

# South Dakota State Data Conference

Pierre SD October 13, 2017

## Preparing Census data for use in Tableau

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# 21<sup>st</sup> Century Expectation: Anywhere, Anytime Access

## Meet users' expectations:

- 24/7 access to data
- Easy Access
- Timely
- Relevant

# Census.gov



**American Community Survey**

**American Housing Survey**

**Annual Survey of Manufactures**

**Business Patterns**

**Nonemployer Statistics**

**Annual Surveys of Governments**

**Census of Governments**

**Commodity Flow Survey**

**Decennial Census**

**Decennial Census of the Island Areas** (American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the U.S. Virgin Islands)

**Economic Census**

**Economic Census of the Island Areas**

**Survey of Business Owners**

**Equal Employment Opportunity (EEO) Tabulation**

**Population Estimates Program**

**Puerto Rico Community Survey**

# Getting and formatting Decennial Data

P13  
MEDIAN AGE BY SEX  
Universe: Total population  
2010 Census Summary File 1

From <[https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC\\_10\\_SF1\\_P13&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_SF1_P13&prodType=table)>

The screenshot shows the American FactFinder website interface. The browser address bar displays the URL: <https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t#none>. The page title is "Search Results: 1-19 of 19 tables and other products match 'Your Selections'". The search criteria are "Median Age" and "South Dakota". The results table is as follows:

ID	Table, File or Document Title	Dataset	About
<input checked="" type="checkbox"/>	P13 <b>MEDIAN AGE BY SEX</b>	2010 SF1 100% Data	<a href="#">i</a>
<input type="checkbox"/>	P13A MEDIAN AGE BY SEX (WHITE ALONE)	2010 SF1 100% Data	<a href="#">i</a>
<input type="checkbox"/>	P13B MEDIAN AGE BY SEX (BLACK OR AFRICAN AMERICAN ALONE)	2010 SF1 100% Data	<a href="#">i</a>
<input type="checkbox"/>	P13C MEDIAN AGE BY SEX (AMERICAN INDIAN AND ALASKA NATIVE ALONE)	2010 SF1 100% Data	<a href="#">i</a>
<input type="checkbox"/>	P13D MEDIAN AGE BY SEX (ASIAN ALONE)	2010 SF1 100% Data	<a href="#">i</a>
<input type="checkbox"/>	P13E MEDIAN AGE BY SEX (NATIVE HAWAIIAN AND OTHER PACIFIC ISLANDER ALONE)	2010 SF1 100% Data	<a href="#">i</a>
<input type="checkbox"/>	P13F MEDIAN AGE BY SEX (SOME OTHER RACE ALONE)	2010 SF1 100% Data	<a href="#">i</a>
<input type="checkbox"/>	P13G MEDIAN AGE BY SEX (TWO OR MORE RACES)	2010 SF1 100% Data	<a href="#">i</a>
<input type="checkbox"/>	P13H MEDIAN AGE BY SEX (HISPANIC OR LATINO)	2010 SF1 100% Data	<a href="#">i</a>
<input type="checkbox"/>	P13I MEDIAN AGE BY SEX (WHITE ALONE, NOT HISPANIC OR LATINO)	2010 SF1 100% Data	<a href="#">i</a>
<input type="checkbox"/>	PCT4 MEDIAN AGE BY SEX	2010 SF2 100% Data	<a href="#">i</a>
<input type="checkbox"/>	PCT4 MEDIAN AGE BY SEX	2010 American Indian and Alaska Native SF	<a href="#">i</a>

Format Table with modify to only bring in useful data.

Transpose the Data

For purposes of this exercise remove any 0 values (empty tracts)

Remove males and females

Table View

Actions: Hide Table Tools, Add/Remove Geographies, Bookmark/Save, Print, Download, Create a Map

Table Tools: Reset Table, Show Hidden Rows/Columns, Transpose Rows/Columns

Legend: show/hide rows and columns, collapse/expand data categories, rearrange columns, rearrange rows, sort ascending/descending, filter rows

Note: This is a modified view of the original table.

Not all rows may be displayed below. Click Back to Search to select other geographies using the search options on the left.

The table contains a total of 14,052,071 data rows.

NOTE: For information on confidentiality protection, nonsampling error, and definitions, see <http://www.census.gov/prod/cen2010/doc/sf1.pdf>.

