

Environmental Protection Agency

EJSCREEN User Guide

2015

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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.

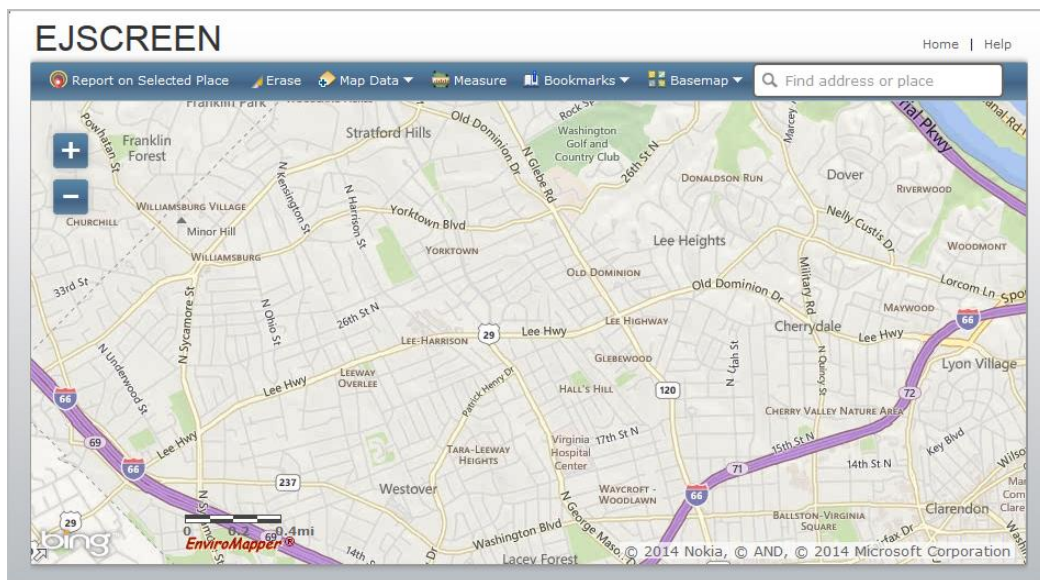
EJSCREEN is an environmental justice mapping and screening tool that provides EPA with a nationally consistent dataset and approach that combines environmental and demographic indicators in maps and reports. This can help to highlight geographic areas and the extent to which they may be candidates for 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 12 environmental factors*, 7 demographic factors, and a variety of 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.

*The National-scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available.

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.

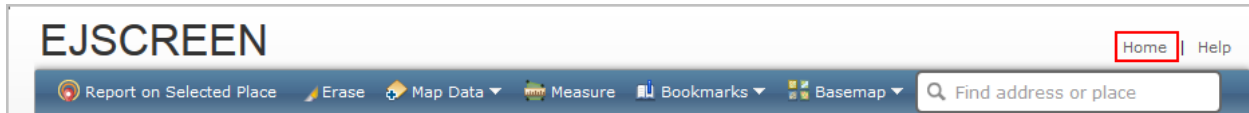
To access the application, navigate to <http://www2.epa.gov/ejscreen>



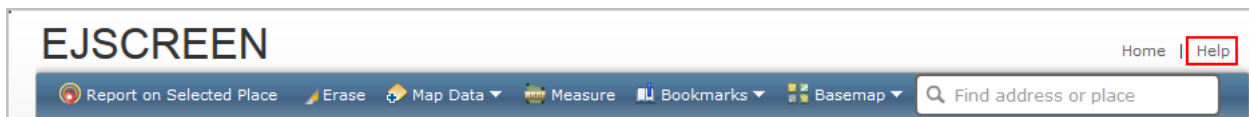
B. EJSCREEN Web Application Home Screen

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

To learn more about EJSCREEN, click the **Home** 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 top bar of the application, a variety of widgets are available for use:



- **Report on Selected Place:** Pick location and see report on a user-defined place or block group
- **Erase:** Remove any drawings from the map
- **Map Data:** See EJSCREEN and other supplementary map data
- **Measure:** Measure distance, find the area of a polygon, get lat/long
- **Bookmarks:** Save locations for review
- **Basemap:** Change map background to show roads, satellite view, etc.
- **Find address or place:** Locate a specific address or area

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

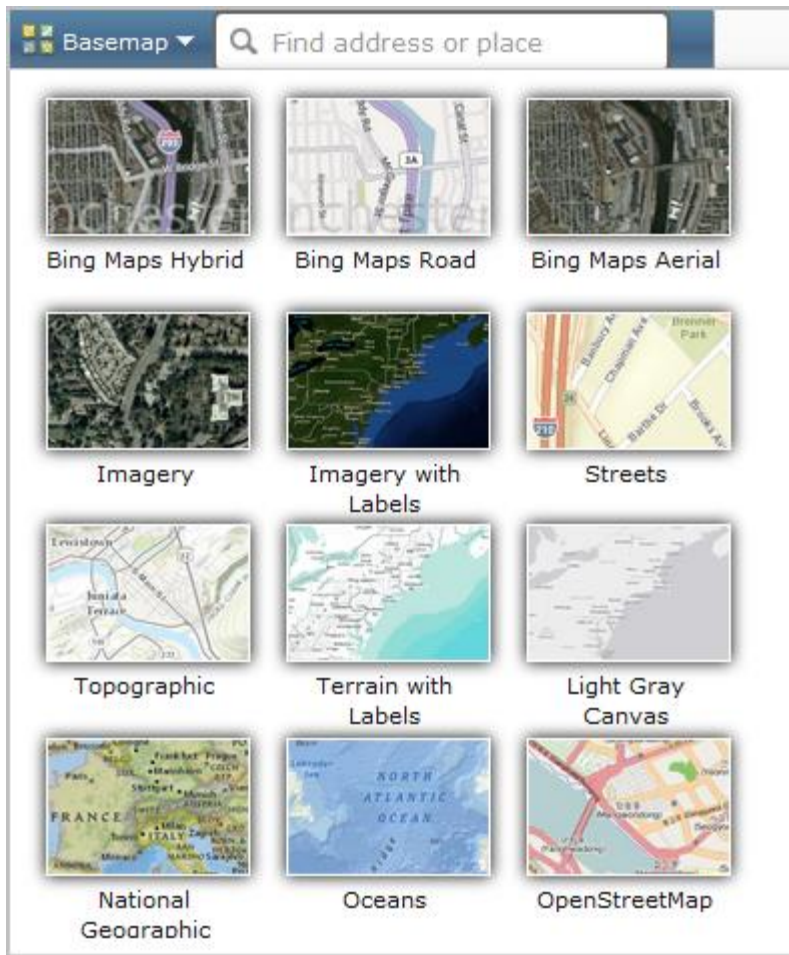
C. Exploring and Navigating Maps

Several data display, basemap and navigation tools are available.

1. Basemaps

Click the down arrow in the Basemap widget to change the basemap for the map display.

Click any of the basemap options to change the display of the basemap. Bing Maps Road is the default display.



2. Navigation

The Navigation widget is visible in the upper left hand corner of the application. This widget allows manual navigation of the map display with a click interface.

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:



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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

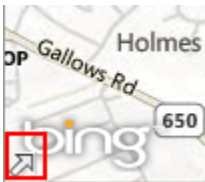
The Pan tool is used to scroll the map in the direction and by the amount you choose.

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

3. Overview Map and Scale Bar

The Overview Map tool displays a small overview map in the lower left-hand corner of the map display that shows a zoomed-out view of the map data along with a gray rectangle that defines the map display's current view extent.

1. Click the arrow button to expand the overview map.

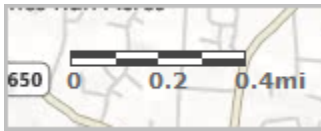


2. Click the arrow again to minimize the overview map back to its original position.

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The Scale Bar in the lower left corner of the map display adjusts length according to the zoom level. It is drawn in miles.



Note: The scale bar can be hidden when widgets are open in the EJSCREEN application. You may need to close widgets to view the scale bar.

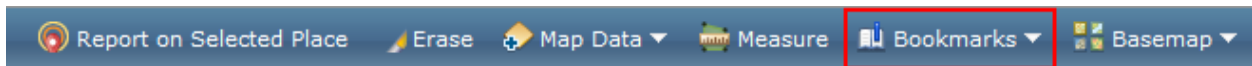
D. Using EJSCREEN Widgets for Analysis

1. Bookmarks Widget

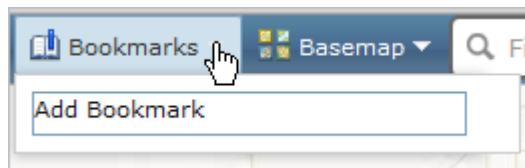
1.1 Bookmarks List

The **Bookmarks** widget stores a collection of map view extents or spatial bookmarks. Users can add their own bookmarks and then use these marks to return to a previous view or switch between views.

1. Locate the Widget toolbar at the top of the application.
2. Click the Bookmarks icon.



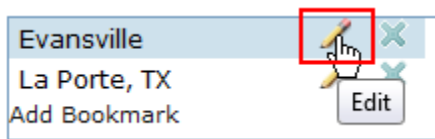
The Bookmarks window will be displayed.



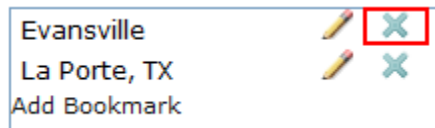
1.2 Adding and Deleting Bookmarks

Use the **Bookmarks** widget to add a new bookmark based on the current map extent. A name can be provided for this bookmark at the prompt.

1. Zoom to a location of interest.
2. Click **Add Bookmark** in the Bookmarks widget.
An Add Bookmark text box will display.
3. Enter the name of the location of interest in the text box.
4. Click outside of the Bookmarks widget when complete to save the bookmark or click the **blue X** to remove the bookmark.
5. To edit a bookmark name click the pencil icon.



6. To remove a bookmark, click the **Bookmarks** button.
7. Next to the bookmark created, click the **blue X**.



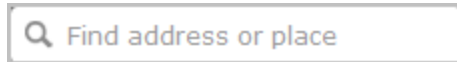
The bookmark will be removed.

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 **Enter the address** text box.



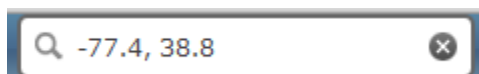
2. Click **the search icon**.

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 **Longitude (X)** and **Latitude (Y)** in the **Find an address or place** text box in the longitude, latitude format (e.g. -77.4, 38.8).



2. Click **the search icon**.

The map display will zoom to that location if found.

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

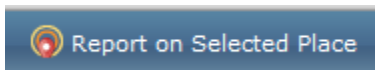
3. Report on Selected Place Widget

The **Report on Selected Place** widget is used to identify a location of interest and then provide EJ Indexes and Environmental and Demographic reports for that block group or buffer 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.

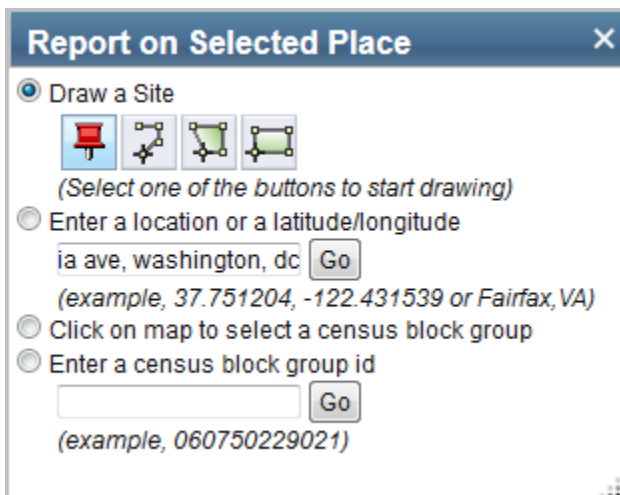
2012 American Community Survey (ACS), 2010 Census, and 2000 Census reports are also available.

The **Report on Selected Place** is intended for examining EJ Indexes, Environmental variables, and Demographic variables across block group-level data for the United States.

1. Locate the Widget toolbar at the top of the application.
2. Click the **Report on Selected Place** icon.



The **Report on Selected Place** window will be displayed.



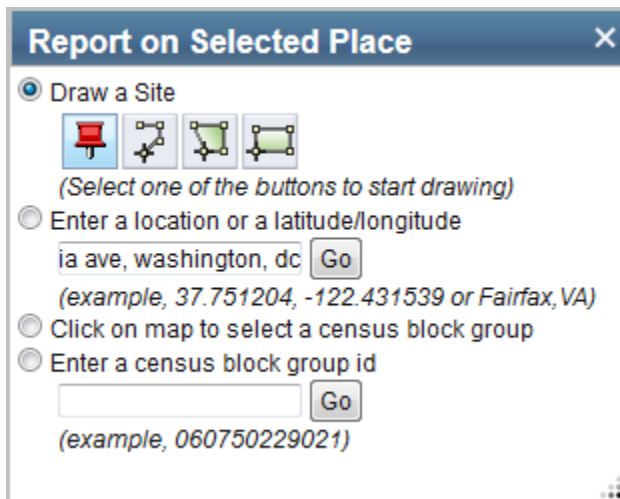
3.1 Locate an Address

The **Report on Selected Place** widget provides options to draw a site, enter a location, or latitude/longitude coordinate pair, click on the map to select a census block group, or enter a census block group id.

