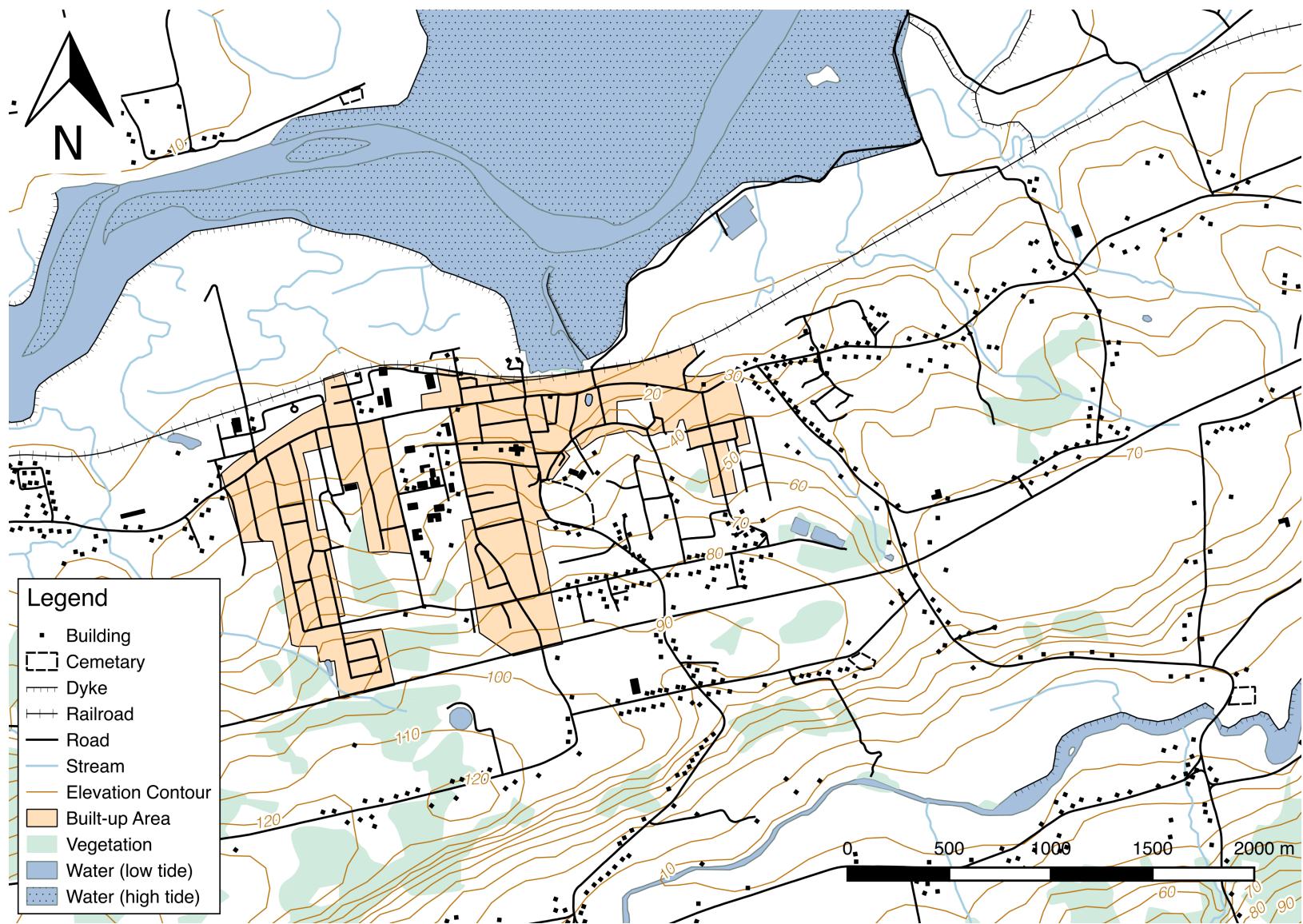


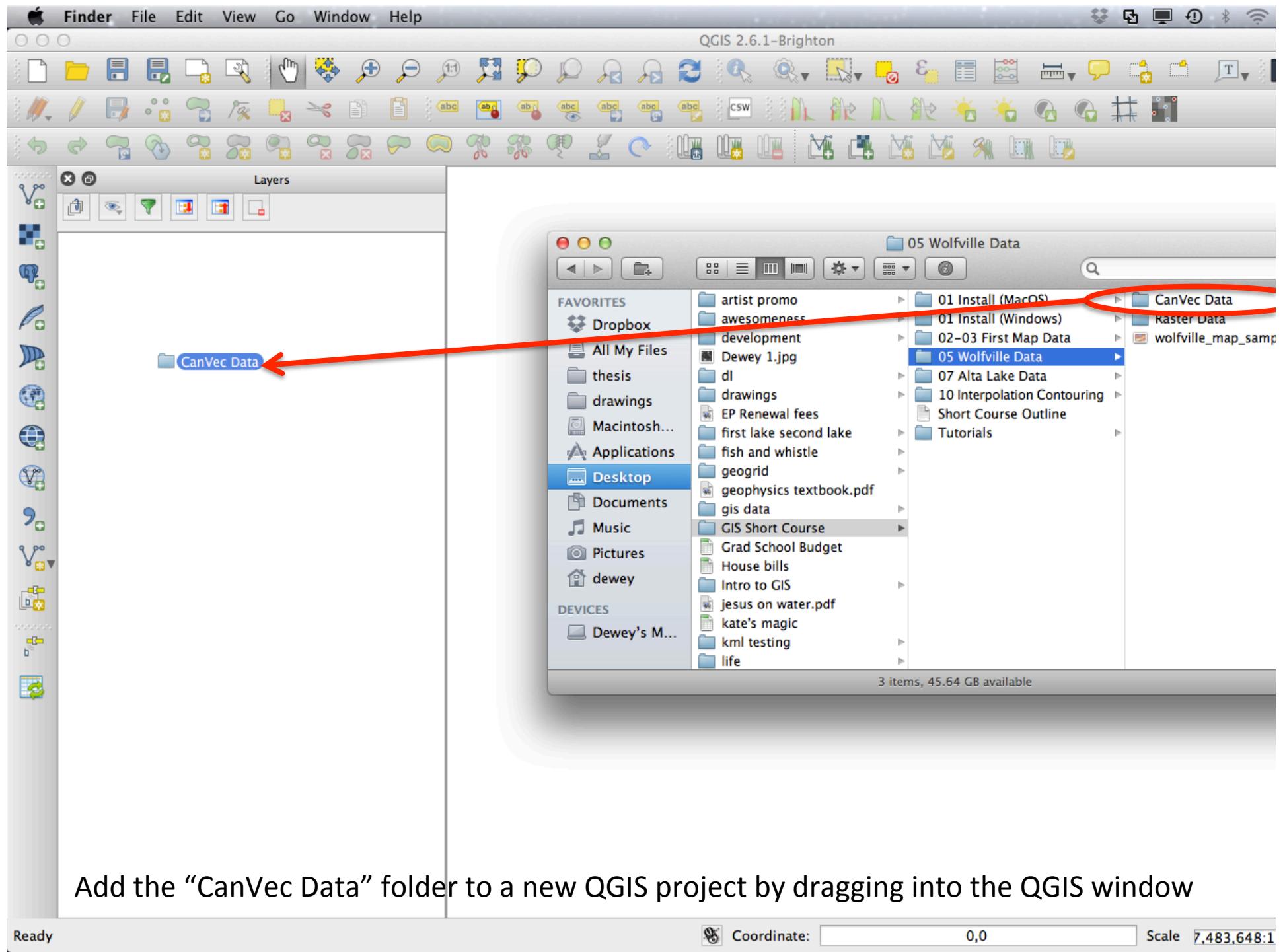
5. Map of Wolfville

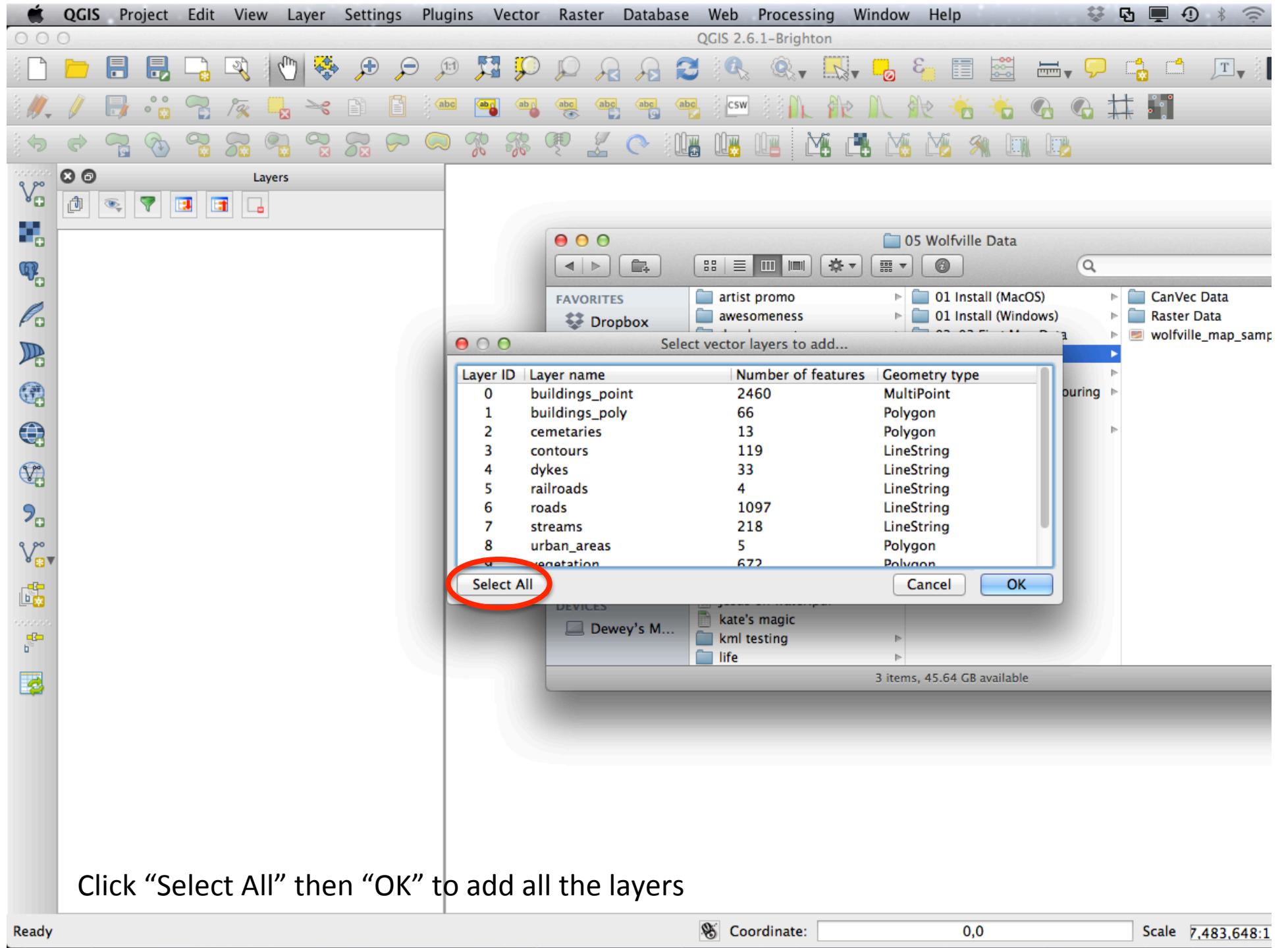
Purpose

- Learn how to change the appearance of vector and raster data in QGIS
- Learn how to add a legend in the Print Composer

The Assignment







QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

QGIS 2.6.1-Brighton

Layers

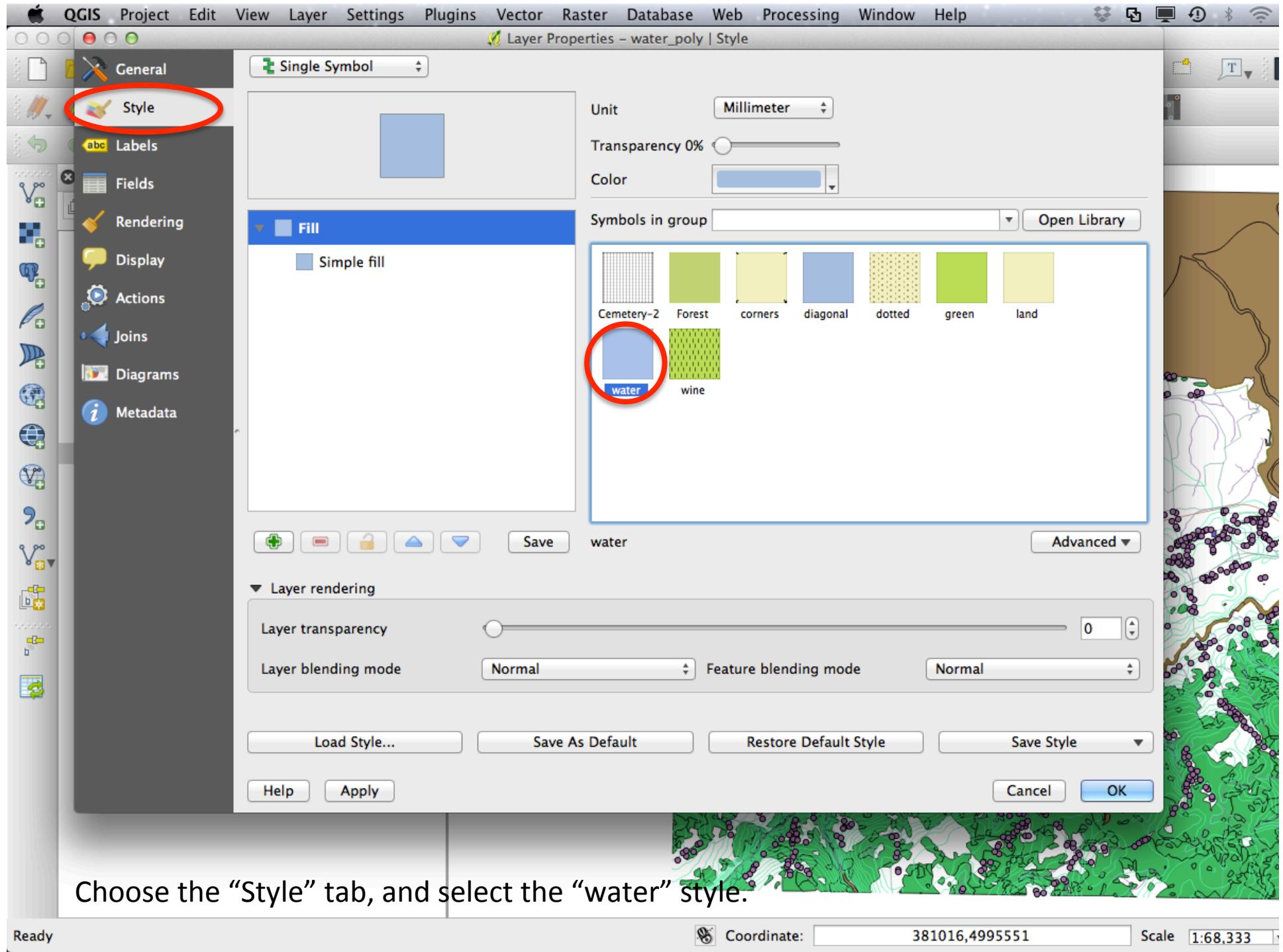
- buildings_point
- buildings_poly
- cemetaries
- contours
- dykes
- railroads
- roads
- streams
- urban_areas
- vegetation
- water_poly

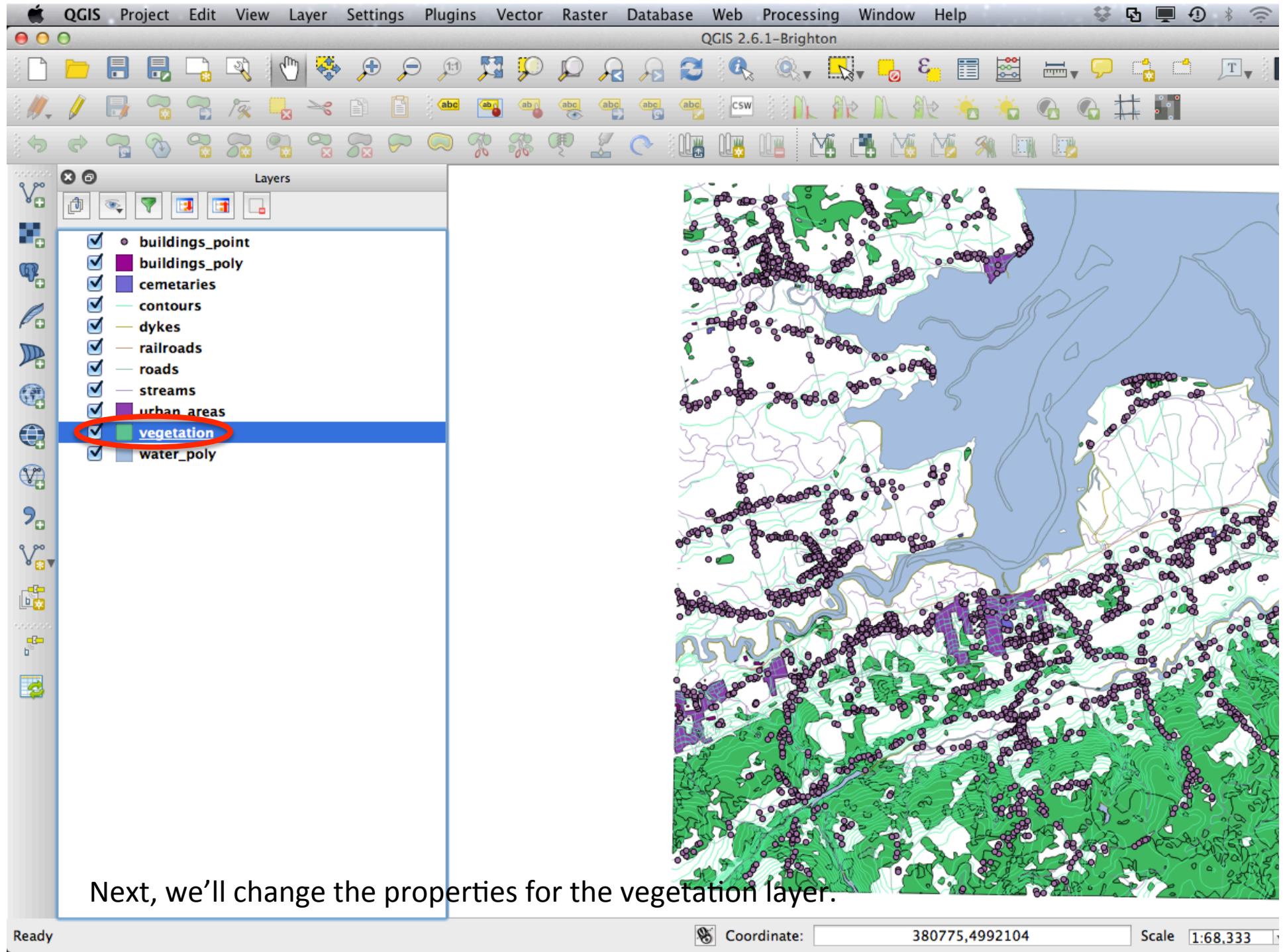
Your map should look like this. We would like to change how these point, line, and polygon features are displayed. To do this we open the “Layer Properties” dialog by double-clicking on the layer name (also, right click the layer and choose “Properties” will open the same dialog).

Ready

Coordinate: 381016,4995551

Scale 1:68,333





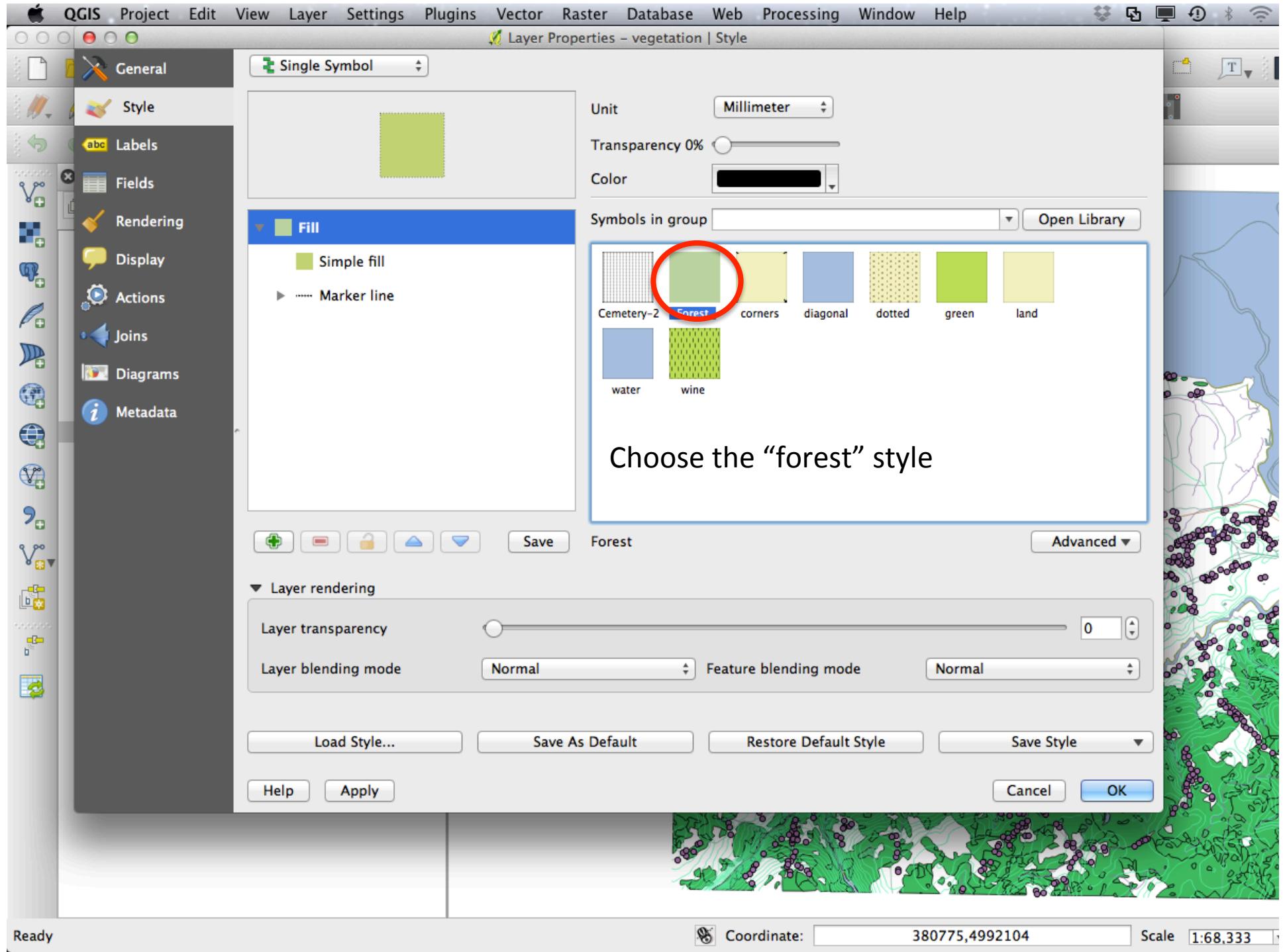
Ready



Coordinate:

380775,4992104

Scale 1:68,333



QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

QGIS 2.6.1-Brighton

Layers

- buildings_point
- buildings_poly
- cemetaries
- contours
- dykes
- railroads
- roads
- streams
- urban_areas
- vegetation
- water_poly

Next, we'll change the urban areas style

Ready

Coordinate: 381377,4991766

Scale 1:68,333

QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

Layer Properties – urban_areas | Style

General Style Labels Fields Rendering Display Actions Joins Diagrams Metadata

Single Symbol

Unit Millimeter Transparency 0% Color

Symbols in group

Recent colors Standard colors

Cemetery-2 Forest Copy color

water wine green land

Choose color...

There is no pre-defined style for urban areas, so we'll choose our own colour.

Advanced

Layer rendering

Layer transparency 0 Layer blending mode Normal Feature blending mode Normal

Load Style... Save As Default Restore Default Style Save Style

Help Apply Cancel OK

Coordinate: 381377,4991766 Scale 1:68,333

QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

Layer Properties – urban_areas | Style

General Style Labels Fields Rendering Display Actions Joins Diagrams Metadata

Single Symbol

Unit Millimeter

Select color

H 69° S 88% V 93% R 206 G 237 B 28 Opacity 100% HTML notation #ceed1c

Current Old

Reset Cancel OK

Load Style... Save As Default Restore Default Style Save Style

Help Apply Cancel OK

Coordinate: 381377,4991766 Scale 1:68,333

Some kind of yellow is generally used for urban areas, but you can choose whatever colour you'd like.

QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

QGIS 2.6.1-Brighton

Layers

- buildings_point
- buildings_poly
- cemetaries
- contours
- dykes
- railroads
- roads
- streams
- urban_areas
- vegetation
- water_poly

Next, we'll change the style of the streams layer

Ready

Coordinate: 395769,4989597

Scale 1:68,333

QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

Layer Properties – streams | Style

General Style Labels Fields Rendering Display Actions Joins Diagrams Metadata

Single Symbol

Unit Millimeter Transparency 0% Width 0.26000

Color

Recent colors

Standard color #a6cee3

Copy color Paste color Choose color...

Bridleway Canal Cycle path Dam

Ditch Drain Floodway Footpath Jetty Living street LockedRoad

Motorway Motorway li Pedestrian v Primary lin Primary ro Residential Residential

Advanced

Layer rendering

Layer transparency 0

Layer blending mode Normal Feature blending mode Normal

Load Style... Save As Default Restore Default Style Save Style

Help Apply Cancel OK

Coordinate: 381305,4996395 Scale 1:68,333

There is a pre-defined “Standard Color” that looks about right, so we’ll choose that.

The screenshot shows the QGIS 'Layer Properties' dialog for a 'streams' layer. The 'Style' tab is selected. Under the 'Single Symbol' section, the 'Line' style is chosen. A color palette dropdown is open, showing a recent color '#a6cee3' (purple) highlighted with a red circle. Below it are other standard colors like black, white, and various shades of green, blue, and orange. The background of the palette shows preview icons for different line styles and colors used in the map. The main map area on the right shows a terrain with purple stream network lines. At the bottom, there are buttons for 'Load Style...', 'Save As Default', 'Restore Default Style', 'Save Style', 'Help', 'Apply', 'Cancel', and 'OK'.

QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

Layer Properties – streams | Style

General Style Labels Fields Rendering Display Actions Joins Diagrams Metadata

Single Symbol

Change the width to 0.5 so the streams are more visible

Unit Millimeter Transparency 0% Width .5

Color

Symbols in group Open Library

Line

Simple line

Bridleway Canal Canal rive Construction Crossing Cycle path Dam

Ditch Drain Floodway Footpath Jetty Living str LockedRoad

Motorway Motorway li Pedestrian v Primary lin Primary ro Residential Residential

Advanced

Layer rendering

Layer transparency 0

Layer blending mode Normal Feature blending mode Normal

Load Style... Save As Default Restore Default Style Save Style

Help Apply Cancel OK

Coordinate: 381305,4996395 Scale 1:68,333

The screenshot shows the QGIS application interface with the 'streams' layer selected in the 'Layer Properties' dialog. The 'Style' tab is active. A red circle highlights the 'Width' input field, which is currently set to 0.5 millimeters. The 'Line' section of the style panel is expanded, displaying a variety of line patterns and colors. The main QGIS window shows a map with a network of streams. The bottom status bar displays the coordinate 381305,4996395 and the scale 1:68,333.

QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

QGIS 2.6.1-Brighton

Layers

- buildings_point
- buildings_poly
- cemetaries
- contours
- dykes
- railroads
- roads
- streams
- urban areas
- vegetation
- water_poly

Next, let's change the style for the roads layer

Ready

Coordinate: 395769,4989597

Scale 1:68,333

QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

Layer Properties – roads | Style

General Style Labels Fields Rendering Display Actions Joins Diagrams Metadata

Single Symbol

Unit Millimeter

Transparency 0% Width 0.26000

Color

Symbols in group

Recent colors Standard colors

Bridleway Canal Ditch Drain Floodway Footpath Jetty Living str LockedRoad Motorway Motorway li Pedestrian v Primary lin Primary ro Residential Residential

Paste color Choose color...

Advanced

Layer rendering

Layer transparency 0

Layer blending mode Normal Feature blending mode Normal

Load Style... Save As Default Restore Default Style Save Style

Help Apply Cancel OK

And change the width to 0.75

We can use the colour black for roads

Coordinate: 395769,4989766 Scale 1:68,333

QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

QGIS 2.6.1-Brighton

Layers

- buildings_point
- buildings_poly
- cemeteries
- contours
- dykes
- railroads
- roads
- streams
- urban_areas
- vegetation
- water_poly

Next, let's change the style for the contour layer

Ready

Coordinate: 395769,4989597

Scale 1:68,333

QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

Layer Properties – contours | Style

General Style Labels Fields Rendering Display Actions Joins Diagrams Metadata

Single Symbol

Unit: Millimeter Transparency: 0% Width: 0.26000

Color: Recent colors Standard colors

Bridleway Canal Ditch Drain Floodway Footpath Jetty Living str LockedRoad Motorway Motorway li Pedestrian v Primary lin Primary ro Residential Residential

Copy color Paste color Choose color... rgb(253, 191, 111) Dam

Advanced

Layer rendering

Layer transparency: 0 Layer blending mode: Normal Feature blending mode: Normal

Load Style... Save As Default Restore Default Style Save Style Cancel OK

Help Apply

Choose a standard color or pick your own

Ready Coordinate: 380799,4993406 Scale 1:68,333

The screenshot shows the QGIS 'Layer Properties' dialog for a 'contours' layer. The 'Style' tab is selected. In the 'Single Symbol' section, the 'Line' style is chosen. A color palette dropdown is open, showing 'Recent colors' and 'Standard colors'. A specific orange color square is highlighted with a red circle, and its RGB value 'rgb(253, 191, 111)' and label 'Dam' are displayed. Below the palette, there are several line style preview icons. The 'Layer rendering' section includes controls for layer transparency (set to 0), layer blending mode (Normal), and feature blending mode (Normal). At the bottom, there are buttons for 'Load Style...', 'Save As Default', 'Restore Default Style', 'Save Style', 'Cancel', and 'OK'. A large text field at the bottom left says 'Choose a standard color or pick your own'. The main QGIS interface shows a map with various layers, including topographic contours and roads.

QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

QGIS 2.6.1-Brighton

Layers

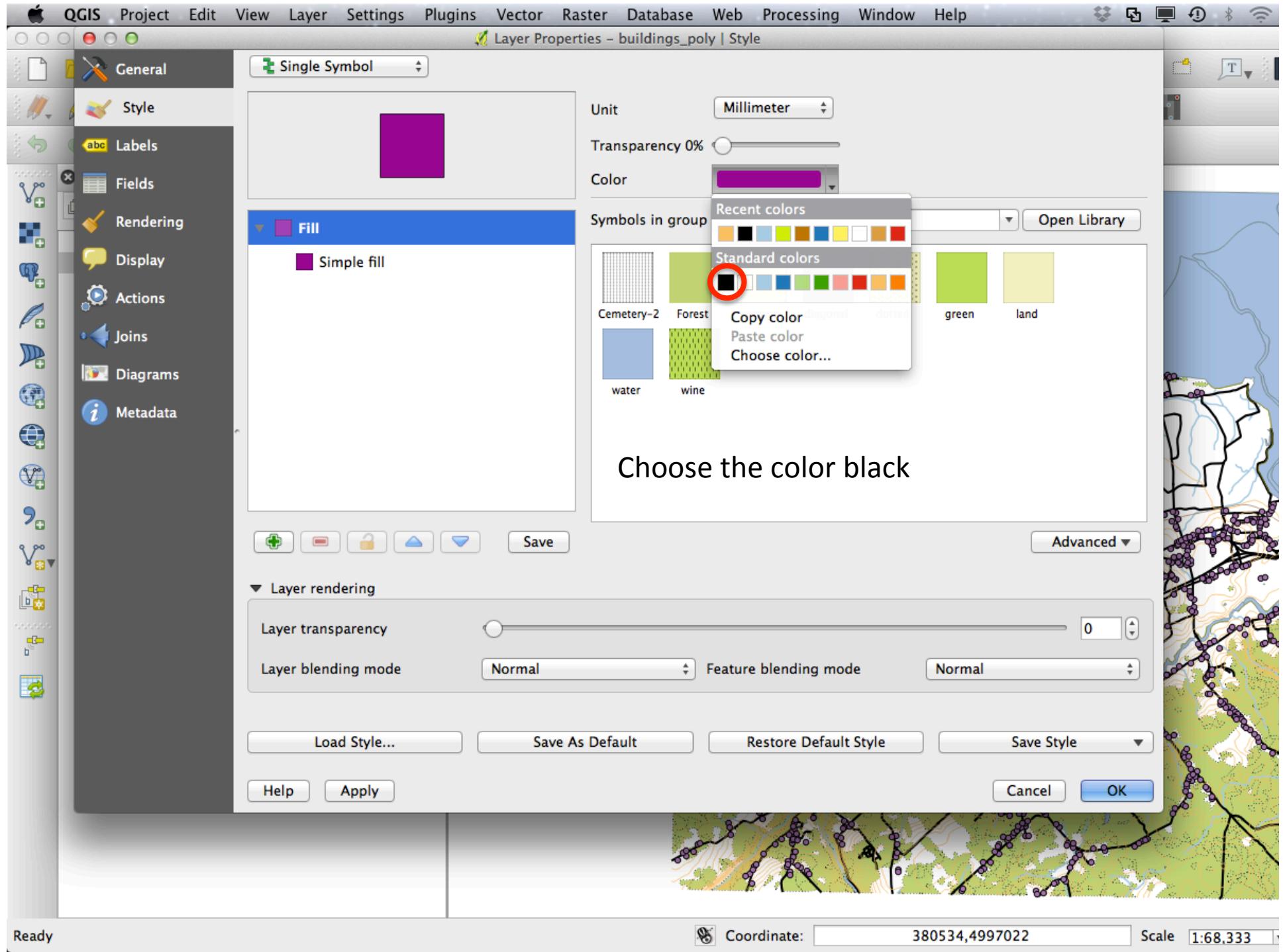
- buildings_point
- buildings_poly
- cemetaries
- contours
- dykes
- railroads
- roads
- streams
- urban_areas
- vegetation
- water_poly

Buildings are represented by two layers – a point layer and a polygon layer. Larger buildings are represented by the polygon layer, smaller buildings by the point layer. Let's change the style for the polygon layer first.

Ready

Coordinate: 380534,4997022

Scale 1:68,333



QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

QGIS 2.6.1-Brighton

Layers

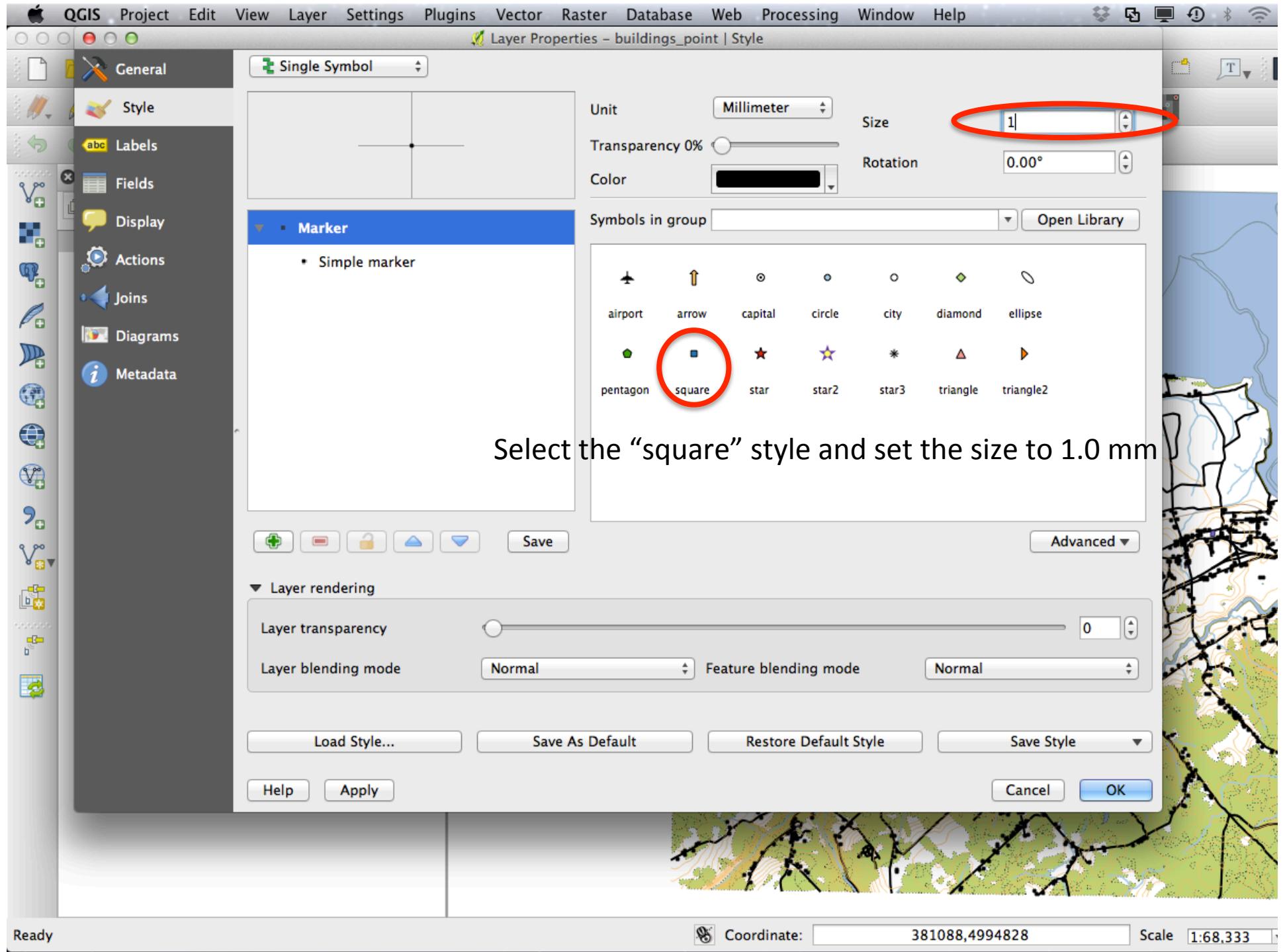
- buildings_point
- buildings_poly
- cemetaries
- contours
- dykes
- railroads
- roads
- streams
- urban_areas
- vegetation
- water_poly

Next, let's change the style for the buildings_point layer

Ready

Coordinate: 395817,4989621

Scale 1:68,333



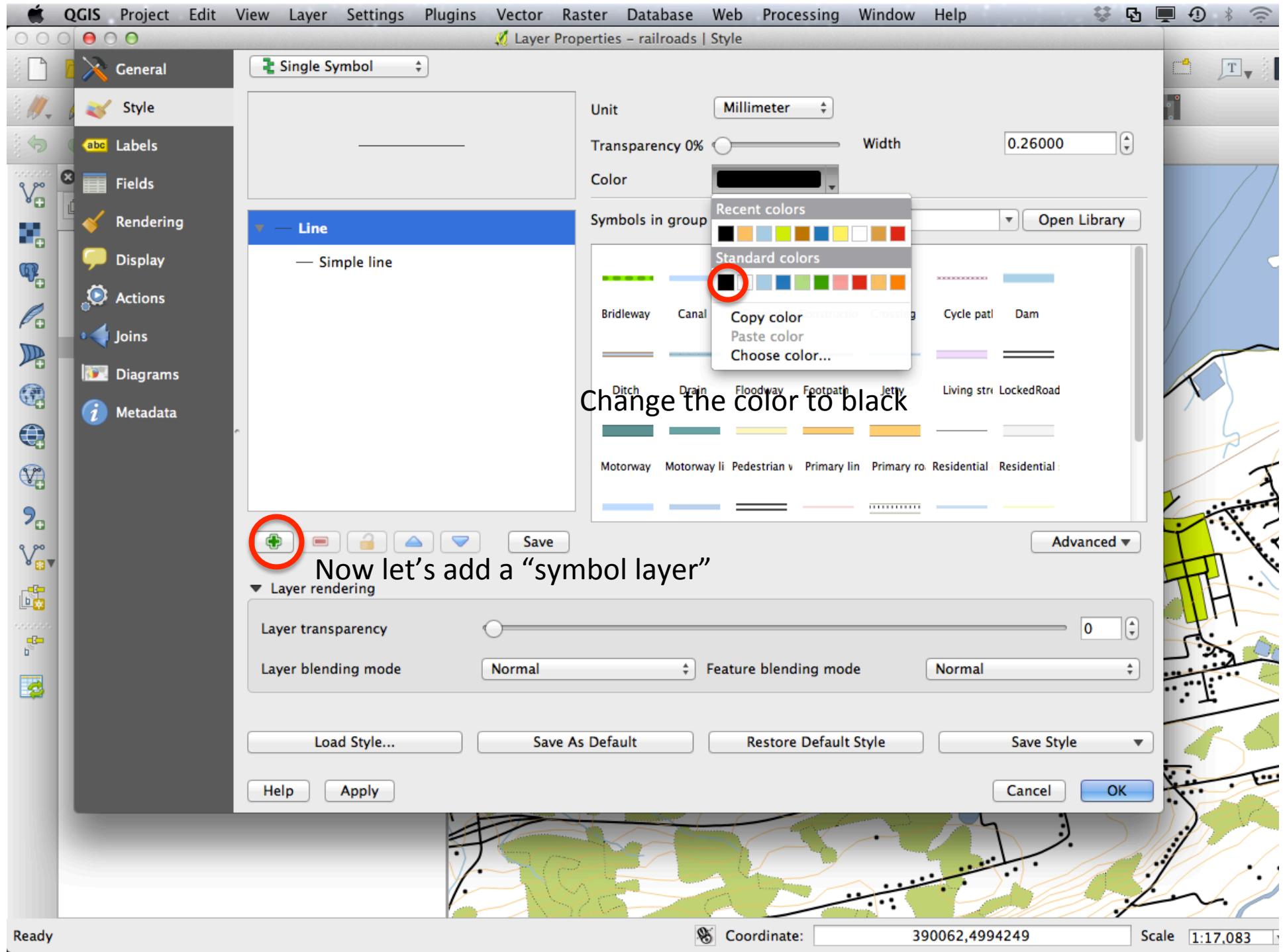
QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

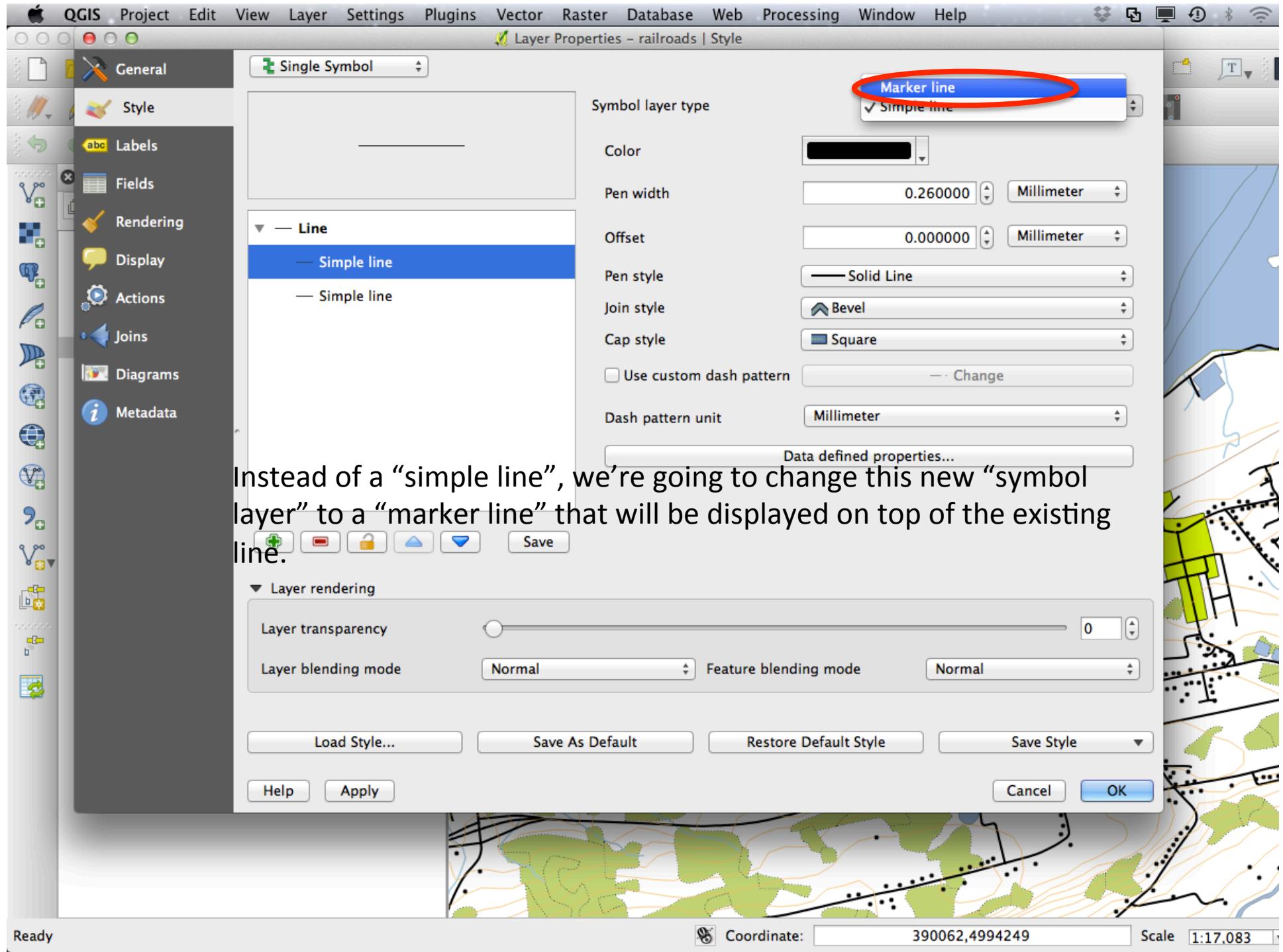
QGIS 2.6.1-Brighton

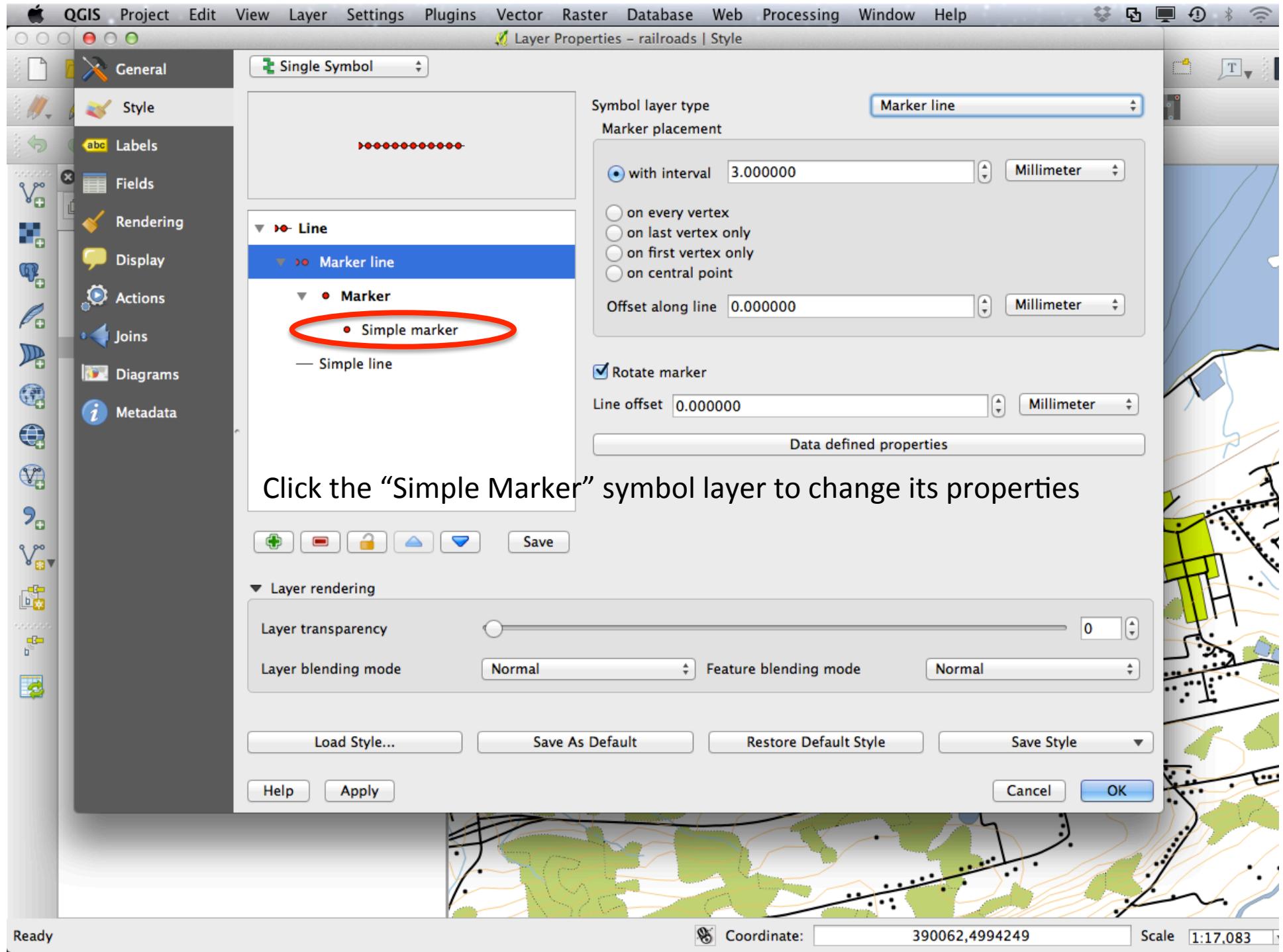
Layers

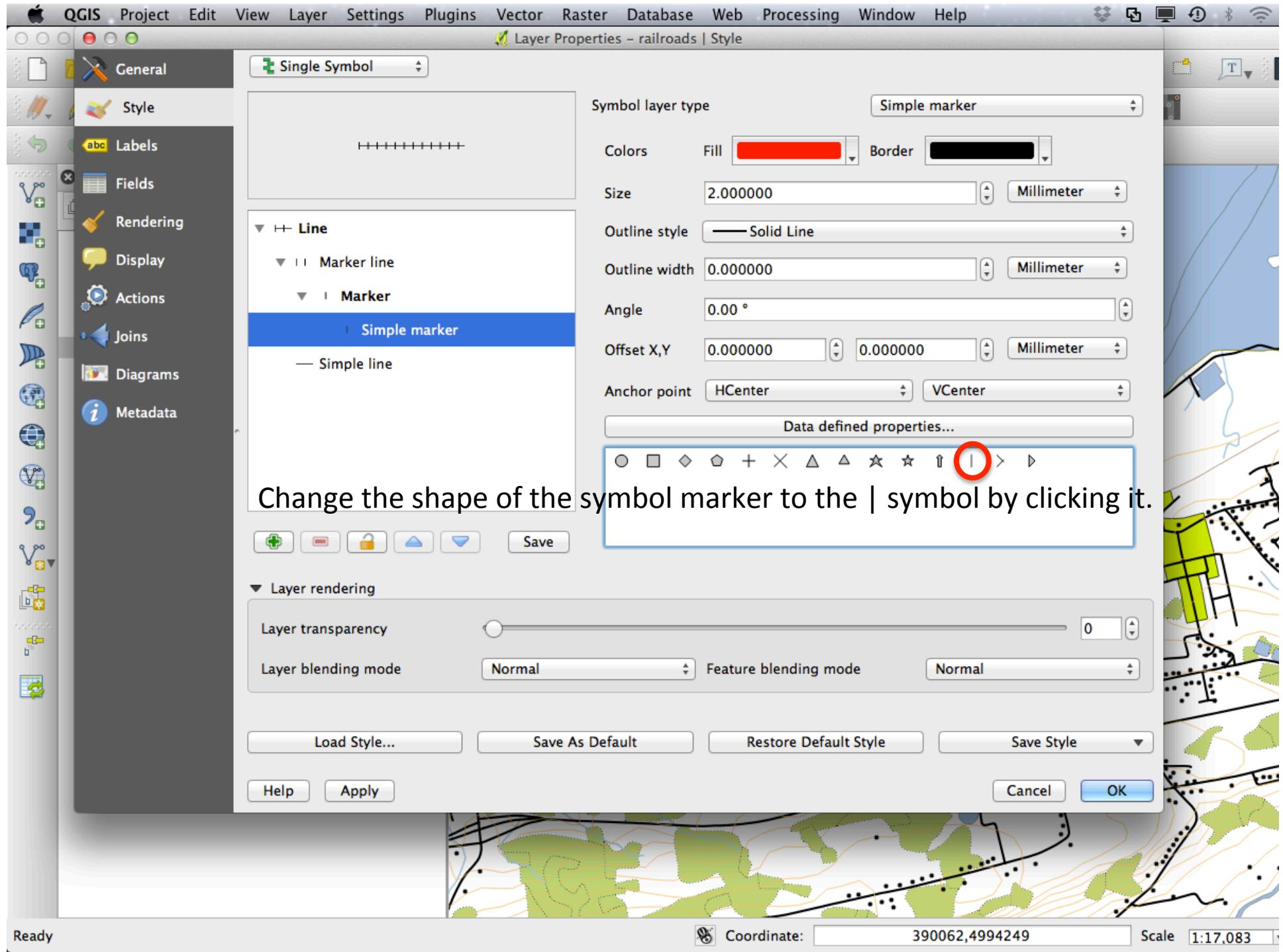
- buildings_point
- buildings_poly
- cemetaries
- contours
- dykes
- railroads
- roads
- streams
- urban_areas
- vegetation
- water_poly

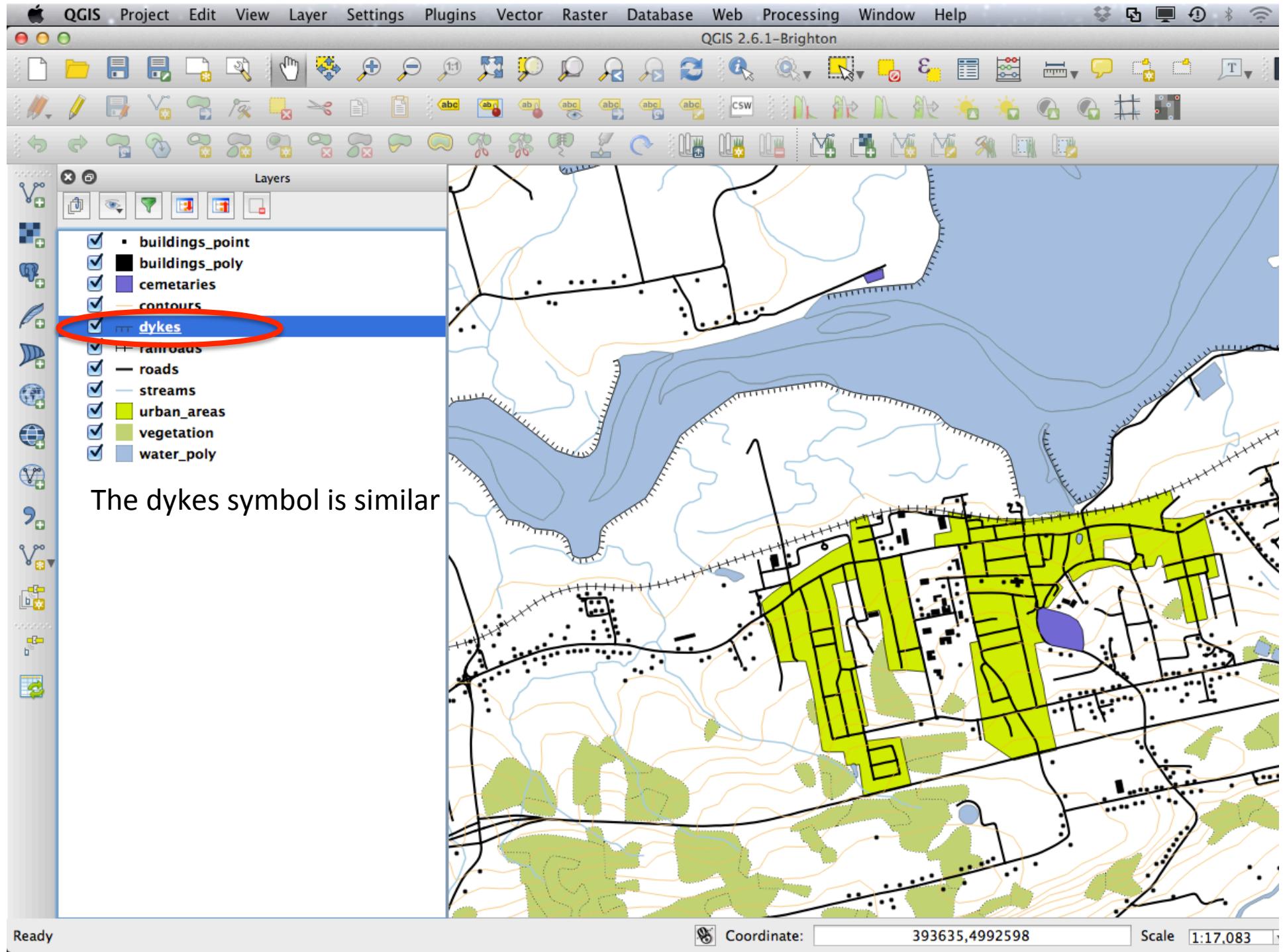
Those are all the “easy” ways of selecting styles. QGIS has a very small selection of styles, so now we’ll demonstrate how to create your own styles. If you don’t get this, don’t worry! These features are less common, but some people might be interested in further customization of styles. Let’s start with the railroads layer.