	Median age --		
	Both sexes	Male	Female
South Dakota	36.9	35.6	38.2
Census Tract 9736, Aurora County, South Dakota	43.2	41.3	45.1
Census Tract 9566, Beadle County, South Dakota	41.9	41.9	42.0
Census Tract 9567, Beadle County, South Dakota	45.8	45.4	46.2
Census Tract 9568, Beadle County, South Dakota	42.6	41.2	43.8
Census Tract 9569, Beadle County, South Dakota	33.4	32.9	34.2
Census Tract 9570, Beadle County, South Dakota	42.2	39.5	45.0
Census Tract 9571, Beadle County, South Dakota	43.2	42.3	44.1
Census Tract 9410, Bennett County, South Dakota	28.3	25.7	30.0
Census Tract 9412, Bennett County, South Dakota	29.2	29.8	28.4
Census Tract 9676, Bon Homme County, South Dakota	46.4	45.0	47.6
Census Tract 9677, Bon Homme County, South Dakota	40.2	37.7	47.7
Census Tract 9586, Brookings County, South Dakota	38.5	37.9	39.3

Sort

Sort rows by the following columns: ?

Sort by

Median age -- Both sexes

Descending (Z-A)

ADD A COLUMN TO SORT BY

REMOVE SORT OK CANCEL

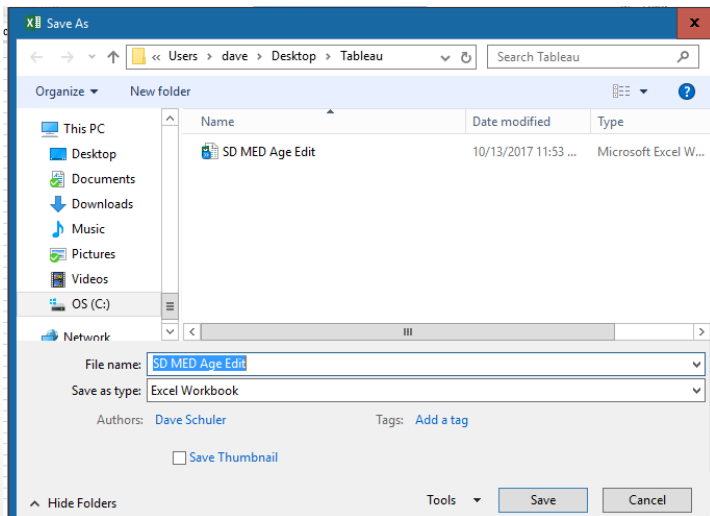
Sort Med age both sexes  
Census Tract 202, Meade County,  
South Dakota 20.6

- Prepare Excel CVS file for Tableau
- Expand columns
- Delete First header row
- Tableau does not like multiple header rows

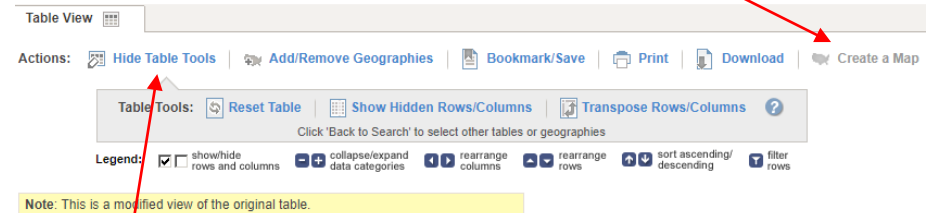
2 key header columns That say the same thing that link to Shape file  
Use the first column with US in the data

