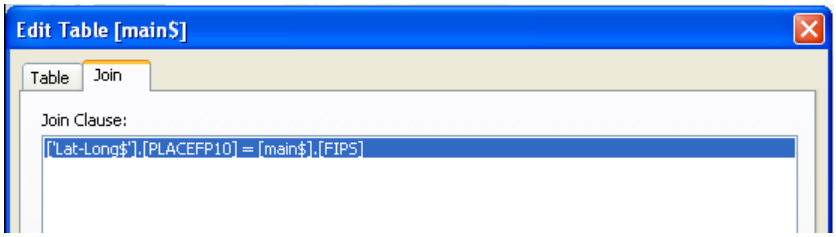
NICAR Hands-On:
Census Data with Tableau Public

Get your data together

1. Gather your data. You'll need:
    a. 2010 and 2000 census data for place (with population > 2000)
    b. Annexation data by place, from a state agency
    c. Lat/ long of the census district

2. Make sure your data is in the right format
    a. Your workbook should have two sheets: one with the data, the second with lat/long
    b. For each sheet, header row is row 1
    c. No blank rows or columns

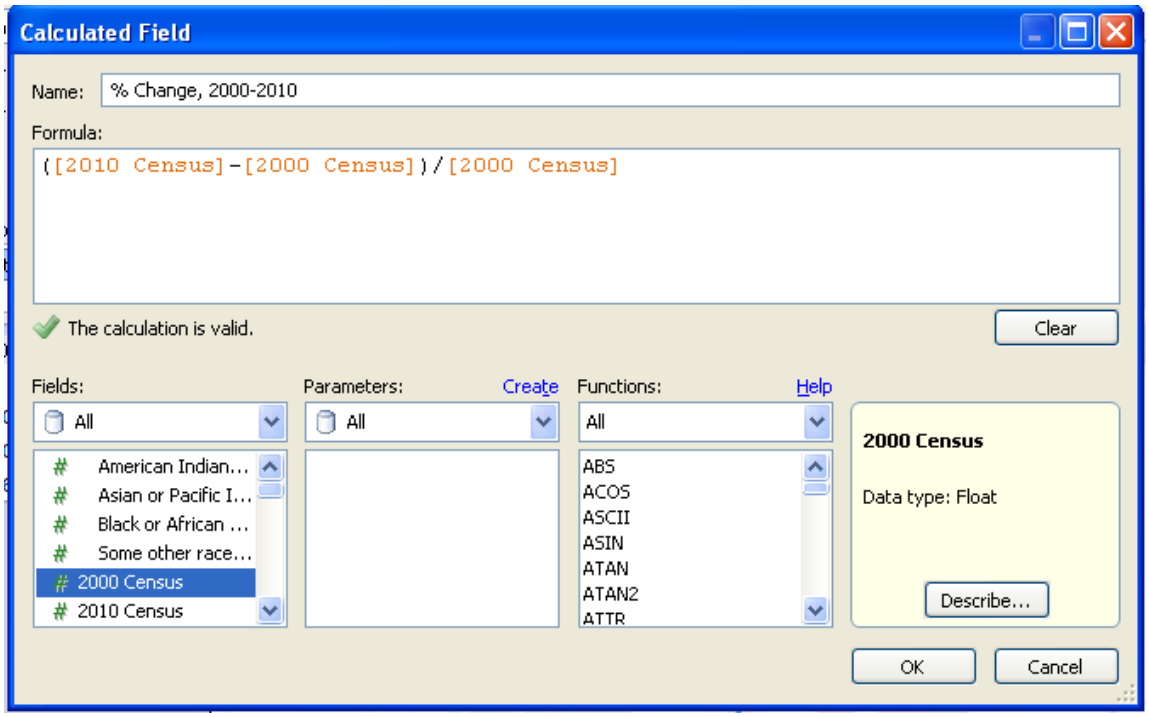
3. Join the census data by city with the lat/long info. You can use a Tableau join (or vlookup in Excel—we'll show a join here).
    a. Open Tableau Public and Click "Open Data."
    b. Choose Excel & find your file
    c. Select "Multiple Tables" and make sure your lat-long and your main tab are there
    d. Edit the join. Here we are joining on FIPS.



