

My dataset has the county and state FIPS codes listed separately. What do I do to put them together?

Check your dataset to see if it already exists

- This happens sometimes, but if you are using a federally produced dataset, the combined FIPS code may be hidden in an indicator called GEOid
- GEOid is simply [STATEFP+COUNTYFP] as a string of text

Counties									
D	Shape *	STATEFP	COUNTYFP	COUNTYNS	GEOID	NAME	NAMESAD	LSAD	CLA
16	Polygon	53	019	01531821	53019	Ferry	Ferry County	06	H1
37	Polygon	53	021	01531822	53021	Franklin	Franklin County	06	H1
19	Polygon	53	023	01533500	53023	Garfield	Garfield County	06	H1
27	Polygon	53	025	01531924	53025	Grant	Grant County	06	H1
24	Polygon	53	027	01531823	53027	Grays Harbor	Grays Harbor County	06	H1
9	Polygon	53	029	01513272	53029	Island	Island County	06	H1
2	Polygon	53	031	01531936	53031	Jefferson	Jefferson County	06	H1
20	Polygon	53	033	01531933	53033	King	King County	06	H1
31	Polygon	53	035	01529223	53035	Kitsap	Kitsap County	06	H1
4	Polygon	53	037	01531926	53037	Kittitas	Kittitas County	06	H1
22	Polygon	53	039	01529219	53039	Klickitat	Klickitat County	06	H1
1	Polygon	53	041	01531927	53041	Lewis	Lewis County	06	H1
30	Polygon	53	043	01514052	53043	Lincoln	Lincoln County	06	H1
33	Polygon	53	045	01529221	53045	Mason	Mason County	06	H1
7	Polygon	53	047	01531928	53047	Okanogan	Okanogan County	06	H1
21	Polygon	53	049	01513274	53049	Pacific	Pacific County	06	H1
12	Polygon	53	051	01529157	53051	Pend Oreille	Pend Oreille County	06	H1
35	Polygon	53	053	01529159	53053	Pierce	Pierce County	06	H1
23	Polygon	53	055	01531931	53055	San Juan	San Juan County	06	H1
34	Polygon	53	057	01531402	53057	Skagit	Skagit County	06	H1
38	Polygon	53	059	01529220	53059	Skamania	Skamania County	06	H1
5	Polygon	53	061	01529222	53061	Snohomish	Snohomish County	06	H1
8	Polygon	53	063	01529225	53063	Spokane	Spokane County	06	H1
11	Polygon	53	065	01531930	53065	Stevens	Stevens County	06	H1
36	Polygon	53	067	01529226	53067	Thurston	Thurston County	06	H1
0	Polygon	53	069	01513275	53069	Wahkiakum	Wahkiakum County	06	H1
26	Polygon	53	071	01531819	53071	Walla Walla	Walla Walla County	06	H1
13	Polygon	53	073	01529224	53073	Whatcom	Whatcom County	06	H1
32	Polygon	53	075	01533501	53075	Whitman	Whitman County	06	H1
6	Polygon	53	077	01531929	53077	Yakima	Yakima County	06	H1

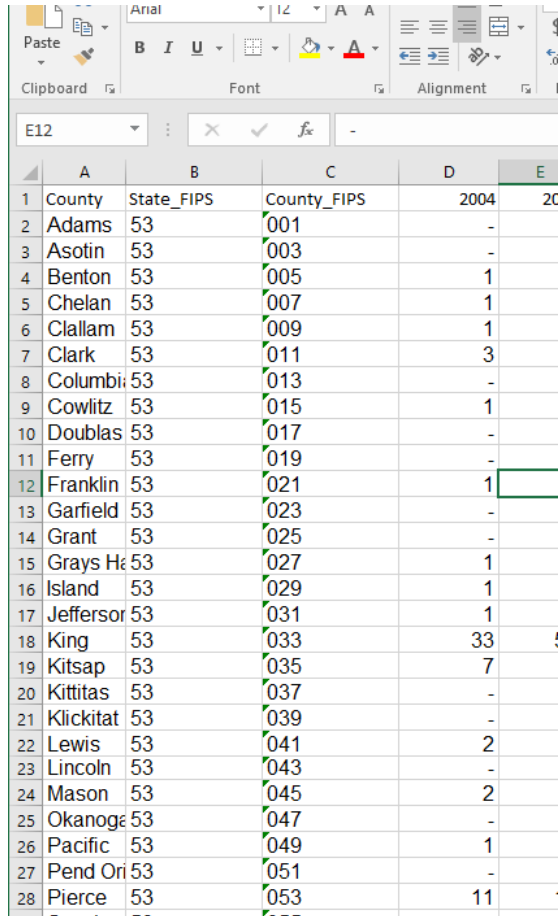
Can I still join using ArcMap or QGIS?

