

## Instructions on Joining the ACS Summary File to the TIGER/Line Shapefiles

It is strongly advised that data users read the most current Summary File Module before reading this document. The Summary File Module can be found at <https://www.census.gov/programs-surveys/acs/guidance/handbooks/summary-file.html>.

TIGER/Line Shapefiles allow data users to directly link geographic areas to data from the American Community Survey and other surveys. The TIGER/Line Shapefiles are designed for use with geographic information system (GIS) software. Learn more about TIGER/Line Shapefiles at:

<https://www.census.gov/programs-surveys/geography/technical-documentation/complete-technical-documentation/tiger-geo-line.html>.

Before using the instructions below, you may want to check out the TIGER/Line Shapefiles that are pre-joined with ACS 5-year estimates in geodatabase format. You can access these files on the TIGER Products page at:

<https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-data.html>.

The variable GEOID joins the ACS Summary File to the TIGER/Line Shapefiles. For the ACS Summary File, GEOID is located in column AW of the geography file. It is not found in the estimates or margins of error files. GEOID's corresponding variable in the TIGER/Line Shapefiles is also GEOID.

We will walk through an example of joining these files using Kent County, Delaware and the 2012 ACS 1-year estimates. In the ACS Summary File, the GEOID is 05000US10001. In the TIGER/Line Shapefiles, the GEOID is 10001. (GEOID is a concatenation of all the codes associated with a given geographic area, such as the state FIPS code, county FIPS code, etc. The exact concatenation varies by geographic area. In this example, 10 = 'state FIPS code' and 001 = 'county FIPS code'.)

The ACS Summary File GEOID contains the necessary information to connect to the TIGER/Line Shapefiles, but it needs to be modified in order to exactly match up. Notice that the ACS GEOID, **05000US10001**, contains the TIGER/Line GEOID string, **10001**.

In order to create an exact match of both GEOIDs, it is necessary to remove all of the characters before and including the letter "S" in the ACS Summary File. By removing these characters, the new GEOID in the ACS Summary File exactly matches the field GEOID in the TIGER/Line Shapefiles.

The following is an example of how to modify the ACS Summary File's GEOID in MS Excel so it can be joined with TIGER/Line Shapefiles.

Open the ACS Summary File comma delimited geography file in Excel. This example uses Delaware's geography file (g20121de.csv) available by scrolling to the bottom of the page at [https://www2.census.gov/programs-surveys/acs/summary\\_file/2012/data/1\\_year\\_seq\\_by\\_state/Delaware/](https://www2.census.gov/programs-surveys/acs/summary_file/2012/data/1_year_seq_by_state/Delaware/).

## Joining ACS Summary Files to TIGER/Line Shapefiles

- Copy the column headers from the geography file template into Delaware's geography file. The 2012\_1yr\_Summary\_FileTemplates.zip file contains the geography file template (2012\_SFGeoFileTemplate) and can be found by opening 2012\_1yr\_Summary\_FileTemplates.zip at [https://www2.census.gov/programs-surveys/acs/summary\\_file/2012/data/](https://www2.census.gov/programs-surveys/acs/summary_file/2012/data/).
- Insert 2 blank columns to the right of the column "GEOID." Your modified GEOID will eventually go into the second column. (Note: Columns F through AV in the following diagrams are hidden for illustrative purposes.)

