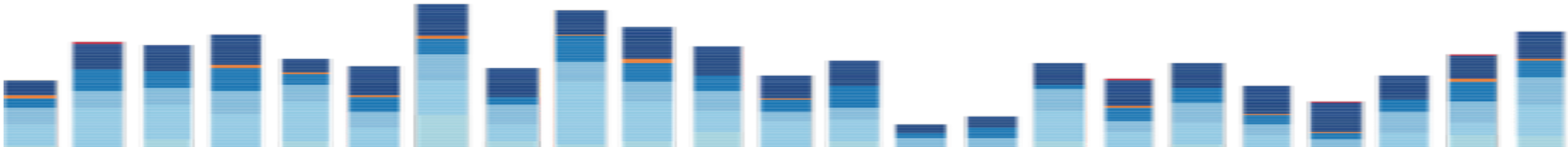
DSC 96

What Happened?

Mapping

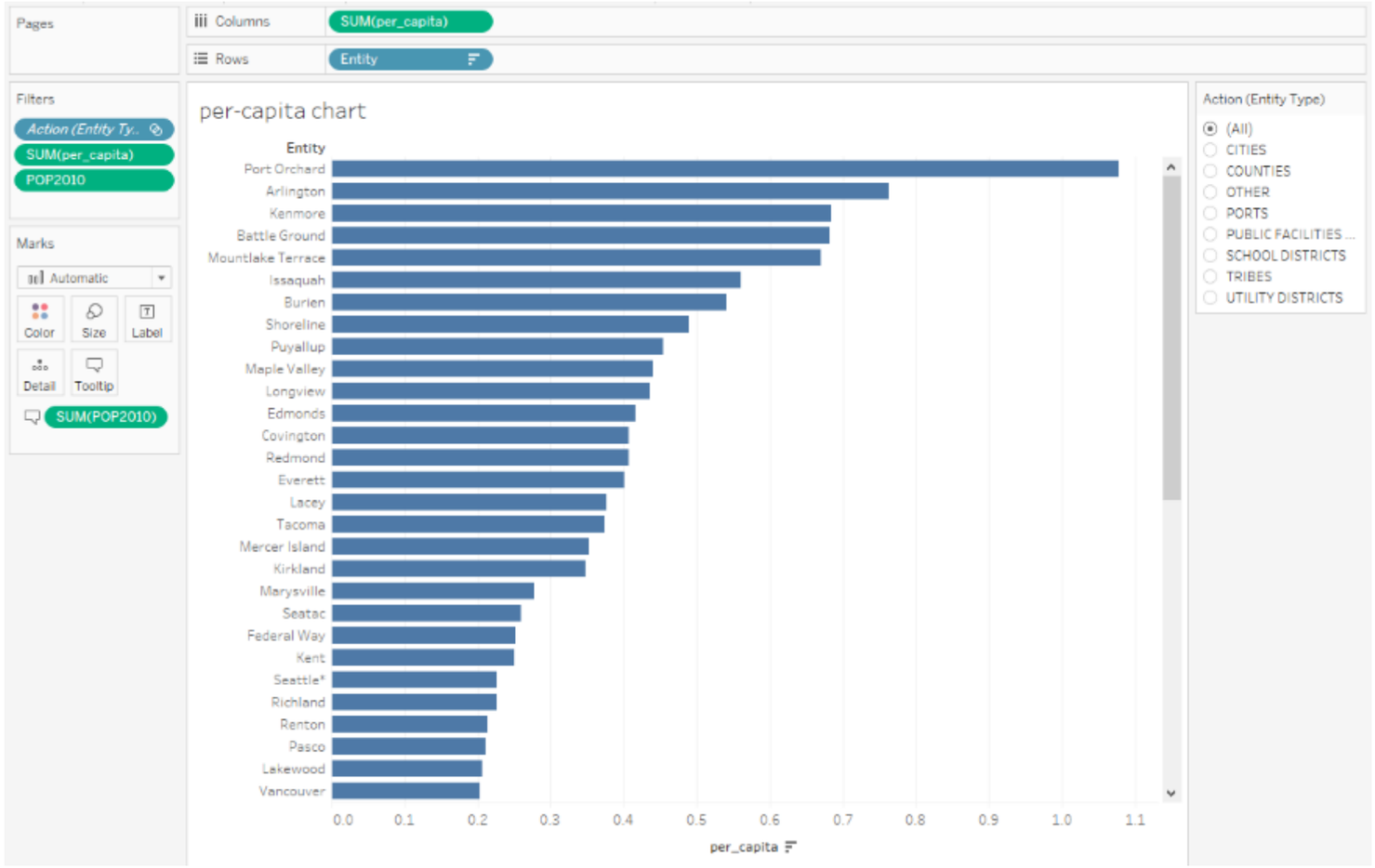
Giorgio Quer



Starting with maps

Last time
- Build a bar chart
- Build a tree map
- how to use filters

This lecture:
- Represent data geographically

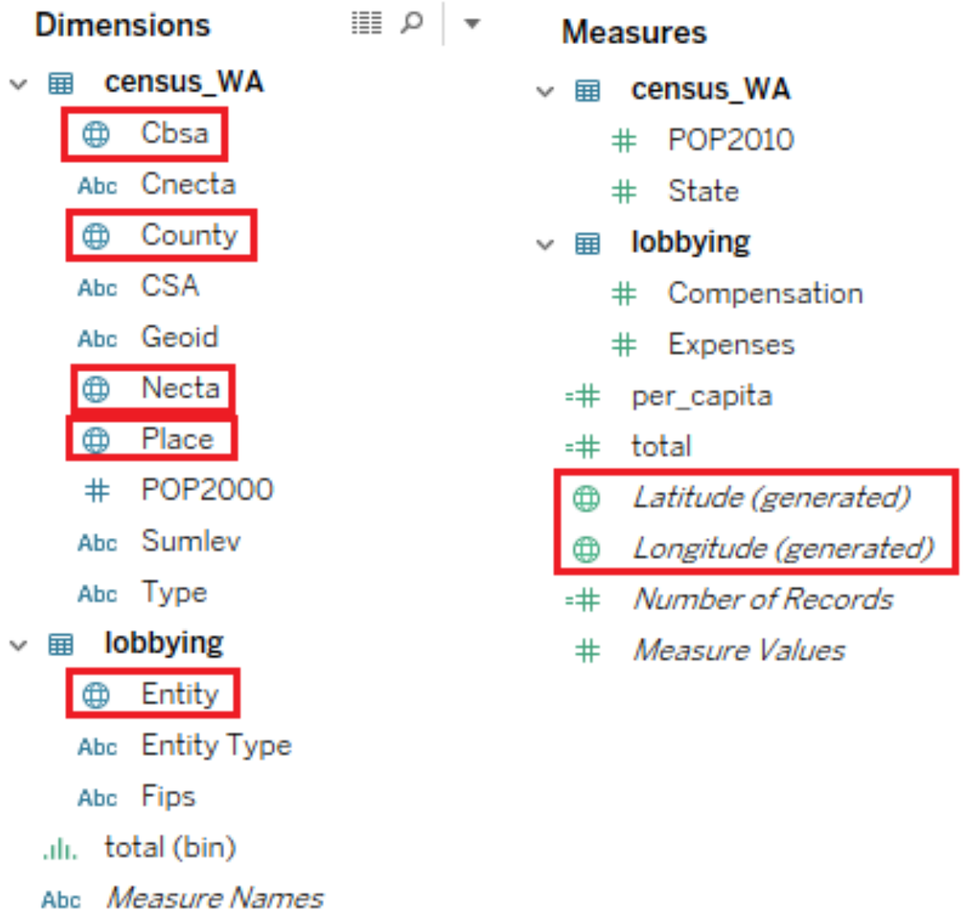


Starting with maps

Tableau automatically will try to note which fields can be mapped.