- Yes, this is possible
- However, especially if we're already working with a custom dataset, it is best to work in Excel, the Open Office alternative "Calc", or Google Sheets
- Why?
 - Lightweight
 - Portable – more options for saving in other file formats
 - You're probably already working in Excel in anyway
 - The skills you learn here can be applied in other contexts

Sample Data: Nonfatal accidents involving motor vehicles and bicycles

- From the King County Department of health (derived from sample files archived on my website)
- Columns include County Name, State FIPS, County FIPS, and the years of 2004 through 2013, and the Total for all years combined

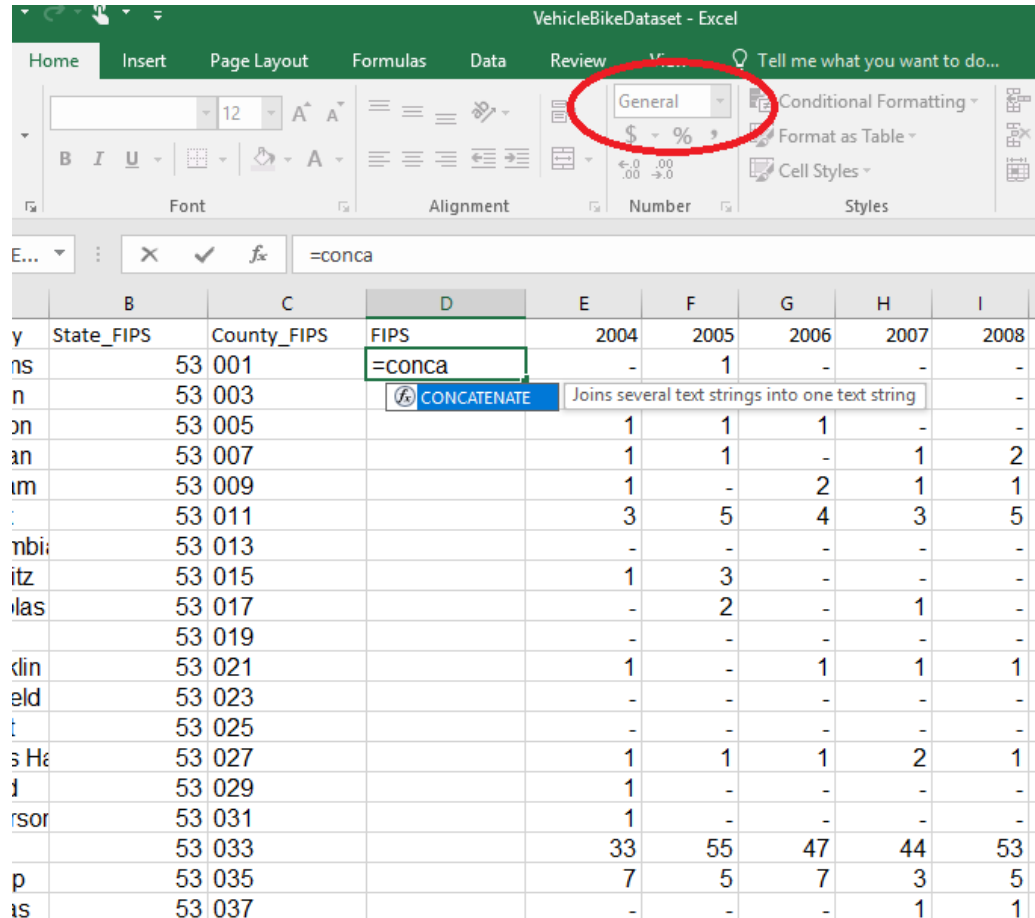
Option 1: CONCATINATE function



	A	B	C	D	E
1	County	State_FIPS	County_FIPS	2004	20
2	Adams	53	001	-	
3	Asotin	53	003	-	
4	Benton	53	005	1	
5	Chelan	53	007	1	
6	Clallam	53	009	1	
7	Clark	53	011	3	
8	Columbia	53	013	-	
9	Cowlitz	53	015	1	
10	Douglas	53	017	-	
11	Ferry	53	019	-	
12	Franklin	53	021	1	
13	Garfield	53	023	-	
14	Grant	53	025	-	
