Policy Map

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GIS and Spatial Data Center
McKeldin Library, Room 4118
College Park, MD 20742-7011

GIS Facilities at the University of Maryland

McKeldin Library

ArcGIS 10.5 and QGIS (an open source GIS software package) are loaded on all public workstations in McKeldin Library, including those located in the McKeldin 6101 instruction laboratory. The laboratory is open to the public during library hours when not in use by a class or librarian. The laboratory schedule is posted on the window by the door and updated each week. Color printing and large format printing are also available in McKeldin Library.

The GIS laboratory is located on the fourth floor of McKeldin Library in room 4118. This laboratory is available for use by faculty, staff, and students using geospatial methods in their research at the discretion of GIS and Spatial Data Services Center Staff. ArcGIS 10.5 and QGIS are installed on all computers in this laboratory, as well as other geospatial, image processing, and statistical packages.

For a complete list of software packages available, please see our GIS Facilities link
https://www.lib.umd.edu/gis/people-and-facilities

Other Facilities

There are other departmental (e.g., anthropology, architecture/urban planning, civil engineering, geographical sciences, and landscape architecture) GIS laboratories on campus that are restricted to faculty, staff, and students in each of those disciplines. Additionally, the Office of Information Technology's software licensing program (http://www.oit.umd.edu/slic) offers ArcGIS at special/reduced rates for faculty and staff at the University of Maryland.

Getting Started

1. Go to UMD database finder at https://www.lib.umd.edu/dbfinder and search for Policy Map. Click on it to launch the Policy Map website.
2. Go ahead and sign up to create an account.

Maps

Searching the Map

Location ▼   Enter Address, City, County, Stat

The set location bar is used to navigate the map to a specific location or add a location onto a Table. Similar to most online mapping tools, you can search for locations by an address or a type of geography (e.g. zip code, city, county, or state), but users can also search by predefined geographies like census tracts, congressional districts, school districts, metro areas, and other geographies.

Search the Map – The default way to use the search bar is by Location, which allows a user to enter an address or geography. To search for an address, type a location in the entry box and click the magnifying icon (or your Enter key). When an address is located, an icon will appear on the map to identify the address. The Info Bubble gives users the option to remove the icon (**Clear Point**) or create a radius report (**See Report**) from the address location.
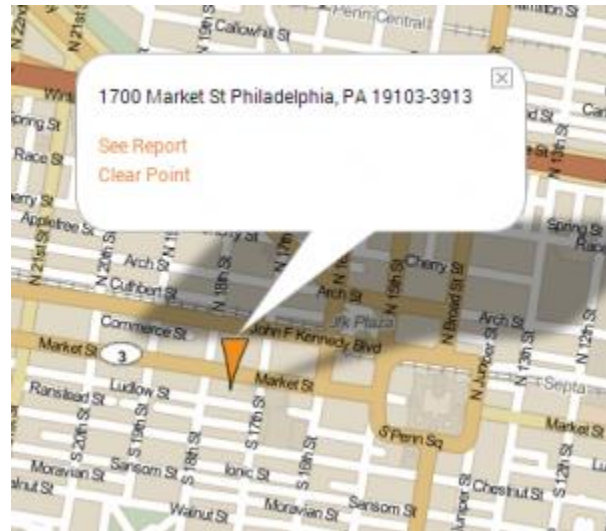
Pre-defined Geographies – You can search by pre-defined geographies in PolicyMap by select the category in the drop down menu.
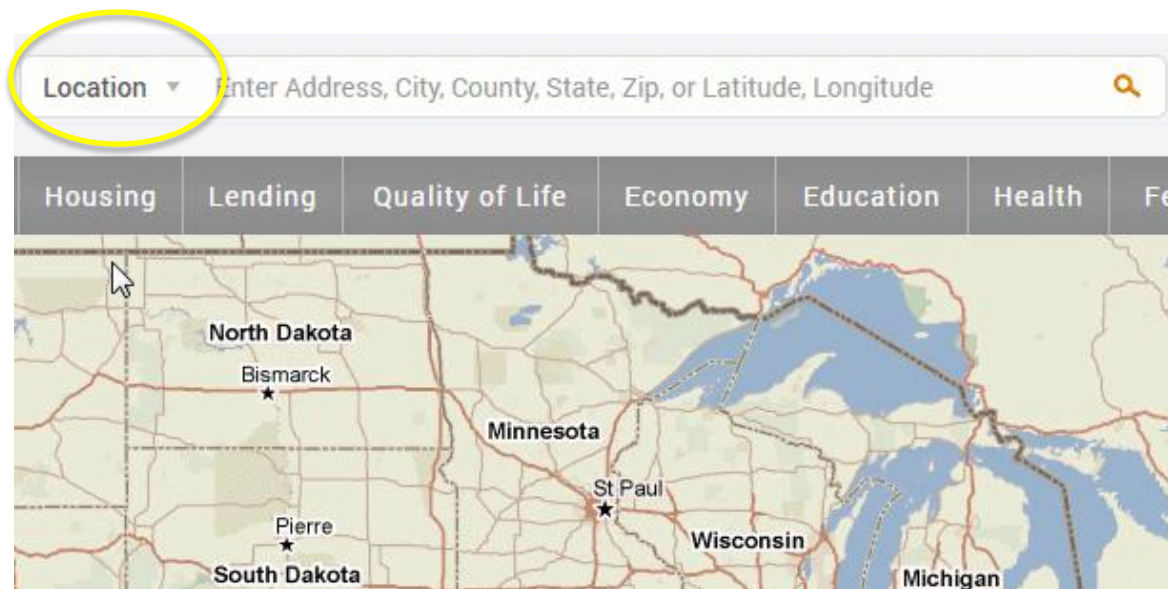
Census Tracts and Block Groups – Users with a FIPS (Federal Information Processing Standard) code could enter the ID in the respective tabs and the map will locate and highlight the boundary for that geography. The suggested locations for tracts and blockgroups will appear after the 10th digit for tracts and 11th digit for blockgroups, and both will display the boundary year(s) each location. Between 2000 and 2010, the US Census updated a large number of census tract and blockgroup boundaries, so on PolicyMap users can see data for either boundaries and also search for them.
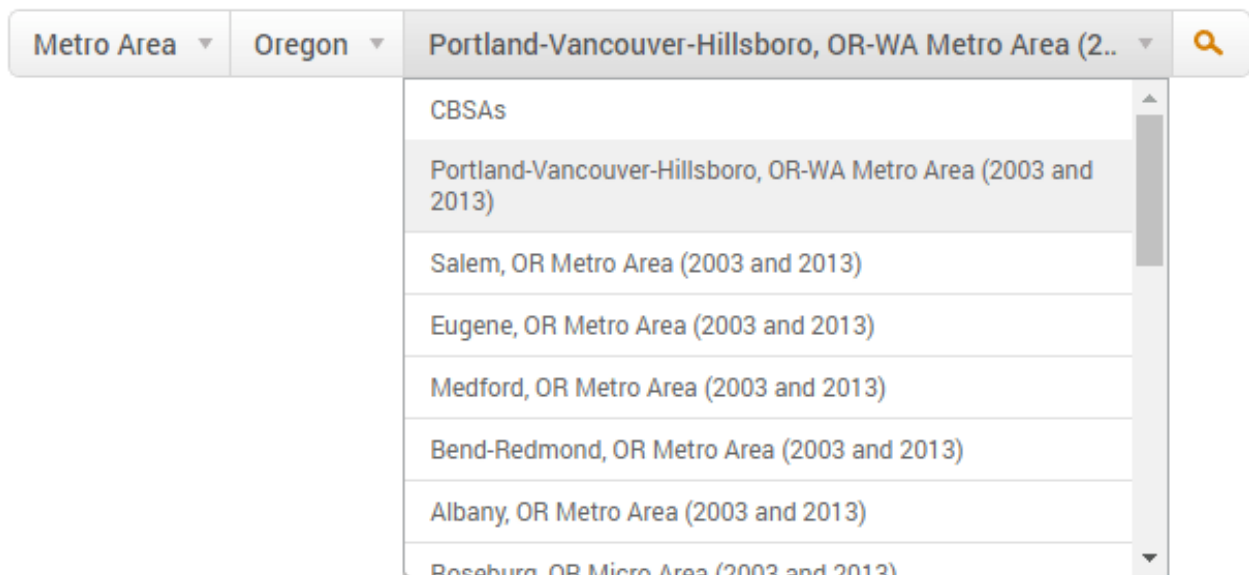
Cong. District – PolicyMap has loaded the latest Congressional districts for all 50 States, US Territories, and Washington DC.

School District – School districts can be found by selecting the state and entering the name of the school district. The suggested locations for schools districts will also appear after entering the 3rd letter of the school district name.

State Districts – PolicyMap has also loaded the legislative districts for the 50 states and Washington DC. When searching for state House and Senate districts, select "Upper House District" to search for the state Senate districts and "Lower House District" for state House districts.

Metro – Users can find a list of CBSAs in a state, with a metropolitan containing over 50,000 people and a micropolitan containing 10,000-49,999 people.

Metro Area ▾	Oregon ▾	Portland-Vancouver-Hillsboro, OR-WA Metro Area (2.. ▾	🔍

CBSAs

Portland-Vancouver-Hillsboro, OR-WA Metro Area (2003 and 2013)

Salem, OR Metro Area (2003 and 2013)

Eugene, OR Metro Area (2003 and 2013)

Medford, OR Metro Area (2003 and 2013)

Bend-Redmond, OR Metro Area (2003 and 2013)

Albany, OR Metro Area (2003 and 2013)

Roseburg, OR Micro Area (2003 and 2013)

To read a full guide on all features on PolicyMap, please look at our Primer available here

Data Layer Legend
To add a data layer, click on any of the tabs visible at the top. For example, Demographics or Income & Spending.

Demographics	Incomes & Spending

When a data layer is added, the Legend will display specific information about the current data layer (e.g. Year, Variable, Range Values, etc) and the range for each color on the map. The legend also

gives you the ability to fully customize the map by; changing the year, how the data is displayed by changing the variable, making your own custom ranges, and host of other features.

Depending on the data layer added, you can toggle between available years, quarters, or even months.

Variable – Changing the variable will change how data is displayed on the map. Each data layer might have specific and unique variables. You can toggle between different variables, including the number, currency, percent, or even the change across years depending on the data layer displayed.

Shade By – gives you the ability to change the geography at which the current data layer is shaded. For example, you can create maps of Philadelphia County by zip code or city, instead of the default shade level of census tracts.

Clear Data Layer – Select the X symbol to the left of the data title in the legend to remove the data layer.
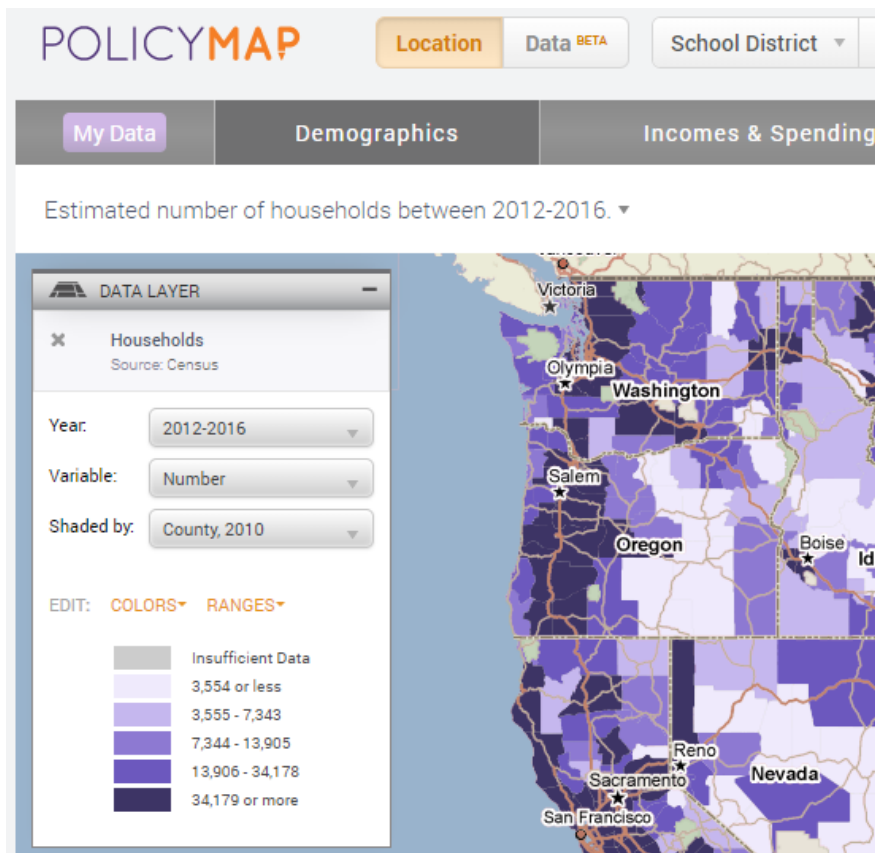
My Data and Favorites
The My Data tab will contain any dataset created in your account or share to your account, as well as a list of all Data Layers which have been marked as a favorite.

