

Environmental Justice as a New Driver for Sustainable Remediation at Superfund Sites

Rick Wice, PG, (wice@battelle.org)

Sixth International Symposium on Bioremediation and Sustainable Environment Technologies
May 9, 2023



Background on EJ

- Robert Bullard, Ph.D. – Father of Environmental Justice
 - Distinguished Professor, Barbara Jordan-Mickey Leland School of Public Affairs, Texas Southern University, Houston, Texas
 - Director of the Bullard Center for Environmental Justice
 - Member White House Environmental Justice Advisory Group
- Compass Industries Superfund Site, Tulsa, Oklahoma 1980s
- Executive Order 12898 – February 1994
- Sustainable Remediation Forum
 - Environment
 - Economy
 - Social

USEPA Environmental Justice Definition

Environmental Justice - Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

This goal will be achieved when everyone enjoys

The same degree of protection from environmental and health hazards, and

Equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

USEPA Environmental Justice

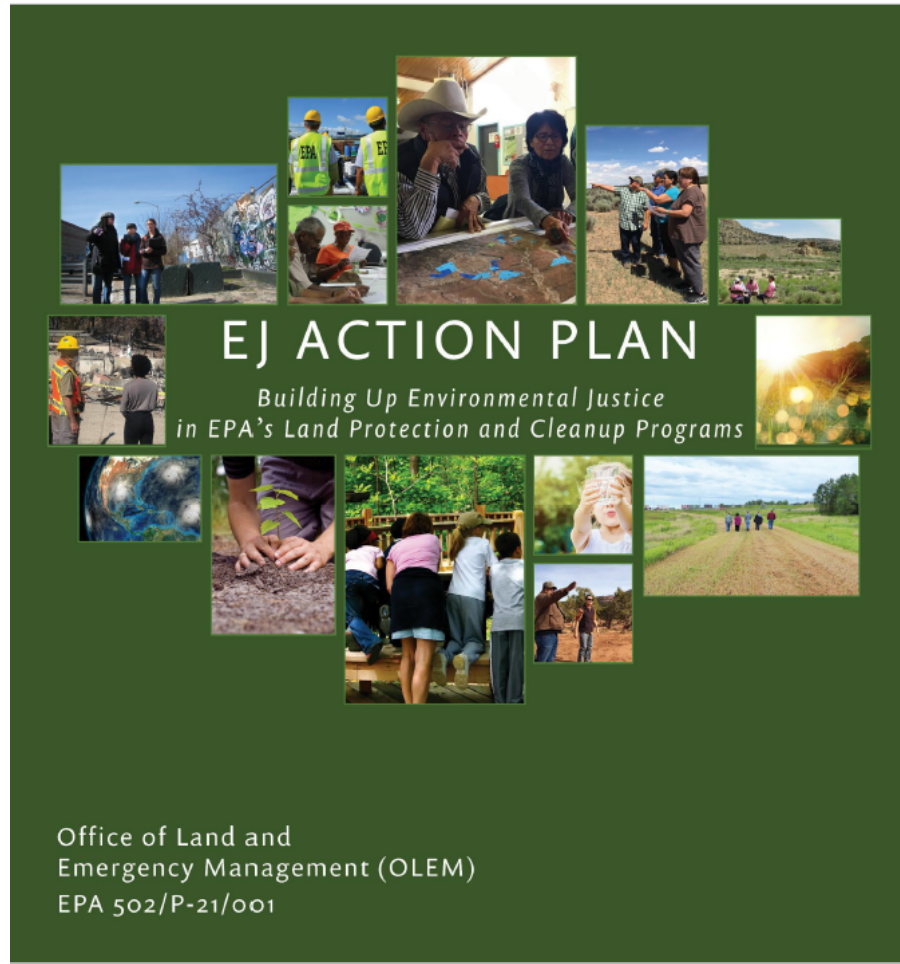
Established an Office of Environmental Justice in 1992

Environmental Justice Website - <https://www.epa.gov/environmentaljustice>

- Grants and Resources
- Strategic Planning
- Collaborative Partnerships

UESPA Office Land and Emergency Management (OLEM) Environmental Justice (EJ) Action Plan, September 2022 (EPA502/P-21/001).