15	Grays Harbor	53	027	1	
16	Island	53	029	1	
17	Jefferson	53	031	1	
18	King	53	033	33	
19	Kitsap	53	035	7	
20	Kittitas	53	037	-	
21	Klickitat	53	039	-	
22	Lewis	53	041	2	
23	Lincoln	53	043	-	
24	Mason	53	045	2	
25	Okanogan	53	047	-	
26	Pacific	53	049	1	
27	Pend Oreille	53	051	-	
28	Pierce	53	053	11	

- We want to combine State_FIPS with County_FIPS so that we have a reliable way to join our table with a data layer
- Right click the column header D, and select “Insert”
- In Row 1, column D, enter the acronym “FIPS”

CONCATENATE



VehicleBikeDataset - Excel

Home Insert Page Layout Formulas Data Review View Tell me what you want to do...

Font: 12, Bold, Italic, Underline, Text Color, Background Color, Paragraph Spacing, Bullets, Numbering, Indentation, Orientation, Text Wrapping, Merge Cells, Clear All, Styles

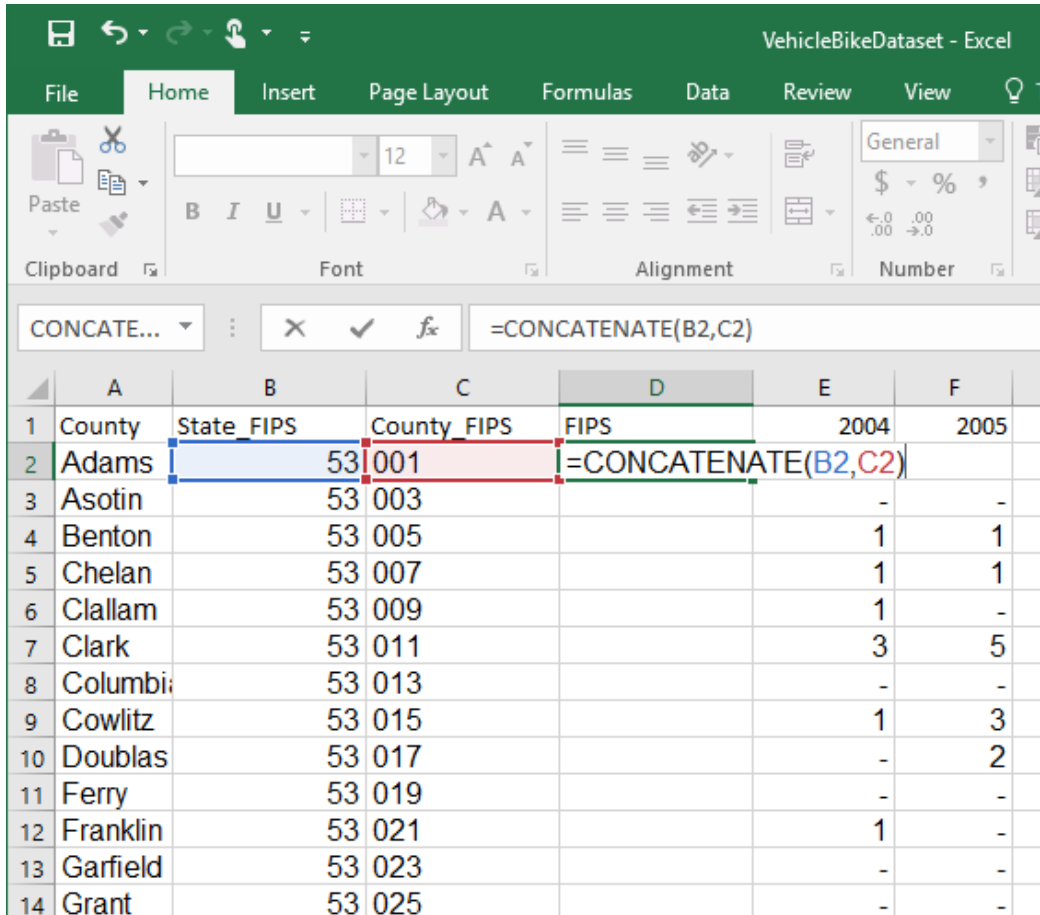
Number: General, Currency, Accounting, Percentage, Decimals, Thousands Separator, Negative Numbers, Date, Time, Text, Error, Custom, Conditional Formatting, Format as Table, Cell Styles

