Tools for Considering Environmental Justice
in CERCLA Investigations at Federal Facility NPL Sites
Environmental Justice Reference Guide

Environmental Justice Pilot Project –
EPA's Federal Facilities Restoration and Reuse Office (FFRRO) and Region 3,
U.S. Department of Defense (DOD), and state agencies

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 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.

This Reference Guide describes computer-based tools available for screening community characteristics and attributes.

Tools to Characterize Potentially Impacted Communities

Several computer-based tools help project teams identify and learn about potentially impacted communities, and identify potential exposure pathways relevant to these groups. The use of these tools is enhanced by outreach strategies that engage communities in dialogue, lead to shared understanding of local concerns, and address potential exposures to site contaminants. This Reference Guide provides a brief overview of these federal tools below, as well as a selection of environmental justice and environmental screening tools that states have developed to address state-specific needs.
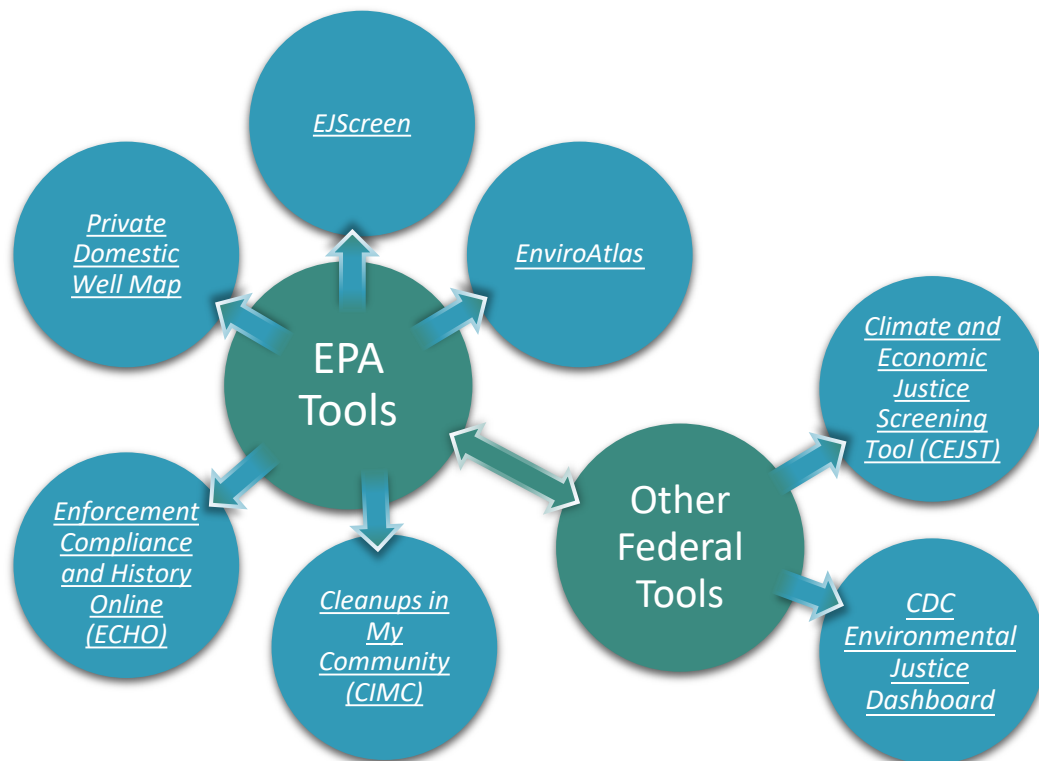
[*] CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act

EPA Tools

EJScreen

This environmental justice mapping and screening tool provides EPA with a nationally consistent dataset and approach for combining environmental and demographic indicators. EJScreen users choose a geographic area; the tool then provides demographic and environmental information for that area. This is the principal tool for characterizing communities next to federal facilities. Users can download reports that summarize search findings.

To summarize how environmental indicators and demographics come together in the same location, EJScreen uses indexes that combine environmental data with information about the low-income and minority population in a census block group. EJScreen presents results in terms of percentiles, allowing community comparisons with the rest of the state, an EPA Region or the nation. The indexes provide community-level information that can inform public engagement and environmental burdens.