	A	B
1	Id	Id2
2	0400000US46	46
3	1400000US46003973600	46003973600
4	1400000US46005956600	46005956600

Save as an excel workbook

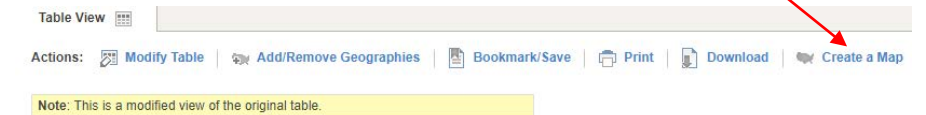


Create a map from AFF table view  
Notice create a map is not highlighted



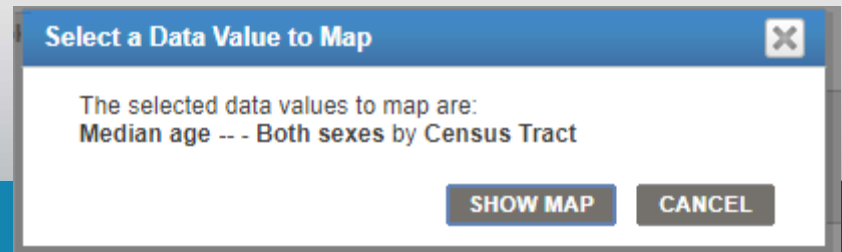
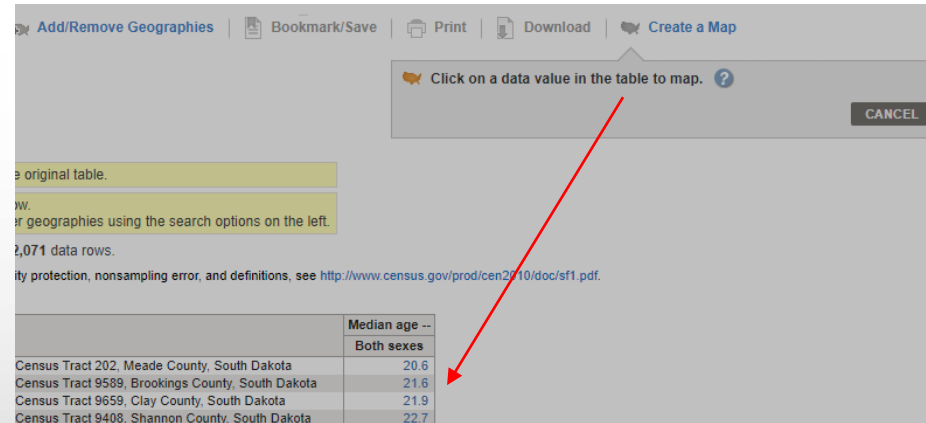
Note: This is a modified view of the original table.

Select hide table tools then select create a map

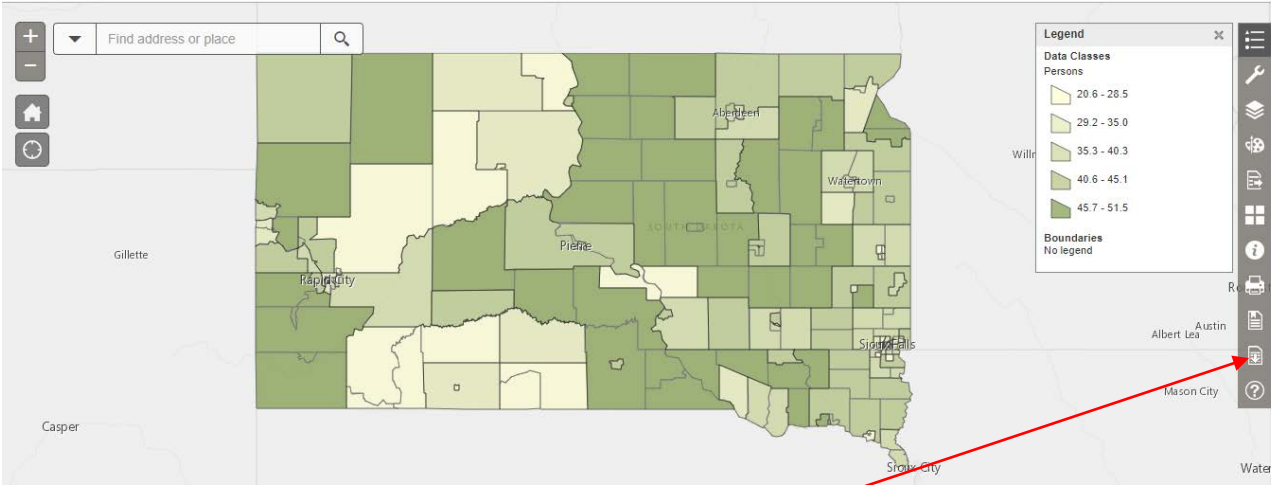


Note: This is a modified view of the original table.

Select any hyperlinked data point.



Thematic Map of Median age -- Both sexes  
Geography: by Census Tract

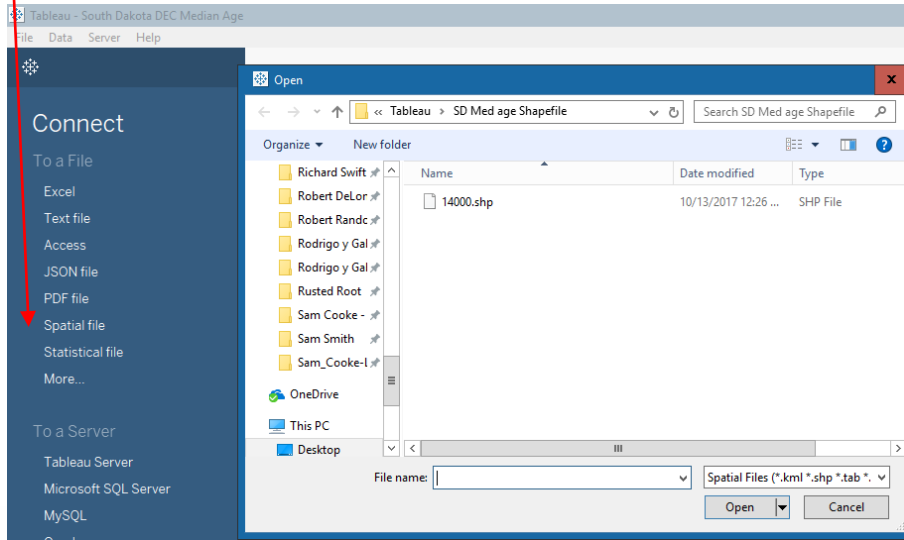


Can modify the map and add layers for visualized effect, but we just need to grab the shape file  
Download the shapefile