You can tell these fields because they have a little globe next to them.

If you look at the dimensions and measures area in your workbook, you also will see at the bottom that Tableau generated a latitude and longitude based on the data that you imported. Under dimensions, several fields now have small globes next to them. Those are fields that Tableau considered geographic.



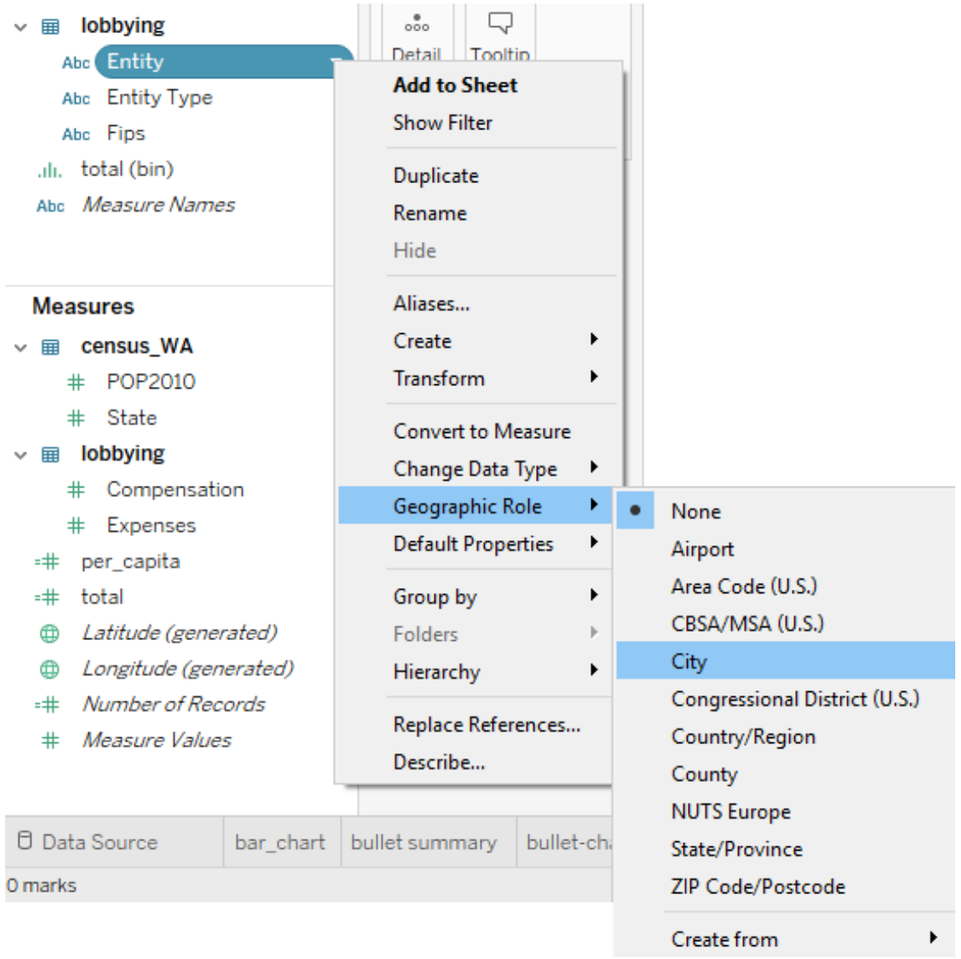
Conversion to geographic field

In the lobbying data (under dimensions)

- Entity field
  - (‘City of Seattle’, ‘Port Orchard’, …)
  - we could convert the entity field to a geographic role
  - but we will inherit a **few problems** when we do that. Remember, it includes ports, tribes and associations and not all of those can be mapped.
  - how does Tableau deal with this problem?

Starting with maps

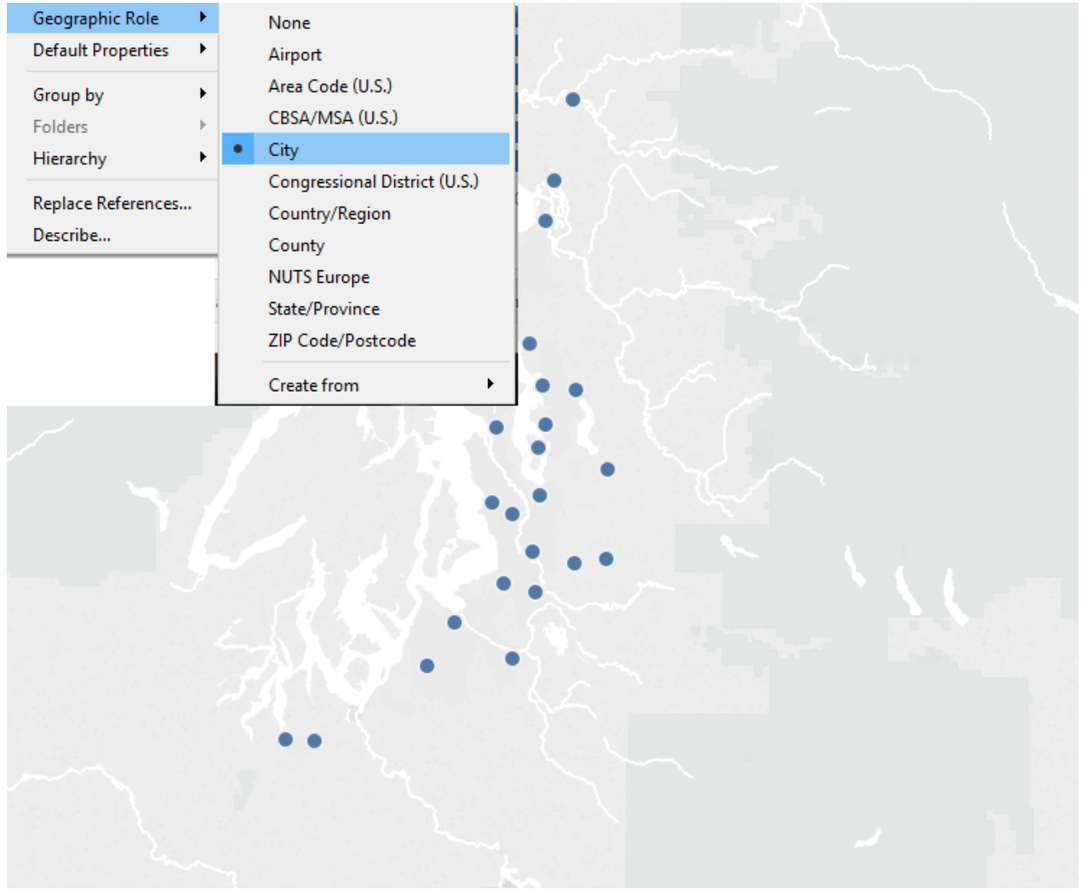
- Select the caret (down arrow) on the right of the pill for Entity.
- Go down to Geographic Role and then select City.



