Environmental Protection Agency

EJScreen User Guide

2022
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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
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:
EJScreen User Guide

- **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
  - **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 Window]

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.

   ![Search Results]

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.

   ![Coordinates Input]

2. Click the search icon.
3. The map display will zoom to that location if found.
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
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.¹

¹ 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.
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.
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.
Click the **Explore Reports** option to display the data variables.

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](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)
```
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 38.896723,-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.

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 57th 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.
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.
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.

**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.
### Environmental Justice Indexes

<table>
<thead>
<tr>
<th>Selected Variables</th>
<th>State Percentile</th>
<th>EPA Region Percentile</th>
<th>USA Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>EI Index for Particulate Matter 2.5</td>
<td>39</td>
<td>69</td>
<td>59</td>
</tr>
<tr>
<td>EI Index for Ozone</td>
<td>39</td>
<td>69</td>
<td>59</td>
</tr>
<tr>
<td>EI Index for 2017 Diesel Particulate Matter*</td>
<td>39</td>
<td>71</td>
<td>80</td>
</tr>
<tr>
<td>EI Index for 2017 Air Toxics Cancer Risk</td>
<td>39</td>
<td>70</td>
<td>59</td>
</tr>
<tr>
<td>EI Index for 2017 Air Toxics Respiratory HI*</td>
<td>39</td>
<td>70</td>
<td>59</td>
</tr>
<tr>
<td>EI Index for Traffic Proximity</td>
<td>31</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>EI Index for Lead Paint</td>
<td>34</td>
<td>55</td>
<td>38</td>
</tr>
<tr>
<td>EI Index for Superfund Proximity</td>
<td>36</td>
<td>63</td>
<td>40</td>
</tr>
<tr>
<td>EI Index for RMP Facility Proximity</td>
<td>36</td>
<td>59</td>
<td>49</td>
</tr>
<tr>
<td>EI Index for Hazardous Waste Proximity</td>
<td>41</td>
<td>86</td>
<td>81</td>
</tr>
<tr>
<td>EI Index for Underground Storage Tanks</td>
<td>42</td>
<td>77</td>
<td>68</td>
</tr>
<tr>
<td>EI Index for Wastewater Discharge</td>
<td>53</td>
<td>83</td>
<td>73</td>
</tr>
</tbody>
</table>

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 cancer 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 50th percentile nationwide, this means that only 50 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.
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

<table>
<thead>
<tr>
<th>Sites reporting to EPA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Superfund NPL</td>
<td>0</td>
</tr>
<tr>
<td>Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)</td>
<td>13</td>
</tr>
</tbody>
</table>

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### Selected Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>State Ave.</th>
<th>%ile in State</th>
<th>EPA Region Ave.</th>
<th>%ile in EPA Region</th>
<th>USA Ave.</th>
<th>%ile in USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particulate Matter 2.5 (µg/m³)</td>
<td>8.62</td>
<td>8.62</td>
<td>29</td>
<td>8.2</td>
<td>67</td>
<td>8.74</td>
<td>50</td>
</tr>
<tr>
<td>Ozone</td>
<td>43</td>
<td>42.9</td>
<td>45</td>
<td>41.9</td>
<td>65</td>
<td>42.6</td>
<td>57</td>
</tr>
<tr>
<td>2017 Diesel Particulate Matter (µg/m³)</td>
<td>0.045</td>
<td>0.334</td>
<td>95</td>
<td>0.207</td>
<td>95-100th</td>
<td>0.295</td>
<td>90-95th</td>
</tr>
<tr>
<td>2017 Air Toxics Cancer Risk (lifetime risk per million)</td>
<td>100</td>
<td>100</td>
<td>30</td>
<td>26</td>
<td>95-100th</td>
<td>36</td>
<td>95-100th</td>
</tr>
<tr>
<td>2017 Air Toxics Respiratory Risk</td>
<td>100</td>
<td>100</td>
<td>30</td>
<td>26</td>
<td>95-100th</td>
<td>36</td>
<td>95-100th</td>
</tr>
<tr>
<td>Traffic Proximity (daily traffic count/distance to road)</td>
<td>7500</td>
<td>3000</td>
<td>69</td>
<td>6800</td>
<td>99</td>
<td>716</td>
<td>98</td>
</tr>
<tr>
<td>Lead Paint (µg/1000 sq ft)</td>
<td>1.5</td>
<td>1.59</td>
<td>8</td>
<td>0.35</td>
<td>10</td>
<td>0.26</td>
<td>59</td>
</tr>
<tr>
<td>Superfund Proximity (site count/area/distance)</td>
<td>0.22</td>
<td>0.24</td>
<td>66</td>
<td>0.15</td>
<td>85</td>
<td>0.13</td>
<td>87</td>
</tr>
<tr>
<td>BMP Facility Proximity (facility count/area/distance)</td>
<td>0.46</td>
<td>0.65</td>
<td>44</td>
<td>0.63</td>
<td>64</td>
<td>0.75</td>
<td>58</td>
</tr>
<tr>