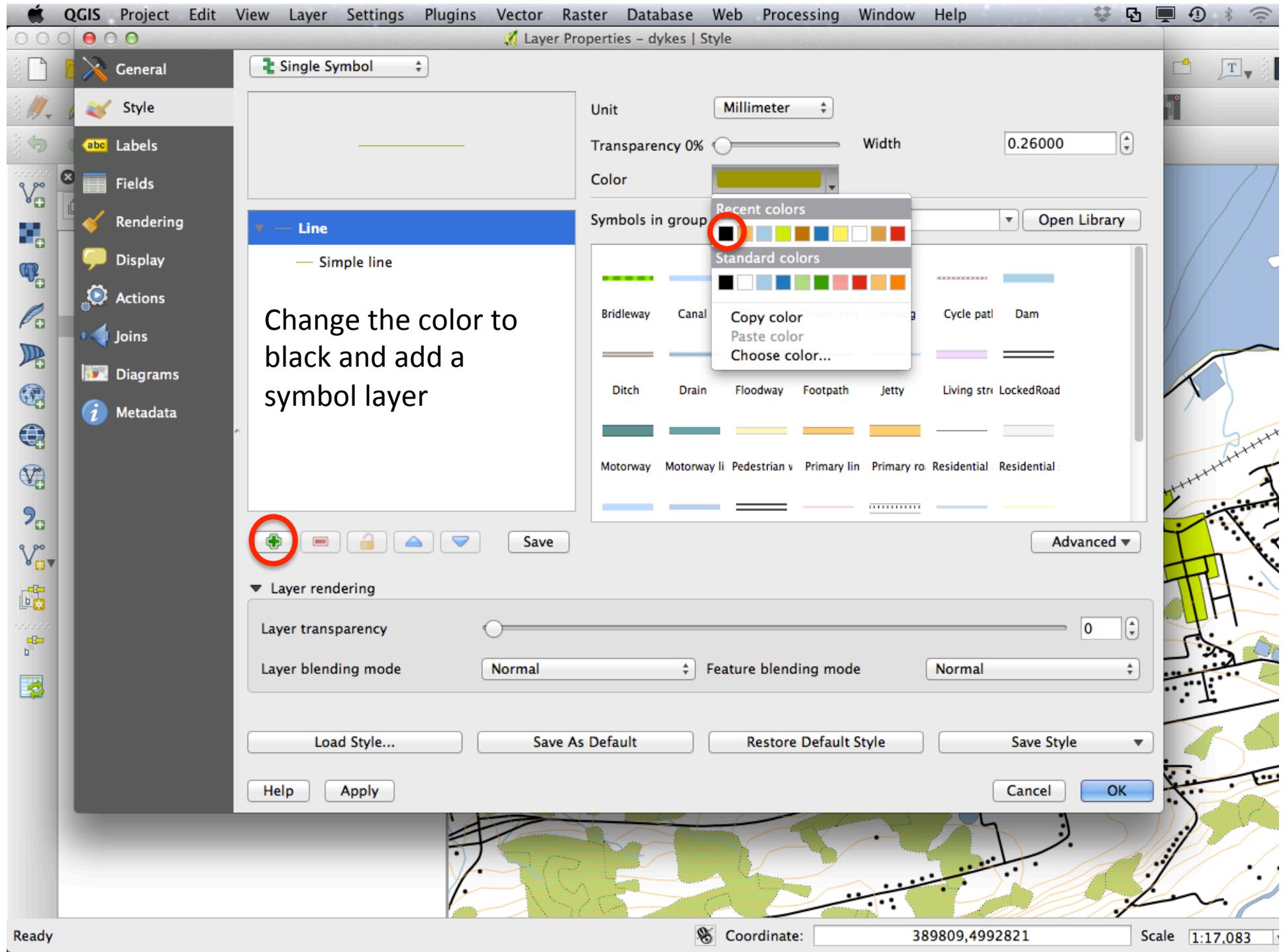


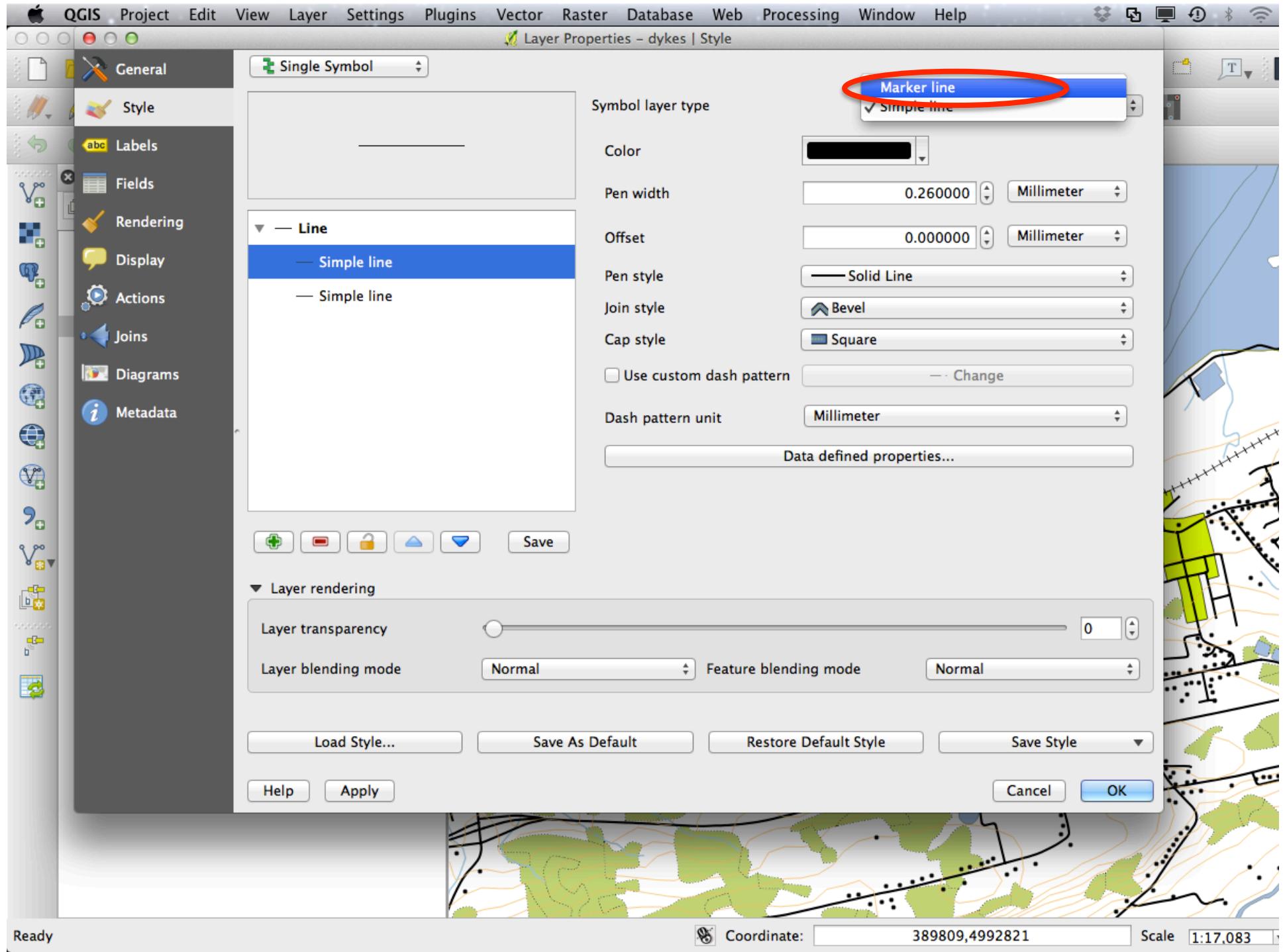


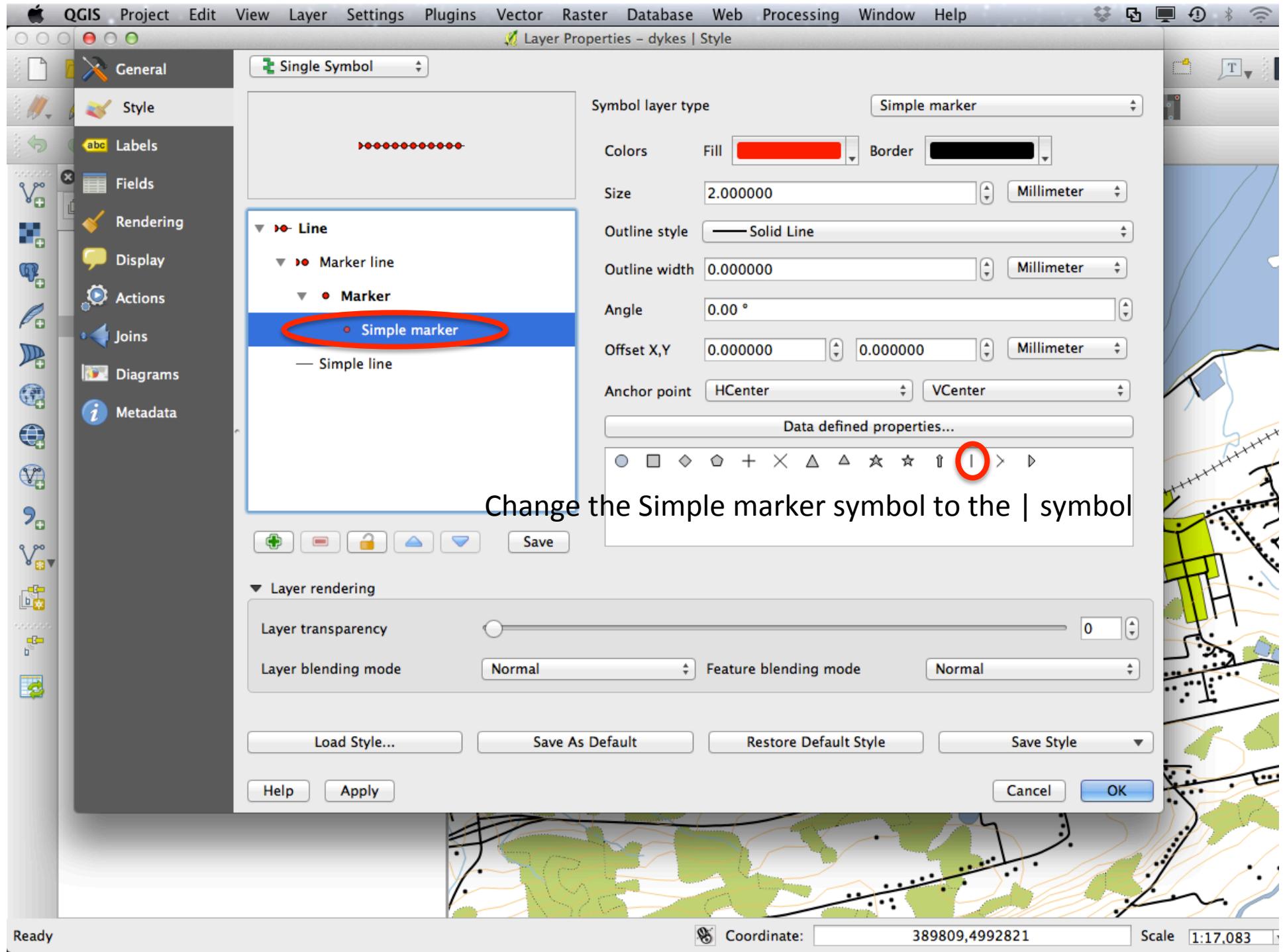


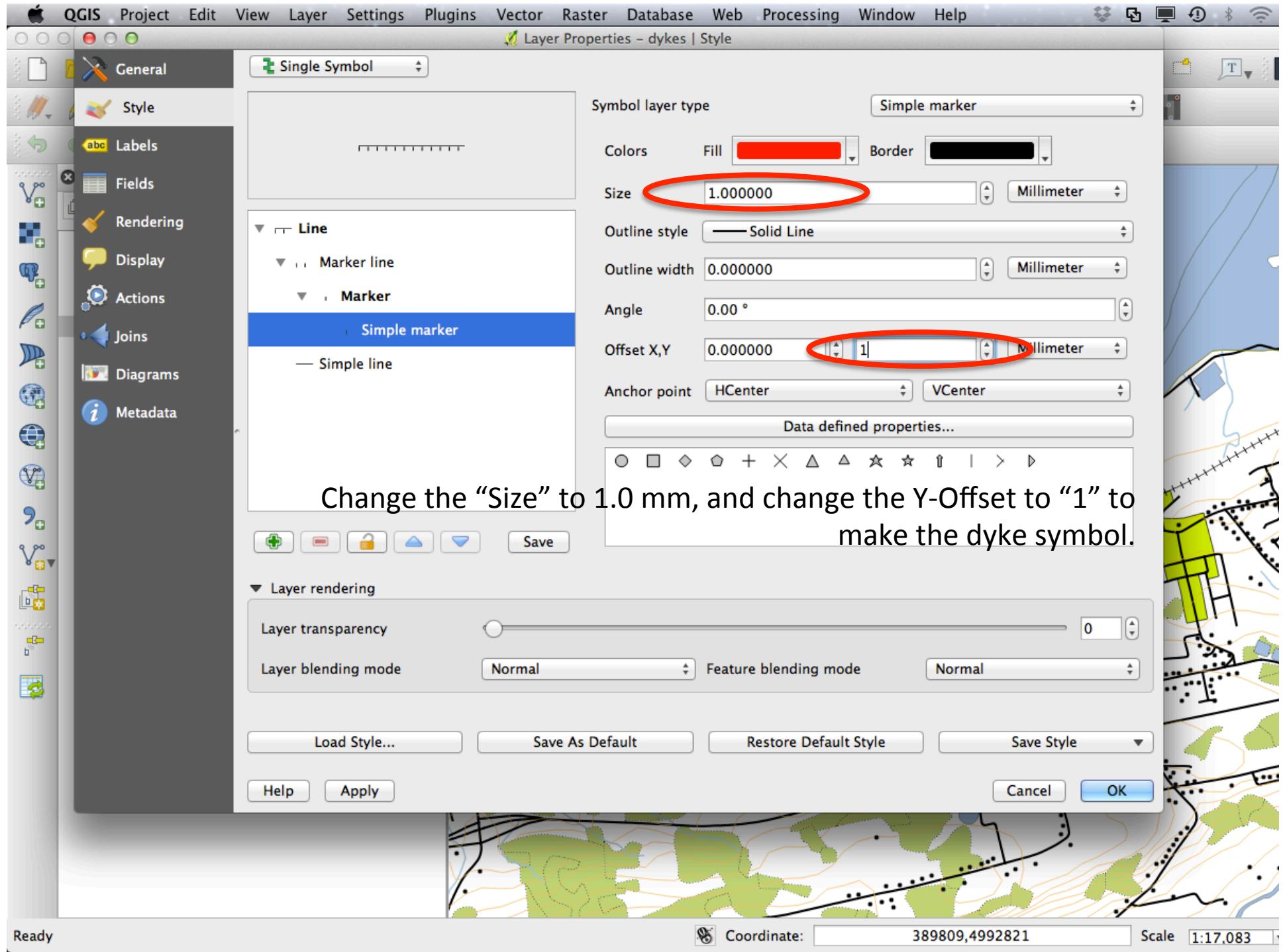


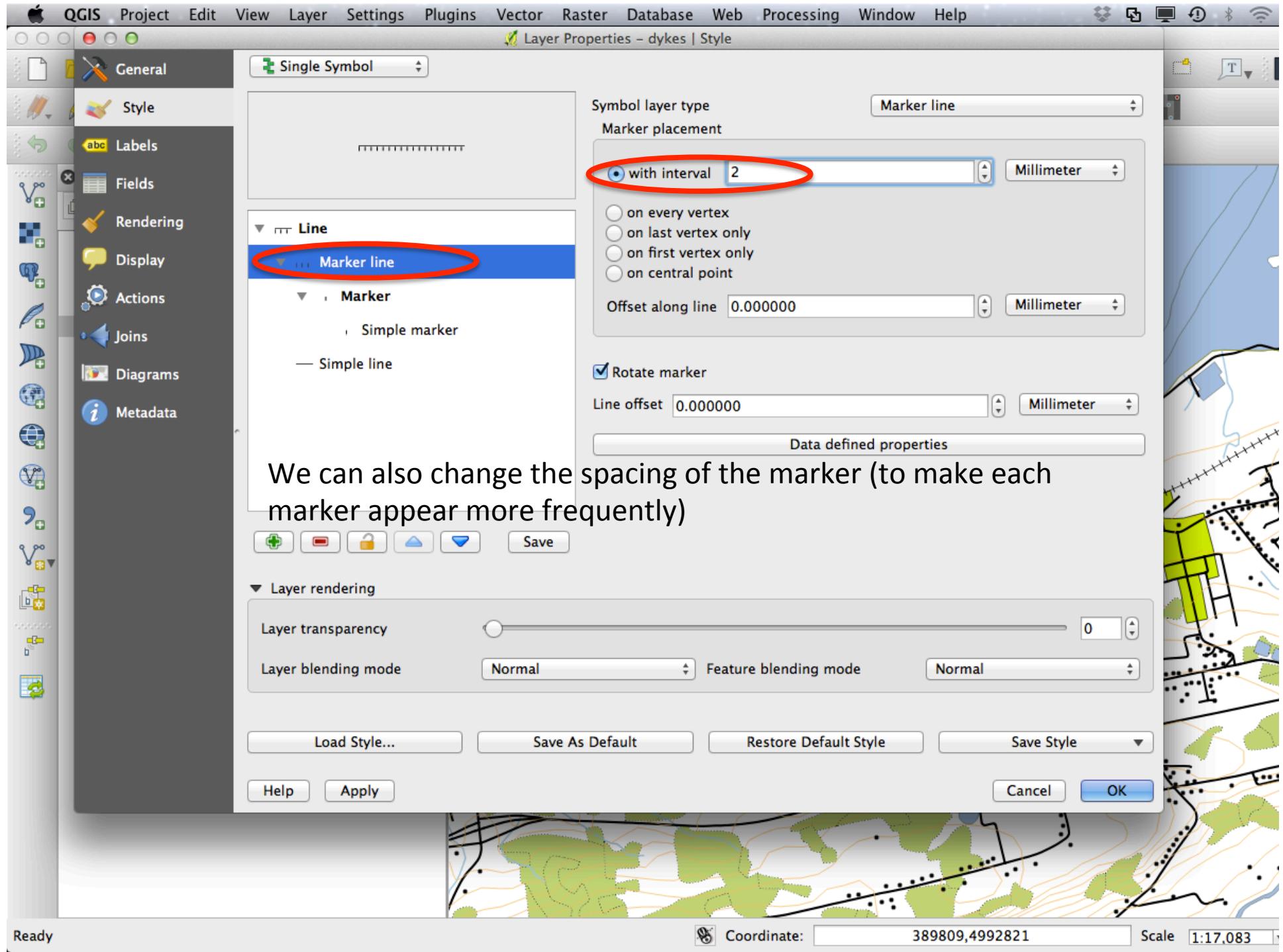
The dykes symbol is similar

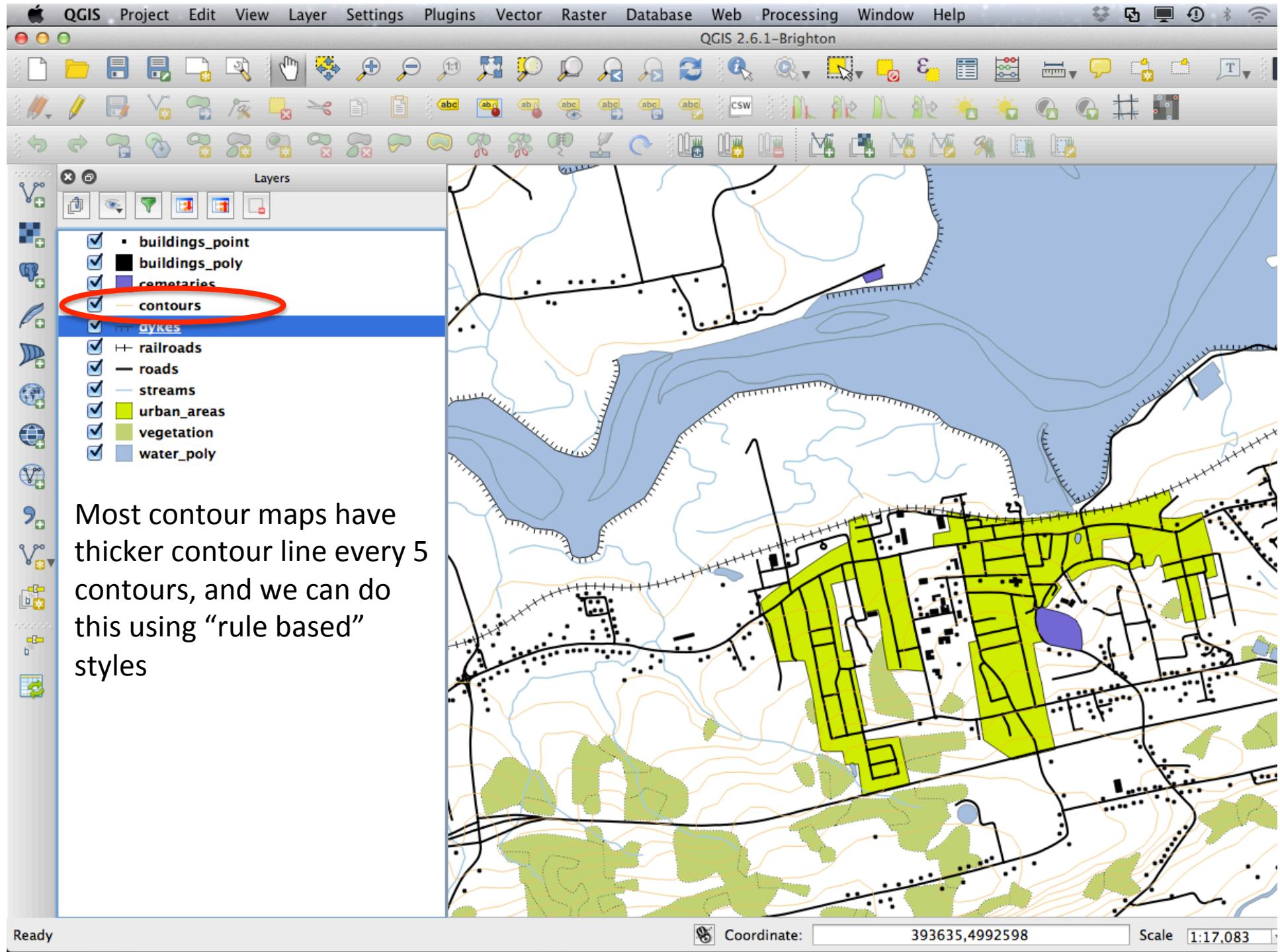












QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

Layer Properties – contours | Style

General Style Labels Fields Rendering Display Actions Joins Diagrams Metadata

Single Symbol Categorized Rule-based Point displacement Inverted polygons

Unit Millimeter Transparency 0% Width 0.26000

Color

Symbols in group Open Library

Line Simple line

Bridleway Canal Canal rive Construction Crossing Cycle path Dam

Ditch Drain Floodway Footpath Jetty Living street LockedRoad

Motorway Motorway li Pedestrian v Primary lin Primary ro Residential Residential

Advanced

Layer transparency 0

Layer blending mode Normal Feature blending mode Normal

Load Style... Save As Default Restore Default Style Save Style

Help Apply Cancel OK

Ready Coordinate: 390381,4993315 Scale 1:17,083

Instead of a “Single Symbol”, let’s use a “Rule-based” symbols

The screenshot shows the QGIS application interface with the 'Style' tab selected in the 'Layer Properties' dialog. The 'Symbol' dropdown menu is open, and the 'Rule-based' option is highlighted with a red circle. The main area displays a 'Line' style panel with numerous line patterns and colors. A large text overlay on the left side of the dialog reads 'Instead of a “Single Symbol”, let’s use a “Rule-based” symbols'. The bottom right corner of the dialog shows a preview of a map with contour lines.

QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

Layer Properties – contours | Style

General Style Labels Fields Rendering Display Actions Joins Diagrams Metadata

Rule-based

Label	Rule	Min. scale	Max. scale	Count	Duplicate count
<input checked="" type="checkbox"/> —	(no filter)				

Currently there is only one symbol (the symbol that does not match any rule)

Let's add a rule

 Refine current rules Count features Rendering order...

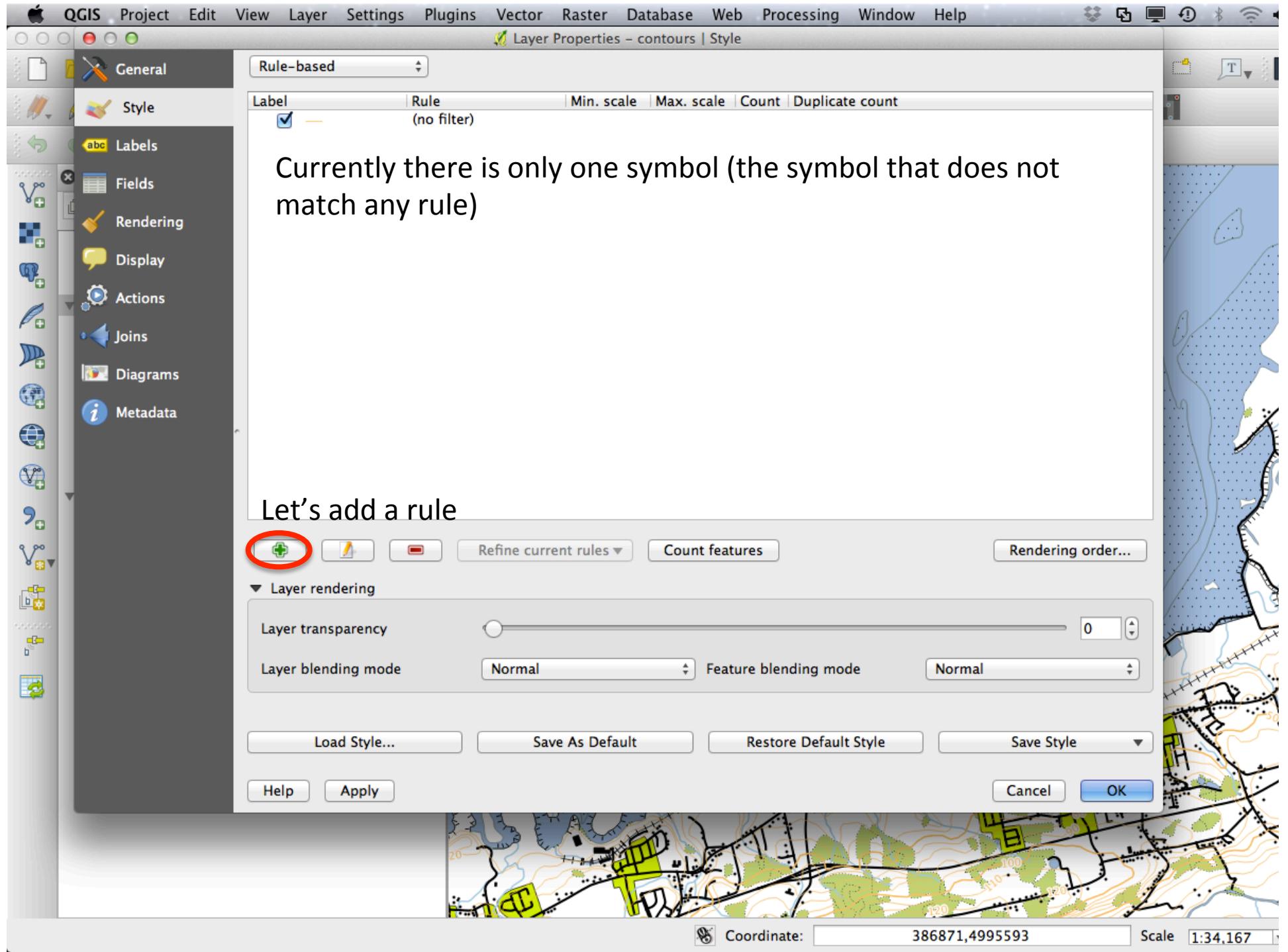
Layer rendering

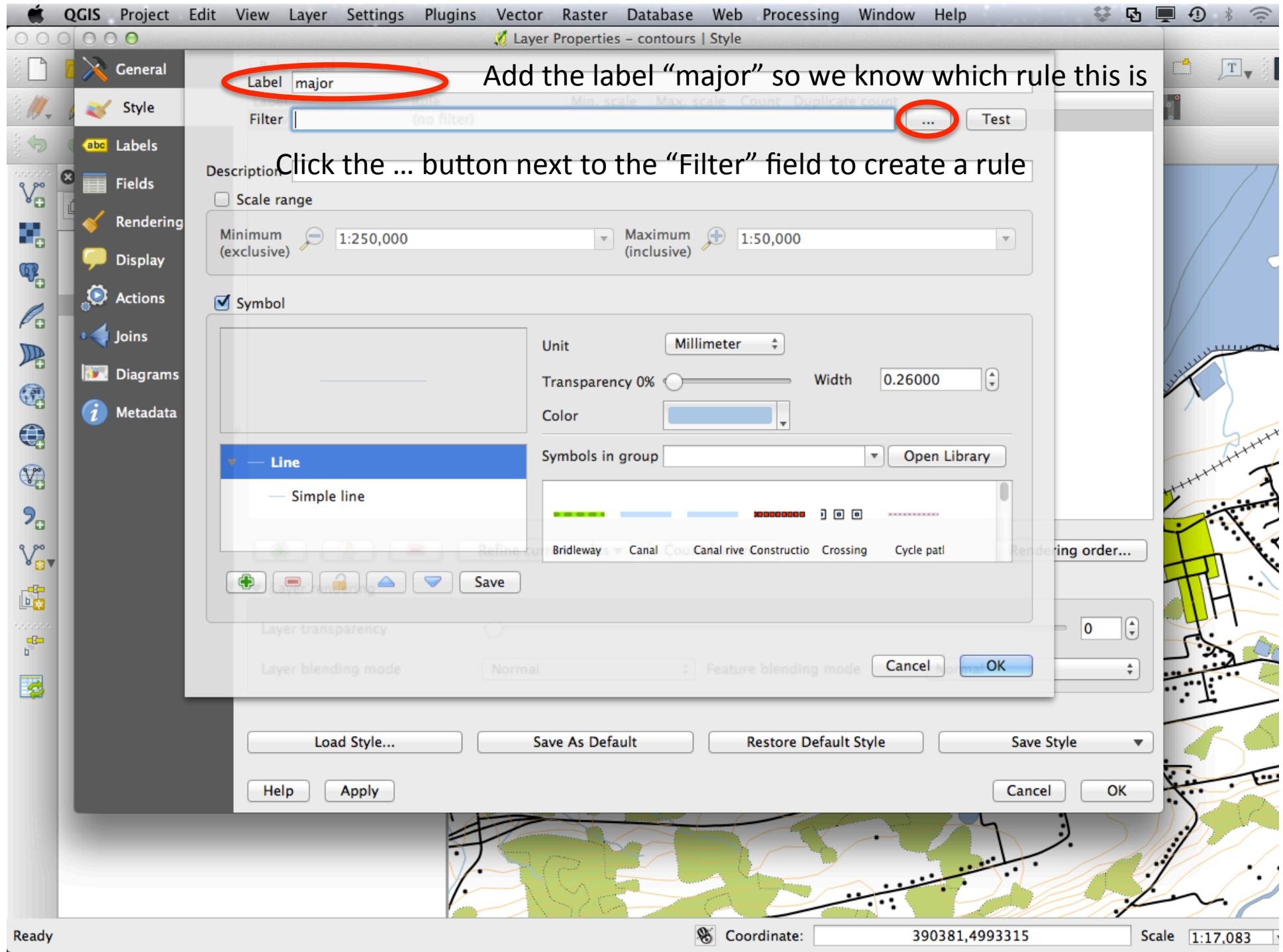
Layer transparency: 0
Layer blending mode: Normal Feature blending mode: Normal

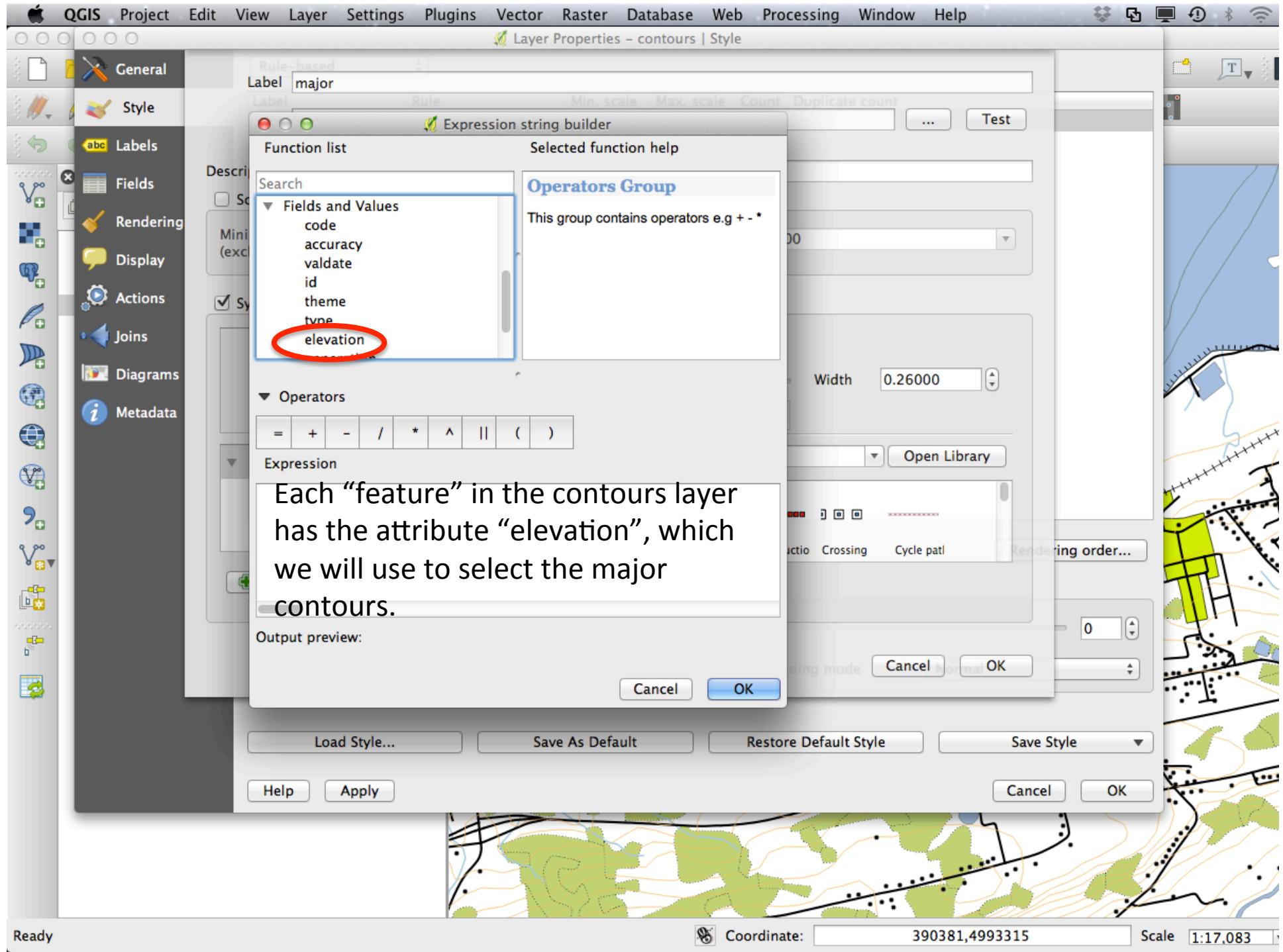
Load Style... Save As Default Restore Default Style Save Style