Starting with maps

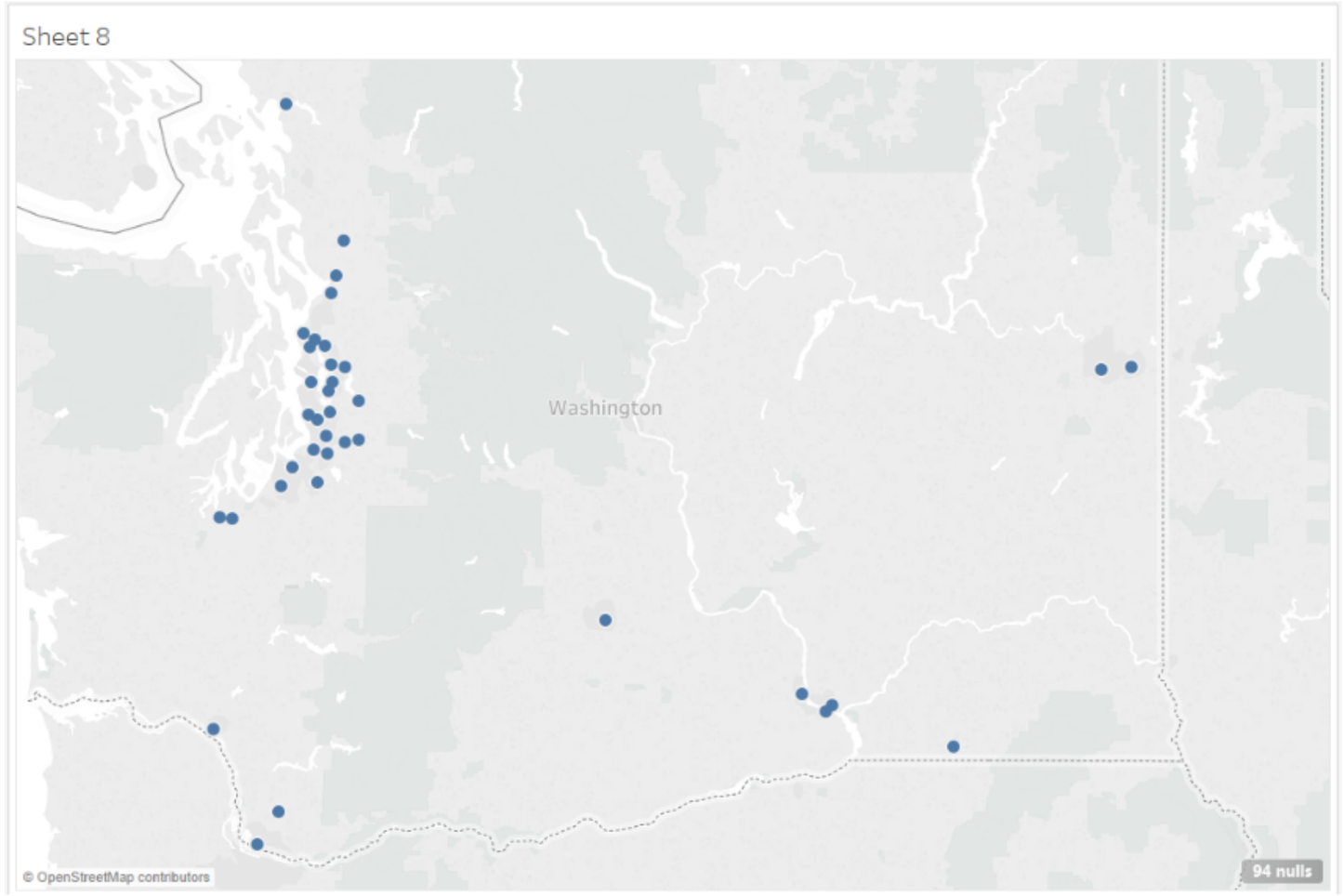
Now, you'll see that there is a little globe next to that field.

- Try double-clicking on **Entity** and let's see if we can build a map.



Starting with maps

Anyone notice anything about this map that we should look at more closely?



Starting with maps

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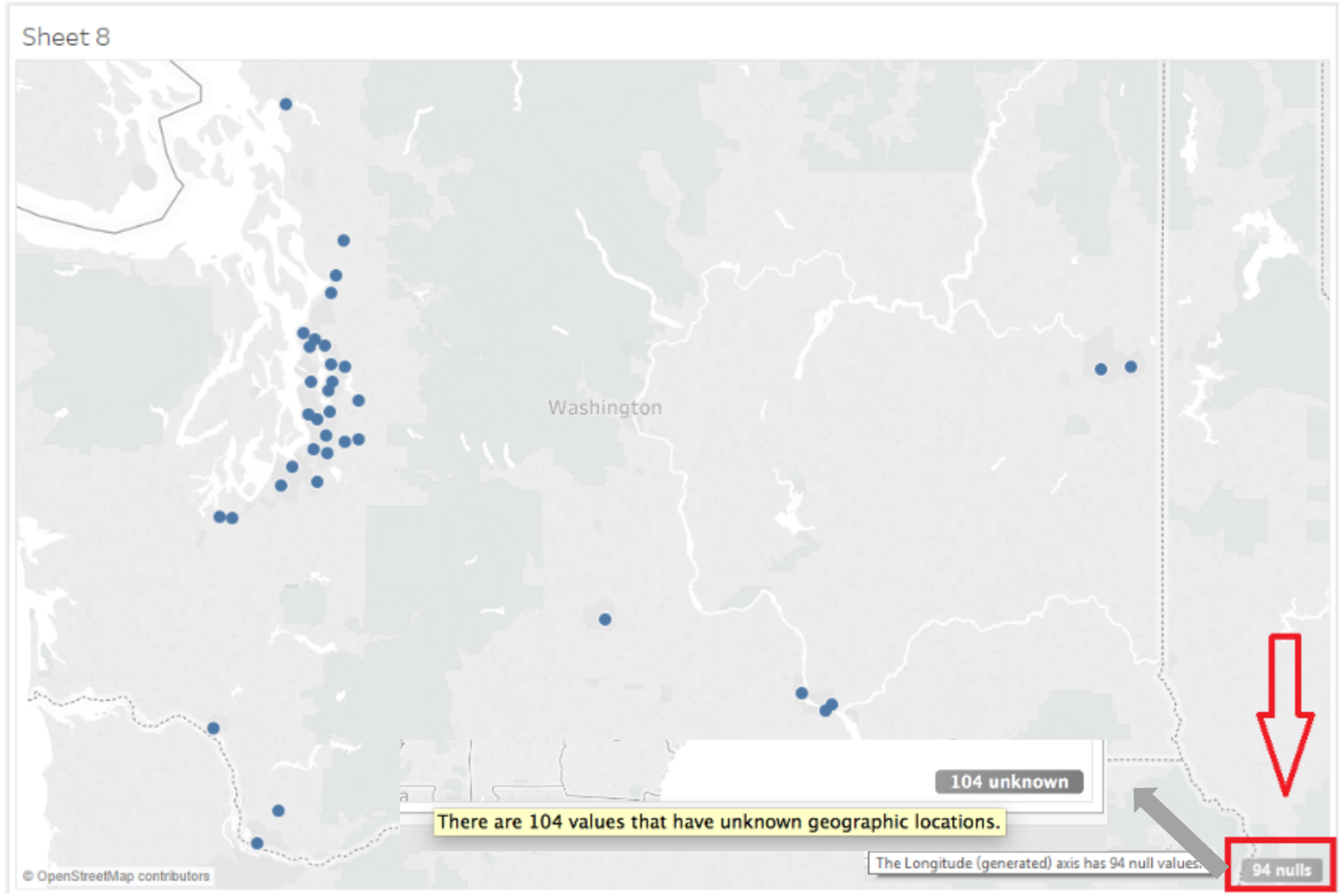
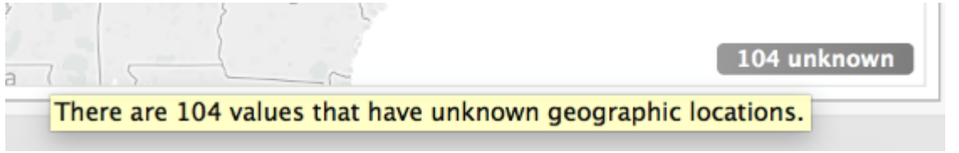