OLEM EJ Action Plan – September 2022



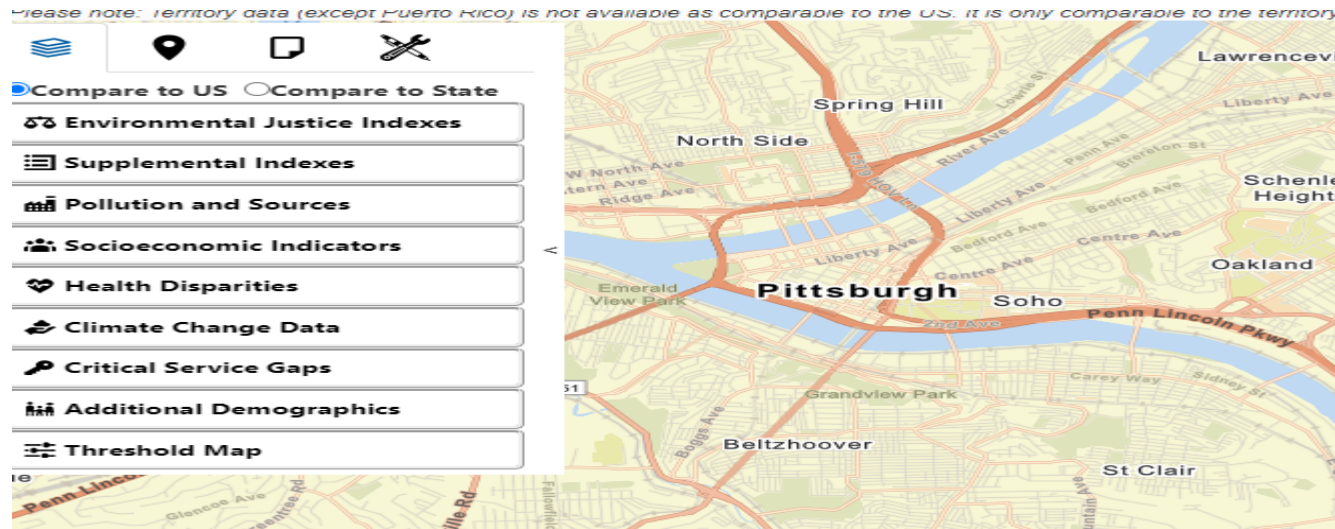
- Based on EO 139855 - Advancing Racial Equity and Support for Underserved Communities Through the Federal Government) and
- EO 14008 - Tackling the Climate Crisis at Home and Abroad

OLEM EJ Action Plan Road Map

- **Section 1- Strengthen Compliance** (emergency response, site inspections, general enforcement, oil spills and chemical accident, USTs)
- **Section 2 - Incorporating EJ Considerations** (RCRA TSDs, natural disaster debris planning, recycling planning, EJScreen tool, Superfund site assessment and NPL designation, response action selection, redevelopment and community wide revitalization, funding regions for EJ at Federal NPL sites, risk assessment, EJ at PFAS Sites)
- **Section 3 - Improve Community Engagement** (community technical support-RCRA, Superfund Sites near HUD housing, community workshops, technical assistance program funding at EPA HQ level for communities near federal NPL sites)
- **Section 4- Justice 40** (very important for how Inflation Reduction Act and Infrastructure Act funding will be applied, earmarked for disadvantaged communities)

EJ Screen

- EJ Screen - <https://www.epa.gov/ejscreen>
 - What is EJ Screen
 - Training
 - Technical and Indicators Explanations
 - Tool Launch and Additional Resources



EJScreen: Environmental Justice Screening and Mapping Tool



Locate search by zip code, census tract, radius of a pin drop, city or county boundaries