The menu is broken into 3 sections; **My Uploaded Data**, **Data Shared with Me**, and **My Favorites**
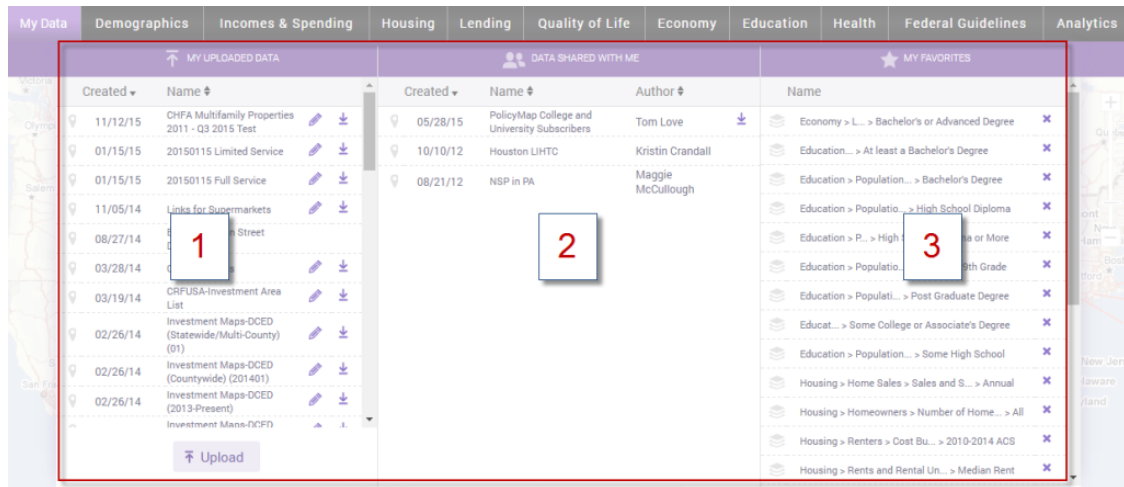

My Uploaded Data will display all datasets created in the account and also datasets processed and uploaded by PolicyMap. Select each header to resort.

- Select the name of the dataset to load onto the Map, Tables, or 3-Layer Maps.
- Select the pencil icon ( ) to open the dataset in the Data Loader to edit.

Data Shared with Me are datasets that other users have uploaded using the Data Loader and have selected to shared with this account.

- Select the dataset name to load onto the Maps, Tables, or 3-Layers Maps
- Sort by any of the headers
- Select the download icon to download an excel/csv file of the data
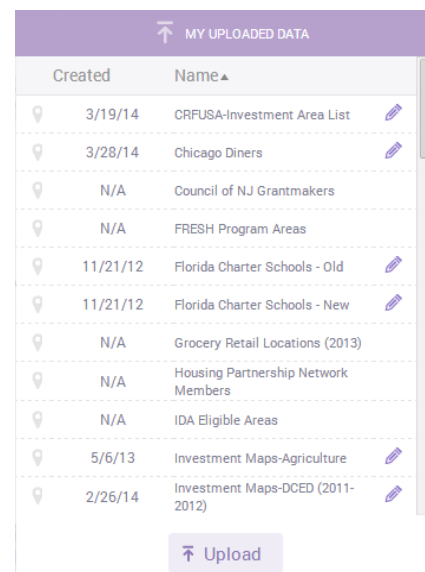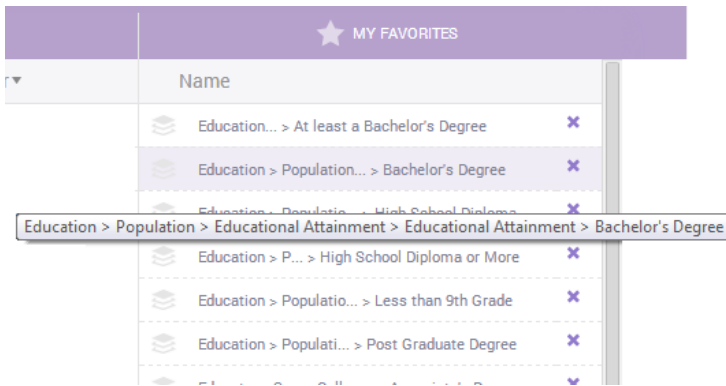
My Favorites will display all data layers that you have marked as a favorite.

- Hover the mouse over a data layer to see the full path of where the data layer is listed in the data menus.

- Select the ✳ icon to remove the data layer from your favorites list.

To add a data layer to your favorites list, load any data layer from the data menu and select the star next to the map title. You can also remove a data layer by selecting the star icon again.


Print, Save, and Email
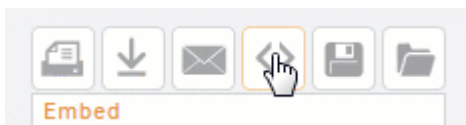
You've made the perfect map; data layers are customized, map is zoomed to your location, and data points have been added and filter. Now you want to share this wonderful map with others. The icons on the top right of the map will allow you to save and share your maps. All printed maps, tables, and reports will store a copy in your My Saved Work, allowing you to log into your account at any time and download a copy or reopen a saved copy.

Print – the print feature allows a user to download a map to save offline. Printed maps can then be used in an electronic document like a Word or PowerPoint file or simply printed out to have a hard copy. Selecting the icon will open a window with some options for your printout.
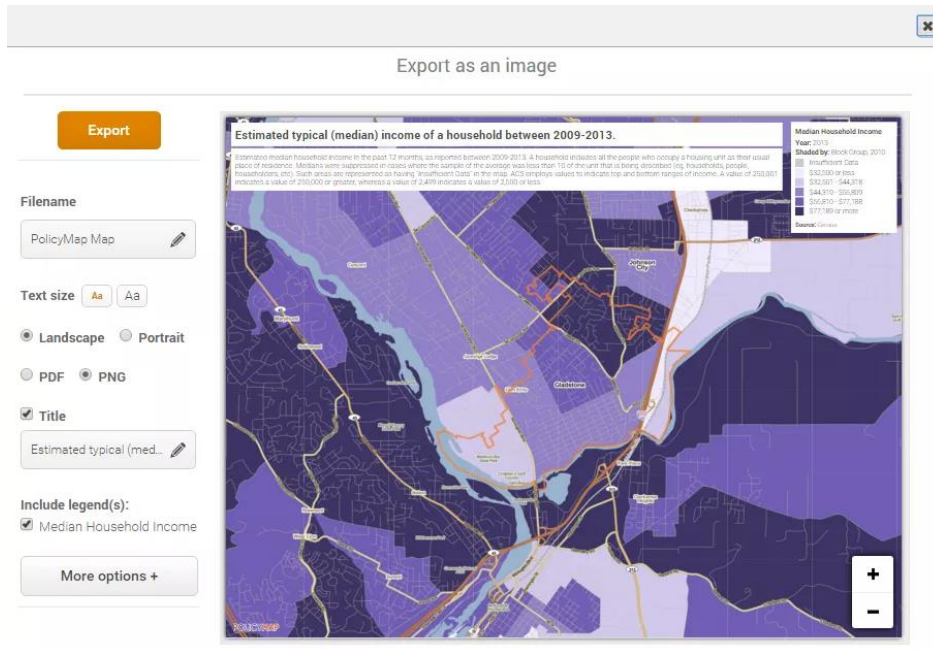
- **Filename** – Change the name of the file that is downloaded.
- **Text size** – Increase the font size of the map title, data description, and legend text.
- **Landscape or Portrait** – Select to have your map display as a vertical or horizontal map.
- **PDF or PNG** – Each format offers a different use but all can be used in an electronic document like Word or PowerPoint. PNGs are graphic files which offer more customization options like re-sizing, cropping, or scaling.
- **Title** – This will allow you to edit the Map Title, or you can remove the Map Title completely from the exported map.
- **Include Legend(s)** – Remove the legend (or legends) from the exported map.
- **Data Layer description** – This will allow you to edit the data description, or you can remove the description completely from the exported map.
- **Cut out selected location(s)** – This will give you the ability to export a map which will only shade in the area of their location; sometimes called "island printing". Learn more about how island printing works here.
- **Add print margins** – This will add a 1/2 inch margin around the map area.

After you have selected the Export button, the file will download directly onto your computer through the browser.

↓

Download Data – gives users the ability to download any public data currently loaded. There are 3 different types of data that can be downloaded:

- Layer which is data aggregated to geographies like tracts, counties, and states,
- Points which is address level data,
- Points with Layer Data which is the ability to download address/point data joined to a geography and layer data.

Save – saving a map will save the location, data layer, and any point data added. You can customize the name by selecting "change name", or opt for the default map name. All saved maps will be available to retrieve in *My Saved Work*.

My Saved Work **–** stores all your saved work throughout PolicyMap. Saved maps, tables, and 3-Layer maps will save the data for the time of creation and reopening the saved work will automatically open the most recent updated data.

Reports and Lists will save a copy of the work as a PDF or CSV. These are will allow you capture the data for that period.

Share

Share allows users to share maps with other PolicyMap users or the public in a variety of ways. There are some limitations to the Share feature, mainly that users cannot share maps with subscription datasets or features overlaid. Luckily, over 80% of the data on PolicyMap can be shared and only a few map features are not sharable.
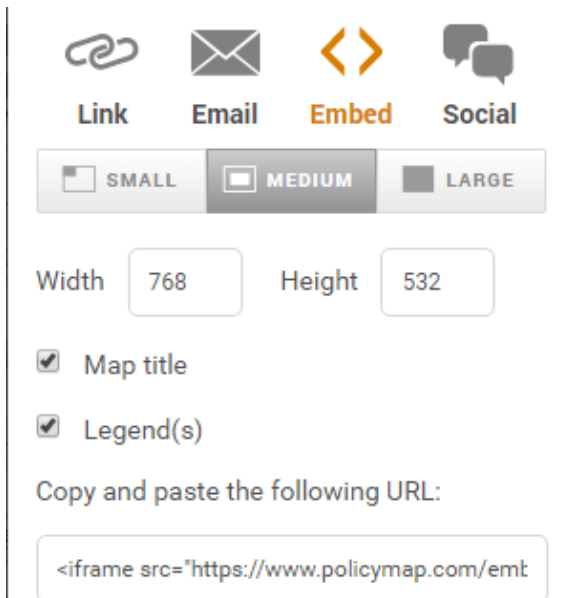
Link allows users to quickly create a URL link to share with others. This link will open the map to the exact location of the map with all the data and any customization done to the data.

Email sends that link to another user or multiple users. Users can write a custom message with the link.

The recipient will receive an email with a unique URL. The URL will take them to the exact map that was shared; zoomed to the same location, data layers and/or points added, and any filters placed.
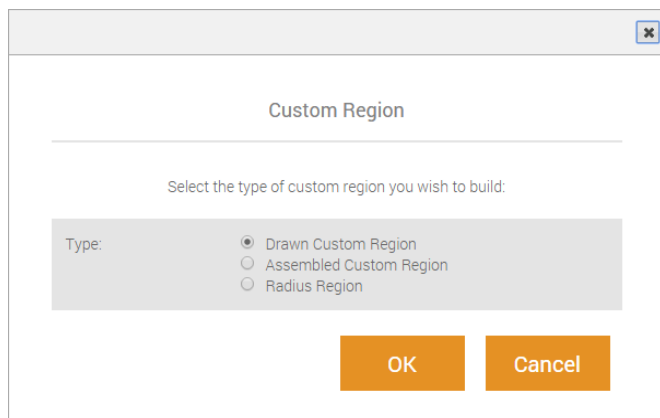
Embed Map allows users to add an interactive map onto their own website or forum. Embedded Maps have many of the same functions as the Maps tool; users can pan around the map and select a point or layer for more information.

Users can choose one of the three default size options or enter custom size that best fits their needs. The map title and legend are optional.

Social allows users to share maps on their Facebook, Twitter, or LinkedIn pages. These shared posts will have an image of the map and data, link back to PolicyMap, and let users add additional text.

Custom Regions

Custom Region

Select the type of custom region you wish to build:

Type:
- ● Drawn Custom Region
- ○ Assembled Custom Region
- ○ Radius Region

OK   Cancel

Custom regions gives subscribers and trial accounts the ability to create unique boundaries on the map, and then build reports or download data for those areas. Drawn custom regions can cross predefined geographic boundaries like census tracts, zip codes, and counties.

Users can also draw a radius around an address or assemble a grouping of boundaries – like block groups, census tracts or zip codes – to create a custom region. To use these features, click the Create button on the bottom of the map and choose one of the three (3) types of custom regions: Drawn, Assembled, or Radius.

All saved custom regions will be available in the My Custom Region menu on the bottom of the map. Users can load custom regions, share regions, or even delete a custom region.

Draw Custom Region – This allows you to free draw a custom region right on top of the map.

