

Environmental Protection Agency

# EJScreen User Guide

2022

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# EJScreen User Guide

## A. EPA EJScreen Web Application

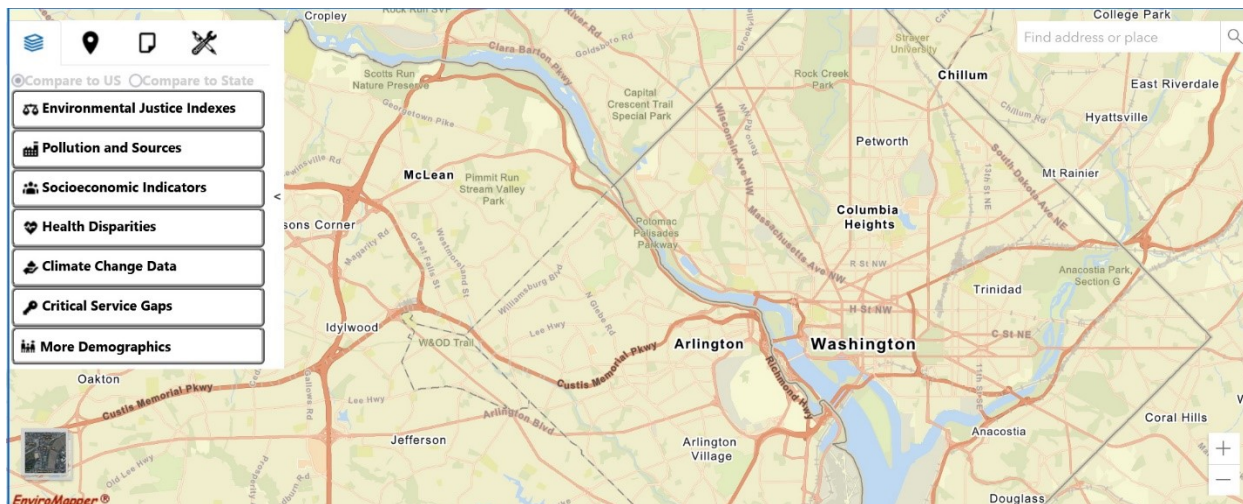
This document provides an introduction to EJScreen and walks through how to start using the tool. The EJScreen website and *EJScreen Technical Documentation* provide many more details on the data and methods behind the tool.

EJScreen is an environmental justice mapping and screening tool that provides EPA with a nationally consistent dataset and approach that combines environmental and demographic indicators in maps and reports. This can help to highlight geographic areas and the extent to which they 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.

The screening tool includes various environmental factors, demographic factors, and EJ indexes. Each EJ index combines multiple demographic factors with a single environmental factor (such as proximity to traffic). The screening tool has Census block group resolution, and provides a number of capabilities, including color coded mapping, the ability to generate a standard report for a selected area, and comparisons showing how a selected area compares to the relevant state, EPA region, or the nation as a whole.

Users should keep in mind that screening tools have substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas, such as Census block groups. Also, in many cases, data on the full range of environmental impacts and demographic factors in any given location will not be available directly through this tool, and its initial results should be supplemented with additional information and local knowledge.

To access the application, navigate to <https://www.epa.gov/ejscreen>



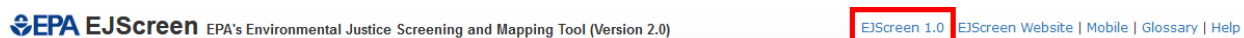


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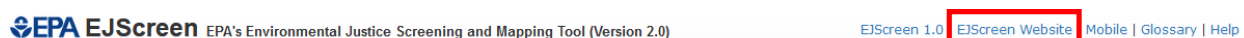
### B. EJScreen Web Application Home Screen

The EJScreen Application contains a number of user interface controls as well as data display and advanced analysis tools.

To access EJScreen Version 1.0, click the **EJScreen 1.0** link to the top right corner of the application.



To learn more about EJScreen, click the **EJScreen Website** link in the top right corner of the application.



To access the EJScreen Mobile application, click the **Mobile** link in the top right corner of the application.



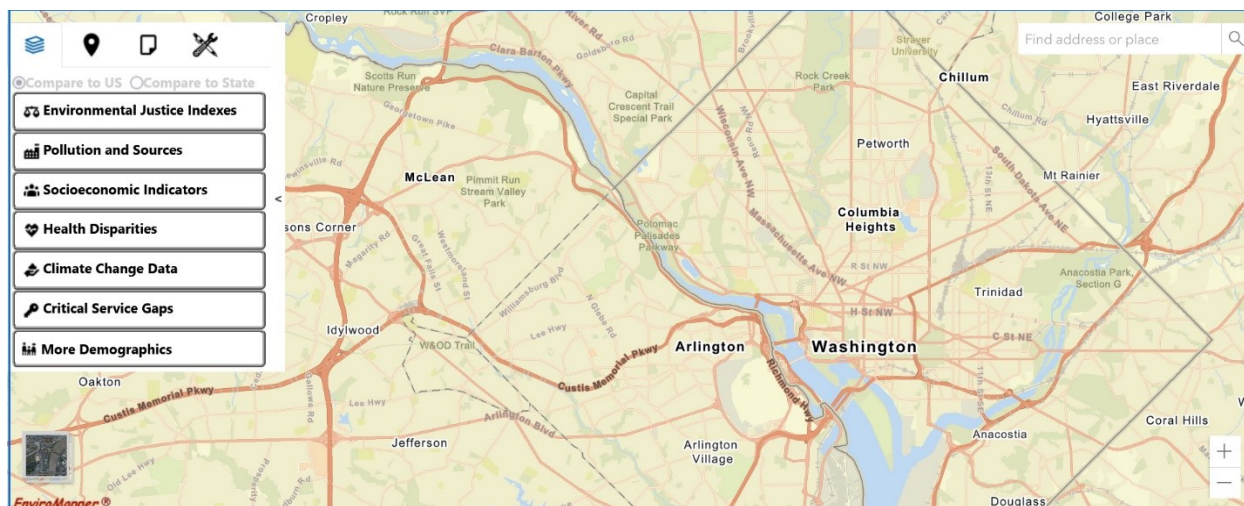
To access the EJScreen Glossary, click the **Glossary** link in the top right corner of the application.



To access help documentation for the EJScreen Application, click the **Help** link in the top right corner of the application.



Along the left side and throughout the application, a variety of widgets are available for use:



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- **Maps:** See EJScreen and other supplementary map data
- **Places:** See public space identifiers on the map
- **Reports:** Pick location and see report on a user-defined place or block group
- **Tools:** Access features include:
  - **Measure:** Measure distance, find the area of a polygon, get lat/long
  - **Save Session:** Save locations for review
  - Additional map data
- **Clear Selected Locations:** Located in the Reports widget, remove any drawings from the map
- **Print:** Located in the Tools widget, print the map displayed on your device
- **Basemap:** Toggle the map between street and satellite view
- **Find address or place:** Locate a specific address or area

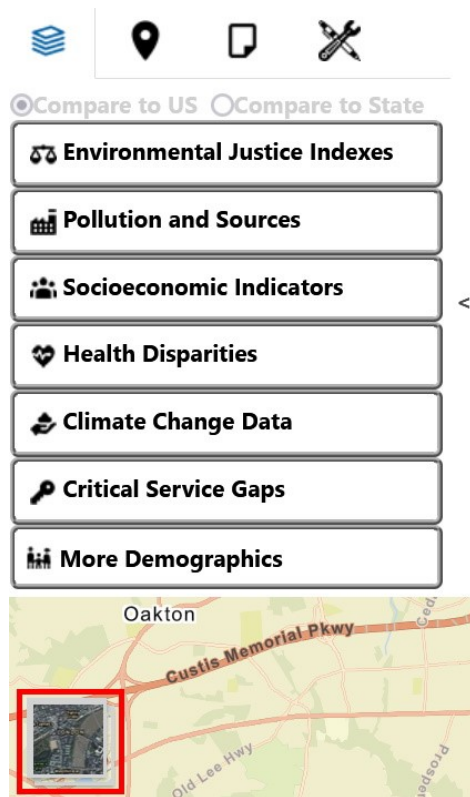
For a more detailed explanation on each widget, see sections C and D below.

### C. Exploring and Navigating Maps

Several data display, basemap and navigation tools are available.

#### 1. Basemaps

Click either the street or satellite basemap option to change the display of the basemap. Streets is the default display.



### 2. Navigation

The Navigation zoom is visible in the bottom right corner of the application. This allows manual navigation of the map display.

#### 2.1 Zoom In/Out

The map display can be zoomed by using the mouse wheel to zoom in/out, using the Zoom In/Out tool or by bounding box

To use the **Zoom In/Out** tool to zoom in and out of the map display:



1. Click the plus sign to zoom in to the map display.
2. Click the minus sign to zoom out of the map display.

To use a bounding box to zoom in on the map display:



1. Hold the shift key with one hand.
2. Hold the left mouse button and drag a rectangle to the area of interest.
3. Release the mouse button to zoom to selected area.

#### 2.2 Pan

The Pan tool is used to scroll the map in the direction and by the amount you choose.

1. Click and hold on any location in the map display.
2. Drag the mouse, and the map will move in the corresponding direction.

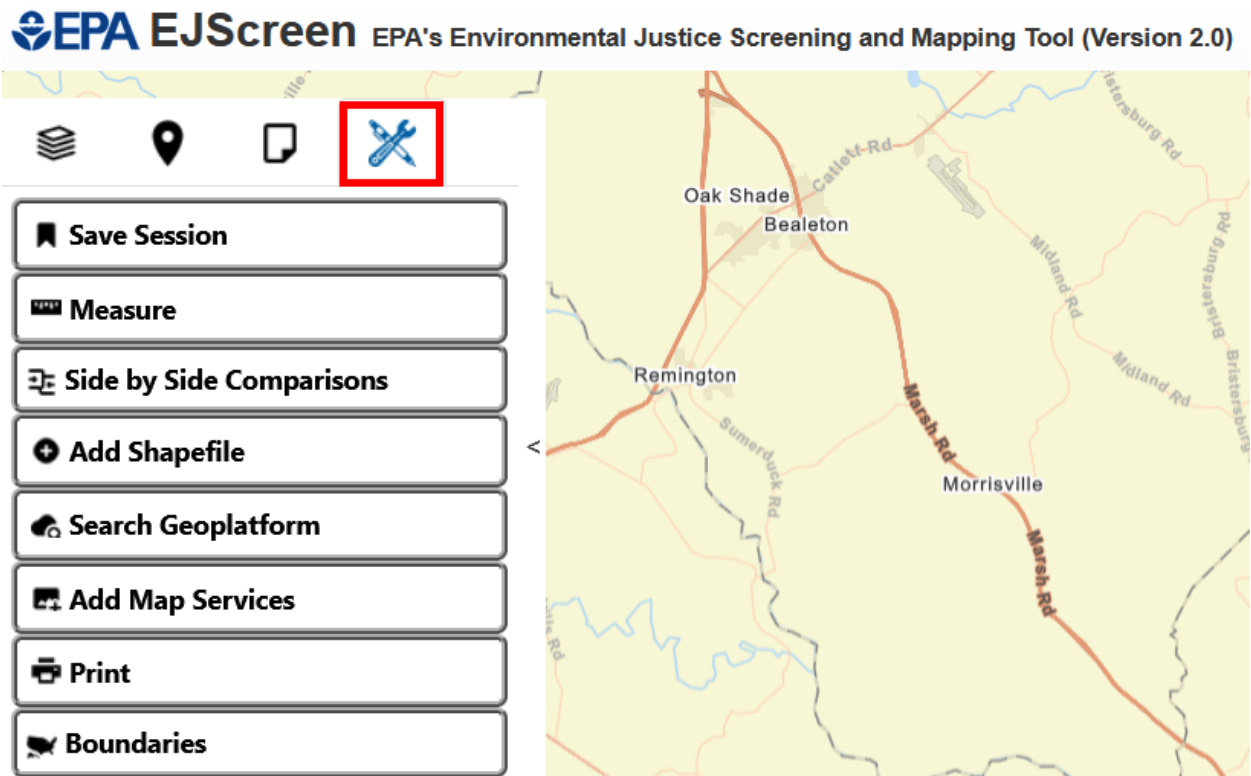
### D. Using EJScreen Common Functions and Widgets for Analysis

#### 1. Save Session

##### 1.1 Saved Sessions List

The **Save Session** widget stores a collection of map view extents with added map content. Users can add their own sessions and then use these to return to a previous view or switch between views.

1. Locate the Widget tool at the top-left of the application.
2. Click the Tools icon.
3. Click the Save Session option.



The Save Session window will be displayed.

**Save Session**

Enter a unique name below to save your current map settings. Your available saved sessions will appear below for you to upload, download and further edit. Consider saving your available sessions to your computer using the "Save to file" setting to avoid losing your current saved sessions.

Name:

**Save** Enter the name for the session

**Saved Sessions**

Session	Actions
Shrlington	
Miami, FL	

[Load from file](#) [Save to file](#)

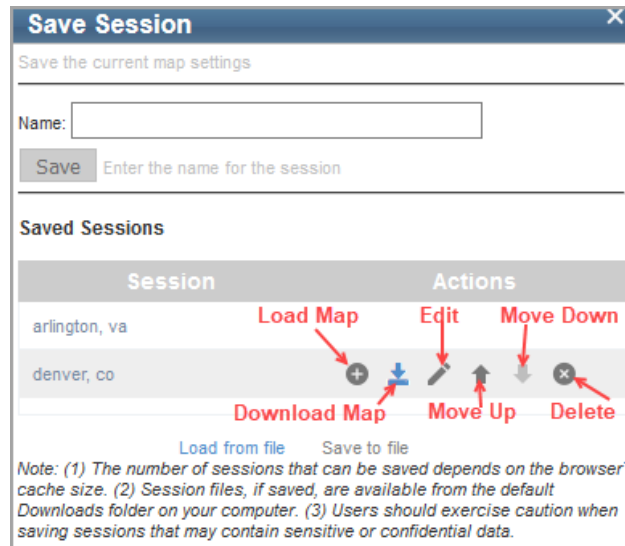
*Note: (1) The number of sessions that can be saved depends on the browser cache size. (2) Session files, if saved, are available from the default Downloads folder on your computer. (3) Users should exercise caution when saving sessions that may contain sensitive or confidential data.*

### 1.2 Adding and Deleting Bookmarks

Use the **Save Session** widget to create a saved session based on the current map extent.

1. Zoom to a location of interest.
2. Click **Save Session** widget in the Tools dropdown.
3. Enter the name of the location of interest in the text box.
4. Click the "Save" button. This will add the session to the list of saved sessions.
5. From the Saved Sessions list hover over the session name to see the options:
  - a. Load map – click this to load the saved session.
  - b. Download map – click this to save the session to your computer as a json file. This file can be shared with other users who can load the file using the Save Session widget.
  - c. Edit – click this to edit the session name.
  - d. Move up/Move down – click these to adjust the order of saved sessions in the list.
  - e. Delete – click "Delete" to remove the saved session.
6. Load from file – click this to load sessions that have been saved to your computer or to load sessions from a json file provided from the download map option.

7. Save to file – click this to save all of the saved session(s) in the “Saved Sessions” list to your computer as a json file.

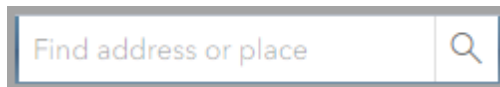


## 2. Find an Address or Place Widget

The **Find an Address** widget allows the user to find a location of interest via an address or by coordinates.

### 2.1 Find an Address

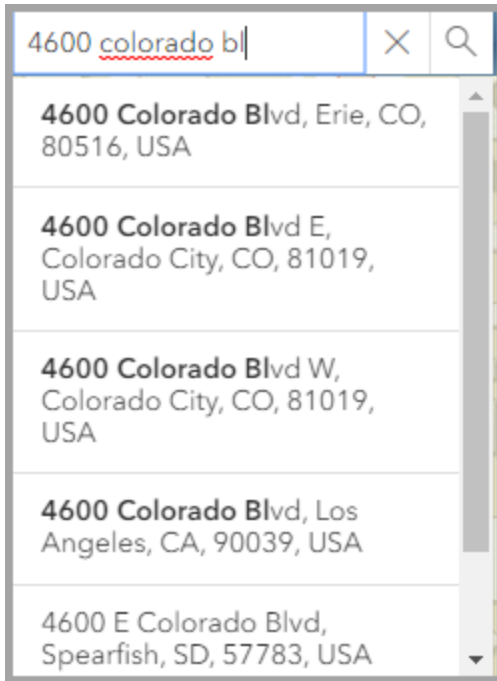
In the **Find an address or place** text box, enter an address or location to search for that location. This can be a street address, a town, a ZIP Code, or other location.



The application will list possible matches for the input. Click the **search icon**, use the enter key on the keyboard, or click an entry from the list.

If no matches are found for the input location, the map will remain unchanged.

1. Enter a location (for example: street address, town, ZIP Code, or other location) in the **Find an address or place** text box.