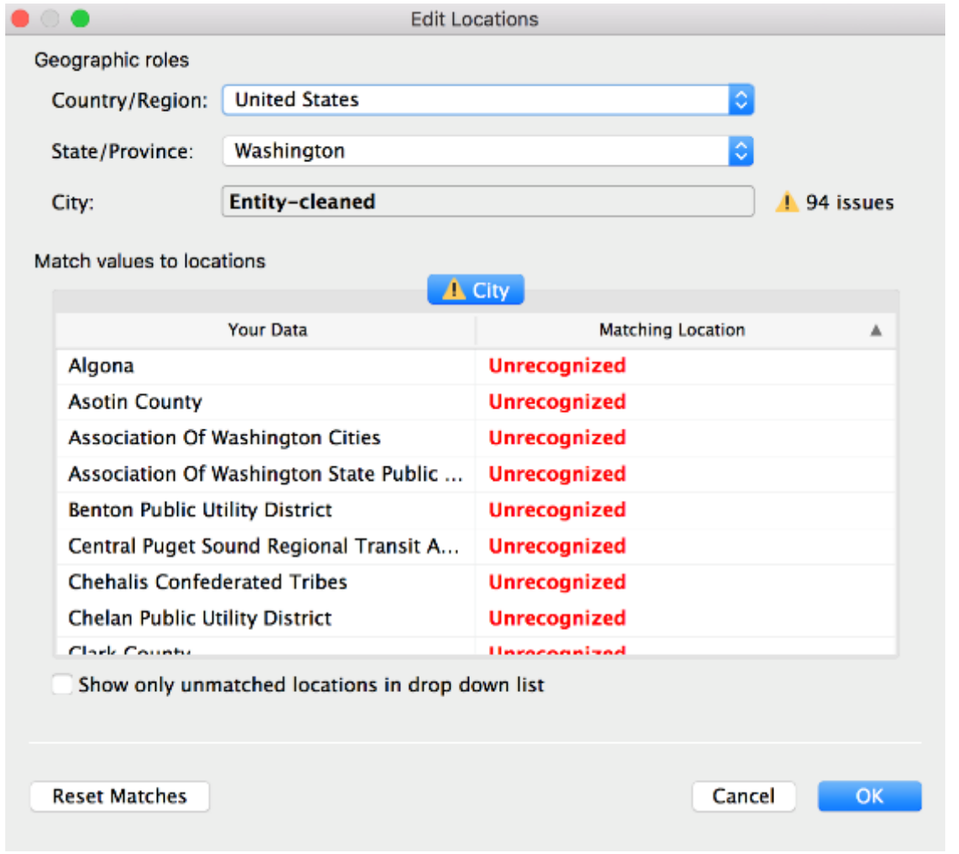
Starting with maps

- Click on that grey box that says **104 unknown**. A dialogue box will open.
- Select the **edit locations** option.

What do you notice about the unrecognized locations?

The ones that are **unrecognized** are
- either the fields that are not cities,
- or smaller towns – not included in Tableau's designated cities?





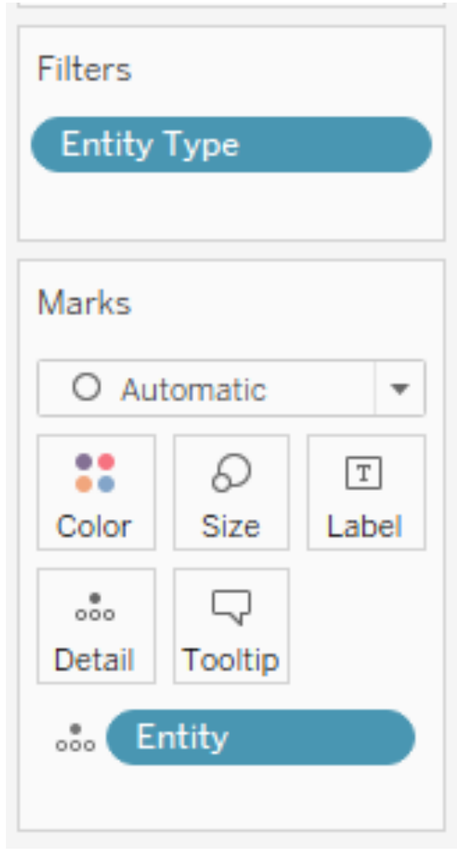
Maps and filtering

We have a few choices now:

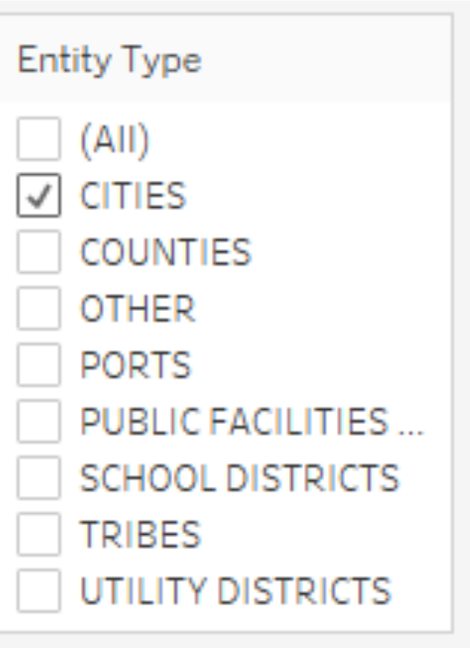
- exclude all of the rows that Tableau doesn't recognize (risk of deleting important data)
- We can filter to understand a bit more of what Tableau is showing

1. Drag **entity_type** onto filters.
2. Then select **Show Filter** and choose **Cities**.

1.

