

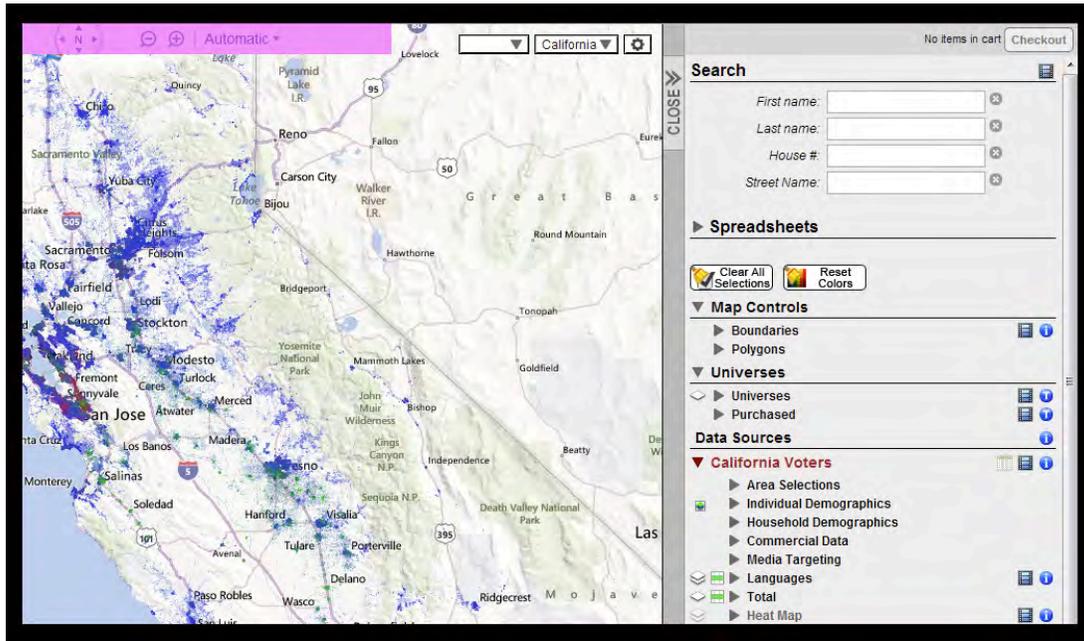
L2 VoterMapping - Display Options

In L2 VoterMapping, there are six ways to control the display of voter data and each can provide you with valuable information for visual analysis: Map Type, Boundaries, Dots/Markers, Choropleth, Graphs, and Heat Maps.

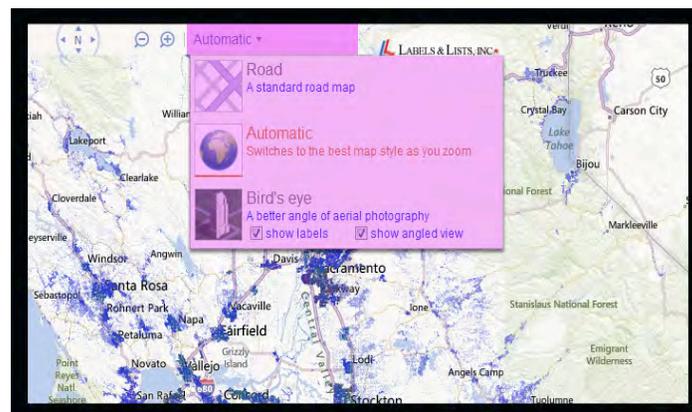
Setting the Map Type:

The great power of L2 VoterMapping is not only its speed but its ability to visualize data in a wide variety of ways. Map views are initially set to “Automatic”. With this setting, you will see terrain and road views when zoomed out and satellite/pictorial views when zoomed in. Other settings are available as well.

Go to the map controls bar at the top left portion of the map.

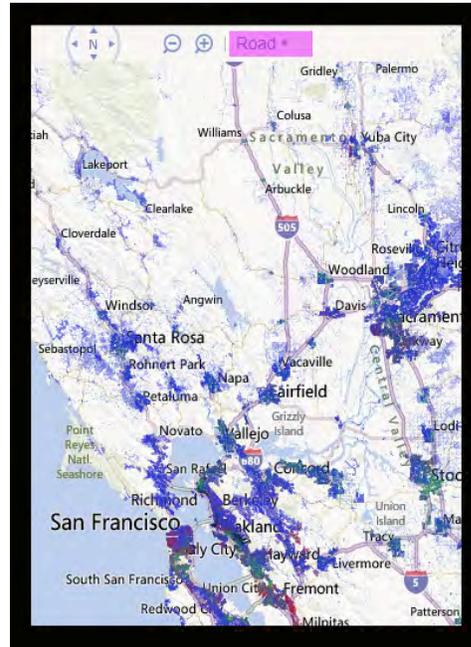
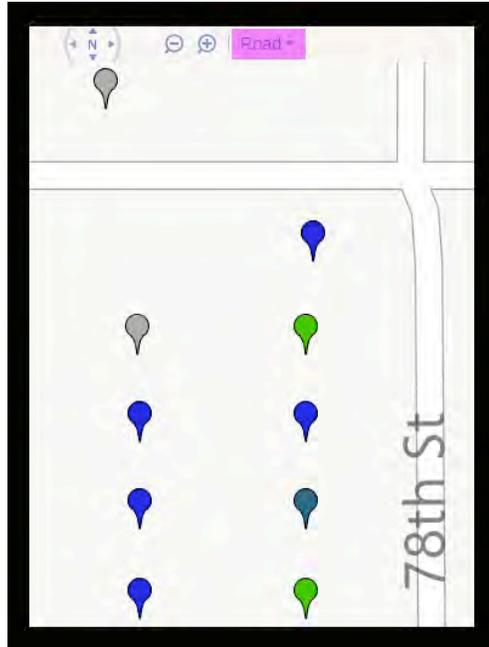


Hover over “Automatic” and a drop down menu will appear.



You will have three map types from which to choose:

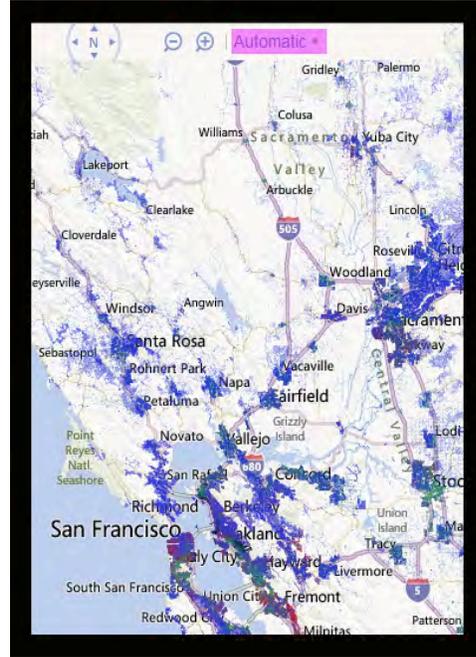
Road View: This map type displays roads, rivers and simple topographic features, like a standard map. Selecting this option will mean that satellite/pictorial imagery will never appear even when zoomed down into a local neighborhood.



Bird's Eye: The map will display as satellite images. When you zoom all the way in, the camera angle shifts so that you are looking down at a slight angle. Selecting this option will mean that even when zoomed all the way out you will always see the photo imagery.



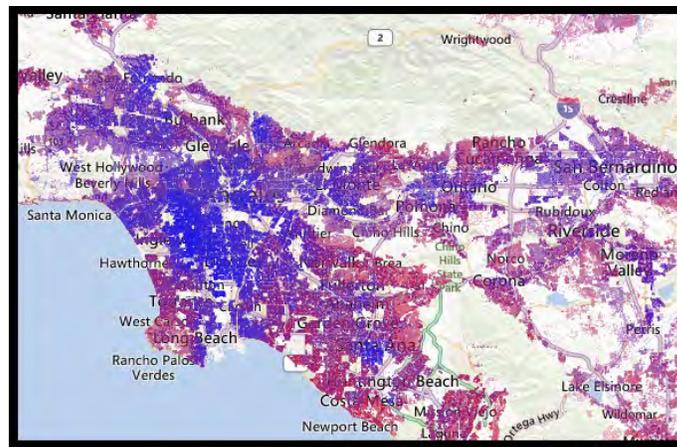
Automatic: This map type will change to and from the Road and Bird's Eye map types depending on the zoom setting. When you are zoomed in, it will show a satellite image, and when you are far away, it will show the standard road map.



Coloring the Dots and Coloring by Area

L2 VoterMapping allows the user to control the coloring of the dots on the map and the color of boundary lines. It also allows coloring by area. Anywhere in the system that a small square color box is found, that data attribute color can be changed. Clicking on the “Reset Colors” button at the top of the control panel will return all coloring schemes to their defaults (with the exception of boundary line colors).

Dot and balloon coloring is a powerful way to see patterns in the data. L2 VoterMapping defaults to coloring the dots and balloons by political party. From high altitude, these patterns can be very informative. Here, for example, is the distribution of Democrats (in blue) and Republicans (in red) distributed across the greater Los Angeles area:

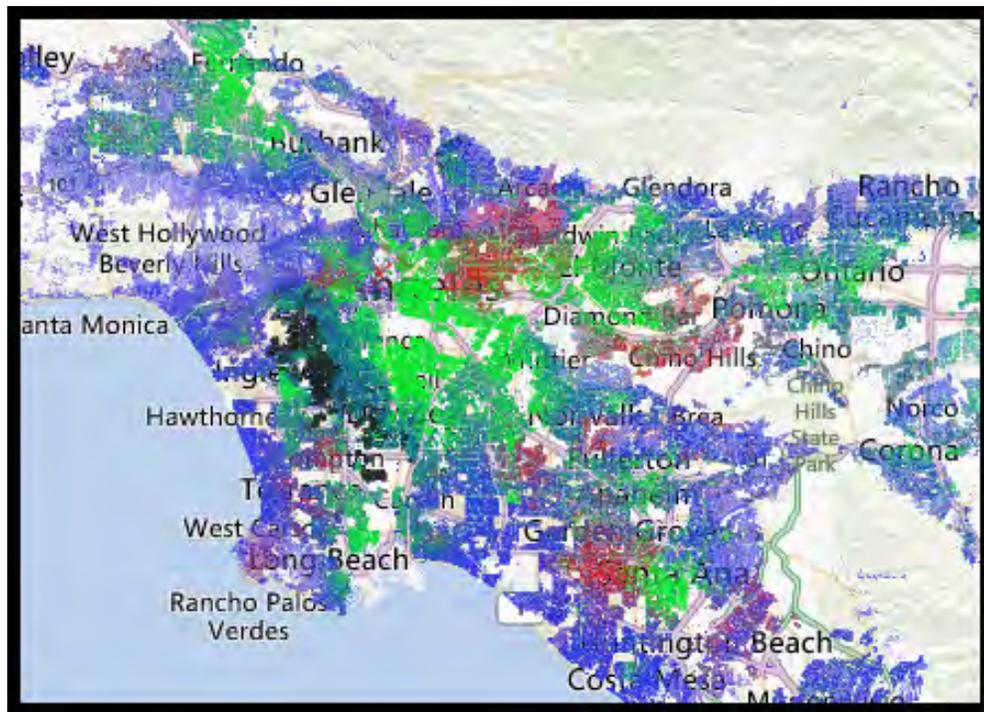


When zoomed in, these same color settings are applied to the balloons for individual households.



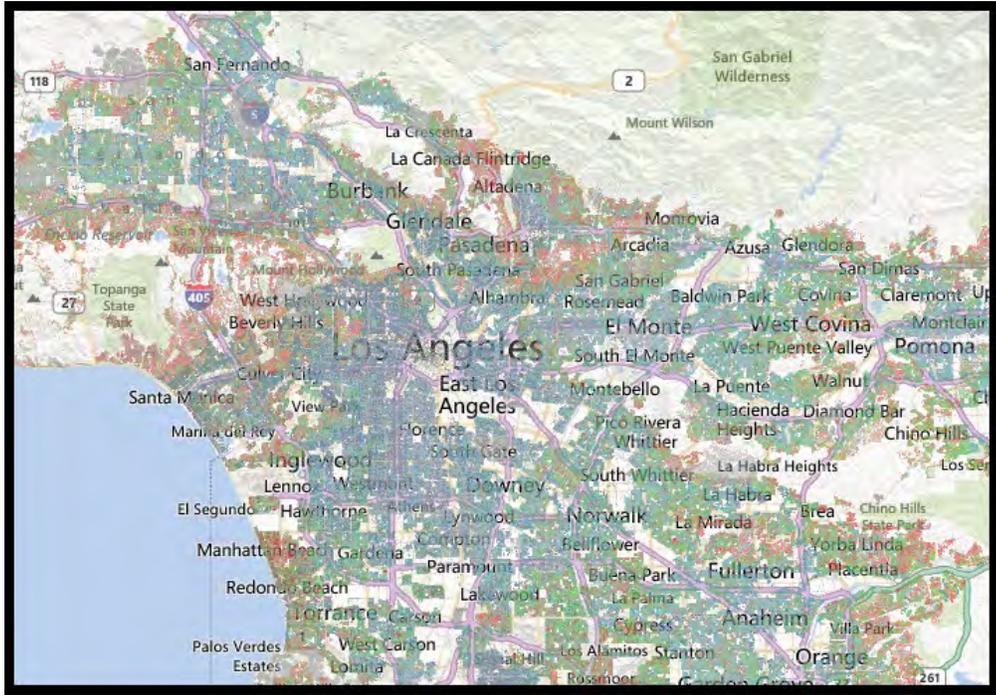
Note that colors are blended in the balloons by the combination of individual voters in those households and their attributes. In this case, when the balloons are being colored by party, the bright blue balloon in the lower left is a pure Democratic household. The bright red balloon just above it, indicates a pure Republican household. The purple balloon to its right indicates the presence of both Republicans and Democrats. The grey balloon below it is a pure Non-Partisan household. In the upper right hand corner is a faded blue, indicating the blending of grey (for Non-Partisan) and blue (for Democratic). The house below it with no balloon contains no registered voters.