2. Click the **search icon**.

The map display will zoom to that location if found.

### 2.2 Coordinates

Searching by **Coordinates** allows the user to input longitude and latitude coordinates and zoom to that point.

1. Enter values for **Latitude** and **Longitude** (in that order) in the **Find an address or place** text box.



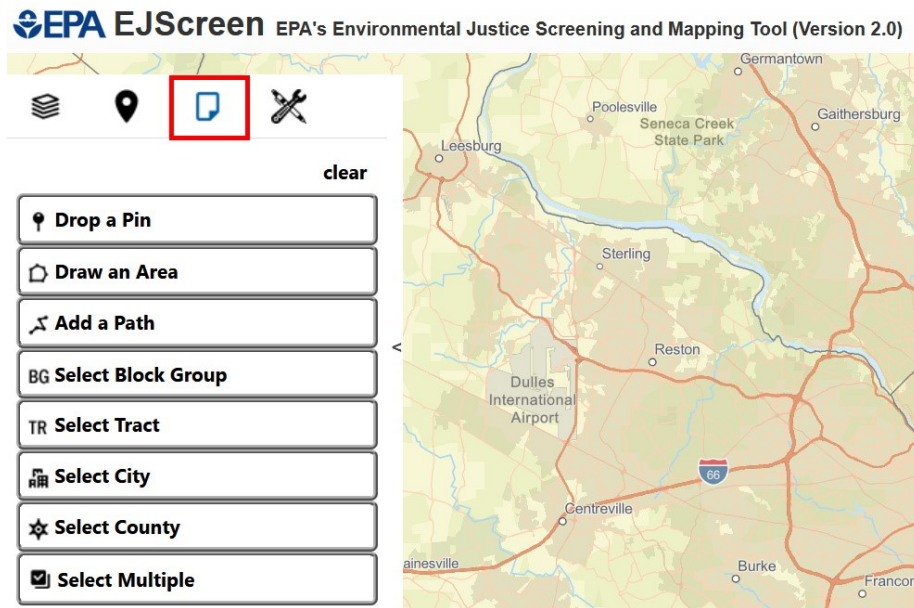
2. Click the **search icon**.
3. The map display will zoom to that location if found.



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### 3. Reports Widget

The **Reports** widget is used to identify a location of interest or known geography and then provide EJ Indexes and Environmental and Demographic reports for that area. In addition to a bar chart (where scores for the location can be compared to state, regional and national scores), users can generate a tabular view for downloading or a graphic standard report in PDF format.



2015-2019 American Community Survey (ACS), 2010 Census, and Center for Disease Control (CDC) reports are also available.

**Note:** Currently, EJScreen indexes for the US Territories have not been developed. In addition, Particle Matter (PM) 2.5 and Ozone data currently are not available in EJScreen for Alaska, Hawaii, and Puerto Rico.

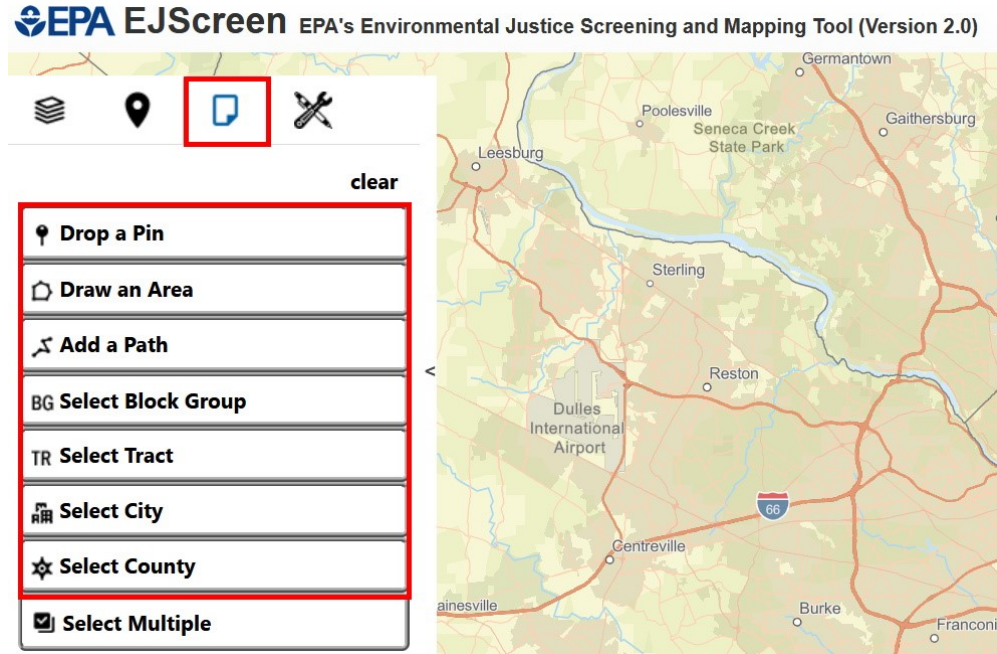
#### 3.1 Location Selection and Buffer Options

The following location selection options are intended for examining EJ Indexes, Environmental variables, and Demographic variables across block group-level data for the United States.

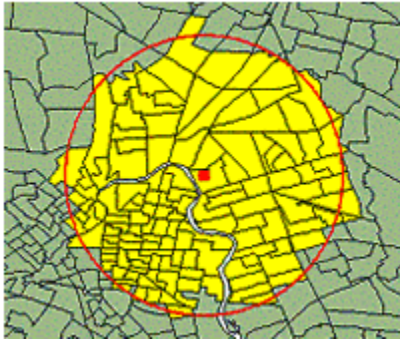
1. Locate the **Reports** icon at the top left of the application.
2. Select one of the various options to view additional data:
  - a. **Drop a Pin** – click this to use a pushpin to select your area for review
  - b. **Draw an Area** – click this to manually draw an enclosed area for review
  - c. **Add a Path** – click this to manually draw a path area for review
  - d. **Select Block Group** – click this to select a population's defined area for review
  - e. **Select Tract** – click this to select a geographic defined area for review
  - f. **Select City** – click this to select a city's limit defined area for review
  - g. **Select County** – click this to select a county's defined area for review



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When user input is a geographic point (i.e., Drop a Pin, Draw an Area, and Add a Path options), a buffer is applied around the point. The ring will aggregate appropriate portions of the intersecting block groups, weighted by population, to create a representative set of data for the entire ring area, honoring variation and dispersion of the population in the block groups within it. For each indicator, the result is a population-weighted average, which equals the block group indicator values averaged over all residents who are estimated to be inside the buffer.<sup>1</sup>



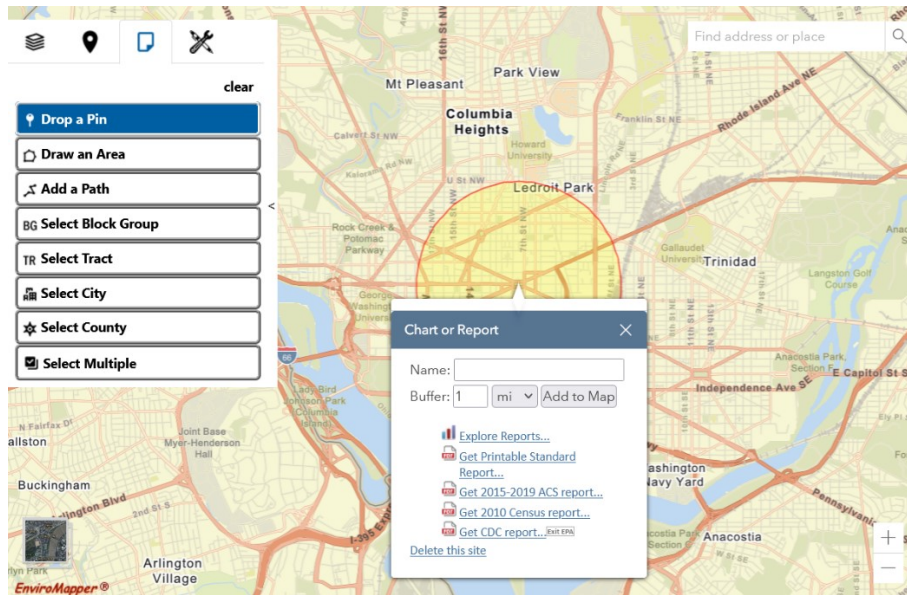
<sup>1</sup> For buffered areas, values are calculated following these steps:

1. The selected point is buffered using the native Geometry Service published through ArcGIS Server.
2. To spatially aggregate the EJScreen data for the buffered ring area for the analysis, the tool takes into account the block points that exist within the block groups to account for the block groups that are partially intersected with the ring area. A weight factor for each block group is determined by summing each block point population percentage for that block group. If the ring touches part of a neighboring block group that contains no block points, nothing will be aggregated; if a ring intersects a number of block groups, EJScreen indices will be aggregated within each block group based on the affiliated block points.
3. The aggregation is done by using factor-weighted block points.

These calculated EJScreen indices are returned to the web application for display in the viewer (as population and raw values) and for comparison against the percentile tables

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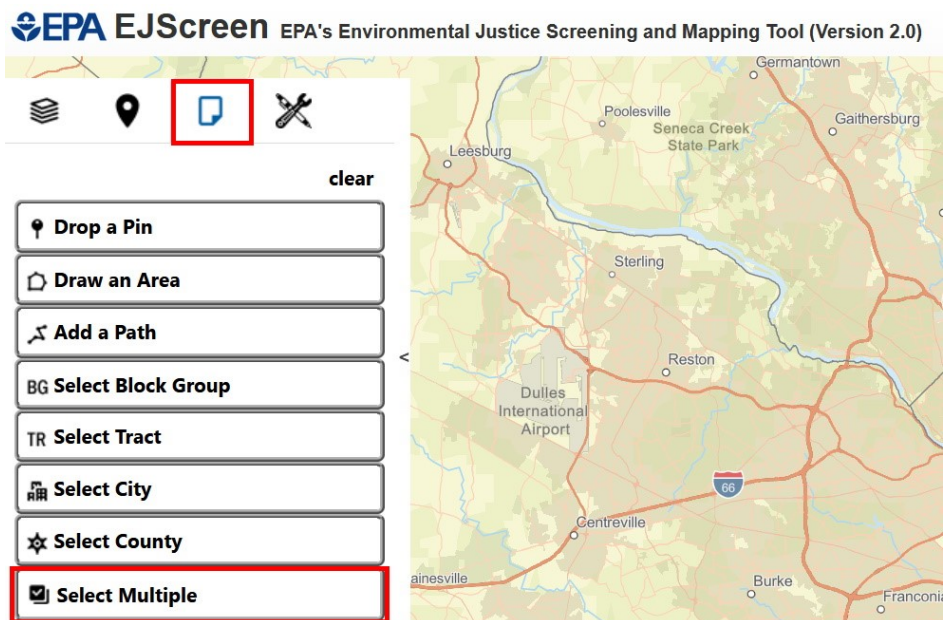
The map display will locate the point location and provide the option to add the buffer to the map (for example, 1-mile buffer around 1600 Pennsylvania Ave NW, Washington, DC 20050).



### 3.2 Select Multiple

The **Select Multiple** option allows reporting for one City, or one or more Counties, Tracts, or Blockgroups.

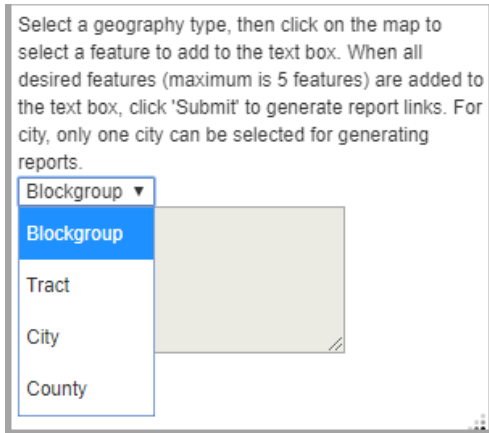
1. Click the **Reports** icon at the top left of the application.
2. Click the **Select Multiple** icon.



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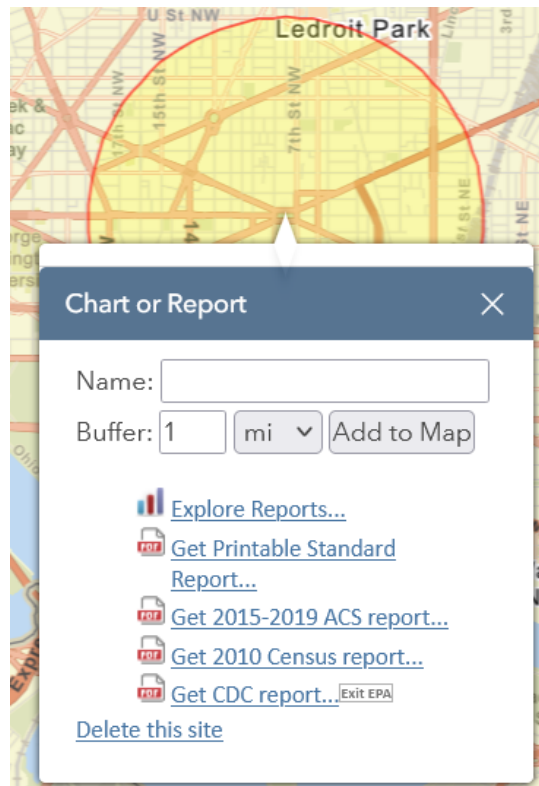
The **Select Multiple** window will be displayed.



3. Select Blockgroup, Tract, City, or County from the Geography Type dropdown menu.
4. Click on the map to add features. Up to five features can be selected for Blockgroup, Tract or County. Only one City can be selected for generating reports.
5. Then click Submit to generate reports.

### 3.3 Explore Reports

After you select a Location Selection option to view data in the area, a **Chart or Report** pop-up screen displays.



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Click the **Explore Reports** option to display the data variables.

Environmental Justice Indexes

Pollution and Sources

Socioeconomic Indicators

[Unselect All]

☒ Particulate Matter 2.5

☒ 2017 Air Toxics Cancer Risk

☒ Lead Paint

☒ Hazardous Waste Proximity

☒ Ozone

☒ 2017 Air Toxics Respiratory HI

☒ Superfund Proximity

☒ Underground Storage Tanks

☒ Diesel Particulate Matter

☒ Traffic Proximity

☒ RMP Facility Proximity

☒ Wastewater Discharge

Environmental Justice Indexes

Pollution and Sources

Socioeconomic Indicators

[Unselect All]

☒ Particulate Matter 2.5

☒ 2017 Air Toxics Cancer Risk

☒ Lead Paint

☒ Hazardous Waste Proximity

☒ Ozone

☒ 2017 Air Toxics Respiratory HI

☒ Superfund Proximity

☒ Underground Storage Tanks

☒ Diesel Particulate Matter

☒ Traffic Proximity

☒ RMP Facility Proximity

☒ Wastewater Discharge

Environmental Justice Indexes

Pollution and Sources

Socioeconomic Indicators

[Unselect All]

☒ Demographic Index

☒ Unemployment Rate

☒ Under Age 5

☒ People of Color

☒ Linguistically Isolated

☒ Over Age 64

☒ Low Income

☒ Less Than High School Education

These data variables represent the data that can be displayed in the bar chart on the bottom half of the widget. As the default, all data layers in the chosen group are selected. Once a data layer is visible, it is displayed in the **Chart of Data Comparisons** as well as in the **Tabular Data** table (if currently visible).

For detailed descriptions of the Environmental Justice Indexes, Pollution and Sources, and Socioeconomic Indicators, see the glossary at <https://www.epa.gov/ejscreen/glossary-ejscreen-terms>.