- After selecting OK (read the instructions for details), your mouse pointer will appear as crosshairs.
- To begin drawing the boundaries of your desired region, click once on the map to create the corners of your custom region. The grey line that appears shows the boundary as you draw it.
- You can pan around the map by holding down the left mouse button while building a custom region or zoom in and out using the zoom bar on the left of the map.
- Close the custom region by clicking on the first point again.
- Once you close your custom region, enter a name and add an optional description in the dialogue box, then select Save.
- All saved custom regions will be available in your My Custom Regions menu below the map. If you make a mistake while drawing your region and want to start over, simply select the Cancel button from the bar along the bottom of the map, and then re-select Build Custom Region to begin again.
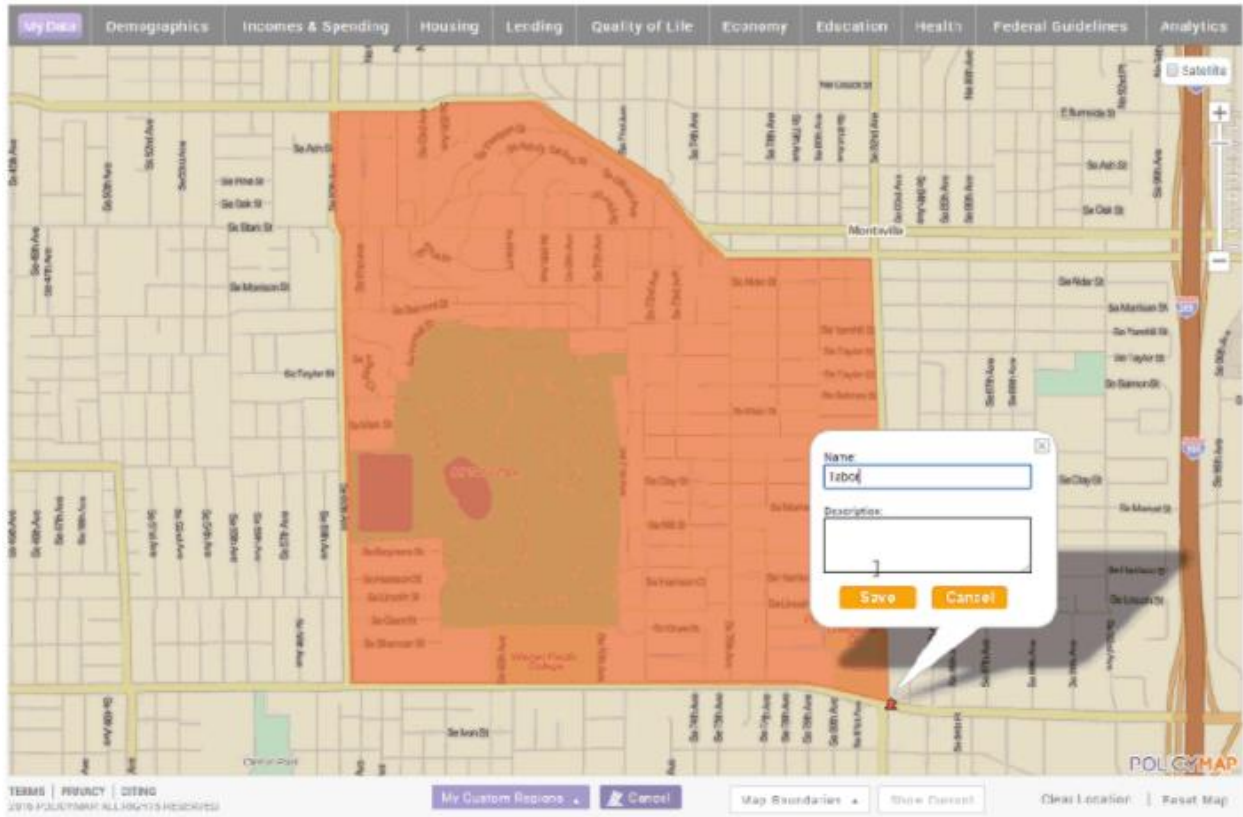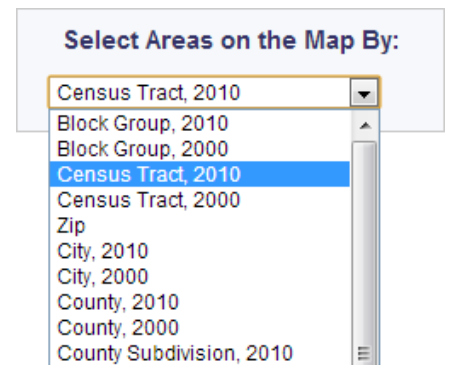

Assembled Custom Region – This gives you the ability to select and group geographies (e.g. census tracts, or zip codes) to create a custom region.

- After choosing Assembled Custom Region and selecting OK (read the instructions for details), the map will display the predefined geographic boundary for your current zoom level. You can change the boundary by choosing from the drop down menu in the "Select Areas on the Map By" window.
- To start, click within a boundary and the area will highlight. You will see the name of the highlighted boundary in the "Click Map to Assemble Region" window; continue to select other areas to assemble your custom region.
- To remove an area you already highlighted, click it again to deselect. Assembled custom regions can be non-contiguous.
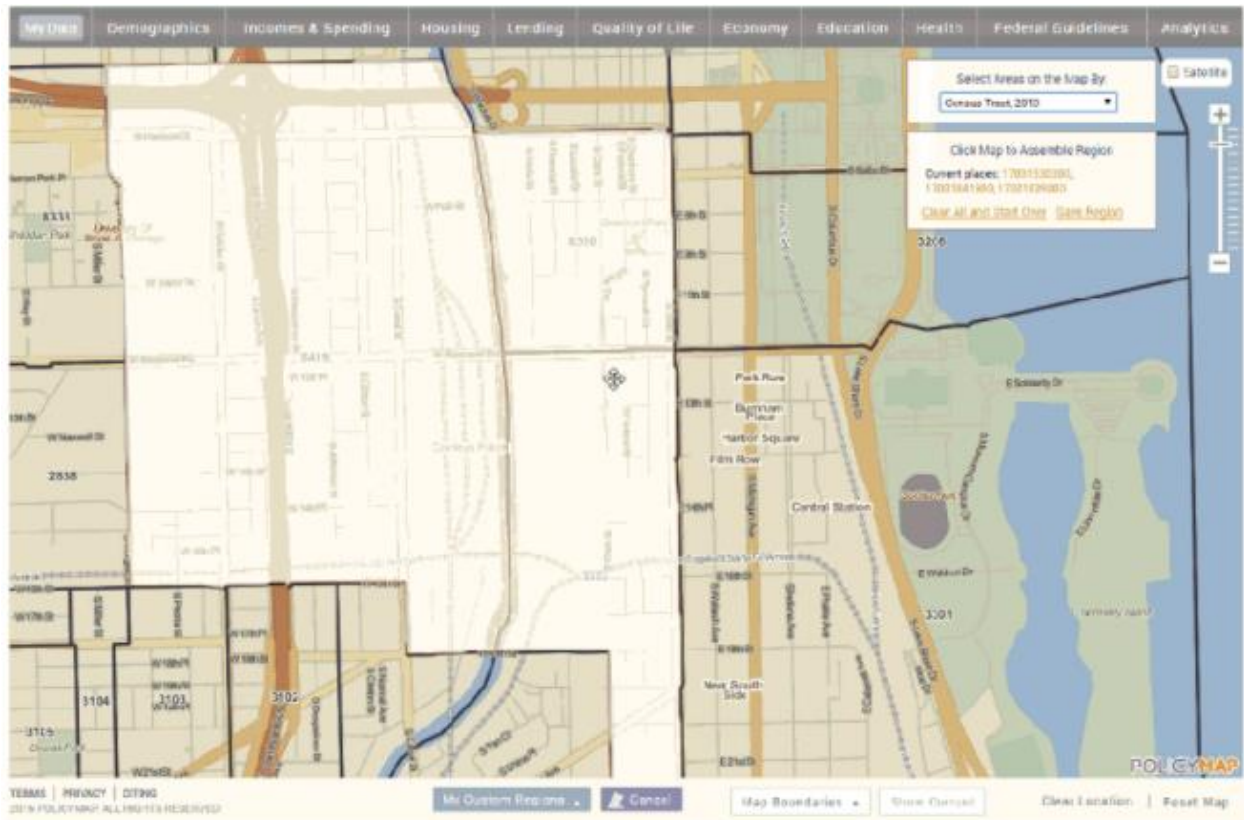
- When assembling a custom region, choose from the drop down menu in the Select Areas on the Map window to select the type of geography you want to use to assemble your custom region. If you change the geography, your custom region will clear and reset.
- You can clear your current custom region and start over, or Save when complete.

Select Areas on the Map By:

Census Tract, 2010	▼
Block Group, 2010	
Block Group, 2000	
Census Tract, 2010	
Census Tract, 2000	
Zip	
City, 2010	
City, 2000	
County, 2010	
County, 2000	
County Subdivision, 2010	

Click Map to Assemble Region

Current places: (no places selected)

Clear All and Start Over   Save Region

NOTE: You cannot change the boundary type in the Select Areas pulldown while making a custom region. If you do, you will lose the custom region you are assembling.

- Once you have selected the areas for your assembled custom region, select Save Region in the window, give your custom region a name, and select Save. All saved custom regions will be available in your My Custom Regions menu.

Radius Region – This allows you to create a radius boundary. You can enter a specific address as the center of the radius or click on the map to identify the center.

- After choosing Radius Custom Region and selecting OK (read the instructions for details), you can enter an address in the "Specify Center of Radius", specify the size of your radius and click GO.
  - Another unique option is to specify the size of the radius first and then click on the map to identify the center (you will see the latitude and longitude appear in the Specify Center box). This will draw a radius around the location selected on the map.
- To save, give your radius a name and description and click "Save" or select "Cancel" to clear the custom region and start over. All saved custom regions will be available in your **My Custom Regions** menu.
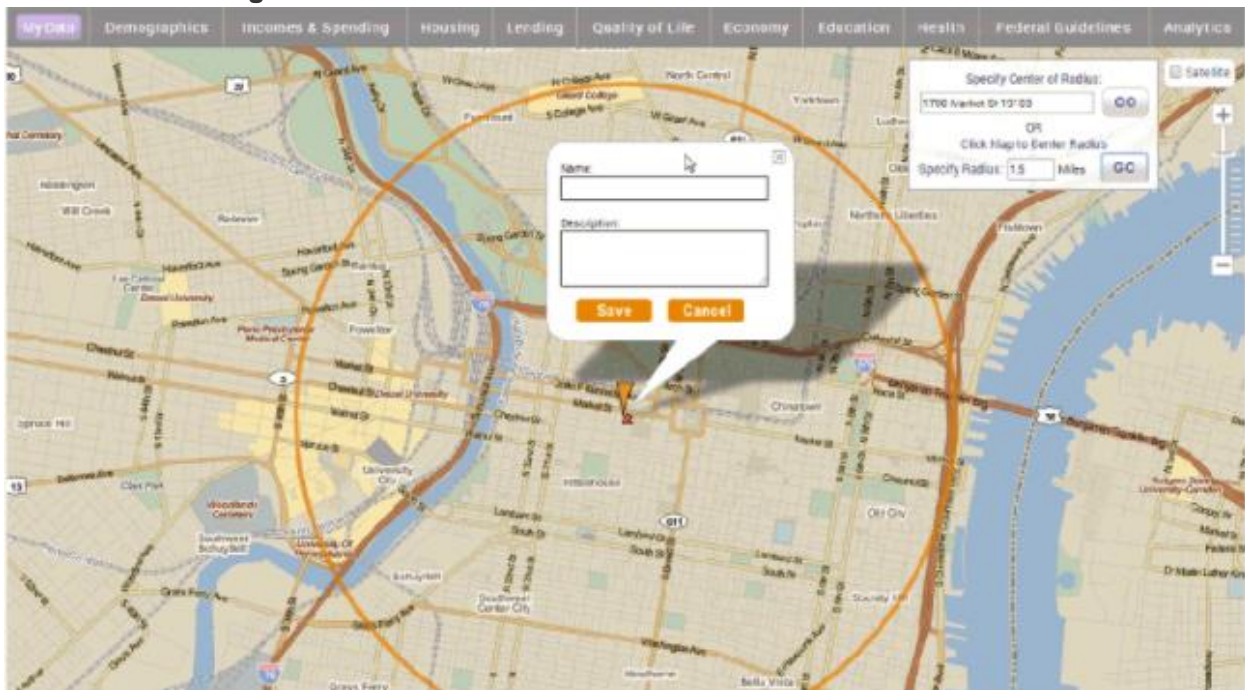
NOTE: The radius custom region has no size limit. For users who need data for an area larger than the 10 mile limit in Reports, create a radius custom region first and then generate a report.

Rules for Custom Regions – Custom regions can do a variety of things on PolicyMap and can be used in most features. Because of a custom region's multifaceted use, we had to create some very unique rules for how a custom region can work. For more information on these rules, visit the links below:

- [Assembled Custom Region Rules](#) – Users have the ability to group together predefined boundaries to assemble a custom region by, so here are some rules how an assembled custom region is created and used in other areas of PolicyMap. https://www.policymap.com/support/tutorial/maps-tutorial/custom-regions/custom-region-assembled-custom-region-rules/
- [The Geography Rule](#) – The geography used to aggregate data for a custom region is determined by the size of the custom region, which in turn determines the zoom level the custom region displays at. On PolicyMap, we sometimes call this the GeoSteps. https://www.policymap.com/support/tutorial/maps-tutorial/custom-regions/custom-region-geography-rule/
- [The 50% Rule](#) – For a geography to be included in the aggregation of a report or table, PolicyMap has determined that at least 50% of a geography must be contained by a custom region boundary. https://www.policymap.com/support/tutorial/maps-tutorial/custom-regions/custom-region-50-rule/

Data Points and Filters

Data Points allows users to view point datasets, like addresses, on the map. You can view these sites by themselves or on top of a data layer. Subscribers and trial users can add datasets which they have loaded using the [Data Loader](#) tool.