Now let's color the balloons in the same area by a completely different attribute—ethnicity.



Here, we see the distribution of various ethnic groups in a simplified coloring scheme that we have set. Blue is Western European, green is Hispanic, black is African-American, red is East and South Asian and grey is all others. Try switching back and forth between coloring the dots by party and coloring them by ethnicity to see the relationship between the two. Note, for example, that the African-American areas are also heavily Democratic.

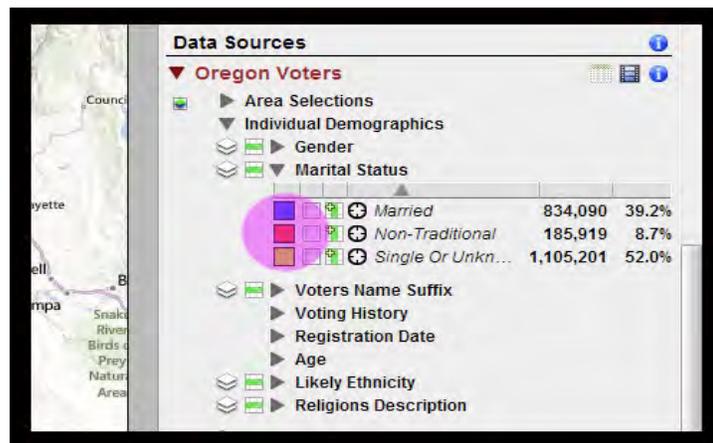
As a final example, let's color the dots in the Los Angeles area on the basis of income. The warmer/hotter the color, the higher the income. Cool, darker colors are lower income areas.



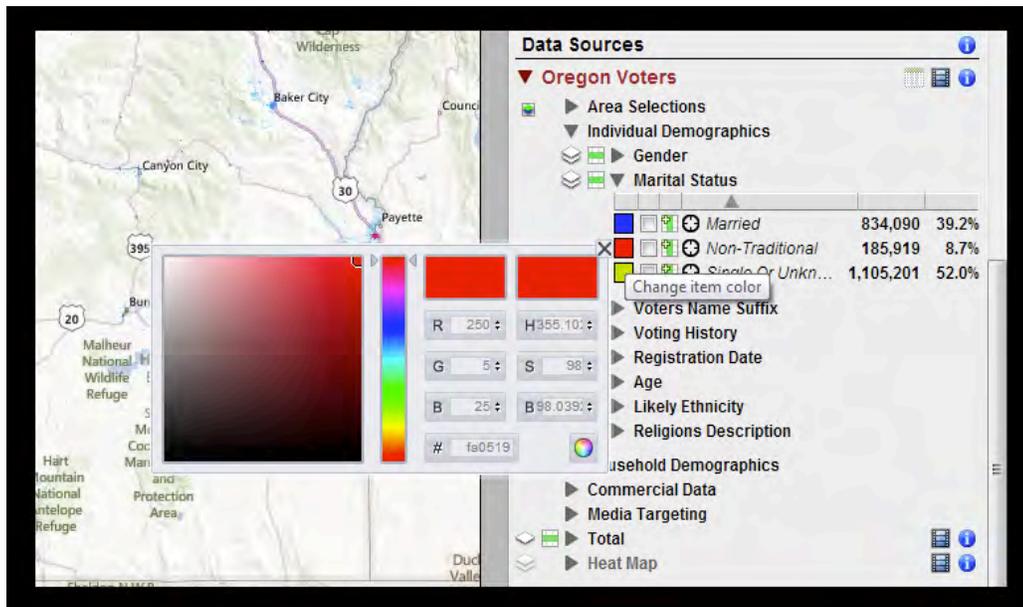
Notice the strong red colors in the Beverly Hills area in the upper left corner of this image.

Changing the Color of Data Attribute

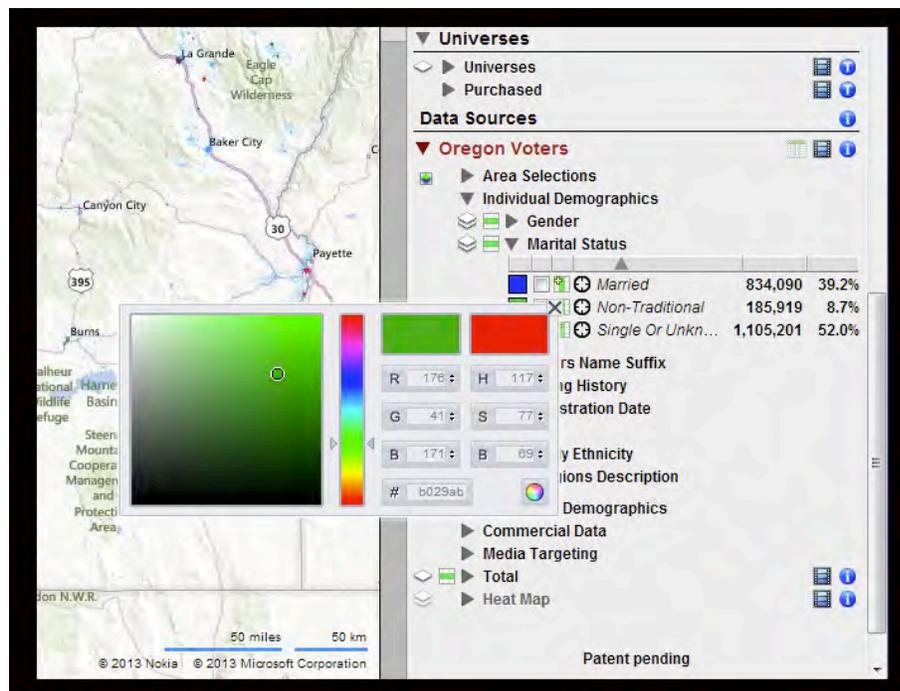
Find the Data Attribute you wish to change in the Data Sources section of the sidebar menu. To the left of each attribute you will see a square colored box.

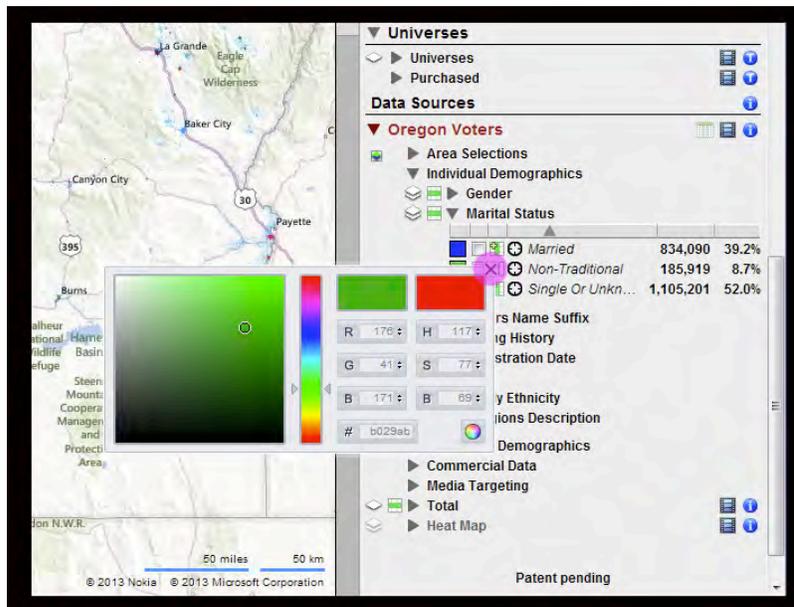


Click on the box and a window will appear containing a color palette and scale, RGB and HSB value inputs, and a #hexadecimal box.

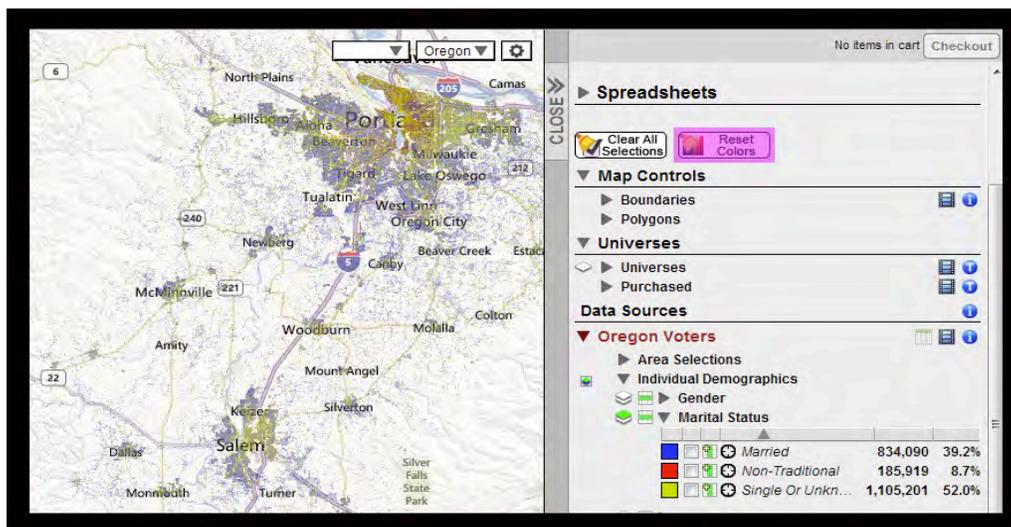


Move the slider arrows on the vertical rainbow bar up and down by clicking and holding down your left mouse button. This will change the available color palette in the large box to the left. Now click somewhere inside that large box to select the color you wish to apply to this attribute. In the color window, the left color box will display the color you are now choosing, while the box to the right contains the original color that is being displayed. As you change the color you will notice the attribute color box will change to match your new color. Finally, click the small “x” in the upper right hand corner of the color palette box to close it. You will now see that the color for that attribute has been changed and will be applied to all dot and area coloring using that attribute.





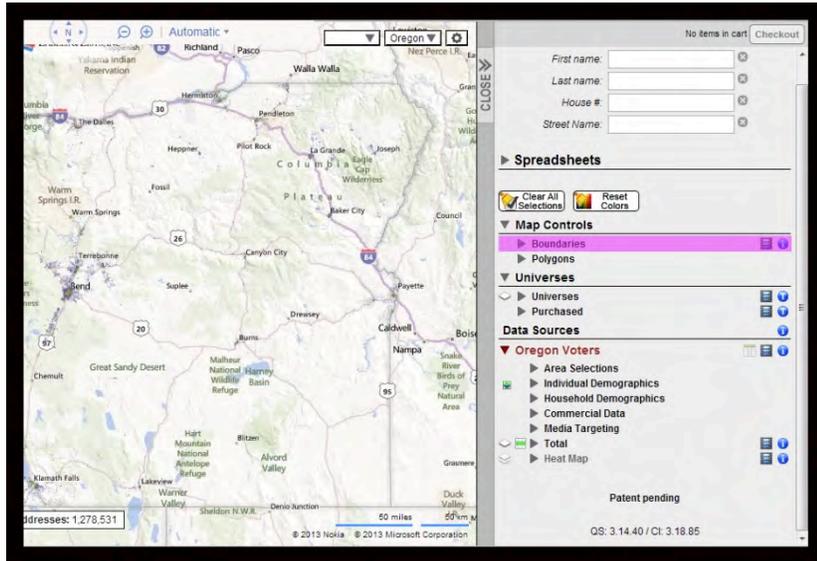
You can use the “Reset Colors” button to change the Data Attribute colors back to their original values. This will not reset any of the Boundary colors.



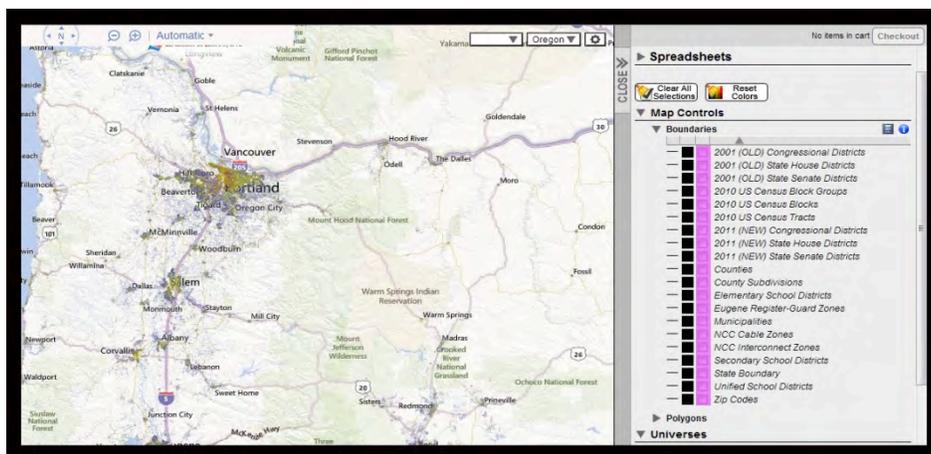
Displaying Boundary Lines

Boundary lines can be displayed over the map for visual analysis and orientation. Boundary lines have no role in voter data selections or the creation of universes. They are purely visual. Multiple boundary lines can be displayed simultaneously.