If a point, address, geographic coordinates or a location is selected the map will focus on a point and provide a 1 mile buffer as the default.

Whenever a block group is selected, by either clicking on it in the map display or entering it in the widget, the map zooms to that block group to allow the user to examine neighboring groups for variation.

1. Type in a location in the **Enter a location or a latitude/longitude** text box in the **Report on Selected Place** widget.



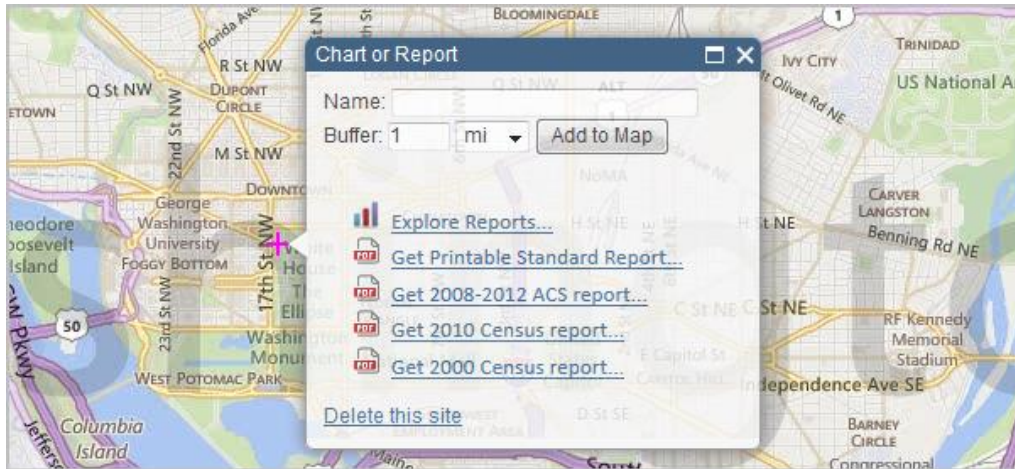
The screenshot shows a window titled "Report on Selected Place" with a close button (X) in the top right corner. The window contains four radio button options:

- Draw a Site: Below this option are four icons: a red pushpin, a star, a square with a cross, and a square with a circle. Below the icons is the text "(Select one of the buttons to start drawing)".
- Enter a location or a latitude/longitude: Below this option is a text input field containing "ia ave, washington, dc" and a "Go" button. Below the input field is the text "(example, 37.751204, -122.431539 or Fairfax, VA)".
- Click on map to select a census block group
- Enter a census block group id: Below this option is an empty text input field and a "Go" button. Below the input field is the text "(example, 060750229021)".

2. Click **Go**.

The map display zooms to the location.

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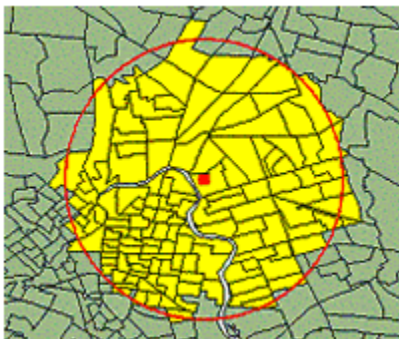


3.2 Buffer

When user input is a geographic point 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.

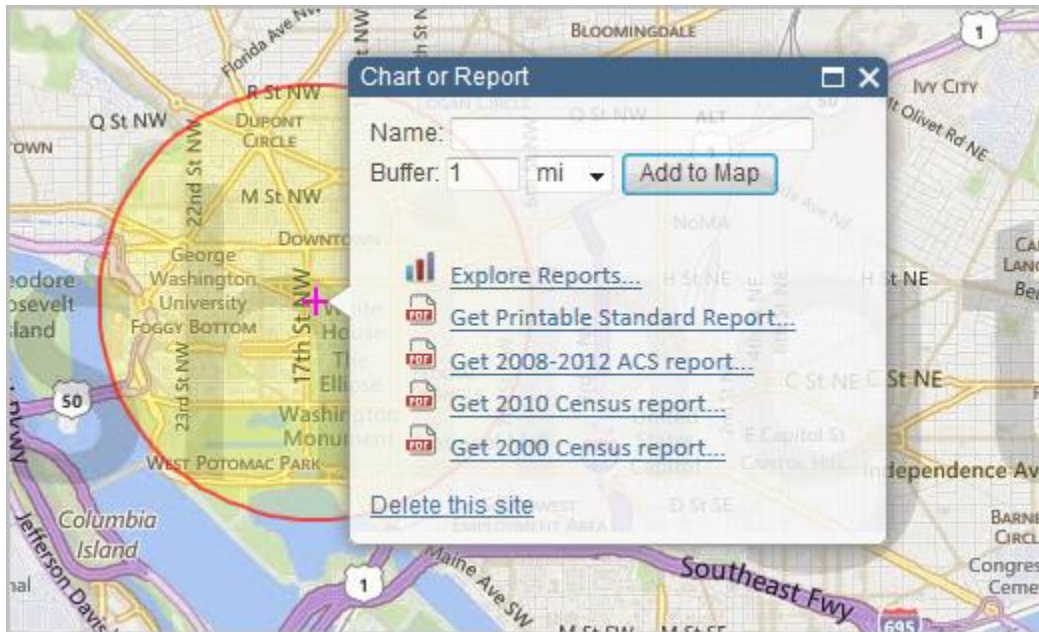


3. The aggregation is done by using factor-weighted block points.

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

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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 20004).



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3.3 Explore Reports

The **Report on Selected Place** widget Explore Reports option is driven by 31 data variables, displayed below:

EJ Indexes	Environmental Indicators	Demographic Indicators
[Unselect All]		
<input checked="" type="checkbox"/> PM 2.5	<input checked="" type="checkbox"/> Ozone	<input checked="" type="checkbox"/> NATA Diesel PM*
<input checked="" type="checkbox"/> NATA Cancer Risk*	<input checked="" type="checkbox"/> NATA Neuro HI*	<input checked="" type="checkbox"/> NATA Respiratory HI*
<input checked="" type="checkbox"/> Traffic Proximity	<input checked="" type="checkbox"/> Lead Paint Indicator	<input checked="" type="checkbox"/> NPL Proximity
<input checked="" type="checkbox"/> RMP Proximity	<input checked="" type="checkbox"/> TSDF Proximity	<input checked="" type="checkbox"/> Water Discharger Proximity

EJ Indexes	Environmental Indicators	Demographic Indicators
[Unselect All]		
<input checked="" type="checkbox"/> PM 2.5	<input checked="" type="checkbox"/> Ozone	<input checked="" type="checkbox"/> NATA Diesel PM*
<input checked="" type="checkbox"/> NATA Cancer Risk*	<input checked="" type="checkbox"/> NATA Neuro HI*	<input checked="" type="checkbox"/> NATA Respiratory HI*
<input checked="" type="checkbox"/> Traffic Proximity	<input checked="" type="checkbox"/> Lead Paint Indicator	<input checked="" type="checkbox"/> NPL Proximity
<input checked="" type="checkbox"/> RMP Proximity	<input checked="" type="checkbox"/> TSDF Proximity	<input checked="" type="checkbox"/> Water Discharger Proximity

EJ Indexes	Environmental Indicators	Demographic Indicators
[Unselect All]		
<input checked="" type="checkbox"/> Demographic Index	<input checked="" type="checkbox"/> Minority Population	<input checked="" type="checkbox"/> Low Income (<2x poverty level)
<input checked="" type="checkbox"/> Linguistically Isolated	<input checked="" type="checkbox"/> Less Than HS Education	<input checked="" type="checkbox"/> Under Age 5
<input checked="" type="checkbox"/> Over Age 64		

*The National-scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available.

These data variables represent the data that is 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 Indicators, Demographic Indicators, and Environmental Justice Indexes, see the glossary at <http://www2.epa.gov/ejscreen>.

3.4 Chart of Data Comparisons

Above the main chart in the **Report on Selected Place** widget, there is a listing of which block group is currently selected for data display along with its State, EPA Region and total population:

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Block group 110010062021, District of Columbia, Region 3 (Population: 0)

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):

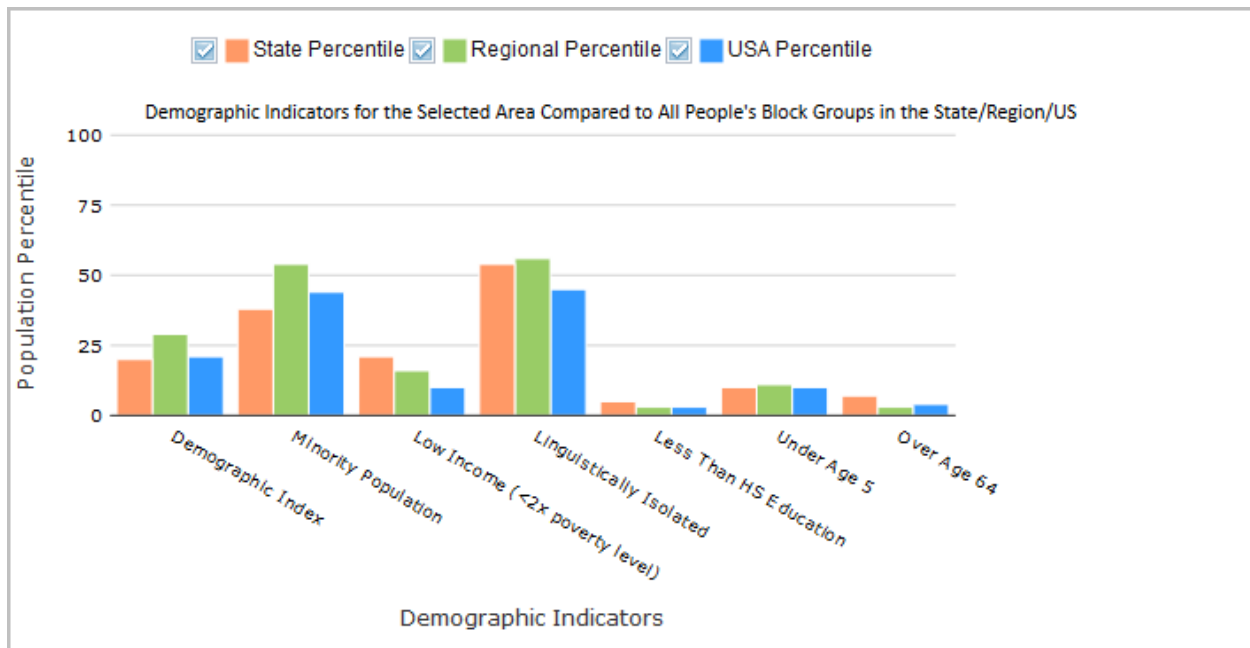
Center: -77.029 38.895, Buffer: 0.5 mile(s), District of Columbia, Region 3 (Population: 1315)

Below the identifying text, there 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 feel free to select whichever comparison is most relevant.

State Percentile Regional Percentile USA Percentile

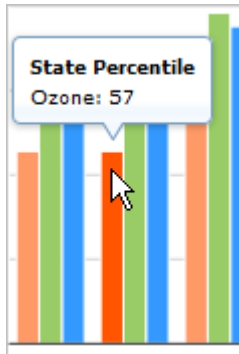
The chart itself displays a series of bar graphs, comparing the currently selected area (either block group or buffered ring) to the state, regional and national statistics for each variable.

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.