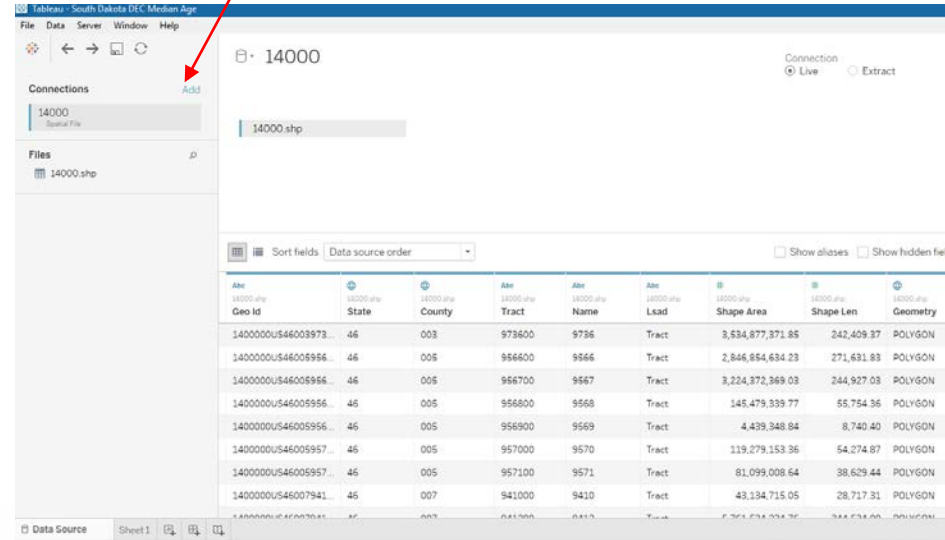


# Tableau Desktop Import Census Data and Shape files

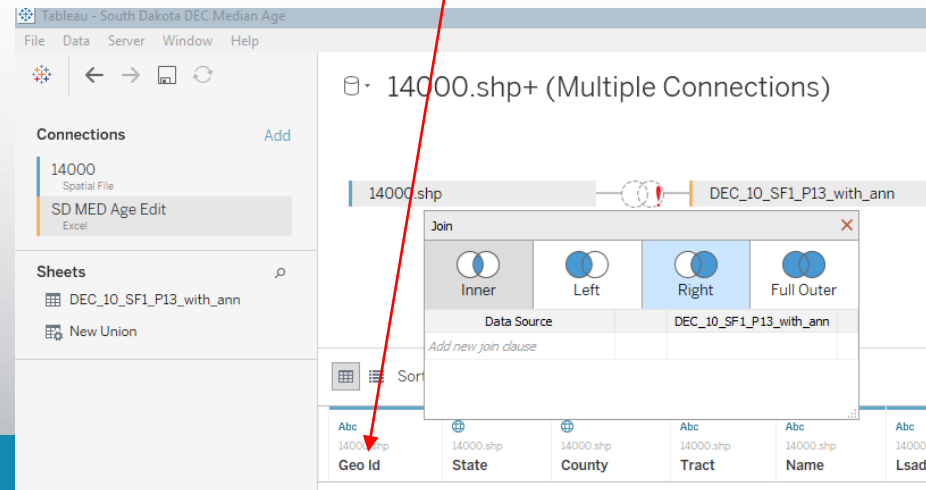
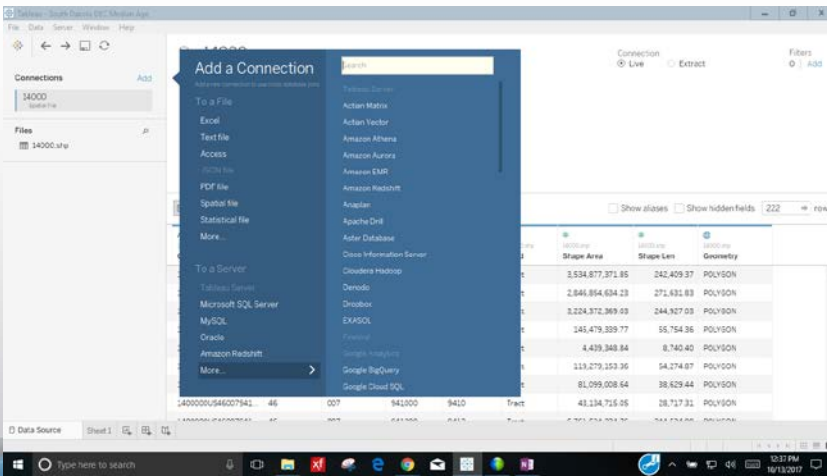
Tableau Desktop is essentially the same as Public. (Where data is stored)  
As a best practice I open the shapefile first