Formula Bar: =conca

	B	C	D	E	F	G	H	I
y	State_FIPS	County_FIPS	FIPS	2004	2005	2006	2007	2008
ns	53	001	=CONCATENATE	-	1	-	-	-
n	53	003						
on	53	005		1	1	1	-	-
an	53	007		1	1	-	1	2
um	53	009		1	-	2	1	1
.	53	011		3	5	4	3	5
nbi	53	013		-	-	-	-	-
itz	53	015		1	3	-	-	-
las	53	017		-	2	-	1	-
	53	019		-	-	-	-	-
clin	53	021		1	-	1	1	1
eld	53	023		-	-	-	-	-
t	53	025		-	-	-	-	-
s He	53	027		1	1	1	2	1
l	53	029		1	-	-	-	-
rsor	53	031		1	-	-	-	-
	53	033		33	55	47	44	53
p	53	035		7	5	7	3	5
ts	53	037		-	-	-	1	1

- In your FIPS column, make sure that your data type is set to “General” – set it before you begin typing the formula
- Type “=” to activate a function, and then begin typing “CONCATENATE”
- A small window should appear – double-click that window to populate the function

=CONCATENATE(B2,C2)

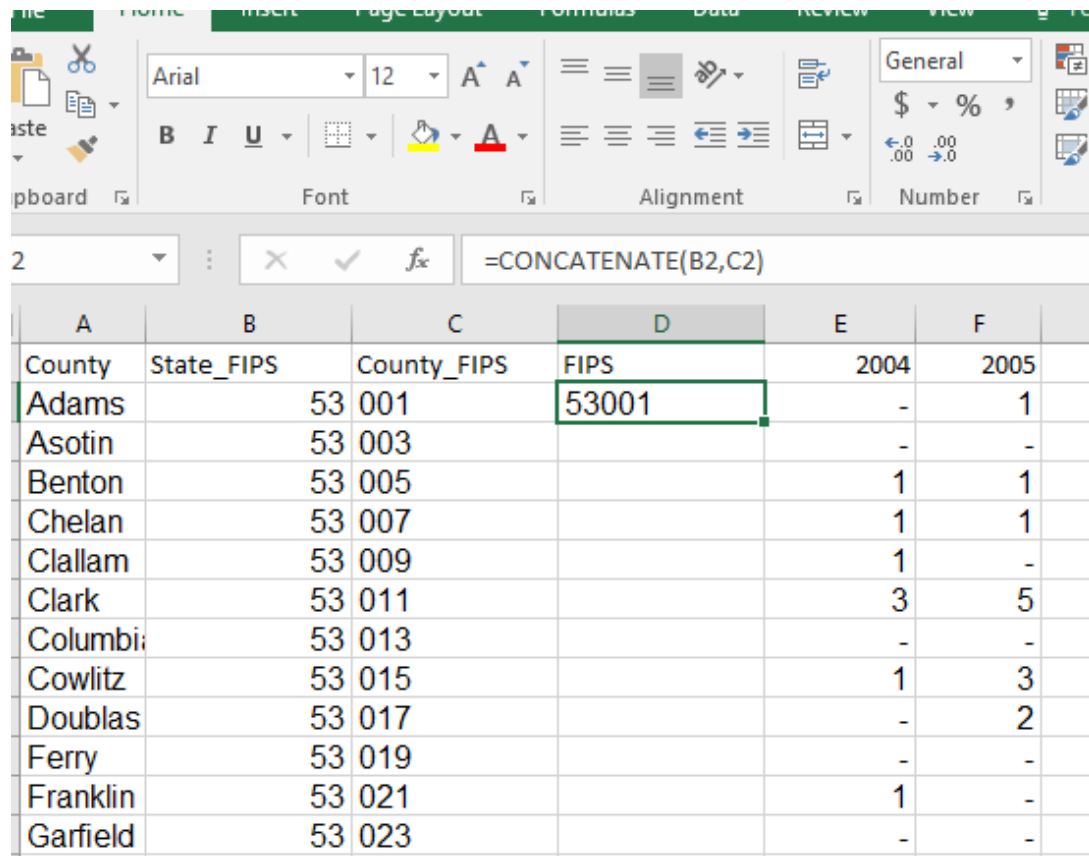


The screenshot shows the Excel interface with the formula bar containing the text `=CONCATENATE(B2,C2)`. The spreadsheet data is as follows:

	A	B	C	D	E	F
1	County	State_FIPS	County_FIPS	FIPS	2004	2005
2	Adams	53	001	=CONCATENATE(B2,C2)		
3	Asotin	53	003		-	-
4	Benton	53	005		1	1
5	Chelan	53	007		1	1
6	Clallam	53	009		1	-
7	Clark	53	011		3	5
8	Columbia	53	013		-	-
9	Cowlitz	53	015		1	3
10	Douglas	53	017		-	2
11	Ferry	53	019		-	-
12	Franklin	53	021		1	-
13	Garfield	53	023		-	-
14	Grant	53	025		-	-

- Next, type the range
- Similarly to when you use `=SUM(B2:C2)` when adding numbers, `CONCATENATE` “adds” textual values together
- Press “Enter”, and it will populate with the combined values

=CONCATENATE(B2,C2)