### 3.4 Chart of Data Comparisons

Above the main chart in the **Explore Reports** option, there is a listing of which block group is currently selected for data display along with its State, EPA Region, and total population:

Block group 110010062021, DISTRICT OF COLUMBIA, EPA Region 3 (Population: 60)

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This graphic is slightly different for a buffer ring-based analysis, which displays the x,y coordinates of the center of the circle along with radius and aggregate population (estimated):

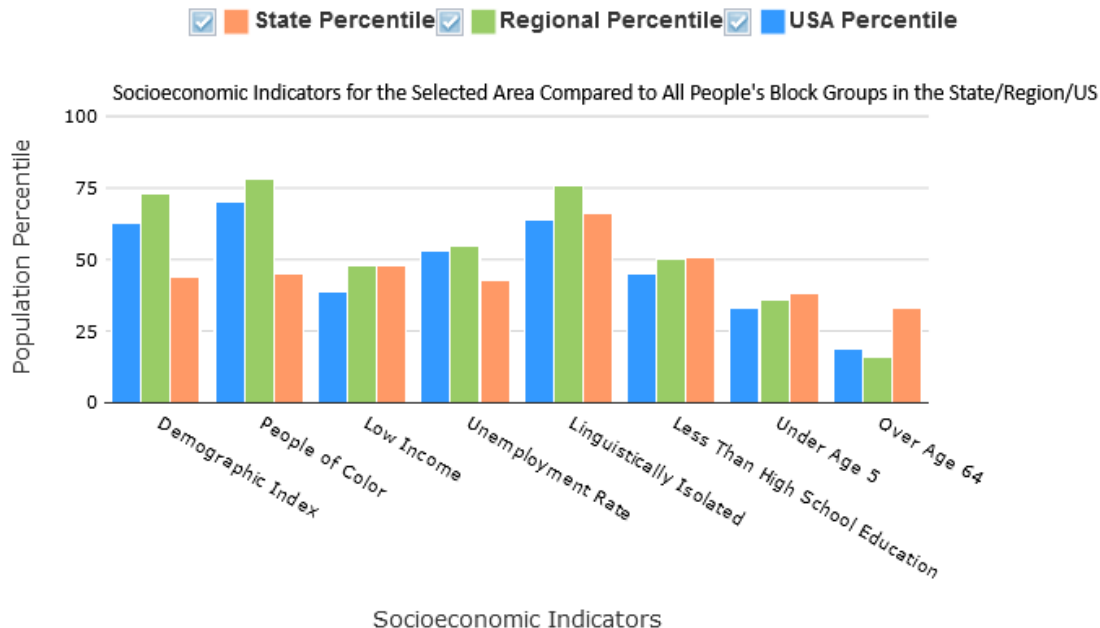
1 mile Ring Centered at 38.898723,-77.036531, DISTRICT OF COLUMBIA, EPA Region 3 (Population: 48,859)

Below the identifying text is a series of selection check boxes that allow the user to control which comparative geographies are visible on the chart. The chart is built to handle one geography (State, Region, or USA) or all three at the same time, so the user may select whichever comparison is most relevant.

☐ State Percentile ☐ Regional Percentile ☐ USA Percentile

The chart itself displays a series of bar graphs, comparing the currently selected area (either block group or buffered ring) to the state, regional and national statistics for each variable.

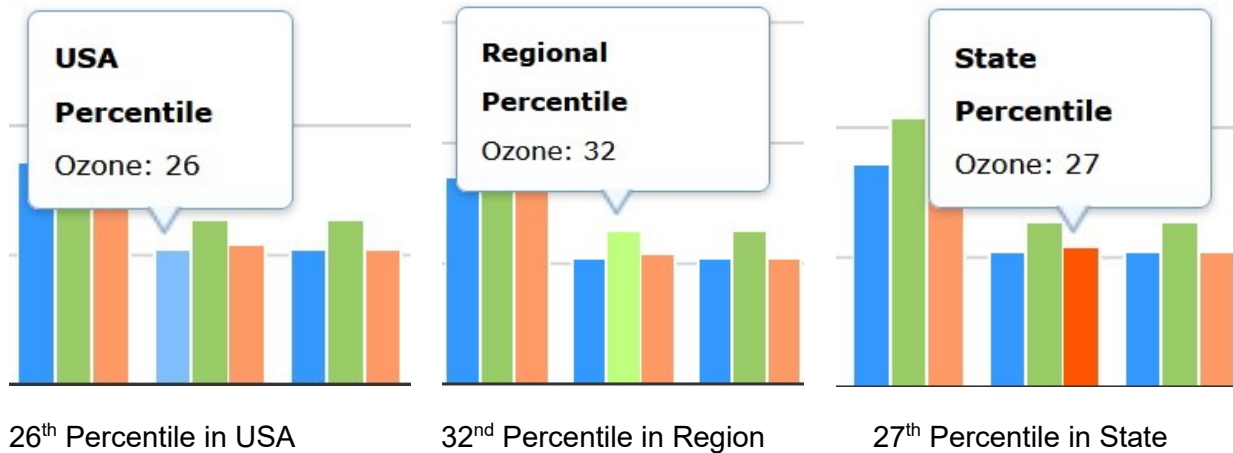
The y-axis of the chart runs from 0 to 100 showing percentiles. The x-axis displays different data variables, as selected by the user.



Pointing to a bar will show a pop-up window including the bar's geography, the variable displayed, and the percentile that the selected block group or ring represents when compared to a larger group. For example, if your area is at the 57<sup>th</sup> Percentile in the state, this means that for the average person the block group score is greater than (or equal to) 57% of the state population.



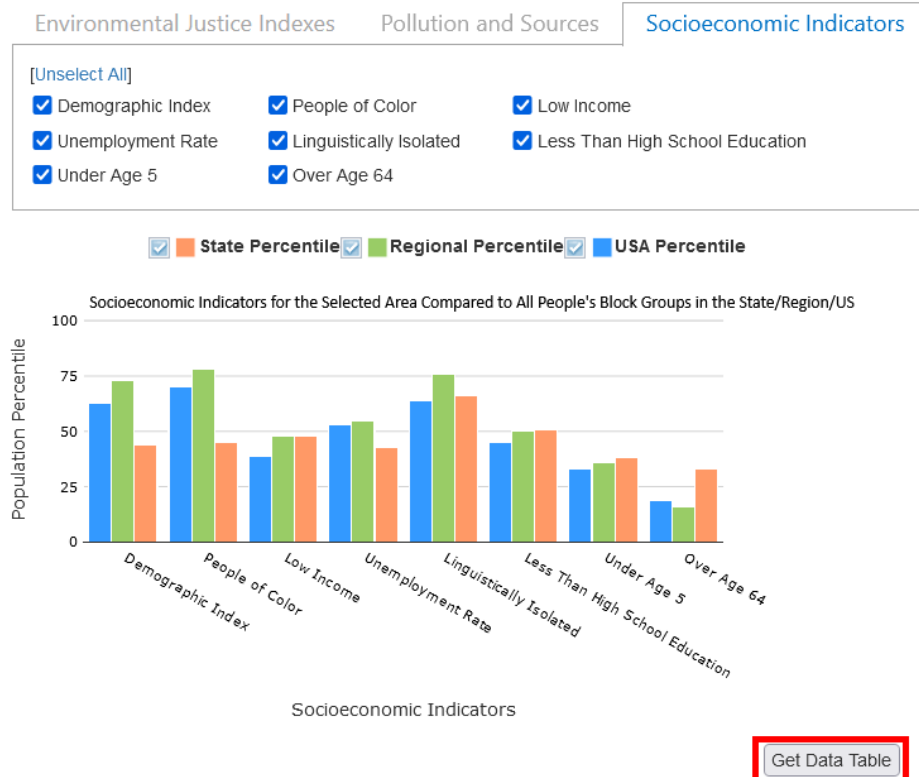
## EJScreen User Guide



### 3.5 Tabular View

Below the chart data, the **Get Data Table** button takes the displayed data and creates a table in a pop-up window within the application. Whichever variables are selected ("checked") in the data tables are displayed in this table.


EJ indexes do not display raw data, but the rest of the data types include a raw score, state average and percentile, regional average and percentile, and national average and percentile.



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Tabular View									
1 mile Ring Centered at 38.890786,-77.033422, DISTRICT OF COLUMBIA, EPA Region 3 (Population: 11,487)									
#	Category	Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
1	EJ Index	EJ Index for Particulate Matter 2.5			39		69		59
2	EJ Index	EJ Index for Ozone			39		69		59
3	EJ Index	EJ Index for Diesel Particulate Matter			39		71		60
4	EJ Index	EJ Index for 2017 Air Toxics Cancer Risk			39		70		59
5	EJ Index	EJ Index for 2017 Air Toxics Respiratory HI			39		70		59
6	EJ Index	EJ Index for Traffic Proximity			31		9		7
7	EJ Index	EJ Index for Lead Paint			34		55		38
8	EJ Index	EJ Index for Superfund Proximity			36		63		49
9	EJ Index	EJ Index for RMP Facility Proximity			36		59		49
10	EJ Index	EJ Index for Hazardous Waste Proximity			41		86		81
11	EJ Index	EJ Index for Underground Storage Tanks			42		77		68
12	EJ Index	EJ Index for Wastewater Discharge			53		83		73
13	Environmental	Particulate Matter 2.5 (ug/m3)	8.62	8.62	29	8.2	67	8.74	50

The user can adjust column widths, scroll through the table, and sort the table by clicking on the column heading. The tabular view also includes the block group Federal Information Processing Standards (FIPS) code, the state, EPA region and population. This table is functional for both the block group selection method and the buffer ring selection method.

In the top right-hand corner of the **Tabular View** window, there is a download icon  that will allow the user to download data as a text file. This functionality will save the tabular data to a comma separated value (CSV) file at a location of the user's choice. The data can be imported to a spreadsheet program or opened as a text file for archiving or future analysis.

### 3.6 Get Printable Standard Report

Any user who would like a more concrete representation of the data available in EJScreen can choose to export a PDF using the **Get Printable Standard Report** link on the **Chart or Report** widget.

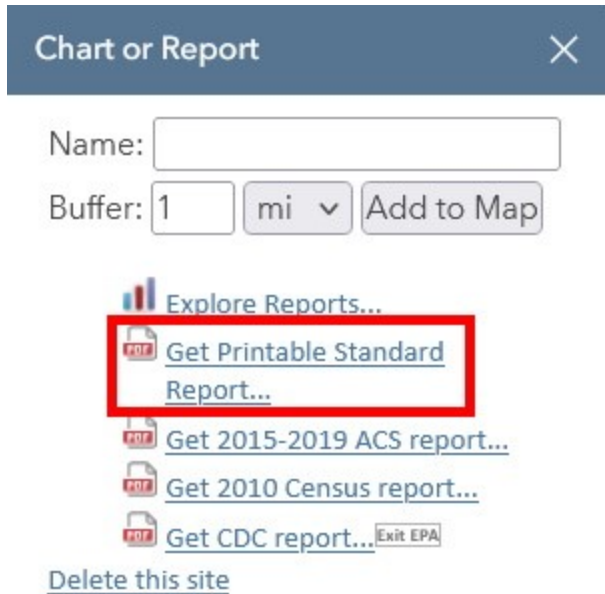


Chart or Report

Name:

Buffer:  mi

[Explore Reports...](#)

[Get Printable Standard Report...](#)

[Get 2015-2019 ACS report...](#)

[Get 2010 Census report...](#)

[Get CDC report...](#)

[Delete this site](#)

**NOTE:** It is important to wait for the report to finish creating, which may take 10 or more seconds. Do not click the **Get Printable Standard Report** link again until a report has been returned.

Once the report is created, the user will then have the option of saving the report as a PDF.



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## EJScreen Report (Version 2.0)

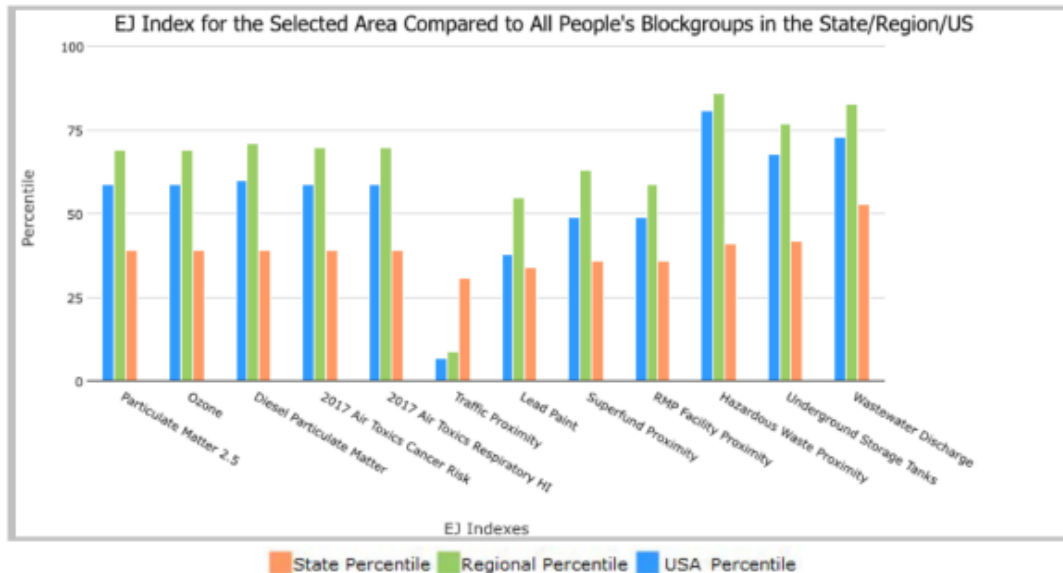


1 mile Ring Centered at 38.890786,-77.033422, DISTRICT OF COLUMBIA, EPA Region 3

Approximate Population: 11,487

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>Environmental Justice Indexes</b>			
EJ Index for Particulate Matter 2.5	39	69	59
EJ Index for Ozone	39	69	59
EJ Index for 2017 Diesel Particulate Matter*	39	71	60
EJ Index for 2017 Air Toxics Cancer Risk*	39	70	59
EJ Index for 2017 Air Toxics Respiratory HI*	39	70	59
EJ Index for Traffic Proximity	31	9	7
EJ Index for Lead Paint	34	55	38
EJ Index for Superfund Proximity	36	63	49
EJ Index for RMP Facility Proximity	36	59	49
EJ Index for Hazardous Waste Proximity	41	86	81
EJ Index for Underground Storage Tanks	42	77	68
EJ Index for Wastewater Discharge	53	83	73



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

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1/3



**Input Area (sq. miles): 3.14**



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## EJScreen Report (Version 2.0)



1 mile Ring Centered at 38.890786,-77.033422, DISTRICT OF COLUMBIA, EPA Region 3

Approximate Population: 11,487

Input Area (sq. miles): 3.14

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
<b>Pollution and Sources</b>							
Particulate Matter 2.5 ( $\mu\text{g}/\text{m}^3$ )	8.62	8.62	29	8.2	67	8.74	50
Ozone (ppb)	43	42.9	45	41.9	65	42.6	57
2017 Diesel Particulate Matter* ( $\mu\text{g}/\text{m}^3$ )	0.649	0.534	95	0.267	95-100th	0.295	90-95th
2017 Air Toxics Cancer Risk* (lifetime risk per million)	40	36	100	30	95-100th	29	95-100th
2017 Air Toxics Respiratory HI*	0.5	0.47	100	0.34	95-100th	0.36	95-100th
Traffic Proximity (daily traffic count/distance to road)	7300	3600	89	680	99	710	98
Lead Paint (% Pre-1960 Housing)	0.19	0.58	8	0.35	40	0.28	52
Superfund Proximity (site count/km distance)	0.22	0.24	66	0.15	85	0.13	87
RMP Facility Proximity (facility count/km distance)	0.48	0.65	44	0.63	64	0.75	58
Hazardous Waste Proximity (facility count/km distance)	38	17	95	1.9	99	2.2	99
Underground Storage Tanks (count/km <sup>2</sup> )	13	12	63	2.7	96	3.9	92
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.00064	0.0014	43	33	51	12	45
<b>Socioeconomic Indicators</b>							
Demographic Index	35%	46%	37	30%	68	36%	57
People of Color	39%	63%	27	33%	65	40%	57
Low Income	21%	28%	48	27%	46	31%	37
Unemployment Rate	7%	7%	57	5%	72	5%	69
Linguistically Isolated	4%	3%	73	3%	80	5%	69
Less Than High School Education	5%	9%	39	10%	31	12%	28
Under Age 5	2%	7%	18	6%	15	6%	14
Over Age 64	7%	12%	26	16%	12	16%	14

\* Diesel PM, air toxics cancer risk, and respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/haps>.

For additional information, see: [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice)

EJScreen is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJScreen outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

February 17, 2022

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## EJScreen User Guide

The **Printable Standard Report** will include the following:

- The latitude and longitude of the center of the buffered ring (Buffer ring selection)
- Approximate population
- The block group that the data represents (Block group selection)
- The state and EPA region that the data is encompassed by
- Input area (in square miles)
- A table of the number of sites reporting to EPA
- A table of all the variables available in the widget and for each variable the following:
  - Raw value (except EJ Indexes)
  - State average (except EJ Indexes)
  - State percentile
  - Regional average (except EJ Indexes)
  - Regional percentile
  - National average (except EJ Indexes)
  - National percentile
- The current date located at the bottom left each page
- A link to [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice) about the report and the tool

Zero is a known and valid value for a data element. NA (not available or “null”) means that no value was calculated for that data element. For example, Ozone and Particle Matter (PM) 2.5 concentrations were not available for Alaska, so all associated data elements are set to “null”.

Multiple reports can be created per session.



### EJScreen Report (Version 2.0)



1 mile Ring Centered at 38.890786,-77.033422, DISTRICT OF COLUMBIA, EPA Region 3

Approximate Population: 11,487

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>Environmental Justice Indexes</b>			
EJ Index for Particulate Matter 2.5	39	69	59
EJ Index for Ozone	39	69	59
EJ Index for 2017 Diesel Particulate Matter*	39	71	60
EJ Index for 2017 Air Toxics Cancer Risk*	39	70	59
EJ Index for 2017 Air Toxics Respiratory HI*	39	70	59
EJ Index for Traffic Proximity	31	9	7
EJ Index for Lead Paint	34	55	38
EJ Index for Superfund Proximity	36	63	49
EJ Index for RMP Facility Proximity	36	59	49
EJ Index for Hazardous Waste Proximity	41	86	81
EJ Index for Underground Storage Tanks	42	77	68
EJ Index for Wastewater Discharge	53	83	73

### 3.7 Get 2015-2019 ACS Report or 2010 Census Report


Two demographic report options are available under the **Chart or Report** option.