Source: EJScreen, June 2023

The Environmental Justice Indexes address multiple environmental indicators, including:
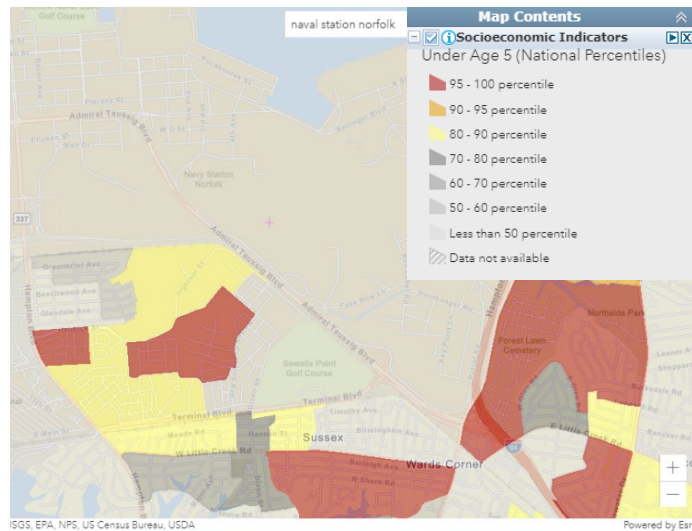
- Air quality concerns (particulate matter [2.5], ozone, diesel particulate matter, air toxics cancer risk, air toxics respiratory hazard index, toxic releases to air, traffic proximity).
- Exposure sources (lead paint, Risk Management Plan [RMP] facility proximity, hazardous waste proximity, Superfund proximity).
- Water quality concerns (underground storage tanks [USTs], leaking USTs [LUSTs], wastewater discharge).

Users can also look at the factors independently. In addition, EJScreen offers several more maps based on demographic and socioeconomic data (U.S. Census data as well as the American Community Survey) as well as indicators of other stressors, such as certain health indicators and access to medical care.
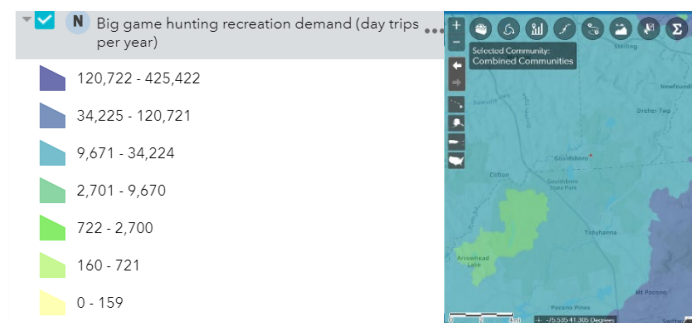
EnviroAtlas

EPA's EnviroAtlas provides information about "ecosystem services", which are the benefits humans get from the environment. The tool also provides information regarding communities, land use and environmental quality. The mapping functions help identify potential uses of land that, when combined with site contaminant data, may indicate possible exposure pathways. Such land use relationships can trigger deeper investigation into land uses, to characterize relevant activities to inform site sampling and risk assessment.

The information gathered can be used to modify Conceptual Site Models (CSMs), which are descriptions of contaminant sources, releases, transport pathways and potential receptors. Accurate and complete CSMs are required as part of ensuring that samples are collected in appropriate media and risks are analyzed for potentially exposed receptors.

Source: EnviroAtlas, June 2023

Cleanups in My Community (CIMC)

CIMC enables users to map and list hazardous waste cleanup locations and grant areas and identify details about those cleanups, grants and other related information. By default, the map displays all cleanup sites identified by EPA. There are options for filtering the data to map specific types of cleanups, such as federal facility and Superfund cleanups. This tool is particularly powerful, allowing users to see what other sources may be located nearby, contributing to cumulative burdens.

Layers on the right side of the map that can be added include impaired waters, flood zones, and tribal areas and federal lands.

Enforcement Compliance and History Online (ECHO)

EPA's ECHO website enables users to search for facilities in communities to assess their compliance with environmental regulations. Users access ECHO to:

- Search for facilities.
- Investigate pollution sources.
- Search for EPA enforcement cases.
- Examine and create enforcement-related maps.
- Analyze trends in compliance and enforcement data.

Private Domestic Well Map

This mapping tool identifies the number/density of domestic (private) water wells and how many people are using them. Understanding the density and geospatial location of private domestic wells, and housing units relying on them, improves detection and response efforts. EPA developed this mapping tool based on two methods to estimate private well density. The maps combine reported wells in 20 states with available well log data and the net housing unit method that is available in all 50 states for estimating domestic well use. The maps do not display the locations of private wells. The value of this mapping tool is its identification of areas that may be vulnerable to groundwater contamination based on the presence of private wells.
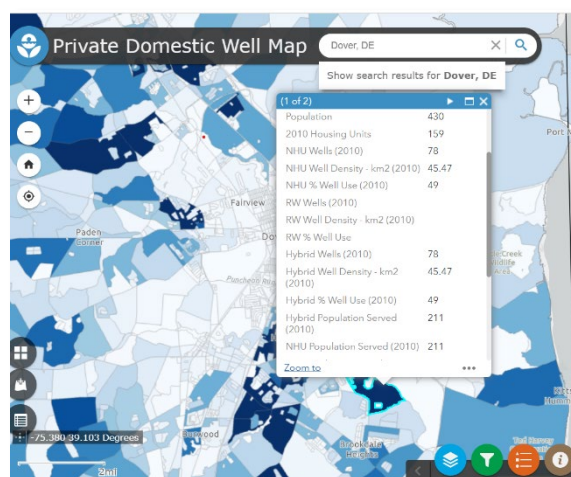