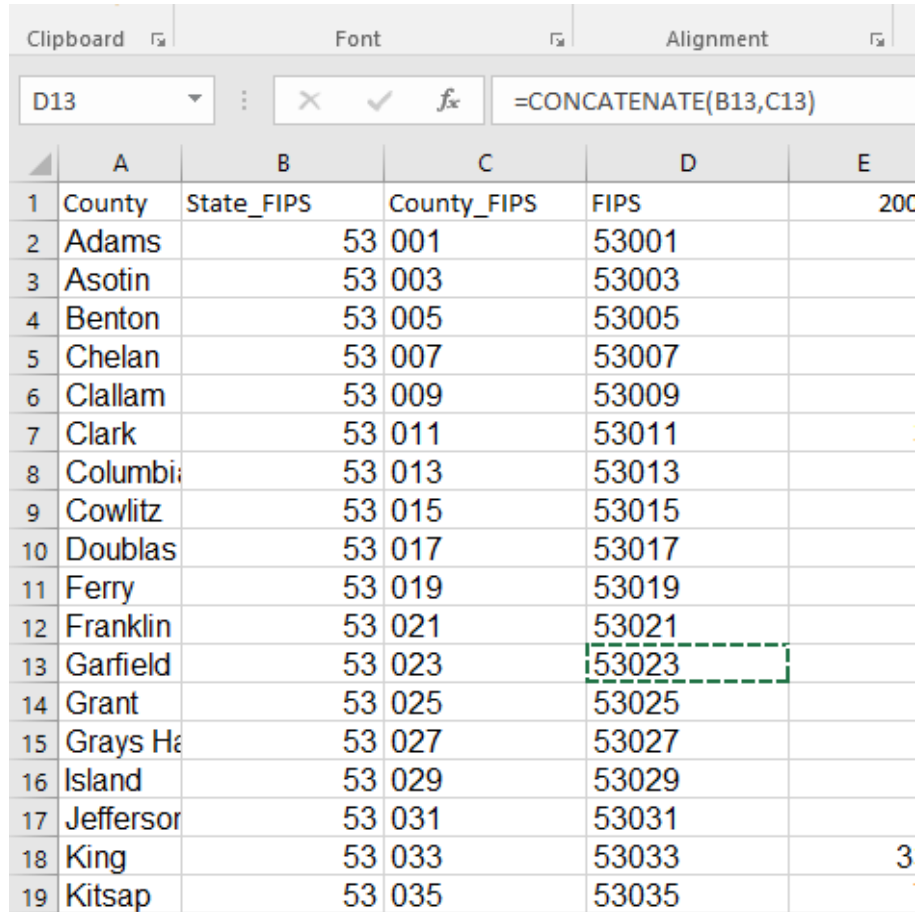


The screenshot shows the Microsoft Excel interface. The formula bar at the top displays the formula `=CONCATENATE(B2,C2)`. Below the formula bar is a table with the following data:

A	B	C	D	E	F
County	State_FIPS	County_FIPS	FIPS	2004	2005
Adams	53	001	53001	-	1
Asotin	53	003		-	-
Benton	53	005		1	1
Chelan	53	007		1	1
Clallam	53	009		1	-
Clark	53	011		3	5