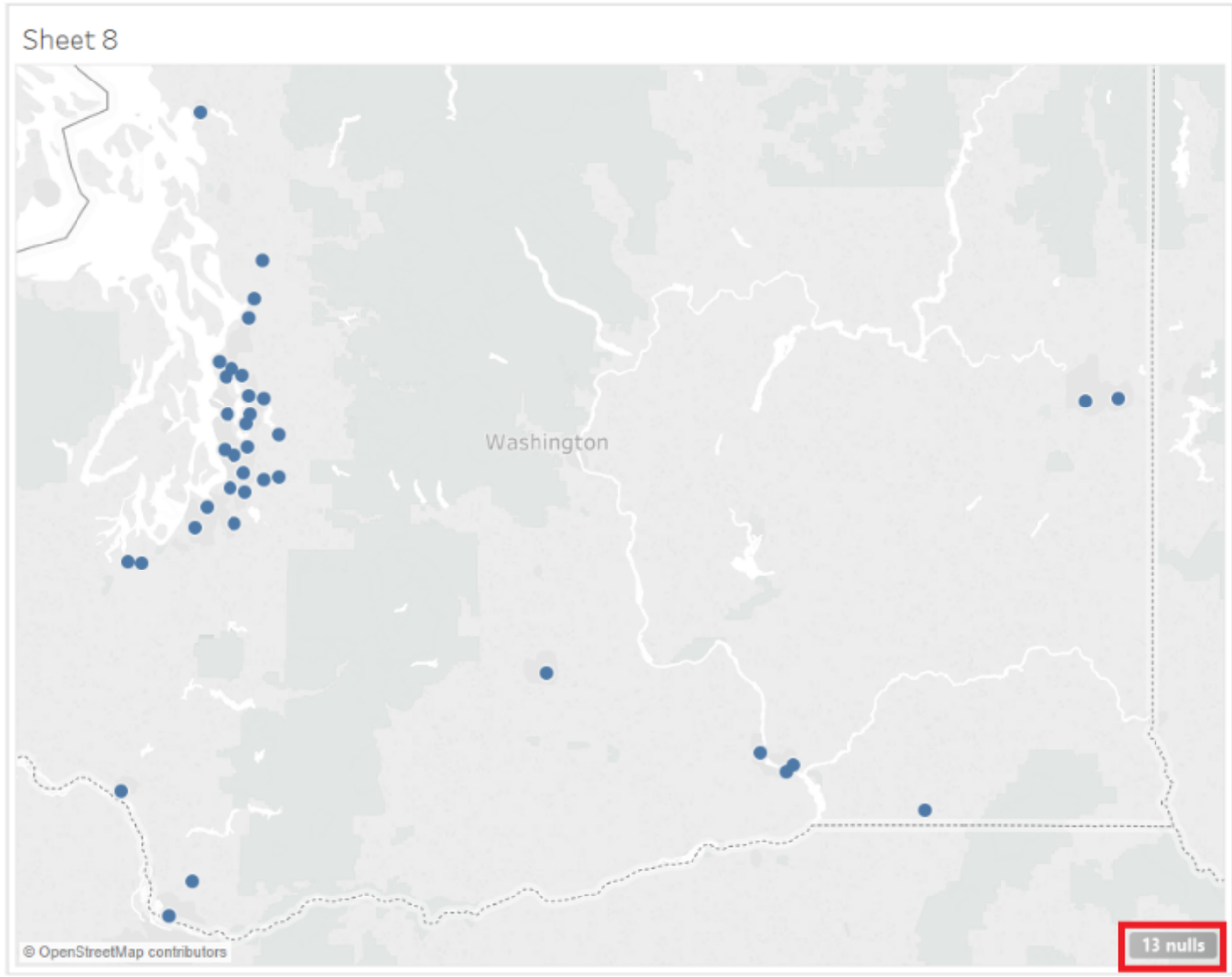


2.



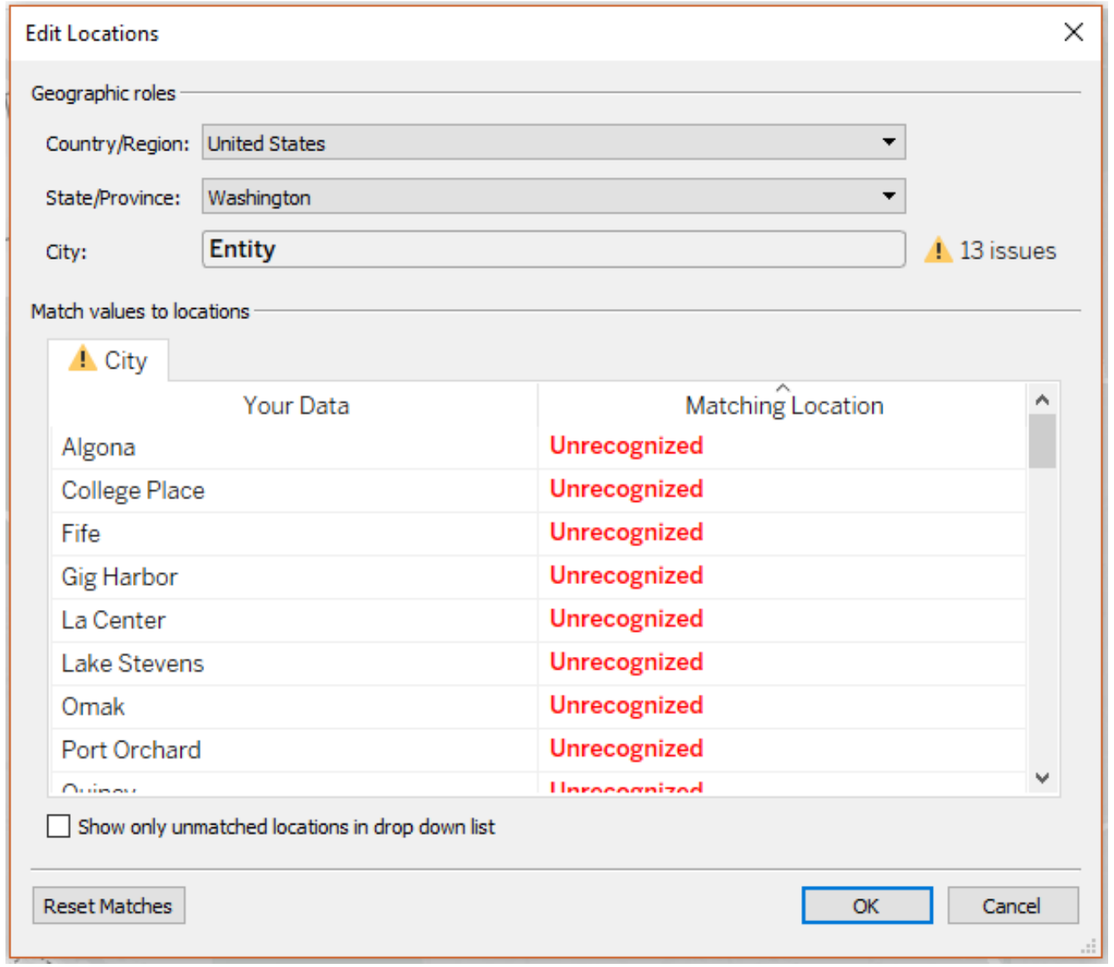
Maps and filtering

After filtering
- there are 13 unrecognized records
- Most of the null values are gone
- How to deal with these 13?



Starting with maps

- Let’s click on the 13 unknown
- let’s use filtering again to check on whether these are small towns
- Use the filter for >9,999 that we have seen in the previous lecture
- 11 cities were too small (ok)
- 2 big cities are still there, not recognized
  - How do we deal with them?