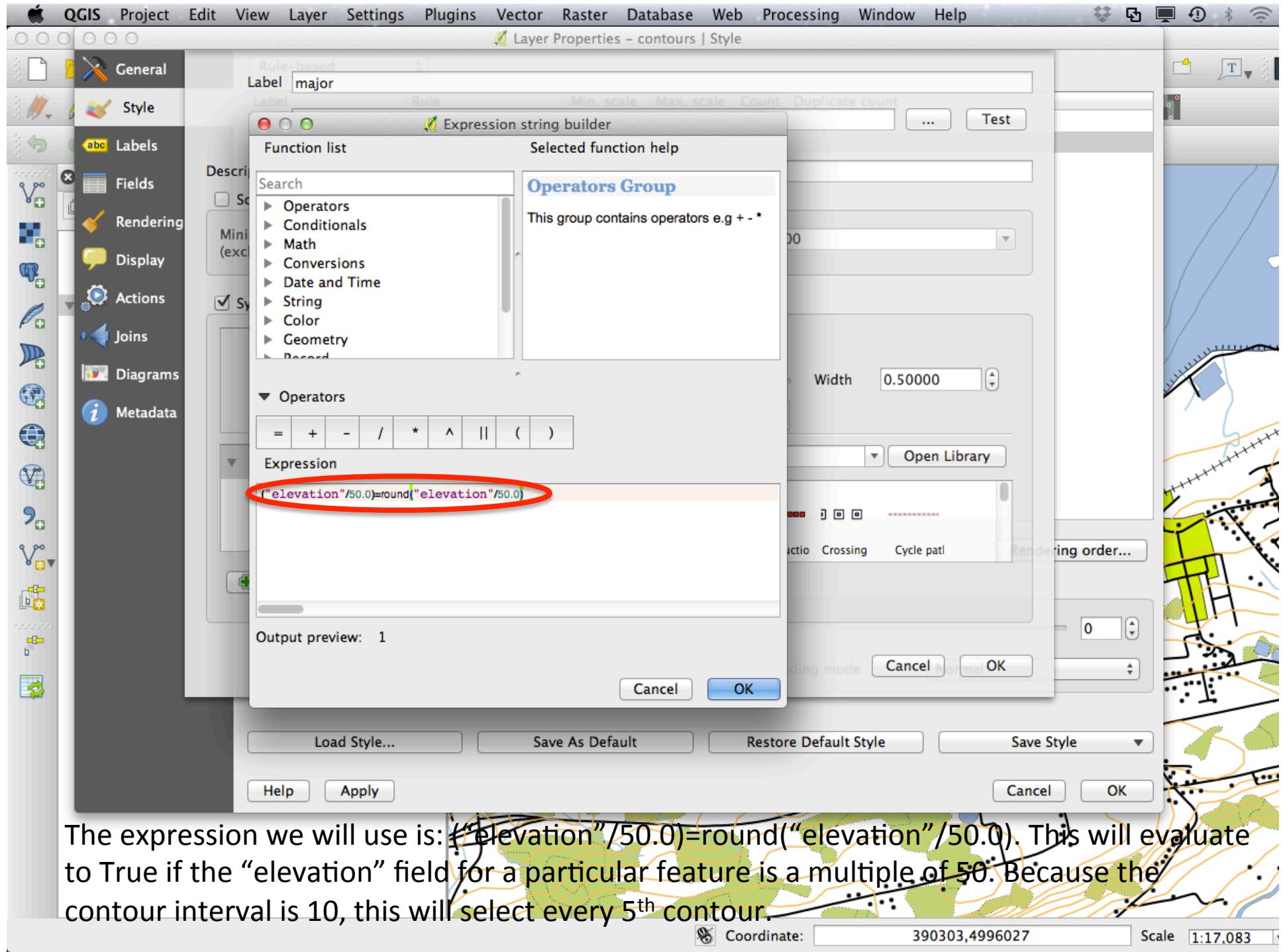
Help Apply Cancel OK

Coordinate: 386871,4995593 Scale 1:34,167

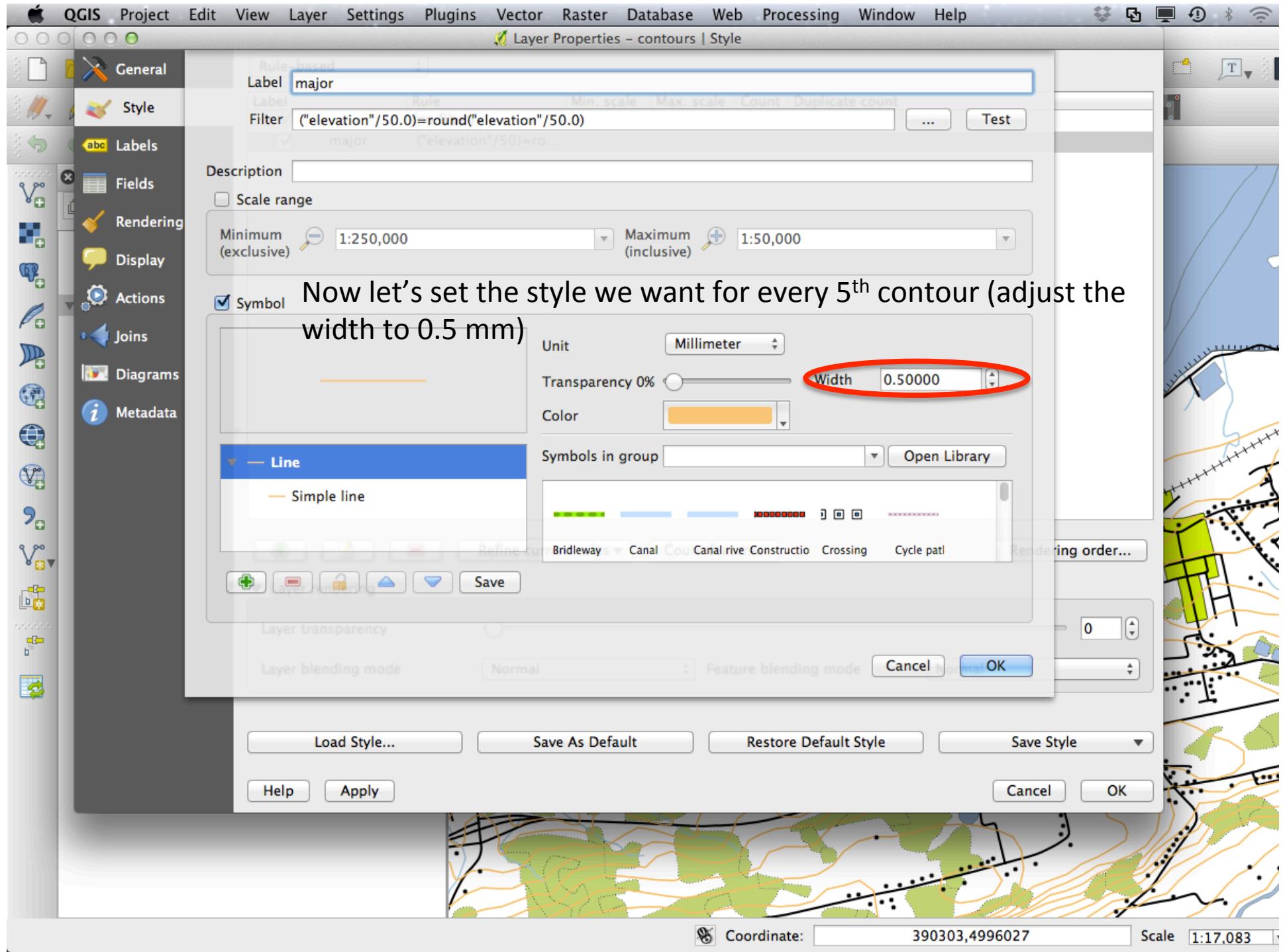


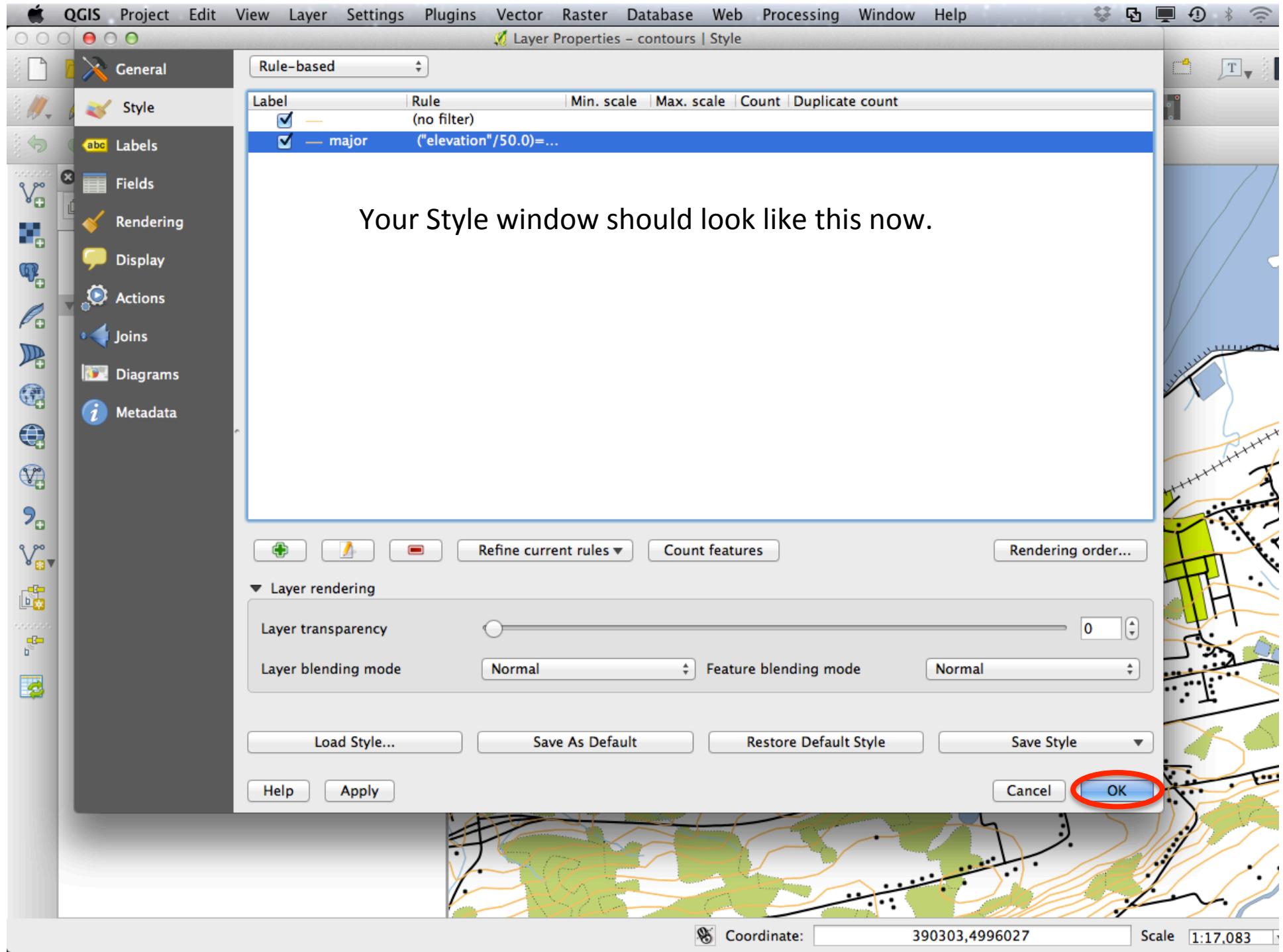


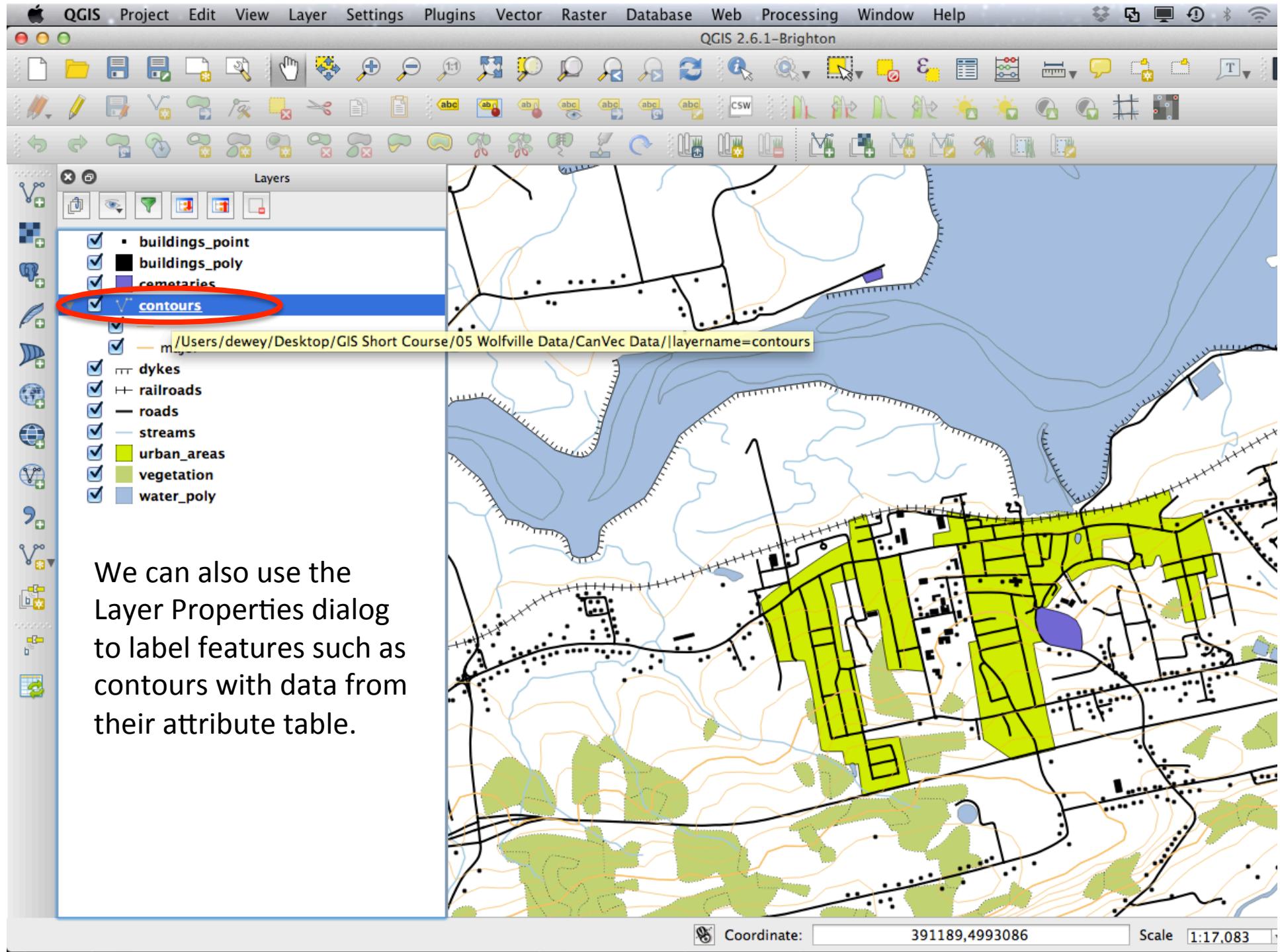




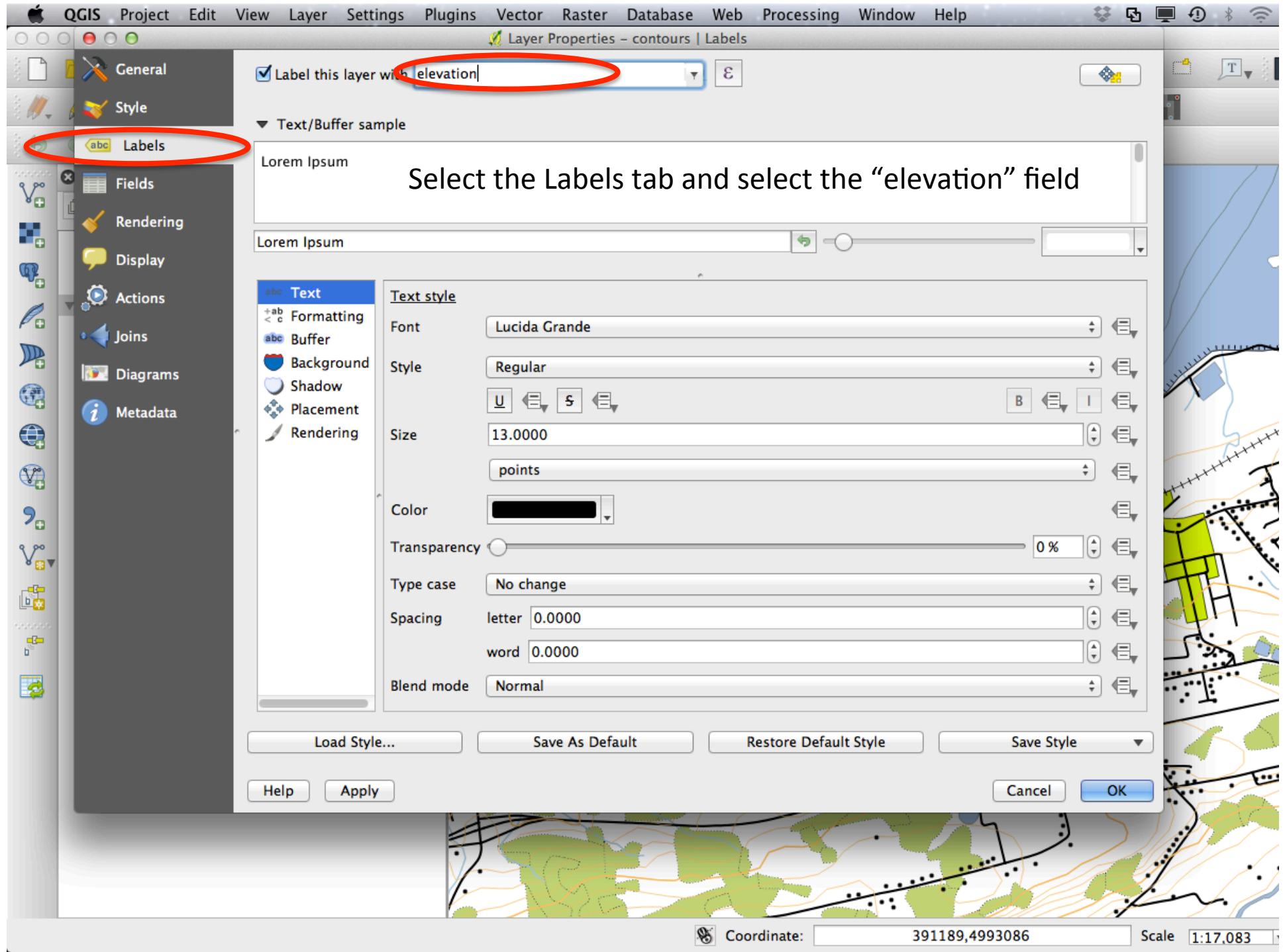
The expression we will use is: `(\"elevation\")/50.0)=round(\"elevation\")/50.0`. This will evaluate to True if the “elevation” field for a particular feature is a multiple of 50. Because the contour interval is 10, this will select every 5th contour.

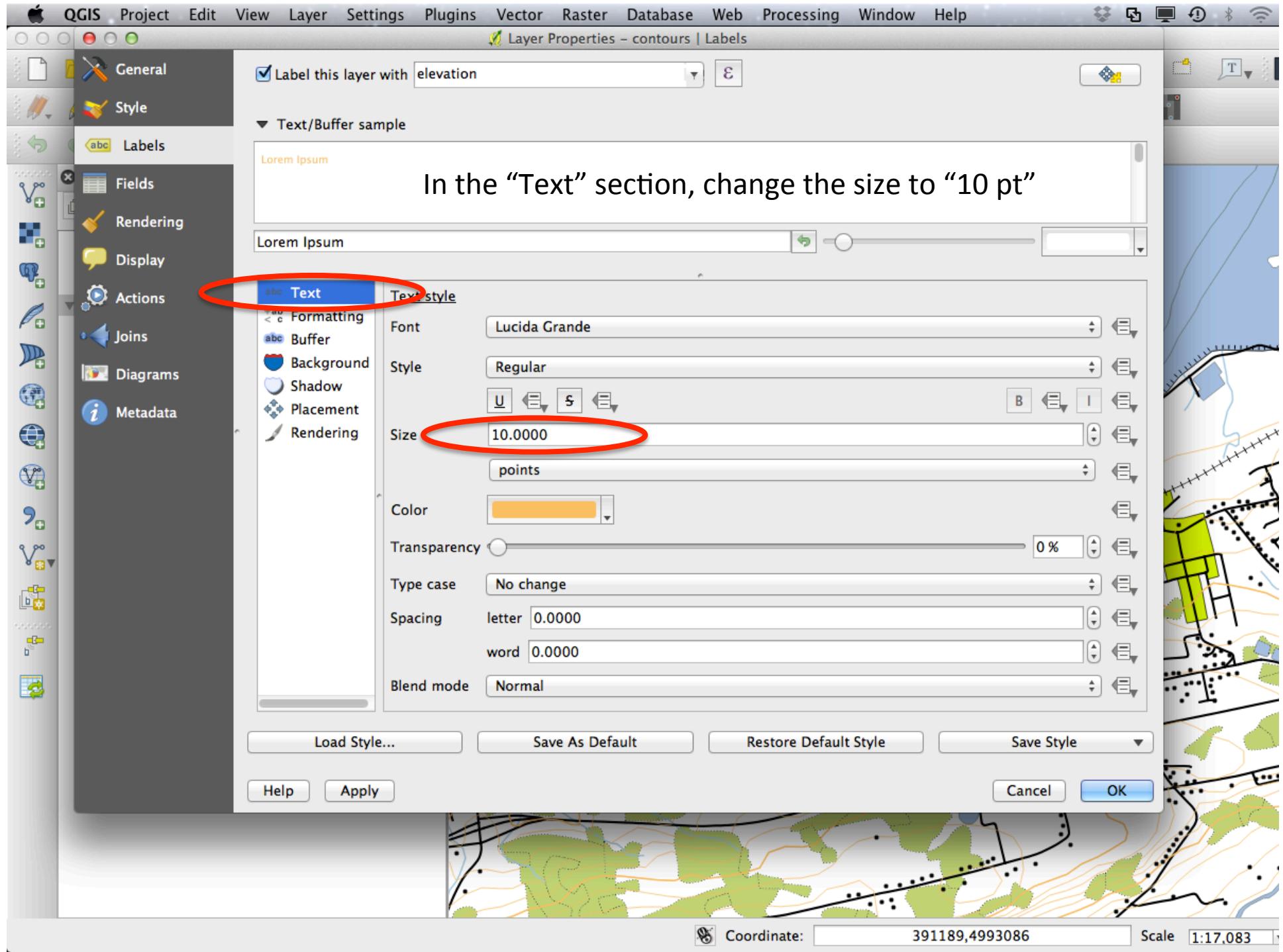


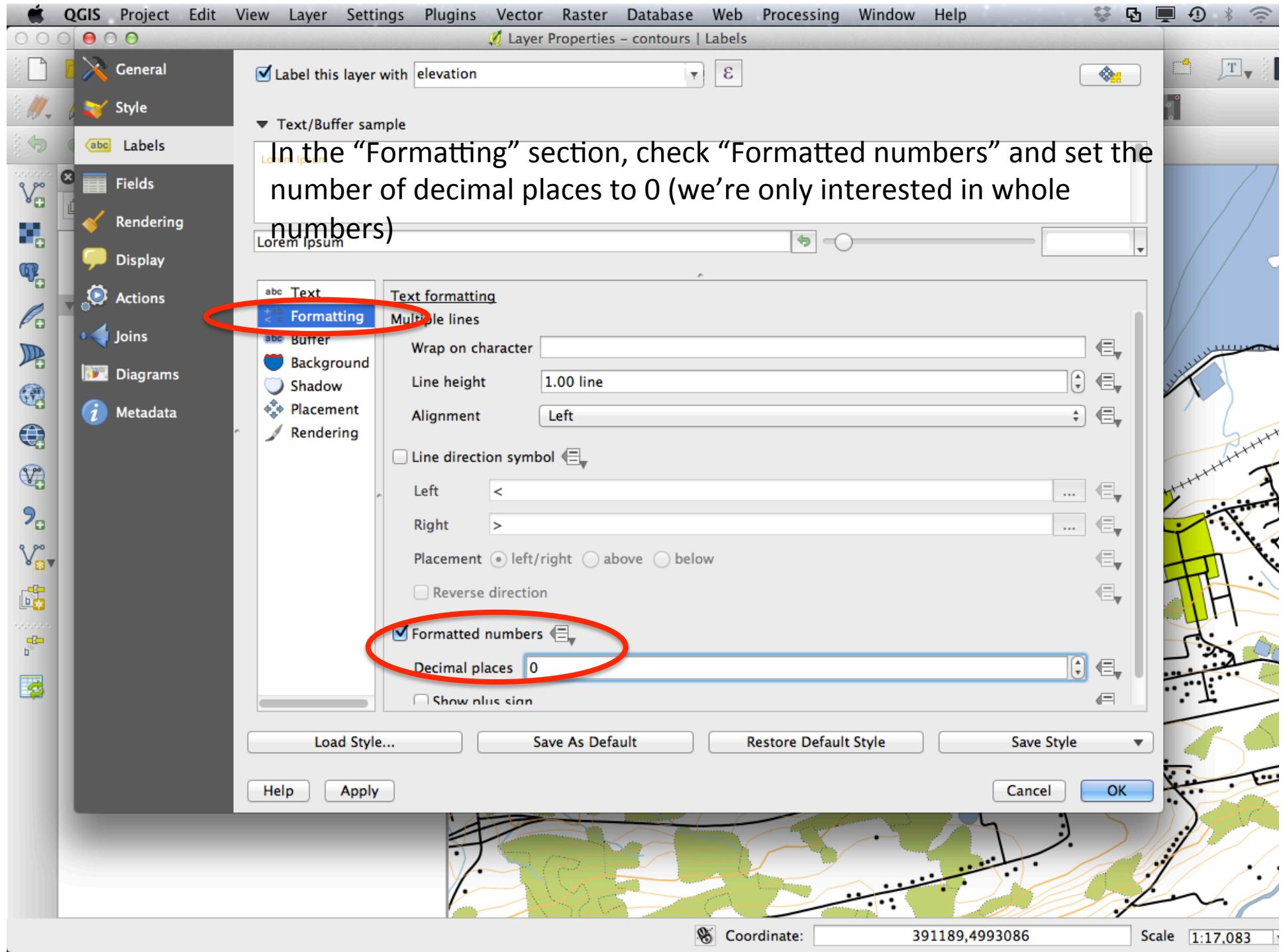


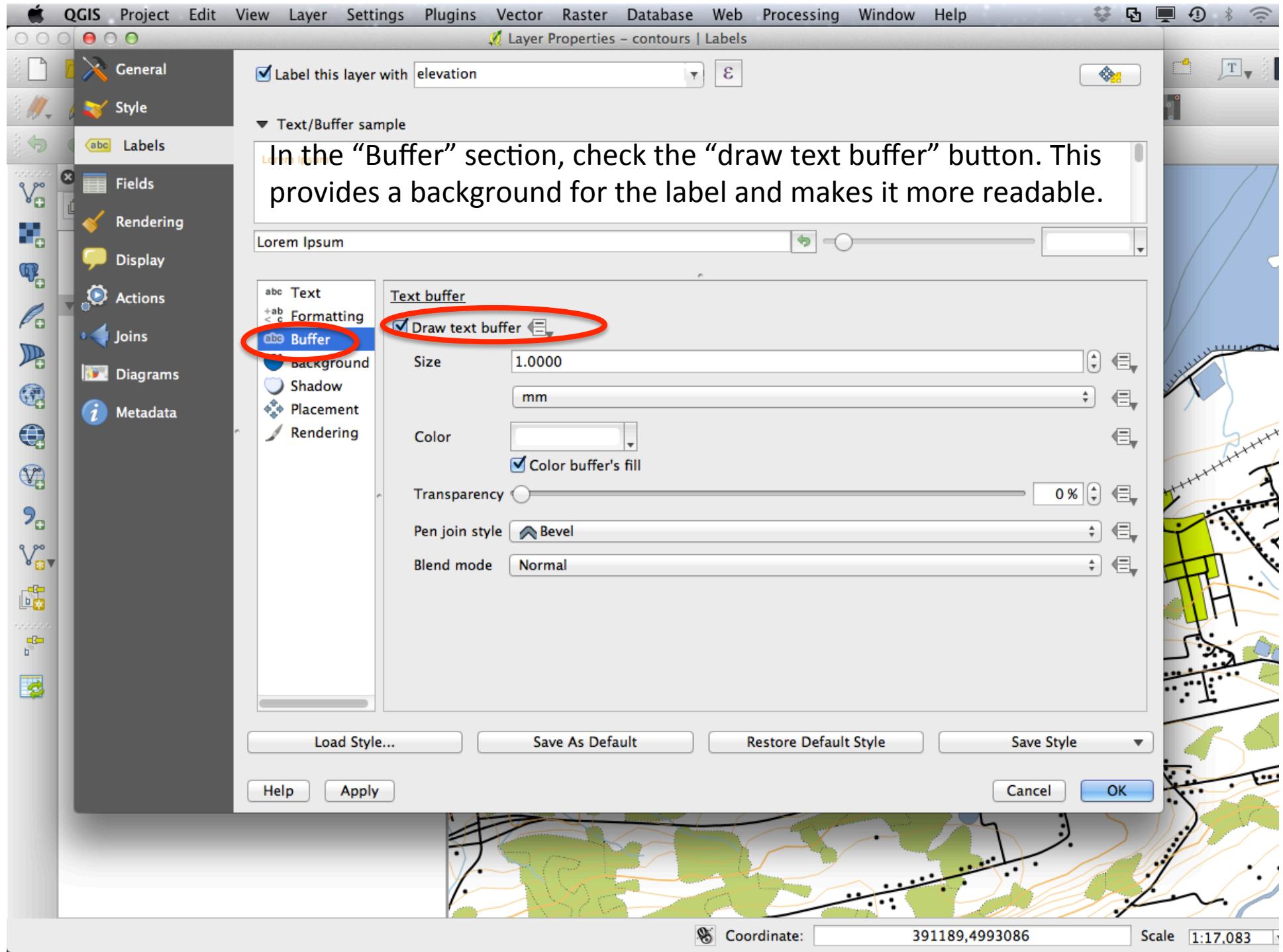


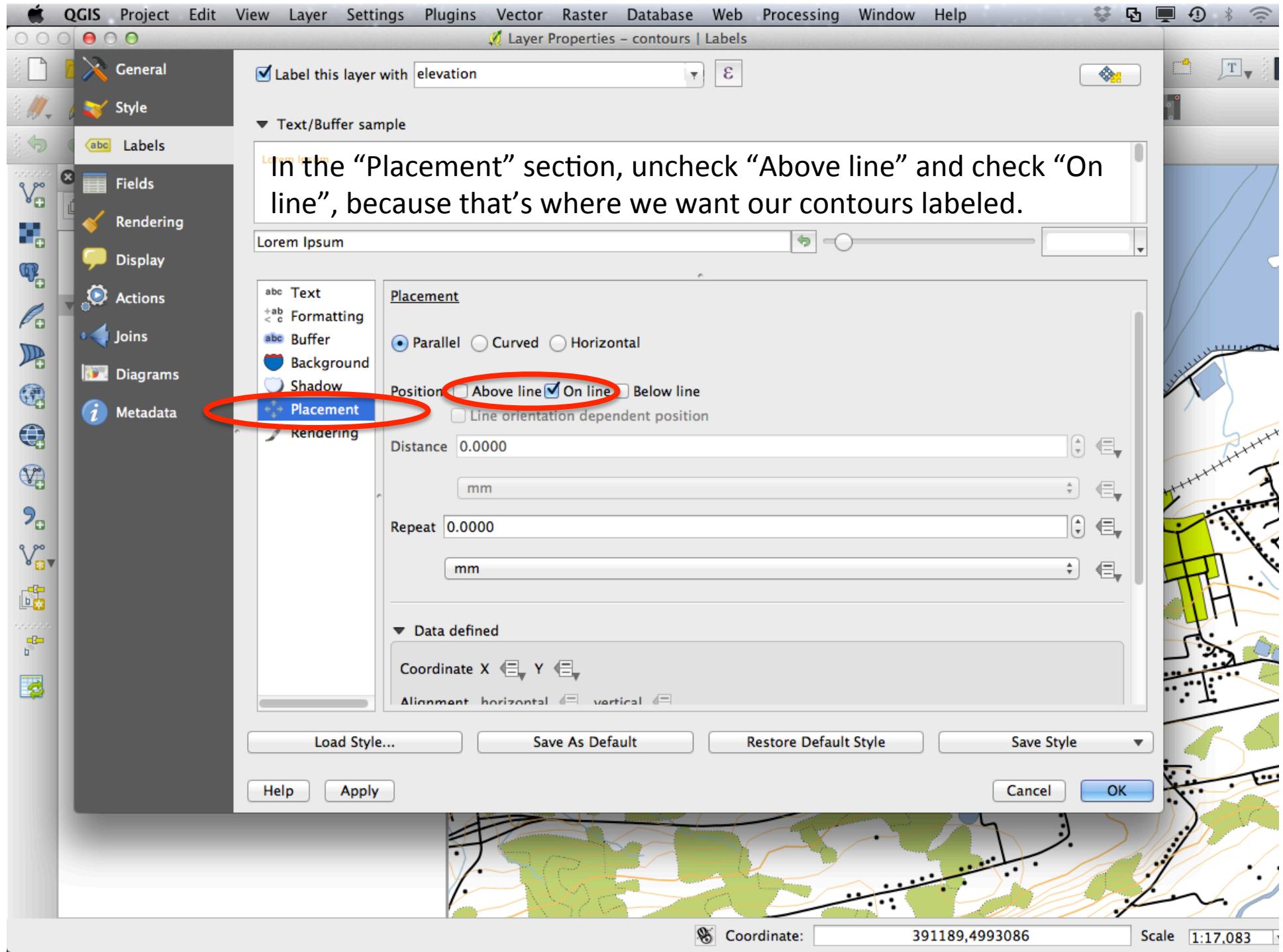
We can also use the Layer Properties dialog to label features such as contours with data from their attribute table.