<td>Hazardous Waste Proximity Facility count/area/distance</td>
<td>38</td>
<td>17</td>
<td>95</td>
<td>1.9</td>
<td>99</td>
<td>2.2</td>
<td>99</td>
</tr>
<tr>
<td>Underground Storage Tanks (count/area)</td>
<td>13</td>
<td>12</td>
<td>63</td>
<td>2.7</td>
<td>96</td>
<td>3.8</td>
<td>92</td>
</tr>
<tr>
<td>Wastewater Discharge (ton/day-weighted concentration/mile)</td>
<td>0.00064</td>
<td>0.0014</td>
<td>43</td>
<td>33</td>
<td>51</td>
<td>12</td>
<td>45</td>
</tr>
</tbody>
</table>

### Socioeconomic Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
<th>%ile in State</th>
<th>%ile in USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic Index</td>
<td>36%</td>
<td>40%</td>
<td>37</td>
</tr>
<tr>
<td>People of Color</td>
<td>36%</td>
<td>63%</td>
<td>27</td>
</tr>
<tr>
<td>Low Income</td>
<td>21%</td>
<td>28%</td>
<td>45</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>7%</td>
<td>5%</td>
<td>57</td>
</tr>
<tr>
<td>Linguistically Isolated</td>
<td>4%</td>
<td>3%</td>
<td>73</td>
</tr>
<tr>
<td>Less Than High School Education</td>
<td>5%</td>
<td>9%</td>
<td>39</td>
</tr>
<tr>
<td>Under Age 25</td>
<td>2%</td>
<td>7%</td>
<td>18</td>
</tr>
<tr>
<td>Over Age 64</td>
<td>7%</td>
<td>12%</td>
<td>25</td>
</tr>
</tbody>
</table>

* 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; occupational data for 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](https://www.epa.gov/haps).

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

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**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 EPA 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 EPA concerns.

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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.
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.

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

- **Name:**
- **Buffer:** 1 mi

- Explore Reports...
- Get Printable Standard Report...
- Get 2015-2019 ACS report...
- Get 2010 Census report...
- Get CDC report...

Delete this site
4. Maps Widget

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.

Web map layers are displayed on top of the existing map data and can be toggled on and off and controlled just like any other layer.

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

3. When map layers are added to the map, the layer legend will be added under the **Map Contents** menu on the right hand side of the map. Layer options are available in the **Map Contents** window.
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:

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.
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.
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.


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.

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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.

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.
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.
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.
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.
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.
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.
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. Check box is added as a layer to the map.
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.
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.
5. Checked boxes are added as a layer to the map
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.
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.
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.
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.
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.
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.

<table>
<thead>
<tr>
<th>Search Geoplatform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter keyword to search:</td>
</tr>
<tr>
<td>OR <strong>Sign In</strong> to search for maps in your ArcGIS account (EPA employees can use single sign on)</td>
</tr>
<tr>
<td>□ Only search within map view</td>
</tr>
</tbody>
</table>

8 Map Services/Web Maps found:

1. **2010 US Estimated Private Domestic Wells**
   - Map Service by anal105_EPA
   - Last Modified: Fri Jul 09 2021
   - (0 ratings, 0 comments, 25942 views)

2. **EPA Smart Growth and Community Revitalization Projects**
   - Web Map by arourk_EPA
   - Last Modified: Mon Jul 12 2021
   - (0 ratings, 0 comments, 31264 views)

3. **EPA-Enhanced Qualified Opportunity Zones**
   - Feature Service by arourk_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**.
3. Search results display in the window.

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.
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.

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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.

![Print Map Option]

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.