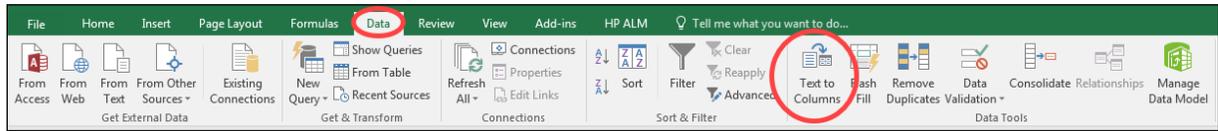
	A	B	C	D	E	AW	AX	AY	AZ
1	FILEID	STUSAB	SUMLEVEL	COMPONENT	LOGRECNO	GEOID			NAME
2	Always equal to ACS Summary File Identification	State Postal Abbreviation	Summary Level	Geographic Component	Logical Record Number	Geographic Identifier			Area Name
3	ACSSF	DE	40	0	1	04000US10			Delaware
4	ACSSF	DE	40	1	2	04001US10			Delaware -- Urban
5	ACSSF	DE	40	43	3	04043US10			Delaware -- Rural
6	ACSSF	DE	40 A0		4	040A0US10			Delaware -- In metropolitan or micropolitan statist
7	ACSSF	DE	40 C0		5	040C0US10			Delaware -- In metropolitan statistical area
8	ACSSF	DE	40 C1		6	040C1US10			Delaware -- In metropolitan statistical area -- In pr
9	ACSSF	DE	40 C2		7	040C2US10			Delaware -- In metropolitan statistical area -- not i
10	ACSSF	DE	40 E0		8	040E0US10			Delaware -- In micropolitan statistical area
11	ACSSF	DE	40 E2		9	040E2US10			Delaware -- In micropolitan statistical area -- not in
12	ACSSF	DE	40 H0		10	040H0US10			Delaware -- Not in metropolitan statistical area
13	ACSSF	DE	50	0	11	05000US10001			Kent County, Delaware
14	ACSSF	DE	50	0	12	05000US10003			New Castle County, Delaware
15	ACSSF	DE	50	0	13	05000US10005			Sussex County, Delaware
16	ACSSF	DE	160	0	14	16000US1077580			Wilmington city, Delaware
17	ACSSF	DE	312	0	15	31200US379801077580			Wilmington city, DE; Philadelphia-Camden-Wilmin
18	ACSSF	DE	500	0	16	50000US1000			Congressional District (at Large) (113th Congress), f
19	ACSSF	DE	795	0	17	79500US1000101			New Castle County (East Central)--Wilmington City
20	ACSSF	DE	795	0	18	79500US1000102			New Castle County (North)--Hockessin PUMA, Dela
21	ACSSF	DE	795	0	19	79500US1000103			New Castle County (West Central)--Newark City &
22	ACSSF	DE	795	0	20	79500US1000104			New Castle County (South)--Middletown Town, Be
23	ACSSF	DE	795	0	21	79500US1000200			Kent County--Dover City PUMA, Delaware
24	ACSSF	DE	795	0	22	79500US1000300			Sussex County PUMA, Delaware
25	ACSSF	DE	970	0	23	97000US1000200			Christina School District, Delaware
26	ACSSF	DE	970	0	24	97000US1000230			Colonial School District, Delaware
27	ACSSF	DE	970	0	25	97000US1000680			Indian River School District, Delaware
28	ACSSF	DE	970	0	26	97000US1001240			Brandywine School District, Delaware
29	ACSSF	DE	970	0	27	97000US1001300			Red Clay Consolidated School District, Delaware

- Next, select the column "GEOID."