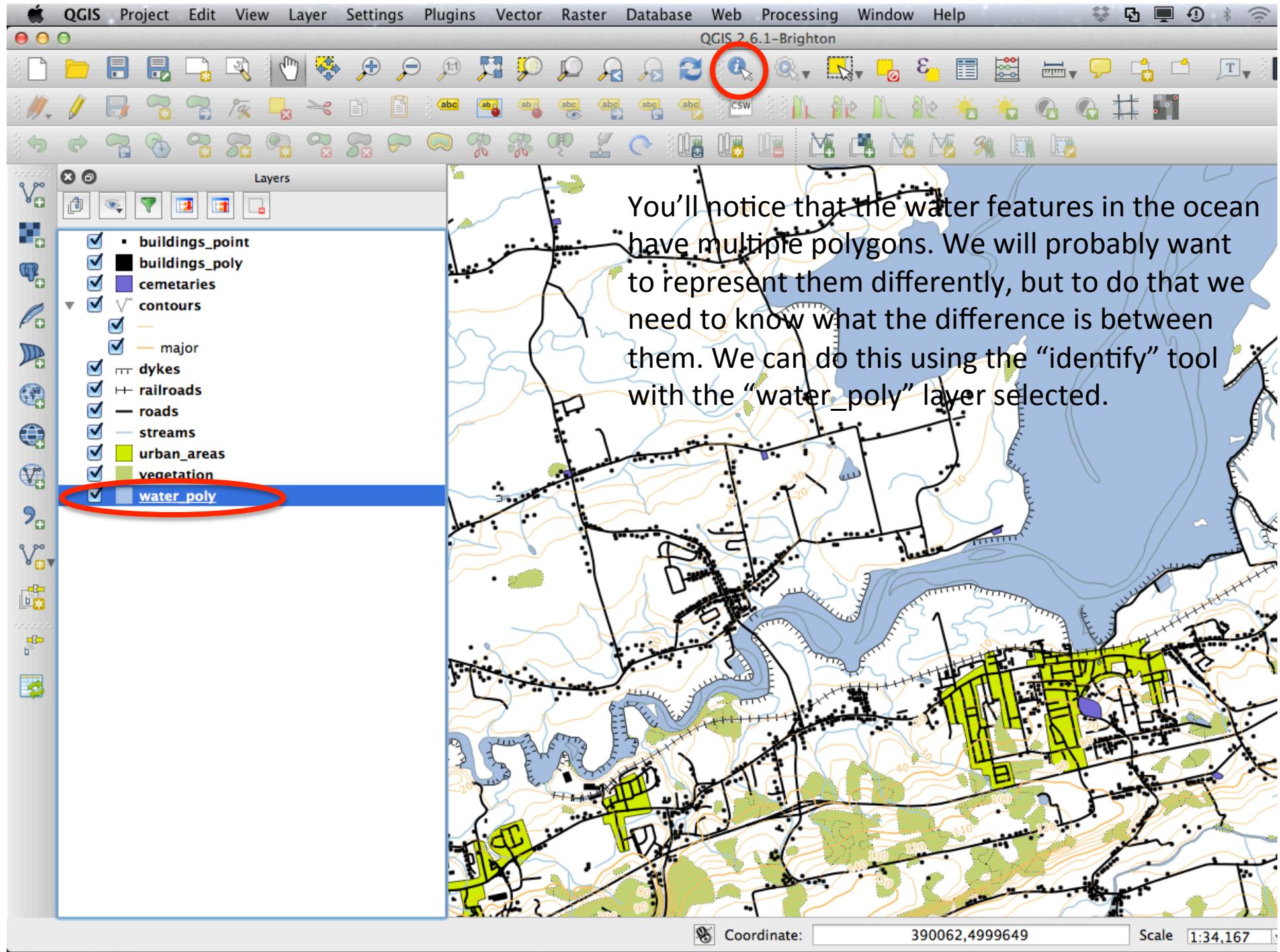


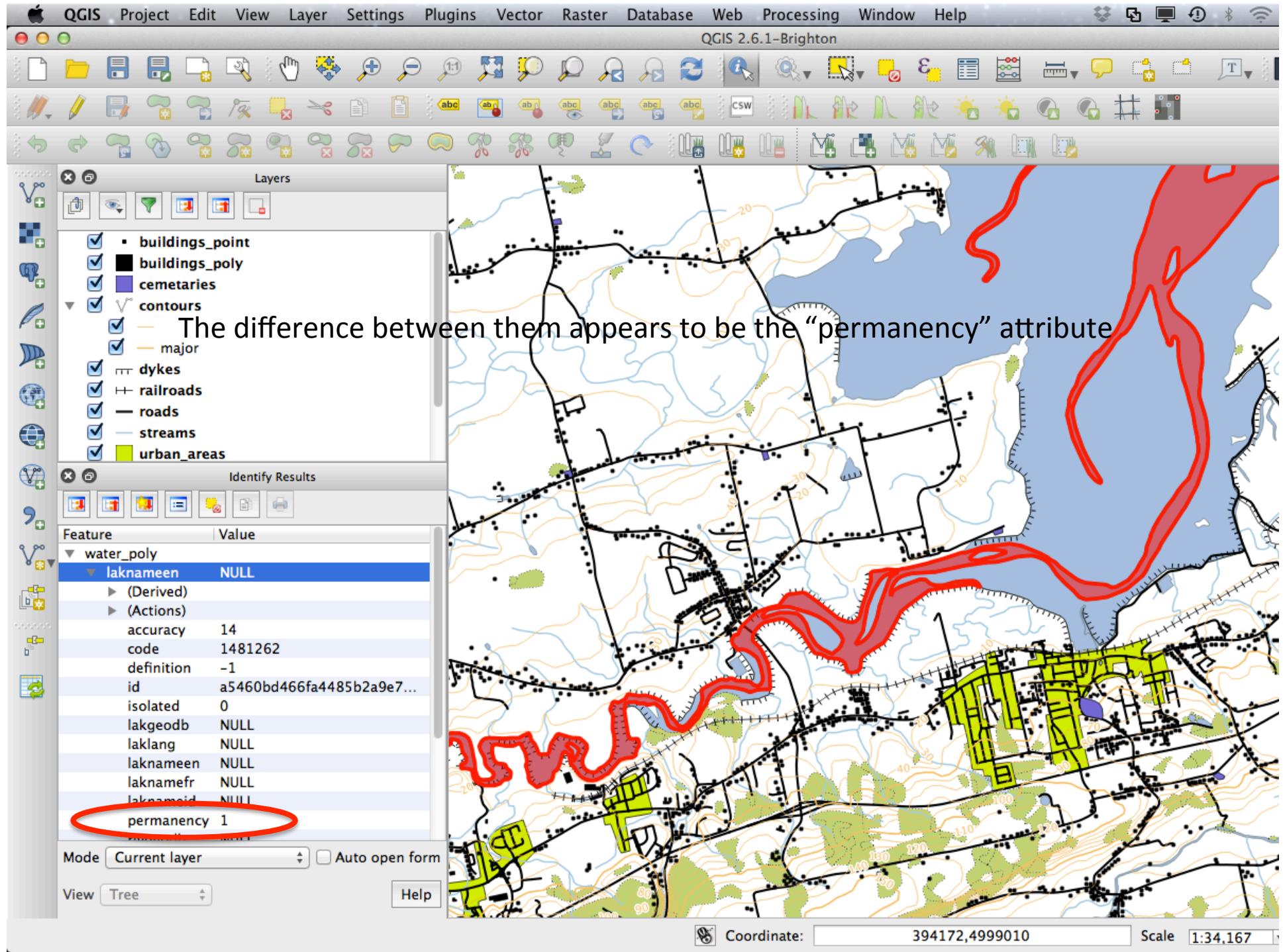


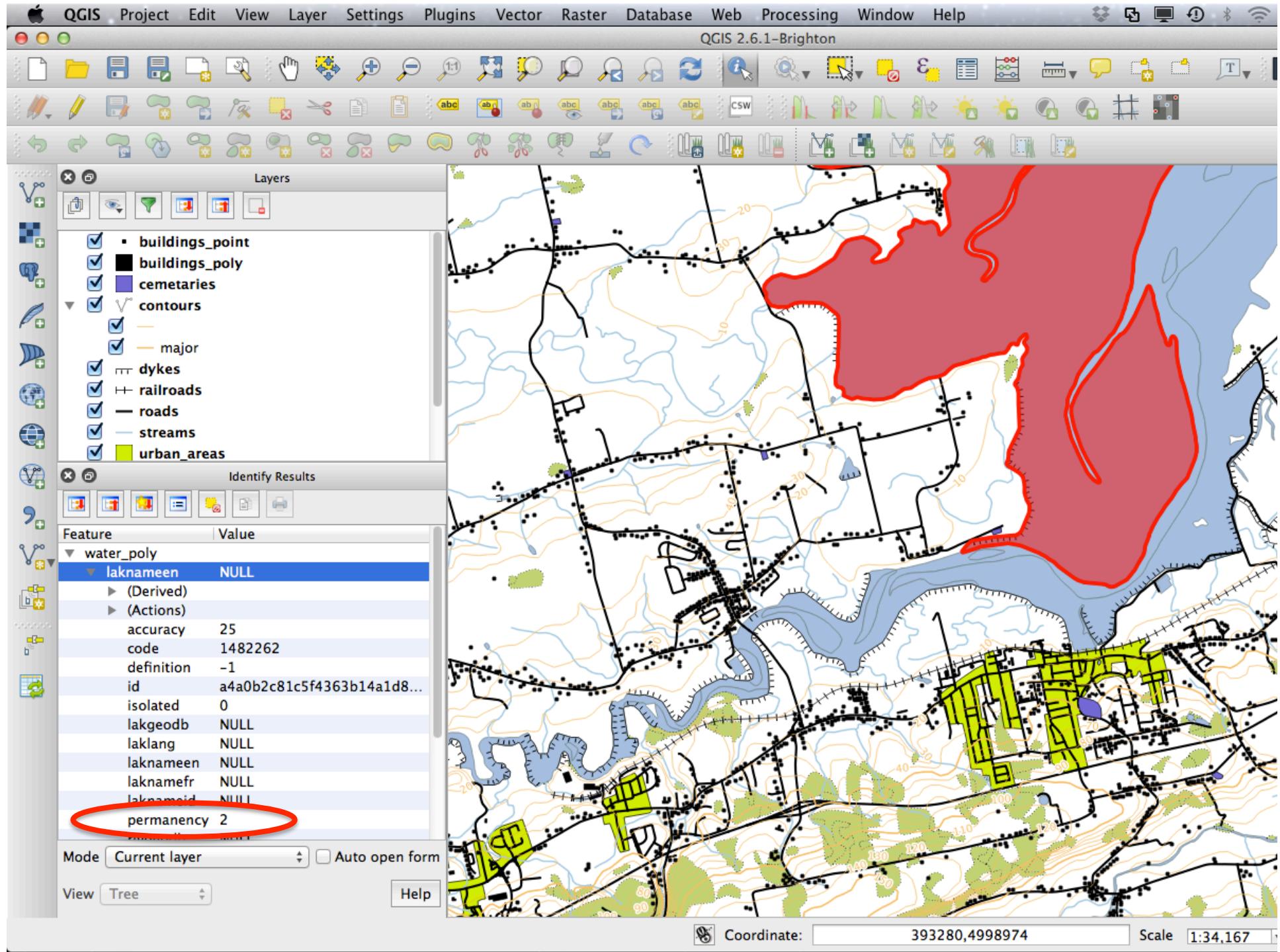


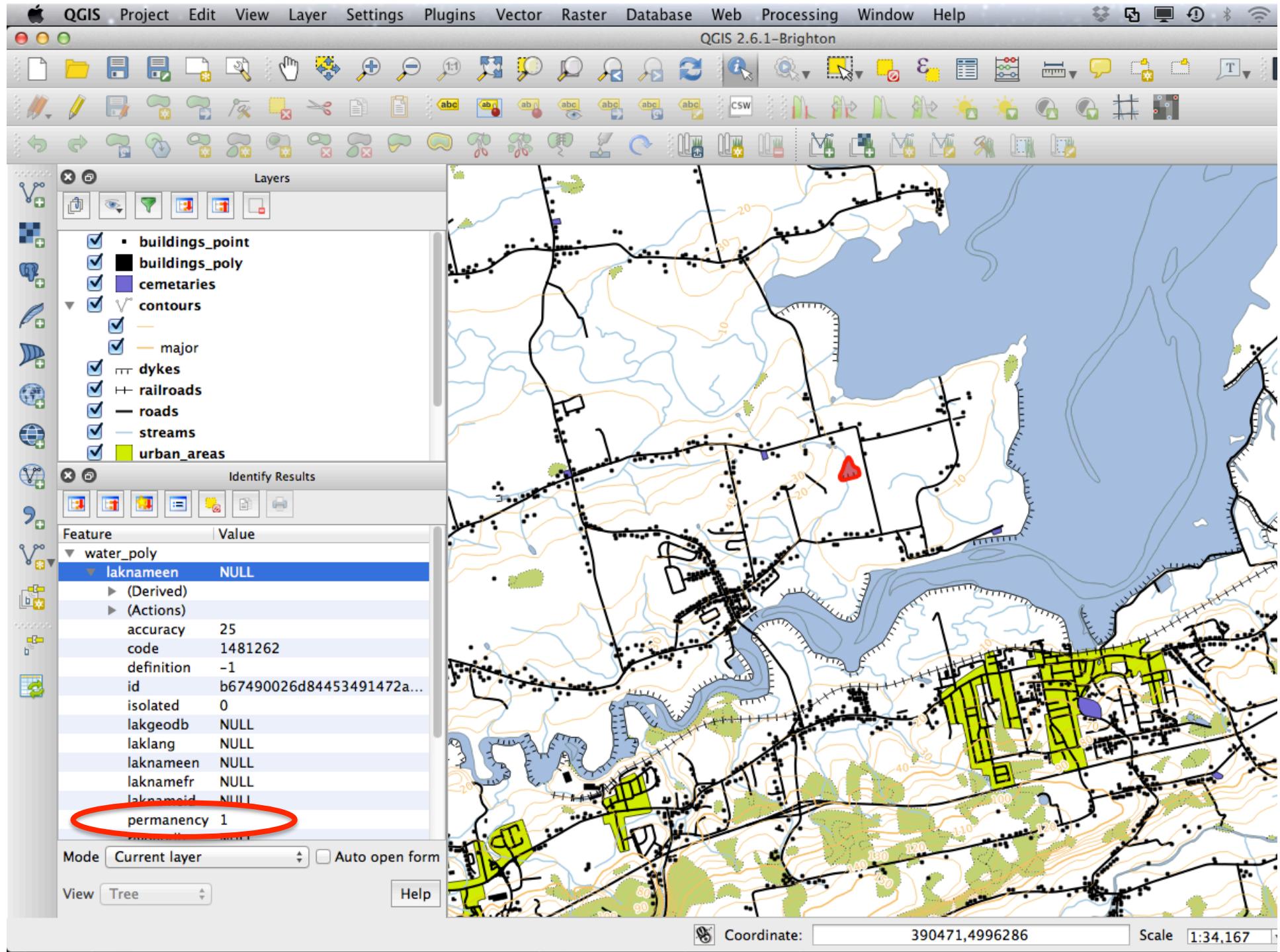


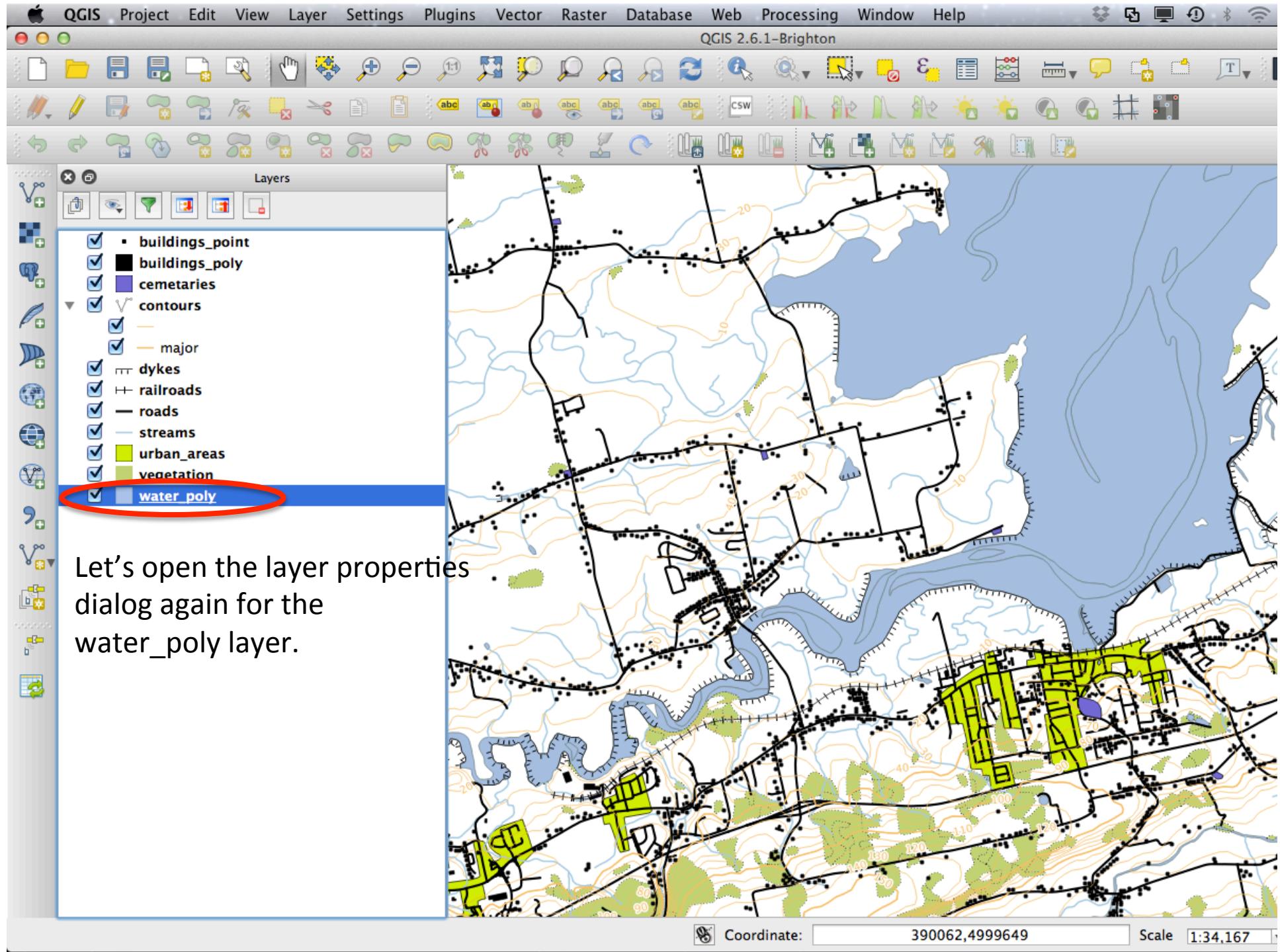


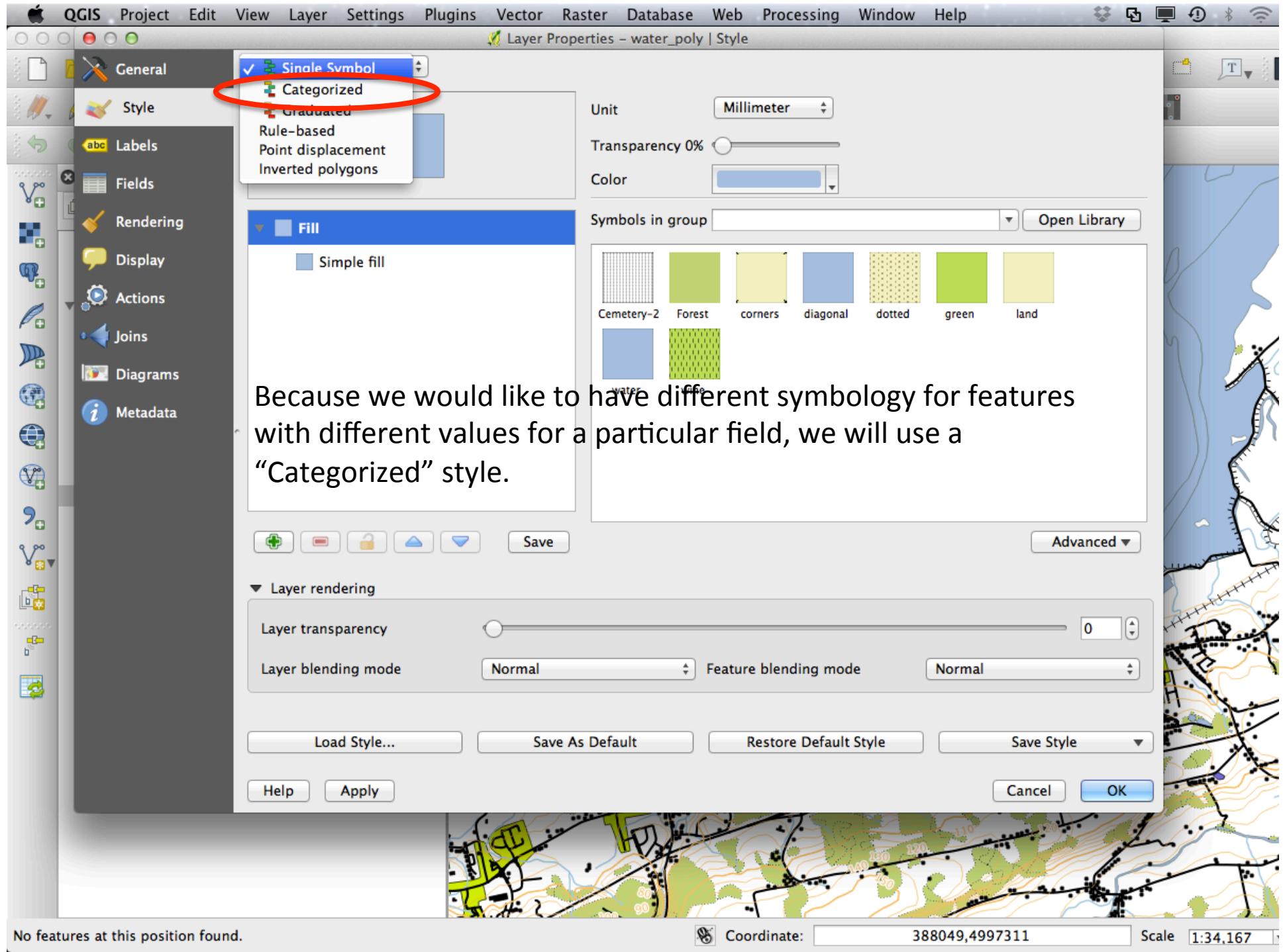










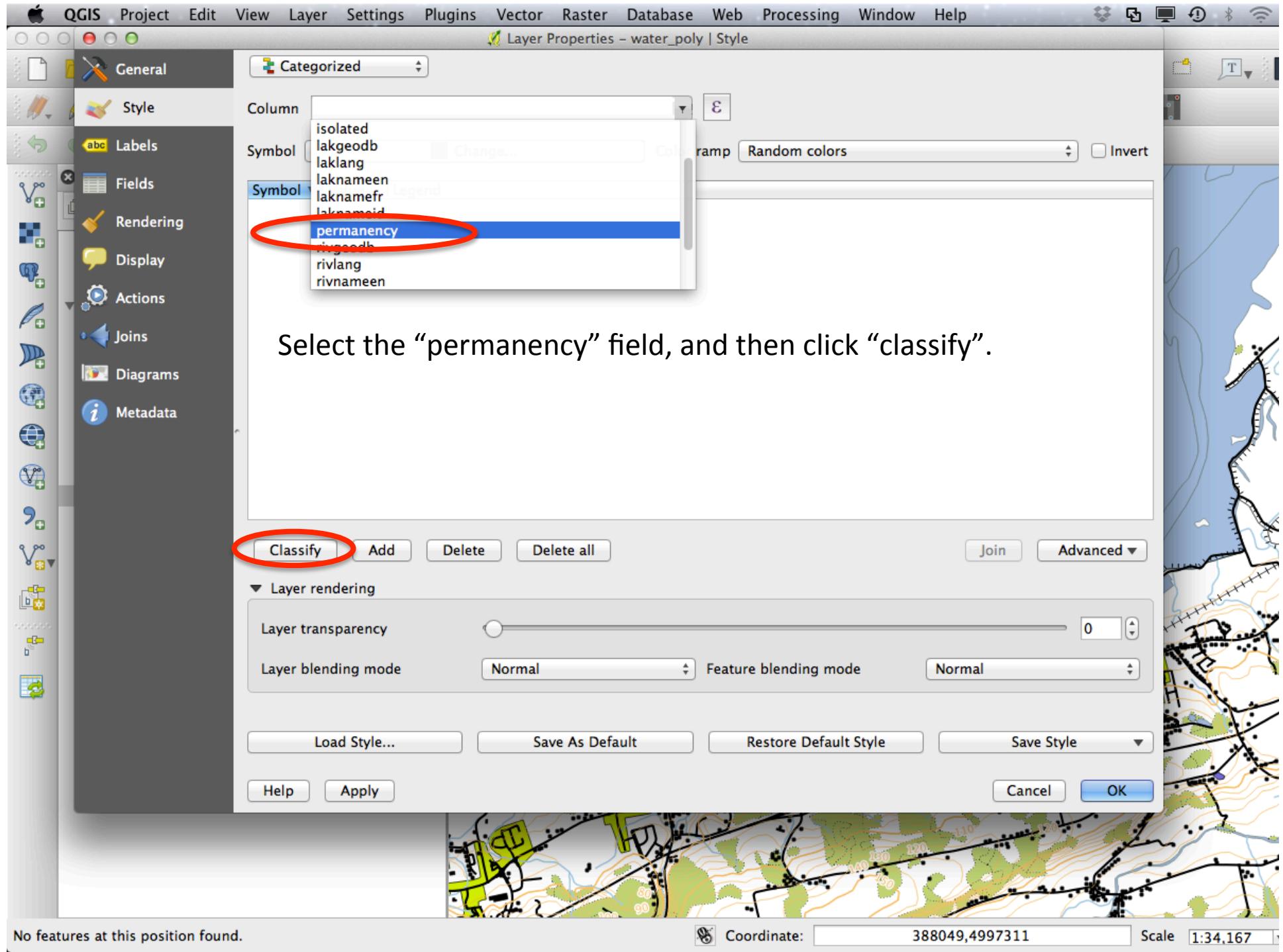


No features at this position found.

Coordinate:

388049,4997311

Scale 1:34,167



QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

Layer Properties – water_poly | Style

General Style Labels Fields Rendering Display Actions Joins Diagrams Metadata

Categorized Column permanency

Symbol Change... Color ramp [source] Invert

Symbol Value Legend

Symbol	Value	Legend
	1	1
	2	2

A permanency value of “1” indicates permanent water.
Double click the symbol to change it.