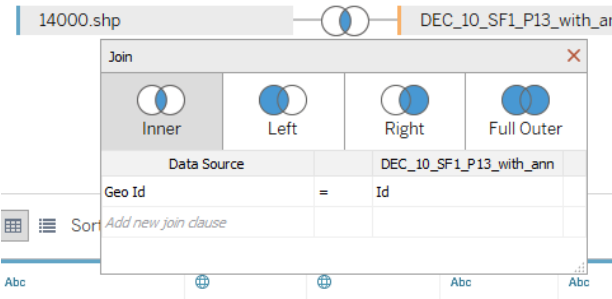
Add the excel data file connection



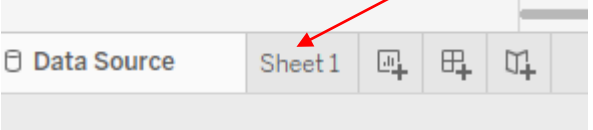
First Column data must match (Data not name).



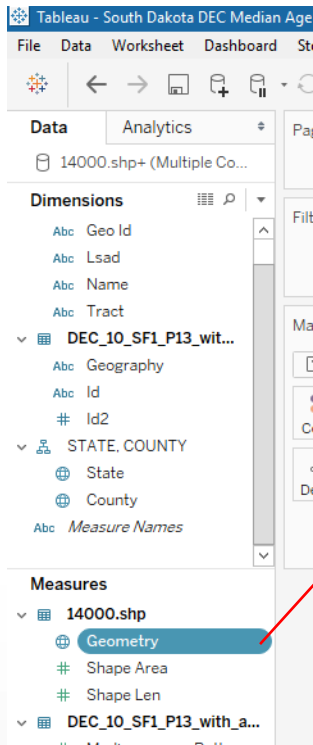
# 14000.shp+ (Multiple Connections)



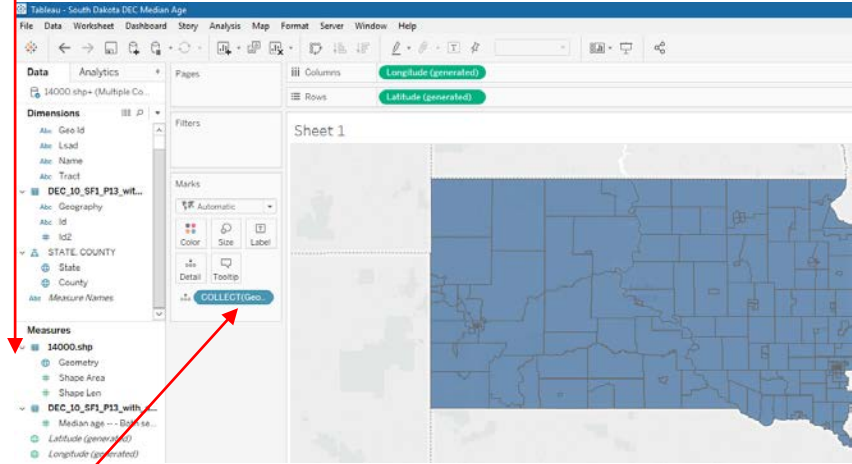
Select tab sheet 1 (at Bottom left)



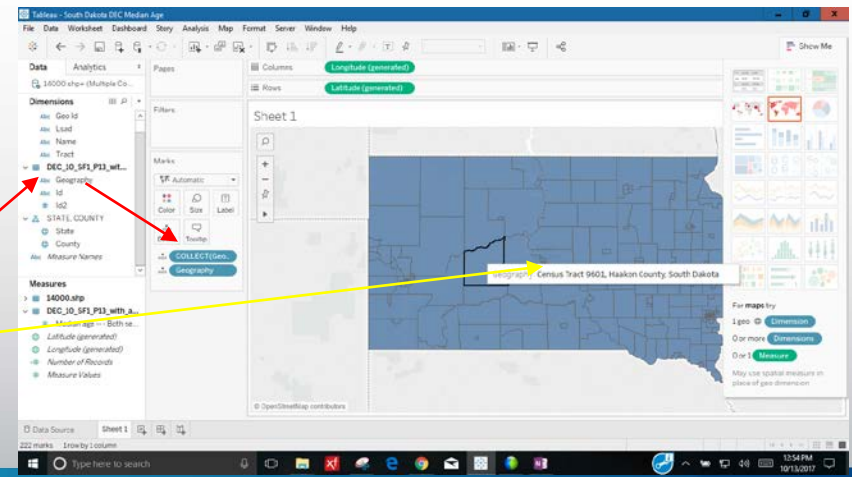
Select Geography from left menu (from 1400.shp)