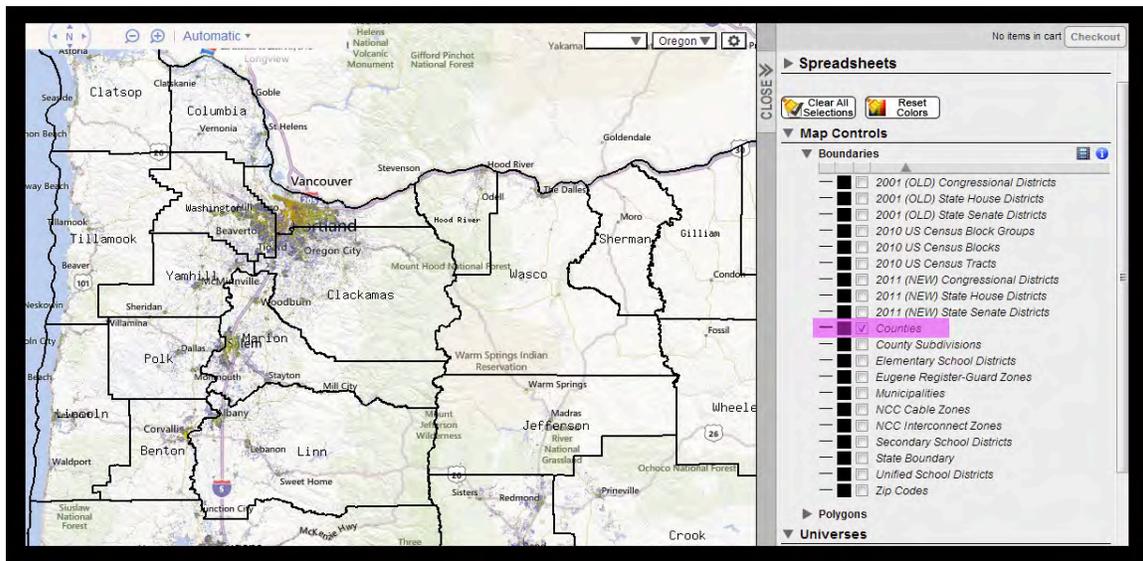
Find Boundaries under Map Controls in the Sidebar Menu



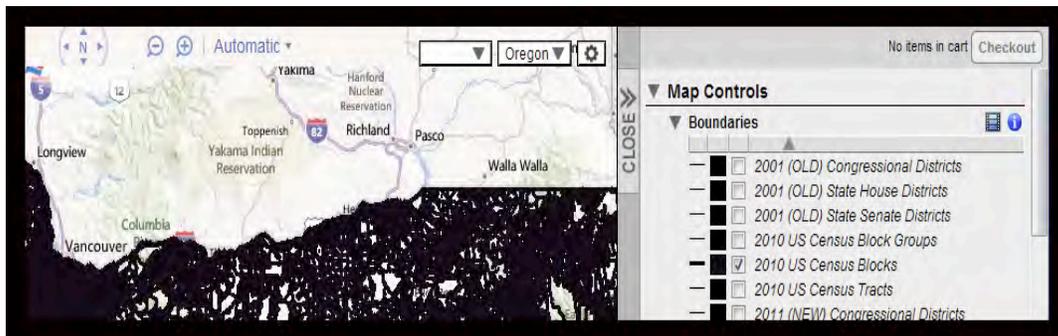
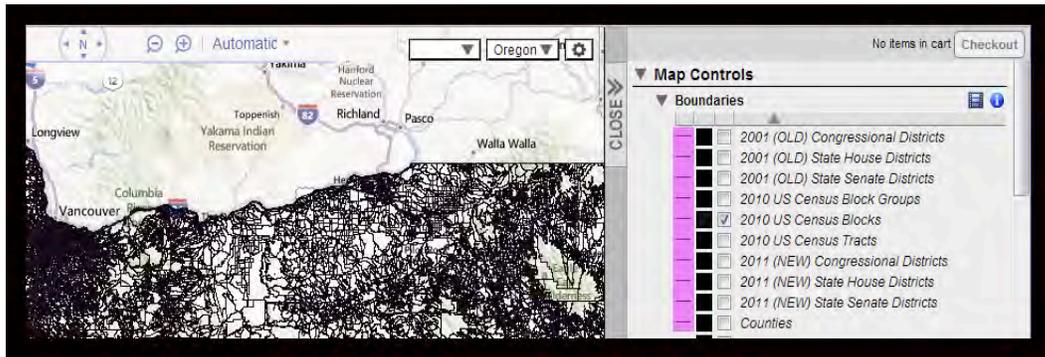
To display a boundary, click on the checkbox next to the desired boundary type. You can turn on multiple layers at once and have different boundaries active simultaneously. If you want to be able to differentiate multiple boundaries change the color for each so that they can be distinguished one from another on the map. Note that there are many boundary line types from which to choose and they will vary by state.



In the following image, we'll display county lines over the Oregon map.



The line thickness of a boundary can be changed by clicking on the short horizontal line to the left of its name. This will allow you to cycle through 5 line thickness levels. To make the line thinner again, simply continue to click on it and it will reset back to the thinnest setting after it has reached the thickest.

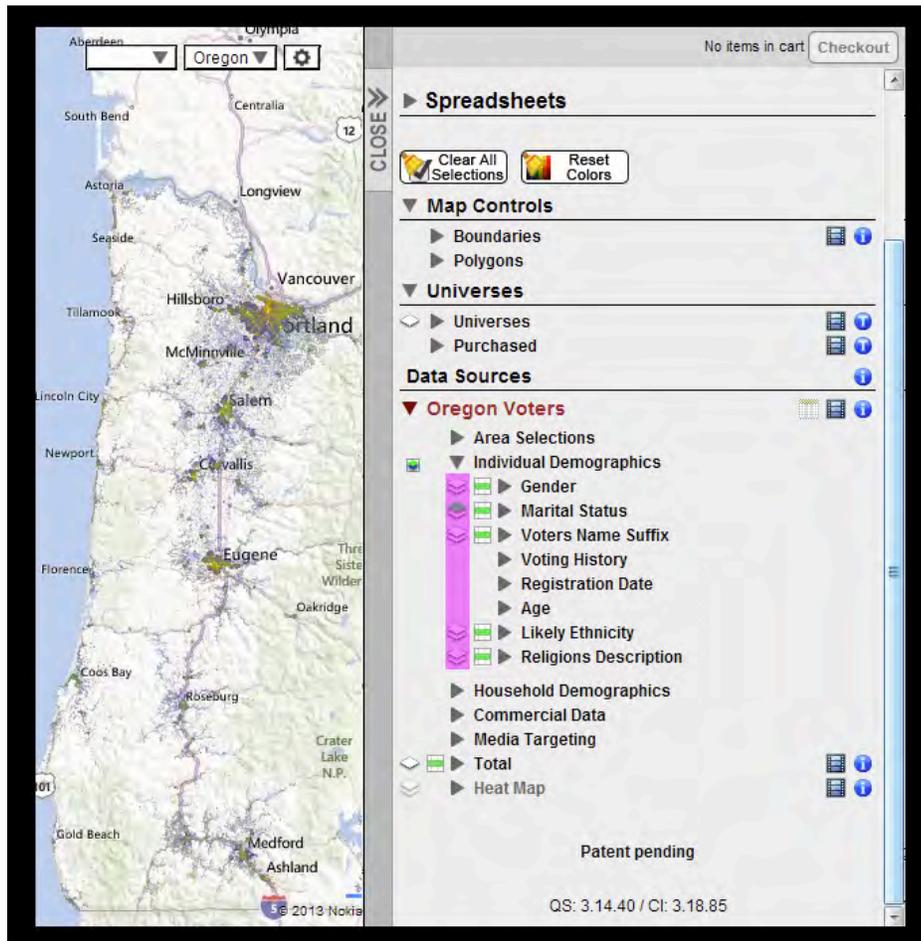


Dots/Markers

When first logging into VoterMapping, the default display for the “Dots” (markers), is Political Party and dot coloring will correspond to that attribute coloring. Coloring of the dots (and areas) is controlled from the layer control icons found to the left of attribute branches. The layer control icons appear as tilted planes, one on top of the other. The top layer is the dot coloring control while the bottom layer is the area coloring (choropleth) control.

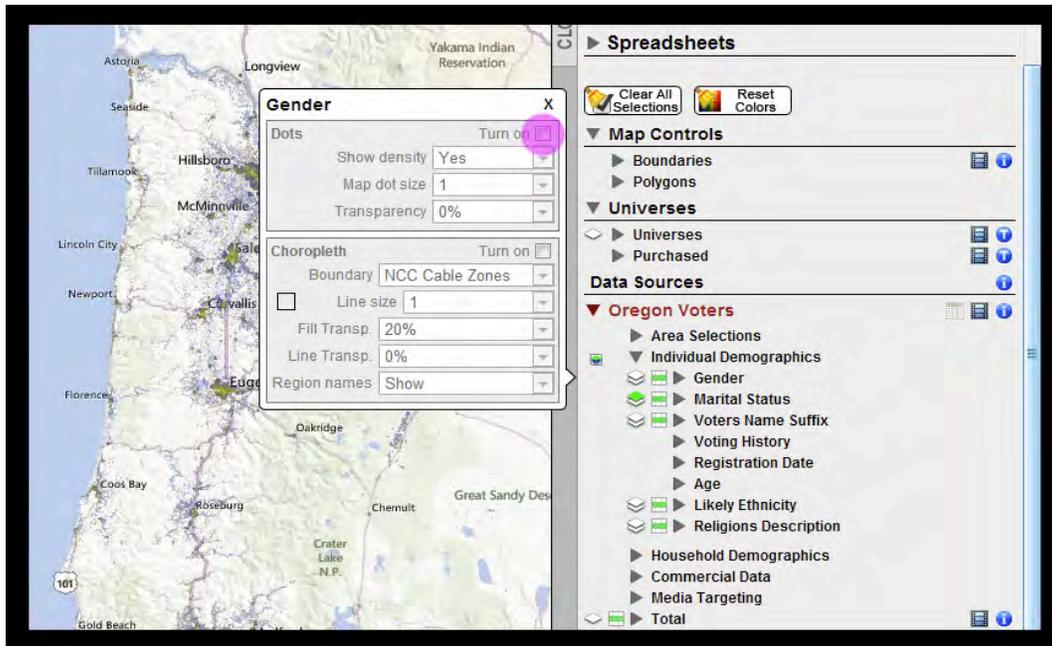


When dot coloring has been set to a particular attribute the top layer control in the icon will change to green. In the image shown below, notice the location of the layer control icons and that the dots on the map are currently being colored by marital status as indicated by the green upper layer of the layer control icon next to that attribute.



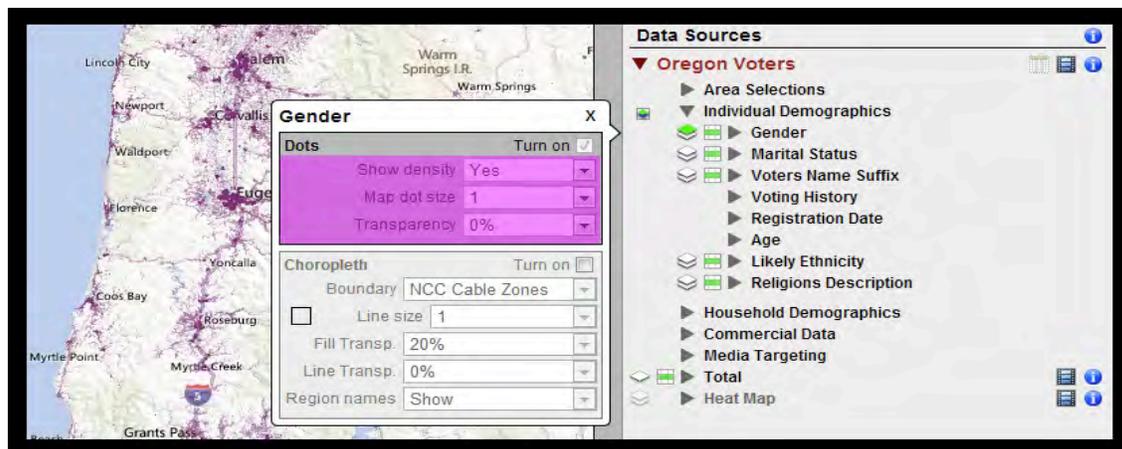
To change the dot/balloon coloring from one attribute to another, click the layer control icon next to the attribute you would like to use as the basis for coloring. Immediately, the layer control box will appear. Note that the top portion of the box controls dot

coloring while the bottom portion controls area (choropleth) coloring.

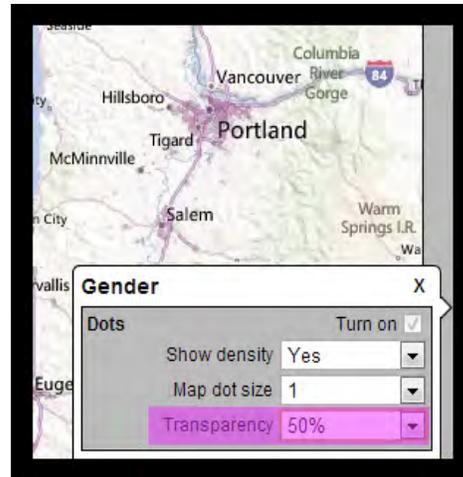


Click on the Turn On check box within the Dots section to color the Dots/Markers by that Data Attribute. Also note that once you have checked this box it cannot be “unchecked”. Dots on the map must always be colored by some attribute or they would be invisible! Coloring of the dots can be changed from one attribute to another but it can never be the case that dot coloring is turned off for all attributes. Thus, once the box has been “checked” you must open a different layer control icon associated with some other attribute and turn on the coloring by that attribute in order to remove coloring by the previous attribute.