Source: Private Domestic Well Map, June 2023

Other Federal Tools

Climate and Economic Justice Screening Tool (CEJST)

CEJST helps federal agencies identify disadvantaged communities that are marginalized, underserved and overburdened by pollution. These communities are in census tracts that are at or above the thresholds in one or more of eight categories of criteria. The current version of the tool evaluates likelihood of disadvantage based on a combination of climate change vulnerabilities, energy, health, housing stock, legacy pollution, transportation, water and wastewater, and economic development, each in combination with low-income status. The current version of the tool will be updated based on more feedback and research.
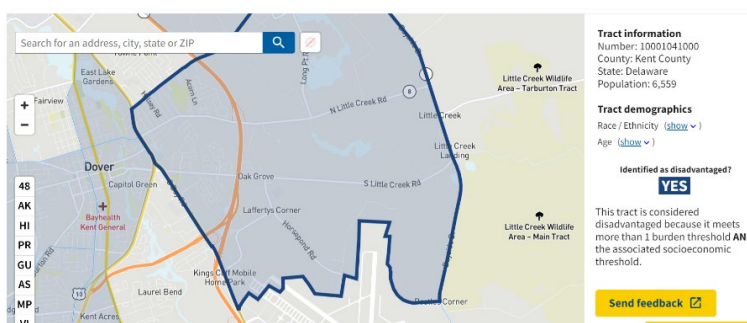

Source: CEJST, June 2023

CDC Environmental Justice Dashboard

This web-based application allows users to evaluate several screening factors, including community characteristics, environmental exposures, health burdens and environmental justice indexes. Assessments are based on zip code. Evaluating communities surrounding a facility may require the use of multiple zip codes. Community characteristics include demographics and social vulnerability as well as a description of the built environment (e.g., access to parks). The social vulnerability index (SVI) uses U.S. Census data to determine the social vulnerability of every census tract. Census tracts are subdivisions of counties for which the U.S. Census collects statistical data. The SVI ranks each tract across 15 social factors, including poverty, lack of vehicle access and crowded housing, and groups them by theme.

The Environmental Justice Dashboard also provides more information on environmental exposures, health burdens and environmental justice. Environmental Exposures presents environmental pollutant data, including water quality, age of housing, PM 2.5 and ozone. It also includes factors related to climate change. Under Health Burden, users can examine health vulnerability based on access to health insurance, hospitals and disability, as well as infant mortality and percentage of low birth weights. The Environmental Justice Index (EJI) is a calculation based on the combined rankings of the Environmental Burden Module, the Social Vulnerability Module and the Health Vulnerability Module. The EJI represents a measure of cumulative effects on human health and well-being.
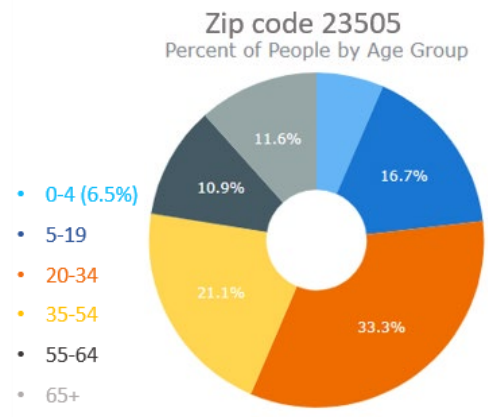
Source: CDC Environmental Justice Dashboard, February 2023

State Tools

Several states have developed environmental justice and environmental screening tools that are tailored to address state-specific needs. For example, the state of New Jersey has developed the Environmental Justice Mapping, Assessment, and Protection (EJMAP) tool. EJMAP establishes an objective, publicly available representation of existing environmental and public health stressors in the state's overburdened communities and supports the analysis required under the state's Environmental Justice Rules.

The state of Virginia maintains several tools to map environmental and environmental justice data, as well as environmental complaints, which can be useful to understand community concerns.

Maryland has developed a screening tool to identify potential underserved or overburdened communities. The EJ Screening Tool uses Maryland census data to query environmental stressors, sensitive populations and potential disparities.

Effective Use of Information Obtained from Tools

A common question after the use of screening tools is "How do we use this information?" Because the tools provide screening-level data, the information must be verified. The process of verification requires community outreach and engagement. The outcome of this process is then used to implement effective engagement strategies and to inform the CERCLA investigation and assessment processes.

Screening tools provide information that can raise important questions; documenting or listing these questions can help project teams develop more targeted strategies to identify and reach communities. Outreach and engagement strategies can be tailored to verify the screening information and to refine CERCLA investigations to ensure the protectiveness of potentially vulnerable communities.

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