    e. You know you've done it right when all your fields show up in the Data Window on the left hand side of Tableau.
    f. Make sure your latitude and longitude fields are correctly geocoded. (They must be numbers to do this.) To make sure your latitude field is geocoded:
        i. Right click on field in the data window → Change data type to Number
        ii. Right click on the field again → Geographic role = Latitude
        iii. Repeat for Longitude

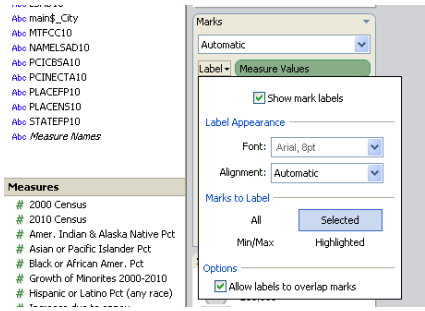
Create map view for Major metro area.

- In the Data Window, ctrl-click on latitude, longitude and city and click “Show Me”
- Drag the 2010 census population from the Data Window to the Size Shelf
- Create a calculated field on % change from last census to this
  - Right-click on 2010 Census → Create Calculated Field
  - Enter this formula. The formula language is similar to SQL or Excel.

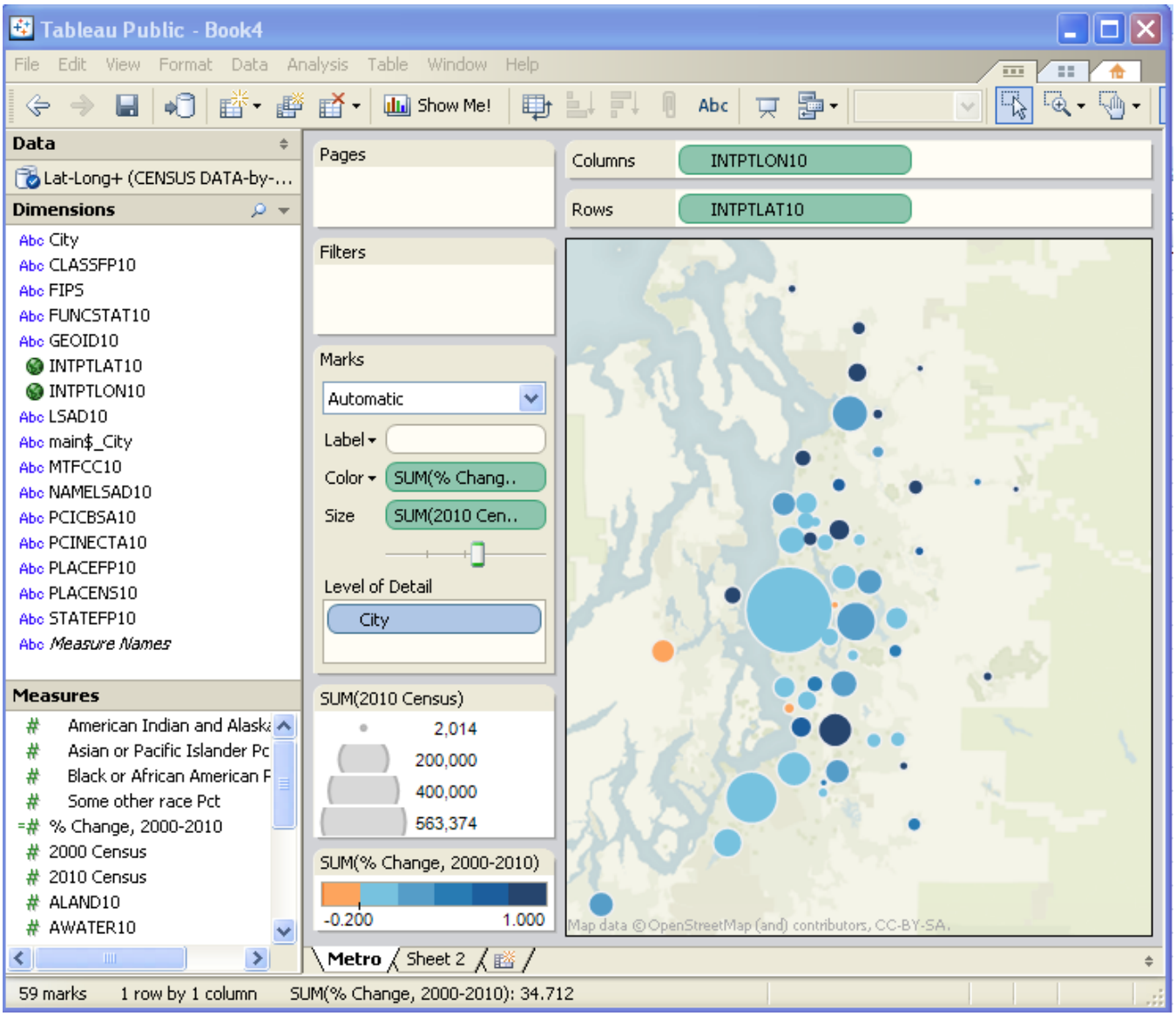


When you are done, the %Change field should show up in the Data Window.