- Once a dataset is loaded, click on any point to display information about that site in the info bubble. Data Points are located in the 3rd a column of a data category.

- Once Data Points are loaded, the legend will appear on the map and users can select the icon on the map to see more information about that location.
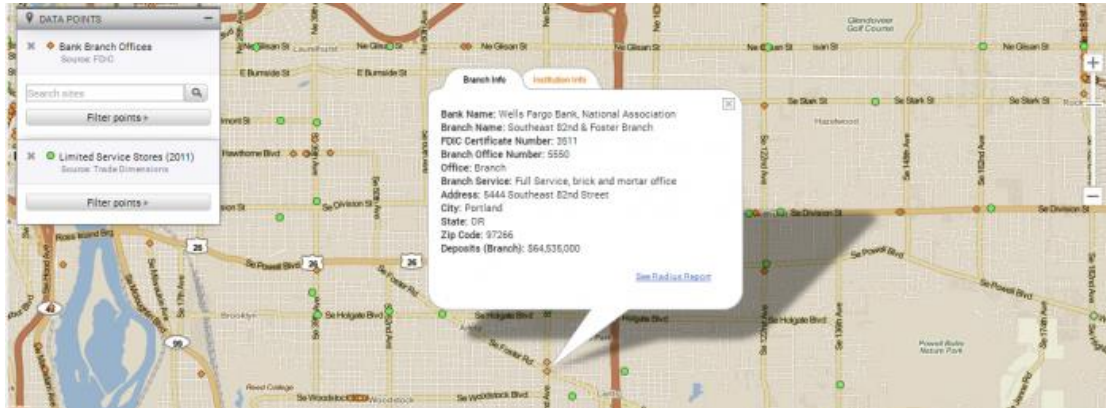
Data Points – Allow you to view address-level/point datasets, like addresses, on the map. You can view these points by themselves or on top of a Data Layer. Subscribers and trial users can add datasets which they have loaded using the Data Loader tool from their My Data tab.

- Once a dataset is loaded, click on any point to display information about that site in the info bubble.
- **Data Points Legend** After loading a point dataset, users can use the legend to filter points on the map or search.
  - Add multiple point datasets to you map: Simply click on each one you wish to add from the menu.
  - Filter datasets: To use the filter option, simply select the filer from the menu in the legend You can apply multiple filters to any dataset.
  - You can remove any site dataset or a filter(s) by clicking X symbol in the legend.
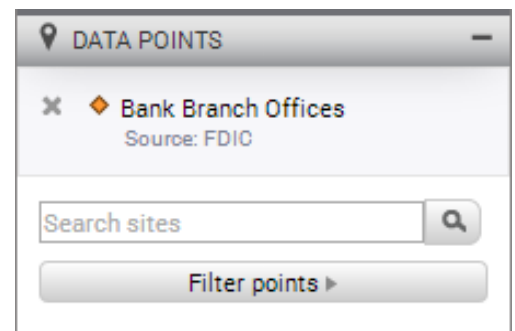
Data Points Filters – Use the filters option to show only address(es) that match a specific filter or even color code.

- To use the filter option, select the filter button in the legend and a menu of filter options will appear, select the indicator you want to filter by. For example, if you load Lending > Bank Branches, you can then choose to filter and show only full service branch locations. *(Note: not all point datasets will have filter options so look for the icon)*

If a point (address level) dataset has multiple indicators, users can then select multiple filters. Another example would be if you load the **Housing > HUD Multifamily** dataset and open the Info Bubble, you will see multiple tabs with lots of data for each multifamily site. Most of the indicators for each locations can be used as filters allowing users to find a specific group of addresses. So with the HUD Multifamily data, users can select to show addresses with a "Contract Status" of active **AND** an "Owner Company Type" of non-profit. The map will now only show address that match the two indicators. Select the X symbol in the legend to remove any filters added.
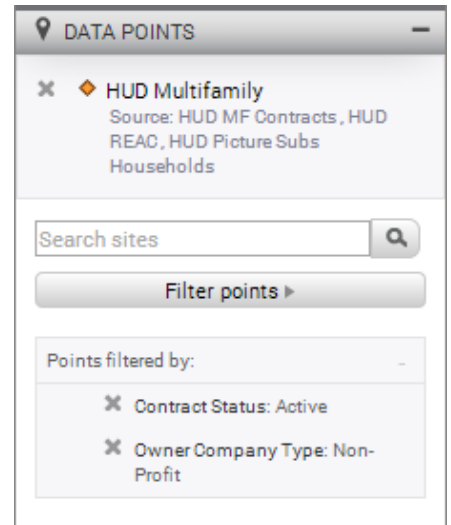
Color Code All Filter – this option will display each address by specific color and each color will represent a type of data for the indicator selected.

● For example, load **Health > Hospitals** and select the "color code all" option for Faculty Type. This will now show each type of facility by their colors shown in the Add Sites legend; orange are Childrens, white is Short Term, green is Long Term, etc.
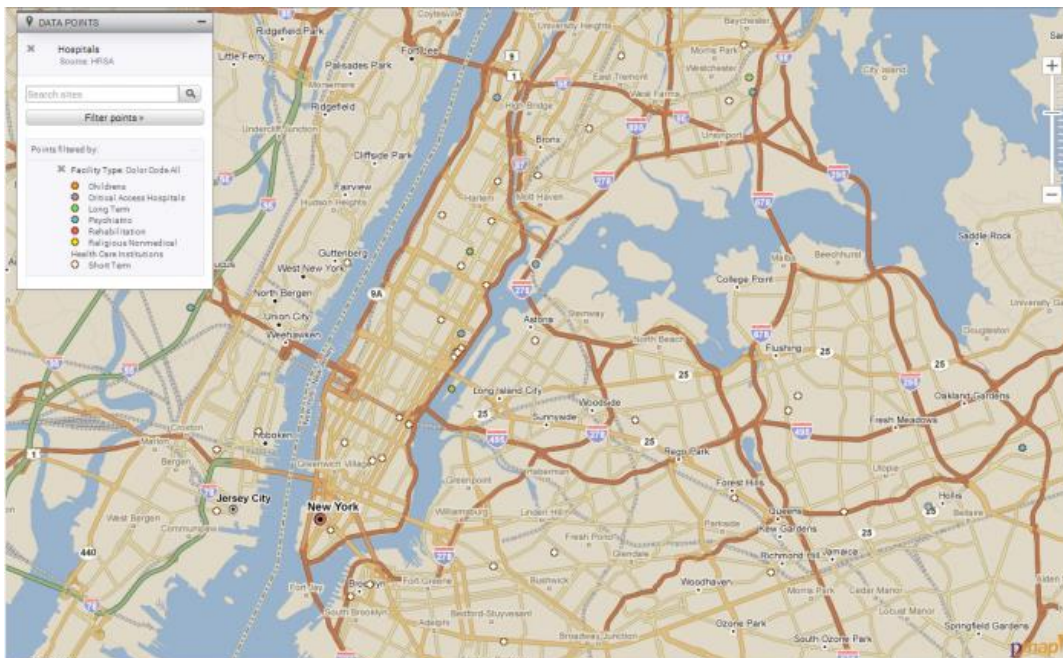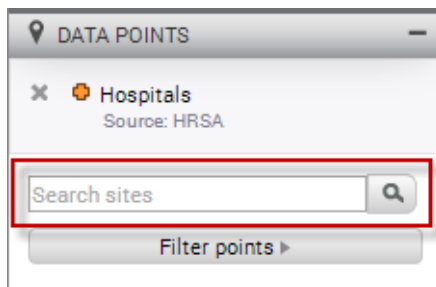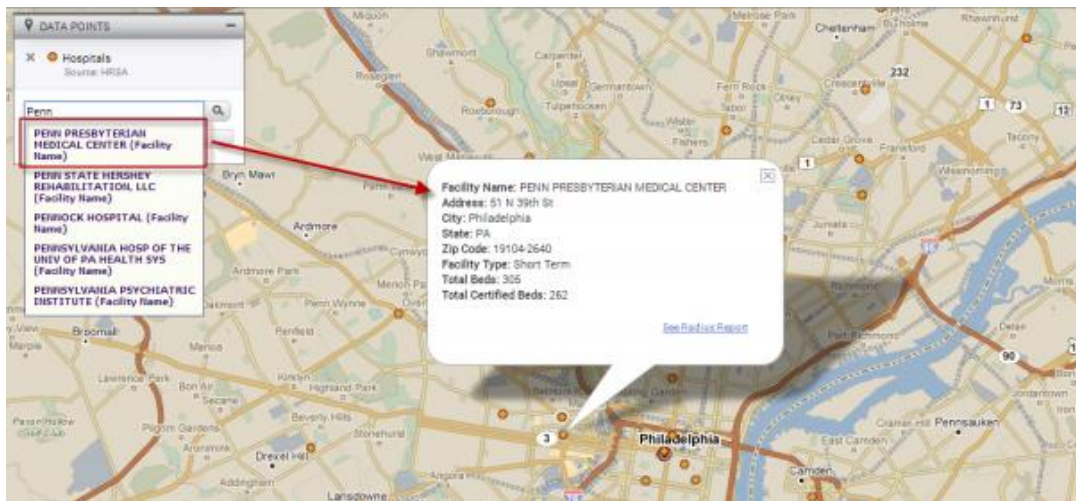

Data Points – Searching

Points

Did you know you can search for specific address in a Data Point dataset? With Data Points, users can display locations for a variety of datasets including schools, libraries, grocery locations, hospitals, health care locations, and much more. Each dataset will display as unique icons on the map and users can click an icon to open the Info Bubble and learn more information for that point.

Use the Search Sites field in a Data Points legend. Simply enter the name of the location that you are searching for and hit your Enter key or select the magnifying glass. This will zoom to the address and open the Info Bubble for more information.
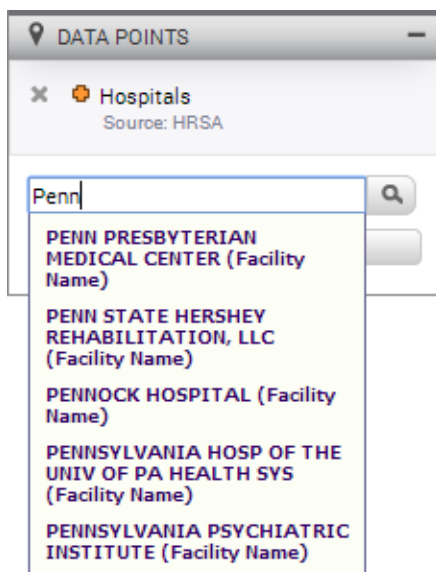
The search feature also uses predictive text, so entering the first 3 letters of a location will display a list of all locations the start with the 3 letters. This is a very helpful if you are not familiar with the exact name of a location.

My Saved Work

My Saved Work stores all your saved work throughout PolicyMap. Saved maps, tables, 3-Layer maps, uploaded and shared datasets, and downloaded datasets will save the data for the time of creation and reopening will automatically open the most recent updated data. Reports and Downloaded Data will save a copy of the work as a PDF or CSV. These are will allow you capture the data for that period.

Open a category, select the name of the section on the left, and then you will see a list with three (3) unique columns; Create, Name, and Actions. The Create and Name columns can be resorted; Created is resorted by date and Name is resorted in alphabetical order.

	Created ▾	Name ⇕			
Maps ▸	03/13/17	Embedding(1280 by 720) - Estimated typical (median) income of a household between 2011-2015.	⧉	✎	🗑
	03/13/17	Embedding(1280 by 720) - Estimated typical (median) income of a household between 2011-2015.	⧉	✎	🗑
Tables ▸	03/13/17	Embedding(450 by 450) - Map	⧉	✎	🗑
Tables Lists ▸	02/10/17	Embedding(1280 by 500) - Predominant racial or ethnic group between 2011-2015.	⧉	✎	🗑

The last column has icons for specific uses:

The open icon will reopen the saved item, including zooming the map to the save location and loading any datasets. Selecting the name will also reopen the saved item.

The pencil icon will give users to ability to rename the title of the save item. This will open a

popup window and a text field to enter/edit the name.

PNG
JPEG
PDF

The download icon will only appear if a saved item was marked to print. Mouse over the icon and a menu will appear with the file types which were selected to print. Select each file type to re-download the printout.

The "x" will give users the ability to delete a saved item. A warning will always appear to confirm the deletion.

Saved Custom Regions will have an extra column which will display the author of the custom region and new icon that replaces the download icon.

The open icon will reopen the custom region zoomed to the area which the custom region fills in.

The share icon allows a user to share a saved custom region to another subscriber. Select the icon to open a popup with the ability to enter an email address and short message.

Tables and 3-Layer Maps Lists are saved queries of points or places. Users will download these queries as CSV (Comma Separated Values) files that can be opened in excel.

The download icon will now show CSV. All other icons will function the same.

There are two types of saved lists in Tables:

Name ⬍
List of Sites: Public Transit Rail Lines in Suffolk, MA (County)
List of Counties within Oregon (State) with Estimated population in 2007.
List of Sites: Hospitals in Multnomah, OR (County)

- **"List of Sites:"** is a list of addresses which are contained within the listed location or custom region. A list of sites will display all the data associated to each address.
- **"List of [Geography Name]:"** is a list of places which are contained in the saved location or custom region. The list of places will have the identifier for the geography (i.e. FIPS code, zip code, county name, etc.) and the data for the geography.