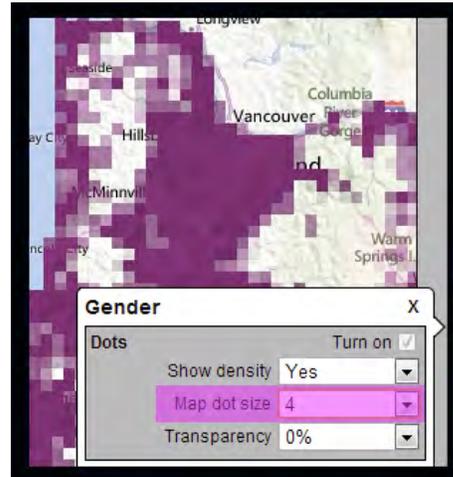
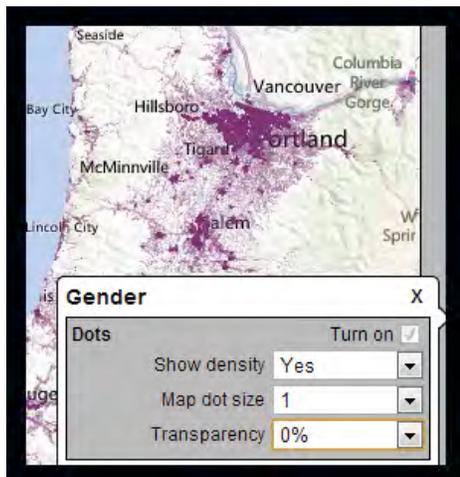
In the layer control box there are three Dot display options: Show density, Map dot size, and Transparency. Try changing the settings in each to see how they affect the map appearance.



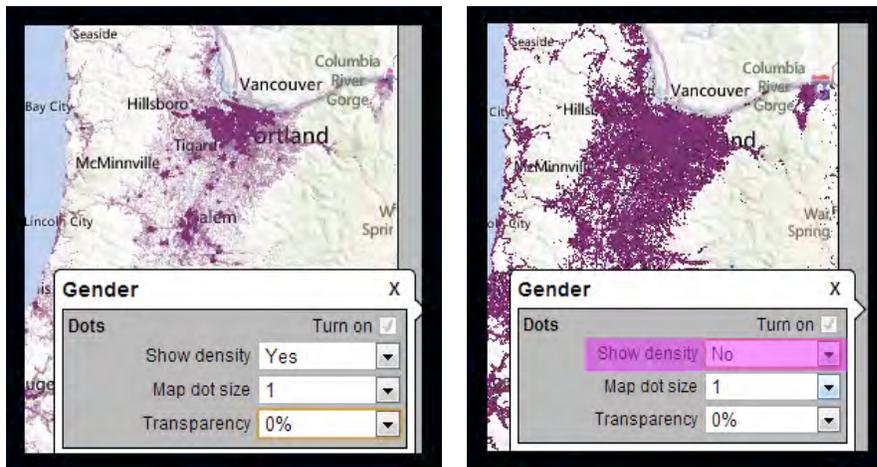
Transparency– changes the transparency of the dots. Make the dots more transparent in order to see details on the map beneath them.



Map dot size – changes the size of the dots. This can be useful to find voters when your selection has resulted in only a small number being selected and the dots are small and widely separated on the map.

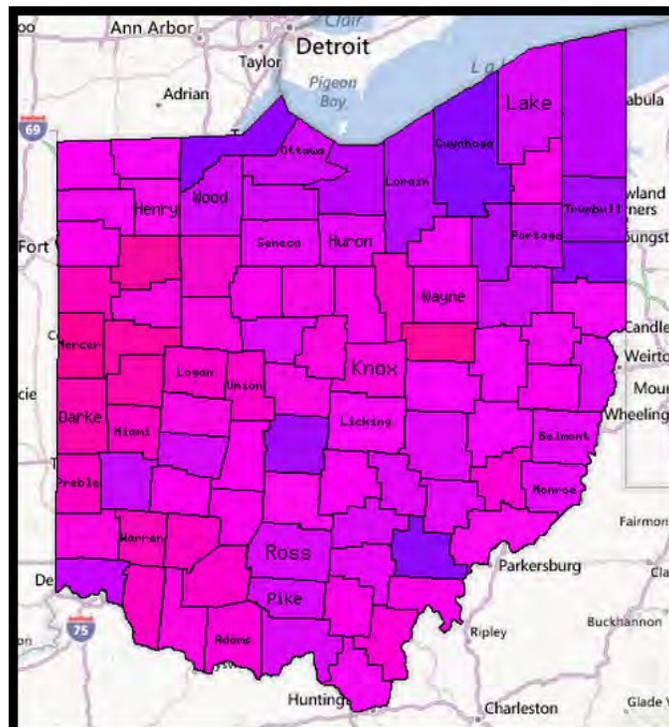


Show density – Turning Density on makes the dots become more transparent in more rural areas. The transparency of dots is controlled by the population density in an area. In higher density areas the dots are darker making concentrations of voters easier to understand. This is the default setting.

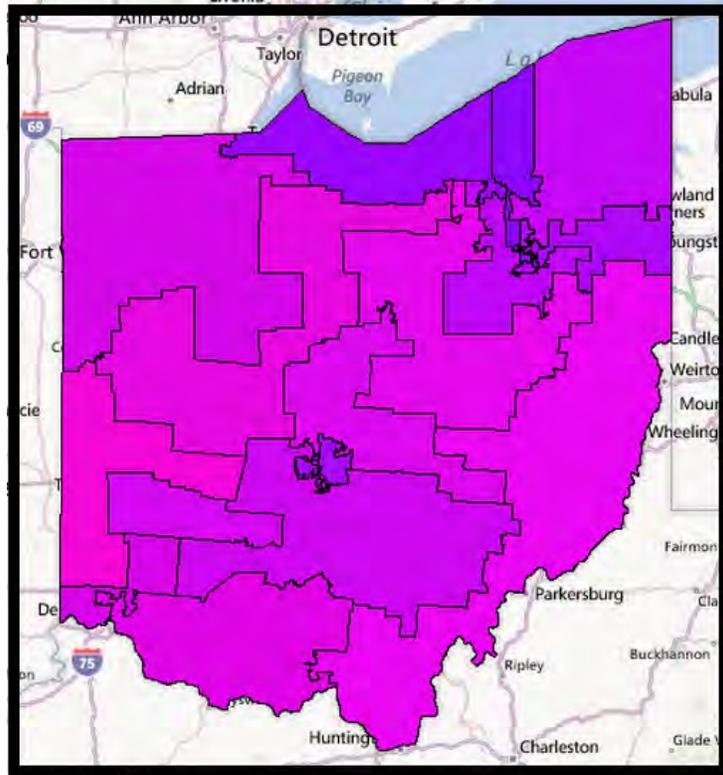


Area Coloring (Choropleth)

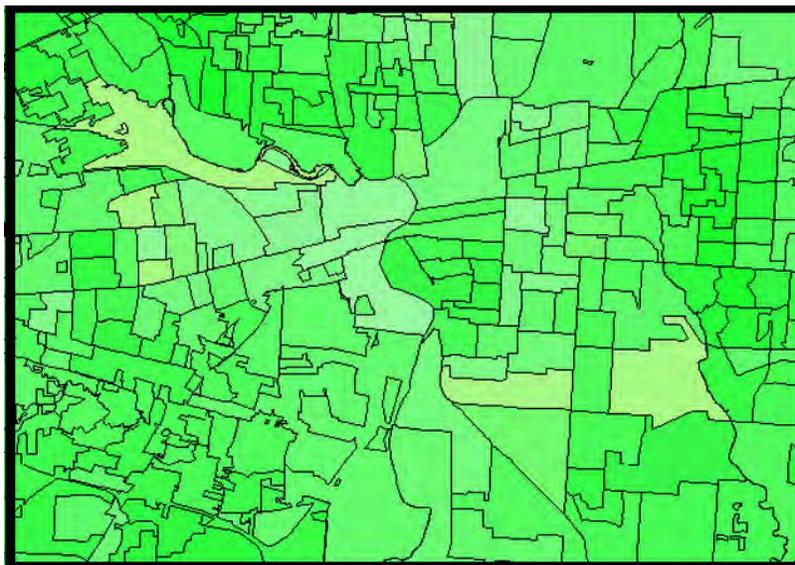
L2 VoterMapping is equipped with a feature that allows coloring within selected boundary areas by the average of the attributes within a chosen Data Field. This is an enormously powerful tool for analysis purposes and reveals data patterns that would be difficult to understand otherwise. Here, for example, we'll display the percentage of votes cast for Obama by county across the state of Ohio in the 2012 presidential election. Because we've set the colors in this attribute branch to vary from bright red (where Obama received only a small percentage of the vote) to bright blue (where he received a high percentage of the vote) we can immediately see his areas of strength and weakness.



Here's area coloring by the same attribute but this time averaged over the new congressional districts:

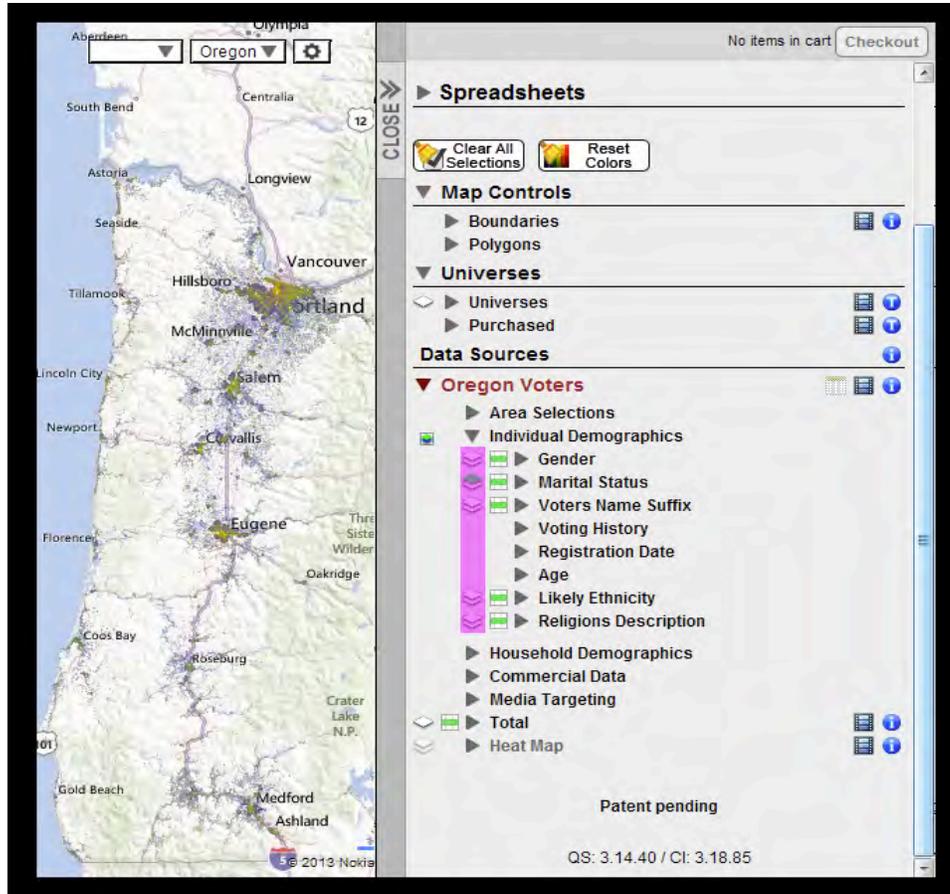


Finally, here's the turnout colored from white to dark green of all voters in the 2012 presidential election by precinct in the core Cleveland area.