Classify Add Delete Delete all Join Advanced

Layer rendering

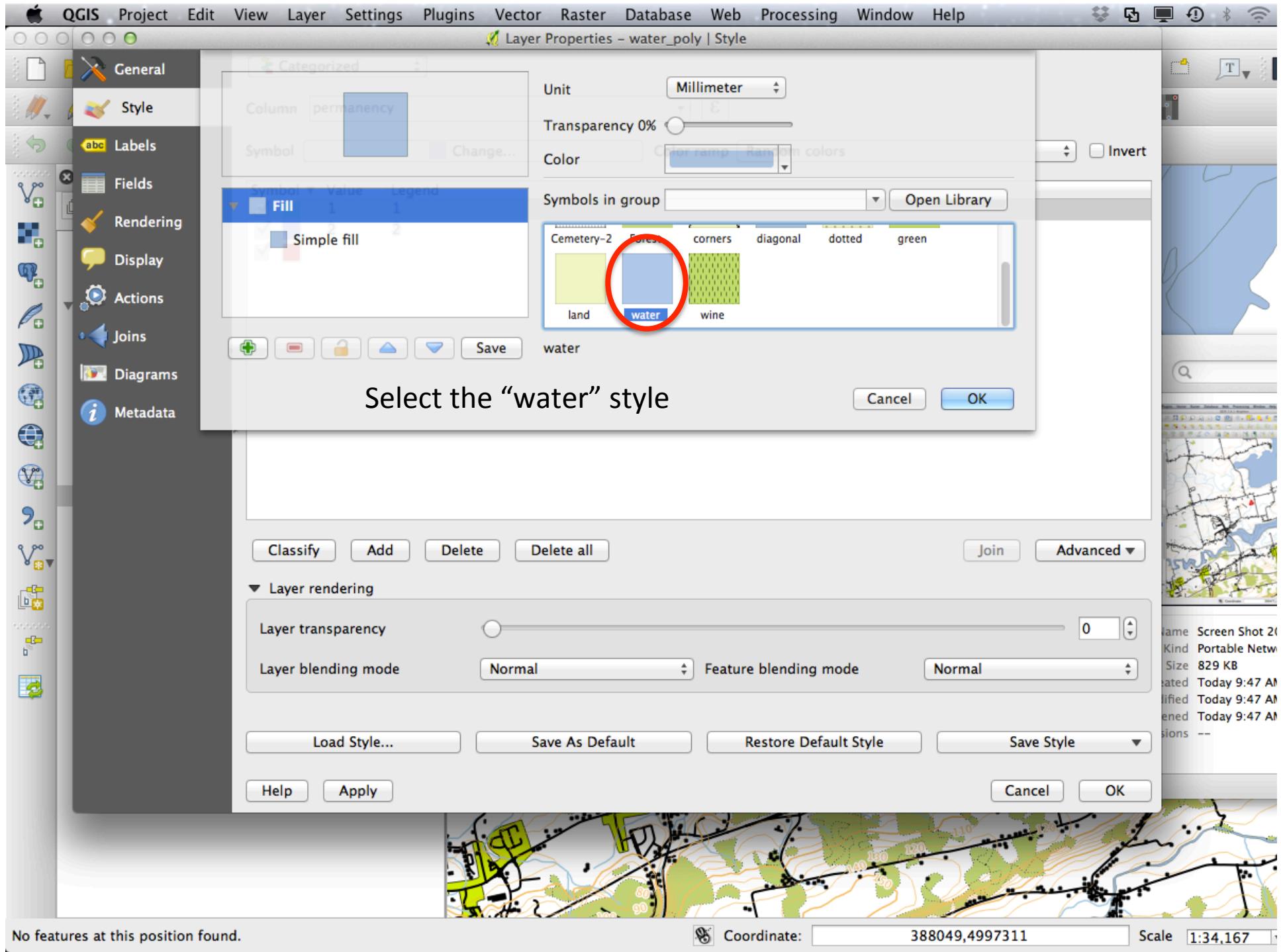
Layer transparency 0

Layer blending mode Normal Feature blending mode Normal

Load Style... Save As Default Restore Default Style Save Style

Help Apply Cancel OK

Coordinate: 386521,4997004 Scale 1:34,167



QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

Layer Properties - water_poly | Style

General Style Labels Fields Rendering Display Actions Joins Diagrams Metadata

Categorized Column permanency

Symbol Change... Color ramp [source] Invert

Symbol Value Legend

Symbol	Value	Legend
	1	1
	2	2

A permanency value of 2 indicates temporary water. Double click the symbol to change it.

Classify Add Delete Delete all Join Advanced

Layer rendering

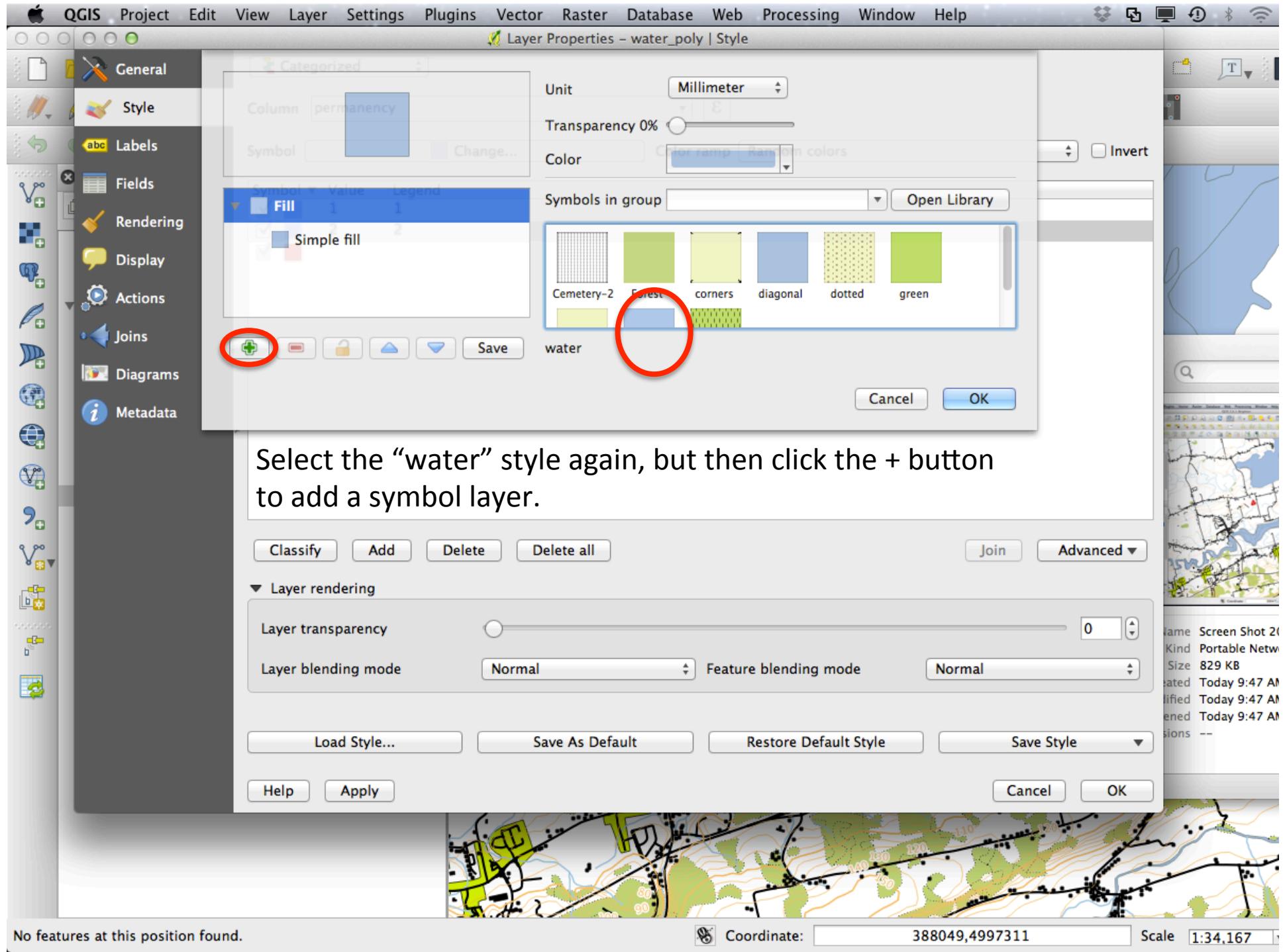
Layer transparency 0

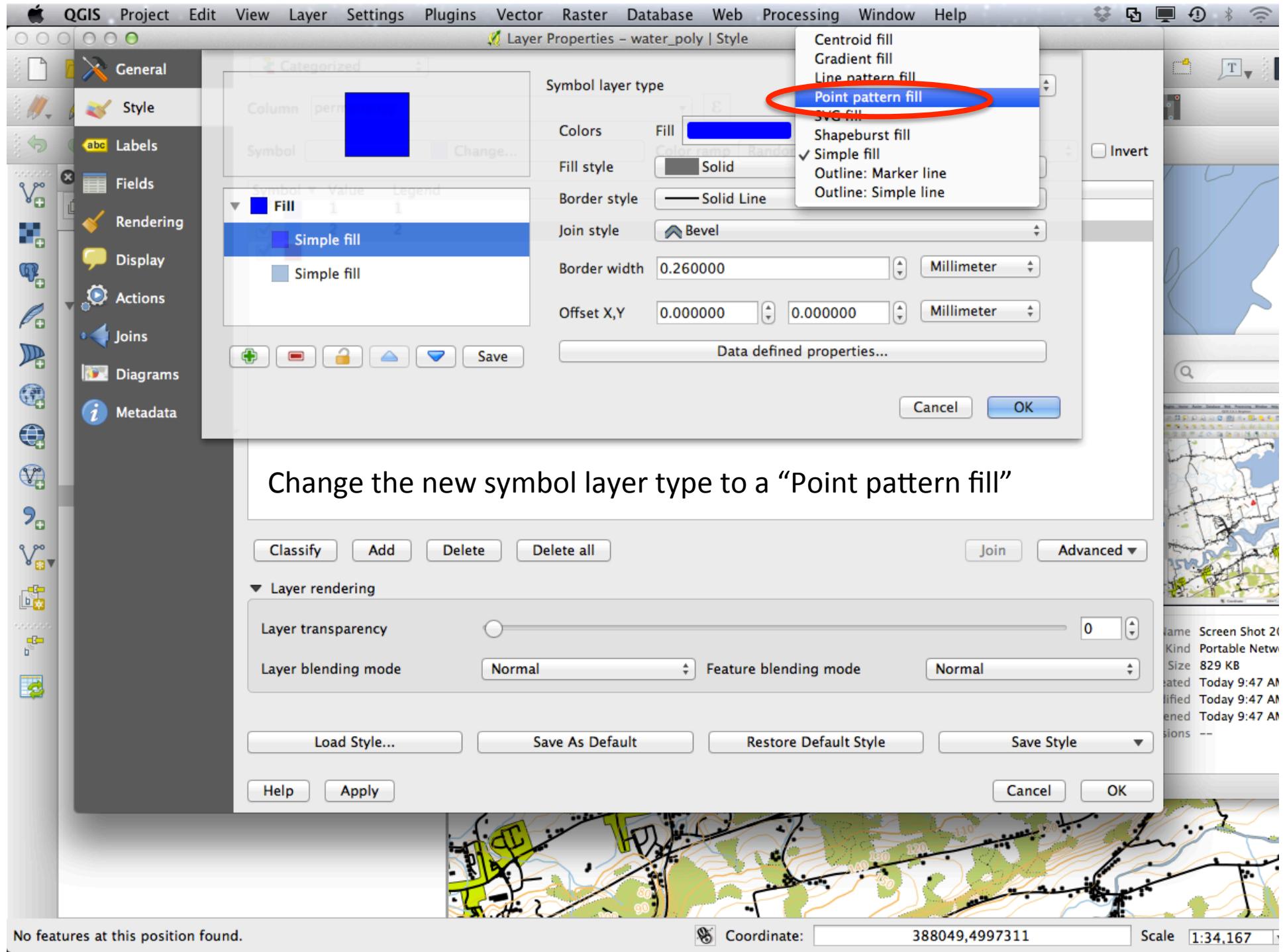
Layer blending mode Normal Feature blending mode Normal

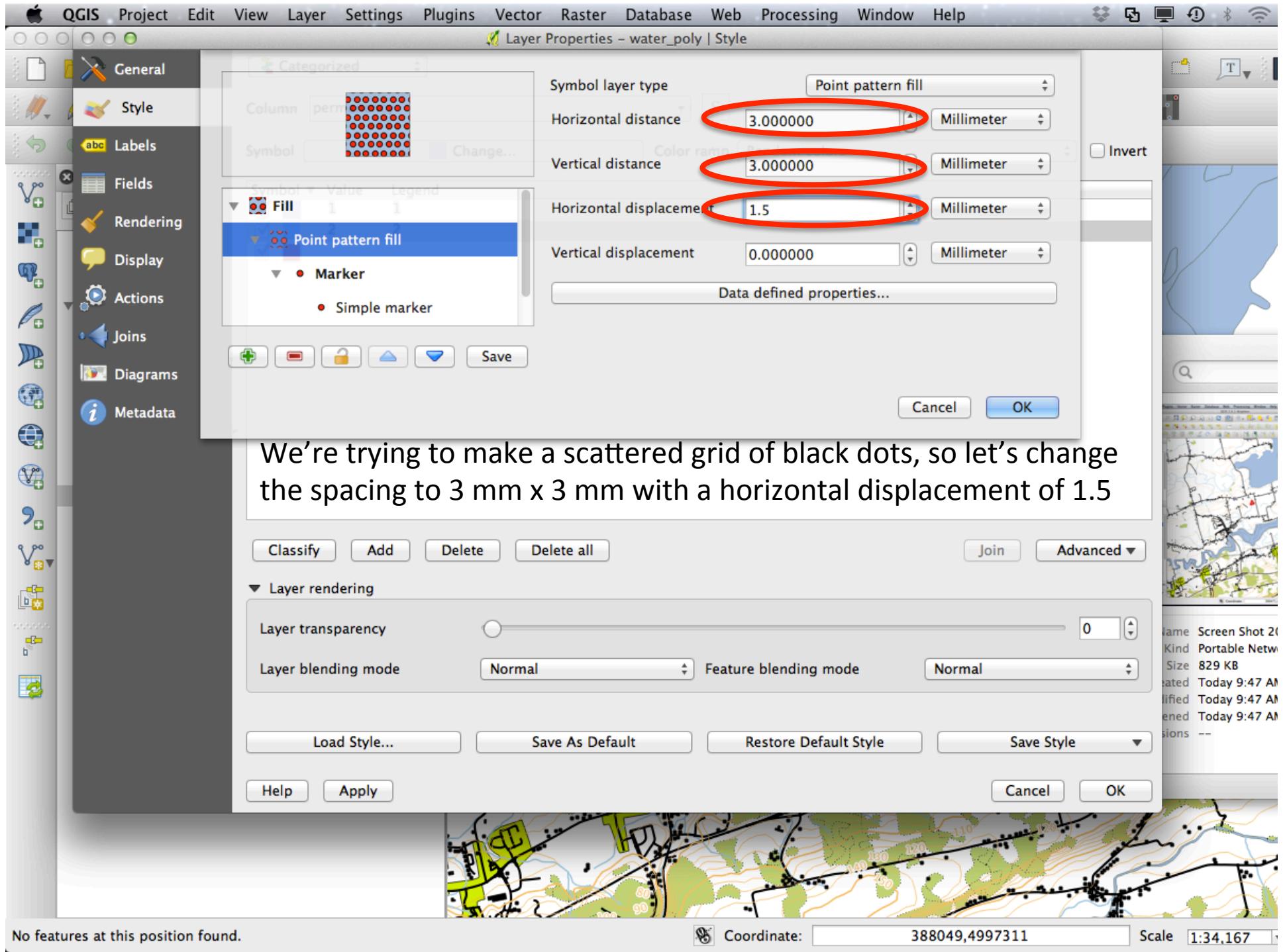
Load Style... Save As Default Restore Default Style Save Style

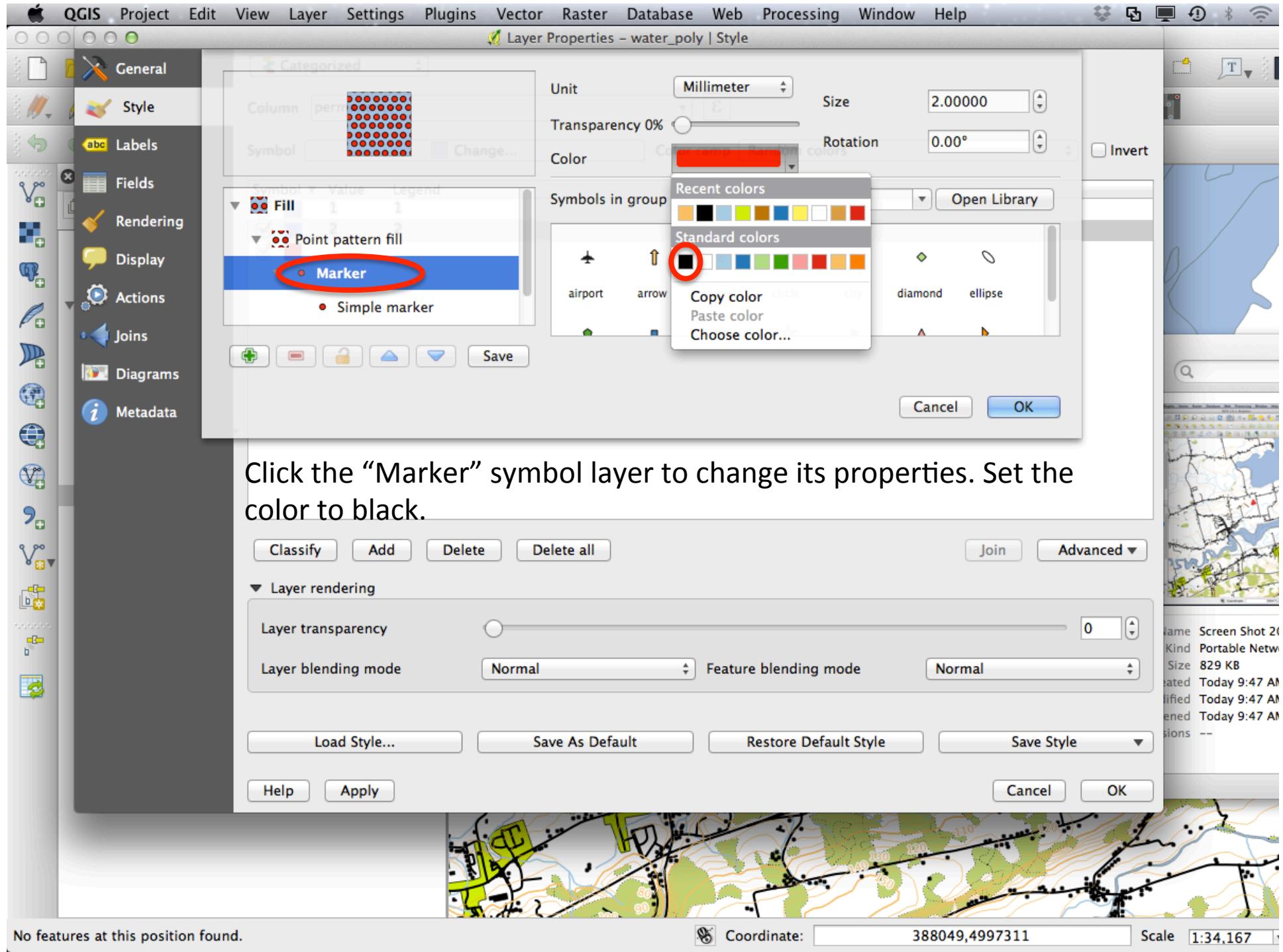
Help Apply Cancel OK

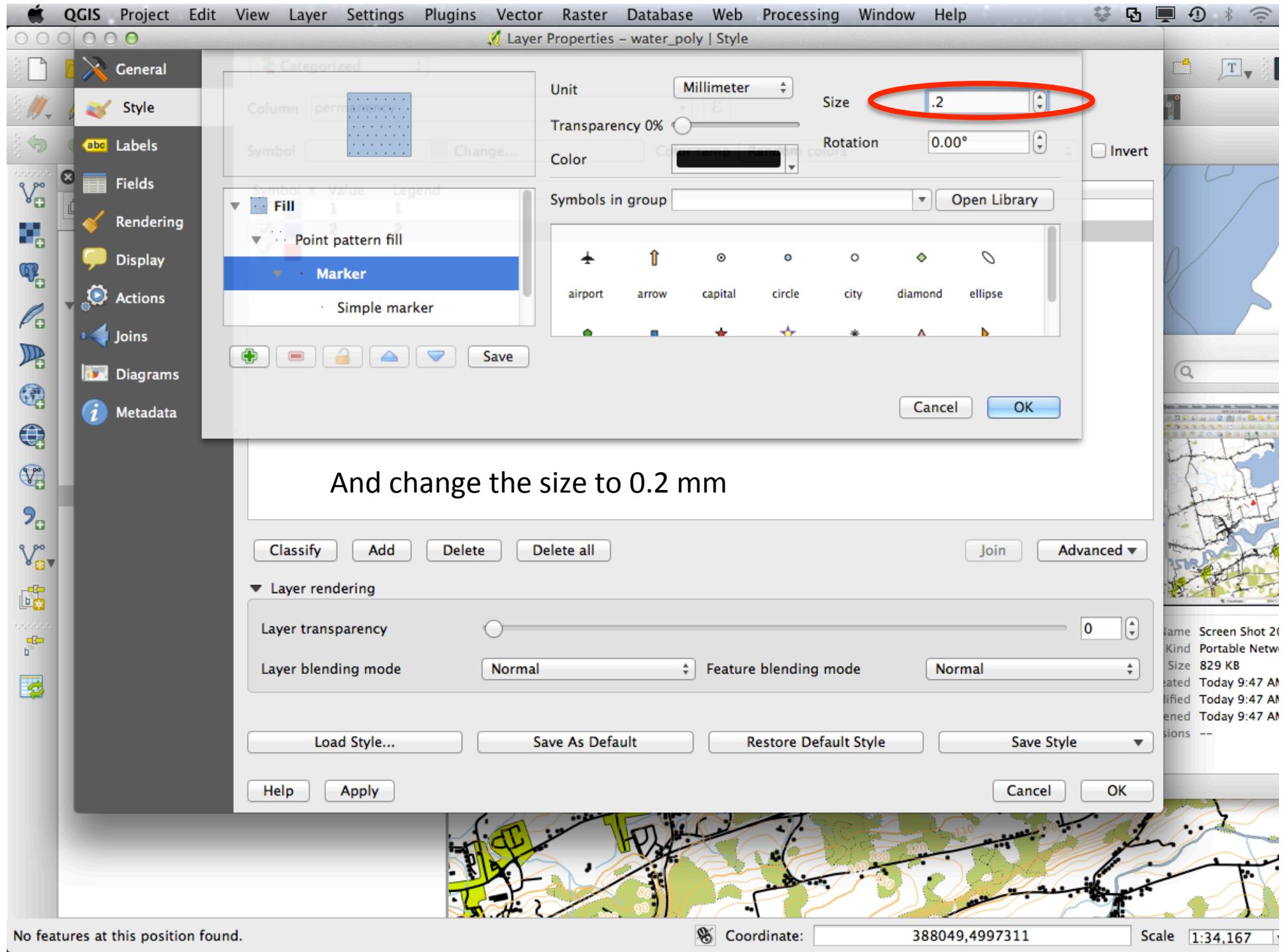
Coordinate: 386521,4997004 Scale 1:34,167