There are also two types of saved lists in 3-Layer Maps;

Name ⬍
3-Layer Map Point List for Investment Loans in Pennsylvania
3-Layer Map List for Tracts (HUB Zones) and Blockgroups (Income and LSAs) in Oregon
3-Layer Map Point List Brownfields in Oregon

- **"3-Layer Map Point List"** is a list of addresses which are contained within geographies which met the criteria. A list of points will display all the data associated to each address.
- **"3-Layer Map Lists"** is a list of places which met the criteria created in the 3-Layer Map. The list of places will have the identifier for the geography (i.e. FIPS code, zip code, county name, etc.) and the data for the geography.

Tables

The Tables feature allows you to view data as a bar graph or chart, that can then compare data across multiple geographies; unlike the Maps feature which demonstrates a visual comparison of data across neighboring communities and borders. Parts of this feature are only available to *subscribers and trial users*.

You have two ways to create a table:

- Click the Tables link at the top left of the page and begin entering locations in the Set Location bar and load data from the Add Data layer tabs.

- You can also use the See Tables feature in the Info Bubble on the map page. When created from the Info Bubble, the table will also load the data layer from the map and all of the

geographies in the Info Bubble → Use the search bar to add additional locations to compare in your table. You can delete any location by the X next to the name of that location.

Data Legend – Use the legend to toggle between available years or variables. Note: **N/A** for a geography indicates that data is not available. In some cases, data is not aggregated to specific types of geography, e.g. Zip Codes, School Districts, etc.

Trend Chart – Once a data layer is loaded, users can use the legend to toggle through any available years and variables; and Tables have a unique ability to show the data through trends across multiple years. To view the trend select the year period
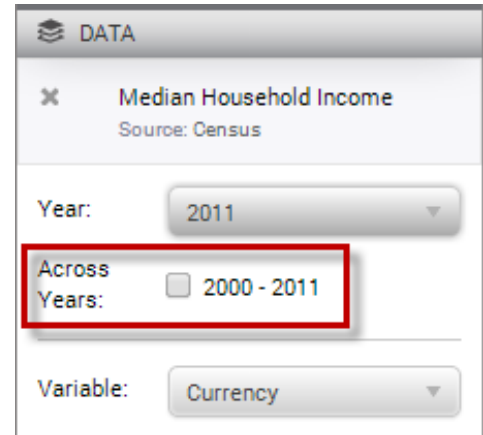
beneath: **Across Years:**

		Percent of Loans that were Government Insured									
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
×	United States (National)	7.22%	4.86%	4.9%	7.41%	25.75%	29.35%	26.59%	25.6%	23.53%	24.18%
×	Oregon (State)	6.04%	2.96%	2.39%	3.72%	21.12%	23.4%	22.89%	22.89%	22.34%	21.88%
×	Gladstone, OR (City, 2010) and Gladstone, OR (City, 2000)	8.39%	2.18%	4.29%	4.38%	32.12%	40.45%	26.96%	34.48%	32.47%	27.74%
×	Gresham, OR (City, 2010) and Gresham, OR (City, 2000)	8.98%	4.16%	2.11%	4.32%	30.94%	35.2%	32.59%	32.32%	31.52%	27.91%
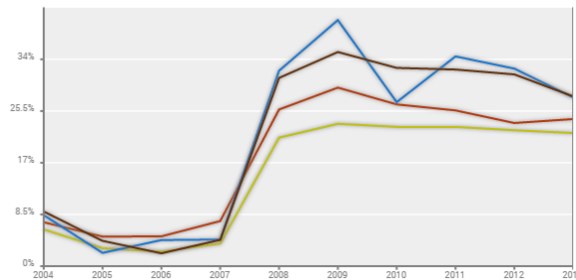
(A trend chart of the percent of all home loans made that were insured by the government between 2004 till 2011.)

See Values feature

Users can download a spreadsheet of data for any location from the Tables page. This allows you to download all the values of data for all the geographies that make up an area; for instance, you can see all the values of each county in a state, zip codes in a city, census tracts in a county, etc.

Let's follow the example below: See Values will show the population of all the states which make up the US, or population of each county that make up the state of Oregon, census tracts for the city of Portland, and blockgroups for the census tract.

	United States (National) ✕	Oregon (State) ✕	Gladstone, OR (City, 2010) ✕	Gresham, OR (City, 2010) ✕
■ Population	314,107,084 See Values for States	3,900,343 See Values for Counties	11,668 See Values for Zip Code Tabulation Areas	108,250 See Values for Zip Code Tabulation Areas
Ranking		27 of 52 States See Rankings	3481 of 29394 Cities See Rankings	264 of 29394 Cities See Rankings

See List feature

The See List feature will display all the addresses from a point dataset that are contained in a geography. Users can then download a CSV file which will contain all the data for the site. **NOTE:** *Unlike Data Layers, users can load multiple Data Points on to the Table to query and generate a list. Simply add additional point datasets from the data menu above.*

	United States (National) ✕	Oregon (State) ✕	Gladstone, OR (City, 2010) ✕	Gresham, OR (City, 2010) ✕
■ Population	314,107,084 See Values for States	3,900,343 See Values for Counties	11,668 See Values for Zip Code Tabulation Areas	108,250 See Values for Zip Code Tabulation Areas
Ranking		27 of 52 States See Rankings	3481 of 29394 Cities See Rankings	264 of 29394 Cities See Rankings
Points: FDIC Bank Failures ✕	538 points See List	6 points See List	0 points	0 points

FDIC BANK FAILURES IN:
Oregon (State)

NAME	FDIC CERTIFICATE NUMBER	BANK CLOSING DATE	ADDRESS	CITY	STATE	ZIP CODE	BANK CHARTER CLASS	BANK HOLDING COMPANY	ASSETS	DEPOSITS	CLOSING TRANSACTION TYPE	ACQUIRING BANK NAME	ACQ BAN CER NU
Pinnacle Bank	57342	2/13/2009	8880 Sw Nimbus Avenue, Suite D	Beaverton	OR	97008	Commercial bank, state charter and Fed nonmember, supervised		$71,921,000	$64,168,000	Purchase and Assumption, where the insured and uninsured deposits, certain other liabilities and	Washington Trust Bank	128

Finally, tables can be saved, printed, or even download the data for all locations in the table. Select the icons in the upper right corner.

All saved tables be will saved to your My Saved Word page.

Reports

Using the Reports feature, *subscribers and trial users* can generate a detailed report for a pre-defined location, radius around an address, or custom region. PolicyMap built each report by grouping together similar datasets that help describe a location. Users can generate as many reports for as many locations needed without additional costs. All reports use the latest data available in PolicyMap, so what you see on the maps and tables, can quickly be turned into a report.

- Choose the type of report you wish to generate. Each report was created with the idea that the data in a report will better describe the area you selected. Here are descriptions of each report:

    - The **Community Profile** is a snapshot of life in area, including information on its population, racial composition, age, income, workforce, and much more.
    - The **Rental Housing Report** includes rent information by bedroom size, income, and affordability data.
    - The **HMDA Report** is a summary of the number, typical amount, and type of home mortgages origins, including high-cost lending activity and high interest loans by race or ethnicity.
    - The **Home Sale Report** provides a summary of the number of sales, median sale amount, aggregate sale amount, and loan-to-value ratio for 2006-2014 annually.

- Once you have selected which report to generate, you can decide what area the report will generate for. There are many unique ways to select or create that area:
    - **Pre-Defined Locations** - To generate a report based on a pre-defined location such as a state, county or census tract, click "Pre-defined Location". Select a location by entering a zip code, city, state, county or other geography. (A pre-defined geography cannot be an address). You can also generate a report for census tracts, Congressional and State districts, school districts, and Metro Areas. Use these tabs to find one of these areas just as you would on the Map page. Click GO and then click the Generate Report button on the page that follows.

| Location ▼ | Enter City, County, State, or Zip | 🔍 |
| Location |
| Census Tract |
| Block Group |
| Congressional District |
| US Senate |
| School District |
| State District |
| Metro Area |

- ○ **Radius** - To generate a report for the area around an address, click "Radius". Specify the center of the radius by typing in an address, enter the full address (including zip code). Your report area, with a default radius of half a mile (0.5), but you can change it and then click Go.
- ○ **Custom Region** - To create a report based on a region of you choosing, click "Custom Region". You can generate a report for a custom region you have already created, select from the My Custom Regions drop down menu.
- ● Once you have generated your report, use the icons 💾 🖨 on the top right to save or print a PDF copy to share. All saved and printed reports will be available in your My Saved Work section. When printing a report, any sections which you do not want to display can be collapsed and the PDF printout will not display the data. The header for each section will still be visible.

(-) This Area is Served by (or touches):

School District(s): Portland School District 1J, Scappoose School District 1J
Congressional District(s): Oregon's 3rd District (Earl Blumenauer - D)
Senators: Jeff Merkley (D-OR), Ron Wyden (D-OR)
State Senate District(s): State Senate District 22
State House District(s): State House District 43, State House District 44

(-) Population Trends:

As of 2014, this area was home to an estimated **31,708** people.

Population	2000	2010	2010-2014	Change 2000 to 2010-2014 (%)
Area	36,354	31,438	31,708	-12.78%
Counties (Multnomah)	660,486	735,334	757,371	14.67%
State (Oregon)	3,421,399	3,831,074	3,900,343	14%

Source: Census
Data aggregated by:
2000 Data Contains: 12 Census Tracts (show)
2010 - 2014 Data Contains: 1 Zip Code Tabulation Areas (show)

(-) Racial Characteristics:

Of the people living in this area in between 2010-2014, **74.91%** are White, **10.64%** are African American, **8.86%** are Hispanic, **5.28%** are Asian, **0.63%** are either Native Hawaiian or Pacific Islander, **0.55%** are American Indian or Alaskan Native, **3.01%** are of 'some other race' and **4.98%** are of two or more races. In the table below, the percentage of the population that each segment represents in the report area is compared to the percent it represents in the state.

Between 2000 and 2010-2014, the White population changed by **N/A**, the African American population by **N/A**, and Asian population by **N/A**. The number of Hispanics changed by **N/A**.

Race	2000	2010	2010-2014	Percent of Total Population in 2010-2014	Percent of State Population in 2010-2014 (Oregon)
White	22,597	22,665	23,752	74.91%	85.06%
African American	7,102	3,746	3,374	10.64%	1.81%
Asian	1,753	1,218	1,675	5.28%	3.9%
Native Hawaiian or Pacific Islander	96	302	200	0.63%	0.37%
American Indian or Alaskan Native	513	348	173	0.55%	1.21%
Some Other Race	1,953	1,269	954	3.01%	3.7%
Two or More Races	2,340	1,890	1,580	4.98%	3.94%

3-

Layer Maps

3-Layer Maps is a neighborhood search tool allowing you to find places that match one or up to three (3) criteria of data on a map. The 3-Layer Maps tools can be used to download a list of addresses which fall within one or multiple criteria (using Download Points) or a list of places that met the criteria set (using Download Places). 3-Layer Maps is available to subscribers or trial users only.

- To start, select 3-Layer Maps from the upper left of the screen. A "wizard" will appear on top of the map with step-by-step instructions for creating an analytic map. You can follow these instructions to
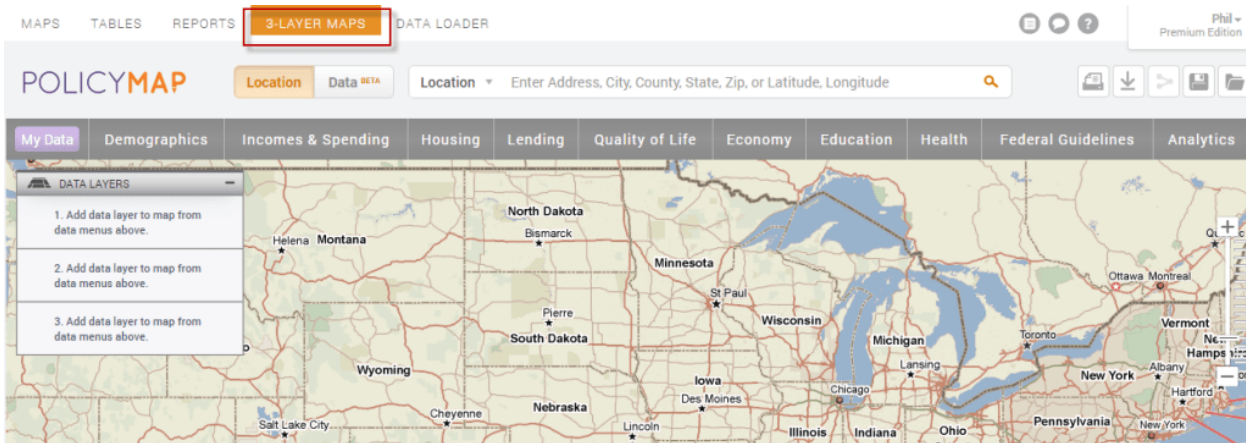


create an analytic or turn off the wizard.