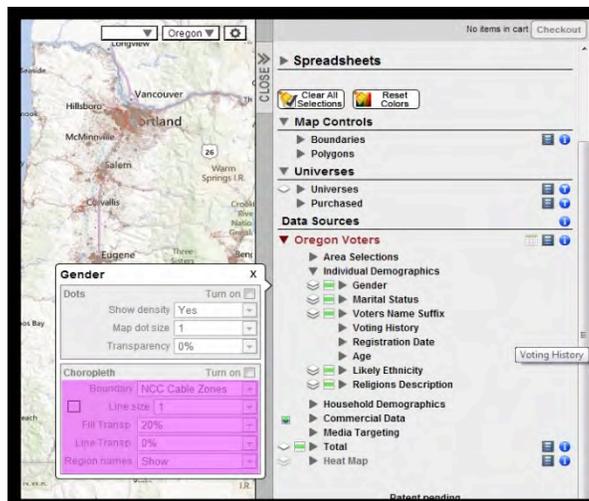


Activating Area Coloring (Choropleth)

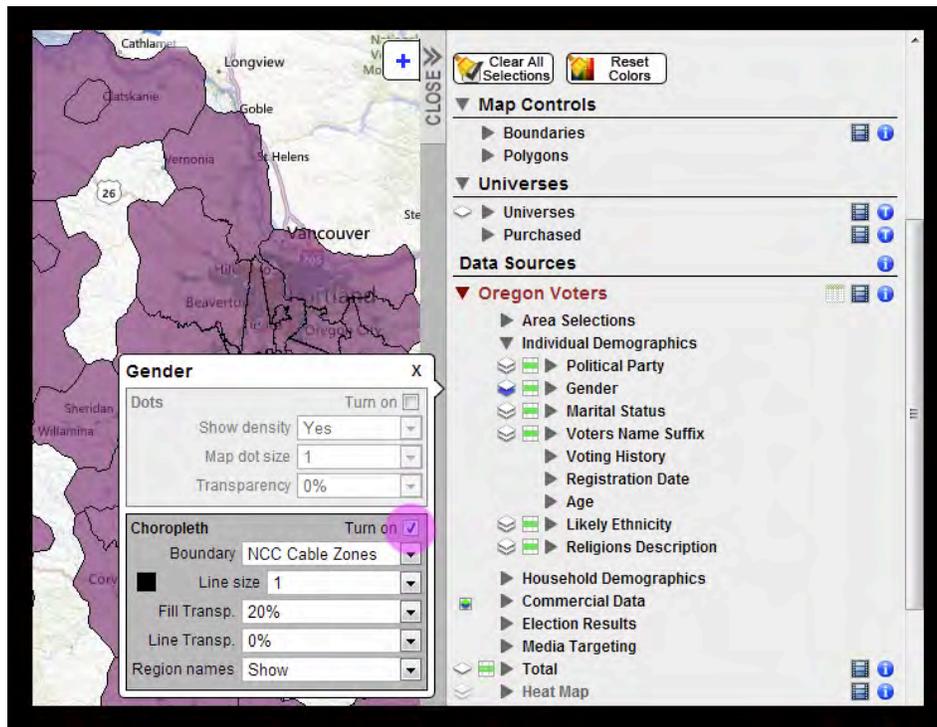
To color by area, click on the layer control icon to the left of a desired Data Field.



The layer control box will appear containing the Data Field Name, a Dots section (at the top), and an area coloring (Choropleth) section at the bottom.

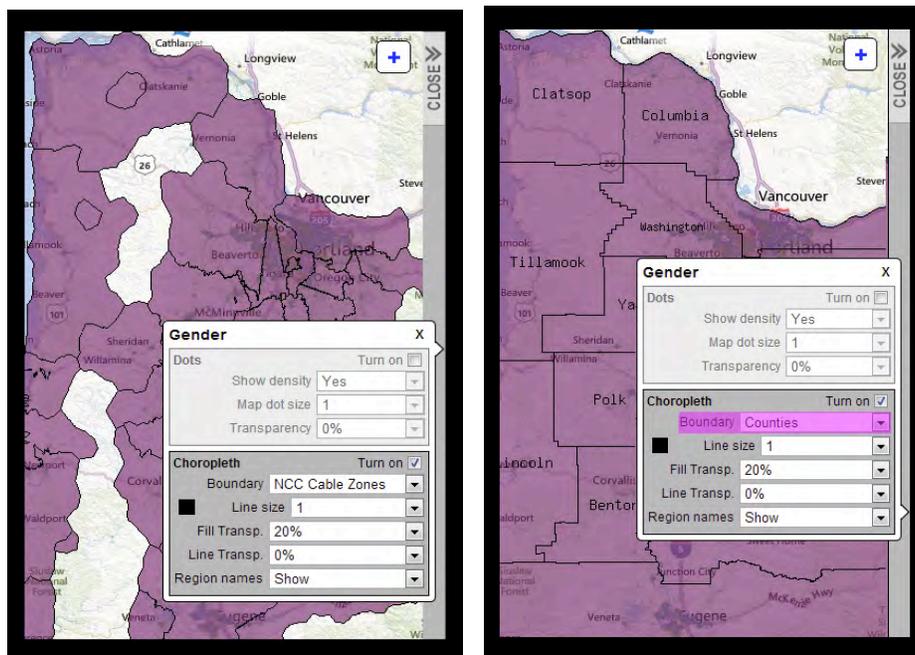


Click the Turn on check box within the Choropleth section to activate the display.

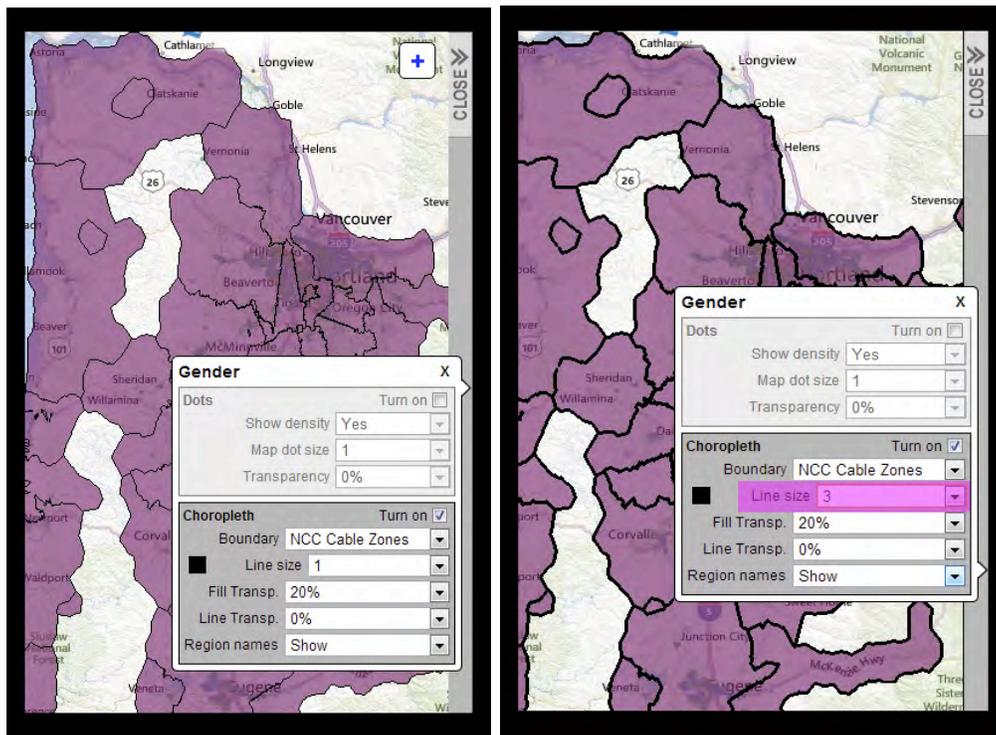


There are 5 Choropleth settings from which to choose:

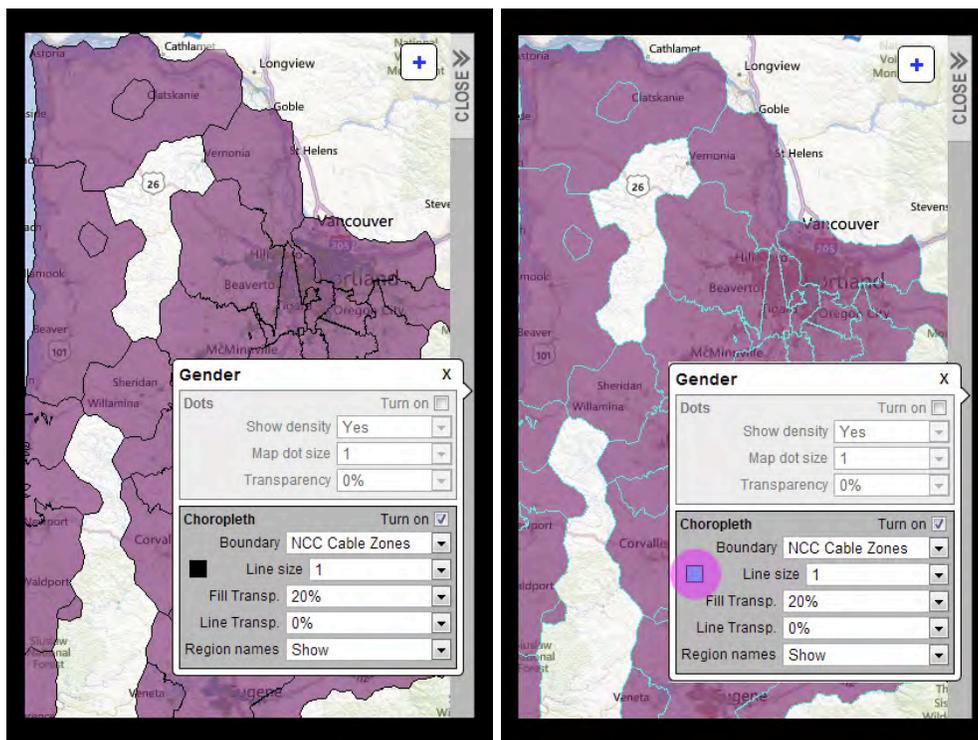
Boundary – Boundaries change what kind of area is used to do the area coloring of the map. Select the boundary you want to color from the dropdown menu.



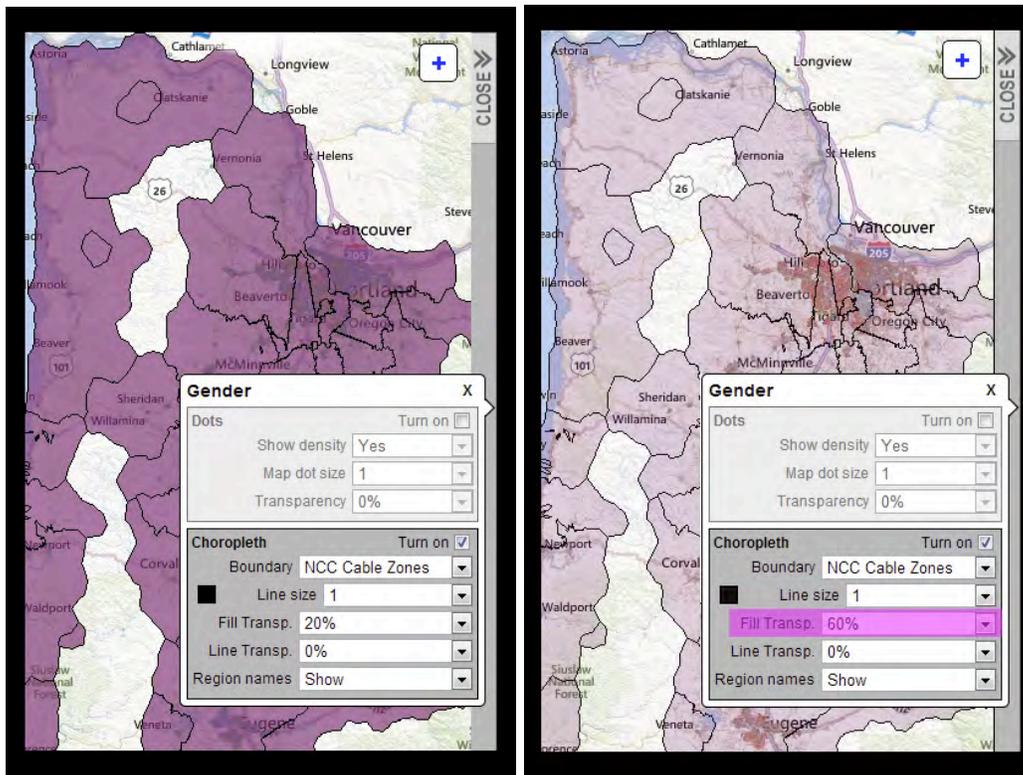
Line size – Changes the line size of the lines outlining boundary areas.



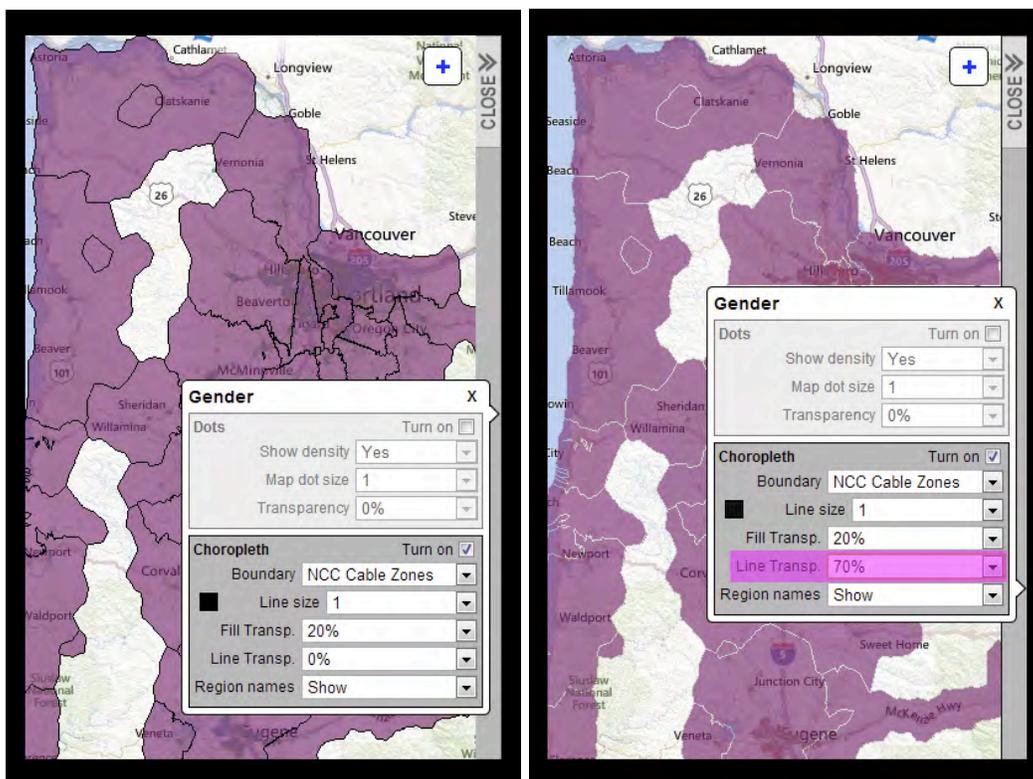
Line Color - changes the color of the lines outlining the boundaries. Change this by clicking on the color box to the left of “Line size”.