- Decide whether you will show absolute change or % change on color. Here we show % change. Drag “% Change” from the Data Window to the Color Shelf:
- Format the colors. On the color legend, click Edit Colors and select Advanced button.
  - Choose orange-blue diverging color scheme
  - Center at the 0
  - Set min to near your min value and max to (in this case 100%) after inspecting your data so that there is a good color range in the middle of your data.
  - On the Color Shelf, add a grey border and 80% transparency. This will help your marks show up better when they overlap.
- Drag “% Change from the Data Window to the Label shelf. Open the label drop-down and select “Selected.” This means the label will show up only when the mark is selected.



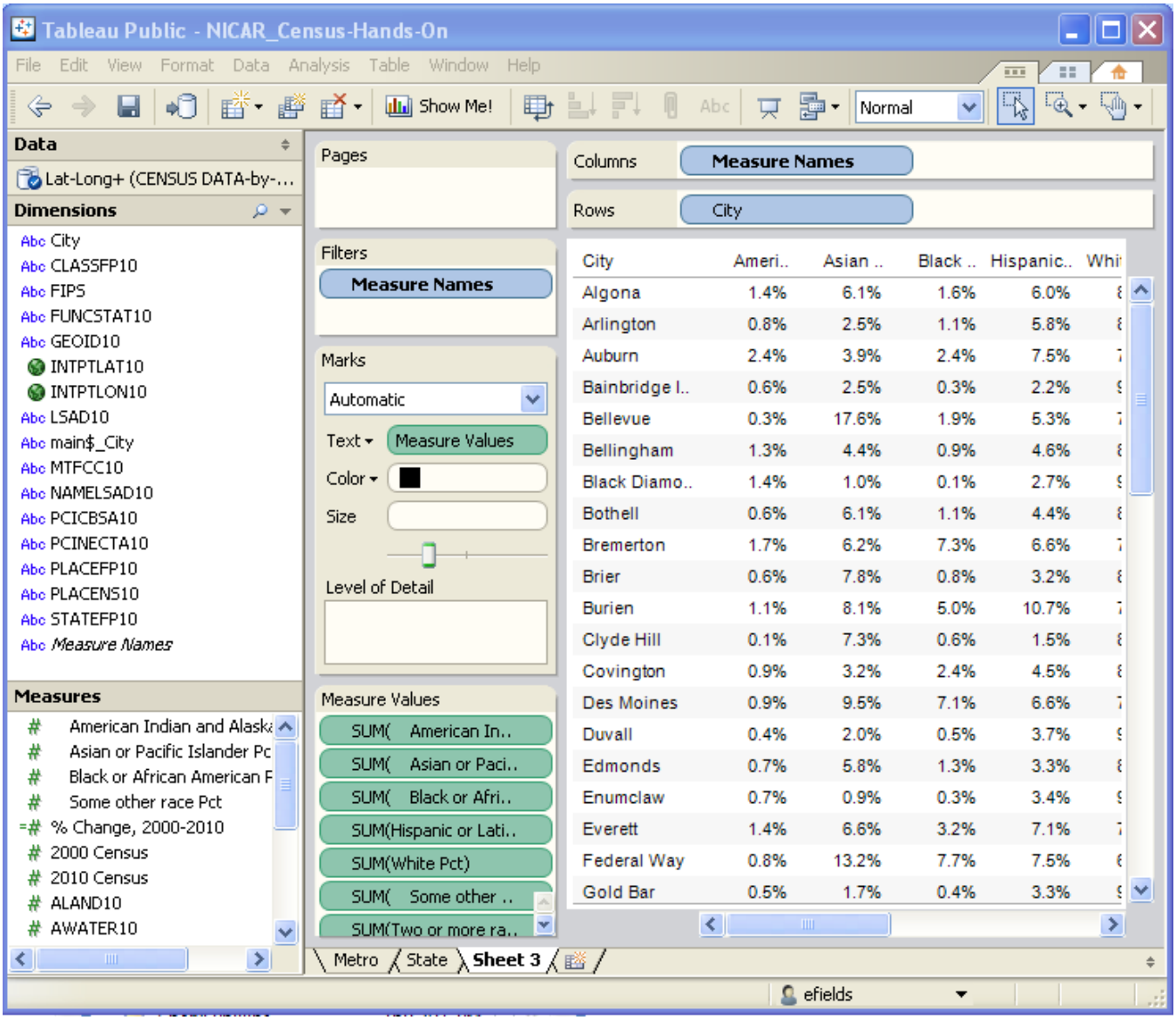
- Rename this sheet "Metro."
- Click the Zoom icon on the toolbar and select the area in your major metro. Your sheet should look like this:



Create detail view

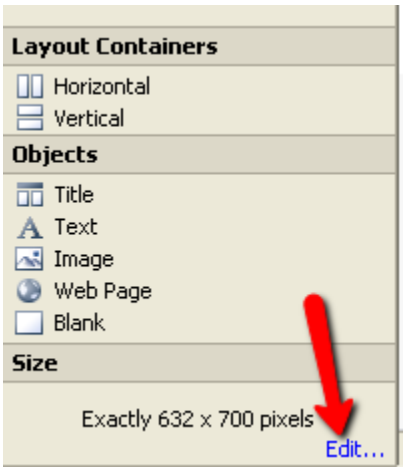
- Create a new sheet.

- Add
  - Measure Names to Columns
  - City to Rows
  - Measures Values to the Text Shelf
- You should have a text chart. Remove from the Measure Value shelf any values you don't want and reorder them as you wish.
- All your percentages will show up as 0. Click each in the Data Window → Field Properties→ Format Text and choose Percentage.
- Rename this sheet "Detail."
- It should look like this:

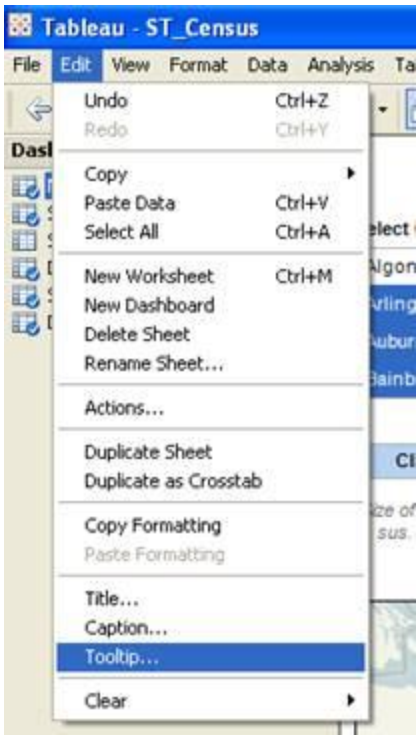


Create the dashboard

1. Create a new dashboard
2. Size it to your page size: click :"Edit" in the size section in the lower-left of the dashboard. This will help you avoid scrollbars and make sure the viz looks good in your page.



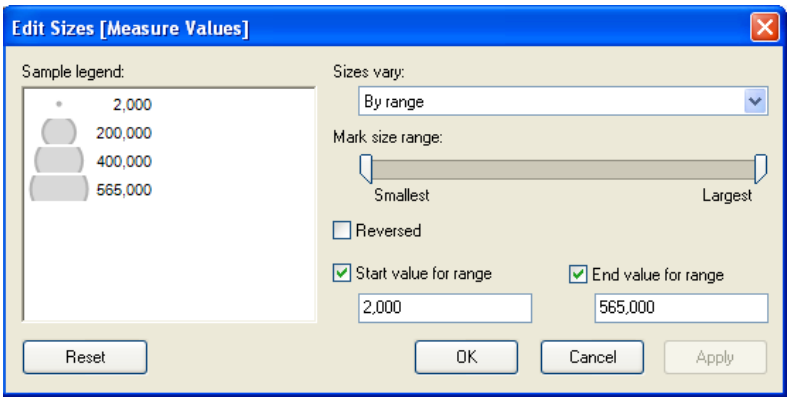
3. Add the map and detail views by dragging them onto the dashboard, or just double-clicking them
4. Arrange and lay out the views by dragging them
5. Change and edit titles by right-clicking on the title and choosing "Edit"
6. Add any explanatory text by selecting "Text" from objects and dragging onto the screen
7. Add a Quick Filter on City
    a. Click on the top right corner of any view __> Quick Filters → City
    b. Make it a compact list
    c. Make it global
8. Add a highlight action: highlight on the toolbar, select City
9. Edit your tooltips for each view.
    a. Select the sheet
    b. On the main menu, select "Edit → Tooltips."