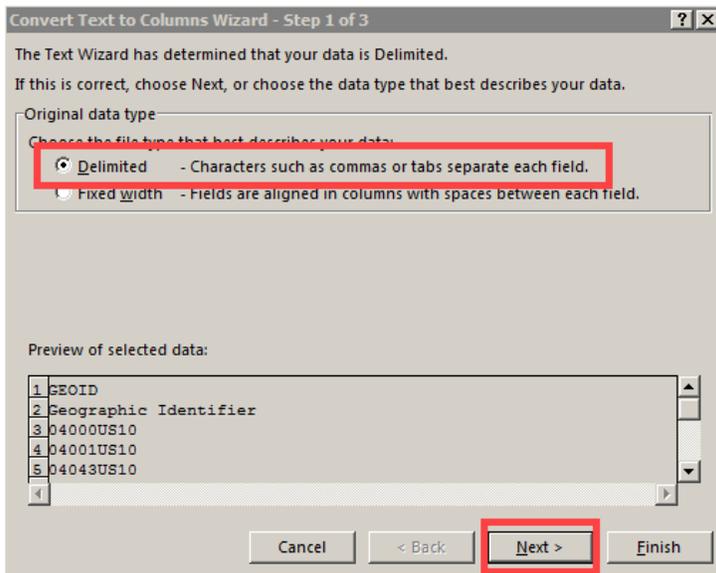
	A	B	C	D	E	AW	AX	AY	AZ
1	FILEID	STUSAB	SUMLEVEL	COMPONENT	LOGRECNO	GEOID			NAME
2	Always equal to ACS Summary File Identification	State Postal Abbreviation	Summary Level	Geographic Component	Logical Record Number	Geographic Identifier			Area Name
3	ACSSF	DE	40	0	1	04000US10			Delaware
4	ACSSF	DE	40	1	2	04001US10			Delaware -- Urban
5	ACSSF	DE	40	43	3	04043US10			Delaware -- Rural
6	ACSSF	DE	40 A0		4	040A0US10			Delaware -- In metropolitan or micropolitan statist
7	ACSSF	DE	40 C0		5	040C0US10			Delaware -- In metropolitan statistical area
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9	ACSSF	DE	40 C2		7	040C2US10			Delaware -- In metropolitan statistical area -- not i
10	ACSSF	DE	40 E0		8	040E0US10			Delaware -- In micropolitan statistical area
11	ACSSF	DE	40 E2		9	040E2US10			Delaware -- In micropolitan statistical area -- not in
12	ACSSF	DE	40 H0		10	040H0US10			Delaware -- Not in metropolitan statistical area
13	ACSSF	DE	50	0	11	05000US10001			Kent County, Delaware
14	ACSSF	DE	50	0	12	05000US10003			New Castle County, Delaware
15	ACSSF	DE	50	0	13	05000US10005			Sussex County, Delaware
16	ACSSF	DE	160	0	14	16000US1077580			Wilmington city, Delaware
17	ACSSF	DE	312	0	15	31200US379801077580			Wilmington city, DE; Philadelphia-Camden-Wilmin
18	ACSSF	DE	500	0	16	50000US1000			Congressional District (at Large) (113th Congress), f
19	ACSSF	DE	795	0	17	79500US1000101			New Castle County (East Central)--Wilmington City
20	ACSSF	DE	795	0	18	79500US1000102			New Castle County (North)--Hockessin PUMA, Dela
21	ACSSF	DE	795	0	19	79500US1000103			New Castle County (West Central)--Newark City &
22	ACSSF	DE	795	0	20	79500US1000104			New Castle County (South)--Middletown Town, Be
23	ACSSF	DE	795	0	21	79500US1000200			Kent County--Dover City PUMA, Delaware
24	ACSSF	DE	795	0	22	79500US1000300			Sussex County PUMA, Delaware
25	ACSSF	DE	970	0	23	97000US1000200			Christina School District, Delaware
26	ACSSF	DE	970	0	24	97000US1000230			Colonial School District, Delaware
27	ACSSF	DE	970	0	25	97000US1000680			Indian River School District, Delaware
28	ACSSF	DE	970	0	26	97000US1001240			Brandywine School District, Delaware
29	ACSSF	DE	970	0	27	97000US1001300			Red Clay Consolidated School District, Delaware

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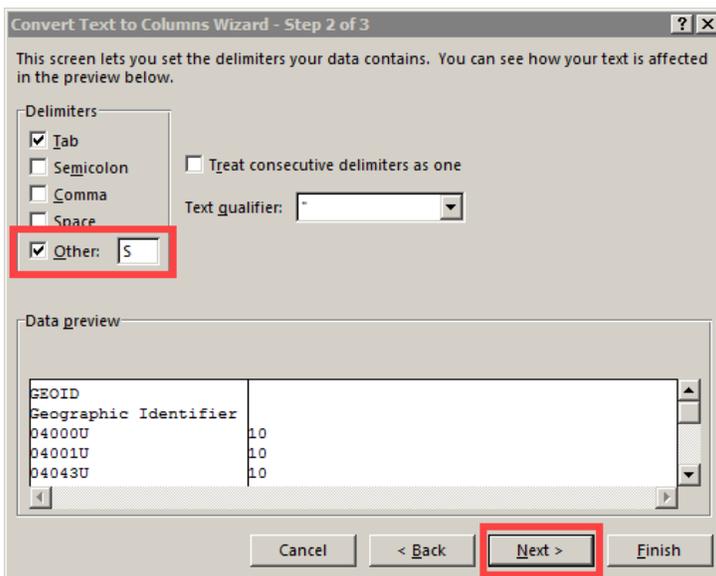
- 4) Select the “Data” tab from the top menu, then select “Text to Columns.” The “Convert Text to Columns Wizard” box should pop up.