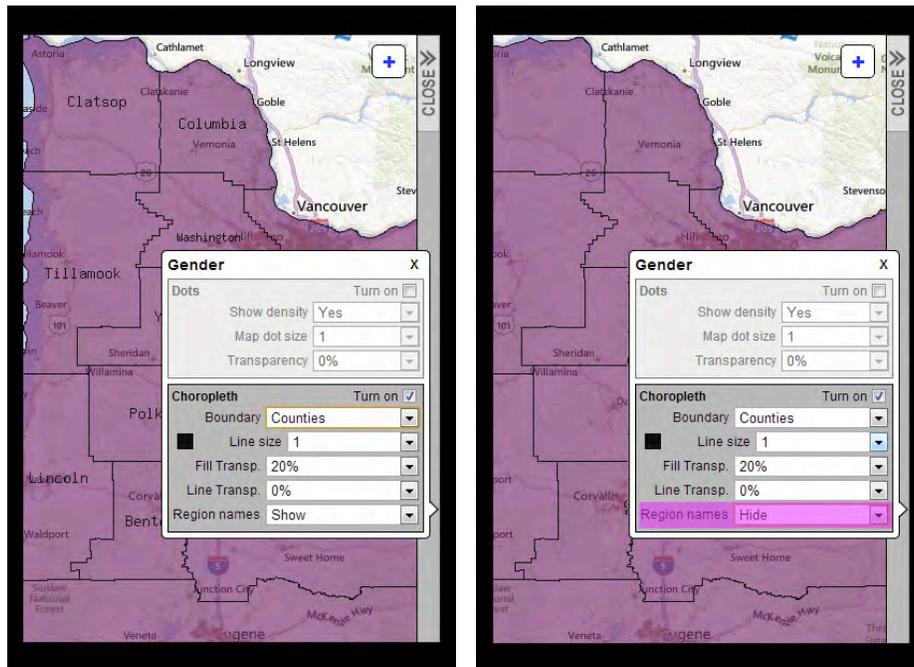
Fill Transparency – changes the fill transparency of the Choropleth color.



Line Transparency – Changes of transparency of the boundary lines.

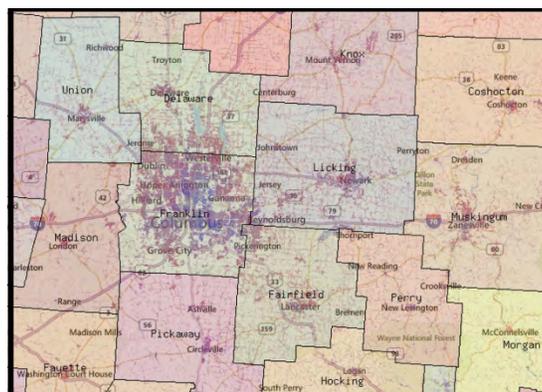


Region names – Toggles to display the titles of the boundaries currently displayed or hide them.



Note that unlike dot coloring, area coloring is turned on only when desired. It is thus possible to “uncheck” the “Turn on” check box in the choropleth section of the layer control box.

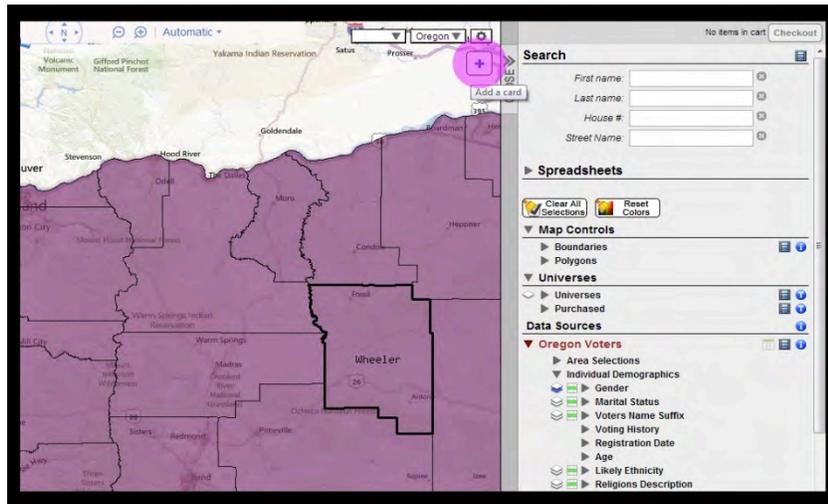
[HINT: Try setting the fill transparency to 0% in order to generate a map with solid blocks of color. Set it to 40% or higher to be able to see the dots beneath the area coloring. Also note that the coloring of the dots is a function completely separate from area coloring. Because of this you can analyze two different attributes simultaneously. For example, here is a map where the dot coloring is set to party affiliation while the area coloring is set to income ranges by county. You can see the relationship between party affiliation and income ranges by setting the area coloring to be semi-transparent. The warmer the color of the county, the higher the average income in that county. Beneath the county coloring you can see the red and blue distribution of the voters by party.



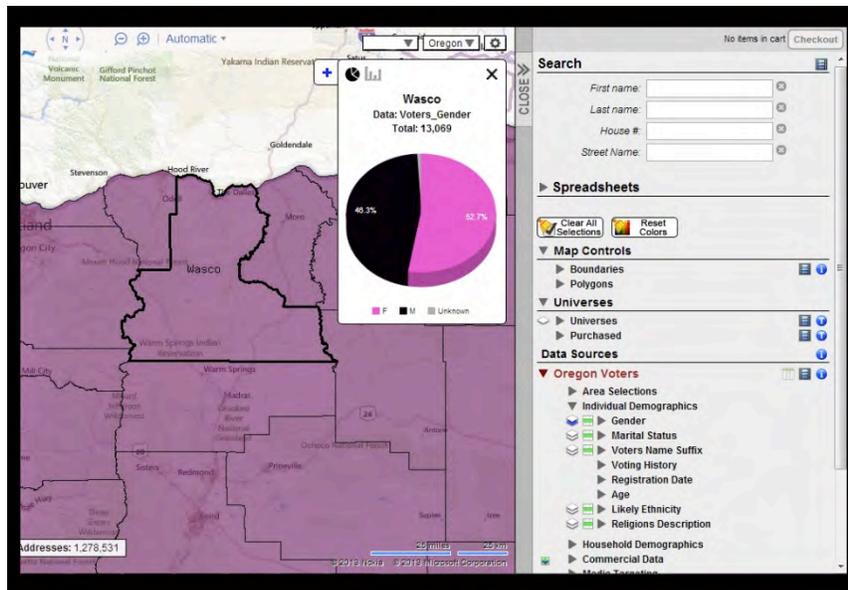
Graphs

When the Choropleth layer is activated, you can create graphs showing the Data Attribute values within different areas.

Click on the blue plus icon located at the top right portion of the map.

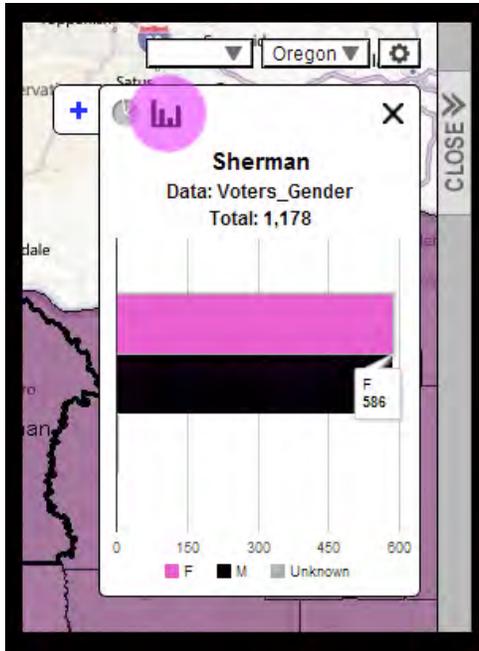


This will bring up a data card for graphing. The graph (either pie chart or bar chart) will display the data for the particular area over which your mouse cursor is hovering.

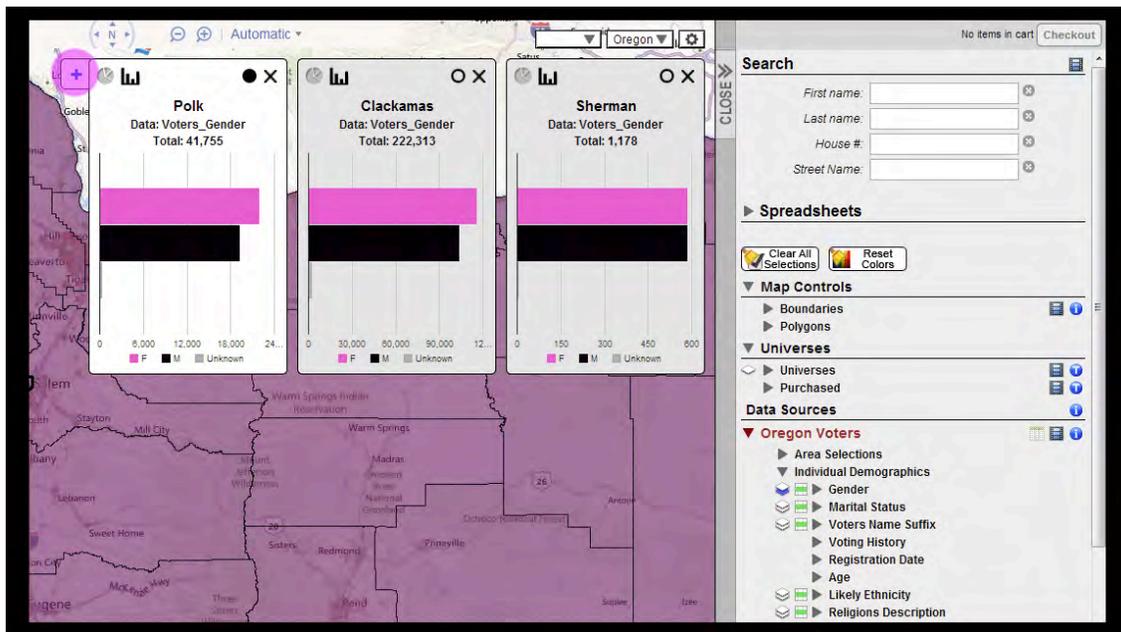


As you move your cursor over different Choropleth Boundaries the graph will change to display the information for the corresponding area.

You can change the type of graph by clicking either the pie or bar chart icons on the upper left corner of the card.

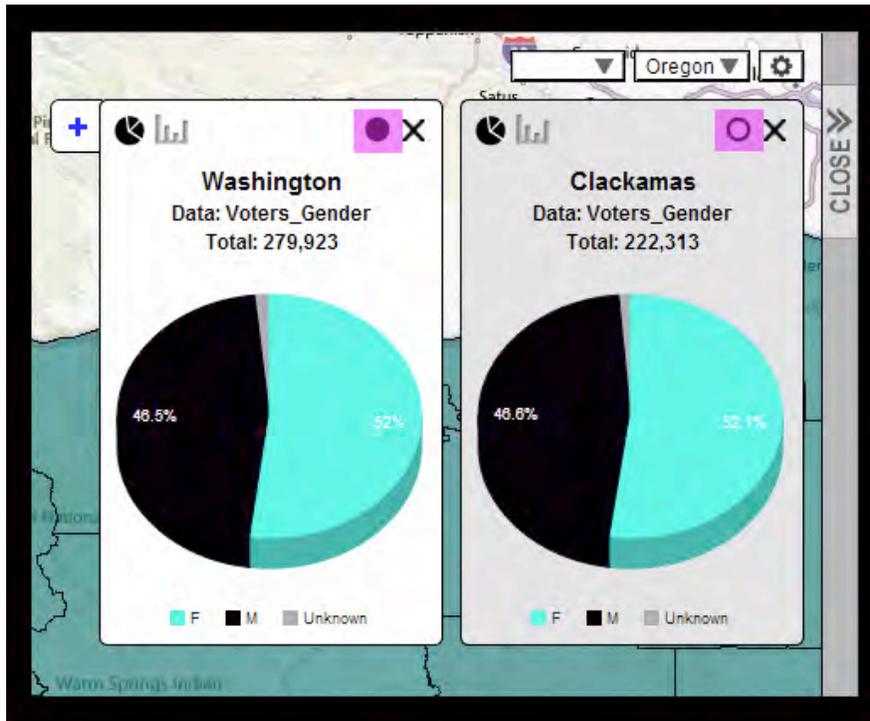


To open multiple cards simultaneously click a choropleth boundary. Your first data card will be fixed in place and a second will open. Now hover over a second area to compare the results in the two graphs side-by-side. Repeat this process by left clicking again or click on the blue “+” sign to open a new card.