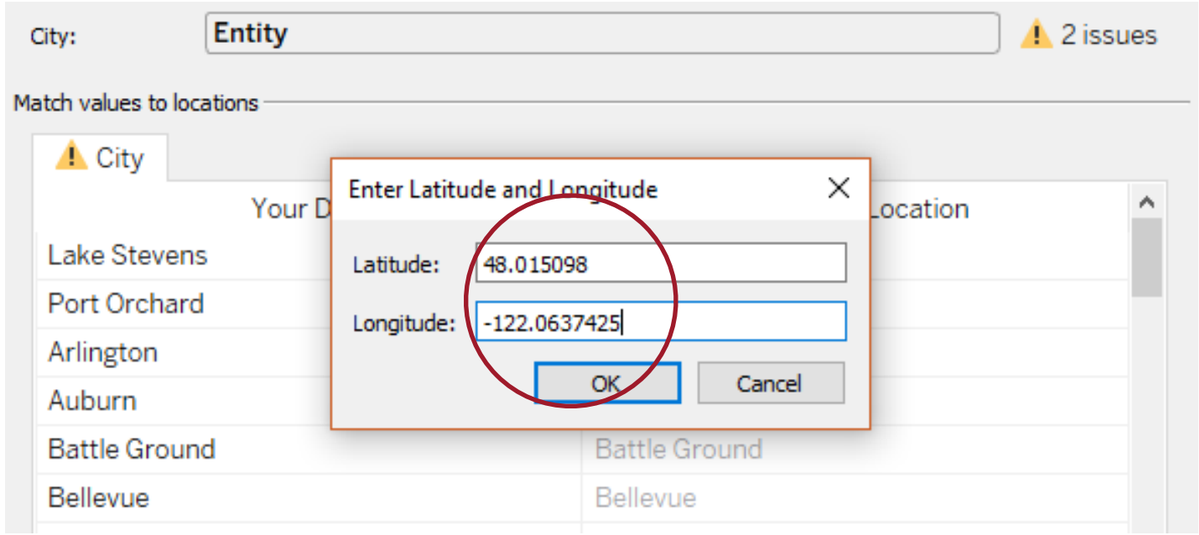


Maps and filtering

- Click on the caret to the right of the field under **Matching Location**.

You'll see that there is an option for entering the latitude and longitude. Let's do that.

- Do a **Google search** for the **latitude** and **longitude** and plug those numbers in.



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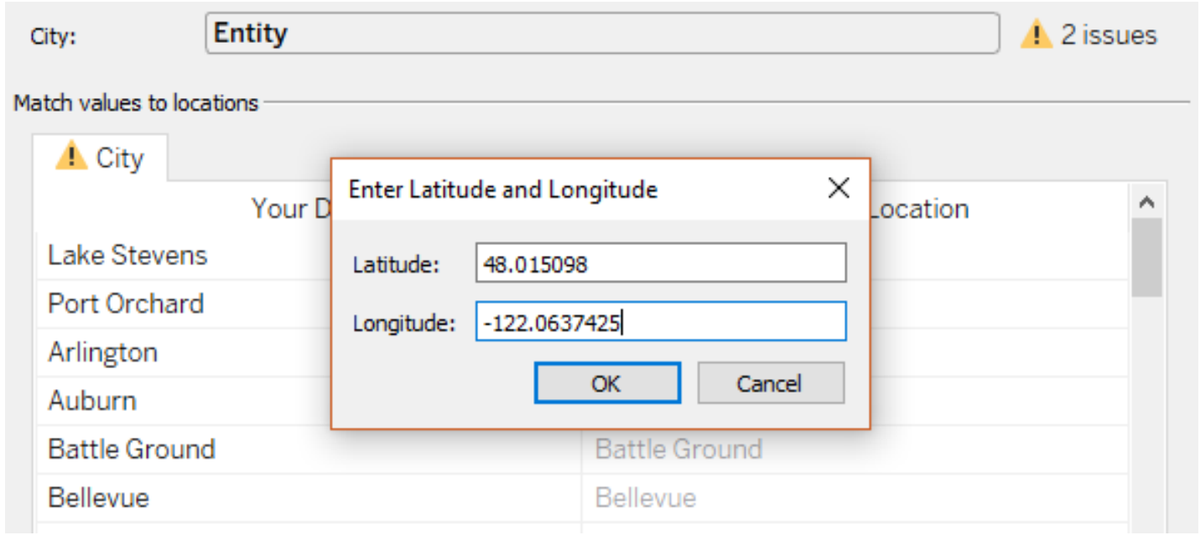


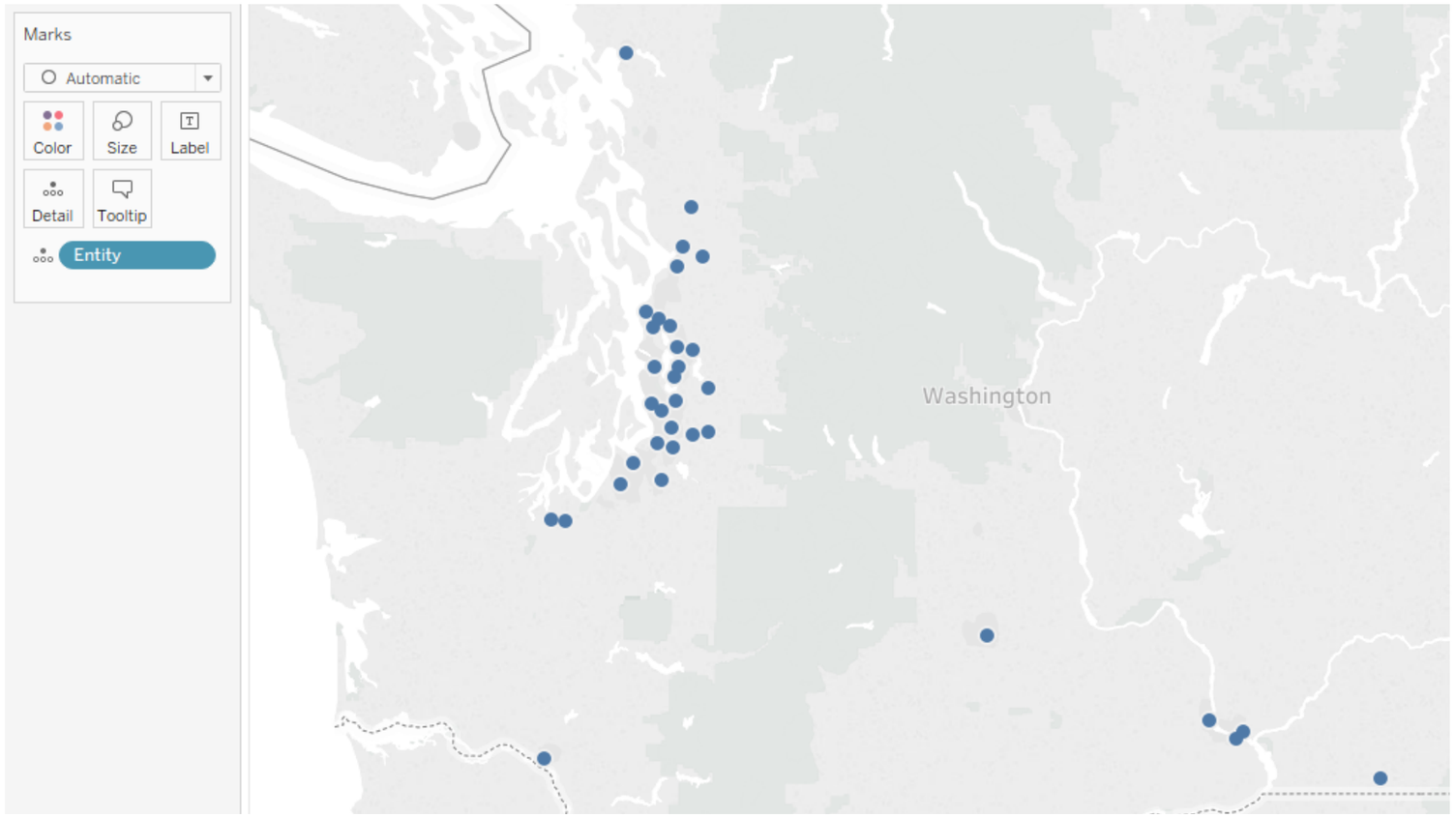
- latitude and longitude can be expressed in **degrees** or in **decimal** form
- we are in the **Western** Hemisphere
  - **longitude** will be a **negative** decimal number

Exploring with maps

Just looking at dots on a map is not particularly useful.