Columbia	53	013		-	-
Cowlitz	53	015		1	3
Douglas	53	017		-	2
Ferry	53	019		-	-
Franklin	53	021		1	-
Garfield	53	023		-	-

- Click the little box on the bottom, right corner of the selected cell and drag it down to copy the formula in each subsequent cell

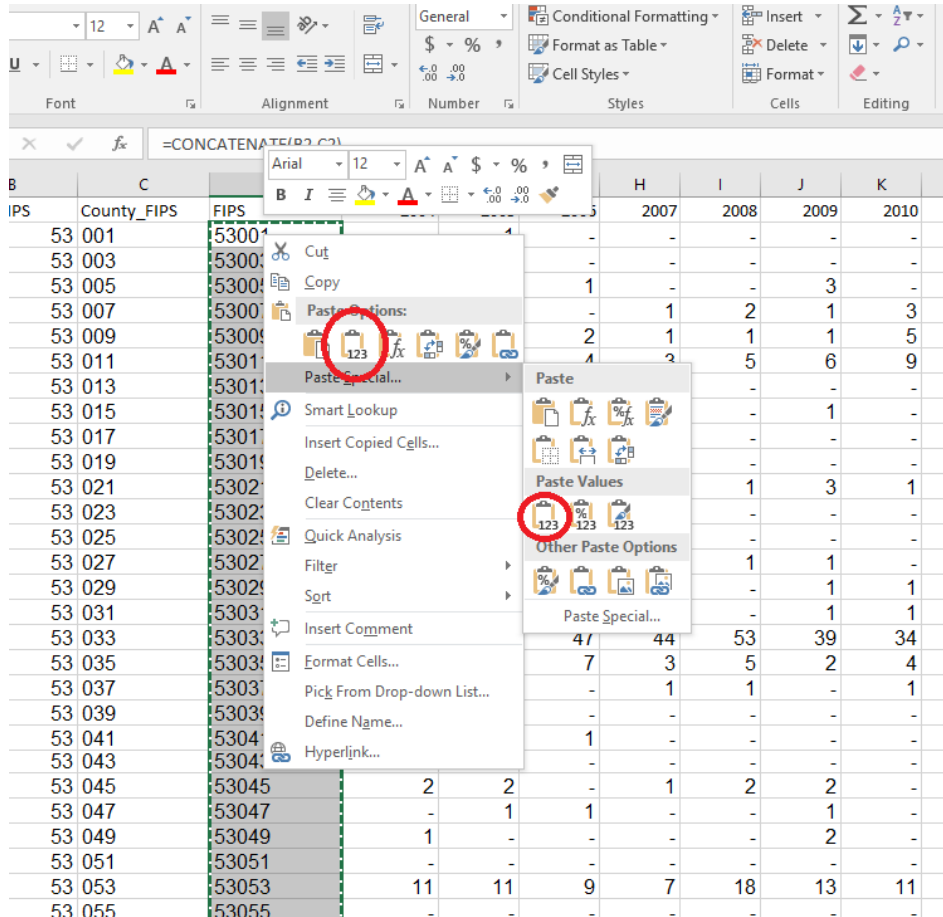
This is good so far, but the outcomes are currently stored as formulas. We need to save them as the actual values