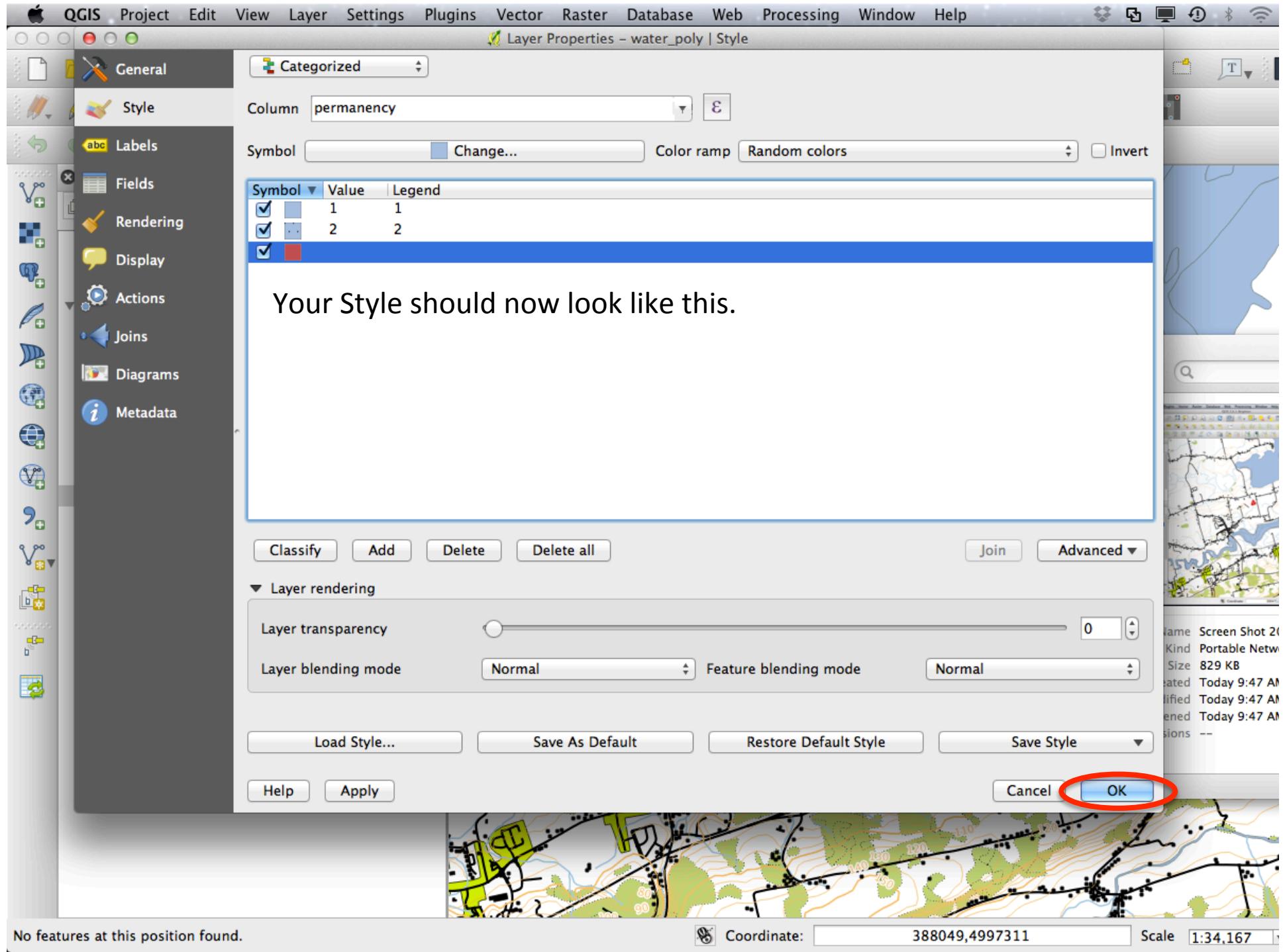


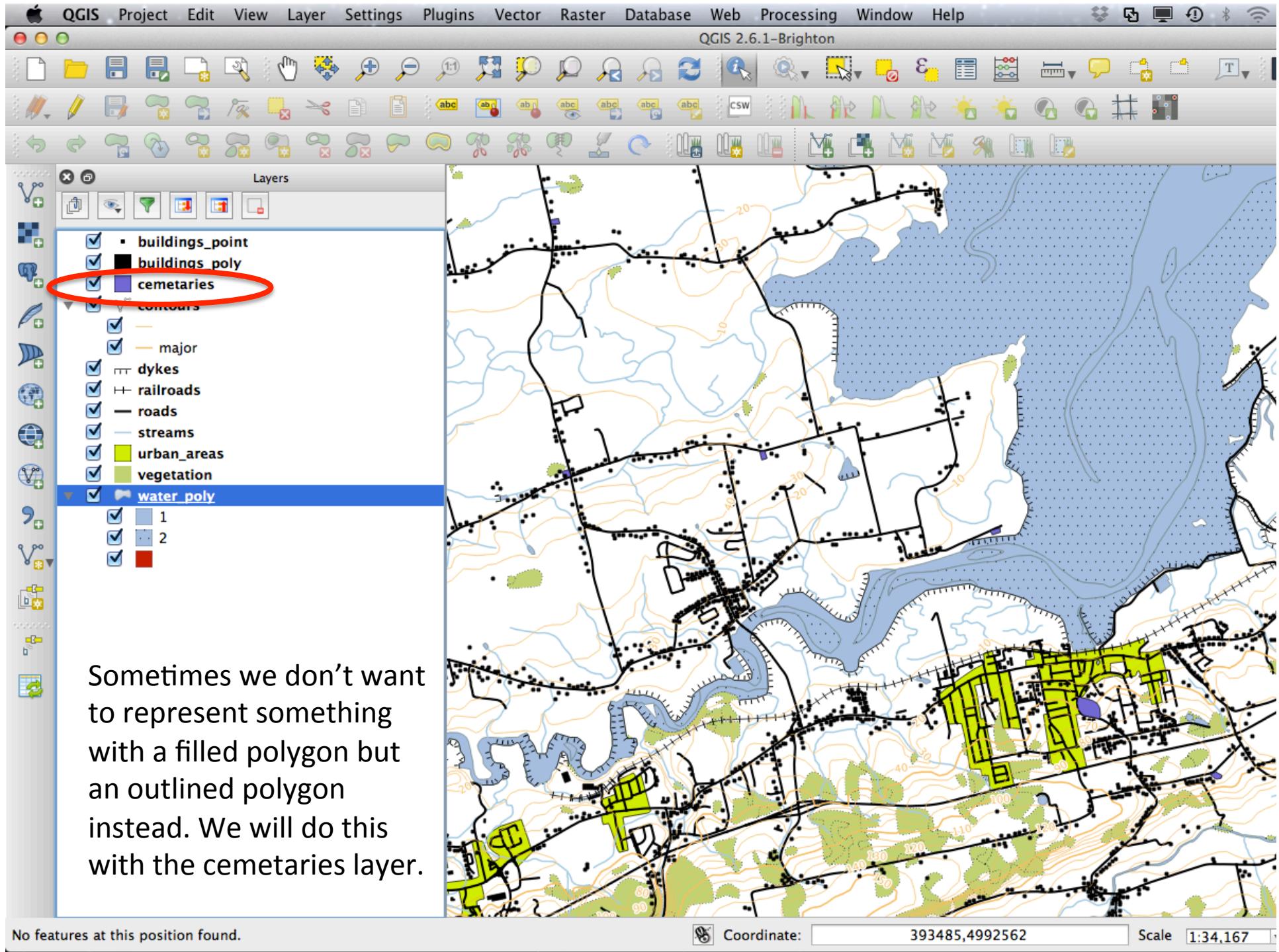


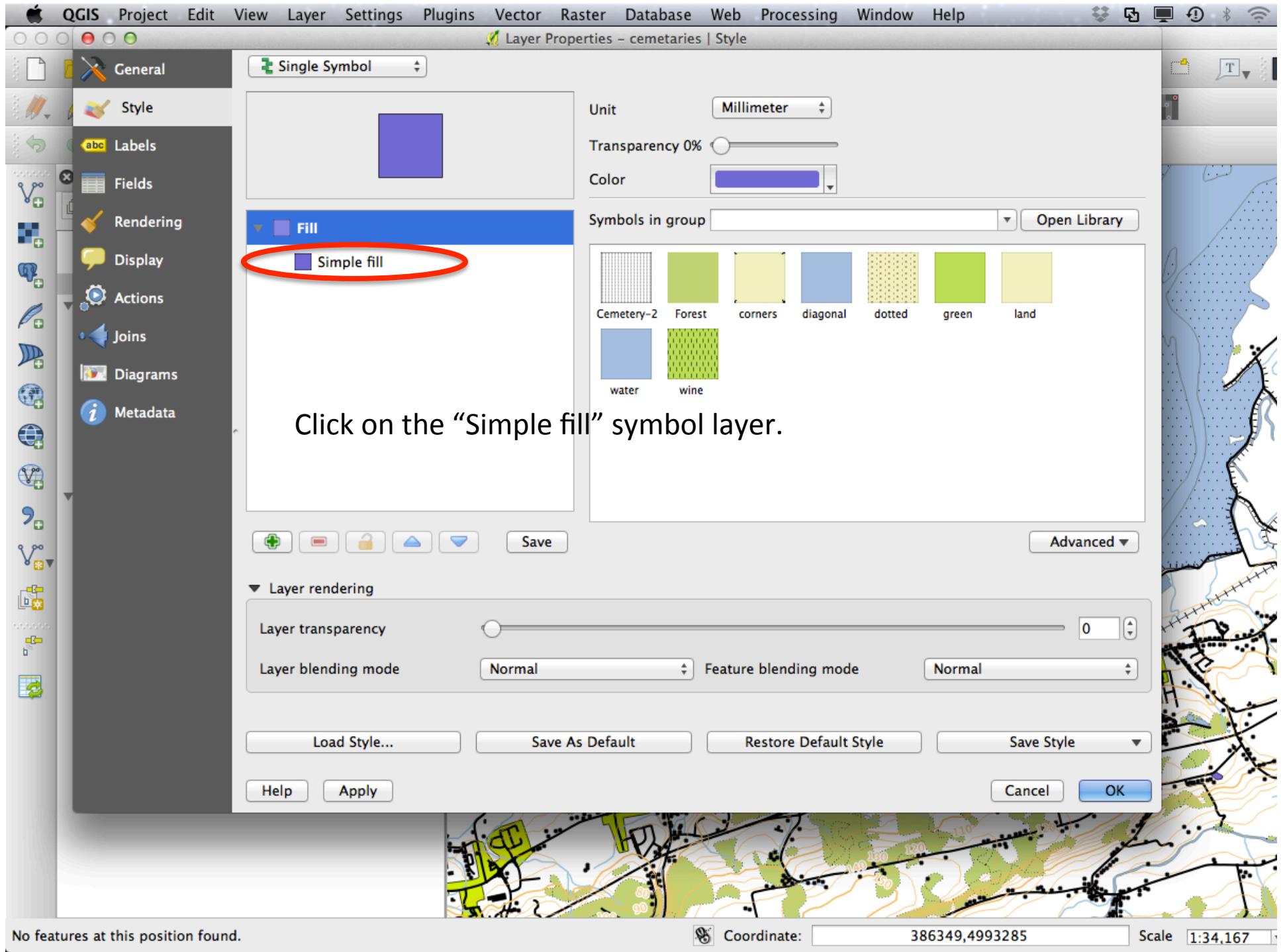


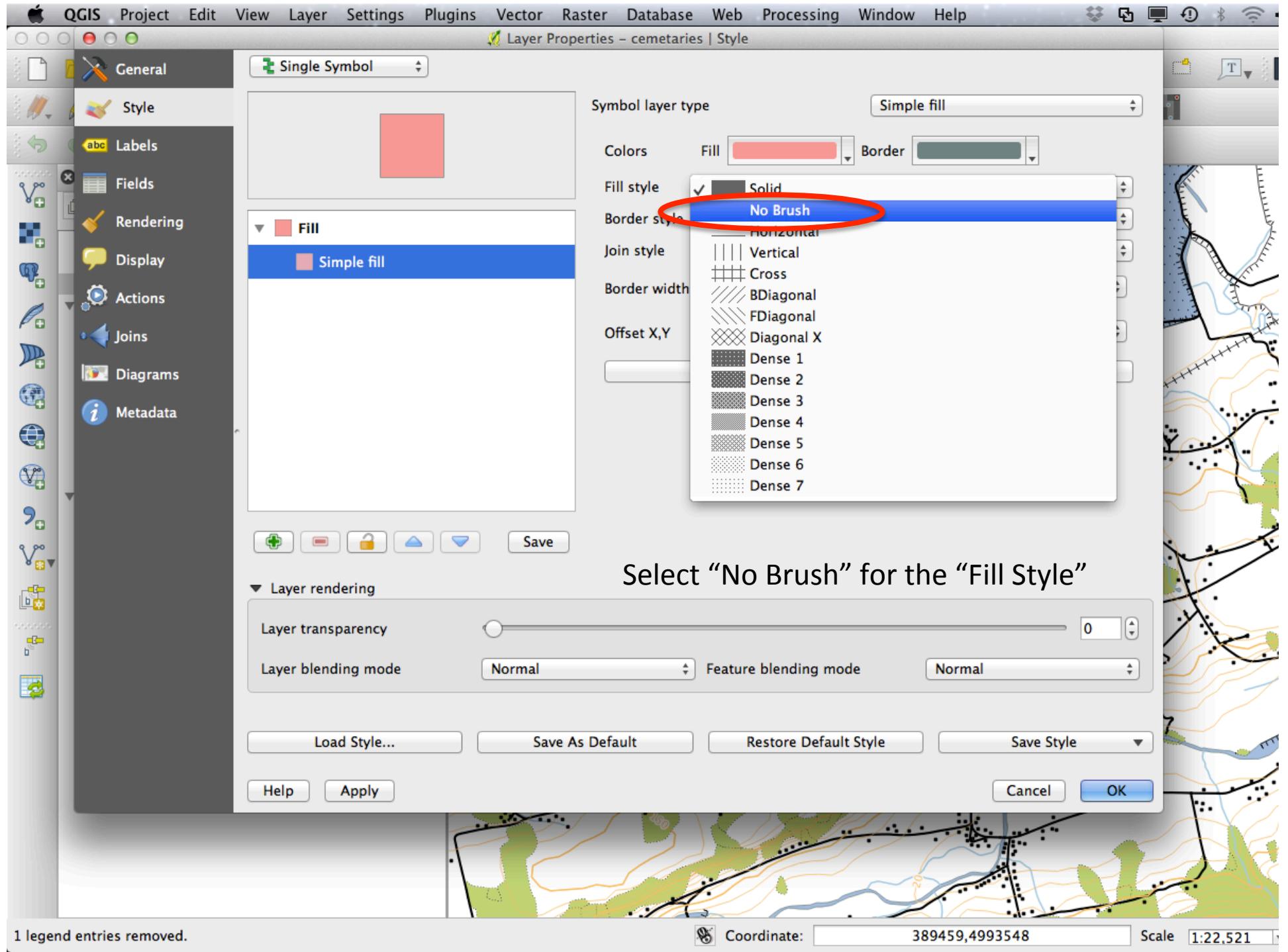


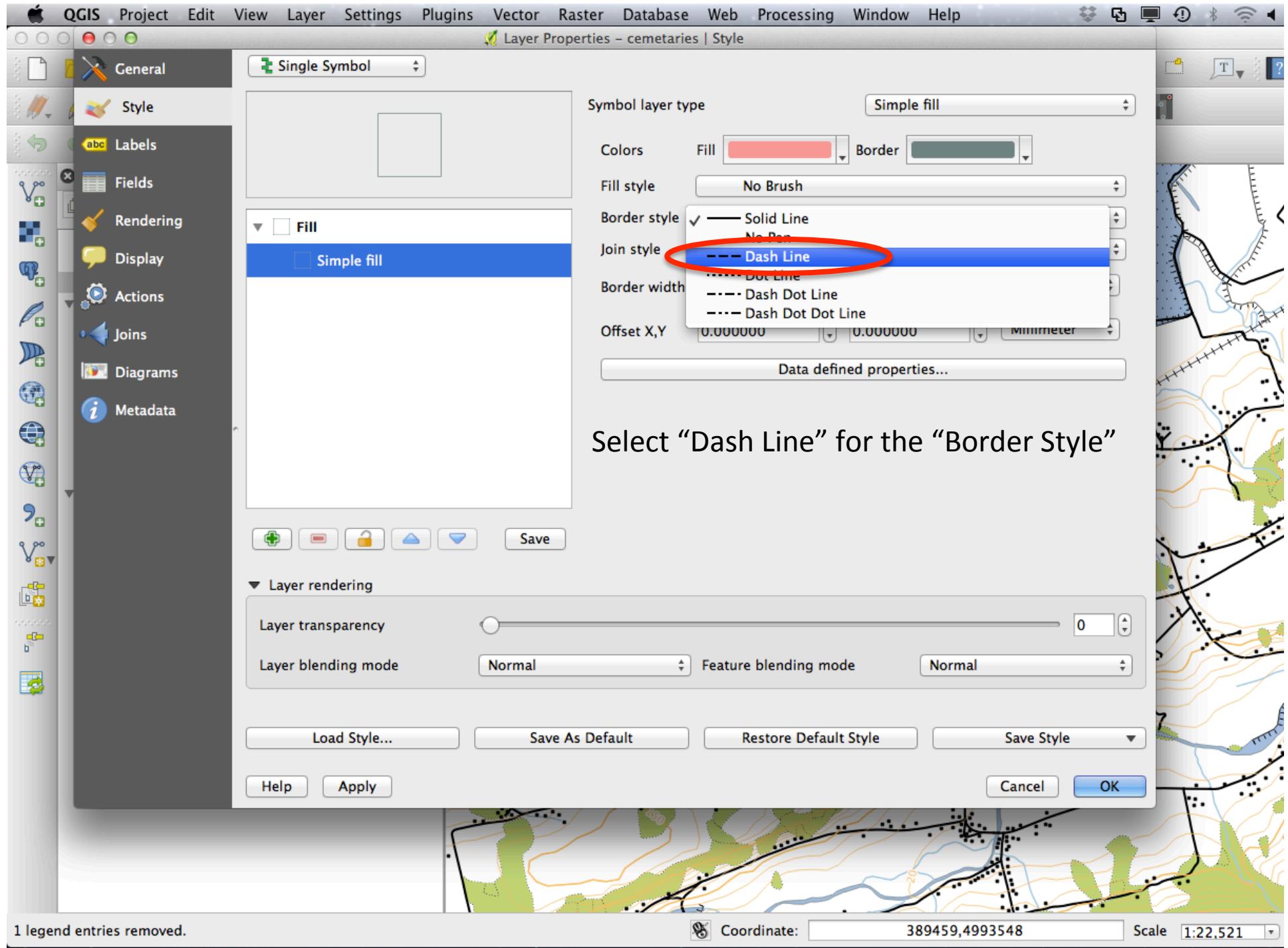


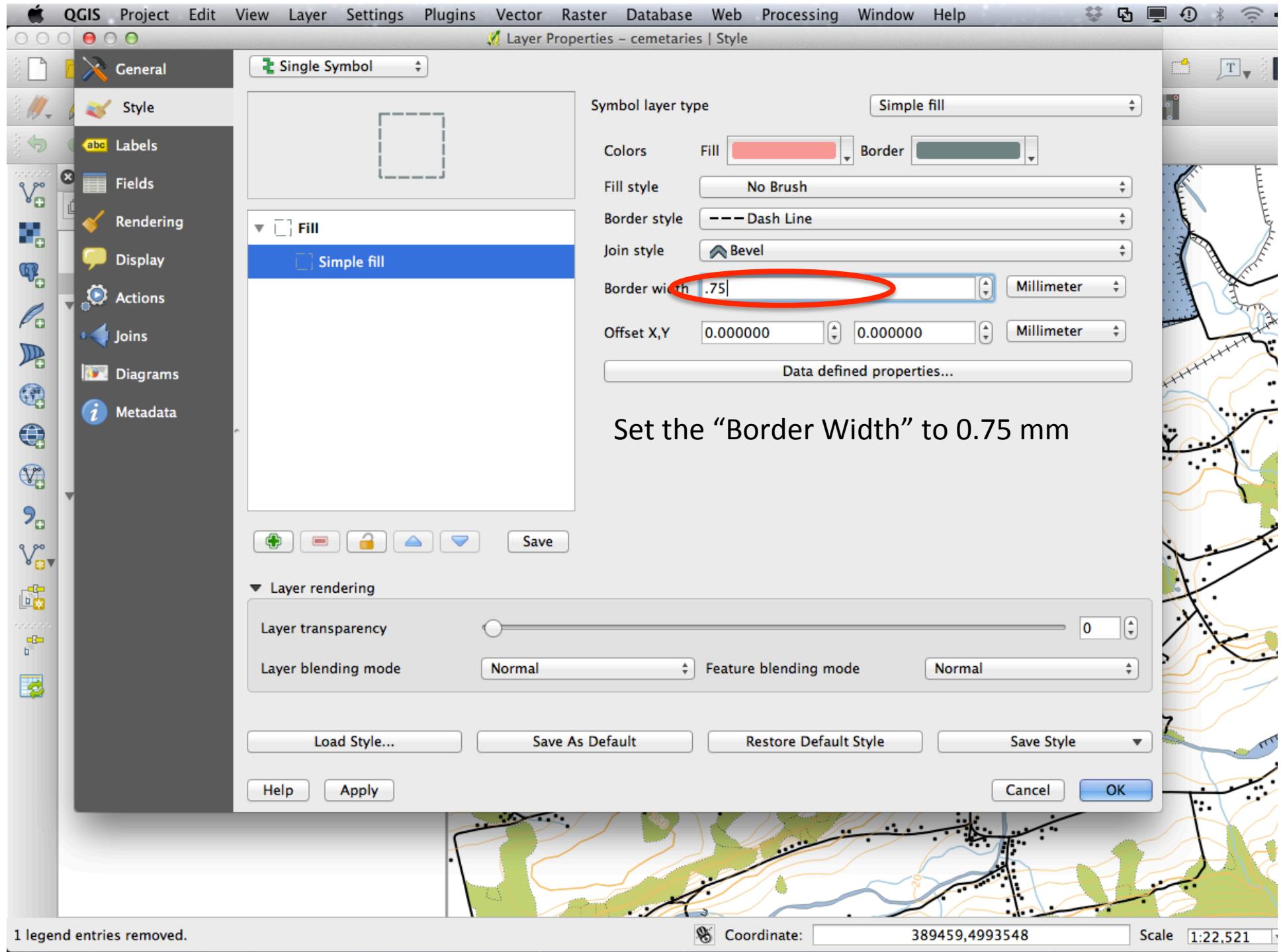


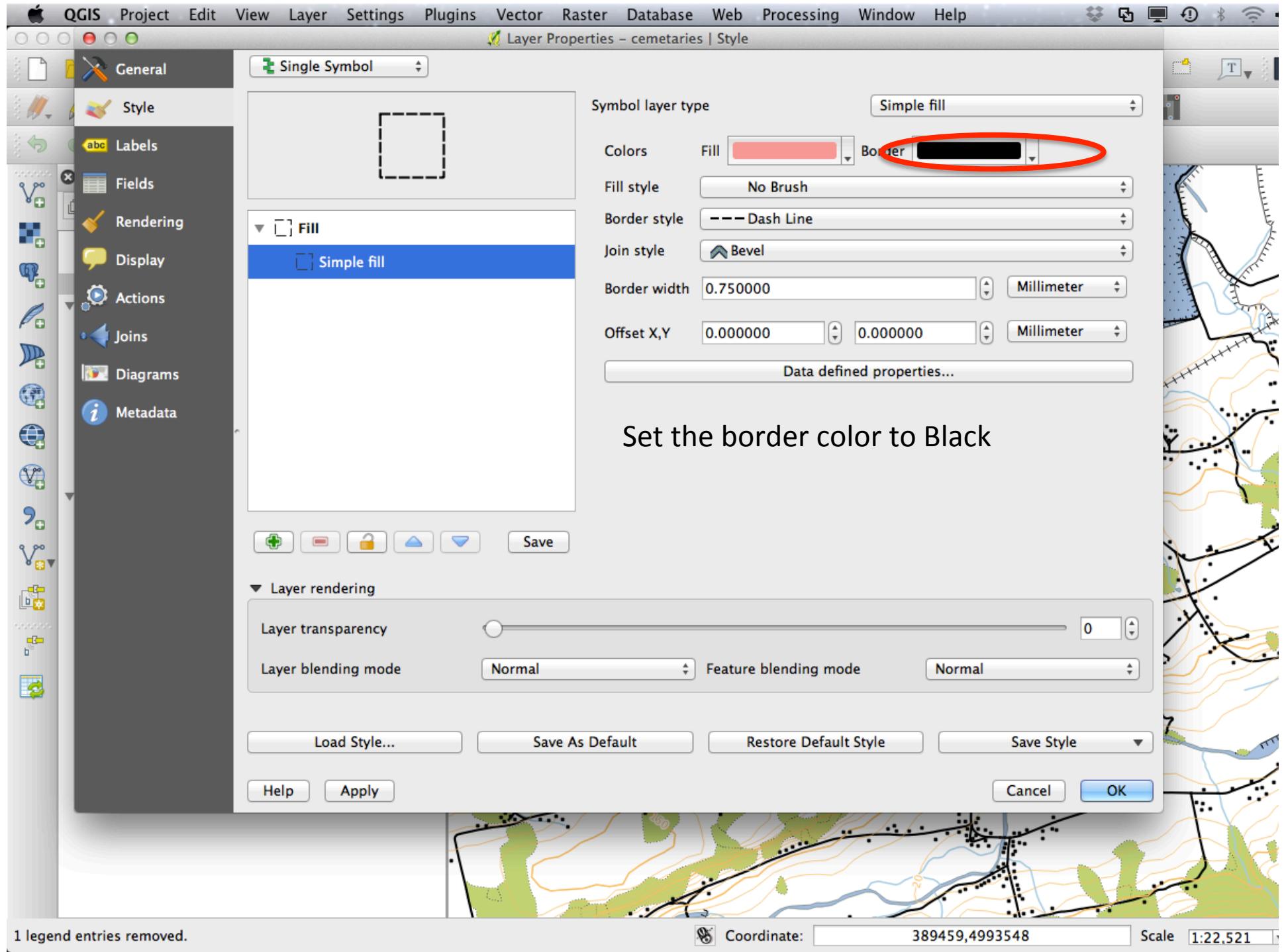












1 legend entries removed.

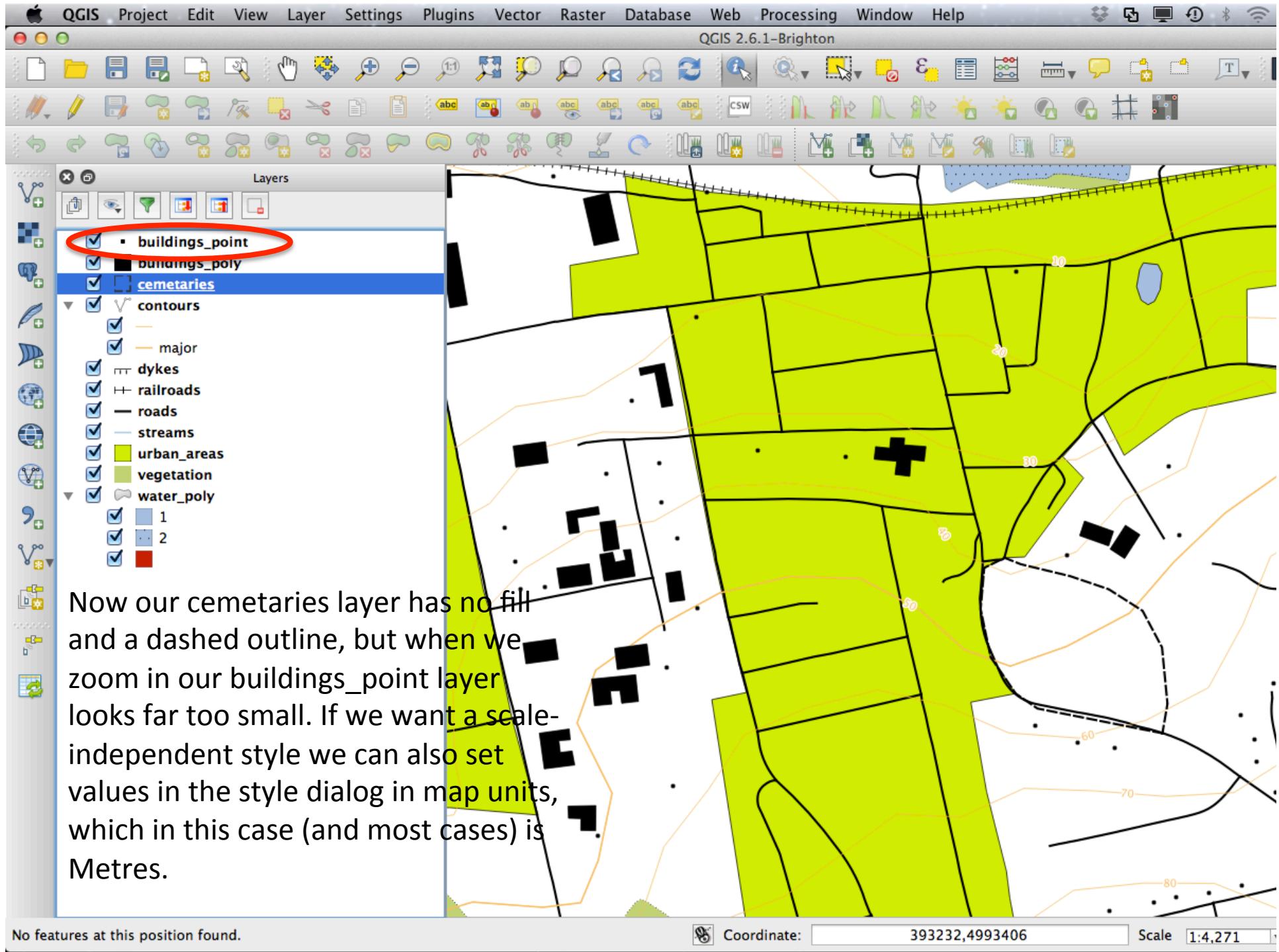


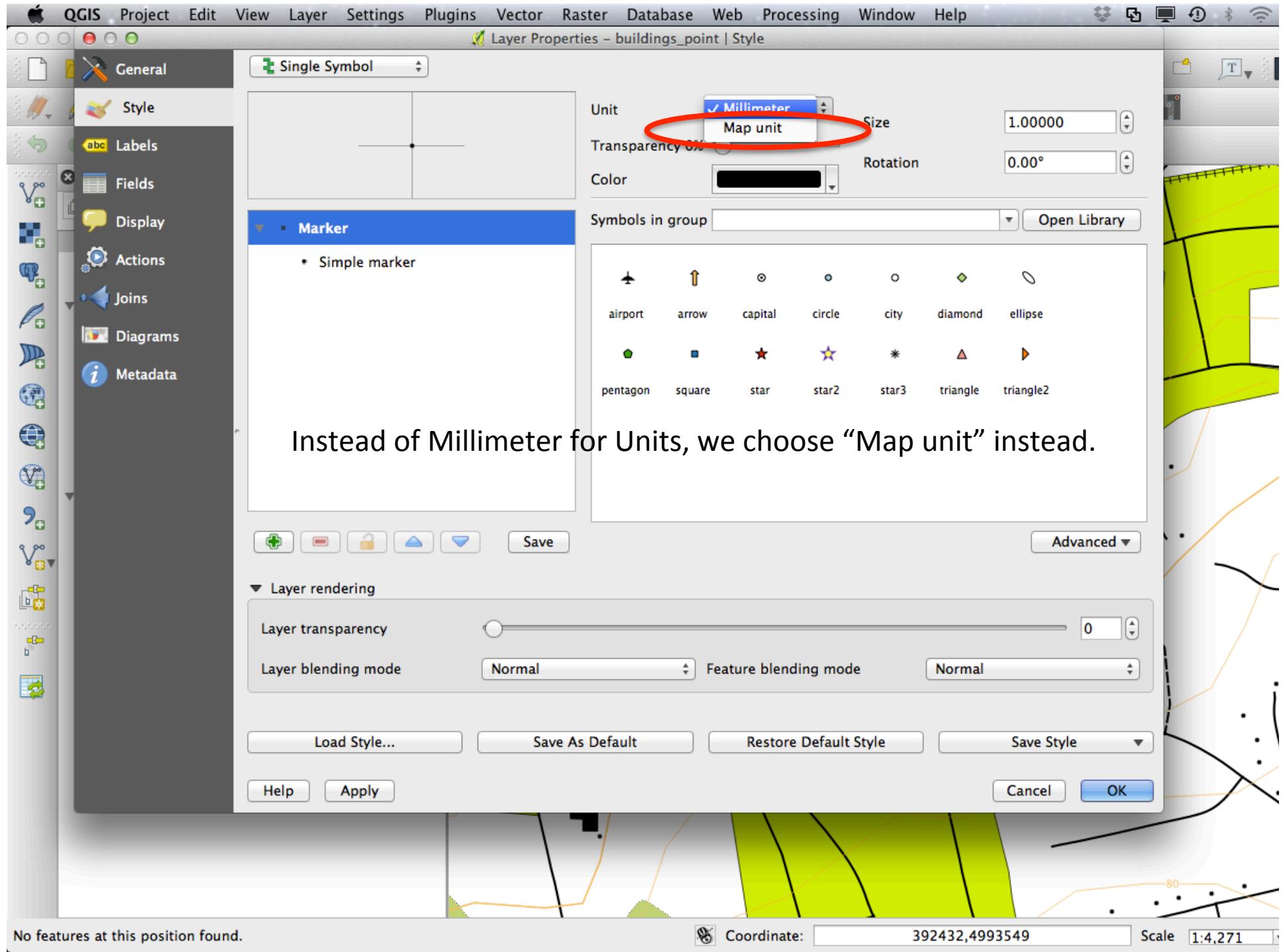
Coordinate:

389459,4993548

Scale

1:22,521





No features at this position found.

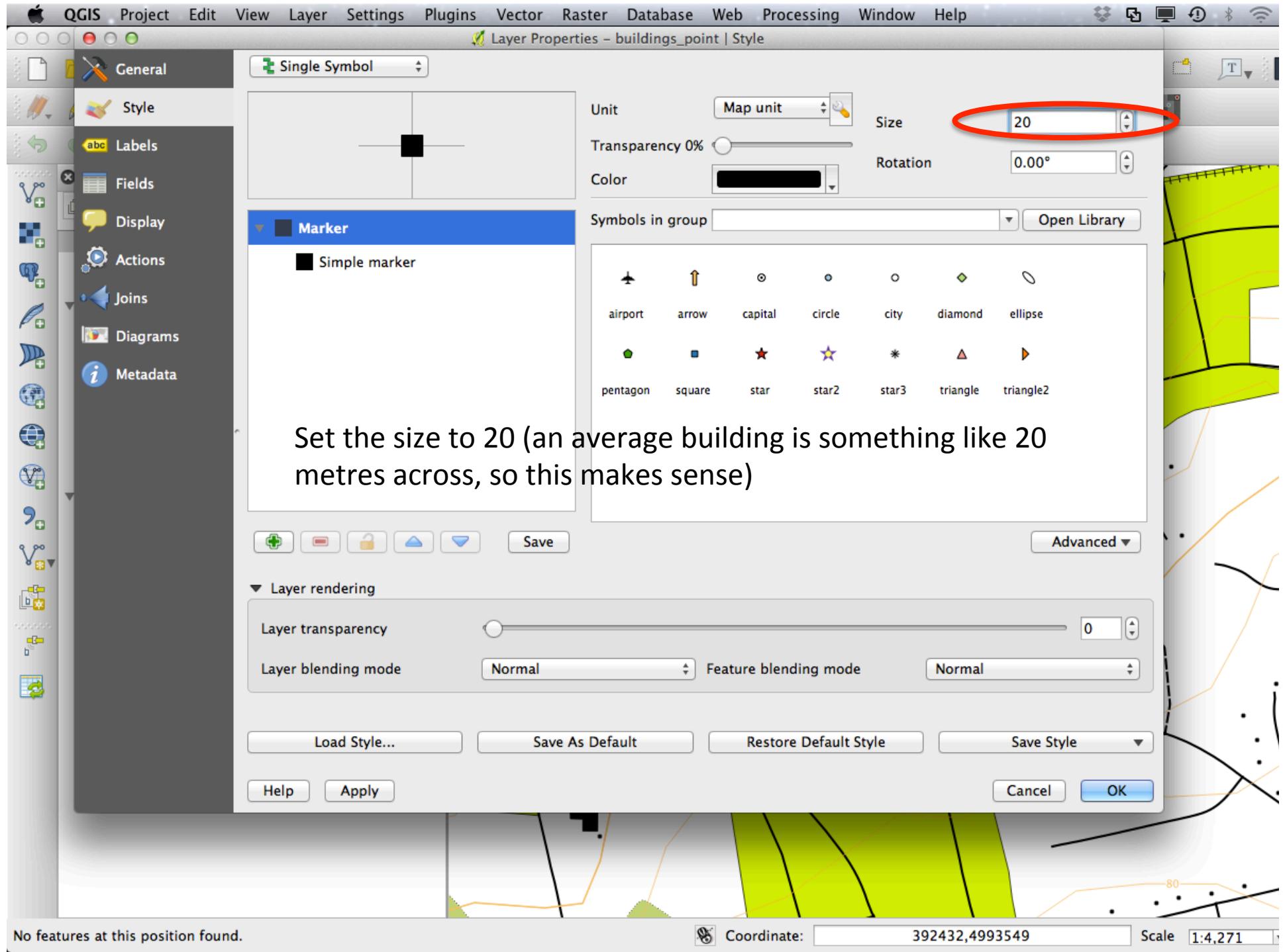


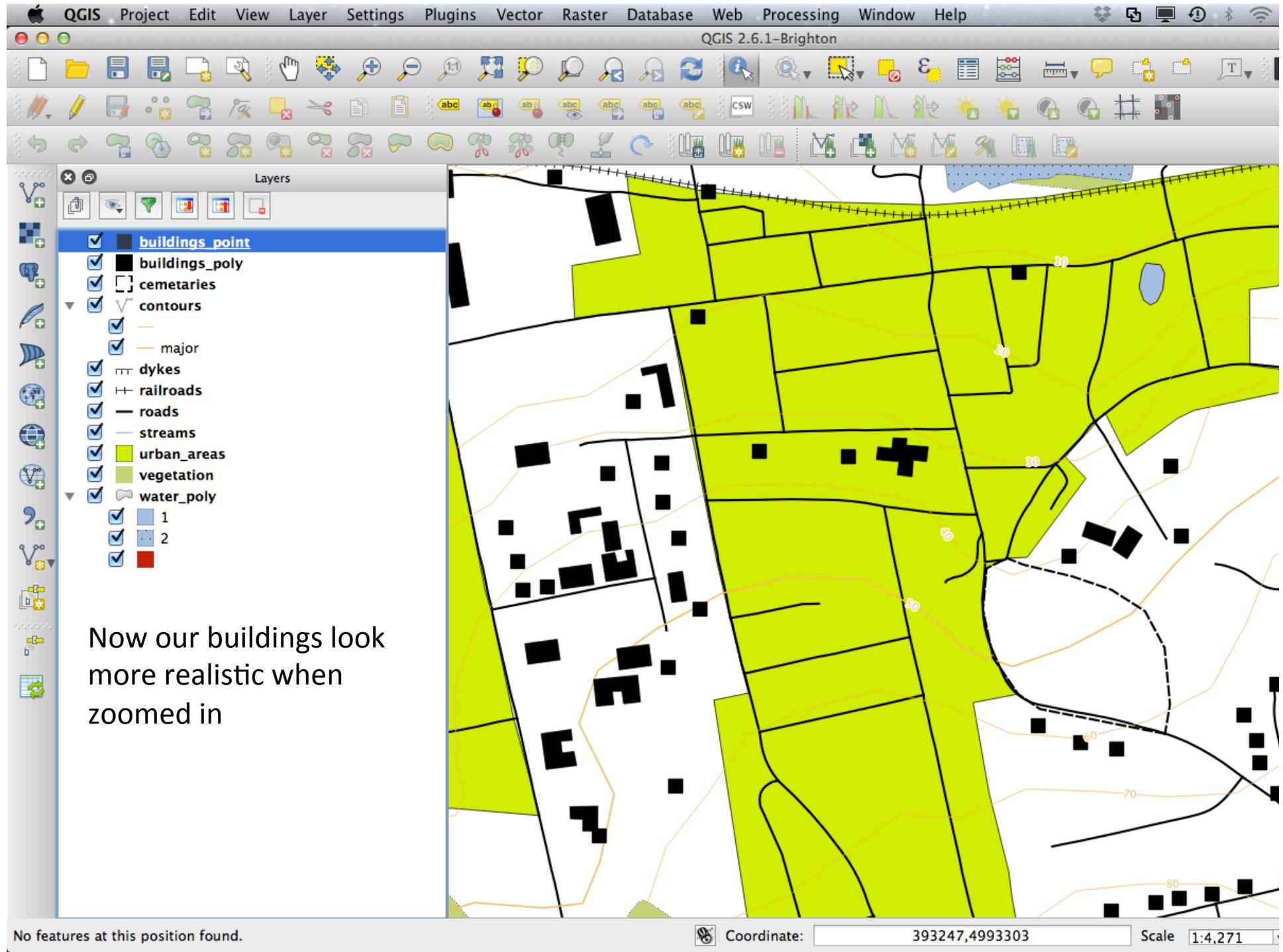
Coordinate:

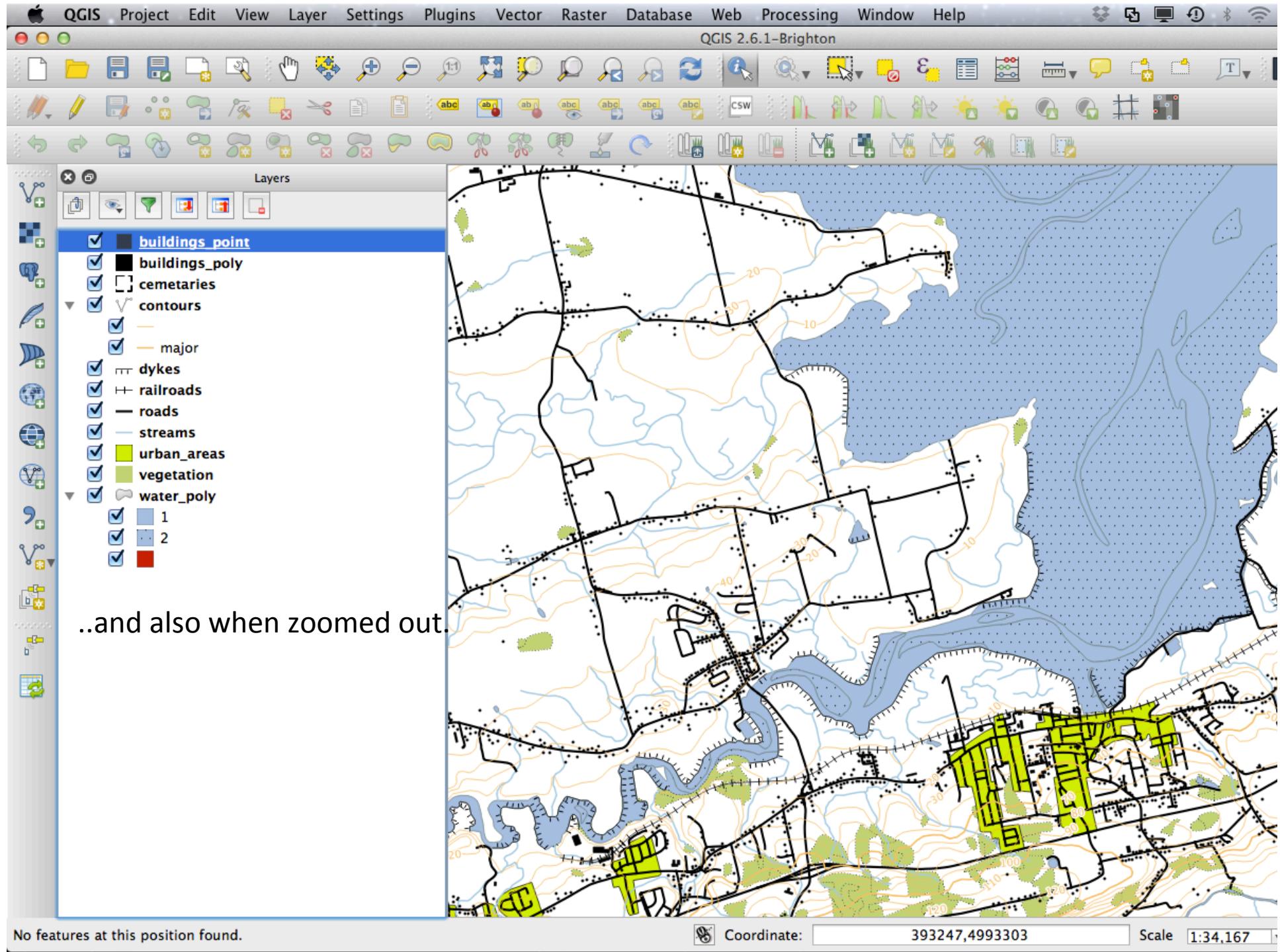
392432,4993549

Scale

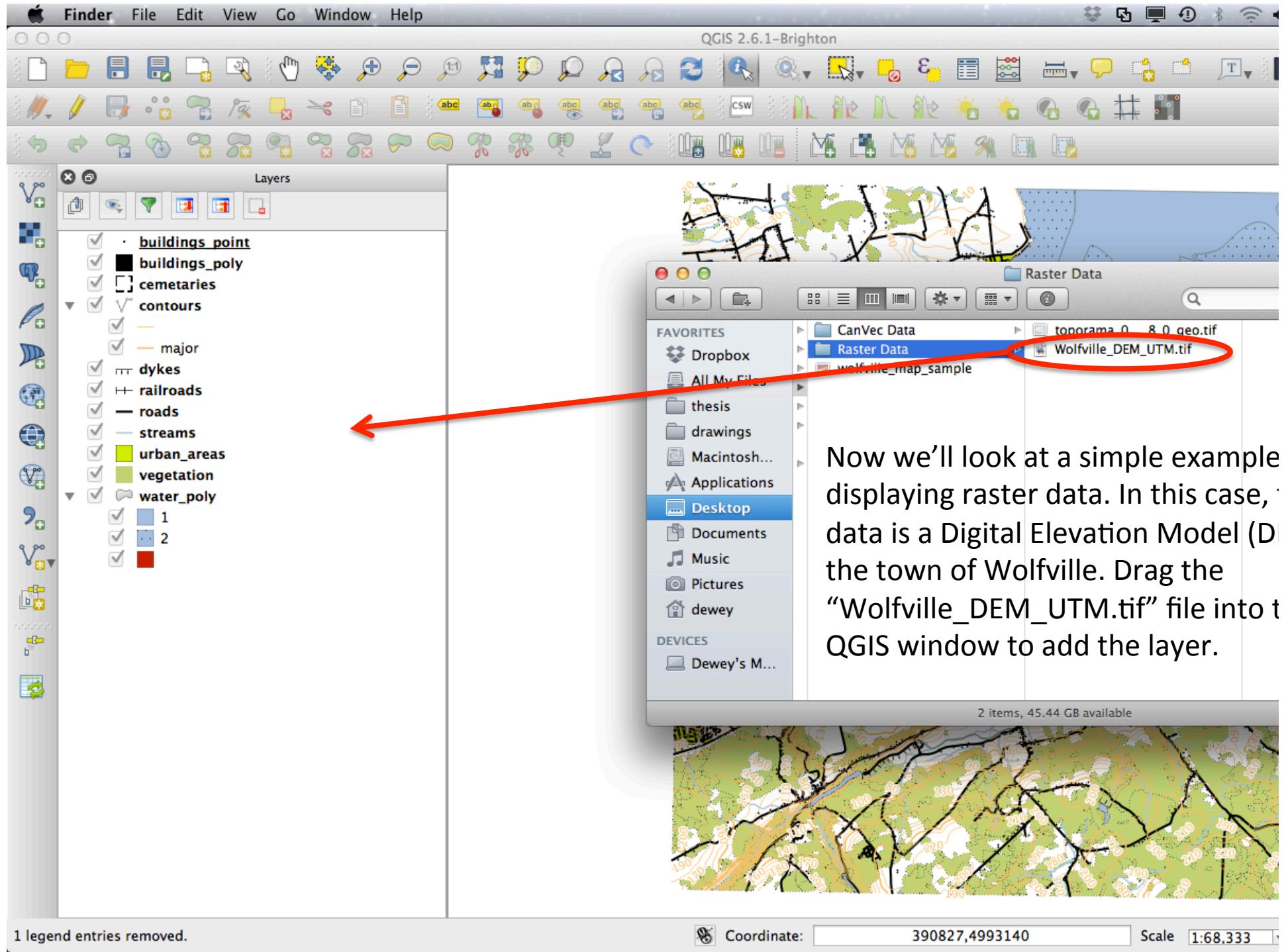
1:4,271



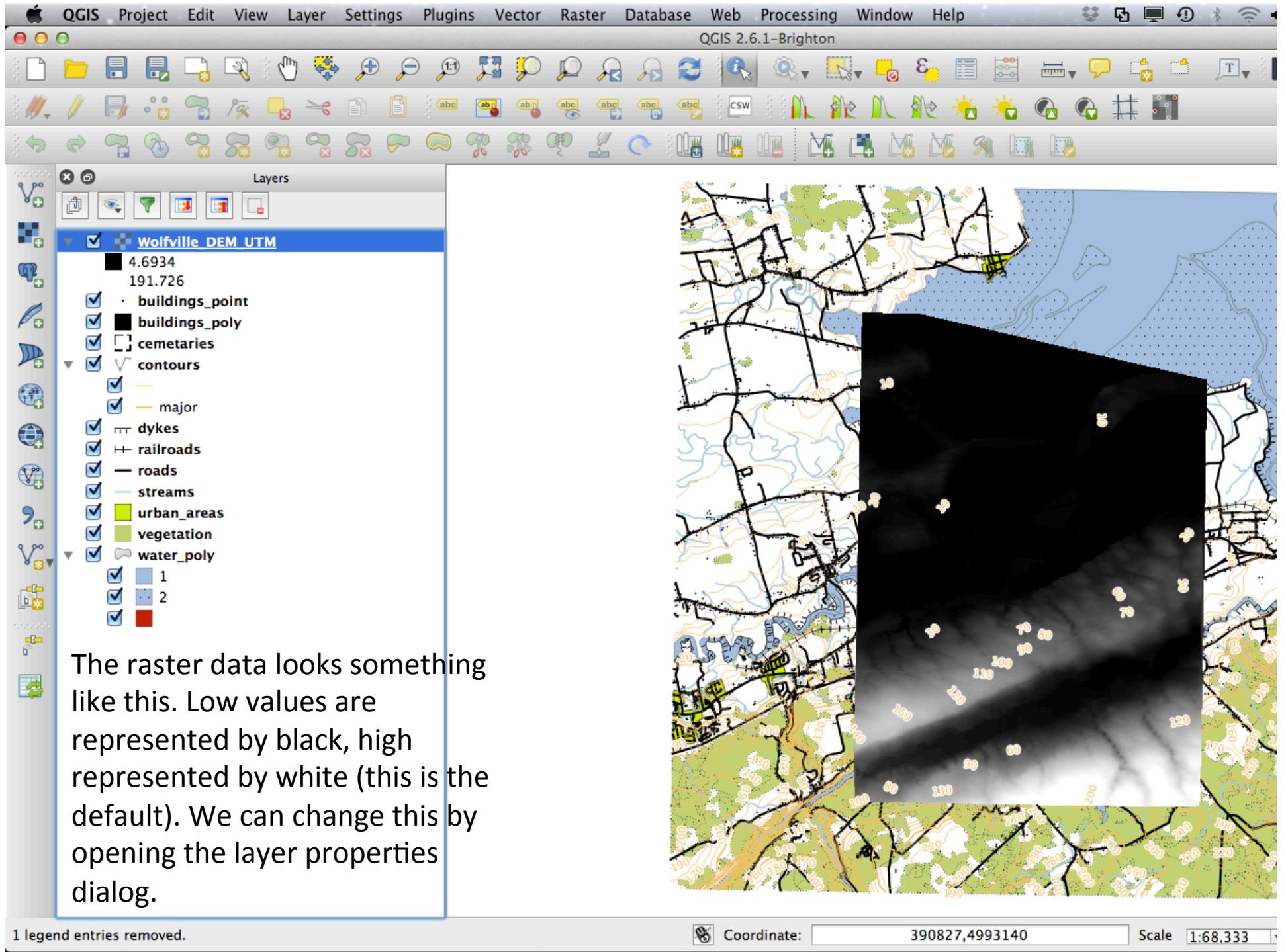


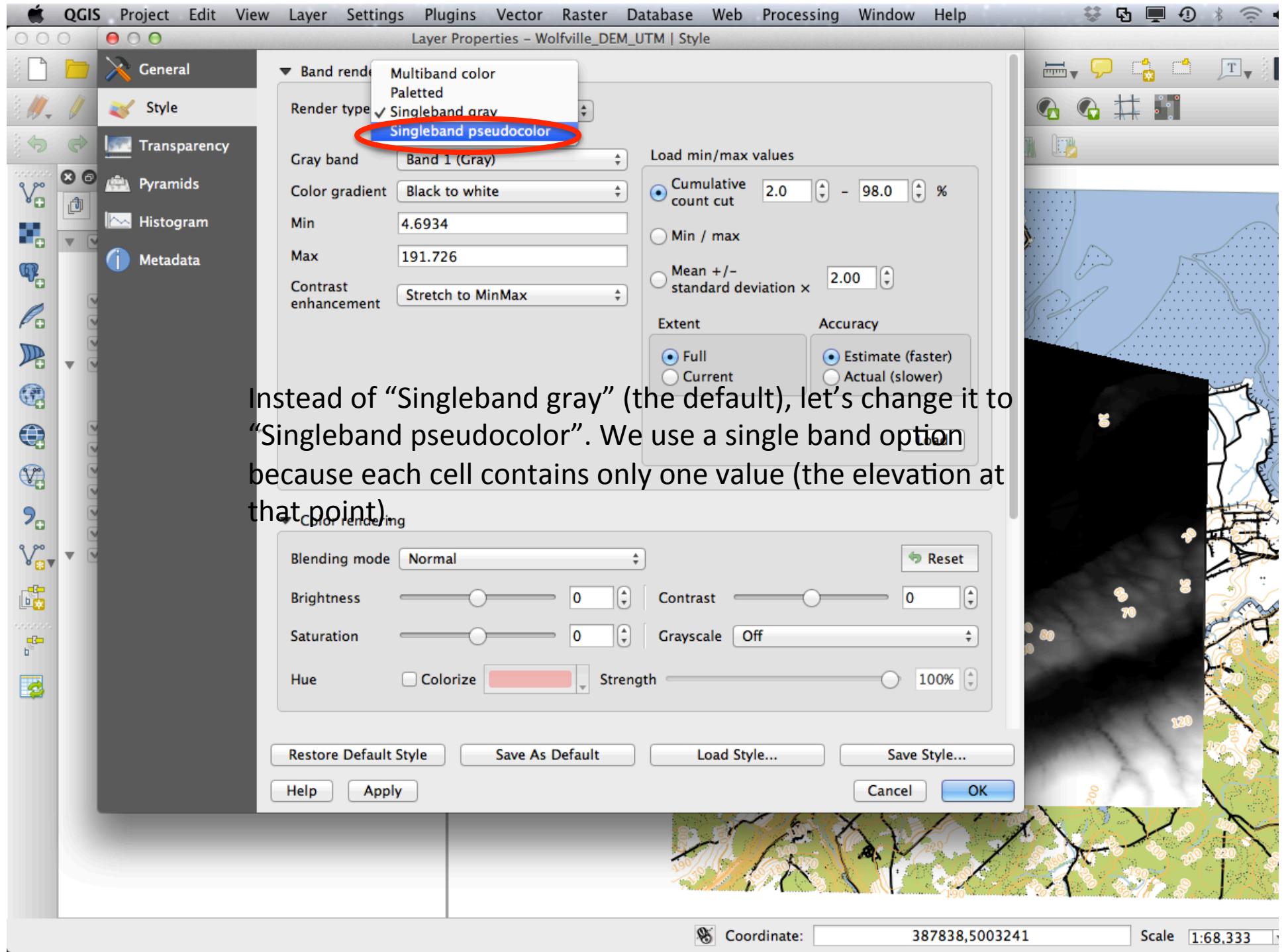


..and also when zoomed out.



Now we'll look at a simple example displaying raster data. In this case, the data is a Digital Elevation Model (DEM) for the town of Wolfville. Drag the "Wolfville_DEM_UTM.tif" file into the QGIS window to add the layer.





QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

Layer Properties – Wolfville_DEM_UTM | Style

General Style Transparency Pyramids Histogram Metadata

Band rendering

Render type: Singleband pseudocolor

Band: Band 1 (Gray)

Color interpolation: Linear

Generate new color map

RdYlBu color ramp, Invert unchecked

Mode: Continuous, Classes: 5

Min: 4.6934, Max: 191.726

Classify button (circled in red)

Min / max origin: Estimated cumulative cut of full extent.

Load min/max values

Cumulative count cut: 2.0 - 98.0 %

Min / max

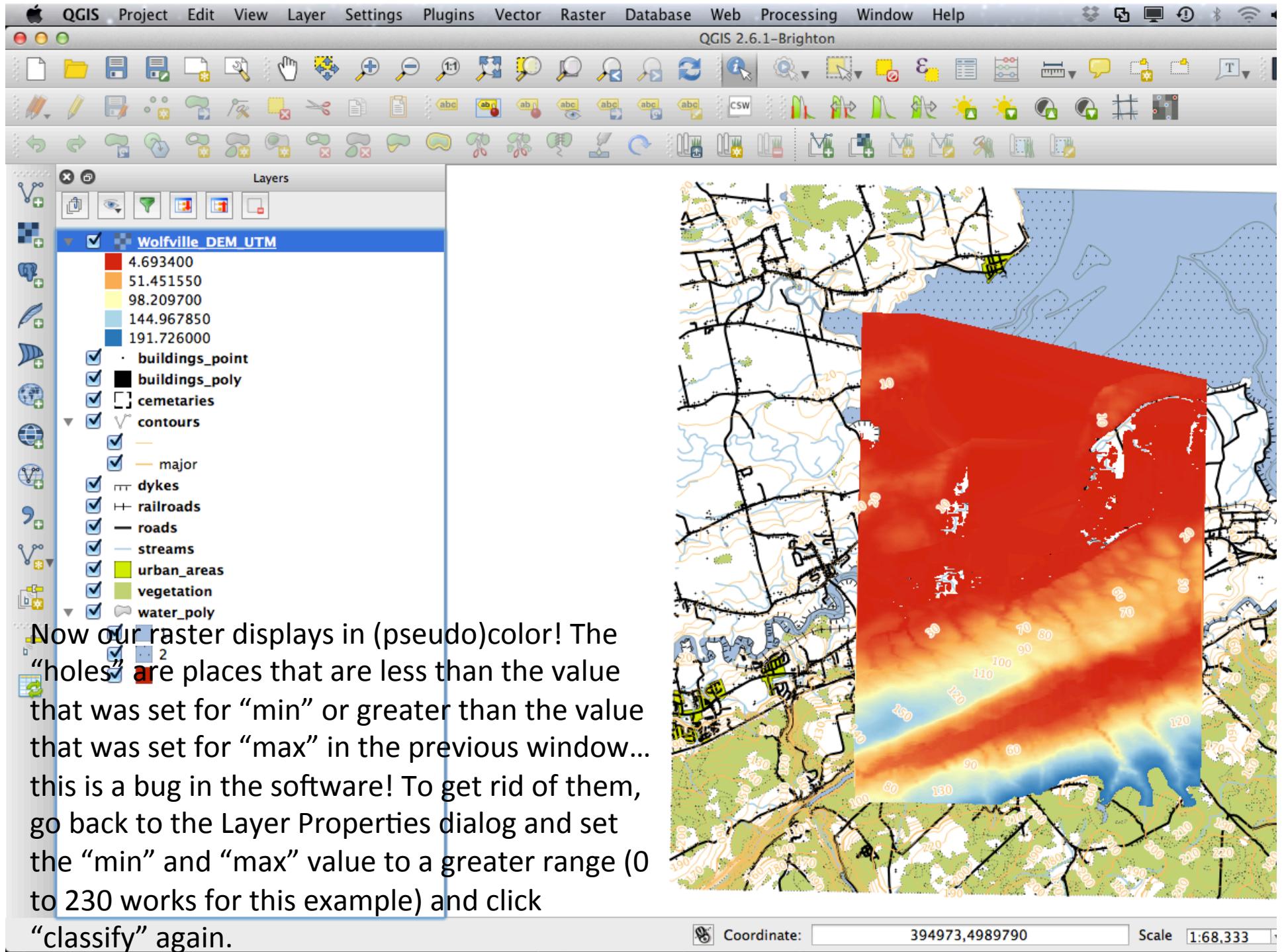
Mean +/- standard deviation x: 2.00

Extent: Full, Accuracy: Estimate (faster)

Restore Default Style, Save As Default, Load Style..., Save Style..., Help, Apply, Cancel, OK

Coordinate: 387838,5003241, Scale: 1:68,333

We have to click “classify” to set the color ramp.



QGIS Project Edit View Layer Settings Plugins Vector Raster Database Web Processing Window Help

Layer Properties – Wolfville_DEM_UTM | Transparency

Global transparency

No data value

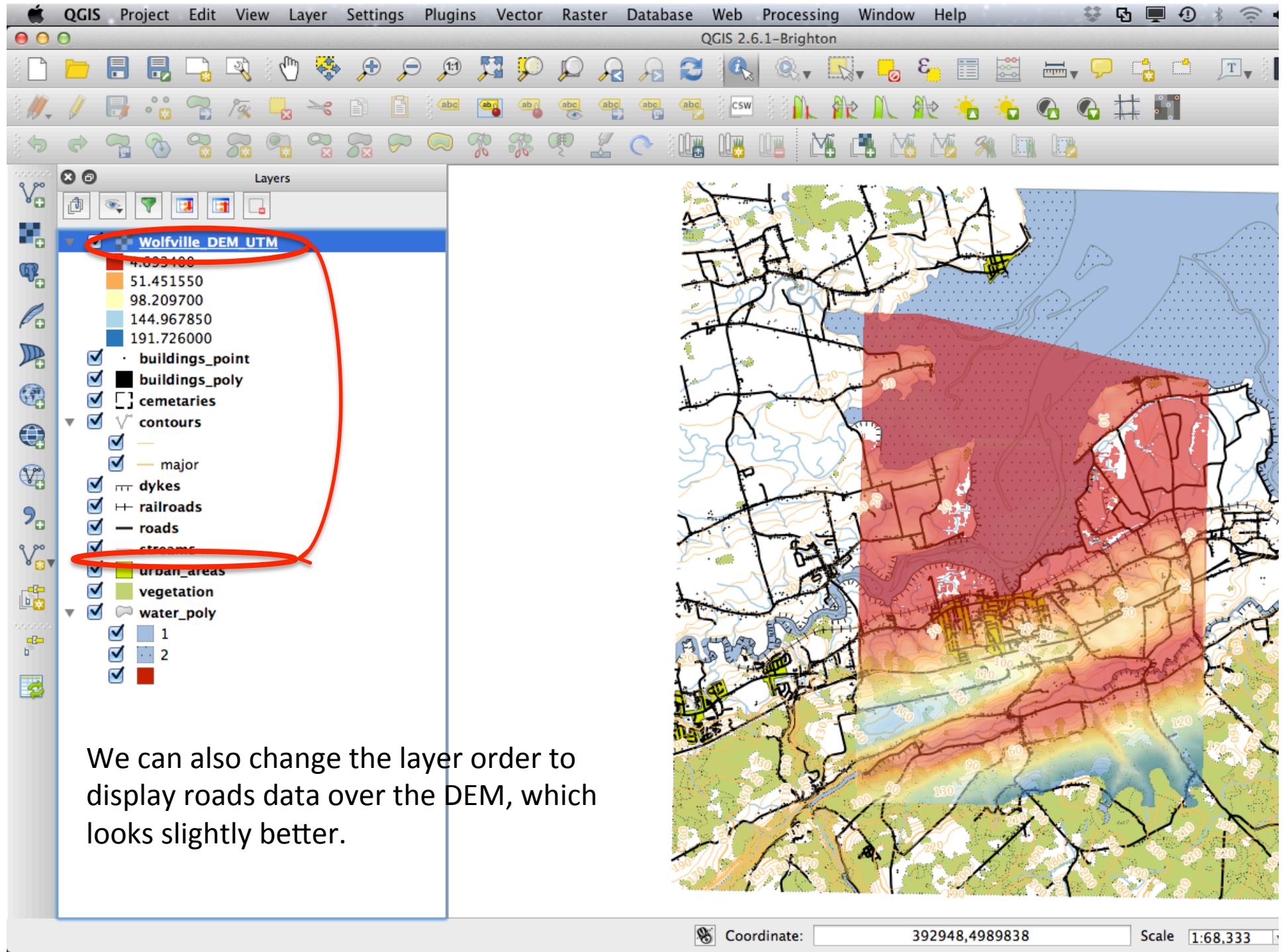
Custom transparency options

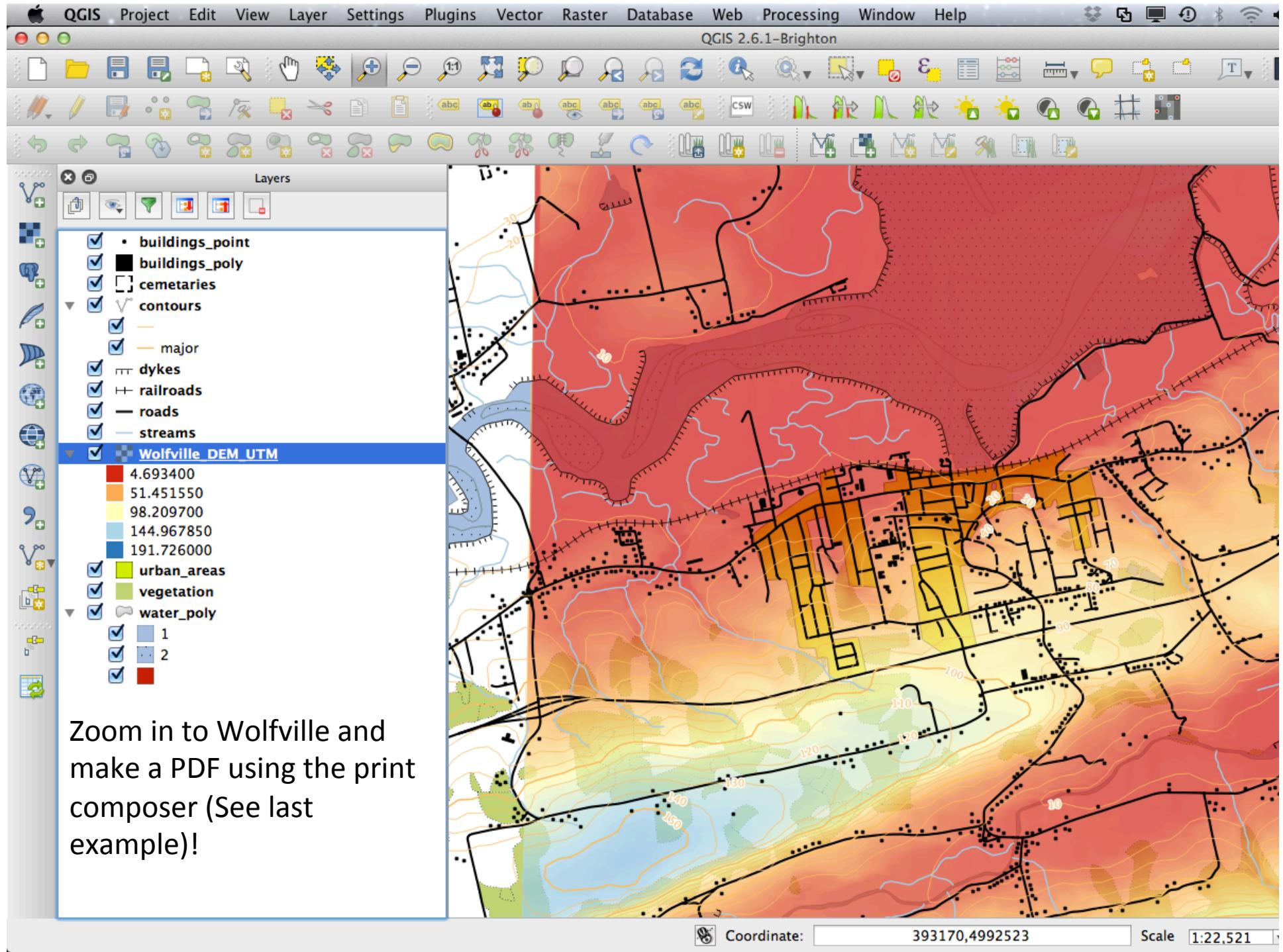
We can also change the transparency of the layer (this works for vector layers too!)

Restore Default Style Save As Default Load Style... Save Style... Help Apply Cancel OK

Coordinate: 386247,5001915 Scale 1:68,333

The screenshot shows the QGIS application interface with the 'Transparency' dialog open for the 'Wolfville_DEM_UTM' layer. The 'Global transparency' section has a slider set to 40%, which is circled in red. The 'No data value' section contains a checked checkbox for '-9999'. The 'Custom transparency options' section is empty. A note in the dialog states: 'We can also change the transparency of the layer (this works for vector layers too!)'. The bottom right corner of the dialog shows a preview of a terrain map with elevation contours. The QGIS toolbar and menu bar are visible at the top.





The Assignment: Create this map in the Print Composer