Environmental Justice Indexes

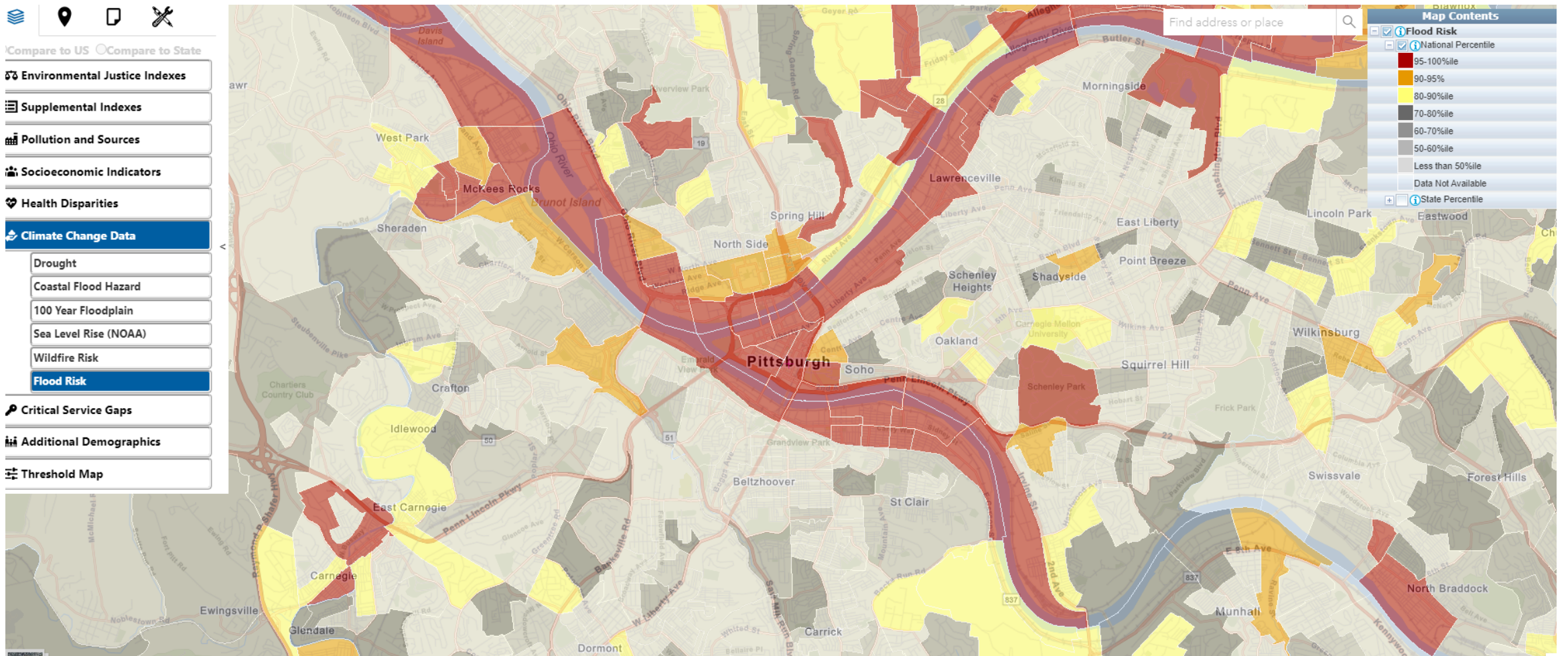
- PM 2.5
- Ozone
- 2017 Diesel Matter
- 2017 Air Toxics
- Traffic Proximity
- Lead Paint
- Superfund Site Proximity
- Risk Management Plan (RMP) Facility Proximity
- Hazardous Waste Proximity
- USTs
- Wastewater Discharge

Socioeconomic, Health Disparities, Climate Change , Service Gaps

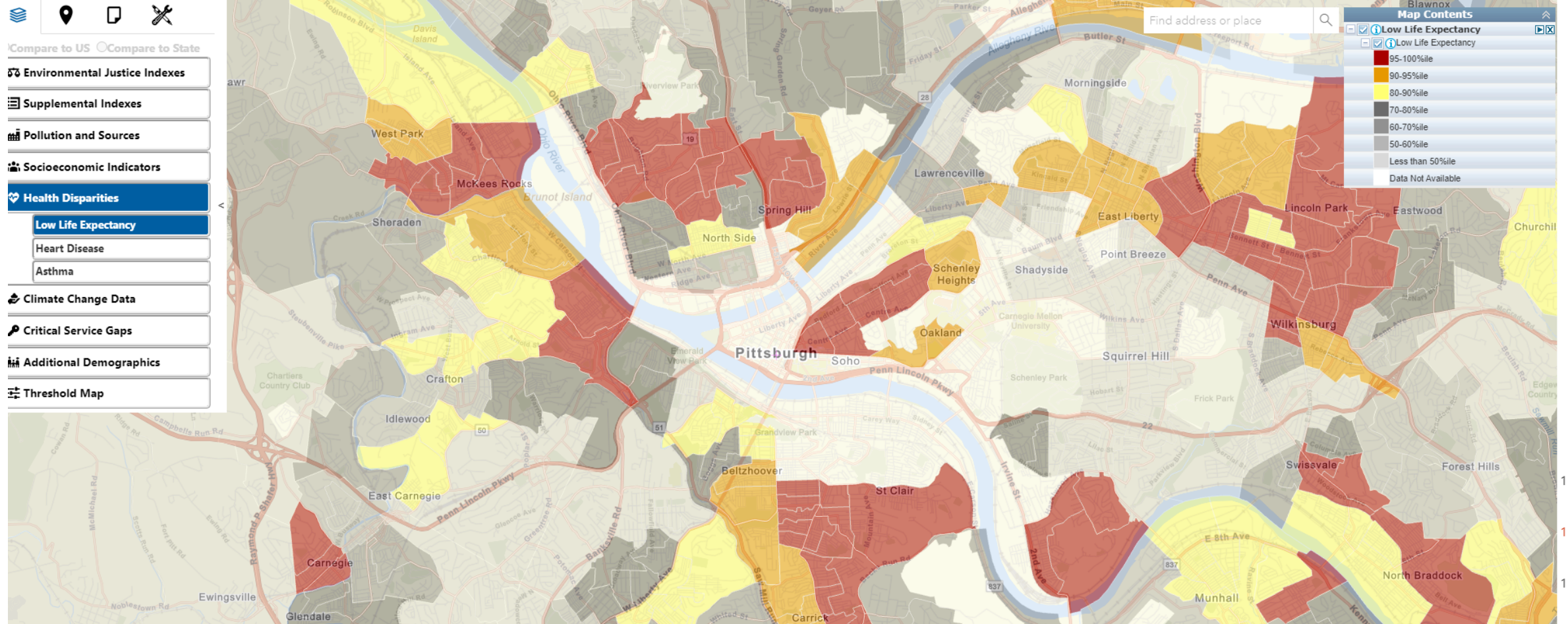
- Demographic Index (People of Color, Low Income, Unemployment Rate, Linguistically Isolated, Less Than HS Education, Under Age 5, Over Age 64)
- Health Disparities (Low Life Expectancy, Heart Disease, Asthma)
- Climate Change Data (Wildfire Hazard, Drought, Coastal Flood Hazard, 100 Year Flood Plain, NOAA Sea Level Rise)
- Critical Service Gaps (Broadband Gaps, Food Desert, Medically Underserved)
- More Demographic (Allows User to look at 2010 Census and 2000 Census)