The **Get 2015-2019 ACS report** link provides a report with US Census Bureau American Community Survey (ACS) data in PDF format.


**Chart or Report** ×


Name:


Buffer:   ▼

 [Explore Reports...](#)

 [Get Printable Standard Report...](#)

 [Get 2015-2019 ACS report...](#)

 [Get 2010 Census report...](#)

 [Get CDC report...](#)


[Delete this site](#)


The **Get 2010 Census report** link provides a report with data from the US Census Bureau, Census 2010 Summary File 1 in PDF format.


**Chart or Report** ×


Name:


Buffer:   ▼

 [Explore Reports...](#)

 [Get Printable Standard Report...](#)

 [Get 2015-2019 ACS report...](#)

 [Get 2010 Census report...](#)

 [Get CDC report...](#)

[Delete this site](#)

### 3.8 Get CDC Report

The **Get CDC report** link links to a Centers for Disease Control and Prevention (CDC) report with environmental health issues for the county.

Chart or Report

×

Name:


Buffer:


1


mi


▼


Add to Map

 [Explore Reports...](#)

 [Get Printable Standard Report...](#)

 [Get 2015-2019 ACS report...](#)

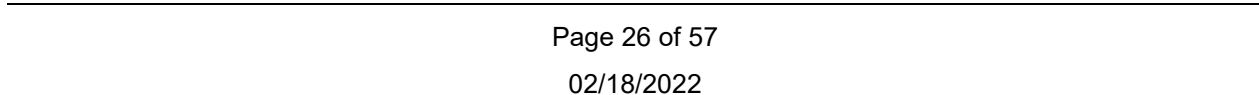
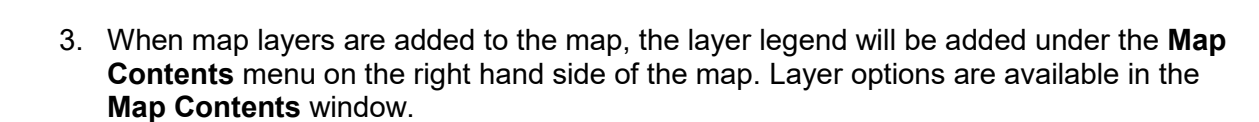
 [Get 2010 Census report...](#)

 [Get CDC report...](#) [Exit EPA](#)

[Delete this site](#)

The **Maps** widget is intended to allow users to add EJScreen and other supplementary map data along with web maps from ArcGIS Online or EPA GeoPlatform Online.

1. Locate the **Maps** icon at the top left of the application.
2. Click the **Maps** icon to display the map options.





## EJScreen User Guide

### 4.1 EJScreen Maps

The **Maps** option allows users to display the EJ Indexes, as well as the environmental indicators, and demographic indicators which comprise the EJ Indexes as color-coded (thematic) maps. The data available for each of the layer groups are shown below:

The image displays three instances of the EJScreen Maps tool interface, each showing a different selection of map layers. Each interface includes a top toolbar with icons for layers, location, map type, and settings, and a comparison selector (Compare to US, Compare to State).

**Left Interface:** The 'Environmental Justice Indexes' category is selected. The list of variables includes: Particulate Matter 2.5, Ozone, Diesel Particulate Matter, 2017 Air Toxics Cancer Risk, 2017 Air Toxics Respiratory HI, Traffic Proximity, Lead Paint, Superfund Proximity, RMP Facility Proximity, Hazardous Waste Proximity, Underground Storage Tanks, and Wastewater Discharge. Other categories shown are Pollution and Sources, Socioeconomic Indicators, Health Disparities, Climate Change Data, Critical Service Gaps, and More Demographics.

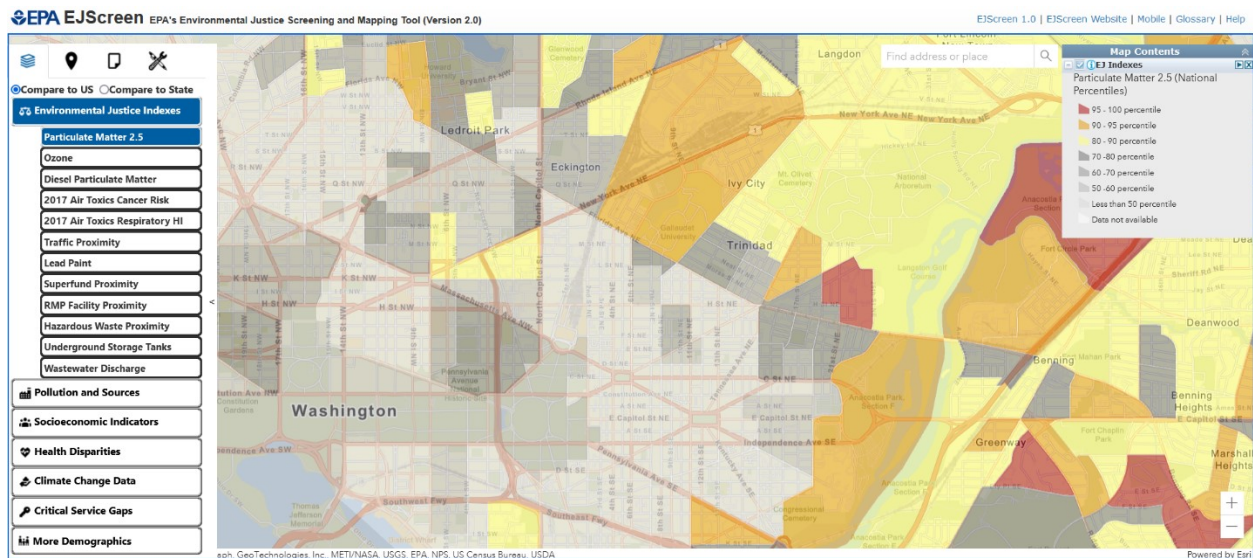
**Middle Interface:** The 'Pollution and Sources' category is selected. The list of variables includes: Particulate Matter 2.5, Ozone, Diesel Particulate Matter, 2017 Air Toxics Cancer Risk, 2017 Air Toxics Respiratory HI, Traffic Proximity, Lead Paint, Superfund Proximity, RMP Facility Proximity, Hazardous Waste Proximity, Underground Storage Tanks, and Wastewater Discharge. Other categories shown are Environmental Justice Indexes, Socioeconomic Indicators, Health Disparities, Climate Change Data, Critical Service Gaps, and More Demographics.

**Right Interface:** The 'Socioeconomic Indicators' category is selected. The list of variables includes: Demographic Index, People of Color, Low Income, Unemployment Rate, Linguistically Isolated, Less Than High School Education, Under Age 5, and Over Age 64. Other categories shown are Environmental Justice Indexes, Pollution and Sources, Health Disparities, Climate Change Data, Critical Service Gaps, and More Demographics.

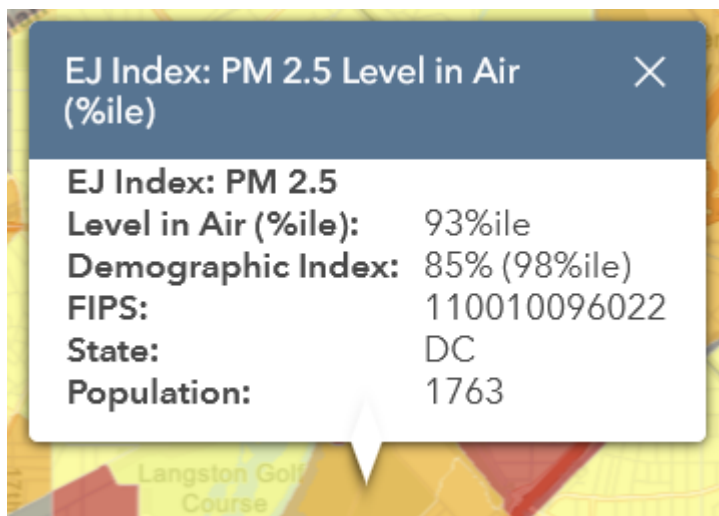
1. When the **Maps** tool is opened, Compare to US is selected as the default. To change the selections, click the Compare to State radio button if desired, select a Category, then select a Variable from the menu and then click the Add to Map button.
2. This will add a map layer that will display the selected variable based on national or state percentile groups as indicated in the **legend** added under map contents to the right hand side of the map.



# EJScreen User Guide



3. Clicking on a block group when any of the **Map EJ Indexes** layers are activated will show a pop-up window that includes the location's blockgroup ID, state, population count, indicator values, and national or state percentile.

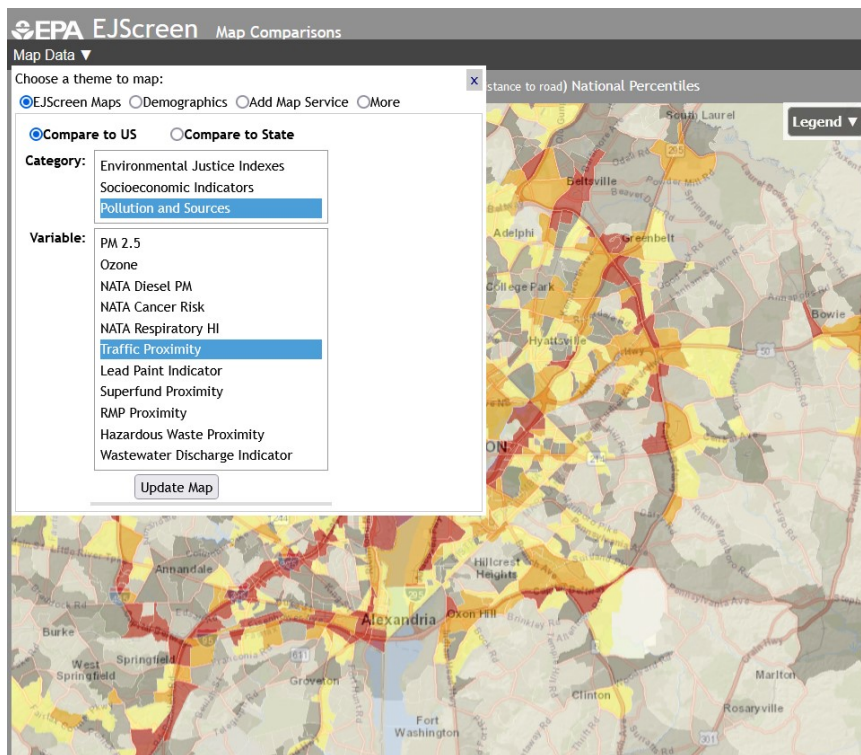


## 4.2 Side by Side Comparisons

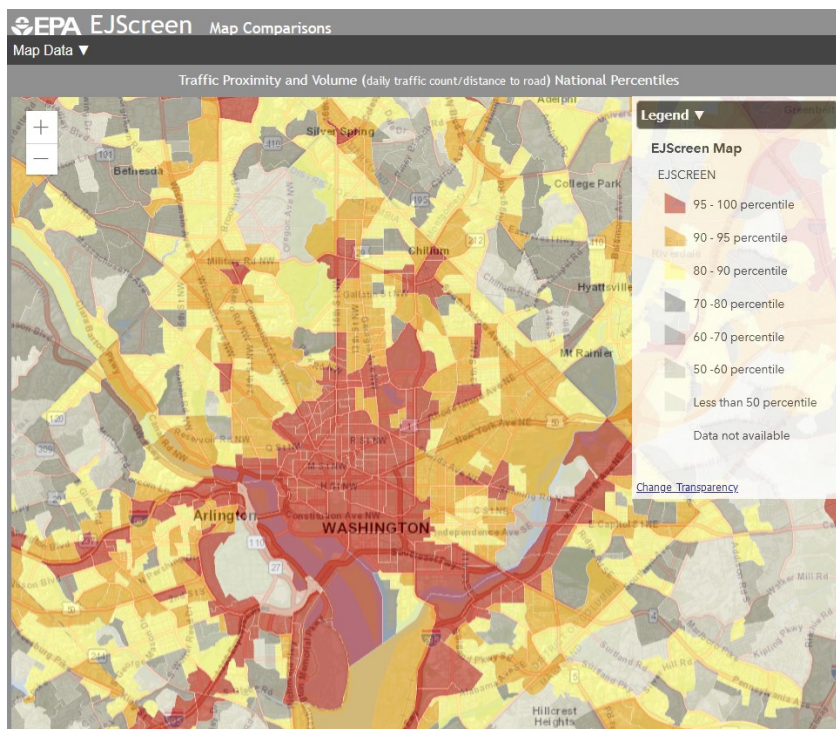
Located in the **Tools** widget, the **Side by Side Comparisons** option allows users to compare different map layers for a location on side-by-side maps in a new window.

1. When the **Side by Side Comparison** tool is opened, Traffic Proximity and Volume and Pct Ratio of Income to Poverty Level <2.0 are selected as the default map data. To change the selections, click the Map Data button, then select a layer from the menu, and then click the Update Map button. This will update the map to display the selected layer.

## EJScreen User Guide

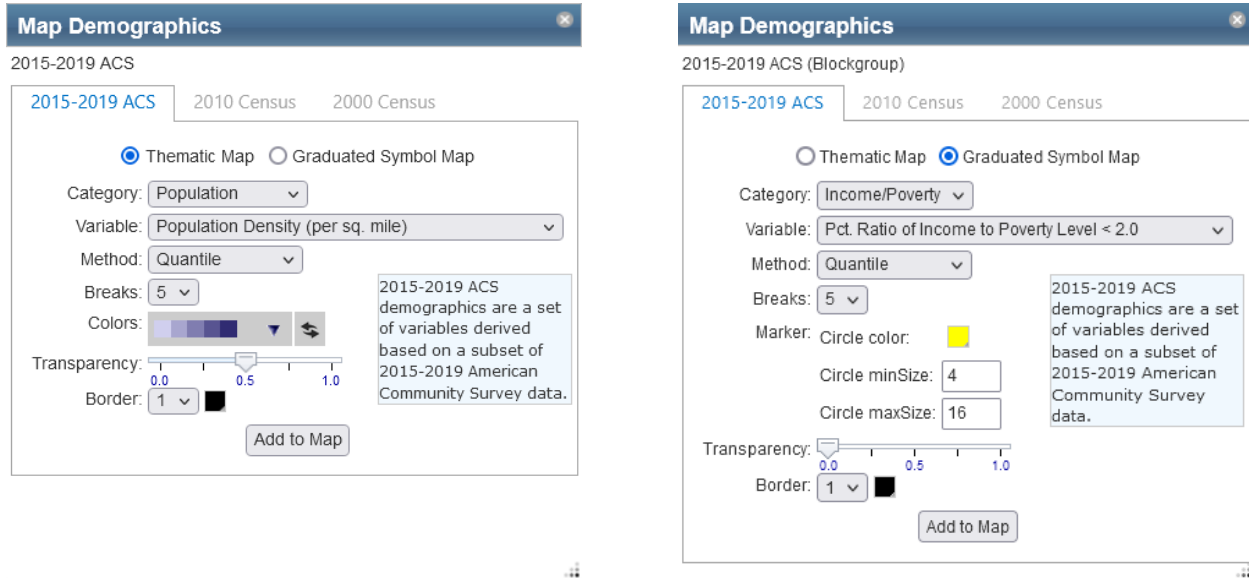


2. To display the Legend, click the Legend button in the upper right hand corner of the map.



### 4.3 More Demographics

Located in the **Maps** widget, the **More Demographics** option allows users to display supplementary demographic information from the Census Bureau in the map.

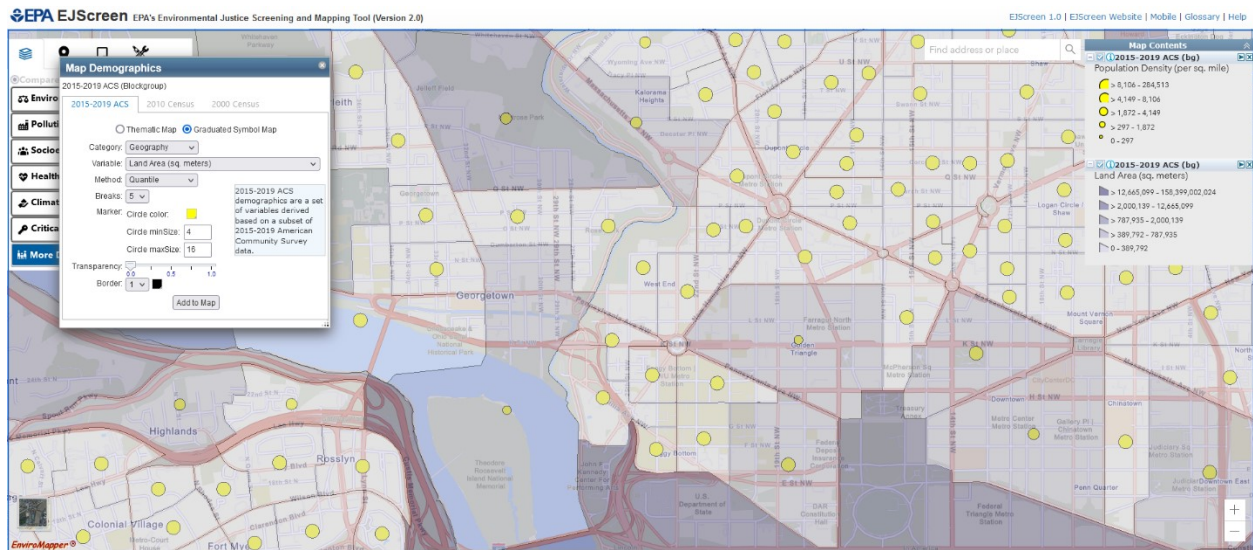


Demographic Data is available for 2015-2019 ACS, 2010 Census, and 2000 Census. Categories and variables depend on the data set. All Demographic options allow selection of method, breaks, colors, transparency and border.