The page will look similar to the Maps page, with the search bar across the top and data categories above the map. To the left, however, you will see three legends; one for each data layer that you can add to the map. Unlike the Map feature, 3-Layer Maps allow you to overlay up to three thematic data layers on the map at the same time. Adjusting the ranges for each data layer as it is added will allow you to find only those places which meet all of the parameters.

- To begin, enter a location in the search bar (this works exactly as it does in the rest of the application). Click GO.

- Next, add a thematic data layer from a data category on top of the map. A legend will display to the left of the map (see example). In the legend for this data layer, users may; change the year, the variables, move the sliders to set the ranges, or manually enter the values for the ranges.
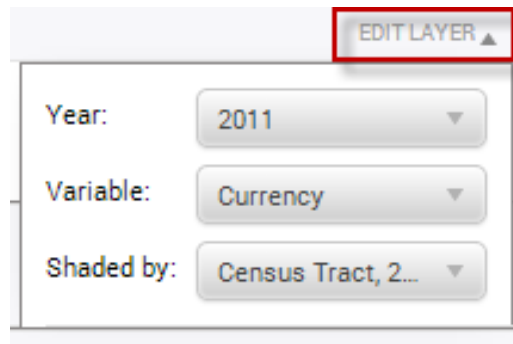
  - When you load the first data layer, the map will be completely purple. This is because the map is showing the entire range for the data layer loaded. You can set a specific range by moving the triangles in the slide bar or manually enter value in the fields.
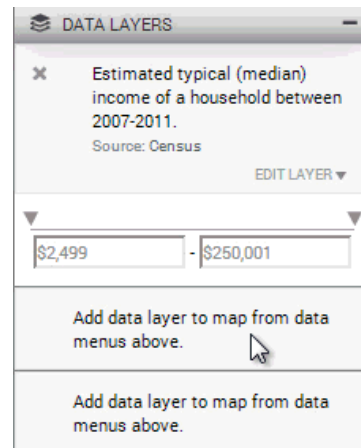
The map will then shade those places in purple which meet the parameter.
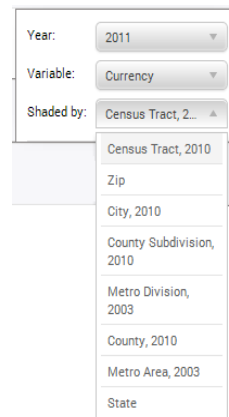
- ○ Just like the legend on the maps page, users can change the year and variables used in the analytic.

- ○ Some data layers on PolicyMap do not have ranges to select from but check-boxes. Unchecking a box will remove that indicator on the map.
    - ○ In some cases, the map will instruct you to zoom in further. This is because the analytic map defaults to the smallest geography available (usually census tracts). As a result, to view the results on the map, you must zoomed further into an area. The triangular symbol ◁ of the zoom bar on the map will indicator how far you must zoom in to be able to see data.

    *If you are creating an 3-Layer Maps at a national or regional level, then change the

- ○ Shade By to a larger geography so the data will display on the map. You will need to do this to every data layer added.

- Click once on any purple area to see its value, which met the parameters set. Click onto any geography not in purple to also see its value and why it did not meet your parameter.
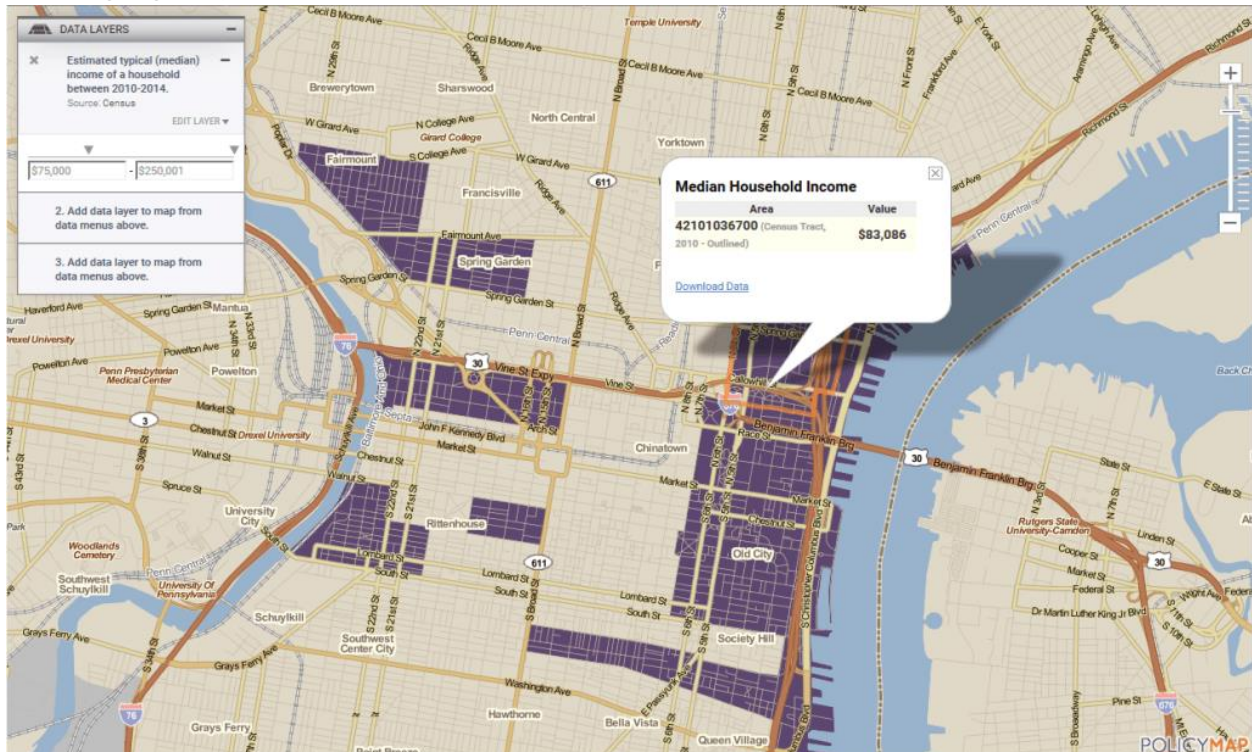
- To add a second layer; select another data layer from the Add Data Layer menu and follow the above steps. An additional legend will display on the left of the map, users can then change the year, variable, the geography shaded by, or set the parameters for the newly added data layer. As you set new parameters for the second data layer, only the areas shaded purple on the map from the previous data layer will display places on the map which meet **both** conditions will shade a dark purple, and clicking onto each place will display the values for both criteria set.

Note, the map will always show the SMALLEST geography identified in the legend. For example, if you have three (3) criteria selected for Census Tracts, School Districts, and Zip Codes, the map will display Census Tracts as that is the smallest geography.

- Finally, add a third layer in the same way and click on any shaded purple area to see the values for the three data layers on the map. Click on any shaded area to see the values or any non-shaded area to see why it did not meet the three parameters.
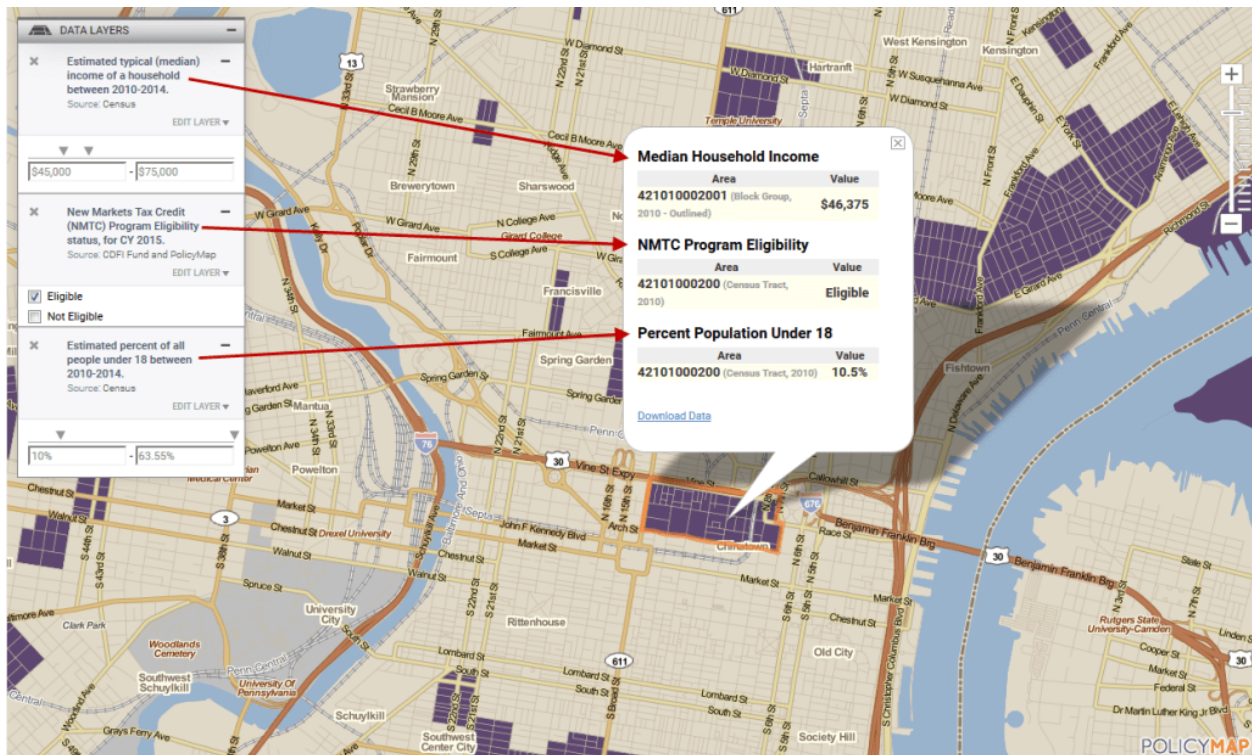
- After you have setup the criteria for a 3-Layer Map, there are a few options to save, share, and even download the data.
  - **Save** will save you 3-Layer Maps criteria to your My Saved Work

  - **Print** gives users the option to customize a title, choose the format, orientation, add/remove legends, and pan and zoom in the print window, and then export a map.

- ○ **Download Layers** allows a subscriber to generate a list of all geographies and the values for those places, which met the criteria of the 3-Layer Maps.

	A	B	C	D	E	F	G
1	Data Layer: Averaged freshman graduation rate in 2009.			70% - 100%	(Variable: percent)		
2	Data Layer: Estimated typical (median) income of a household between 2007-2011.			$40,000 - $75,000	(Variable: currency)		
3	Data Layer: New Market Tax Credit (NMTC) Program Eligibility status, as of 2012.			Eligible	(Variable: none)		
4							
5	State	School District	Averaged freshman graduation rate in 2009.	Zip	Estimated typical	Census Tract, 2010	New Mark
6	Oregon	Adrian School District 61	95.2	97901	41250	41045970700	Eligible
7	Oregon	Adrian School District 61	95.2	97901	41250	41045970900	Eligible
8	Oregon	Adrian School District 61	95.2	97910	40983	41045970900	Eligible
9	Oregon	Ashland School District 5	97.6	97520	43840	41029001700	Eligible
10	Oregon	Ashland School District 5	97.6	97520	43840	41029001800	Eligible
11	Oregon	Ashland School District 5	97.6	97520	43840	41029001900	Eligible
12	Oregon	Baker School District 5J	81	97814	40607	41001950300	Eligible
13	Oregon	Baker School District 5J	81	97814	40607	41001950400	Eligible
14	Oregon	Baker School District 5J	81	97814	40607	41001950500	Eligible
15	Oregon	Baker School District 5J	81	97814	40607	41001950600	Eligible
16	Oregon	Baker School District 5J	81	97833	59200	41001950500	Eligible

- ○ **Download Points** works in conjunction Data Points. After creating the criteria of a 3-Layer Map, subscribers can add an address/point dataset from the Data Points section in a data menu and use the Download Points function to generate a list of addresses which only fall on a geography in purple on the map.

Download Layers

As stated on the [3-Layer Maps tutorial](#), the Download Layers function will generate a list of geographies and data which have met the criteria setup. It is a simple and highly efficient way to download a large dataset from PolicyMap. There are also some unique ways to use this feature to download data.

For example, if you are looking for a list of places that met just one criteria. Let's say, you are looking for zip codes with a specific income range.

- 1. Go to 3-Layer Maps from the upper left. Once on the page, use the search bar to center the map to a given area. Even though, the map is centered on one location, the query is being processed for the entire nation.
- 2. Select Income & Spending > Income: Household > Median Household Income: All Households to add the data layer.
- 3. Choose Zip from the Data Shaded By drop down menu. The map will now show income ranges at the zip code level.
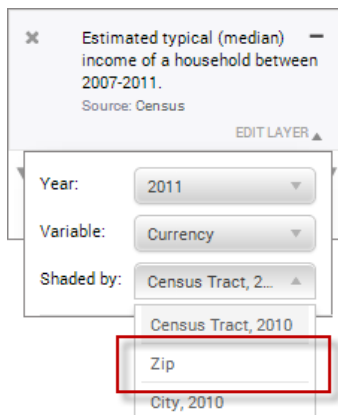
- Set your range in the legend. Now, only zip codes within the set ranges will appear on the map.
- Finally, select the Download Layers function. Give your file a custom name, select the state (or the nation) to generate the list.