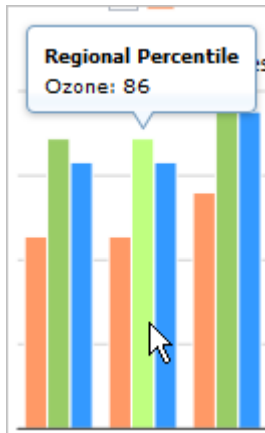


Pointing to a bar will show a pop-up window including the bar's geography, the variable displayed, and the percentile that the selected block group or ring represents when compared to a larger group. For example, if your area is at the 57th Percentile in the state, this means the average person there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

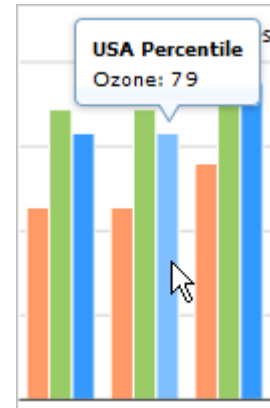
EJSCREEN User Guide



57th Percentile in State



86th Percentile in Region

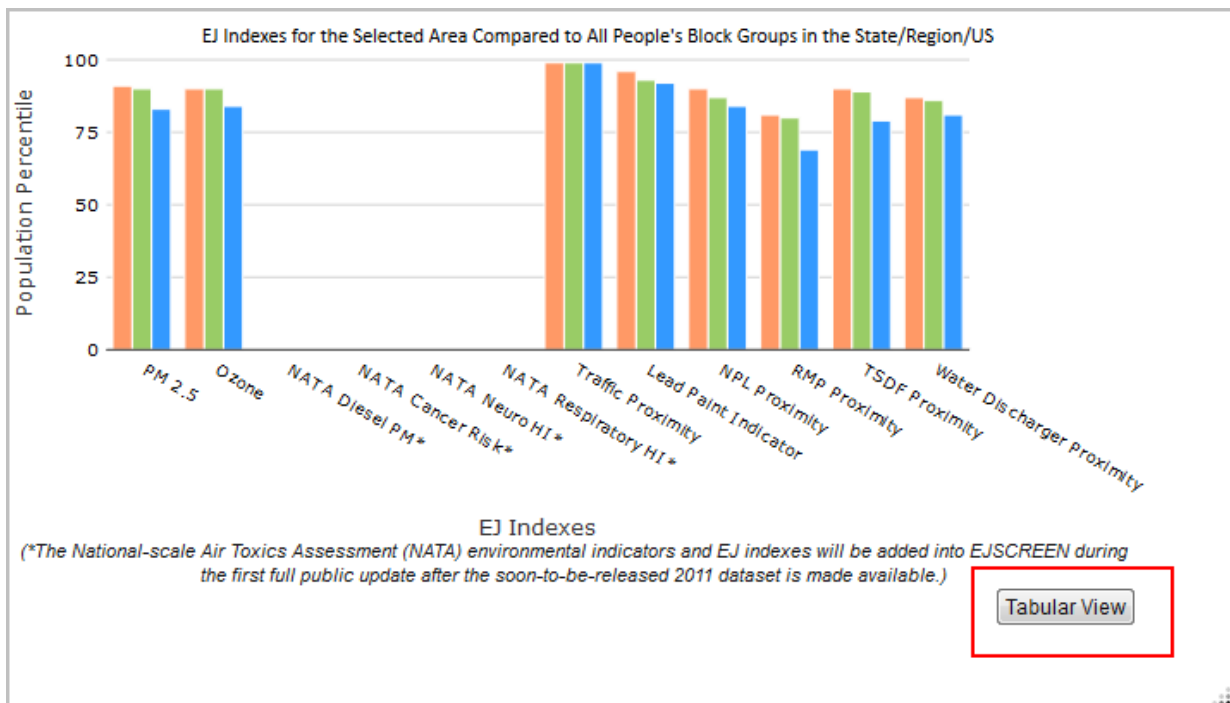


79th Percentile Nationally

3.5 Tabular View

Below the chart data, the **Tabular View** 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									
Block group 510131020032, VIRGINIA, EPA Region 3 (Population: 1570)									
#	Category	Selected Variables	Raw Data	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 (PM 2.5)			91		90		83
2	EJ Index	EJ Index for Ozone			90		90		84
3	EJ Index	EJ Index for NATA Diesel PM*			N/A		N/A		N/A
4	EJ Index	EJ Index for NATA Air Toxics Cancer Risk*			N/A		N/A		N/A
5	EJ Index	EJ Index for NATA Neurological Hazard Index*			N/A		N/A		N/A
6	EJ Index	EJ Index for NATA Respiratory Hazard Index*			N/A		N/A		N/A
7	EJ Index	EJ Index for Traffic Proximity and Volume			99		99		99
8	EJ Index	EJ Index for Lead Paint Indicator			96		93		92
9	EJ Index	EJ Index for NPL Proximity			90		87		84
10	EJ Index	EJ Index for RMP Proximity			81		80		69
11	EJ Index	EJ Index for TSDF Proximity			90		89		79
12	EJ Index	EJ Index for Water Discharger Proximity			87		86		81
13	Environmental	Particulate Matter (PM 2.5 in ug/m3)	10.5	9.41	97	10.1	64	9.78	65
14	Environmental	Ozone (ppb)	51	48.6	95	48.2	89	46.1	77
15	Environmental	NATA Diesel PM (ug/m3)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16	Environmental	NATA Air Toxics Cancer Risk (risk)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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 an icon  which will allow the user to download data as text file. This functionality will save the tabular data to a comma separated value 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.

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Block group 510131020032, VIRGINIA, EPA Region 3 (Population: 1570)

#	Category	Selected Variables	Raw Data	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 (PM 2.5)			91		90		83
2	EJ Index	EJ Index for Ozone			90		90		84
3	EJ Index	EJ Index for NATA Diesel PM*			N/A		N/A		N/A
4	EJ Index	EJ Index for NATA Air Toxics Cancer Risk*			N/A		N/A		N/A
5	EJ Index	EJ Index for NATA Neurological Hazard Index*			N/A		N/A		N/A
6	EJ Index	EJ Index for NATA Respiratory Hazard Index*			N/A		N/A		N/A
7	EJ Index	EJ Index for Traffic Proximity and Volume			99		99		99
8	EJ Index	EJ Index for Lead Paint Indicator			96		93		92
9	EJ Index	EJ Index for NPL Proximity			90		87		84
10	EJ Index	EJ Index for RMP Proximity			81		80		69
11	EJ Index	EJ Index for TSDF Proximity			90		89		79
12	EJ Index	EJ Index for Water Discharger Proximity			87		86		81
13	Environmental	Particulate Matter (PM 2.5 in ug/m3)	10.5	9.41	97	10.1	64	9.78	65
14	Environmental	Ozone (ppb)	51	48.6	95	48.2	89	46.1	77
15	Environmental	NATA Diesel PM (ug/m3)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16	Environmental	NATA Air Toxics Cancer Risk (risk)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

3.6 Get Printable Standard Report

A 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 seconds or more. Do not click the **Get Printable Standard Report** link again until a report has been returned.

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

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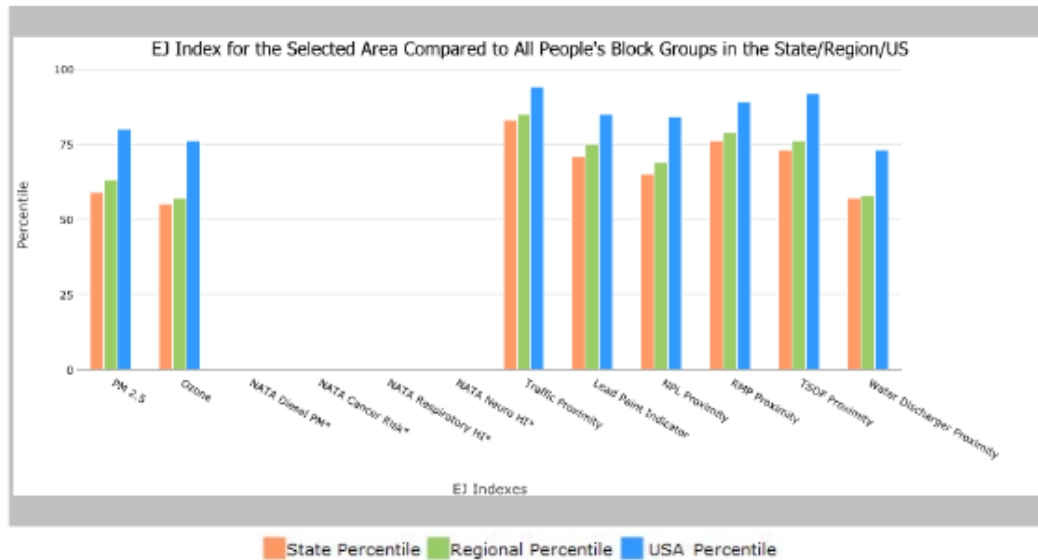
EJSCREEN Report



for Block Group 060372077101, CALIFORNIA, EPA Region 9

Approximate Population: 2363

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	59	63	80
EJ Index for Ozone	55	57	76
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	83	85	94
EJ Index for Lead Paint Indicator	71	75	85
EJ Index for Proximity to NPL sites	65	69	84
EJ Index for Proximity to RMP sites	78	79	89
EJ Index for Proximity to TSDFs	73	76	92
EJ Index for Proximity to Major Direct Dischargers	57	58	73



This report shows environmental, demographic, and EJ indicator values. 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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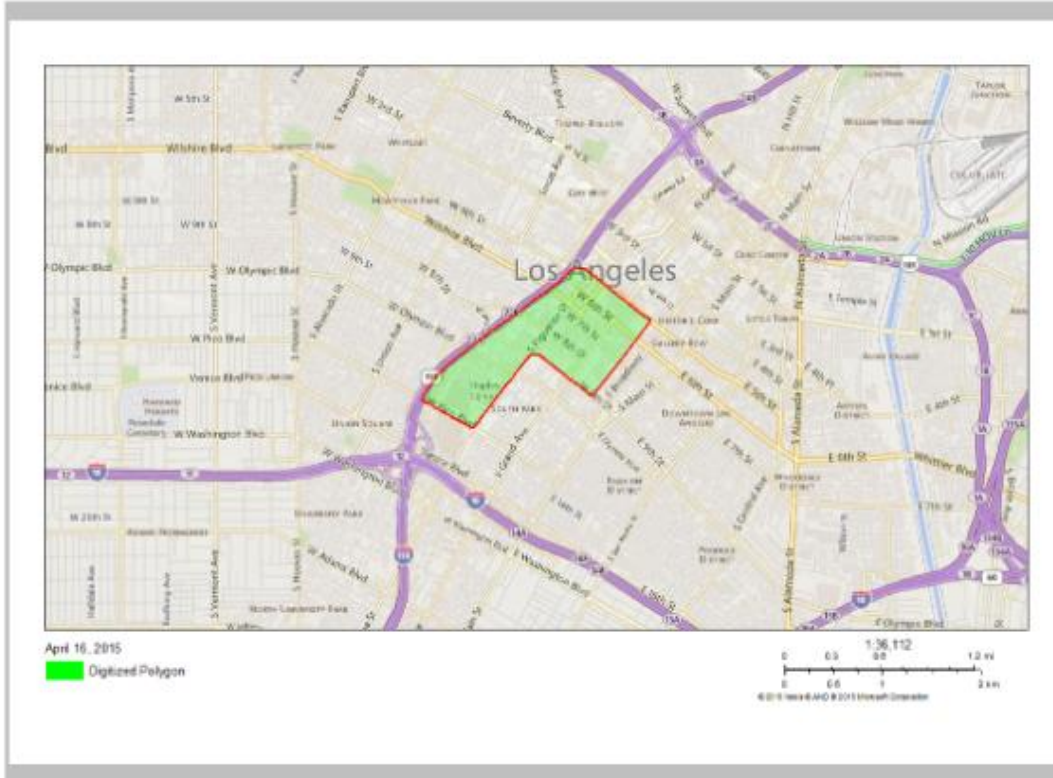
EJSCREEN User Guide



EJSCREEN Report

for Block Group 060372077101, CALIFORNIA, EPA Region 9

Approximate Population: 2363



EJSCREEN User Guide



EJSCREEN Report

for Block Group 060372077101, CALIFORNIA, EPA Region 9



Approximate Population: 2363

Selected Variables	Raw Data	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$)	13.1	10.4	94	9.95	95	9.78	99
Ozone (ppb)	45.2	48.4	41	49.7	33	48.1	43
NATA Diesel PM ($\mu\text{g}/\text{m}^3$) [*]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Cancer Risk (lifetime risk per million) [*]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index [*]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index [*]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	490	210	89	190	90	110	95
Lead Paint Indicator (% Pre-1960 Housing)	0.47	0.3	71	0.25	76	0.3	73
NPL Proximity (site count/km distance)	0.11	0.13	71	0.11	75	0.098	78
RMP Proximity (facility count/km distance)	0.71	0.48	83	0.41	85	0.31	89
TSDP Proximity (facility count/km distance)	0.17	0.13	82	0.12	84	0.054	94
Water Discharger Proximity (facility count/km distance)	0.11	0.18	47	0.19	45	0.25	41
Demographic Indicators							
Demographic Index	48%	47%	50	48%	52	35%	71
Minority Population	57%	60%	45	57%	49	36%	73
Low Income Population	38%	35%	55	35%	56	34%	58
Linguistically Isolated Population	21%	10%	82	9%	84	5%	92
Population With Less Than High School Education	18%	19%	58	18%	61	14%	72
Population Under 5 years of age	8%	7%	43	7%	43	7%	47
Population over 64 years of age	18%	12%	84	12%	82	13%	78

^{*} The National-scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <http://www.epa.gov/ttn/atw/natamain/index.html>.

For additional information, see: 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.