1. Click the tab for the dataset.
2. Choose either Thematic Map or Graduated Symbol Map.
3. Choose Category from the dropdown menu.
4. Select Variable from dropdown menu.
5. Adjust Method, Breaks, Colors or Marker, Transparency, and Border, if desired.
6. Click the **Add to Map** button to add layer to map and to the Select Map Contents Menu and legend.



# EJScreen User Guide



## 4.4 Add Shapefile

Located in the **Tools** widget, the **Add Shapefile** option can be used to add a saved shapefile from a user's computer. When the file is selected from the computer, the layer will be added in the map contents panel. Please note that users should exercise caution when uploading a shapefile that may contain sensitive or confidential data.

### Add Shapefile

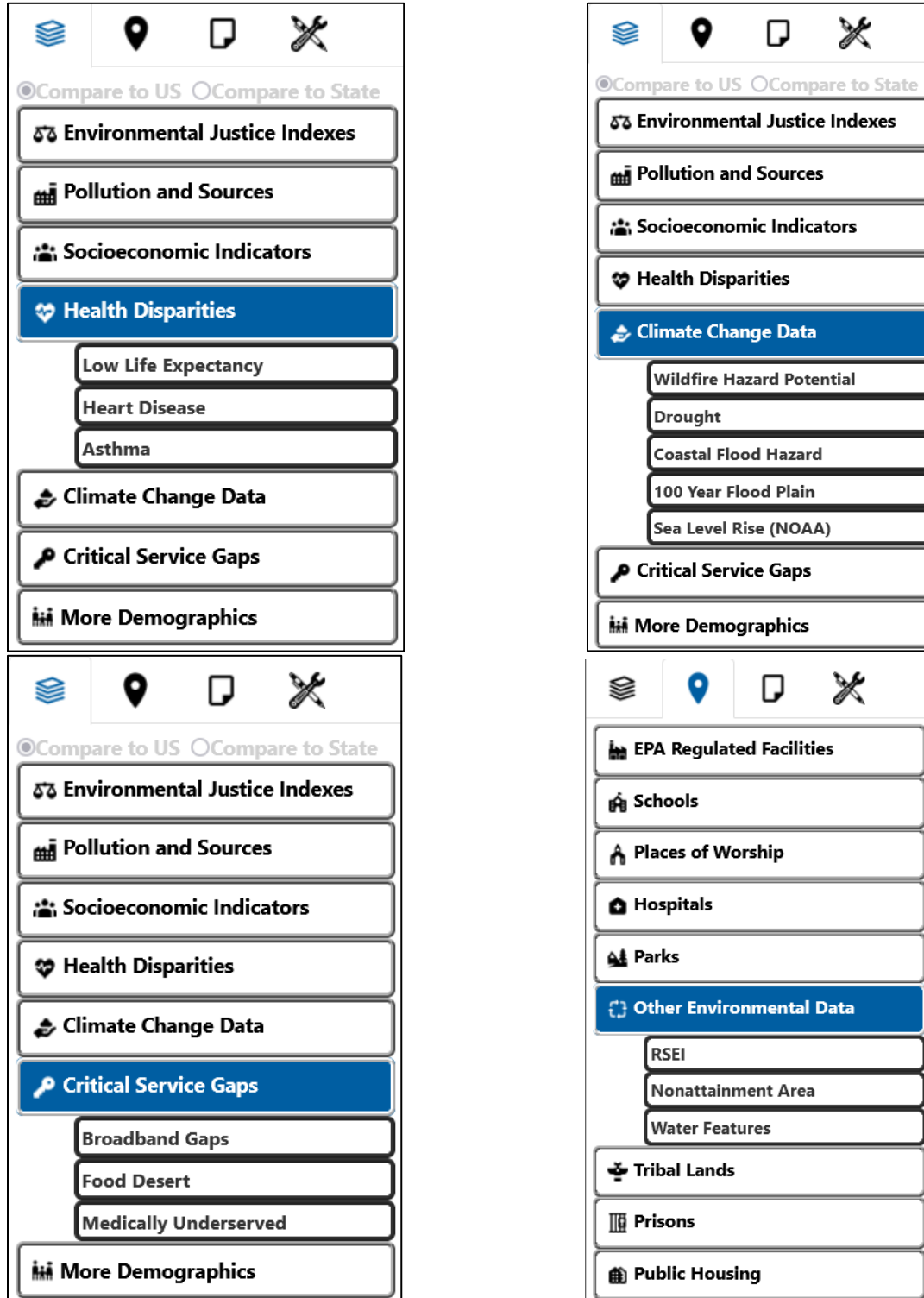
Click the "Add File" button to browse your computer and select a **zipped** shapefile.  
*(Note: The shapefile needs to be less than 10MB in size and have less than 4,000 point features or 2,000 linear or polygonal features. Visit the [Shapefiles](#) website for more information and limitations.)*

**Add File**

Users should exercise caution when uploading a shapefile that may contain sensitive or confidential data.

### 4.5 Additional Layers in Maps and Places Widgets

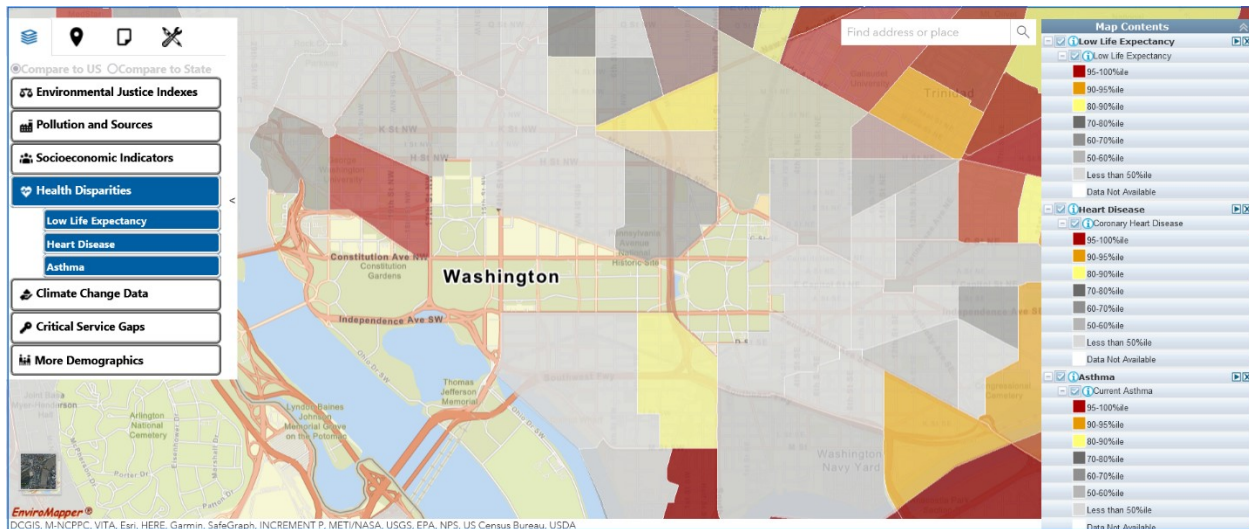
Layer markers are available under the **Maps** and **Places** widgets, which are shown below:



### 4.5.1 Health Disparities

This map service contains locational data for the following Health Disparities: Low Life Expectancy, Heart Disease, and Asthma.

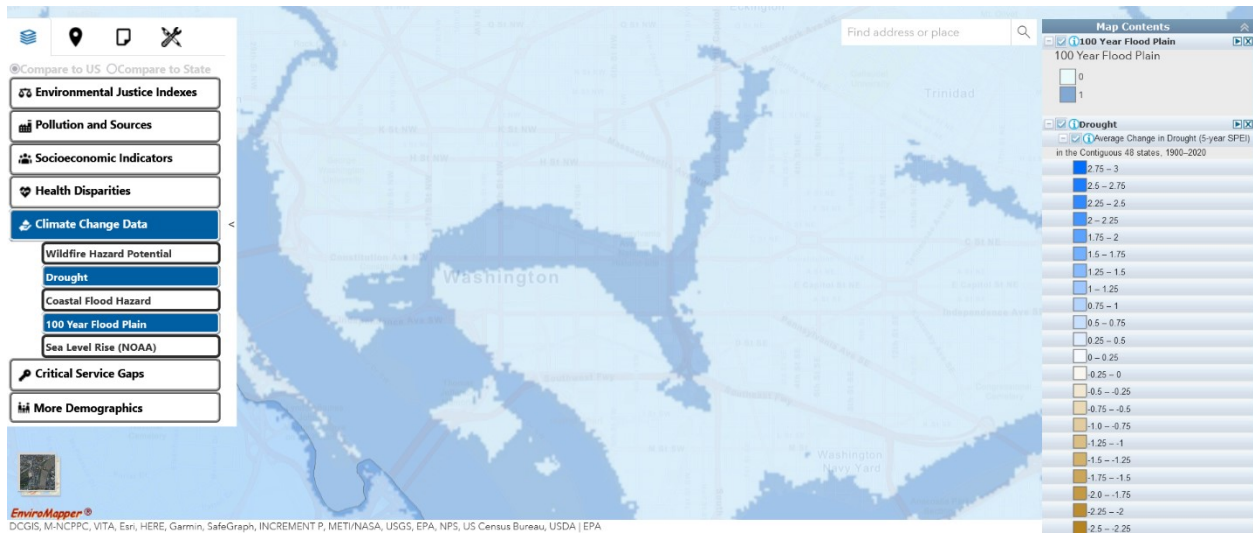
1. Click the **Maps** icon in the Widget toolbar.
2. Click the **Health Disparities** icon to display a dropdown list.
3. Click one or more of the following: **Low Life Expectancy**, **Heart Disease**, or **Asthma**.
4. Selected Health Disparities will be added to the Map Contents menu.
5. Checked boxes are added as layers to the map.



### 4.5.2 Climate Change Data

This map service contains locational data for Climate Change Data: Wildfire Hazard Potential, Drought, Coastal Flood Hazard, 100 Year Flood Plain, and Sea Level Rise (NOAA).

1. Click the **Maps** icon in the Widget toolbar.
2. Click the **Climate Change** icon to display a dropdown list.
3. Click one or more of the following: **Wildfire Hazard Potential**, **Drought**, **Coastal Flood Hazard**, **100 Year Flood Plain**, and **Sea Level Rise (NOAA)**.
4. Selected Climate Change Data will be added to the Map Contents menu.
5. Checked boxes are added as layers to the map.

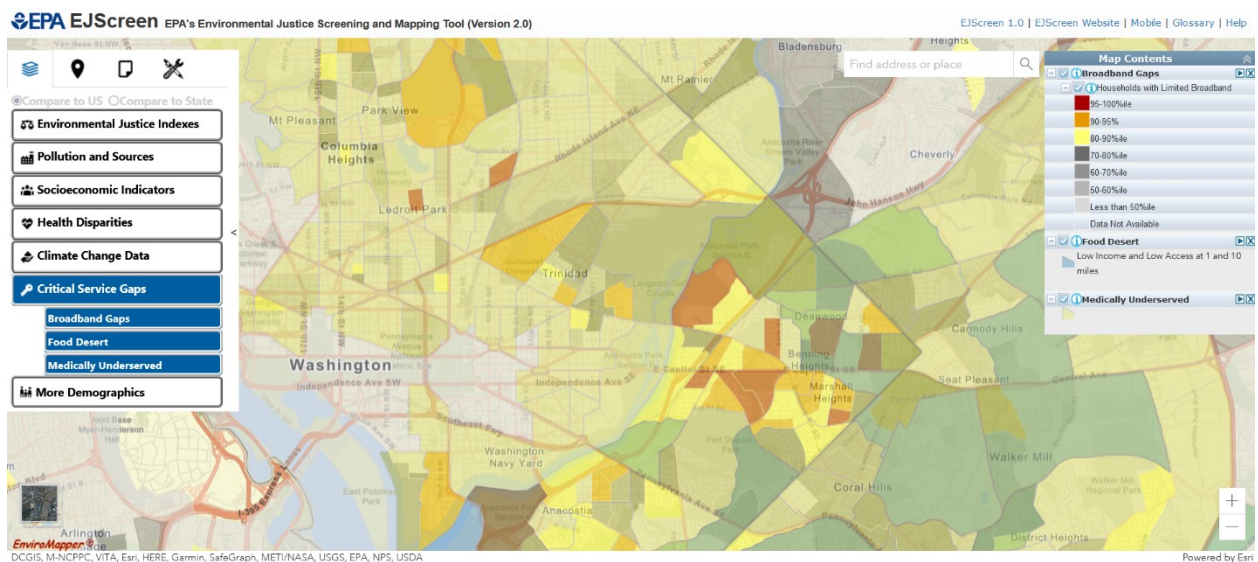


## EJScreen User Guide

### 4.5.3 Critical Service Gaps

This map service contains locational data for Critical Service Gaps: Broadband Gaps, Food Desert, and Medically Underserved.

1. Click the **Maps** icon in the Widget toolbar.
2. Click the **Critical Services Gaps** icon to display a dropdown list.
3. Click one or more of the following: **Broadband Gaps**, **Food Desert**, and **Medically Underserved**.
4. Selected Critical Service Gaps will be added to the Map Contents menu.
5. Checked boxes are added as layers to the map.



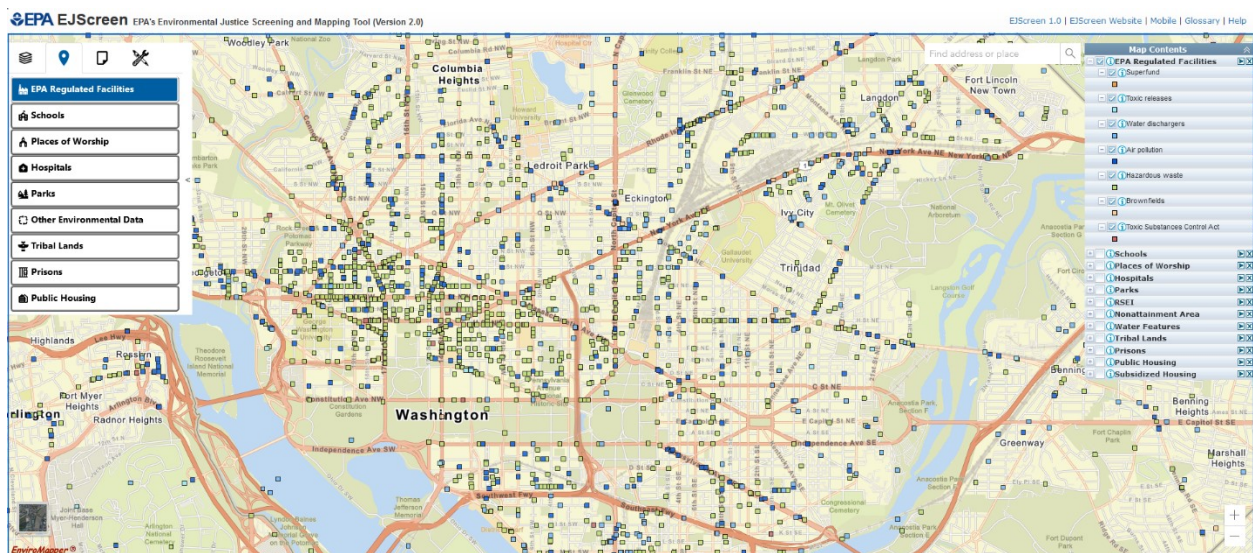


## EJScreen User Guide

### 4.5.4 EPA Regulated Facilities

This map service contains locational data for EPA Regulated Facilities: Superfund, Toxic releases, Water dischargers, Air pollution, Hazardous waste, Brownfields, and Toxic Substances Control Act.

1. Click the **Places** icon in the Widget toolbar.
2. Click the **EPA Regulated Facilities** icon.
3. EPA Regulated Facilities will be added to the Map Contents menu.
4. Click one or more of the following in the Map Contents menu: **Superfund, Toxic releases, Water dischargers, Air pollution, Hazardous waste, Brownfields, and Toxic Substances Control Act.**
5. Checked boxes are added as layers to the map.