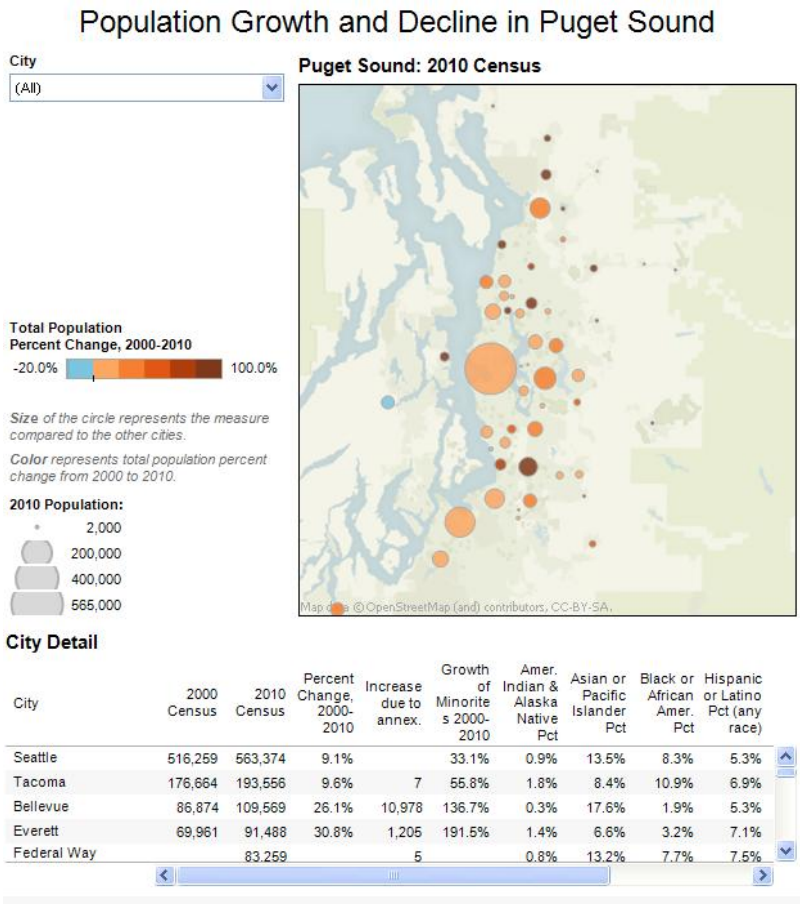
c. Repeat for the other sheet

Test the interaction

1. Click around and see how it works
2. Fix the size legend so that cities keep their sizes as you change from one to another



Your dashboard should look like this:



City	2000 Census	2010 Census	Percent Change, 2000-2010	Increase due to annex.	Growth of Minorities 2000-2010	Amer. Indian & Alaska Native Pct	Asian or Pacific Islander Pct	Black or African Amer. Pct	Hispanic or Latino Pct (any race)
Seattle	516,259	563,374	9.1%		33.1%	0.9%	13.5%	8.3%	5.3%
Tacoma	176,664	193,556	9.6%	7	55.8%	1.8%	8.4%	10.9%	6.9%
Bellevue	86,874	109,569	26.1%	10,978	136.7%	0.3%	17.6%	1.9%	5.3%
Everett	69,961	91,488	30.8%	1,205	191.5%	1.4%	6.6%	3.2%	7.1%
Federal Way		83,259		5		0.8%	13.2%	7.7%	7.5%

Then take it to your graphics dept…. discuss the colors, layout and information presentation with them.