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

- The current date
 - The block group that the data represents (Block group selection)
 - The latitude and longitude of the center of the buffered ring (Buffer ring selection)
 - The state and EPA region that the data is encompassed by
 - 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
 - A link to metadata about the report and the tool
- Values highlighted in red are above the 95th percentile.
- 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 PM 2.5 concentrations were not available for Alaska, so all associated data elements are set to “null”.

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	82	97	92
EJ Index for Ozone	82	97	94
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	83	96	94
EJ Index for Lead Paint Indicator	90	98	98
EJ Index for NPL Proximity	91	98	97
EJ Index for RMP Proximity	73	87	78
EJ Index for TSDF Proximity	83	92	82
EJ Index for Water Discharger Proximity	89	98	97

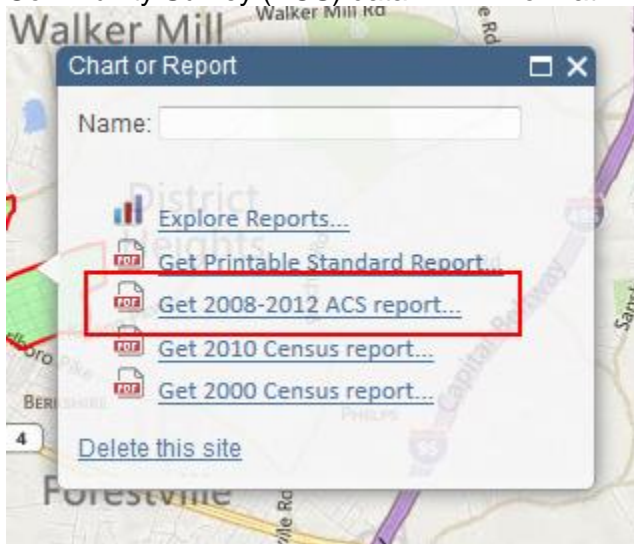
Multiple reports can be created per session.

3.7 Get 2008-2012 ACS Report, 2010 Census Report or 2000 Census Report

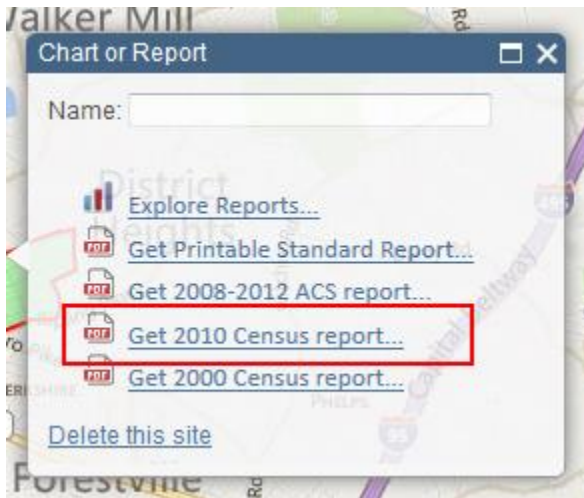
Three demographic report options are available under the **Report on Selected Places** widget **Chart or Report** option.

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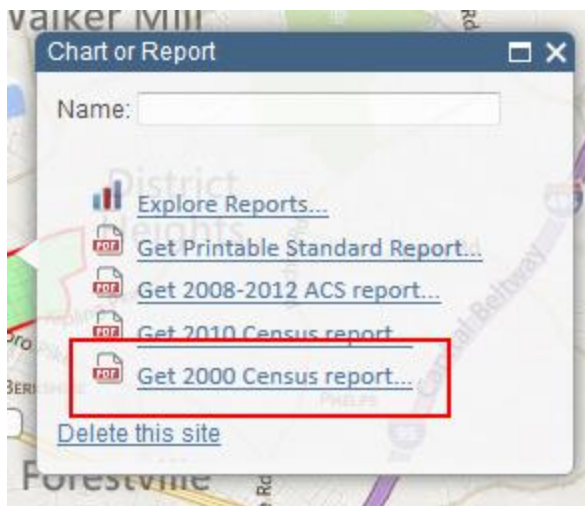
The **Get 2008-2012 ACS Report** link provides a report with US Census Bureau American Community Survey (ACS) data in PDF format.



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



The **Get 2000 Census report** link provides a report with data from the US Census Bureau, Census 2000 Summary File 3 in PDF format.



4. Erase Widget

The **Erase** widget is used to remove any drawings from the map.



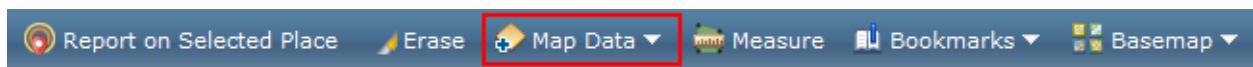
1. Locate the Widget toolbar at the top of the application.
2. Click the **Erase** icon.
3. All added drawings and measurement markers will be removed from the map.

5. Map Data Widget

The **Map Data** 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.

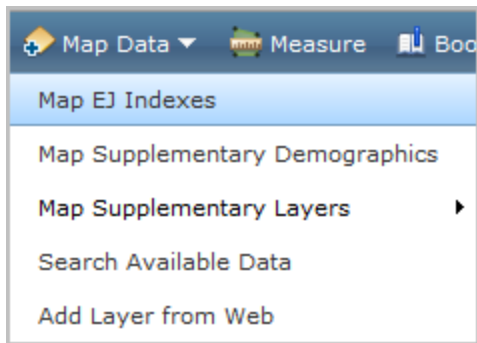
Web map layers are displayed on top of the existing map data and can be toggled on and off and controlled just like any other layer.

1. Locate the Widget toolbar at the top of the application.
2. Click the **Map Data** icon.

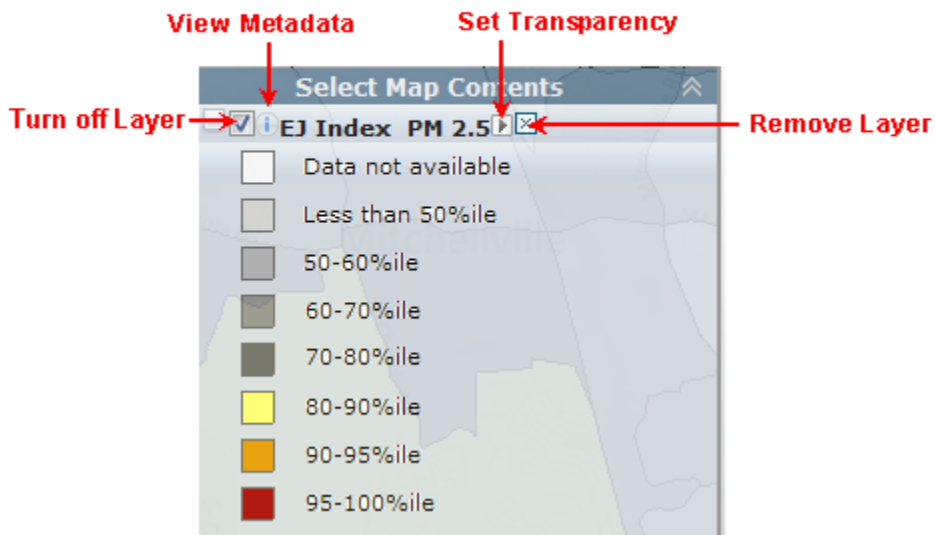


The **Map Data** options will be displayed.

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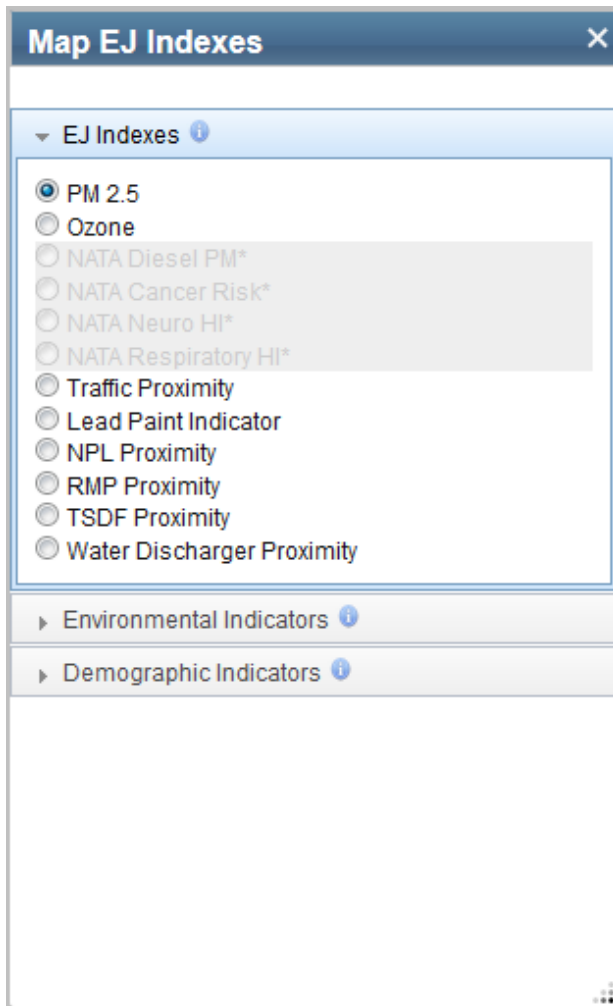
3. When map layers are added to the map, the layer legend will be added under the **Select Map Contents** menu on the right hand side of the map. Layer options are available in the **Select Map Contents** window.



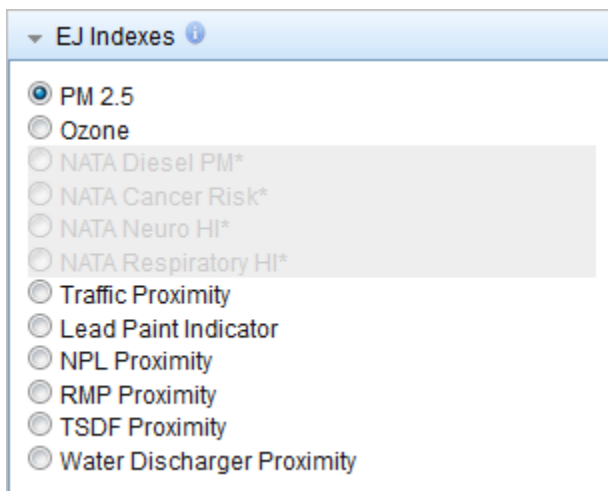
5.1 Map EJSCREEN Indexes

The **Map EJSCREEN Indexes** 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.

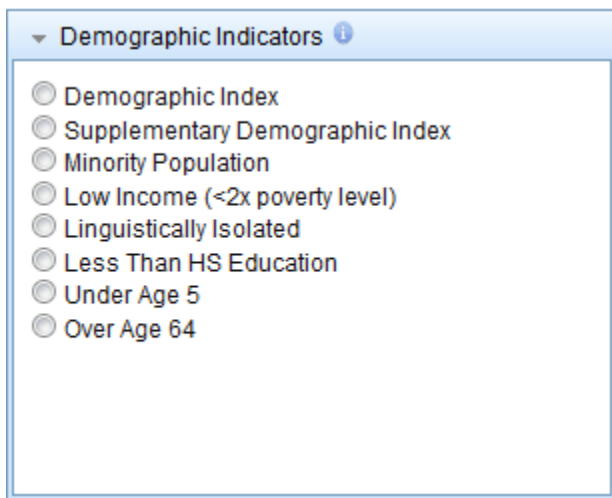
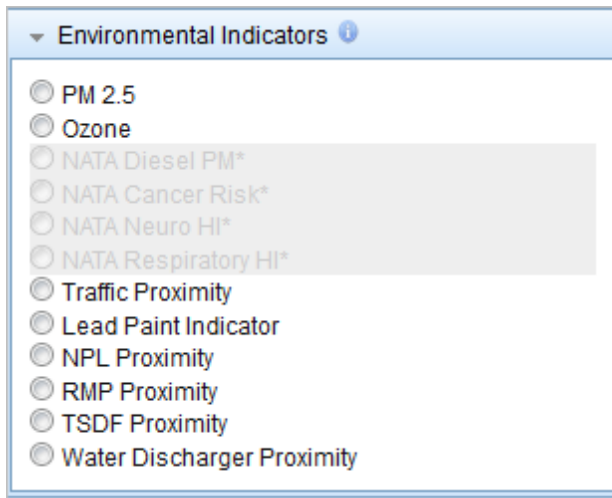
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The data available for each of the layer groups are shown below:

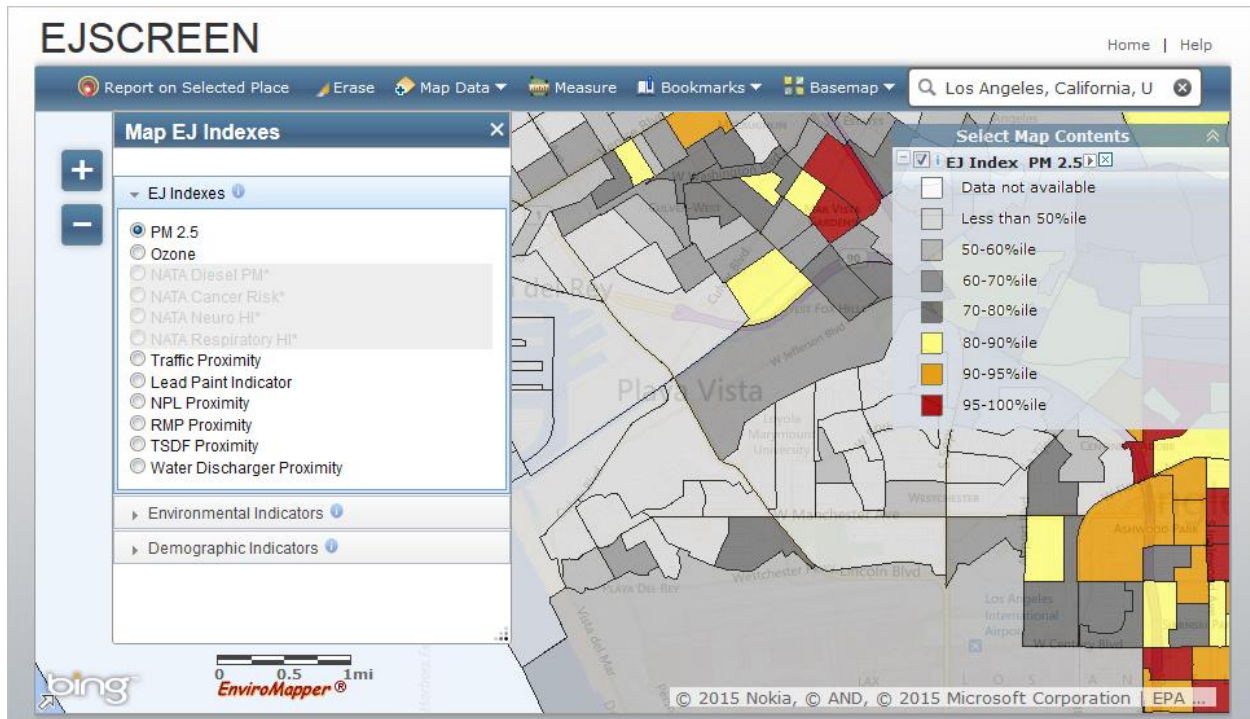


EJSCREEN User Guide

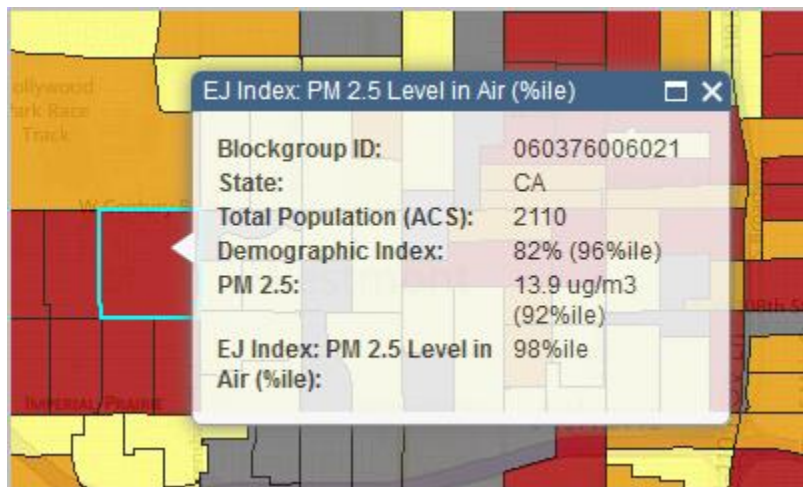


1. When the **Map EJSCREEN Indexes** tool is opened, PM 2.5 is selected as the default and is added to the map. To change the display, click a header and then click a button to select a layer for display.
2. This will add a map layer that will display the selected variable based on national percentile groups as indicated in the **legend** added under map contents to the right hand side of the map.

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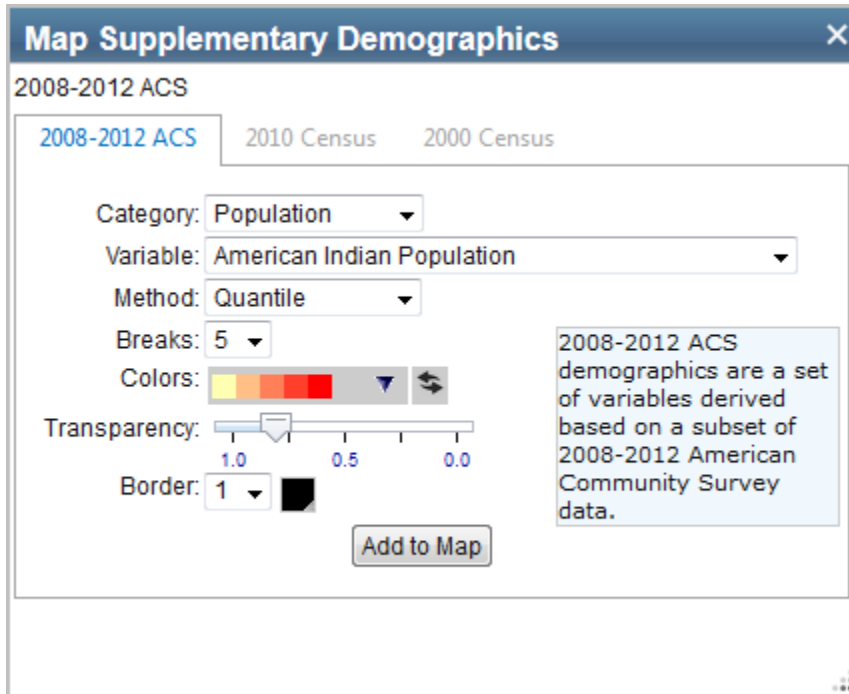


3. Clicking on a block group when any of the **Map EJ Indexes** layers are activated will show a pop-up window that includes the location's blockgroup ID, indicator values, population count and national percentile.



5.2 Map Supplementary Demographics

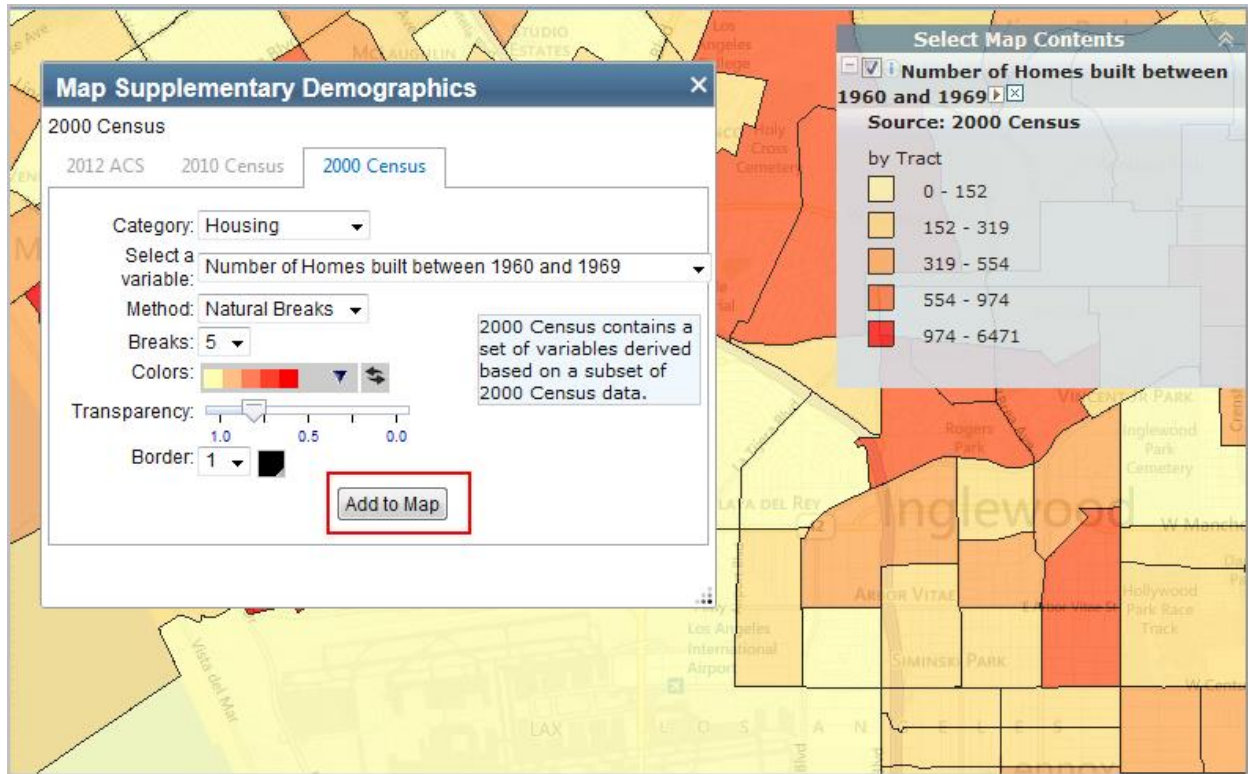
The **Map Supplementary Demographics** option allows users to display supplementary demographic information from the Census Bureau in the map.



Demographic Data is available for 2012 ACS, 2010 Census and 2000 Census data. 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 Category from the dropdown menu.
3. Select variable from dropdown menu.
4. Adjust Method, Breaks, Color, Transparency and Border if desired.
5. Click the **Add to Map** button to add layer to map and to the Select Map Contents Menu and legend.

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5.3 Map Supplementary Layers

Options available under Map Supplementary Layers are shown below:

- Sites reporting to EPA
- Places
- Transportation
- Water Features
- EPA Tribal Areas
- Nonattainment Area
- Boundaries
- Supplementary EJ Indexes

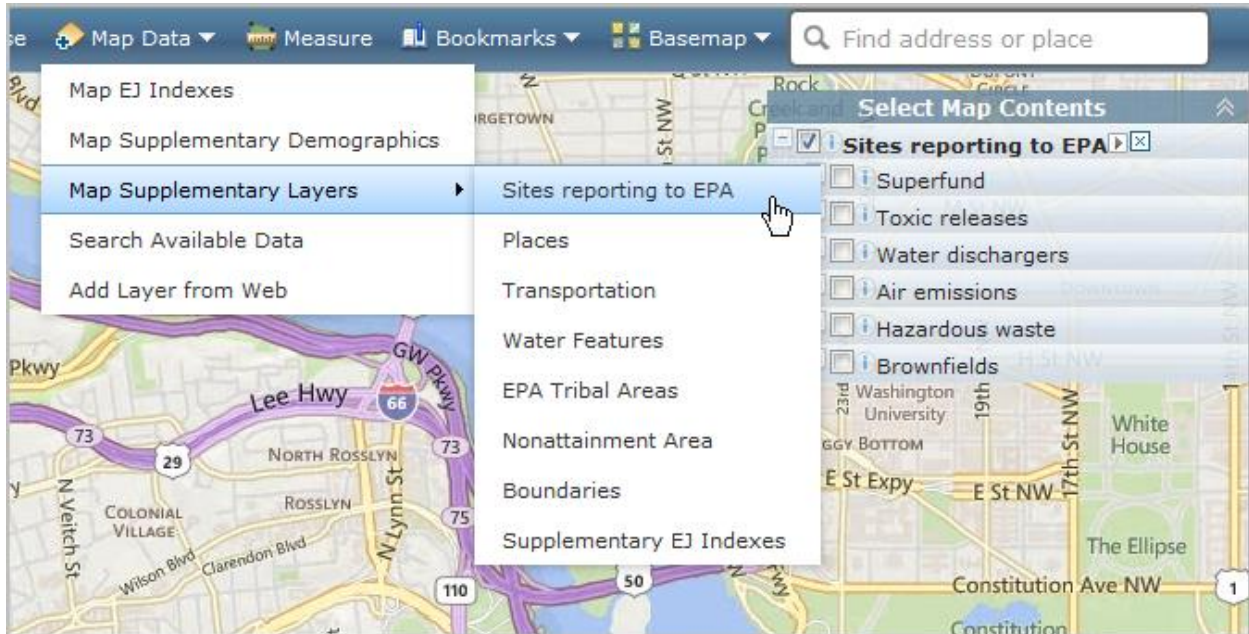
5.3.1 Sites Reporting to EPA

This map service contains the locations for the following program systems: Superfund (NPL), Toxic Releases (TRI), Water Dischargers (NPDES), Air Emissions (AFS), Hazardous Waste (RCRAInfo), and Brownfields (ACRES).

1. Click Map Data in the Widget toolbar.

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2. Click or mouse over Map Supplementary Layers.
3. Click Sites reporting to EPA.
4. Sites reporting to EPA will be added to the Select Map Contents menu.
5. Check boxes to add layers to the map.