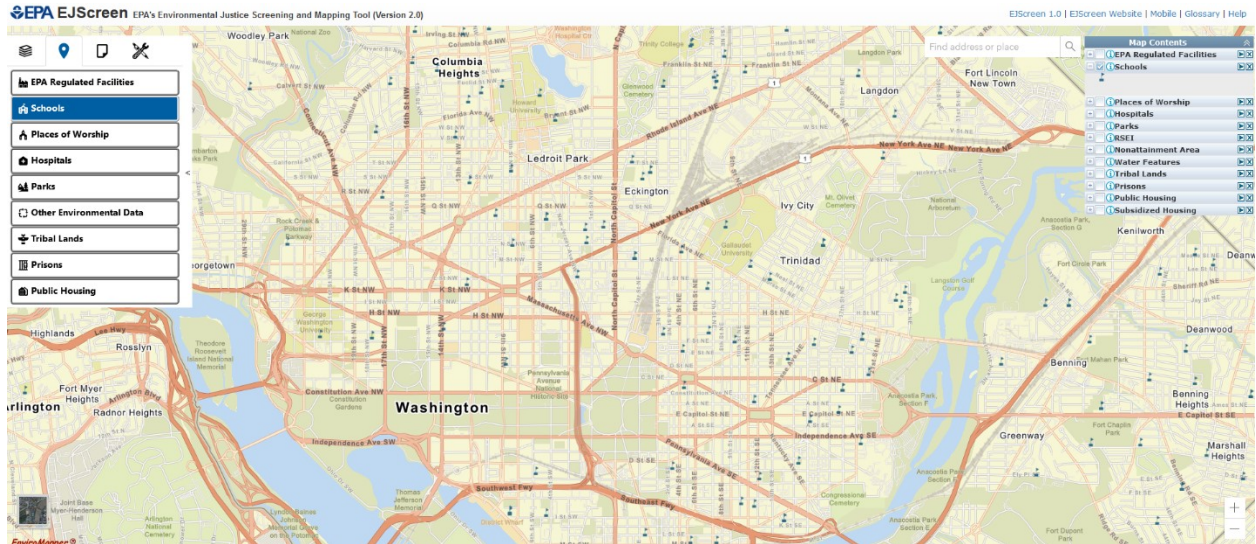


## EJScreen User Guide

### 4.5.5 Schools

This map service contains locational data for public Schools via the National Center for Education Statistics (NCES) map service.

1. Click the **Places** icon in the Widget toolbar.
2. Click the **Schools** icon.
3. Schools will be added to the Map Contents menu.
4. Checked box is added as a layer to the map.

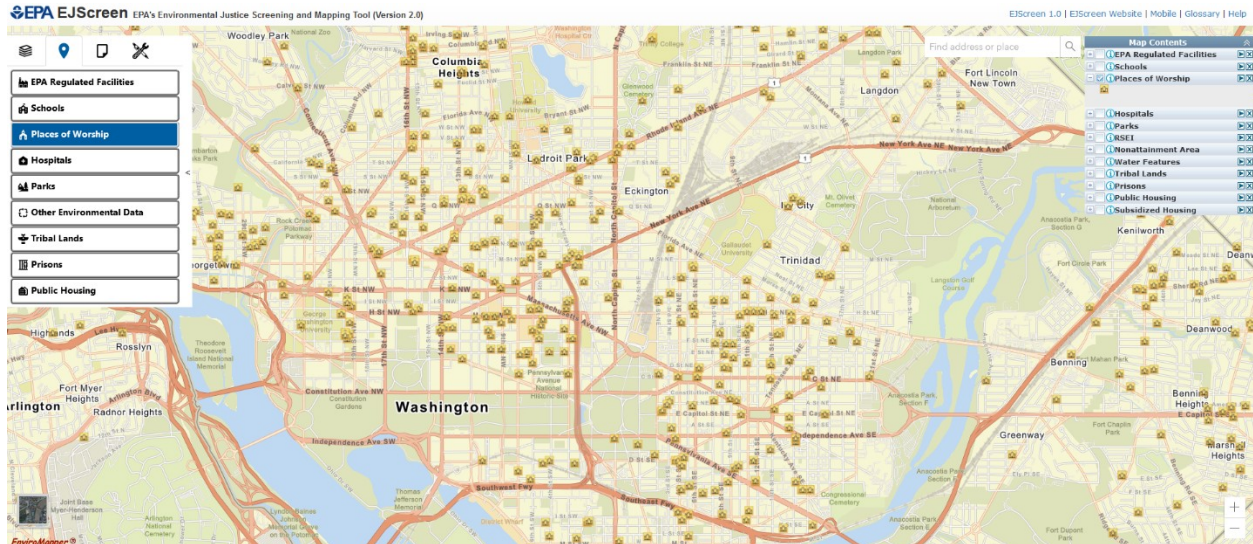


## EJScreen User Guide

### 4.5.6 Places of Worship

This map service contains locational data for Places of Worship via the United States Geological Survey (USGS) Geographic Names Information System (GNIS) service.

1. Click the **Places** icon in the Widget toolbar.
2. Click the **Places of Worship** icon.
3. Places of Worship will be added to the Map Contents menu.
4. Checked box is added as a layer to the map.



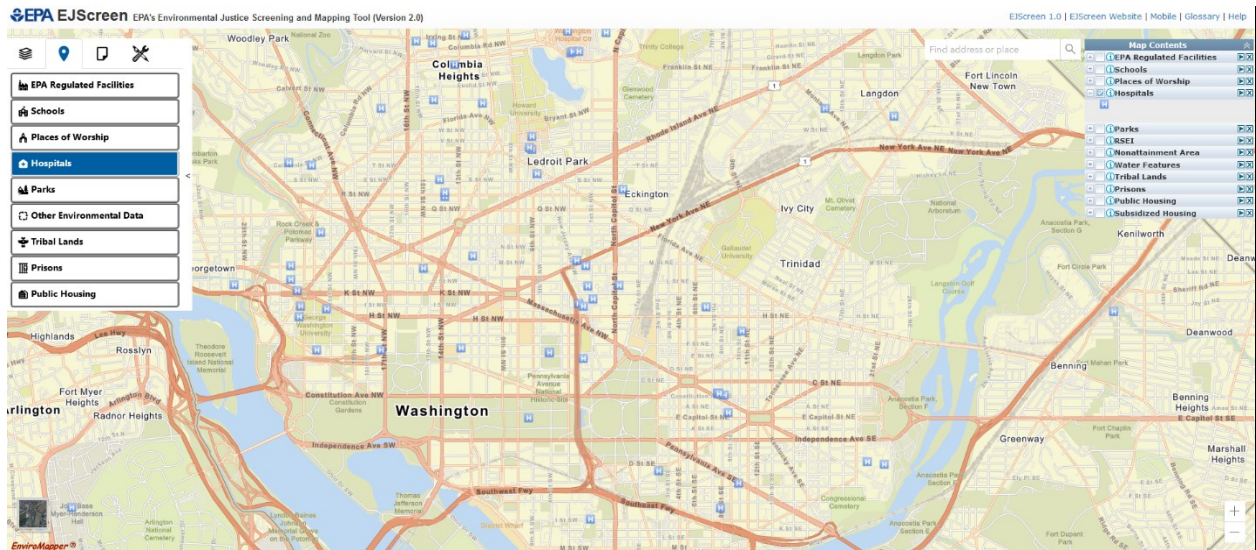


## EJScreen User Guide

### 4.5.7 Hospitals

This map service contains locational data for Hospitals via the United States Geological Survey (USGS) Geographic Names Information System (GNIS) service.

1. Click the **Places** icon in the Widget toolbar.
2. Click the **Hospitals** icon.
3. Hospitals will be added to the Map Contents menu.
4. Checked box is added as a layer to the map.

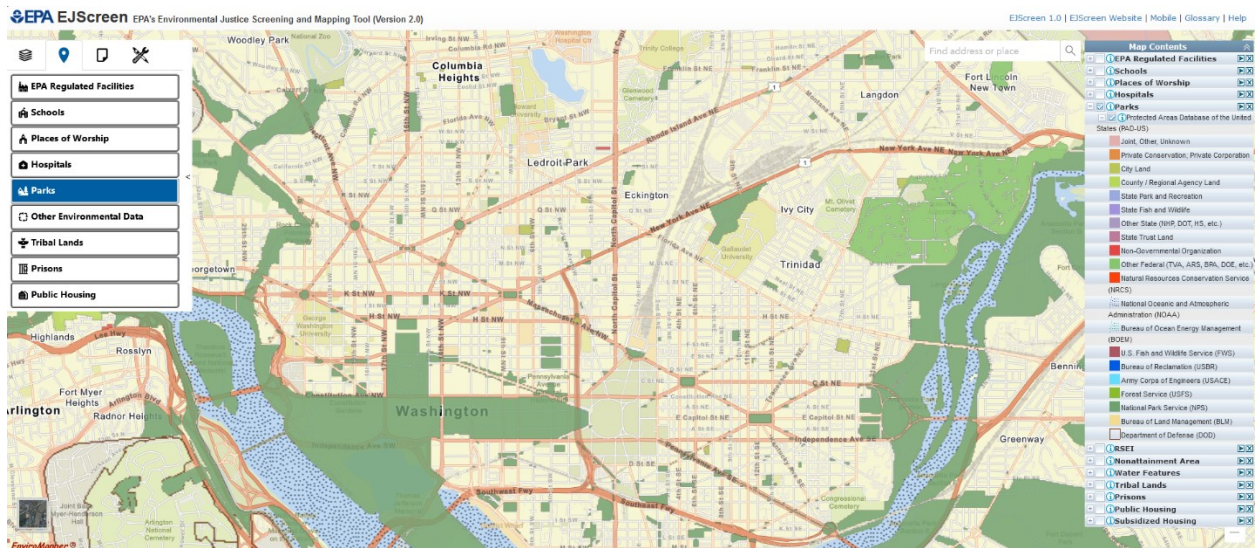


## EJScreen User Guide

### 4.5.8 Parks

This map service illustrates and describes public land ownership represented in the Protected Areas Database of the United States (PAD-US). The database is published by the United States Geologic Survey (USGS), Core Science Systems, Core Science Analytics and Synthesis, National GAP Analysis Program.

1. Click the **Places** icon in the Widget toolbar.
2. Click the **Parks** icon.
3. Parks will be added to the Map Contents menu.
4. Checked box is added as a layer to the map.

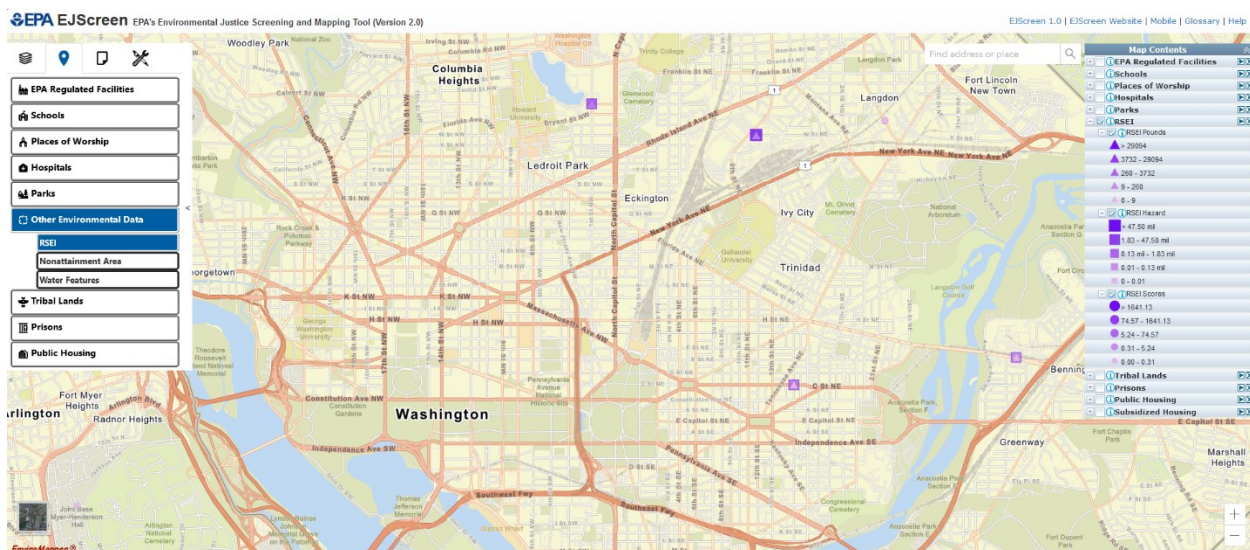


## EJScreen User Guide

### 4.5.9 RSEI

EPA's Risk-Screening Environmental Indicators (RSEI) model helps policy makers, researchers, and communities explore data on releases of toxic substances from industrial and federal facilities. RSEI incorporates information from the Toxics Release Inventory (TRI) on the amount of toxic chemicals released, together with factors such as the chemical's fate and transport through the environment, each chemical's relative toxicity, and potential human exposure. RSEI model results can be used to help establish priorities for further investigation and to look at changes in potential human health impacts over time. Further information is available at the [RSEI website](#).

1. Click the **Places** icon in the Widget toolbar.
2. Click the **Other Environmental Data** icon to display a list.
3. Click **RSEI**.
4. Click one or more of the following in the Map Contents menu: **RSEI Pounds**, **RSEI Hazard**, and **RSEI Scores**.
5. Checked boxes are added as a layer to the map.



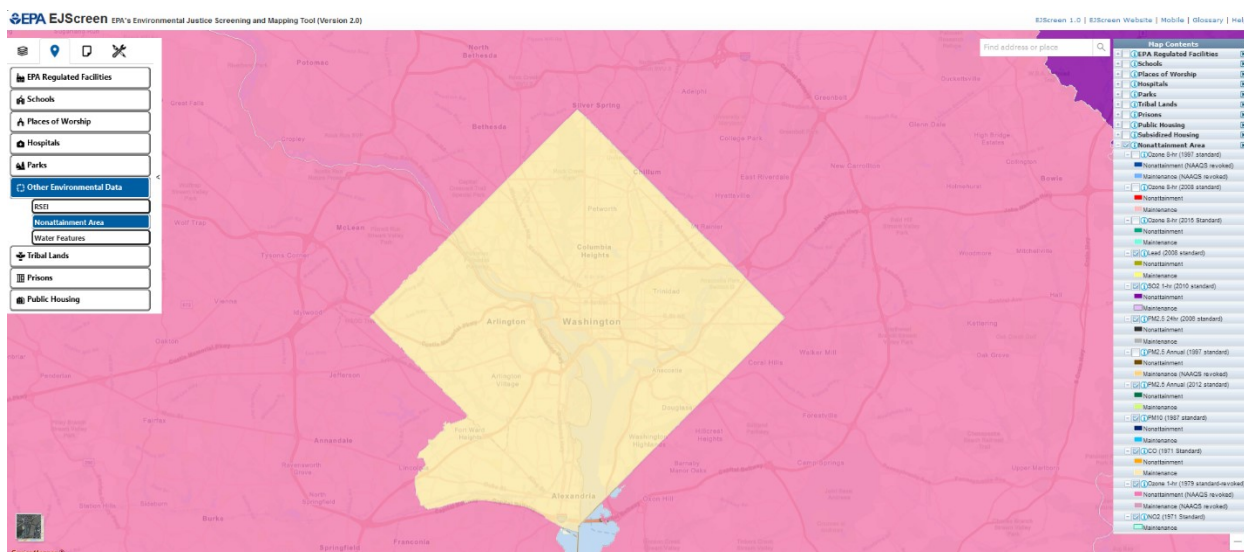


## EJScreen User Guide

### 4.5.10 Nonattainment Area

This map service contains publicly available nonattainment areas data published by EPA. Further information on EPA nonattainment areas can be found at <https://www.epa.gov/green-book>.