Save to the web & publish

1. Save to the web
    a. Main menu: File → Tableau Public → Save to web
    b. Follow the prompts
    c. Do not select "show sheets as tabs."
2. Publish
    a. Click "Share" in the lower left
    b. Copy the embed code and paste into your web page

Ambitious step

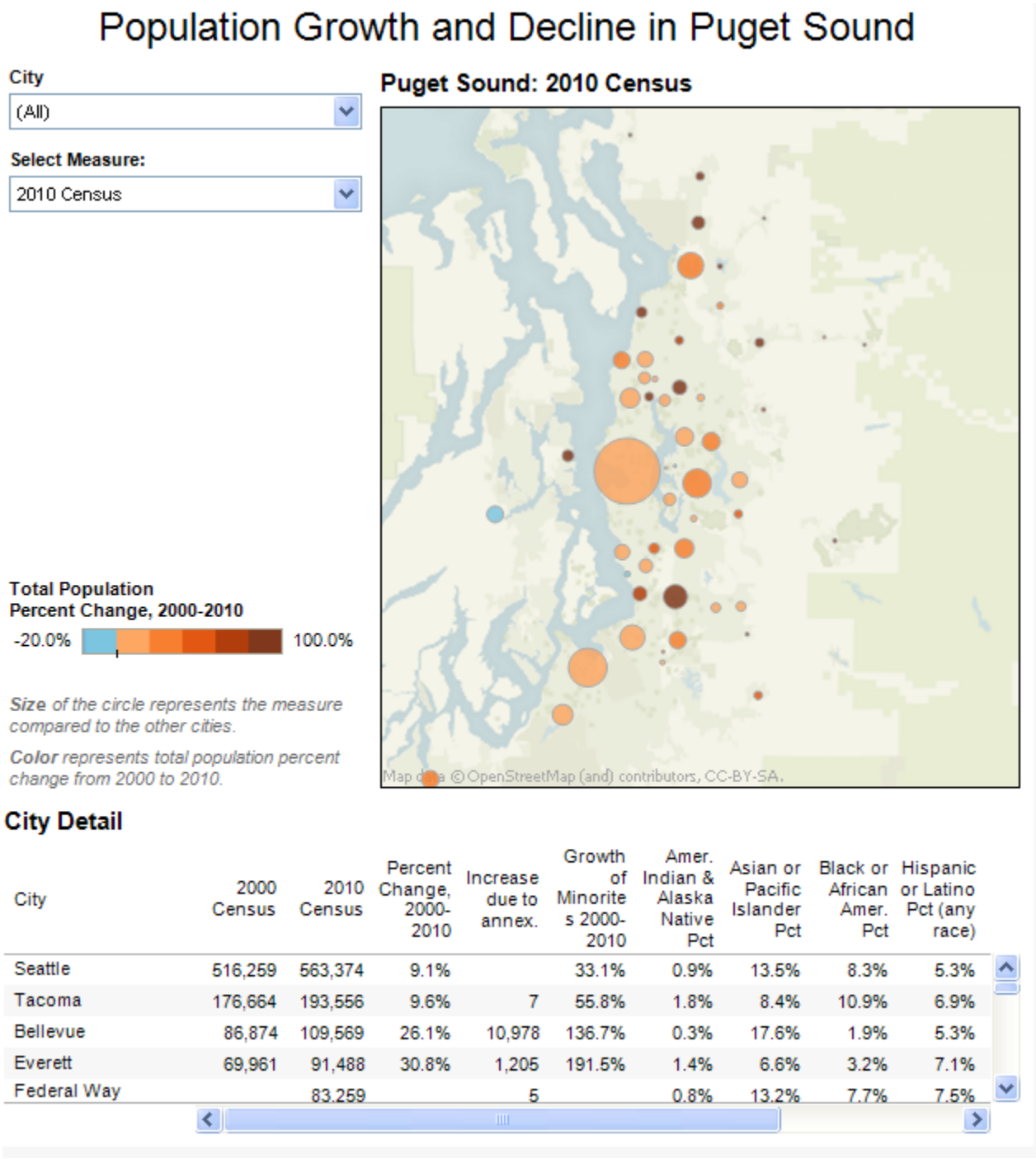
On your map view:

1. Drag "Measure names" to filter
    a. Show Quick filter—make it a compact list
    b. Customize the filter—don't allow "all"
2. Drag "Measure values" to label and to size shelves

Now your users can select which measure is shown on the map. On the dashboard,

- Remove your size legend
- Make sure the measure names quick filter is showing.

Your dashboard will look like this:



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