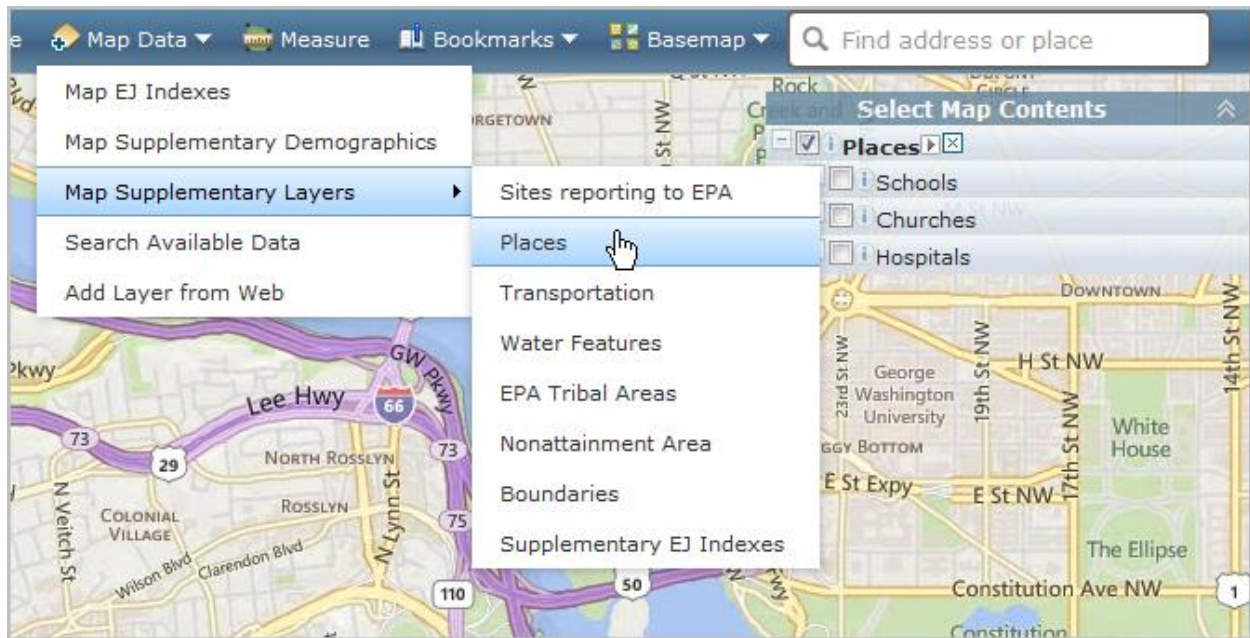


5.3.2 Places

This map service contains locational data for Schools, Churches, and Hospitals from the United States Geological Survey (USGS) Geographic Names Information System (GNIS) service.

1. Click Map Data in the Widget toolbar.
2. Click or mouse over Map Supplementary Layers.
3. Click Places.
4. Places will be added to the Select Map Contents menu.
5. Check boxes in the Select Map Contents to add layers to the map.

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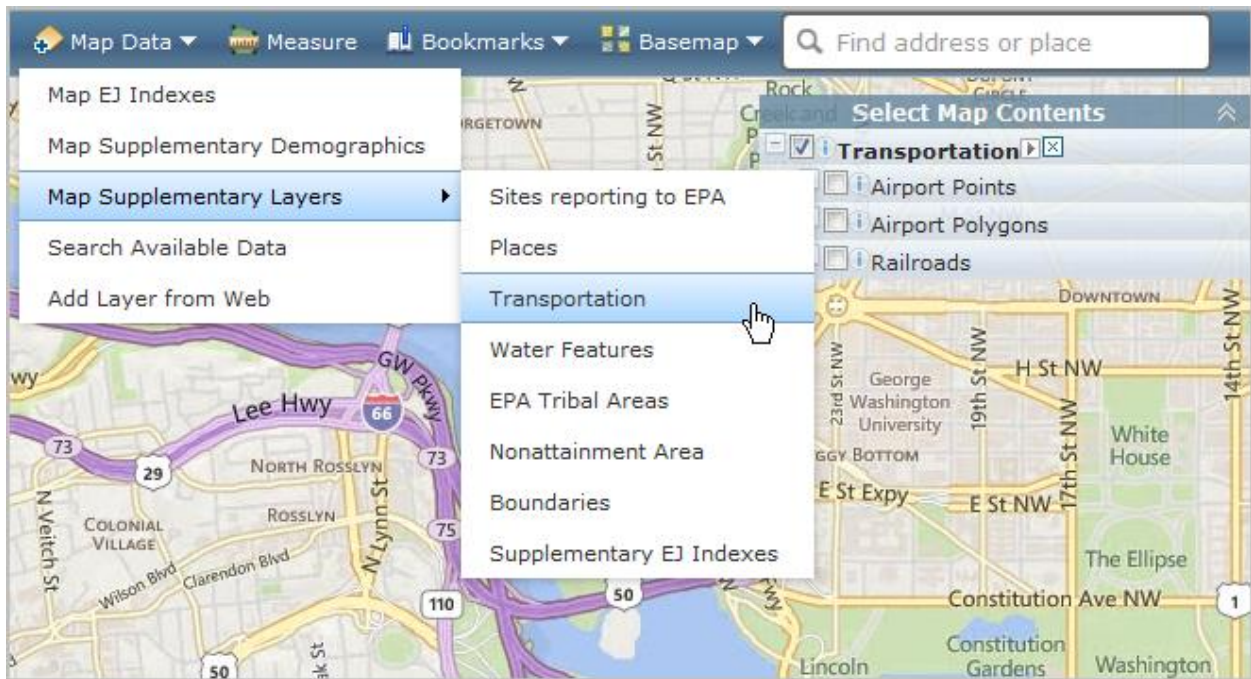


5.3.3 Transportation

This map service contains transportation layers for Airport Points, Airport Polygons and Railroads.

1. Click Map Data in the Widget toolbar.
2. Click or mouse over Map Supplementary Layers.
3. Click Transportation.
4. Transportation will be added to the Select Map Contents menu.
5. Check boxes in the Select Map Contents to add layers to the map.

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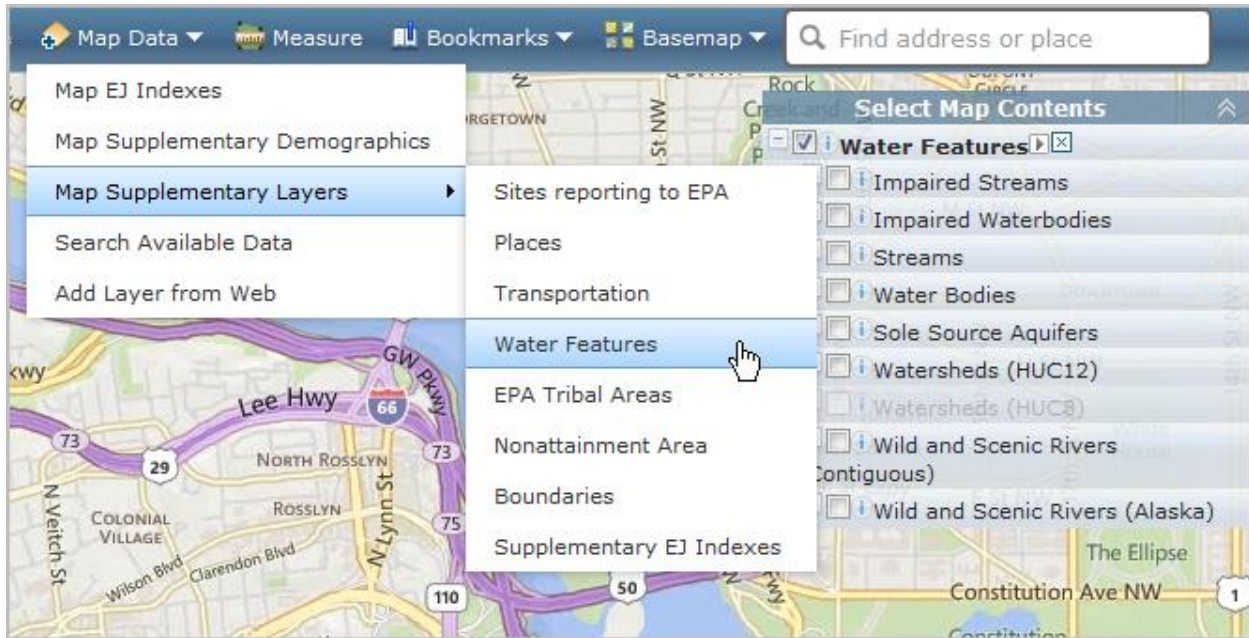


5.3.4 Water Features

This map service contains Water and Hydrological layers for Impaired Streams, Impaired Waterbodies, Streams, Water Bodies, Sole Source Aquifers, Watersheds (HUC12), Watersheds (HUC8) (6), Wild and Scenic Rivers (Contiguous), and Wild and Scenic Rivers (Alaska).

1. Click Map Data in the Widget toolbar.
2. Click or mouse over Map Supplementary Layers.
3. Click Water Features.
4. Water Features will be added to the Select Map Contents menu.
5. Check boxes in the Select Map Contents to add layers to the map.

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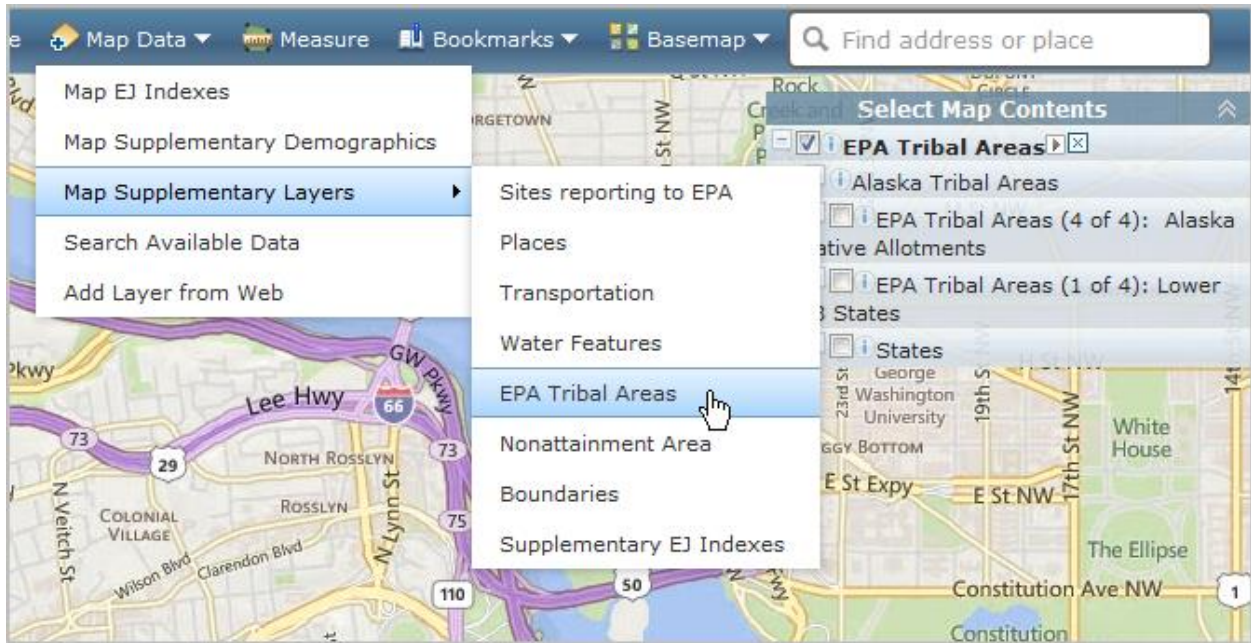


5.3.5 EPA Tribal Areas

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

1. Click Map Data in the Widget toolbar.
2. Click or mouse over Map Supplementary Layers.
3. Click EPA Tribal Areas.
4. EPA Tribal Areas will be added to the Select Map Contents menu.
5. Check boxes in the Select Map Contents to add layers to the map.