1. Click the **Places** icon in the Widget toolbar.
2. Click the **Other Environmental Data** icon to display a list.
3. Click **Nonattainment Area**.
4. Click one or more of the following in the Map Contents menu: **Ozone 8-hr (1997 standard)**, **Ozone 8-hr (2008 standard)**, **Ozone 8-hr (2015 Standard)**, **Lead (2008 standard)**, **SO2 1-hr (2010 standard)**, **PM2.5 24hr (2006 standard)**, **PM2.5 Annual (1997 standard)**, **PM2.5 Annual (2012 standard)**, **PM10 (1987 standard)**, **CO (1971 Standard)**, **Ozone 1-hr (1979 standard-revoked)**, and **NO2 (1971 Standard)**.
5. Checked boxes are added as a layer to the map



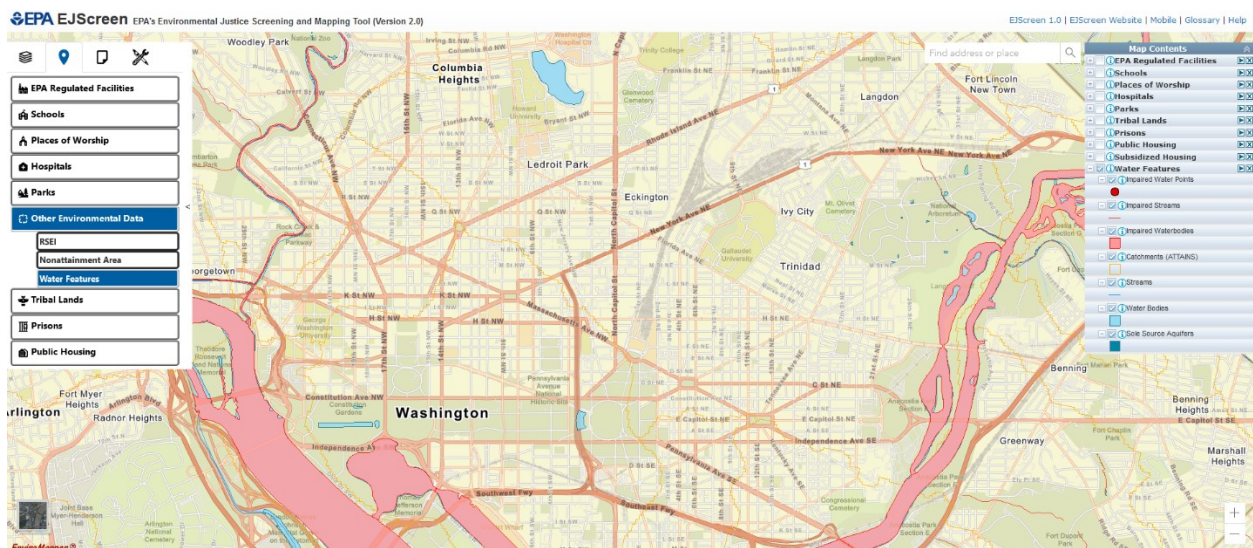


## EJScreen User Guide

### 4.5.11 Water Features

This map service contains Water and Hydrological layers for Impaired Streams, Impaired Waterbodies, Streams, Water Bodies, Sole Source Aquifers, Watersheds (HUC12), and Watersheds (HUC8).

1. Click the **Places** icon in the Widget toolbar.
2. Click the **Other Environmental Data** icon to display a list.
3. Click **Water Features**.
4. Click one or more of the following in the Map Contents menu: **Impaired Water Points, Impaired Streams, Impaired Waterbodies, Catchments (ATTAINS), Streams, Water Bodies, and Sole Source Aquifers**.
5. Checked boxes are added as a layer to the map.

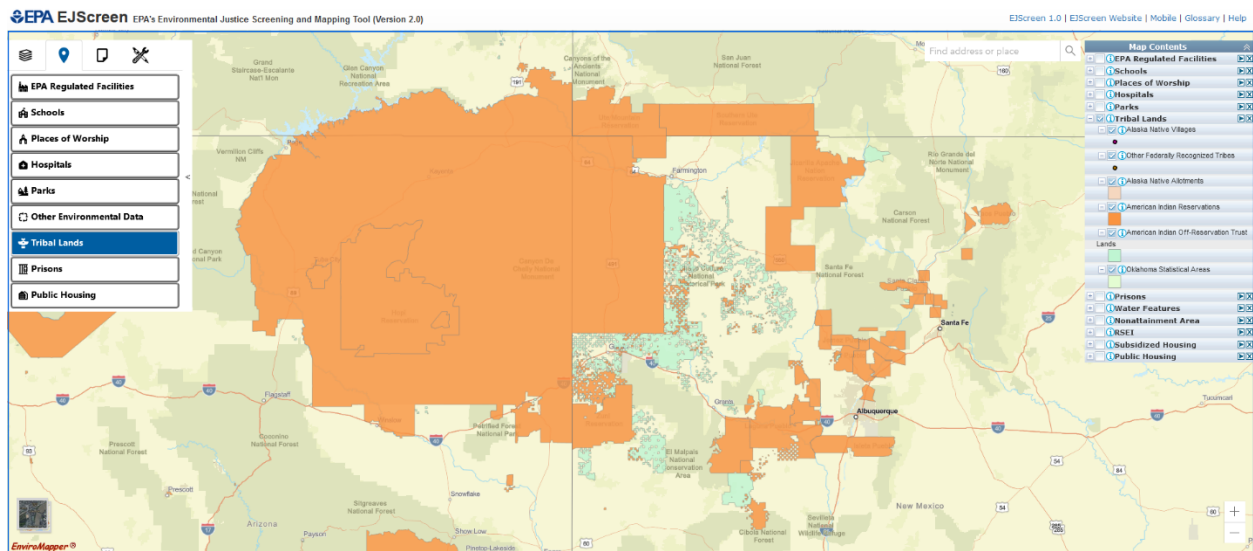


## EJScreen User Guide

### 4.5.12 Tribal Lands

This map service contains tribal areas for lower 48 states and Alaska Native Villages, Alaska Native Allotments, and Alaska Reservations in Alaska.

1. Click the **Places** icon in the Widget toolbar.
2. Click the **Tribal Lands** icon.
3. Tribal Lands will be added to the Map Contents menu.
4. Click one or more of the following in the Map Contents menu: **Alaska Native Villages, Other Federally Recognized Tribes, Alaska Native Allotments, American Indian Reservations, American Indian Off-Reservation Trust Lands, or Oklahoma Statistical Areas.**
5. Checked boxes are added as layers to the map.

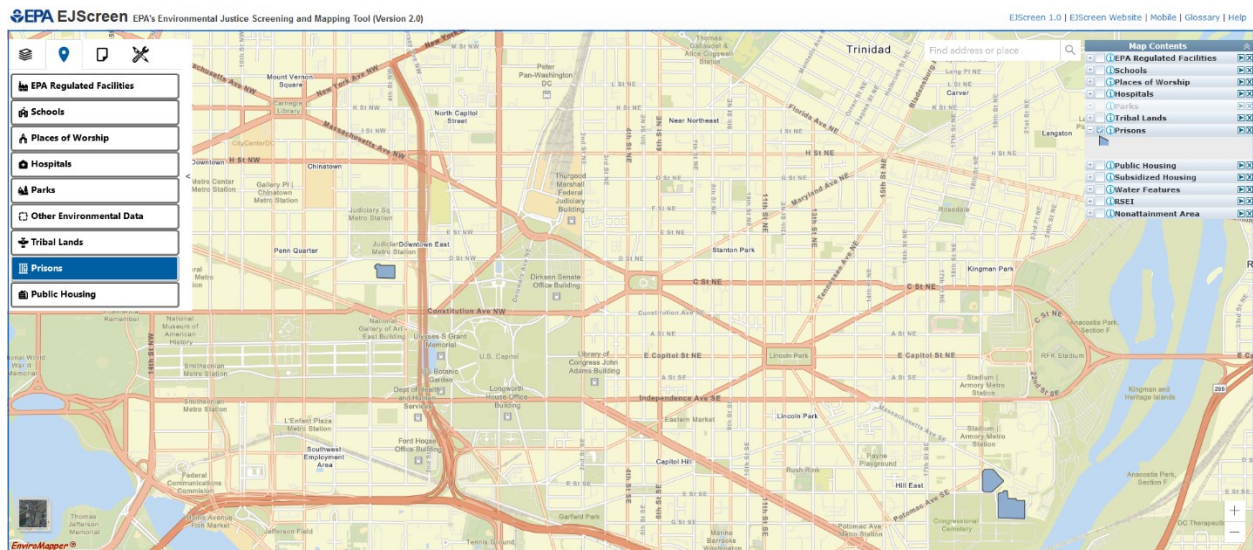


## EJScreen User Guide

### 4.5.13 Prisons

The prison boundary feature class contains secure detention facilities. These facilities range in jurisdiction from federal (excluding military) to local governments. Polygon geometry is used to describe the extent of where the incarcerated population is located (fence lines or building footprints). Further information is available at the [Department of Homeland Security](#).

1. Click the **Places** icon in the Widget toolbar.
2. Click the **Prisons** icon.
3. Prisons will be added to the Map Contents menu.
4. Checked box is added as a layer to the map.

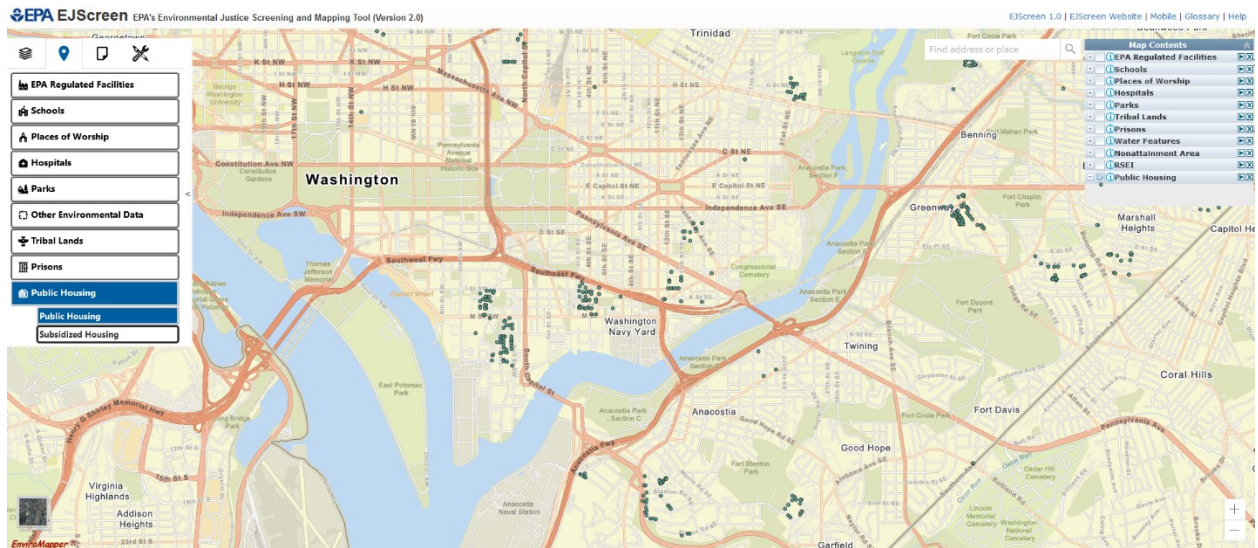


## EJScreen User Guide

### 4.5.14 Public Housing

This map service contains Public Housing data from the United States Department of Housing and Urban Development.

1. Click the **Places** icon in the Widget toolbar.
2. Click the **Public Housing** icon to display a list.
3. Click **Public Housing**.
4. Public Housing will be added to the Map Contents menu.
5. Checked box is added as a layer to the map.



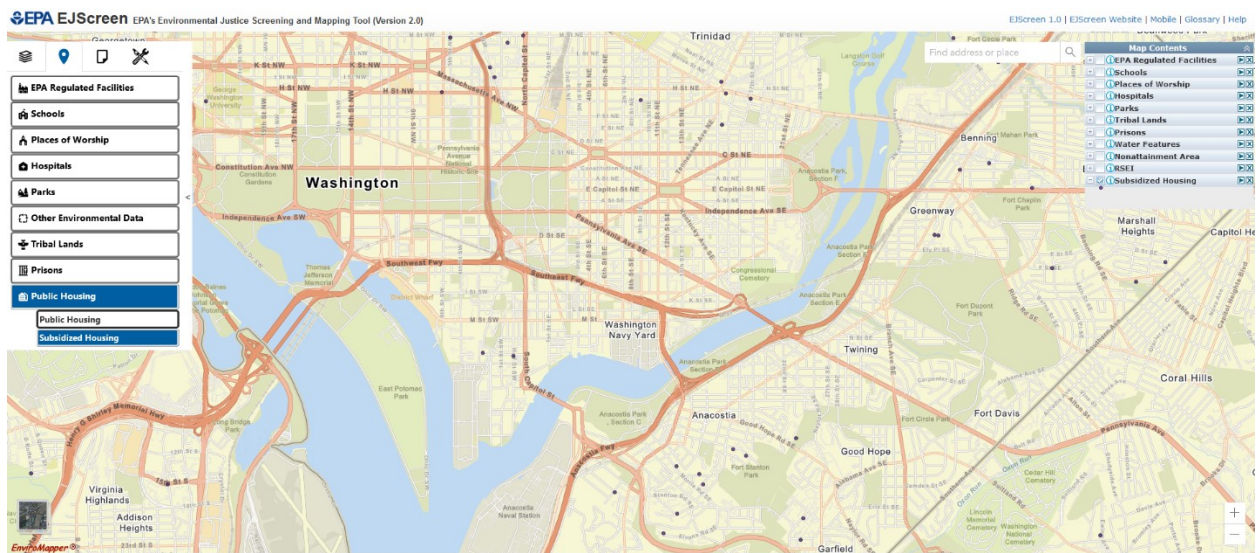


## EJScreen User Guide

### 4.5.15 Subsidized Housing

This map service contains Multifamily Properties Assisted data from the United States Department of Housing and Urban Development. HUD Multifamily Housing property portfolio consists primarily of rental housing properties with five or more dwelling units such as apartments or town houses, but can also be nursing homes, hospitals, elderly housing, mobile home parks, retirement service centers, and occasionally vacant land.

1. Click the **Places** icon in the Widget toolbar.
2. Click the **Public Housing** icon to display a list.
3. Click **Subsidized Housing**.
4. Subsidized Housing will be added to the Map Contents menu.
5. Checked box is added as a layer to the map.

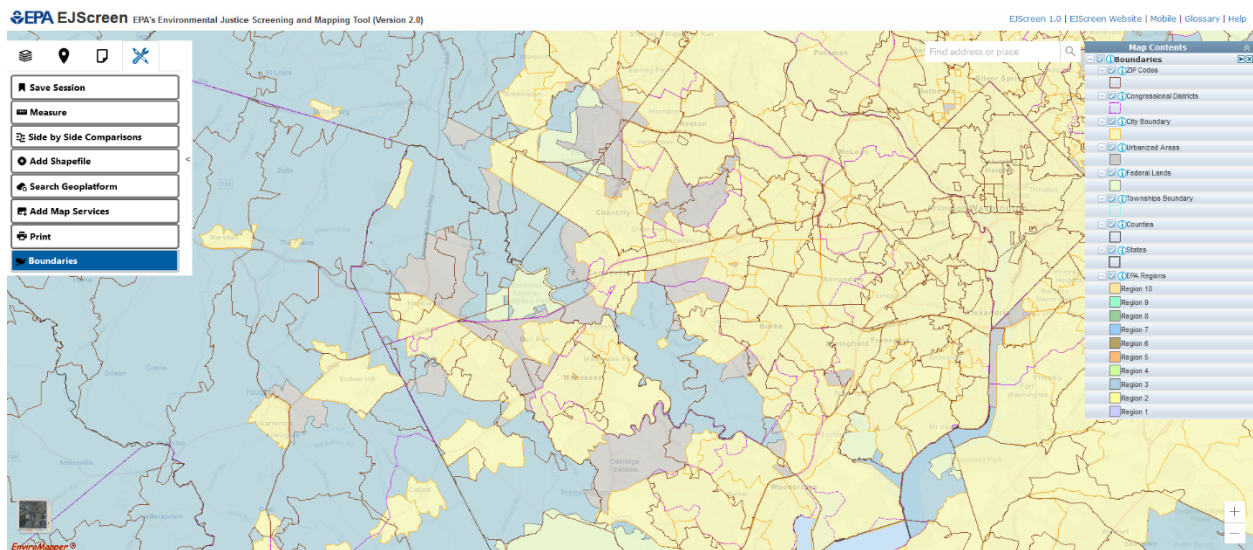


## EJScreen User Guide

### 4.5.16 Boundaries

This map service contains boundary data for ZIP Codes, Congressional Districts, City Boundary, Urbanized Areas, Federal Lands, Townships Boundary, Counties, States, and EPA Regions.

1. Click the **Tools** icon in the Widget toolbar.
2. Click the **Boundaries** icon.
3. Click one or more of the following in the Map Contents menu: **ZIP Codes, Congressional Districts, City Boundary, Urbanized Areas, Federal Lands, Townships Boundary, Counties, States, and EPA Regions**
4. Checked boxes are added as a layer to the map.



### 5. Search for Maps

Click the **Tools** icon to search for maps via the Geoplatform or to add publicly available data from the web.

#### 5.1 Search Geoplatform

Search Geoplatform allows the user to search content on ArcGIS Online. Users with an account through ArcGIS.com can click "Sign In" on the top-right corner to sign in and view additional available information through the platform.