Add information on

- total cities paid for lobbying
- the per capita rate
- How to do it?

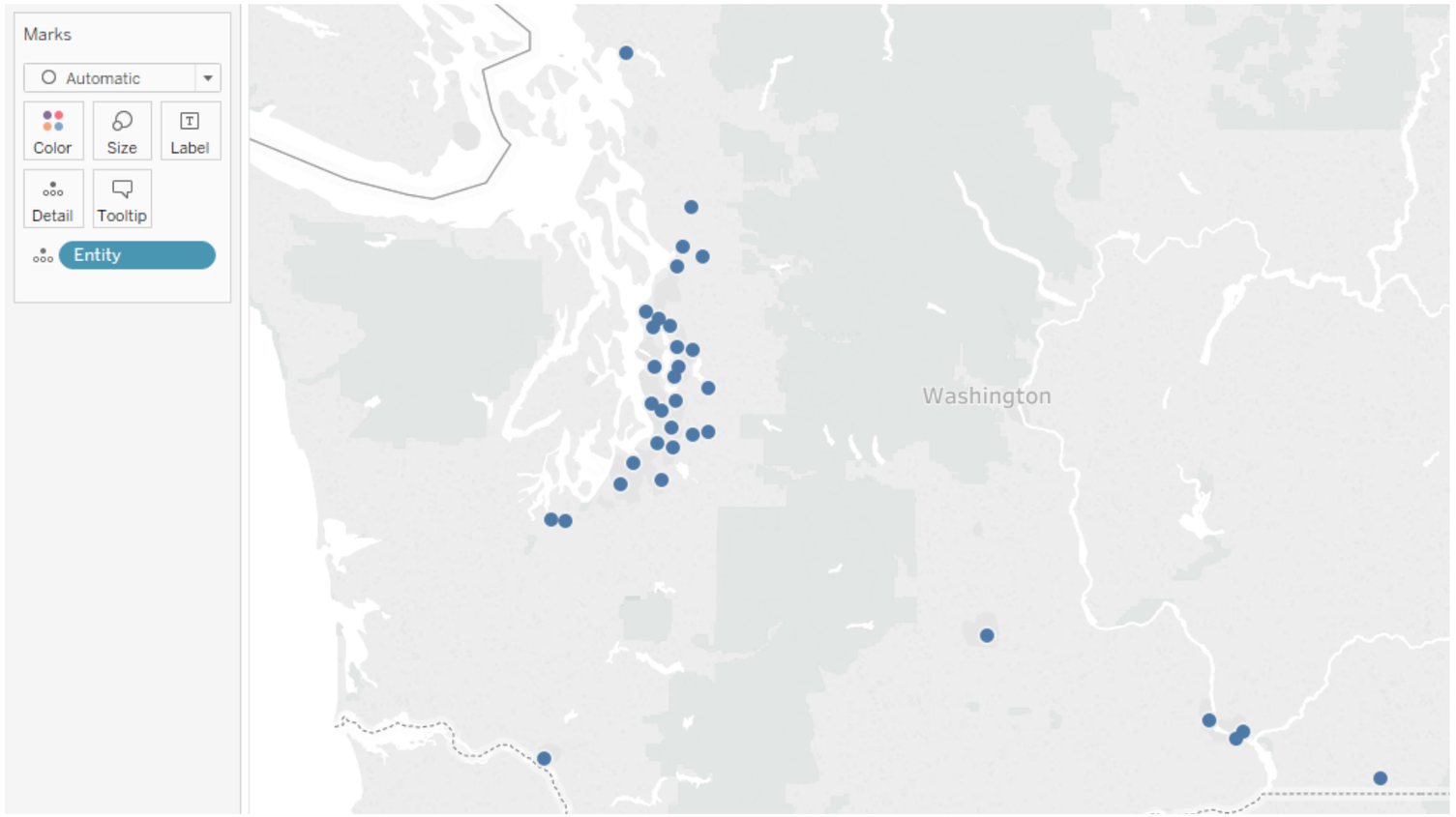


Exploring with maps

Just looking at dots on a map is not particularly useful.

Add information on

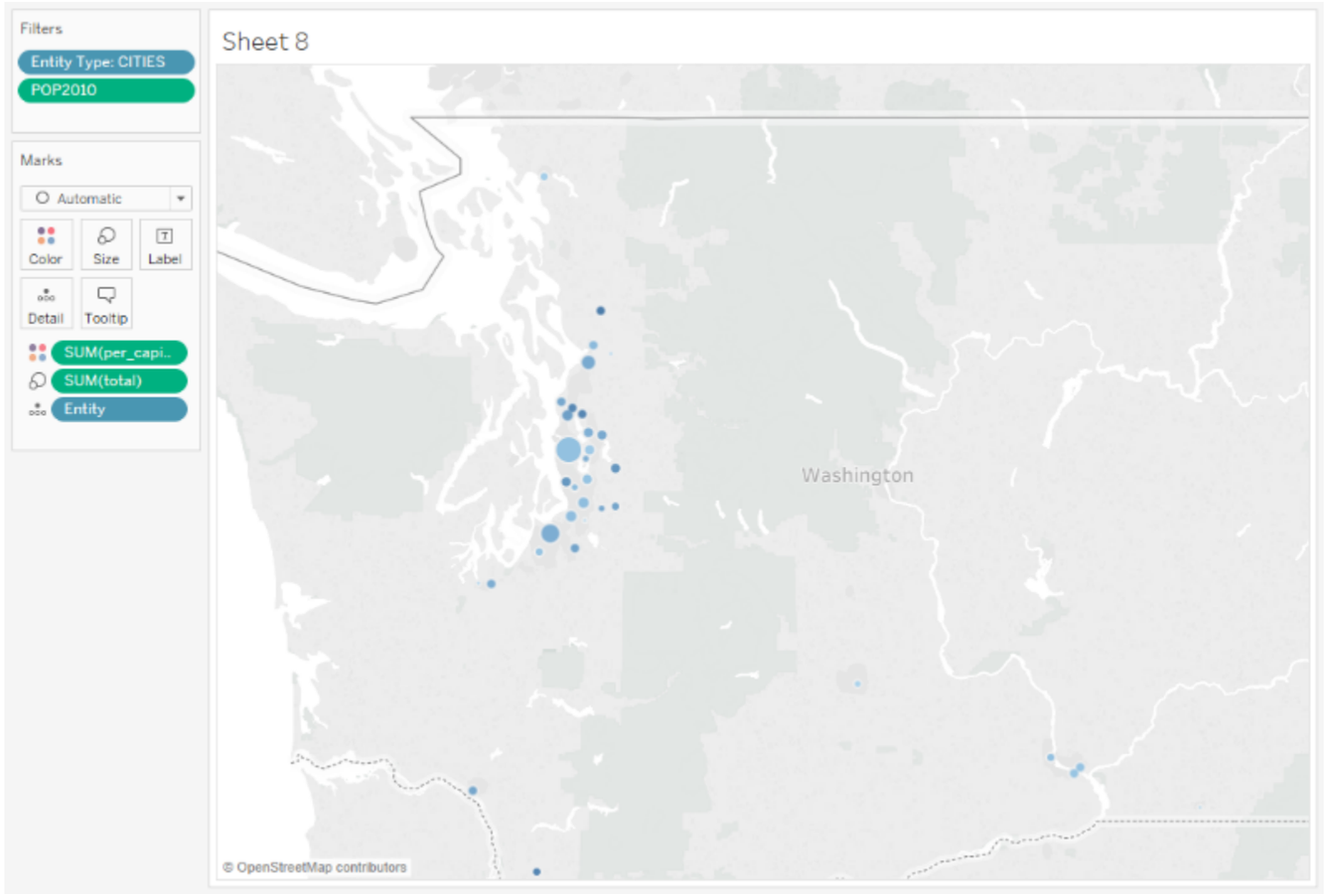
- total cities paid for lobbying
- the per capita rate
- How to do it?
  - **Filters!**