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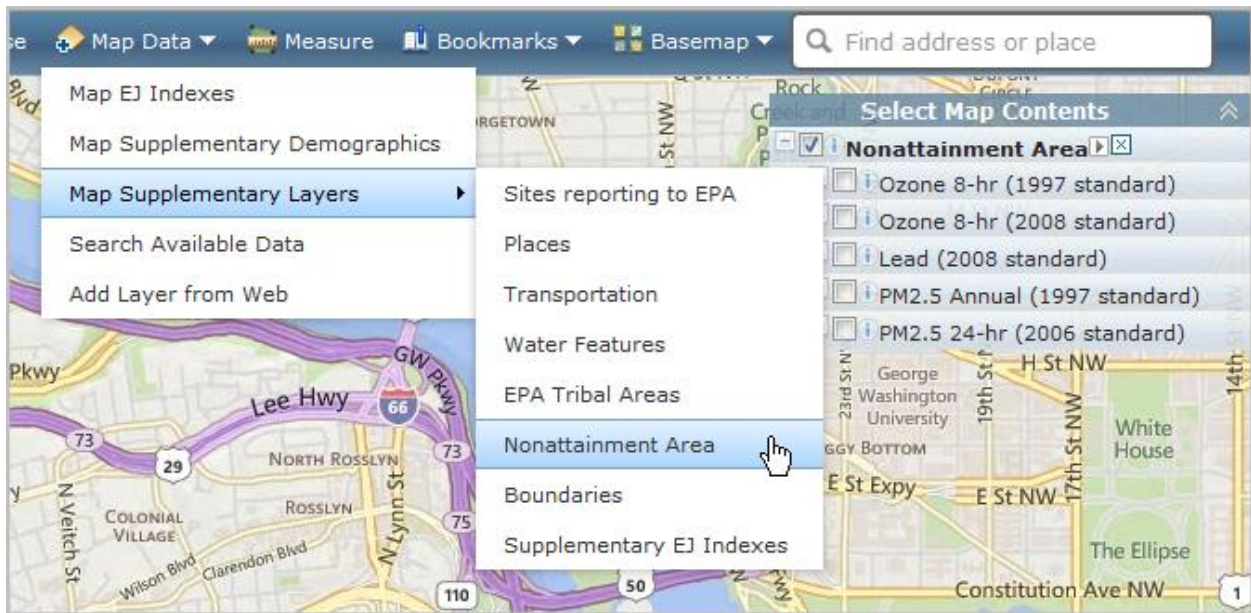


5.3.6 Nonattainment Area

This map service contains publically available nonattainment areas data published by EPA. Further information on EPA nonattainment areas can be found at <http://www.epa.gov/oaqps001/greenbk/index.html>.

1. Click Map Data in the Widget toolbar.
2. Click or mouse over Map Supplementary Layers.
3. Click Nonattainment Area.
4. Nonattainment Area will be added to the Select Map Contents menu.
5. Check boxes in the Select Map Contents to add layers to the map.

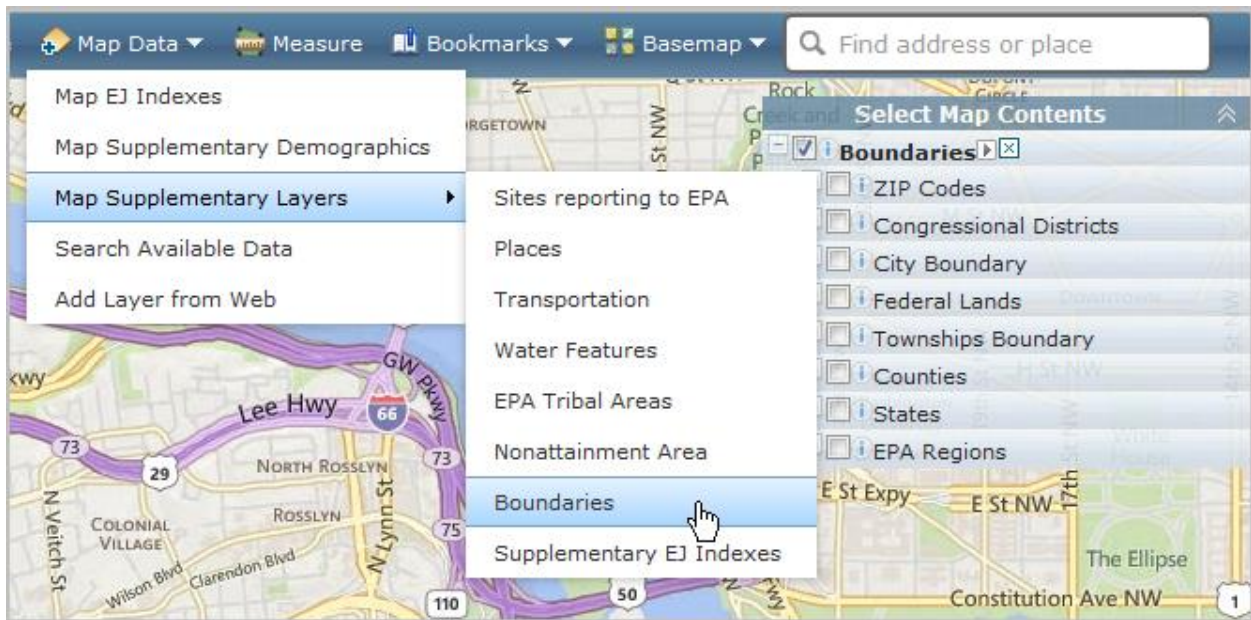
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5.3.7 Boundaries

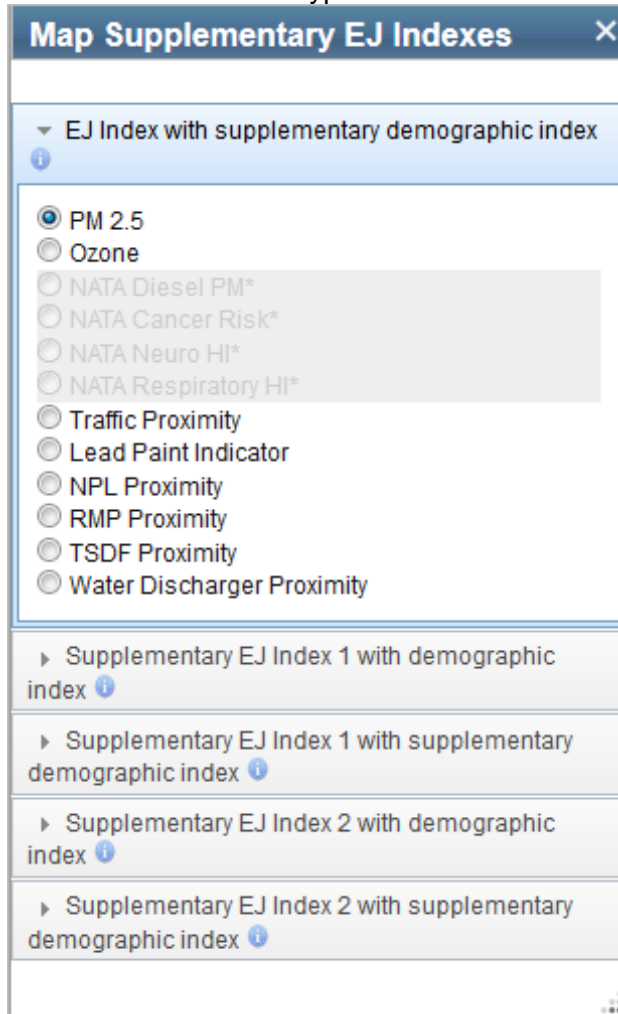
This map service contains boundary data for ZIP Codes, Congressional Districts, City Boundary, Federal Lands, Townships Boundary, Counties, States, and EPA Regions.

1. Click Map Data in the Widget toolbar.
2. Click or mouse over Map Supplementary Layers.
3. Click Boundaries.
4. Boundaries will be added to the Select Map Contents menu.
5. Check boxes in the Select Map Contents to add layers to the map.



5.3.8 Supplementary EJSCREEN data

Each tab under **Supplementary EJ Indexes** holds one of two supplementary EJ indexes combined with one of two demographic indexes. The twelve environmental indicator sublayers are the same for each type of EJ Index.



5.4 Search Available Data

The Search Available Data 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.

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Search Available Data ✕

Enter keywords below to search publicly available data layers from many sources through [ArcGIS.com](#). If you have an account through ArcGIS.com, please click "Sign In" on the top-right corner to sign in and view additional available information through your platform. [Sign in](#)

Enter keyword to search:

Within current map window
 Search within group

1. Enter a keyword in the **Enter keyword to search** text box. Press Enter on the keyboard or click **Search**.

Search Available Data ✕

Enter keywords below to search publicly available data layers from many sources through [ArcGIS.com](#). If you have an account through ArcGIS.com, please click "Sign In" on the top-right corner to sign in and view additional available information through your platform. [Sign in](#)

Enter keyword to search:

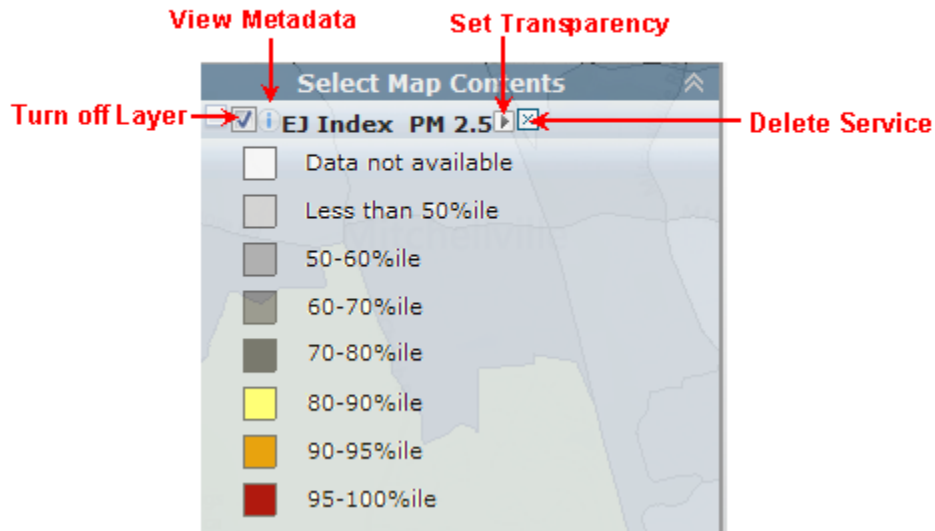
Within current map window
 Search within group

EJSCREEN User Guide

2. Search results display in the window and add Filtering options



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



5.5 Add layer from the Web

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

Add Layer from Web ✕

Choose one of the following options and enter a proper URL to add publicly available data from the web to the map.

ArcGIS Server Web Service (Whole service)

OGC Web Service (WMS)

KML/KMZ

GeoRSS

*URL:

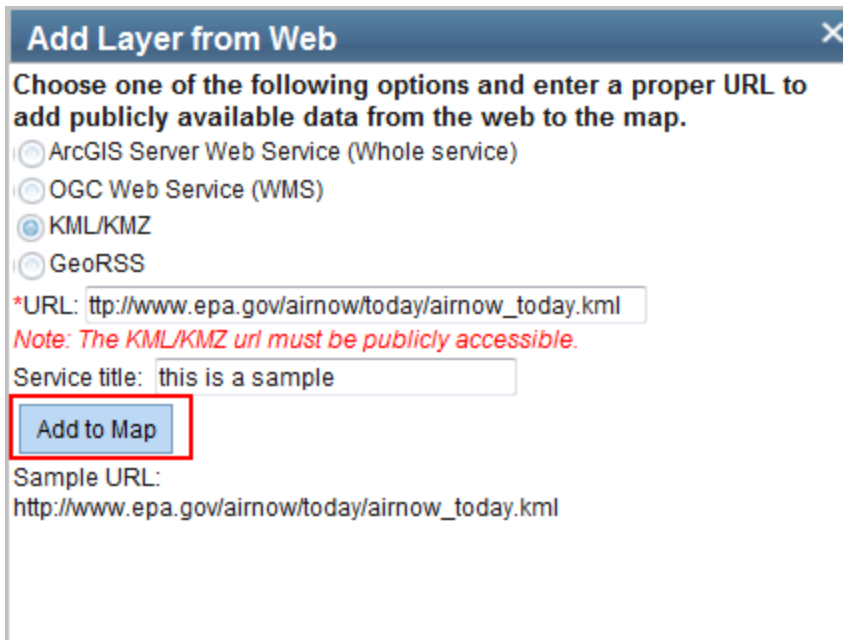
(*http://<server>/arcgis/rest/services/<service name>/MapServer*)

Service title:

Add to Map

Sample URL:
`http://sampleserver1.arcgisonline.com/ArcGIS/rest/services/Demographics/ESRI_Census_USA/MapServer/0,1`

1. Select from the options by clicking the appropriate radio button.
2. Enter a valid publically 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.