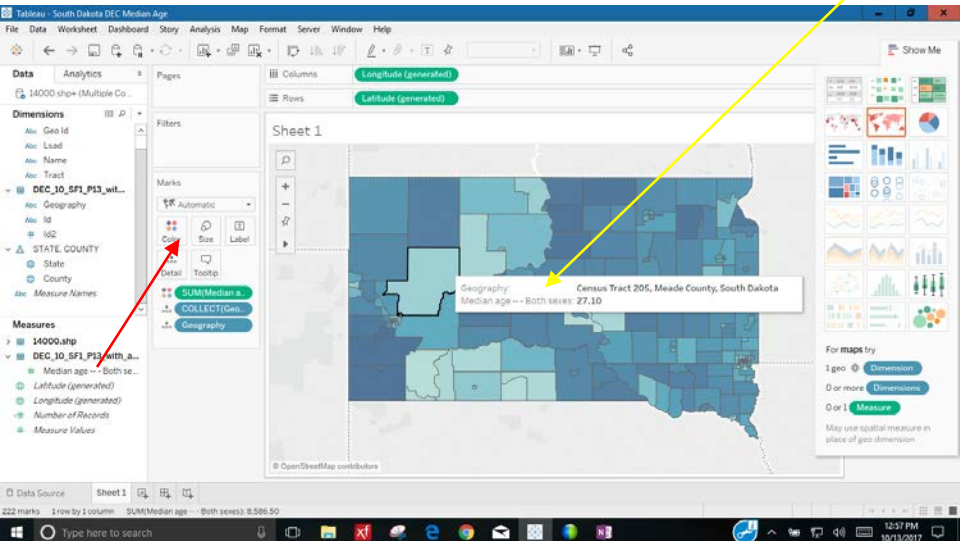
Double click Geometry then minimize 14000.shp menu



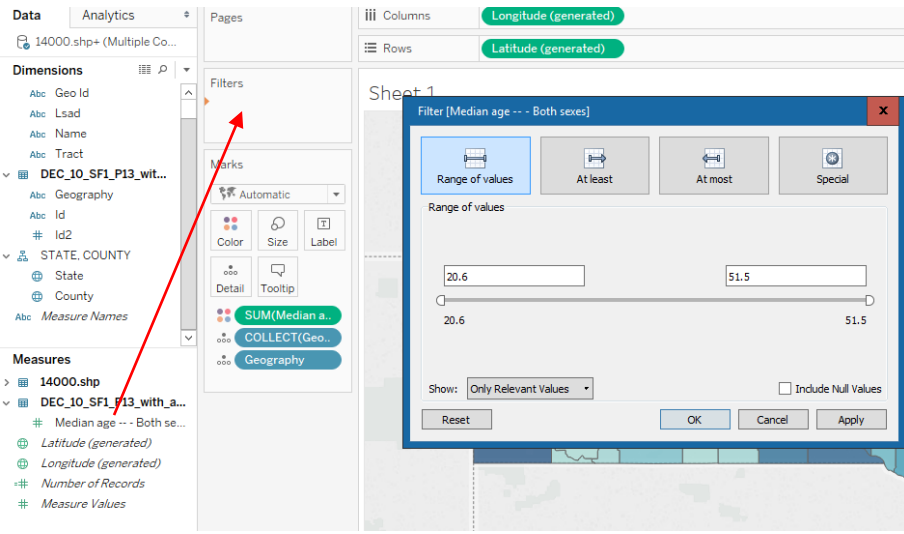
Drag Dec Geography and drop on detail. Now Mouse over name is displayed



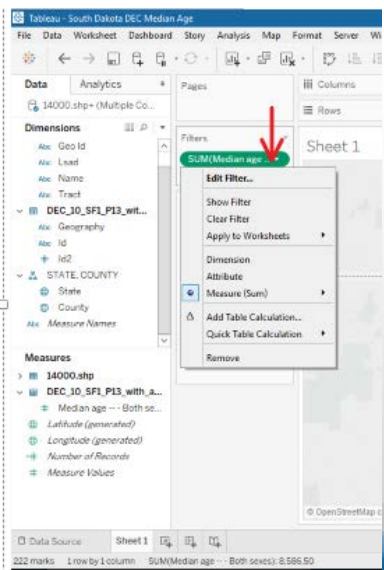
Drag Median age to color. Mouse over now displays data and tract info



