option #3 as previously described. (Alternatively, the general area of the release could be drawn using Option #2).



Step 2: Using the “Maps” tab, navigate through the many different data layers that can be overlaid and select one or multiple to be added to the map.

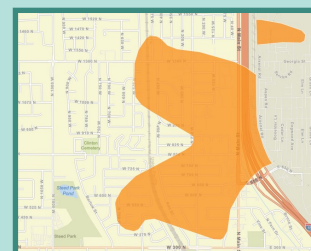


Mapping the location of contamination relative to EJScreen data in the community can provide the site team with valuable information to guide community outreach and other site activities and decisions. This information can be added to the Community Involvement Plan and other remedial investigation documents.

Goal	Question	Sources
Identify possible methods & locations to engage with the community	<ul style="list-style-type: none"> Where might people gather? Where may trusted community leaders be found? What community events could the site team attend? 	EJScreen “Places” Tab: Schools, colleges, parks, places of worship, hospitals, tribal lands, etc.
Address engagement burdens that community members face	<ul style="list-style-type: none"> Do communities have access to public transportation? Can communities afford transportation? Might communities need childcare assistance? Would online and/or hybrid meetings be helpful? Do communities have access to reliable internet? Should meetings be offered in multiple languages? When and where should meetings be offered? 	EJScreen “Map” Tab for Additional Demographics: Income/Poverty, Technology, Education. Population (Age), etc. EJScreen “Map” Tab for Critical Service Gaps: Broadband Gaps, Transportation Access
Identify other environmental burdens the community faces	<ul style="list-style-type: none"> What other environmental issues are impacting the community? May there be other agencies or organizations working on these issues that the site team could partner with? How might cumulative impacts be considered in the remedy? 	EJScreen “Map” Tab for Pollution and Sources

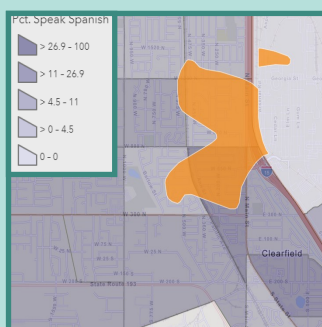
Hypothetical Case Study:

A Superfund site team had been experiencing challenges conducting community outreach near a groundwater trichloroethylene (TCE) plume. To better understand their community and to develop a stronger Community Involvement Plan, the site team utilized EJScreen in tandem with site visits, conversations with local leaders, and interviews. First, they uploaded shapefiles of identified contamination within the community (shown in orange to the right).



Extent of contamination

Second, they generated an EJScreen Community Report, which showed that there was a high percentage of Spanish speakers and a high percentage of people who had less than a high school education.

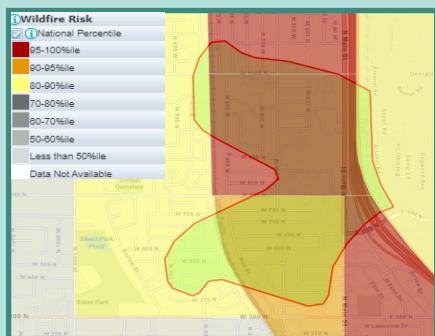


Percent of population that speaks Spanish (layer found in Additional Demographics tab)

SOCIOECONOMIC INDICATORS	
Less Than High School Education	23%
Under Age 5	5%
Over Age 64	10%
Low Life Expectancy	23%

Percent of population with less than a high school education (found in Community Report)

The site team reviewed the outreach material they had developed and **ensured that handouts were available in Spanish** and at an appropriate reading level.

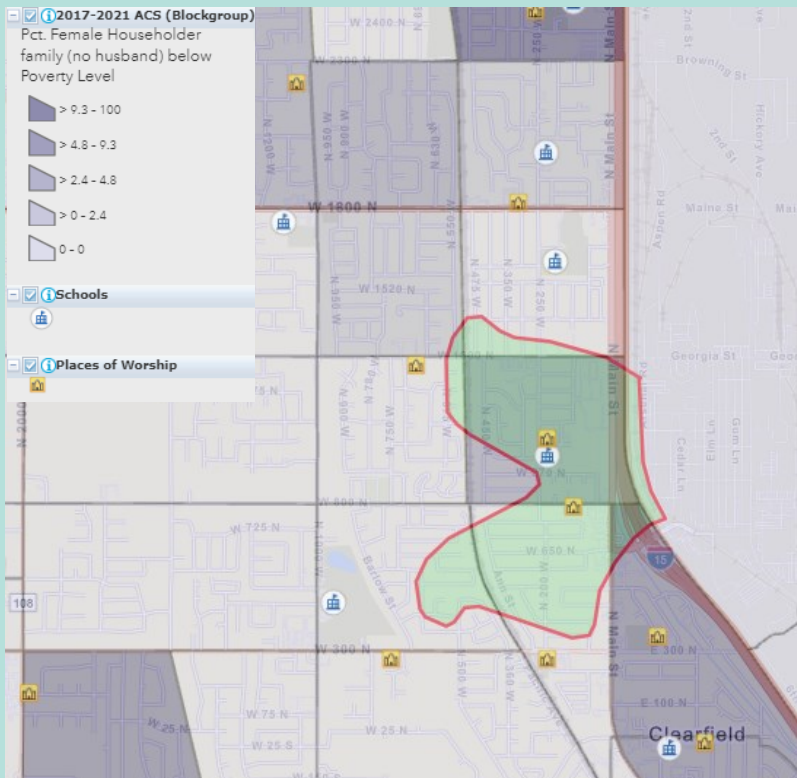


Wildfire risk

(layer found in Climate Change Data tab)

The site team also noted that there were multiple other environmental issues affecting the community, including a high risk of wildfires and risk of severe drought. This led the site team to research organizations involved with wildfire mitigation, talk with community leaders, and then **partner with other organizations** working in the community focused on these issues, including co-attending events and disseminating information in tandem.

Hypothetical Case Study (continued)



Percent of households below poverty that are run by single mothers (found in Additional Demographics tab), and Places of Worship & Schools layers (from Places tab)

The site team also noted that the area had a high percentage of single-parent households (shown to the left). To encourage participation in community meetings, the site team **offered childcare** during meetings and hosted them at a nearby school. **Meetings were also made hybrid, recorded,** and uploaded online for parents who could not attend live.

Lastly, utilizing the Schools layer and Places of Worship layer, the site team decided to reach out to nearby **places of worship that could assist as a trusted source of information** in relaying information about the contamination. The site team attended an event hosted by a nearby church to meet community members and distribute information about the cleanup.

Summary: How Can You Use EJScreen & Contaminant Mapping?



Community Involvement

Scheduling meetings, translation needs, literacy levels, meeting formats, developing a Community Involvement Plan



Partnerships

Forming partnerships with local organizations that may be addressing similar environmental concerns identified via EJScreen



Site Documents

Including information in Five Year Reviews, RI/FS, Proposed Plans, Site Profile Pages, Story Maps, etc.



Cleanup Levels

Identify multiple stressors on a community to inform selection of cleanup levels, including those for sensitive populations



Grant Applications

Providing information on overburdened communities for grant applications (such as EPA Technical Assistance Grants, EJ Grants, or non-EPA Grants)



Work Prioritization

Prioritizing Operable Units, conducting concurrent Remedial Investigations and Remedial Actions

Interested in exploring other tools? [CEJST](#), [EnviroAtlas](#), and [ECHO](#) may also provide useful information about your community!