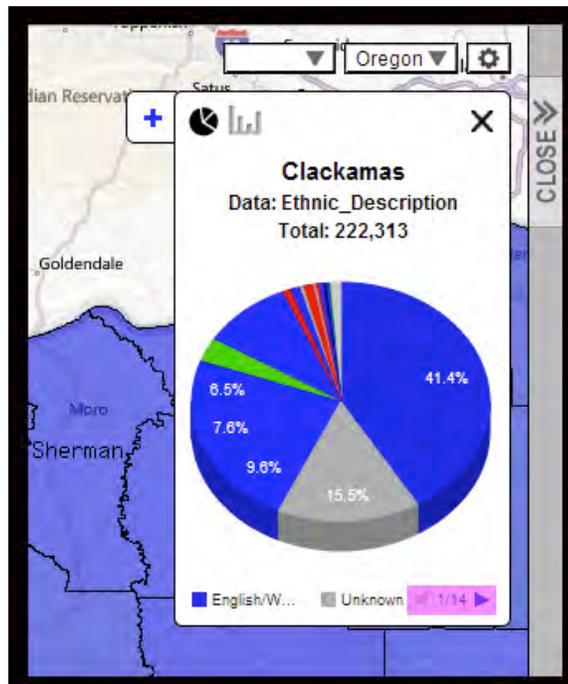


When using multiple cards, the most recent card will become the active card. The active card will contain a solid black circle icon in its upper right corner and be white, while the inactive card(s) will have hollow black circles and be dark gray. To change

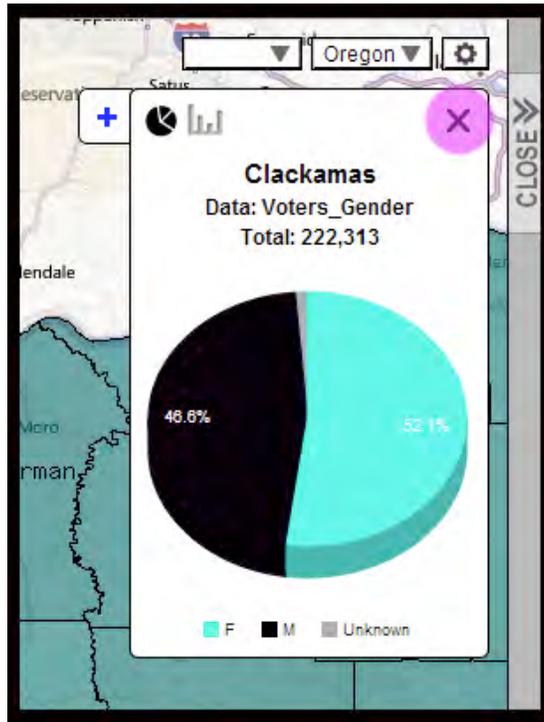
which card is active, click on the hollow circle on an inactive card.



Notice the legend at the bottom of the card which displays the meanings for the different colors. Cycle through this legend by clicking on the small blue arrow at the bottom of a graph card.



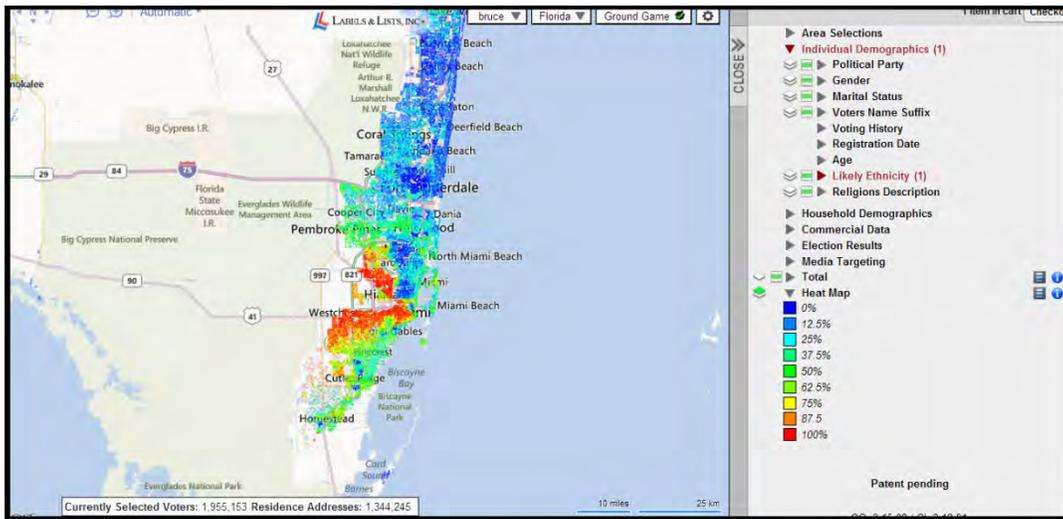
Click the "X" at the upper right corner of a card to close it.



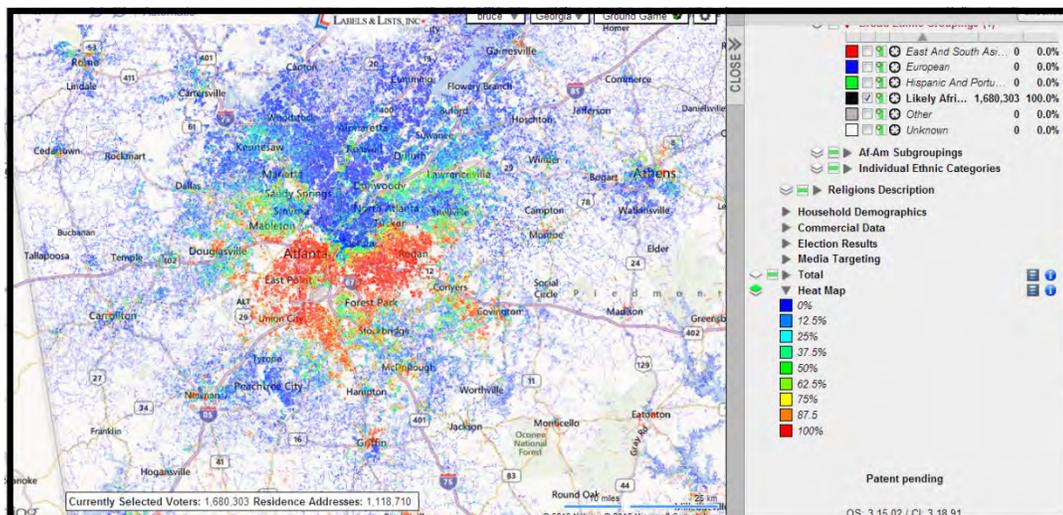
Heat Maps

Heat Maps use a fixed color scale from cold colors to hot colors to show the relative concentration of voters with selected attributes within an area as a percentage of all voters.

Heat mapping can quickly show where your targeted voters reside. Make any filtering selection and then color the dots by the Heat Map attribute to see the concentrations. Here, for example, we've selected Hispanic voters in Florida and Heat Mapped the results:



The relative concentration of Hispanic voters as a percentage of all voters is displayed by coloring the dots on a scale from cool colors to hot colors as shown in the heat map scale on the right. The area of hot red in Miami reveals an extremely high concentration of Hispanic voters in those areas. In the next map, we can see the relative concentration of African-American voters in metro Atlanta:



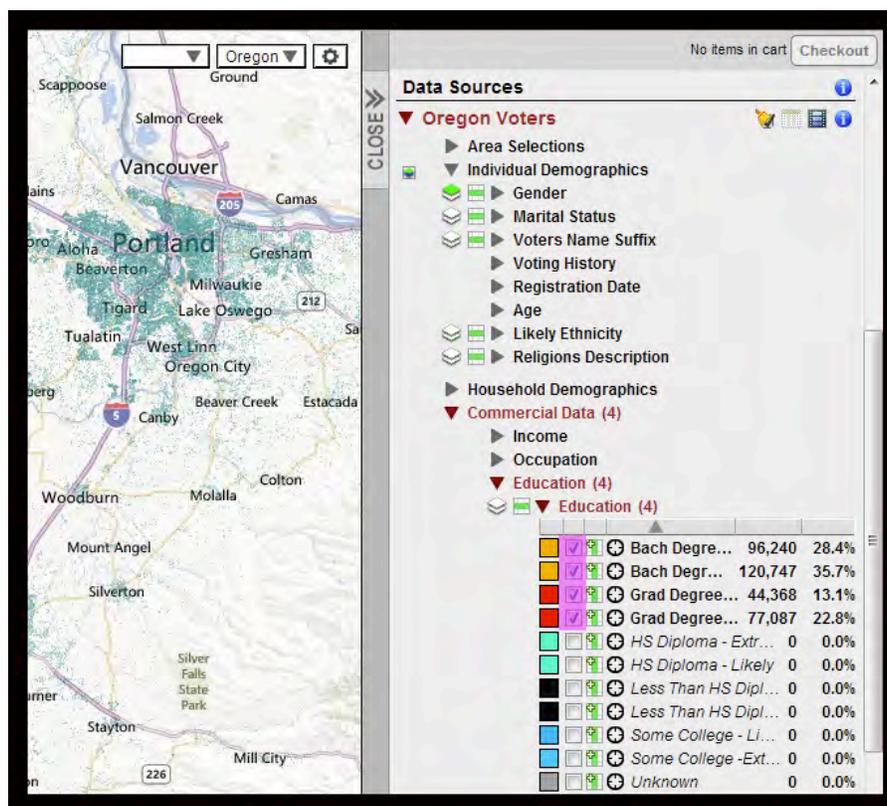
Make a selection for any particular type of voters and then color by Heat Map to learn more about the concentration of that demographic.

[HINT: Note that some attributes (like gender) are so evenly distributed geographically that Heat Maps are unlikely to reveal real concentrations. There are few areas, for instance where a very high percentage of the voters are female. Also note that if you attempt to color by Heat Map when you have not made any selections you will see that all coloring is bright red. Since you are selecting “all voters” then the percentage will logically always be 100% and everything will be red. Either make a voter selection or change the coloring to a different attribute.]

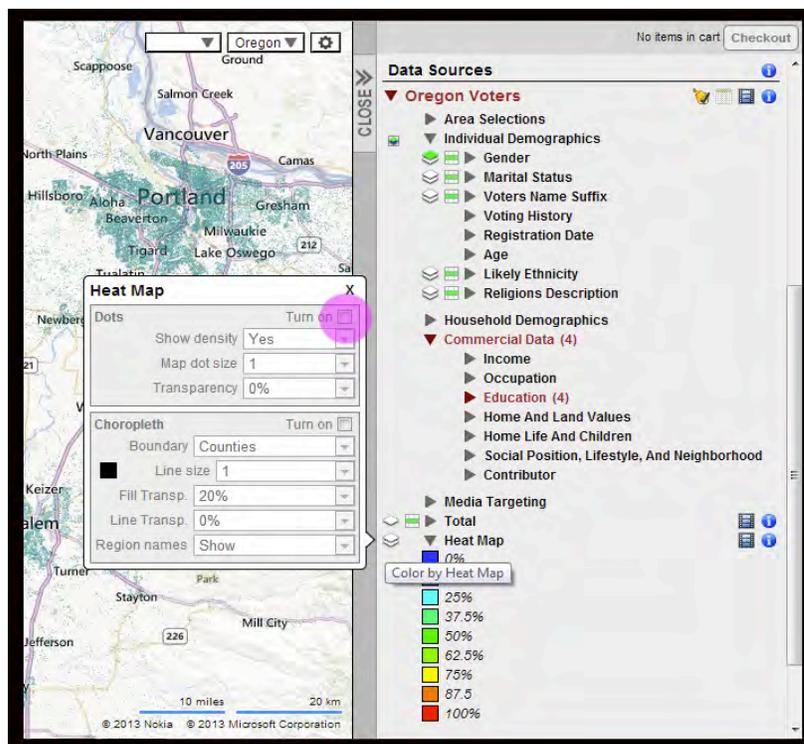
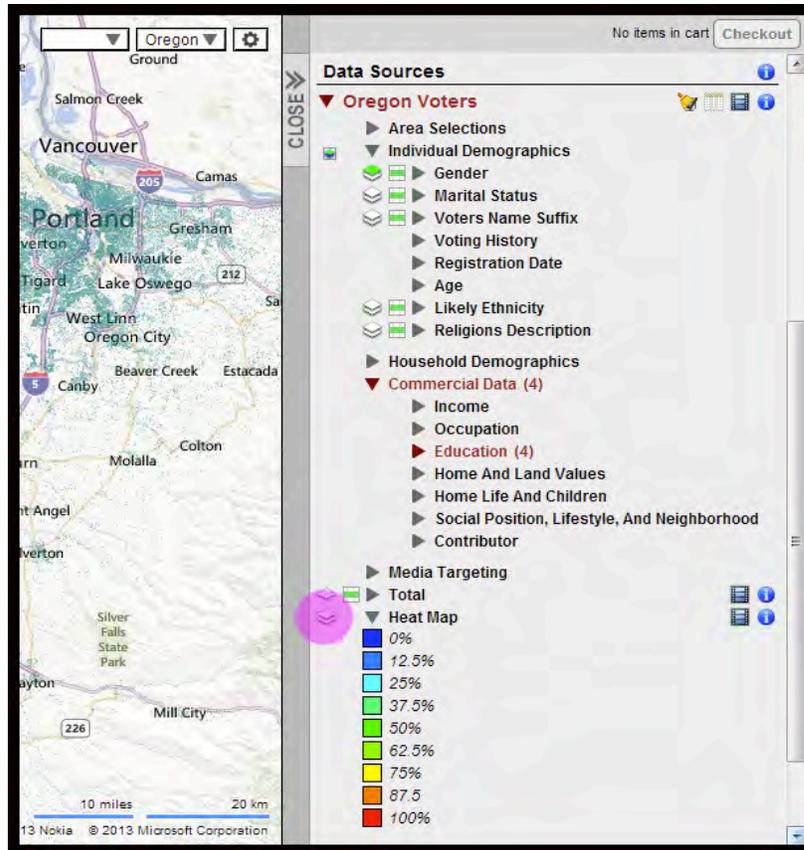
Within VoterMapping, there are two types of Heat Maps: Dot based and Choropleth based.