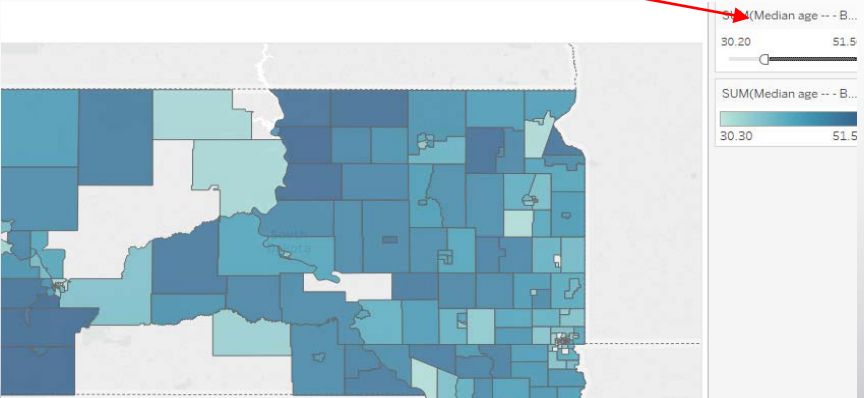
Drag Median age to filter



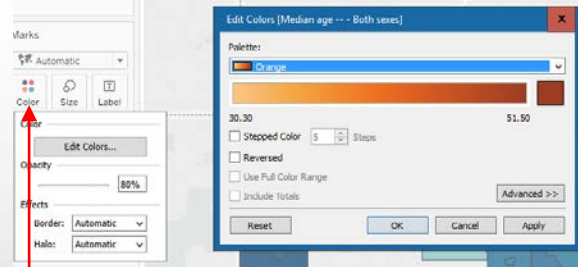
Click on filter name, Select show filter



Adjust range to be displayed



Edit Map Colors



# Using ACS Data, to identify low Edu attainment. the Key is cleaning the data and using short name

S1501 EDUCATIONAL ATTAINMENT 2011-2015 American Community Survey 5-Year Estimates

Table View

Actions: Modify Table | Add/Remove Geographies | Bookmark/Save | Print | Download | Create a Map

View Geography Notes | View Table Notes

Tell us what you think. Provide feedback to help make American Community Survey data more useful for you.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

Versions of this table are available for the following years:

- 2015
- 2011
- 2010
- 2008
- 2007
- 2006
- 2005
- 2004
- 2003
- 2002
- 2001
- 2000
- 1999
- 1998
- 1997
- 1996
- 1995
- 1994
- 1993
- 1992
- 1991
- 1990

Subject	South Dakota										Census Tract 9736, Aurora County, South Dakota							
	Total		Percent		Males		Percent Males		Females		Percent Females		Total		Percent		Males	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population 18 to 24 years	84,485	+/-651	(X)	(X)	43,927	+/-524	(X)	(X)	40,558	+/-362	(X)	(X)	191	+/-34	(X)	(X)	101	+/-23
Less than high school graduate	13,008	+/-674	15.4%	+/-0.8	7,649	+/-551	17.4%	+/-1.2	5,359	+/-418	13.2%	+/-1.0	44	+/-23	23.0%	+/-12.6	32	+/-19
High school graduate (includes equivalency)	24,663	+/-1,132	29.2%	+/-1.3	14,185	+/-796	32.3%	+/-1.7	10,478	+/-688	25.8%	+/-1.7	64	+/-23	33.5%	+/-11.3	25	+/-15
Some college or associate's degree	40,183	+/-1,172	47.6%	+/-1.4	19,218	+/-835	43.7%	+/-2.0	20,965	+/-648	51.7%	+/-1.6	50	+/-24	26.2%	+/-10.2	35	+/-19
Bachelor's degree or higher	6,631	+/-587	7.8%	+/-0.7	2,875	+/-377	6.5%	+/-0.9	3,756	+/-398	9.3%	+/-1.0	33	+/-22	17.3%	+/-10.0	9	+/-10
Population 25 years and over	551,039	+/-843	(X)	(X)	272,983	+/-543	(X)	(X)	278,056	+/-470	(X)	(X)	1,837	+/-68	(X)	(X)	935	+/-44
Less than 9th grade	21,440	+/-1,958	3.9%	+/-0.2	11,584	+/-625	4.2%	+/-0.2	9,856	+/-706	3.5%	+/-0.3	178	+/-35	9.7%	+/-1.9	127	+/-27
9th to 12th grade, no diploma	28,473	+/-1,022	5.2%	+/-0.2	15,722	+/-733	5.8%	+/-0.3	12,751	+/-641	4.6%	+/-0.2	43	+/-18	2.3%	+/-1.0	16	+/-12
High school graduate (includes equivalency)	172,522	+/-2,190	31.3%	+/-0.4	91,319	+/-1,585	33.5%	+/-0.6	81,203	+/-1,338	29.2%	+/-0.5	681	+/-66	37.1%	+/-3.1	365	+/-47
Some college, no degree	120,767	+/-1,899	21.9%	+/-0.3	56,822	+/-1,304	20.8%	+/-0.5	63,945	+/-1,351	23.0%	+/-0.5	342	+/-53	18.6%	+/-2.8	168	+/-32

[https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_15\\_5YR\\_S1501&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_5YR_S1501&prodType=table)

Modify the table to select total and percent  
Collapse and 24 and under and uncheck

Filter Dimension

Display Columns where ?