The EJ Screen tool uses demographic default to American Community Survey (ACS 2015-2019, or earlier census data) and environmental data to create reports and maps

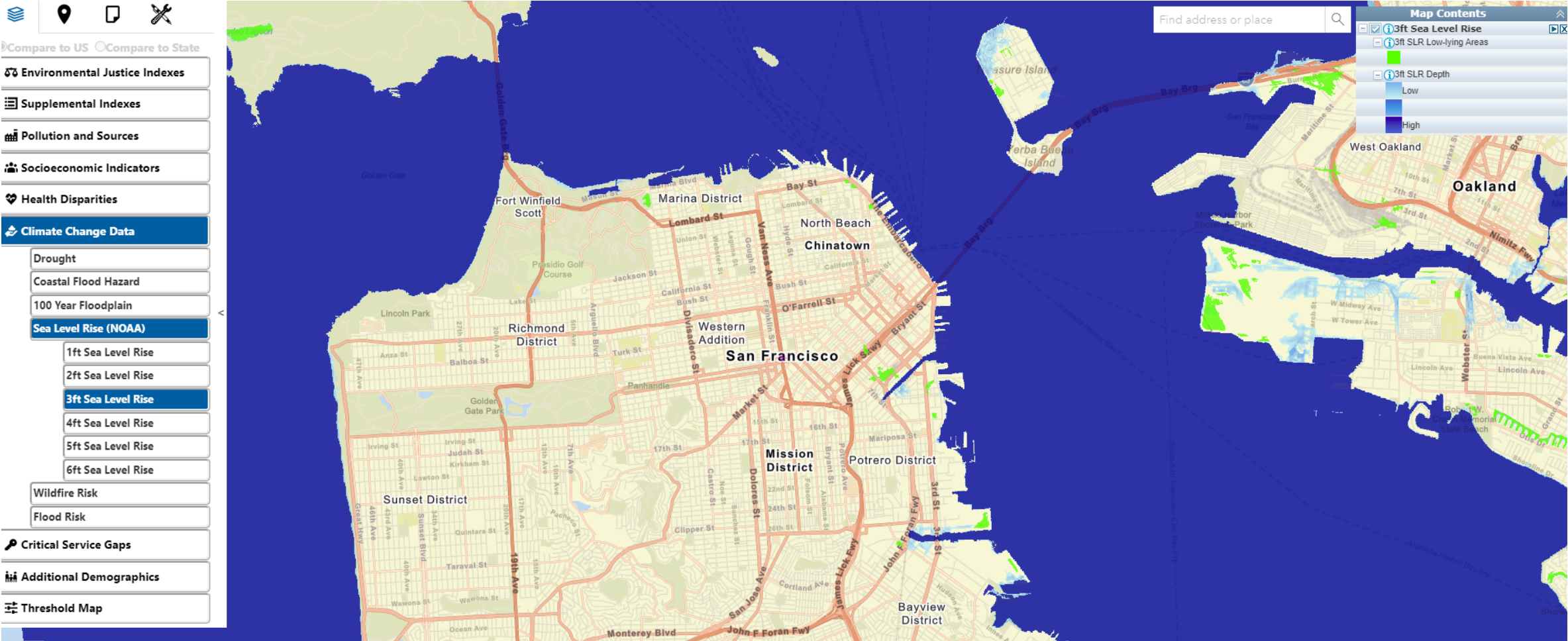
Pittsburgh Flood Risk