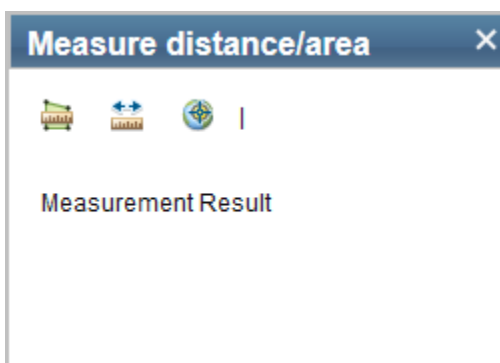
6. Measure Widget

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

1. Locate the Widget toolbar at the top of the application.
2. Click the **Measure** icon.



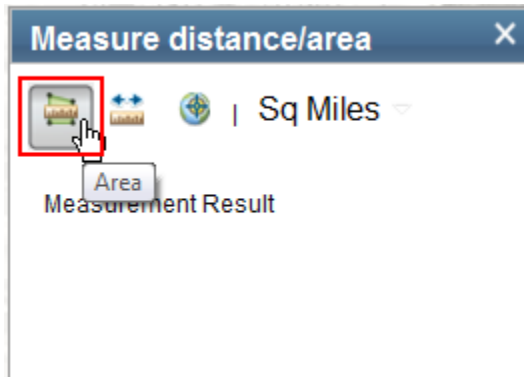
The **Measure** widget will be displayed.




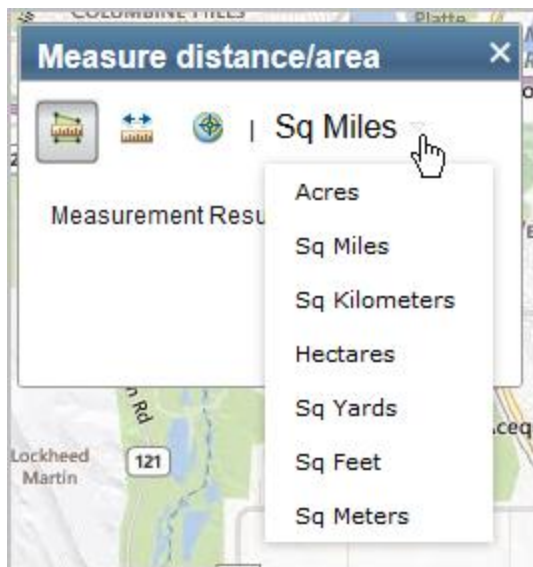
6.1 Measure Area

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

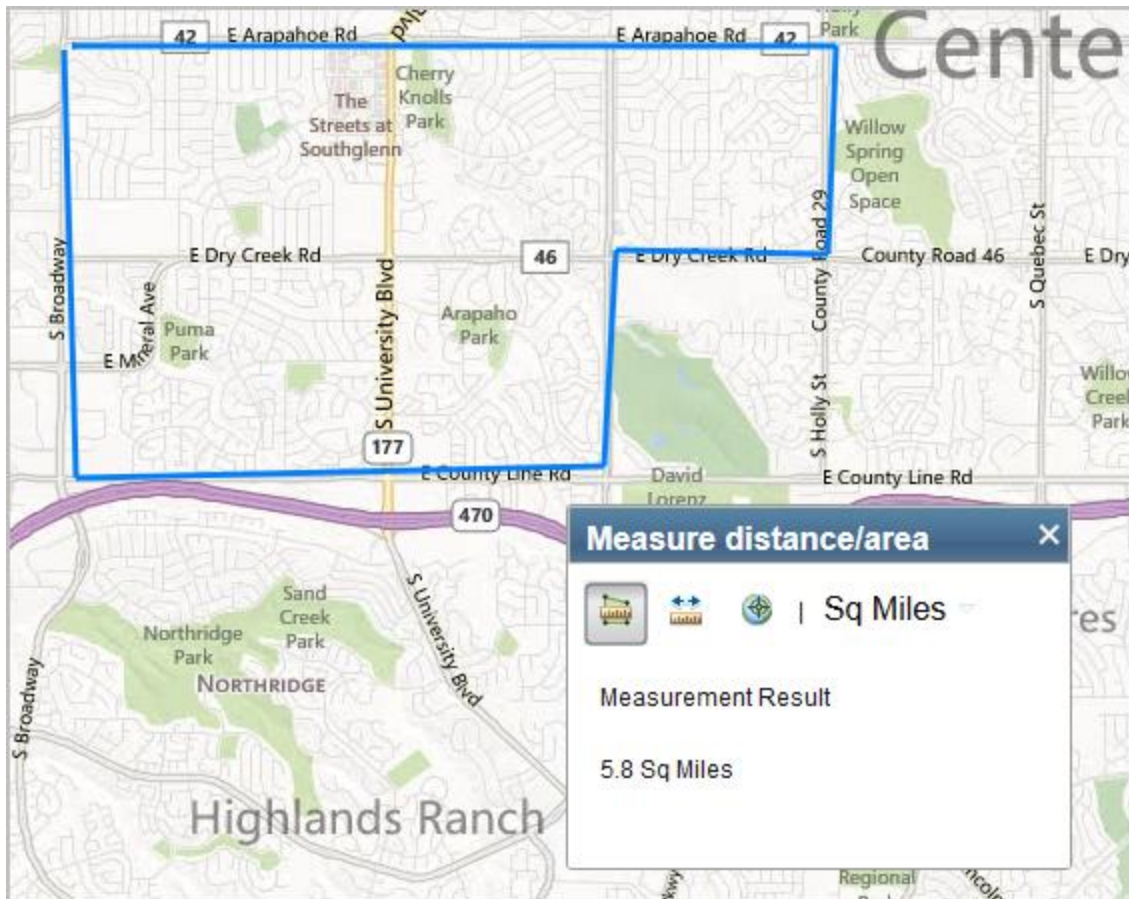


1. Locate the Widget toolbar at the top of the application.
2. Click the **Measure** icon.
3. Click the **Measure Area** icon .
4. Area Units of Sq Miles will appear on the Measure window. A dropdown menu with all unit options is located next to the default units.



5. Select the desired unit.
6. Click on the map to begin drawing the polygon. Continue clicking to add to the polygon and double click to complete the drawing.
7. The area measurement will appear in the Measure window.

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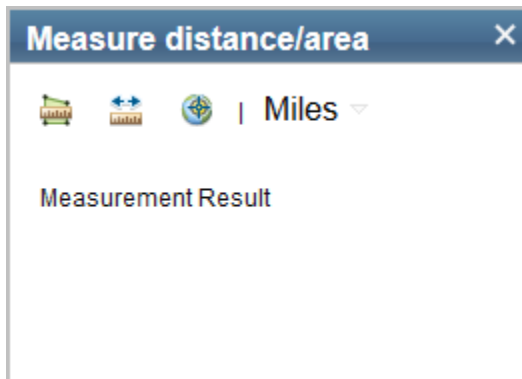


8. To remove the drawing click the Erase Icon in the toolbar, click on the map to begin a new drawing, or close the Measure tool.




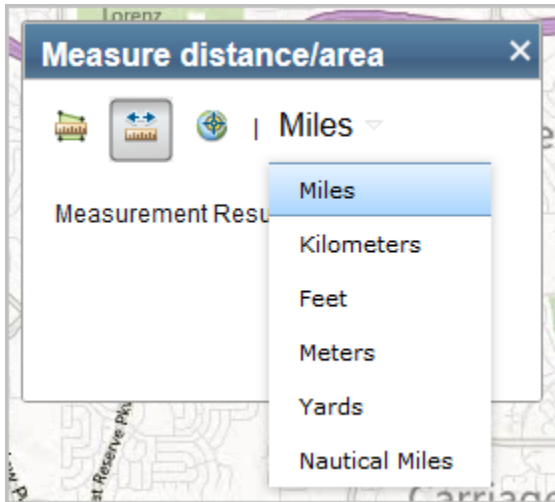
6.2 Measure Line

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

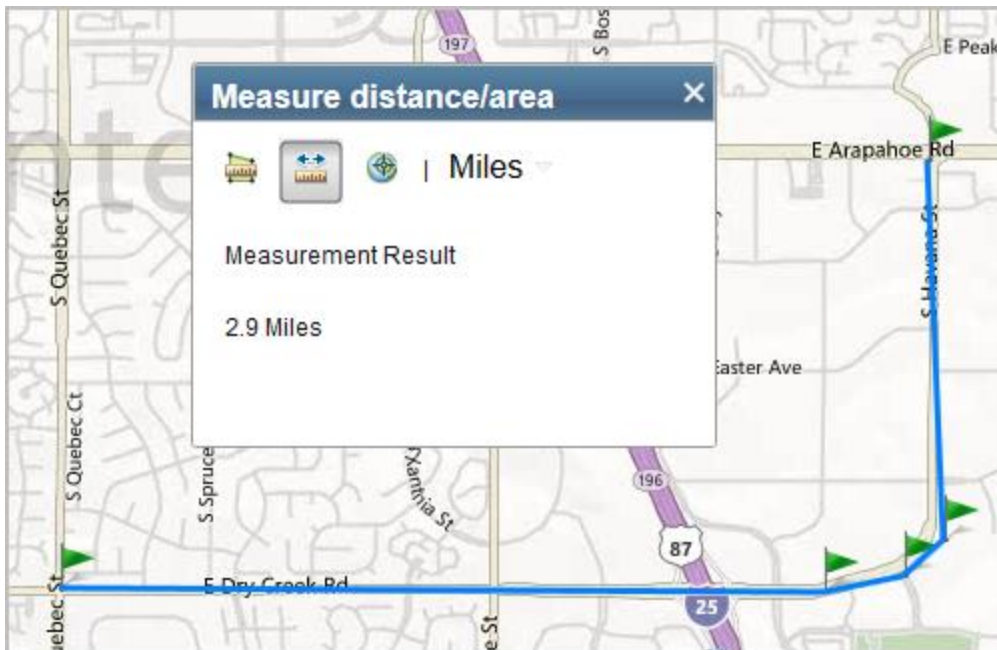


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1. Locate the Widget toolbar at the top of the application.
2. Click the **Measure** icon.
3. Click the **Measure Line** icon .
4. Distance Units of Miles will appear on the Measure window. A drop down menu with all unit options is located next to the default units.



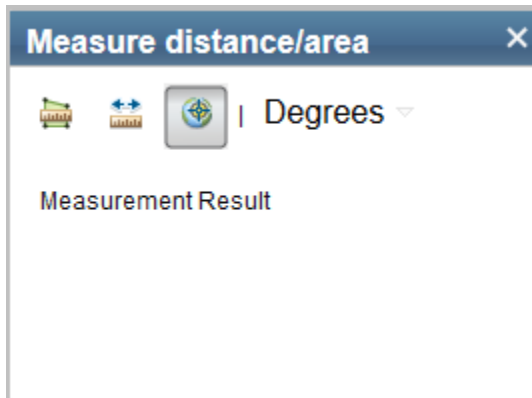
5. Click anywhere on the map display to begin a line. Click to add points along the line or to add angles to the line.
6. Double-click to complete the line.
7. The distance measurement will appear in the Measure window.




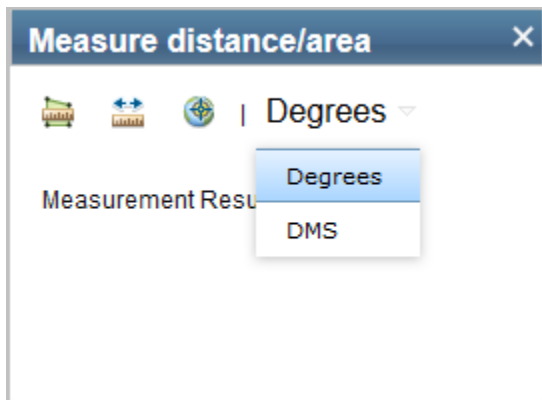
- To remove the line click the Erase Icon in the toolbar, click on the map to begin a new line, or close the Measure tool.

6.3 Latitude Longitude for a point

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

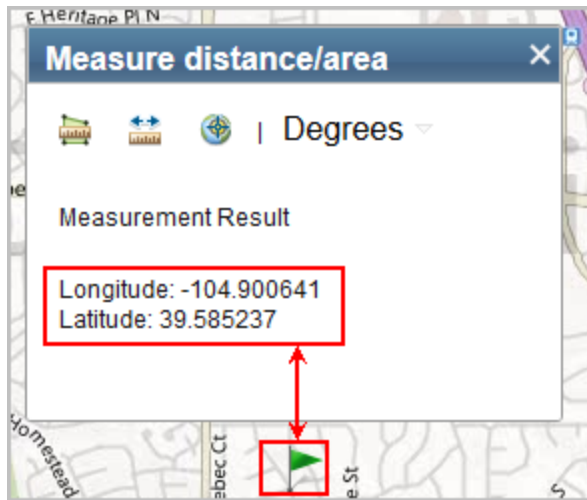


- Locate the Widget toolbar at the top of the application.
- Click the **Measure** icon.
- Click the **Degrees** icon .
- Location Units of Degrees will appear on the Measure window. A drop down menu with unit options is located next to the default units.



- As the mouse is moved over the map the current location will display in the Measure window.
- Click on the map to add a flag to the map and freeze the location in the measure window.

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7. The location measurement can be copied from the Measure window.
8. To remove the flag click the Erase Icon in the toolbar or close the Measure tool.
9. To find the measurement of a new location click the Degrees icon in the measure window and click the map. This will also remove the previous flag.