Dot Heat Map

Start by selecting the particular type of voter you wish to analyze through Heat Mapping.

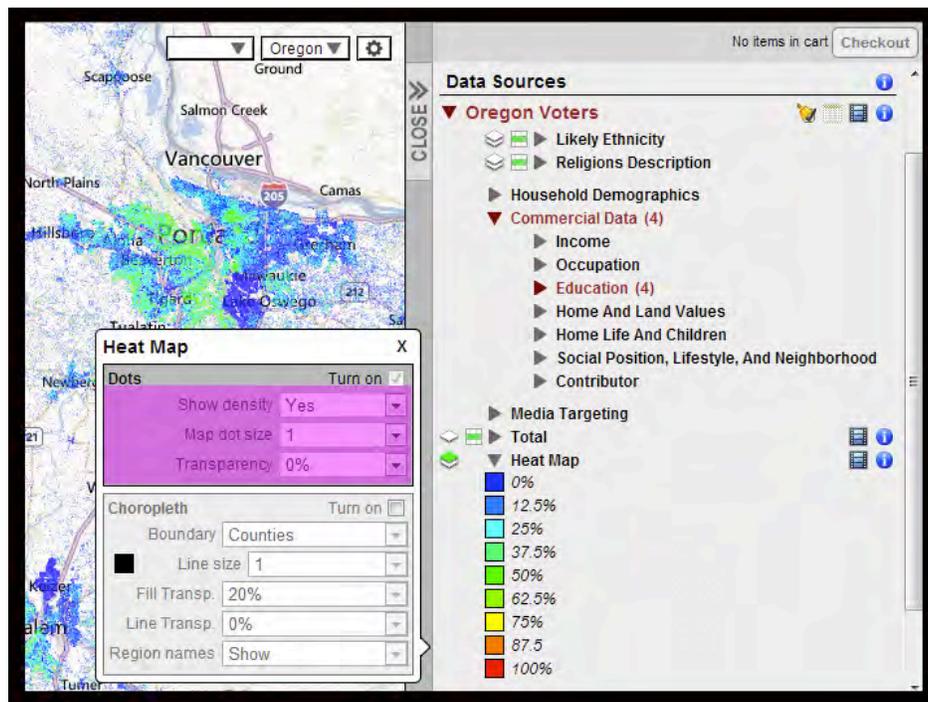
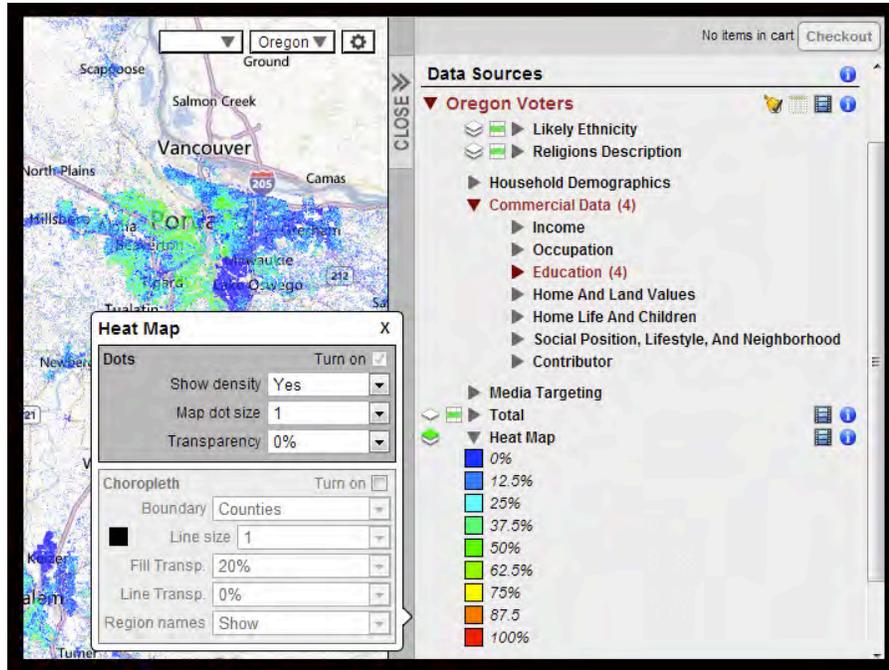


Within the Data Sources section, click on the Heat Map branch to display the Heat Map legend. Now click on the layer control icon to the left of the Heat Map data tree. The “Heat Map” layer control box will open containing two sections: “Dots” and “Choropleth”.



Click the “Turn on” check box within the Dots section to color the dots on the Heat Map scale. The Dots/Markers will be colored based on the concentration of the selected

selected voters as a percentage of all voters.



In this same window there are three Dot display options identical to any other Dot display options. Show density, Map dot size, and Transparency.

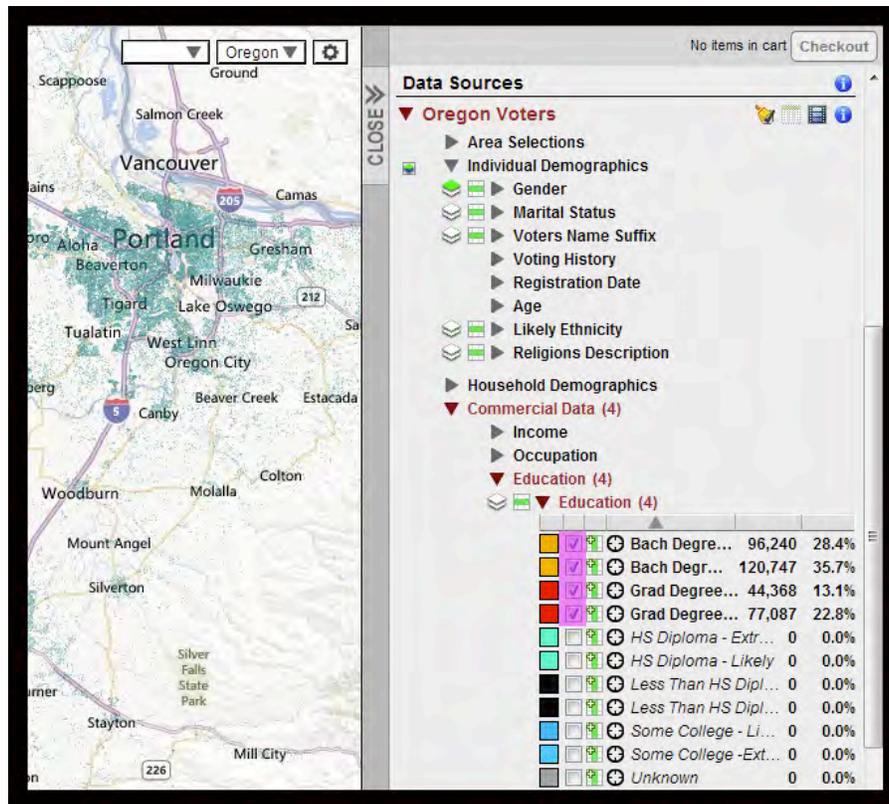
Transparency– changes the transparency of the dots.

Map dot size – changes the size of the dots.

Show density – Toggles whether or not the proximity of a dot's neighbors influences its color brightness.

Heat Mapping by Area Coloring (Choropleth Heat Mapping)

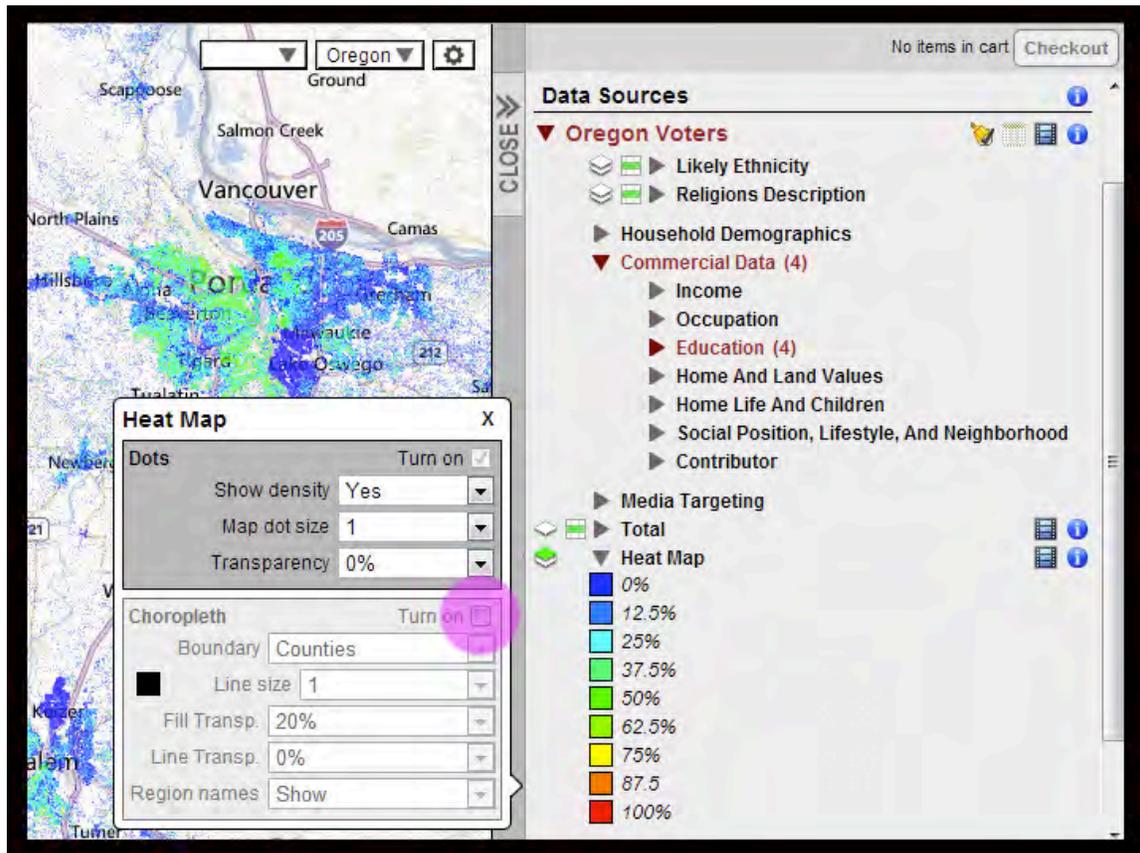
Select a Data Attribute filter, or group of attributes, by clicking on the check box to the left of the desired attribute(s).



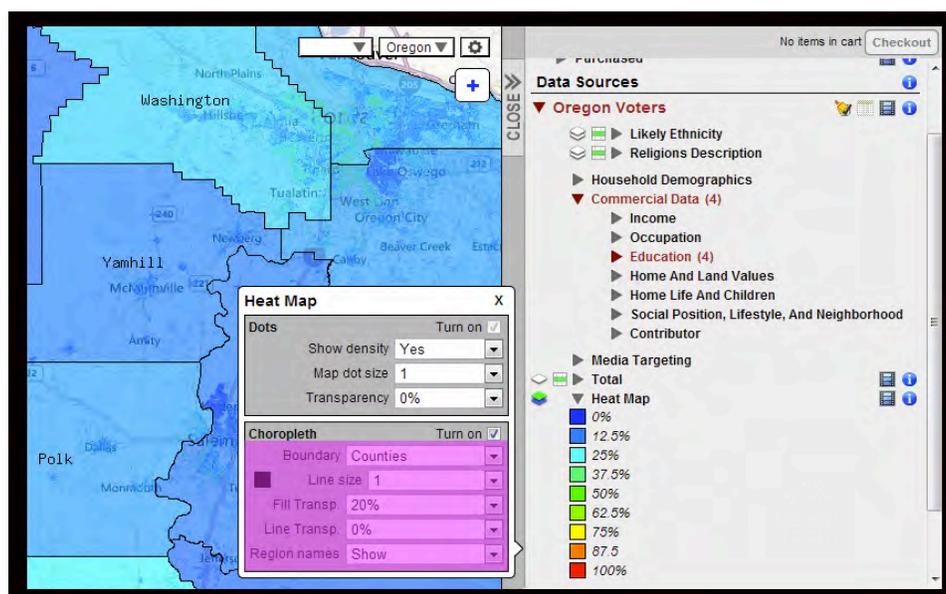
Within the Data Sources section, click on the Heat Map to reveal the Heat Map legend.



Click on the layer control icon to the left of the Heat Map data tree. The Heat Map layer control box will open up containing two sections: “Dots” and “Choropleth”.



Click the “Turn on” check box within the Choropleth section to activate the Heat Mapping by area color feature. The selected boundary will be colored based on the concentration of the selected attribute filters within that area or region.



Within this same window there are 5 Choropleth settings from which to choose, identical to the settings for any other Choropleth function:

Boundary – you can set what boundary is used to Choropleth by scrolling through the Boundary options.

Line Size – Changes the line size of the boundaries.

Fill Transparency – Changes the fill transparency of the Choropleth color.

Line Transparency – Changes of transparency of the boundary lines.

Region Names – Toggles the titles of the boundaries currently displayed