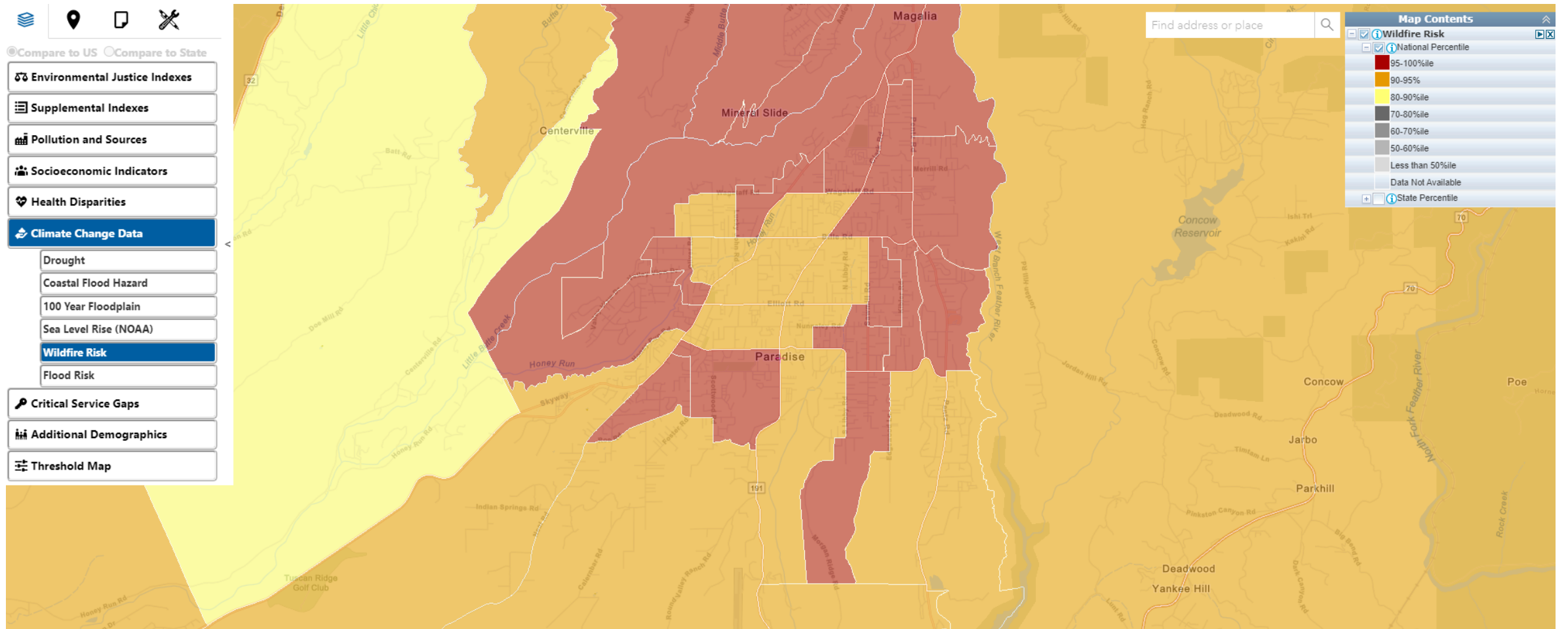
Pittsburgh Low Life Expectancy



San Francisco 3 Feet Sea Level Rise

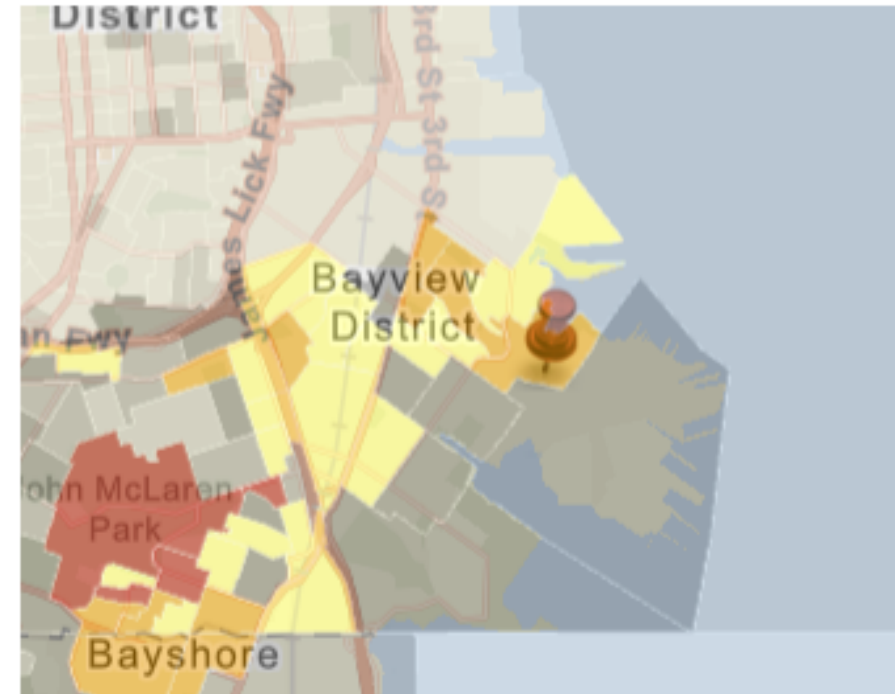
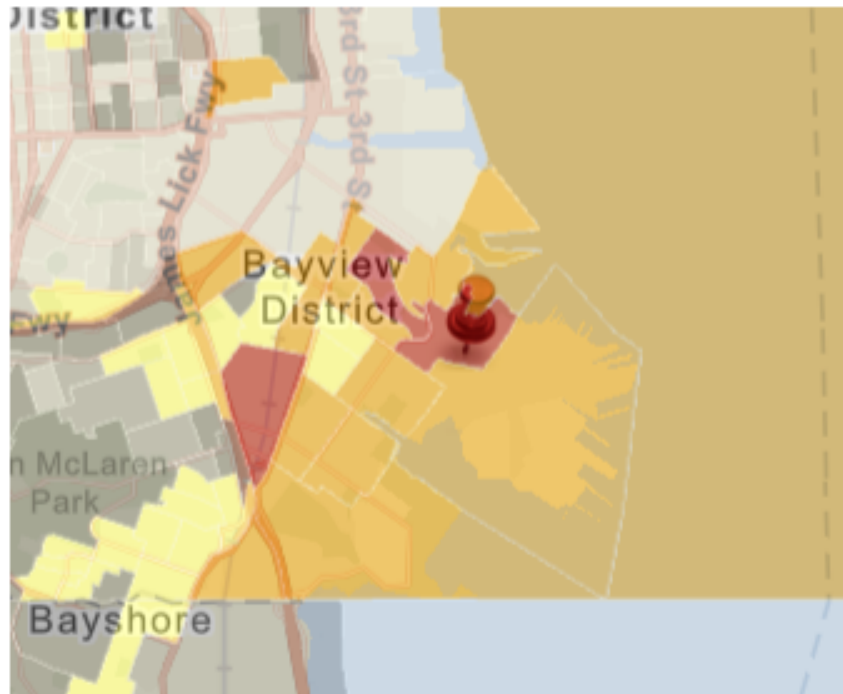