Exploring with maps

Maps in Tableau are another type of chart
You can change the size and color of what you are exploring

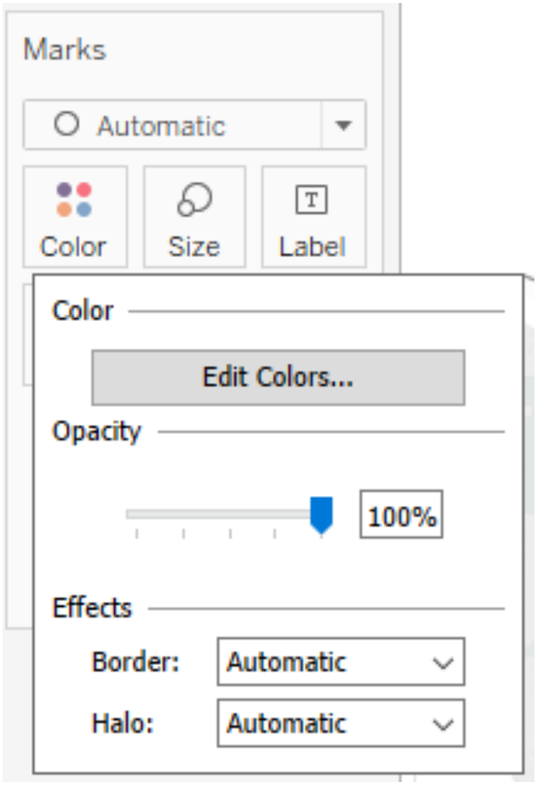
- Drag the **per capita** onto **color**
- Next, drag **total** onto **size**



Exploring with maps

We can **adjust our palette** here.

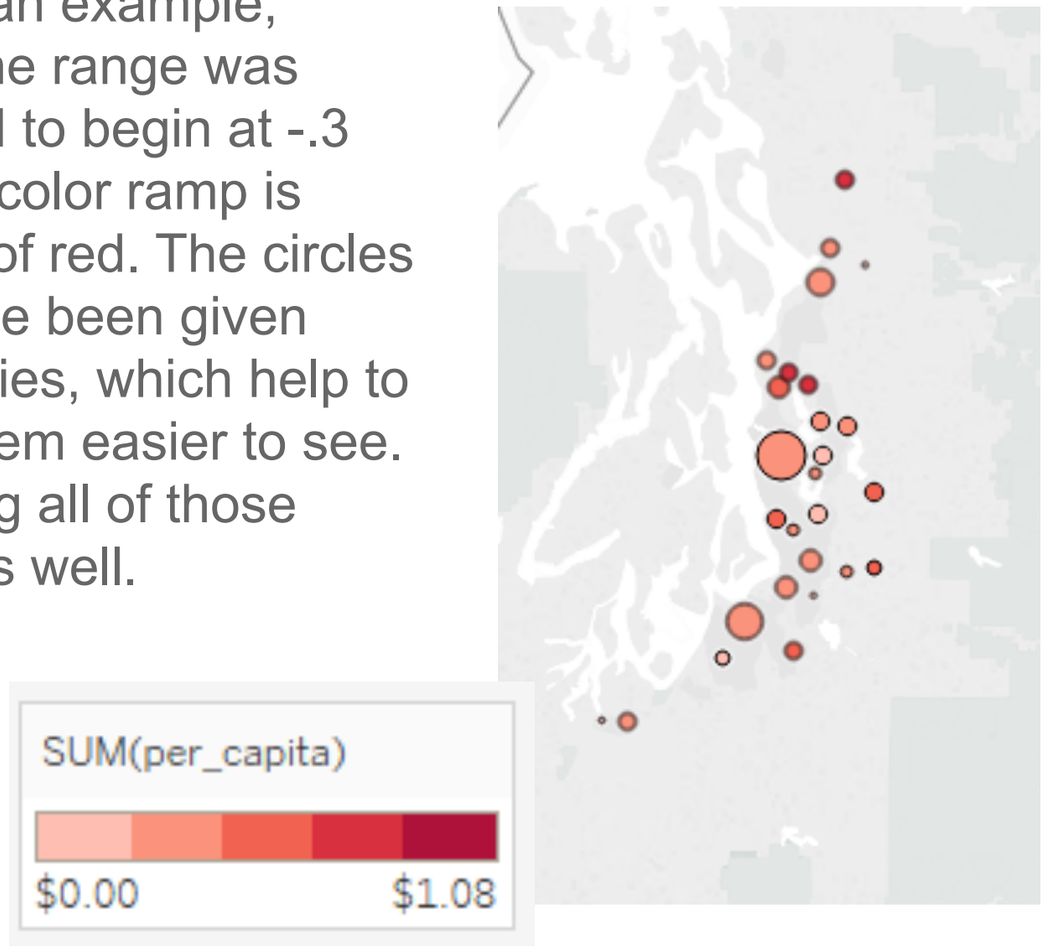
- Click on **color** and then select **edit colors**.



More details:
Let's first select stepped colors, which groups the total paid by each city government into bins.
That makes it easier to see different parts of the range. We can also select the number of bins.
Our goal is to make it easier to see the various ranges and not let Seattle overwhelm the other cities. Play around with the bins and the range.
Try using the advanced settings to set the starting range at 0, which reduces the number of circles in the grey range. Now, try making that a negative number and see what happens.

Exploring with maps

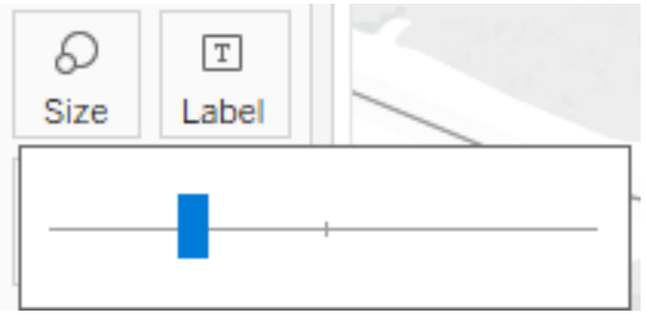
Here is an example, where the range was changed to begin at -.3 and the color ramp is shades of red. The circles also have been given boundaries, which help to make them easier to see. Try doing all of those things as well.



Let’s edit the size ranges

- Click on the **size icon** and you can then adjust the size of the bubbles.

Again, our goal is clarity.



In-Class Exercise

Map both

- vehicle stop data
- collision data
  by joining each with pd_beats_datasd.geojson

Issue:

- We can not import geographic data in Tableau online
- workaround: I created the data and it is now available online:
  - Create new workbook
  - Connect to Data: “On this site”
    - pd_beats_datasd = vehicle stops
    - pd_collisions_datasd.csv = collision data
  - Where is the map?
    - Measures -> double click on Geometry
    - Beat = “The **geographical** area which a given police officer patrols is known as a **beat**”
      - Add it to Marks -> Detail
      - Put your Measure as Marks -> Color!

Explore the results.

At the end of the class we will share what we learned!!