	A	B	C	D	E
1	County	State_FIPS	County_FIPS	FIPS	200
2	Adams	53	001	53001	
3	Asotin	53	003	53003	
4	Benton	53	005	53005	
5	Chelan	53	007	53007	
6	Clallam	53	009	53009	
7	Clark	53	011	53011	
8	Columbia	53	013	53013	
9	Cowlitz	53	015	53015	
10	Douglas	53	017	53017	
11	Ferry	53	019	53019	
12	Franklin	53	021	53021	
13	Garfield	53	023	53023	
14	Grant	53	025	53025	
15	Grays Ha	53	027	53027	
16	Island	53	029	53029	
17	Jefferson	53	031	53031	
18	King	53	033	53033	3
19	Kitsap	53	035	53035	

- Simply highlight the desired cells (D2:D40 in this case)
- Copy (Ctrl + C)

Paste Values



- Right Click Cell D2, and select “Paste Values”
- Looks like a little clipboard that says “123” on it

Now your cells should display plain text in the formula box

The screenshot shows an Excel spreadsheet with the following data:

ite_FIPS	County_FIPS	FIPS	2004	2005
53 001		53001	-	1
53 003		53003	-	-
53 005		53005	1	1
53 007		53007	1	1
53 009		53009	1	-
53 011		53011	3	5
53 013		53013	-	-
53 015		53015	1	3
53 017		53017	-	2
53 019		53019	-	-
53 021		53021	1	-
53 023		53023	-	-

- If you see a little caution sign, highlight the column, and tell excel to ignore the error
- It thinks that we are doing something wrong for having a column that starts with the number 0

Option 2: Flash Fill

The screenshot shows an Excel spreadsheet with the following data:

A	B	C	D	E	F
County	State_FIPS	County_FIPS	FIPS	2004	2005
Adams	53	001	53001	-	1
Asotin	53	003	53003	-	-
Benton	53	005	53005	1	1
Chelan	53	007	53007	1	1
Clallam	53	009	53009	1	-
Clark	53	011	53011	3	5
Columbia	53	013	53013	-	-
Cowlitz	53	015	53015	1	3
Douglas	53	017	53017	-	2
Ferry	53	019	53019	-	-
Franklin	53	021	53021	1	-
Garfield	53	023	53023	-	-
Grant	53	025	53025	-	-
Grays Harbor	53	027	53027	1	1
Island	53	029	53029	1	-
Jefferson	53	031	53031	1	-
King	53	033	53033	33	55
Kitsap	53	035	53035	7	5
Kittitas	53	037	53037	-	-
Klickitat	53	039	53039	-	-
Lewis	53	041	53041	2	4
Lincoln	53	043	53043	-	-
Mason	53	045	53045	2	2
Okanogan	53	047	53047	-	1
Pacific	53	049	53049	1	-
Pend Oreille	53	051	53051	-	-
Pierce	53	053	53053	11	11
San Juan	53	055	53055	-	-
Skagit	53	057	53057	2	-
Skamania	53	059	53059	-	-

- Type in the text for column D2, and then begin again for D3
- Excel will try to detect a pattern and auto-populate the column
- This is fine, given that we have a consistent format for each piece of information entered
- **USE THIS SPARINGLY** – in other contexts, the outcomes may be incorrect

And now you have completed
your FIPS Code/GEOID
conversion!