	A	B	C	D	E	F
1	Data Layer: Estimated typical (median) income of a household between 2007-2011.					
2	$55,000 - $65,000	(Variable: currency)				
3	State	Zip	Estimated typical (median) income of a househ			
4	Pennsylvania	15004	56607			
5	Pennsylvania	15005	58003			
6	Pennsylvania	15009	55427			
7	Pennsylvania	15017	55920			
8	Pennsylvania	15020	60740			
9	Pennsylvania	15026	58489			

- The generated file is a CSV file which will show the zip codes which met the income range and the incomes for each zip code.

Querying Layers

Sometimes when working with data, you are looking to find places that meet a certain criteria or range of a data layer. 3-Layer Maps can be used to query a data layer to find any location or locations that meets a specific range. For example, do you want to find all the school districts in Oregon that had over 75% of students participating in a Free and Reduce Lunch program? To create this query:

- Go to 3-Layer Maps
- Set Oregon as your location in the search bar
- Load the data under Income & Spending > Additional Income & Spending Data: Free and Reduce Lunch
- In the legend, set the range on the left of the map to 75% to 99.59%
- This will show all school districts that have more than 75% of students in the program
- Select the download icon and choose Download Place, choose Oregon and give the list a custom name
- This will generate a list of the 10 school districts that meet the set threshold.
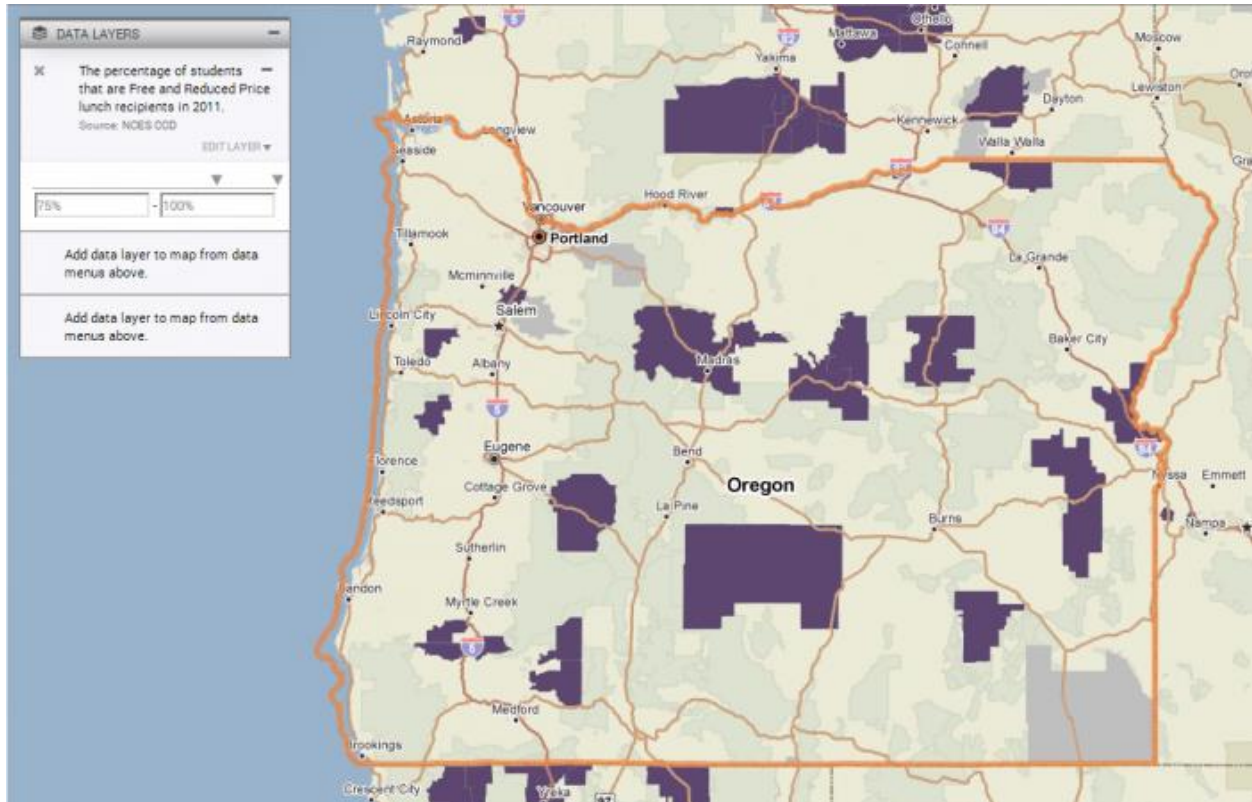
Would you want an example which queries a smaller geography size? How about looking to find tracts that have housing prices within a median home sale range of $150,000 to $275,000 in the Suffolk county Boston area. 3-Layer Maps is a quick way to query and find these tracts. To create this query:

- Go to 3-Layer Maps
- Set Suffolk, MA (county) as your location
- Load the data under Housing > Home Values: Median Values
- Set the median price range to $150,000 and $275,000
- Select the download icon and choose Download Places, select Massachusetts and give the list a custom name
- This will generate a complete list of all census tracts in Massachusetts that meet the range of median home sale price.
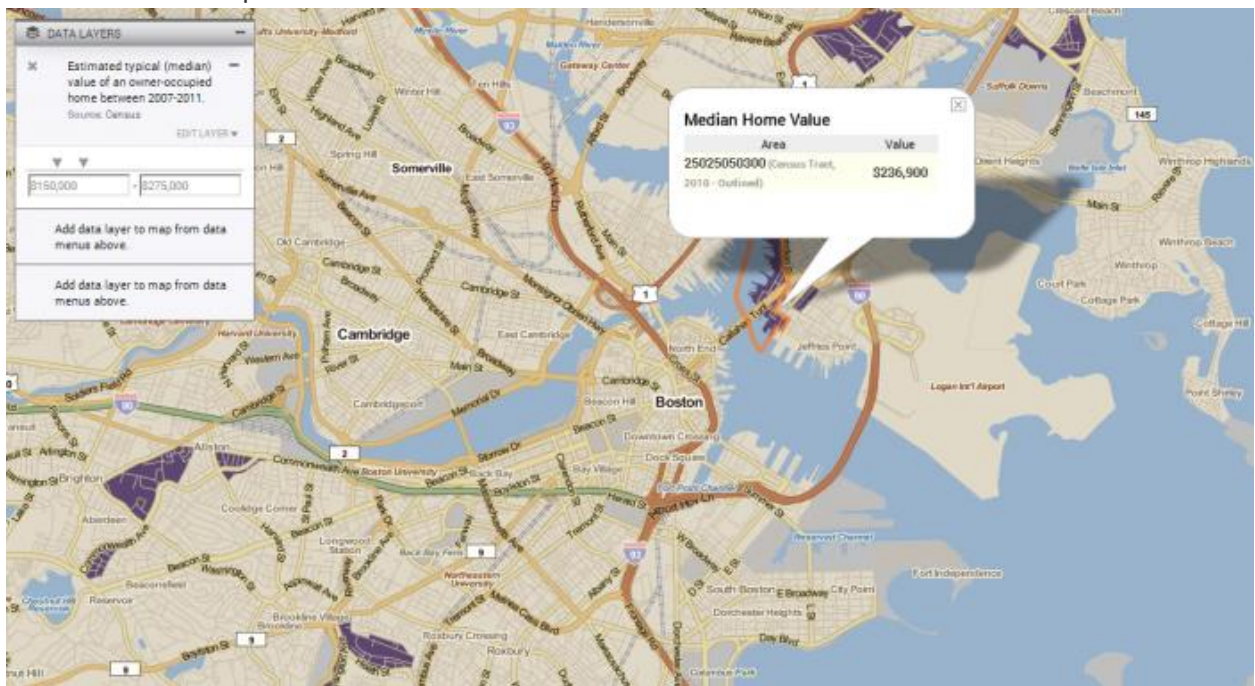
- Using the FIPS code to identify Suffolk county in the file, you will find the 7 tracts in the county under the FIPS prefix of "250250"

Download Points

As stated in the 3-Layer Maps tutorial, the Download Points List function will generate a list of addresses which only fall on a geography identified by the criteria set in the analytic. The list will display all the data available for the address dataset. Users can utilize this feature to query address locations against any geography a data layer(s) in PolicyMap.

For example, if you have a portfolio of investment addresses and you want to know which addresses are located in a qualified census tract for the CDFI Fund New Markets Tax Credit program. First you want to use the Data Loader to upload your list of addresses.
- Go to 3-Layer Maps from the upper left. Once on the page, use the search bar to center the map to a given area. Even though, the map is centered on one location, the query is being processed for the entire nation.

- Select Federal Guidelines > **CDFI Fund NMTC**: Eligible Tracts > **Eligibility Status**: Eligible Tracts to add the data layer.
- Because the NMTC data layer is a check-box option in the legend, simply uncheck the *Not Eligible* box and now the map will ONLY show census tracts which are eligible in purple.

- Now add the dataset which you have uploaded using the Data Loader from the My Data category above the map.
- Finally, select **Download Points List** from the menu at the bottom of the map. This will open a popup window. Give your list a unique name by selecting the "*change name*", then (if you have multiple datasets loaded from the Add Sites menu) select the point set to download, and select which state to query.
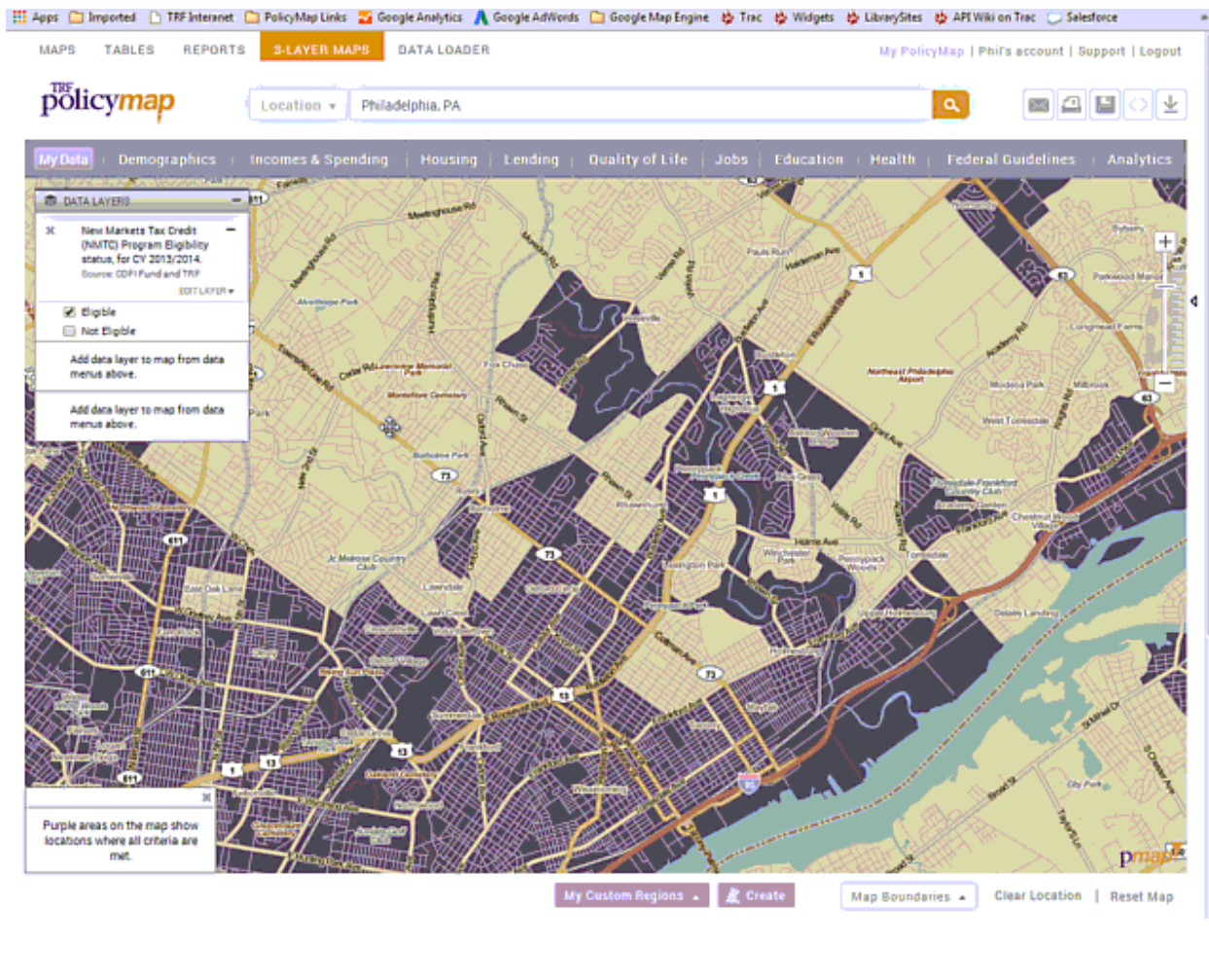

Users can also query addresses from datasets already loaded by PolicyMap. Let's say you are working under the Affordable Care Act and are looking for Community Health Centers (FQHCs) located in counties with a high percentage of teenagers without insurance AND in Medically Underserved Areas.