Search Geoplatform

Enter keyword to search:  Search


OR [Sign In](#) to search for maps in your ArcGIS account (EPA employees can use single sign on)

☐ Only search within map view


8 Map Services/Web Maps found:

  
Add

**2010 US Estimated Private Domestic Wells**  
This map provides estimated private domestic wells for the United States by Census block and block group.  
Map Service by ahal05\_EPA  
Last Modified: Fri Jul 09 2021  
(0 ratings, 0 comments, 25942 views)

  
Add

**EPA Smart Growth and Community Revitalization Projects**  
EPA Community Revitalization Technical Assistance Projects conducted by the Office of Community Revitalization in cooperation with EPA Regional Offices, Federal and regional partner agencies, and local communities.  
Web Map by arouk\_EPA  
Last Modified: Mon Jul 12 2021  
(0 ratings, 0 comments, 31284 views)

  
Add

**EPA-Enhanced Qualified Opportunity Zones**  
This layer contains census tracts that have been designated as Qualified Opportunity Zones and contains additional data determined by the EPA to be of interest to users who are seeking revitalization-oriented information about these tracts.  
Feature Service by arouk\_EPA  
Last Modified: Mon Mar 01 2021  
(0 ratings, 0 comments, 3247 views)

1. Default layers available for selection include Map of RSEI Hazard, Map of RSEI Scores, Map of RSEI pounds, and Qualified Opportunity Zones.
2. To search for additional layers, enter a keyword in the **Enter keyword to search** text box. Press Enter on the keyboard or click **Search**.



## EJScreen User Guide

### Search Geoplatform

Enter keyword to search: FRS Public Map Service

Search

OR [Sign In](#) to search for maps in your ArcGIS account (EPA employees can use single sign on)

3. Search results display in the window.


### Search Geoplatform

Enter keyword to search: FRS Public Map Service Search

OR [Sign In](#) to search for maps in your ArcGIS account (EPA employees can use single sign on)


☐ Only search within map view

**48 Map Services/Web Maps found:**




**Air Monitoring Grant**  
Map to aid in applying for Air Quality/monitoring grant  
Feature Service by lmartin\_jeffersoncounty  
Last Modified: Tue Feb 01 2022  
(0 ratings, 0 comments, 3203 views)

Add



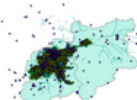
**Air\_Resources\_WFL1**  
air related features  
Feature Service by jcassels  
Last Modified: Wed Mar 14 2018  
(0 ratings, 0 comments, 19581 views)

Add



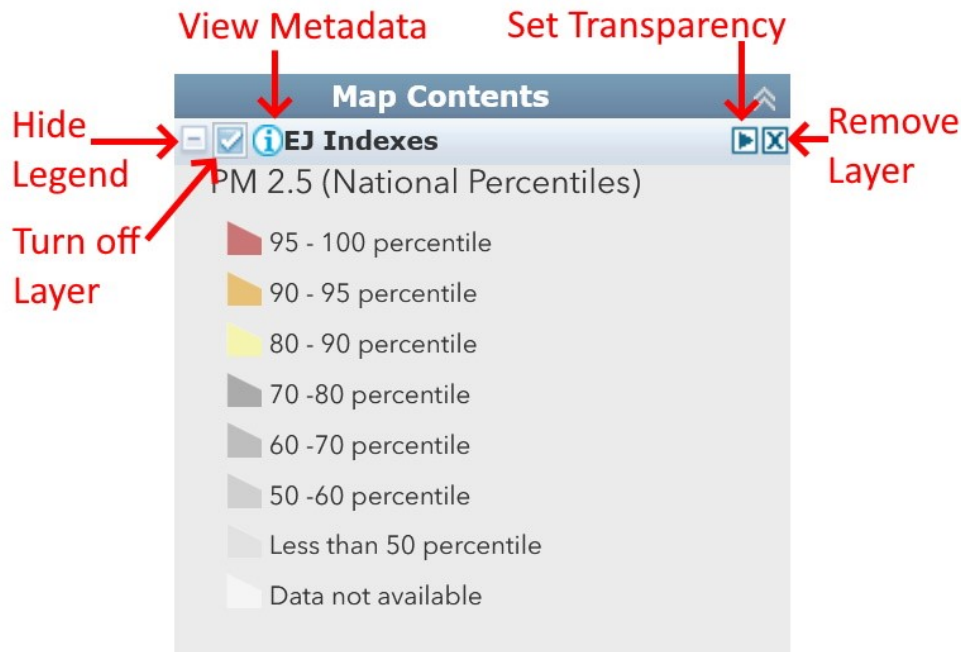
**Alabama Environmental Protection Agency (EPS) Facility Registry Service (FRS) Wastewater Treatment Plants**  
This map shows all Environmental Protection Agency Facility Registry Service wastewater treatment plants in the State of Alabama.  
Web Map by jessica.pack\_alhub  
Last Modified: Tue Jul 13 2021  
(0 ratings, 0 comments, 56 views)

Add



**BG\_RUCK**  
Response to Urban Contamination in Karst for Bowling Green, Kentucky  
Feature Service by wkuchnqes

4. Click **Add** to add a layer to the **Select Map Contents** menu.
5. The layers can be controlled or toggled on and off in the **Map Contents** menu.



### 5.2 Add Map Services

The Add Map Services allows a user to add publicly available data from the web to the map.

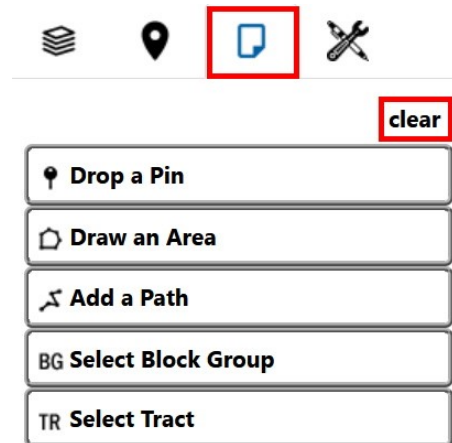
1. Select from the options by clicking the appropriate radio button.
2. Enter a valid publicly available URL in the URL text box.
3. Enter the Service title in the text box if desired.
4. Click the **Add to Map** button.

The 'Add Map Services' dialog box contains the following elements: a title bar with a close button; a bold instruction to choose an option and enter a URL; four radio button options (ArcGIS Server Web Service, OGC Web Service, KML/KMZ, GeoRSS) with KML/KMZ selected; a text box for the URL containing 'https://www.epa.gov/airnow/today/airnow\_today.kml'; a red note stating 'The KML/KMZ url must be publicly accessible.'; a text box for the service title; a blue 'Add to Map' button highlighted with a red rectangle; and a sample URL at the bottom: 'https://files.airnowtech.org/airnow/today/airnow\_today.kml'.

### 6. Clear Selected Locations

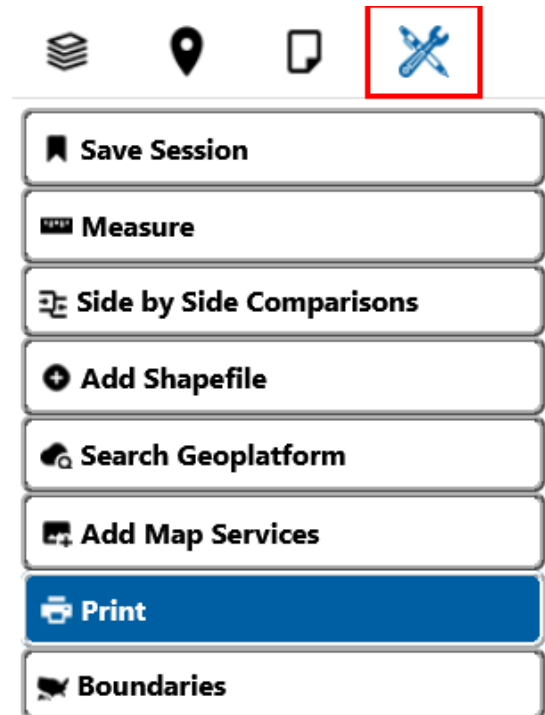
Use **Clear Selected Locations** to remove any drawings or selections from the map.

1. Click the **Reports** icon at the top left of the application.
2. Click the **clear** label at the top of the dropdown list.
3. All added drawings and measurement markers will be removed from the map.

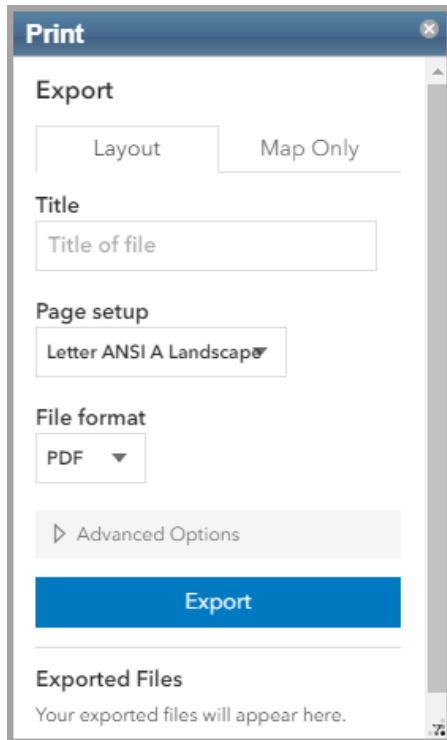


### 7. Print Widget

Use **Print** to print the map shown on your personal device.



1. Click the **Tools** icon at the top left of the application.
2. Click the **Print** icon.
3. The print map option allows you to select various page setups and format.

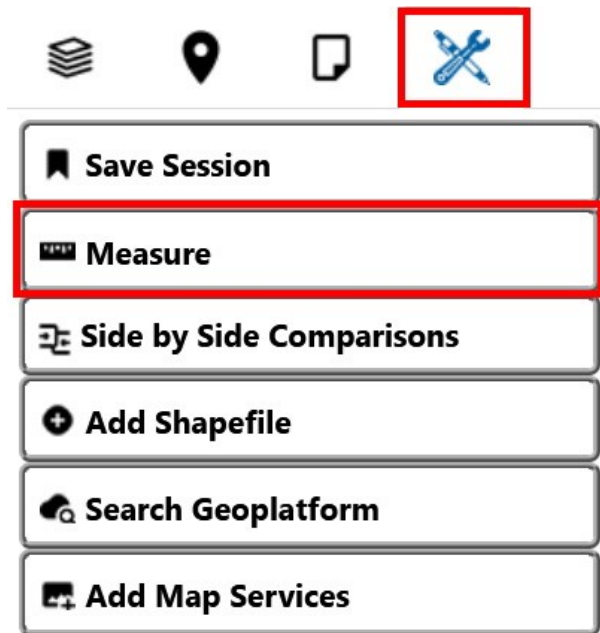


4. For printing a map and its associated legend, choose the Layout option.

### 8. Measure Widget

The **Measure** feature allows the user to measure geographic distance as well obtain the longitude and latitude for a location on the map.

1. Click the **Tools** icon at the top left of the application.
2. Click the **Measure** icon.




The **Measure** pop-up window displays after clicking the icon.

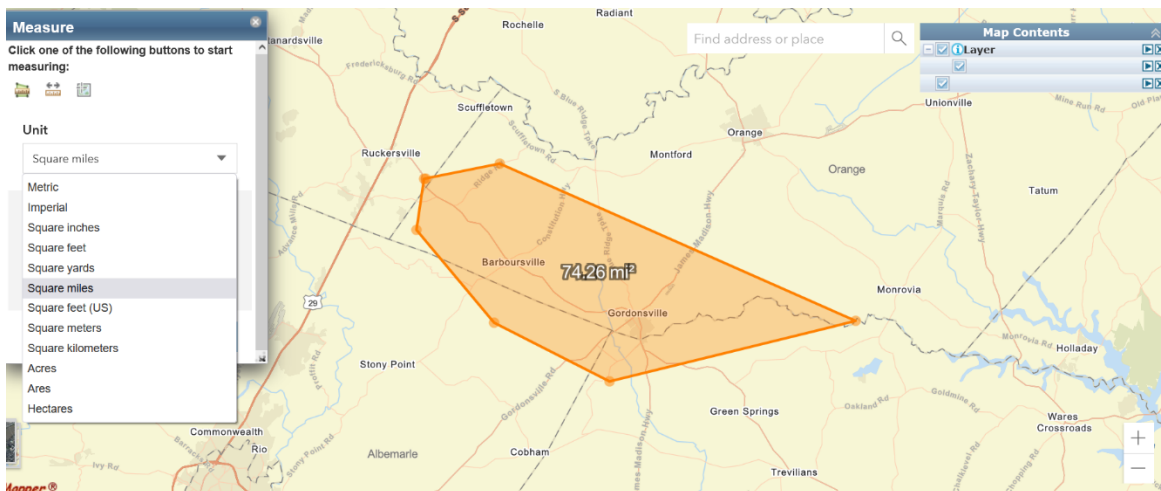


### 8.1 Measure Area

The **Measure Area** tool allows the user to measure the area of a polygon.



1. Click the **Tools** icon at the top left of the application.
2. Click the **Measure Area** icon .
3. Click on the map to add the first point.
4. Click on the map to begin drawing the polygon. Continue clicking to add to the polygon and double-click to complete the drawing.
5. Area Units of Square Miles is the default unit. A dropdown menu with all unit options will appear in the window when three points have been clicked on the map.




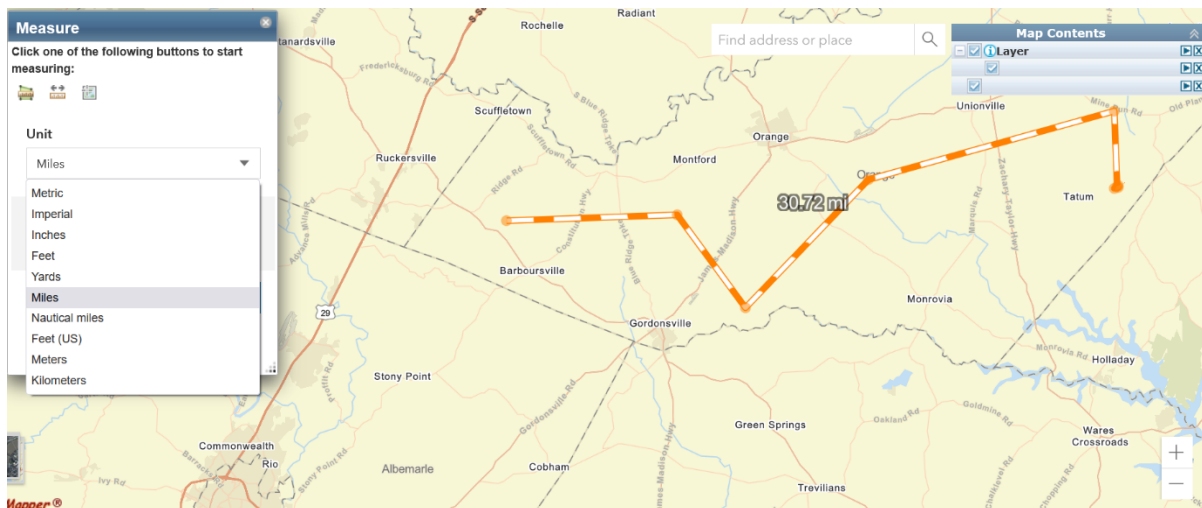
6. Select the desired unit.
7. The area measurement will appear in the Measure window.
8. To remove the drawing, click the **clear** icon in the Reports widget, click on the map to begin a new drawing, or close the Measure tool.

### 8.2 Measure Line

The **Measure Line** tool allows the user to measure distance on the map display.



1. Click the **Tools** icon at the top left of the application.
2. Click the **Measure** icon.
3. Click the **Measure Line** icon .
4. Click anywhere on the map display to begin a line. Click to add points along the line or to add angles to the line.
5. Distance Units of Miles is the default unit. A dropdown menu with all unit options will appear in the window.
6. Double-click to complete the line.
7. The distance measurement will appear in the Measure window.



9. To remove the line, click the **clear** icon in the Reports widget, click on the map to begin a new drawing, or close the Measure tool.

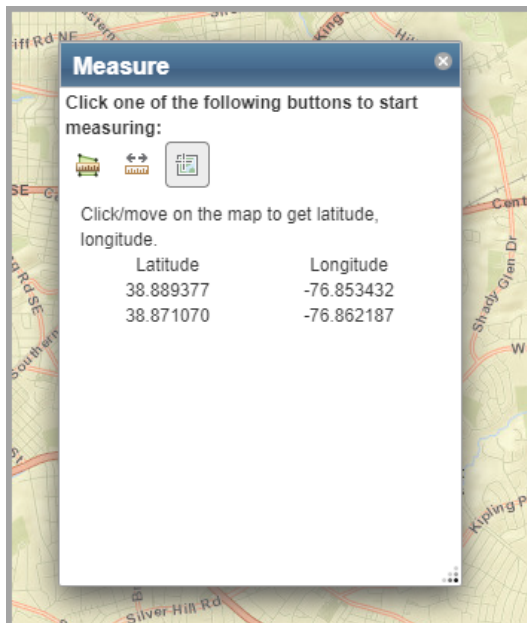


### 8.3 Latitude Longitude for a point

The **Measure Location** tool allows the user to obtain the latitude and longitude measurements for a point.



1. Click the **Tools** icon at the top left of the application.
2. Click the **Locate a point** icon.
3. As the mouse is moved over the map, the current location will display in the Measure window.
4. Click on the map to freeze the location in the Measure window.



5. The location measurement can be copied from the Measure window.
6. The top measurement will change as the mouse is moved over the map. The bottom measurement will show the last clicked location.