Boxhead is one of the following

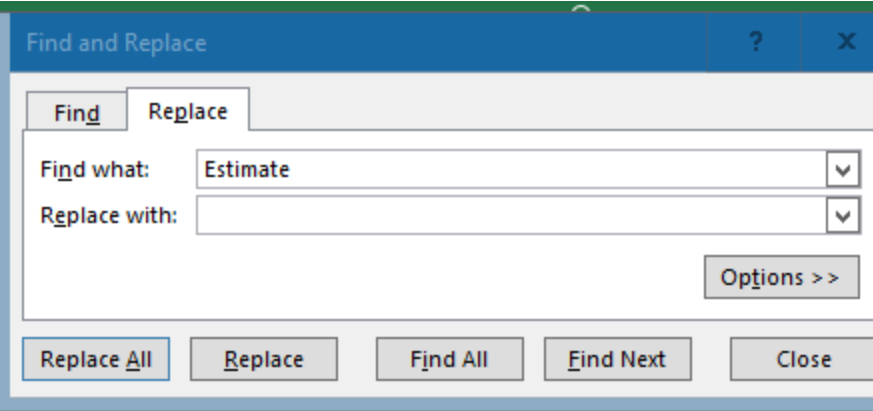
Code	Meaning
<input type="checkbox"/> HC01	Total
<input type="checkbox"/> HC02	Percent
<input type="checkbox"/> HC03	Males
<input type="checkbox"/> HC04	Percent Males
<input type="checkbox"/> HC05	Females
<input type="checkbox"/> HC06	Percent Females

OK CANCEL

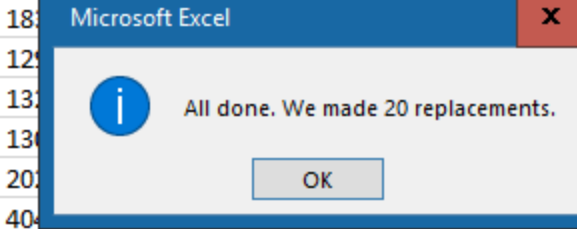


Clean rest in excel (Find 25 to 24) Delete all columns to right

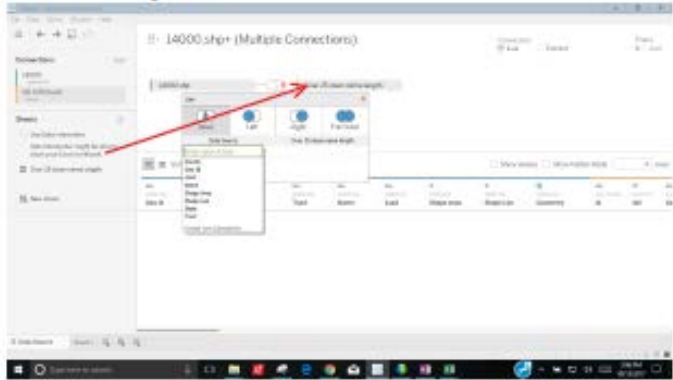
Shorten Column names ( Remove estimate, total) Displays better in Tableau



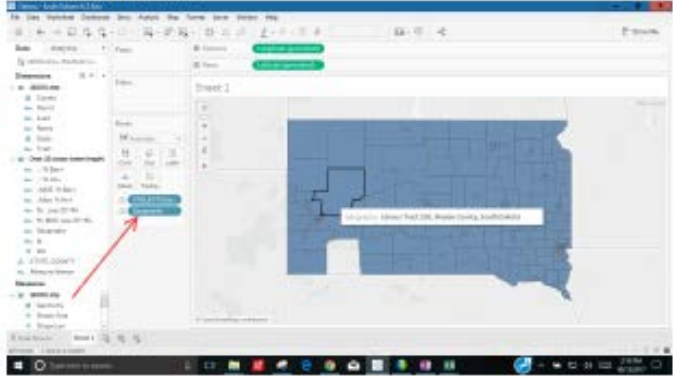
551039



Join data sets drag sheet



Drag geometry to map



# Continue the Conversation

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