- Again, start by selecting 3-Layer Maps from the upper left. Once on the page, use the search bar to center the map to a given area.
- In the data menu, select Health > **Health Facilities**: Community Health Centers (FQHCs). This will display all Community Health Centers across the nation.
- Now, add the first criteria of data from the data menu; select Health > **Uninsured Population**: By Age > **Uninsured Population By Age**: Less than 19 years old. This will show the full range of value for all counties, so let's change the
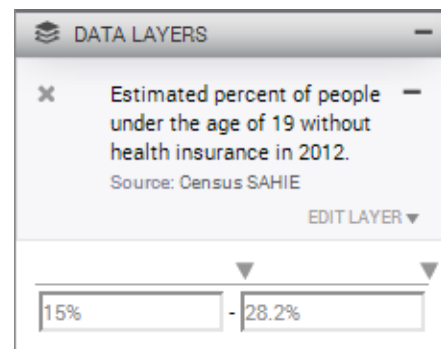
minimum percentage from 1.5% to 15%, so the map will only show counties which have at least 15% of people under the age of 19 without health insurance.
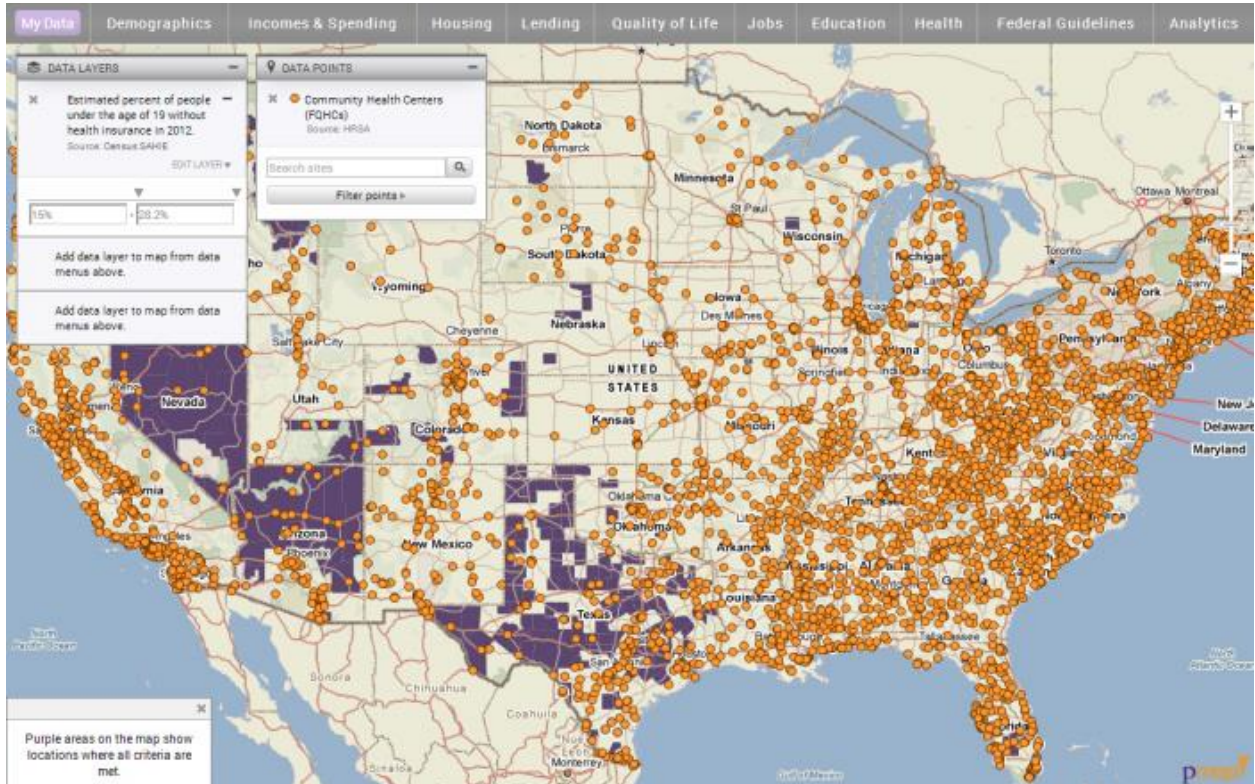
- At the national level, it's hard to see some of these Community Health Centers, so let's use search bar and zoom into a city. We'll go to Miami-Dade County in Florida for this example.

- This will zoom the maps to the municipality of Dallas. Now add the second criteria; Federal Guidelines > **CDFI Fund New Markets Tax Credit (NMTC)**: Severely Distressed – Secondary Criteria > **Severely Distressed (Secondary) Criteria**: Medically Underserved Areas.
  * Depending on your browser, you might see a message which asks you to zoom into the map by one zoom level, so select the "plus sign"

in the zoom bar on the left of the map until the message disappears.
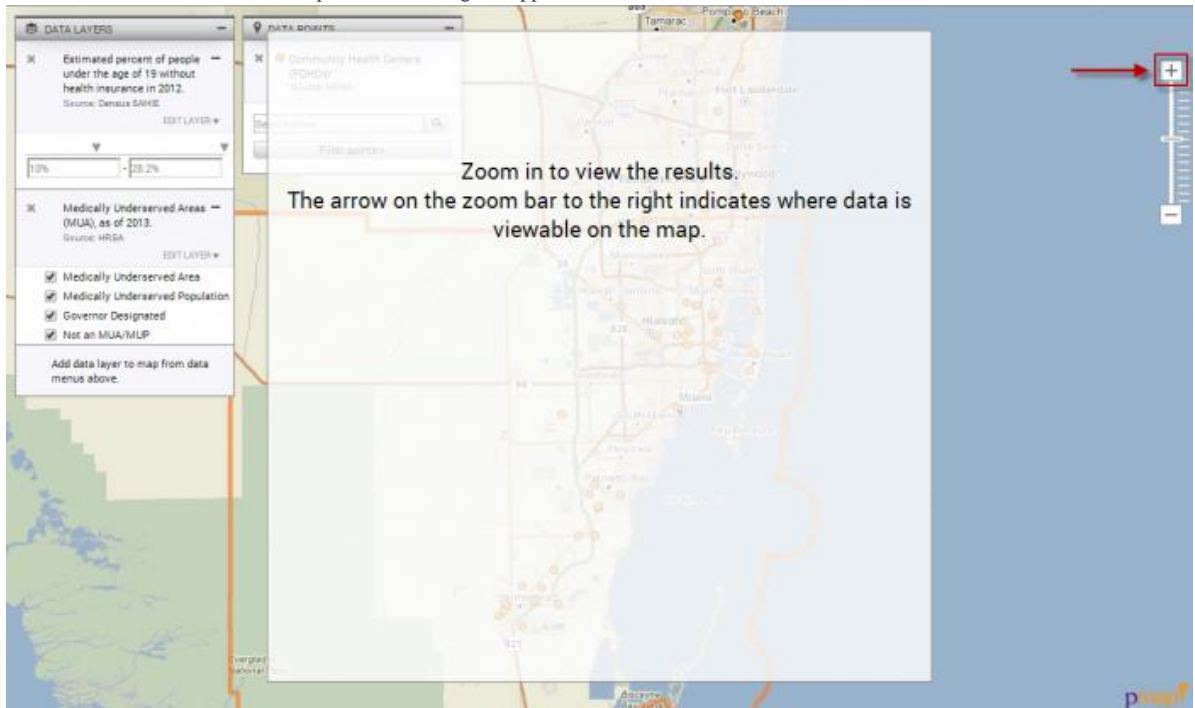
- Once the map is visible again, uncheck the "Not an MUA.MUP" box in the legend for Medically Underserved Areas (MUA). This will not show only census tracts which are in Medically Underserved Areas AND in a county with at least 15% of people under the age of 19 without health insurance.
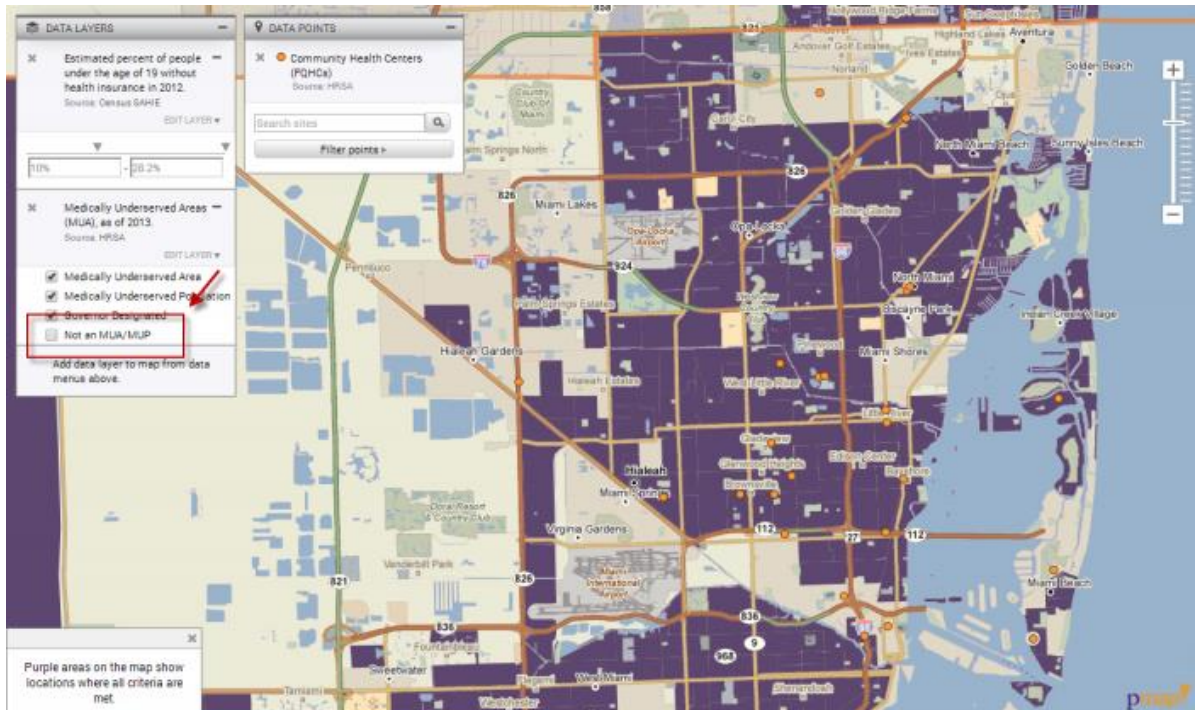
- Finally, select the download icon and choose **Download Points**. This will give the option to create a custom name for the query, (if you have multiple datasets loaded from the data menus) selecting which point set to download, and select which state to query.
  - * The Download Points function will only query one (1) state at a time.

Based on our analytic, this will generate a list of only Community Health Centers which sit on a census tract that is considered a Medically Underserved Area AND in a county with a relatively high population of teenagers without health insurance. The list will display all the data associated to the Community Health Center (FQHC) dataset.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Data Layer: Estimated percent of people under the age of 19 without health insurance in 2012.							10% - 28.2%	(Variable: percent)					
2	Data Layer: Medically Underserved Areas (MUA), as of 2013.							Medically Und (Variable: none)						
3														
4	FQHC													
5	State	Facility Na	Provider /	Provider City	Provider State	Provider Zip	Phone Number	Provider Numt	Federally	Medicare	Approved RHC	CMS Provider Number		
6	TX	SOUTH TE	2912 Aven	HONDO	TX	78861-3329	803-426-5288	451933	No	No				
7	TX	UVALDE C	1009 Garn	UVALDE	TX	78801-4809	512-278-5604	451817	No	No				
8	TX	LAMESA P	1600 N Br\	LAMESA	TX	79331-3145	806-872-3069	451845	No	No				
9	TX	FORT BEN	400 Austir	RICHMOND	TX	77469-4406	713-342-4560	451876	No	No				
10	TX	FORT BEN	400 Austir	RICHMOND	TX	77469-4406	281-342-4530	671852	No	No				
11	TX	MERCEDE!	1500 W 1s	MERCEDES	TX	78570-2551	512-787-8915	451809	Yes	No				
12	TX	COMMUN	2810 Dacy	KYLE	TX	78640-6322	512-268-8920	671945	No	No				
13	TX	KAUFMAN	101 N Hou	KAUFMAN	TX	75142-1949	972-932-7001	451965	No	No				
14	TX	SOUTH PL	Po Box 51!	LEVELLAND	TX	79336-0519	806-894-7842	451846	No	No				
15	TX	SOUTH CE	3601 N Ma	HOUSTON	TX	77004-8004	713-525-4832	451903	Yes	No				
16	TX	SOUTH TE	Po Box 60(	COTULLA	TX	78014-0600	512-879-3047	451842	No	No				
17	TX	SOUTH TE	100 S Mair	ENCINAL	TX	78019	956-948-7230	671847	No	No				
18	TX	SCHCHC -	3315 Dela	HOUSTON	TX	77004-3284	713-734-4580	671811	No	No				

More Training and Information

University of Maryland at College Park students, faculty, and staff have access to free online courses provided by ESRI. These cover a wide range of GIS topics and skills. To gain access to online classes, please contact *kelleyo@umd.edu* with the name of the course you are interested in and your UMD e-mail address to obtain a registration code.

Course list: https://www.esri.com/training/unlimited-esri-training/

University of Maryland Libraries' GIS and Spatial Data Services Center website:
http://lib.umd.edu/gis/

University of Maryland Libraries' GIS and Spatial Data Services Center workshop series:
https://www.lib.umd.edu/gis/workshops