Paradise, CA Wildfire Risk



MAPPING Output Example - Hunters Point, SF, CA

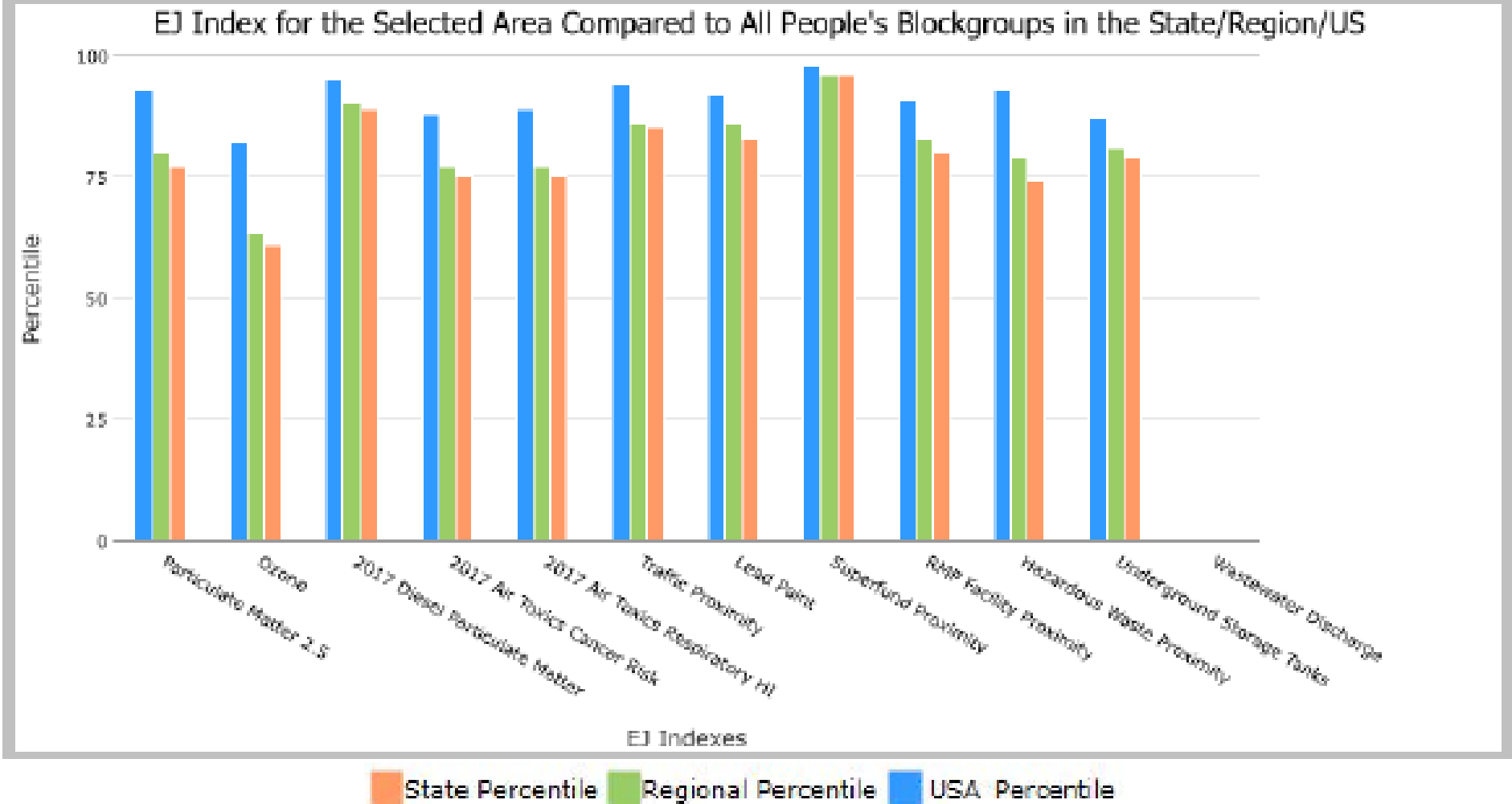
- Proximity HPNS CERCLA Site Yellow 80-90%, Orange 90-95%, Red 95-100 %
- People of Color HPNS CERCLA Site



EJ Screen Report HPNS (1-mile radius)

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
Environmental Justice Indexes			
EJ Index for Particulate Matter 2.5	77	80	93
EJ Index for Ozone	61	63	82
EJ Index for 2017 Diesel Particulate Matter ^a	89	90	95
EJ Index for 2017 Air Toxics Cancer Risk ^a	75	77	88
EJ Index for 2017 Air Toxics Respiratory HI ^a	75	77	89
EJ Index for Traffic Proximity	85	86	94
EJ Index for Lead Paint	83	86	92
EJ Index for Superfund Proximity	96	96	98
EJ Index for RMP Facility Proximity	80	83	91
EJ Index for Hazardous Waste Proximity	74	79	93
EJ Index for Underground Storage Tanks	79	81	87
EJ Index for Wastewater Discharge	N/A	N/A	N/A

EJ Screen Report HPNS (1-mile radius)



EJ ACS Summary Report HPNS (1-mile radius)

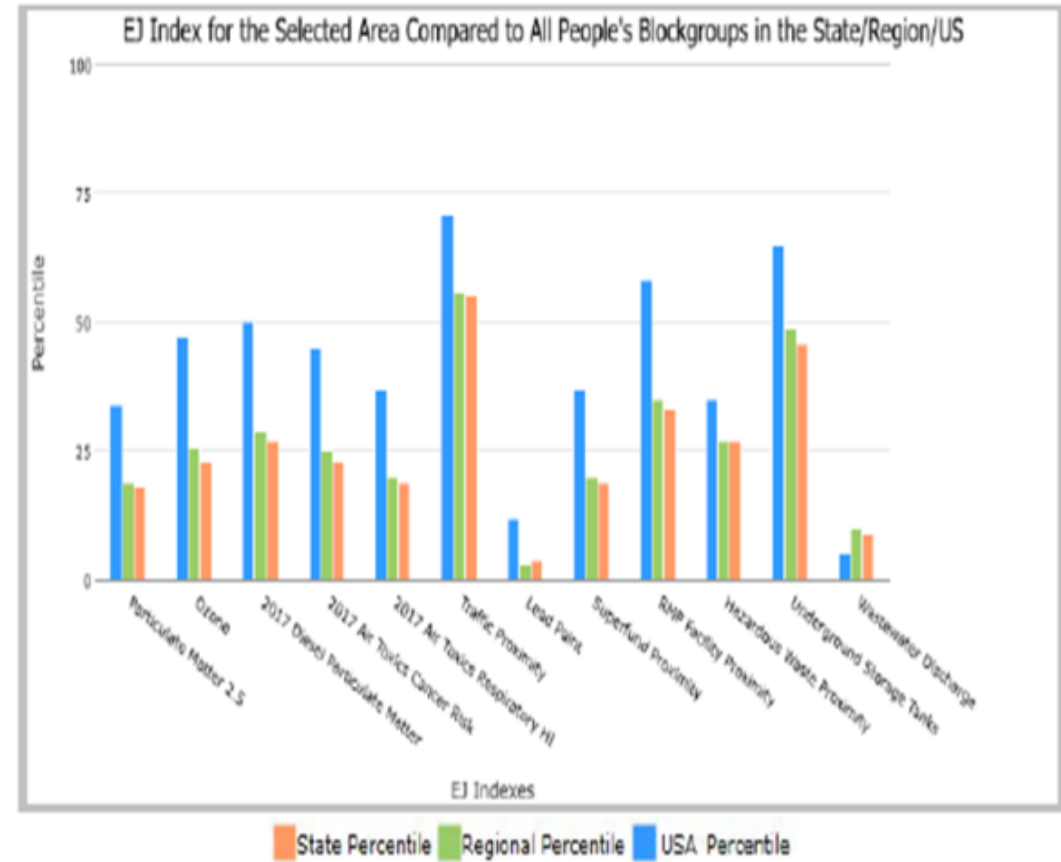
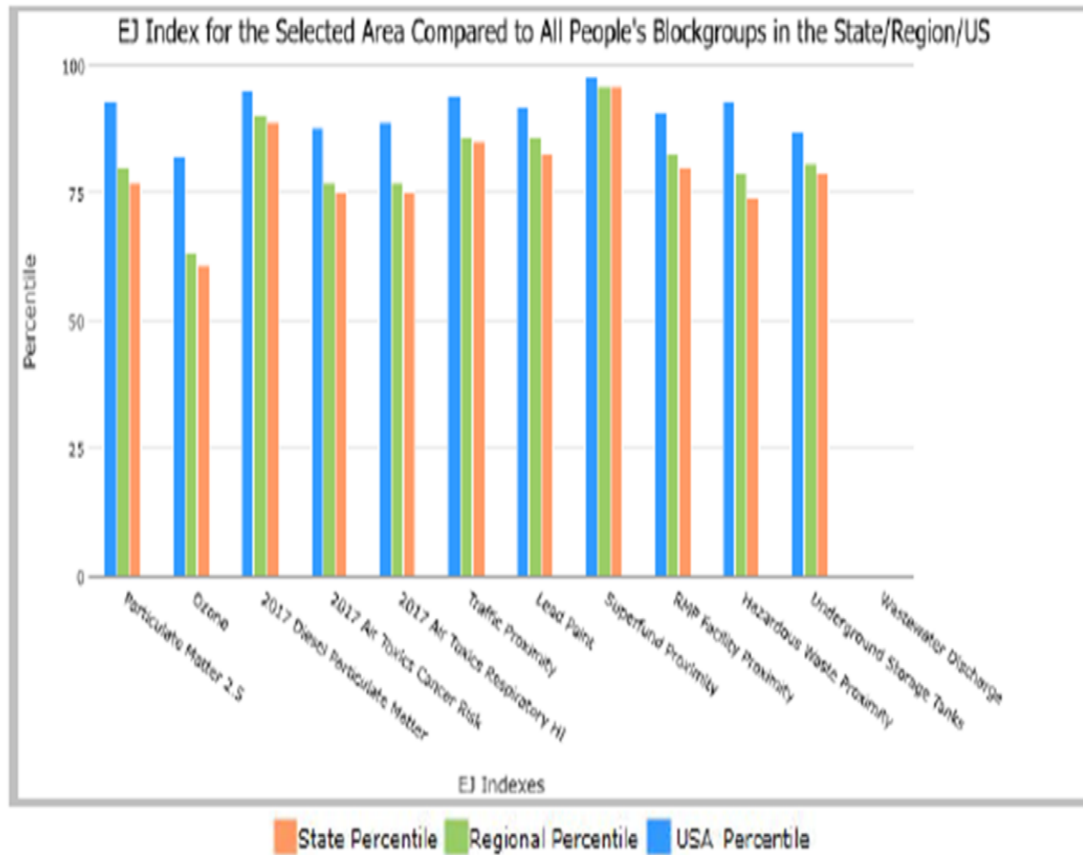
	2015 - 2019 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	20,811	100%	532
Population Reporting One Race	19,789	96%	2,089
White	2,518	12%	311
Black	7,408	38%	552
American Indian	41	0%	53
Asian	4,682	23%	323
Pacific Islander	716	3%	416
Some Other Race	4,403	21%	434
Population Reporting Two or More Races	842	4%	208
Total Hispanic Population	6,019	29%	453
Total Non-Hispanic Population	14,592		
White Alone	1,554	8%	227
Black Alone	7,144	35%	481
American Indian Alone	24	0%	53
Non-Hispanic Asian Alone	4,659	23%	323
Pacific Islander Alone	650	3%	419
Other Race Alone	28	0%	110
Two or More Races Alone	534	3%	209

EJ ACS Summary Report

Households by Household Income

Household Income Base	7,088	100%	131
< \$15,000	1,437	20%	132
\$15,000 - \$25,000	702	10%	90
\$25,000 - \$50,000	1,221	17%	91
\$50,000 - \$75,000	942	13%	88
\$75,000 +	2,787	39%	148

HPNS Compared to Marin County, California



EJ Challenges

- Stakeholder Involvement
 - A Seat at the Table and Understanding the Community Needs
 - Trust
 - Understanding the Science
- Gentrification

BATTELLE

It can be done

800.201.2011 | solutions@battelle.org | www.battelle.org