- 5) In the “Convert Text to Columns Wizard,” select “Delimited” under “Choose the file type that best describes your data:” then click “Next.”

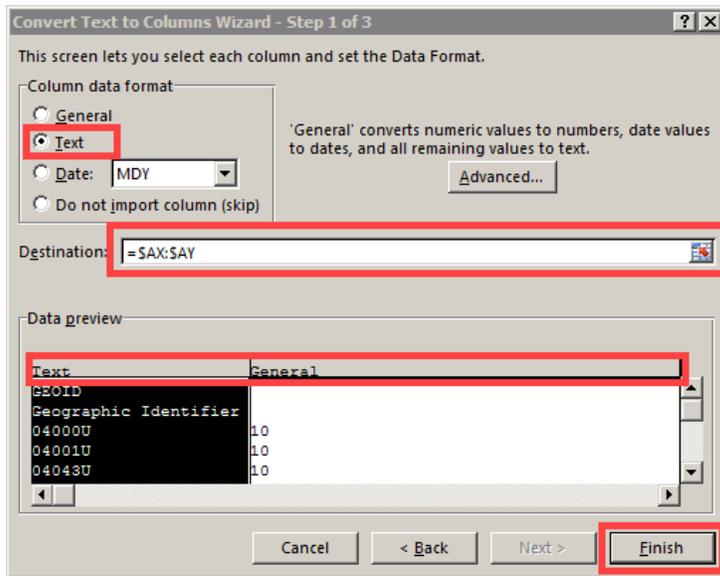


- 6) Check “Other” as the delimiter and type the letter “S” into the box. Click “Next.”



## Joining ACS Summary Files to TIGER/Line Shapefiles

- In the “Data preview” window, click on the top of the column and select “Text” under “Column data format” for EACH of the columns. In “Destination,” select the two blank columns that you created in Step 1 by typing the formula “=\$AX:\$AY”. Click “Finish.”



- Column AY should now contain the modified ACS GEOID that corresponds to GEOID in the TIGER/Line Shapefiles. The second screenshot shows the TIGER/Line Shapefile for Kent County, Delaware.

	A	B	C	D	E	AW	AX	AY	AZ
1	FILEID	STUSAB	SUMLEVEL	COMPONENT	LOGRECNO	GEOID	GEOID	NAME	
2	Always equal to ACS Summary File Identification	State Postal Abbreviation	Summary Level	Geographic Component	Logical Record Number	Geographic Identifier	Geographic Identifier	Area Name	
3	ACSSF	DE	40	0	1	04000US10	04000U	10	Delaware
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6	ACSSF	DE	40	A0	4	040A0US10	040A0U	10	Delaware -- In metropolitan or micropolitan statistical area
7	ACSSF	DE	40	C0	5	040C0US10	040C0U	10	Delaware -- In metropolitan statistical area
8	ACSSF	DE	40	C1	6	040C1US10	040C1U	10	Delaware -- In metropolitan statistical area -- in principal
9	ACSSF	DE	40	C2	7	040C2US10	040C2U	10	Delaware -- In metropolitan statistical area -- not in principal
10	ACSSF	DE	40	E0	8	040E0US10	040E0U	10	Delaware -- In micropolitan statistical area
11	ACSSF	DE	40	E2	9	040E2US10	040E2U	10	Delaware -- In micropolitan statistical area -- not in principal
12	ACSSF	DE	40	H0	10	040H0US10	040H0U	10	Delaware -- Not in metropolitan statistical area
13	ACSSF	DE	50	0	11	05000US10001	05000U	10001	Kent County, Delaware
14	ACSSF	DE	50	0	12	05000US10003	05000U	10003	New Castle County, Delaware
15	ACSSF	DE	50	0	13	05000US10005	05000U	10005	Sussex County, Delaware
16	ACSSF	DE	160	0	14	16000US1077580	16000U	1077580	Wilmington city, Delaware
17	ACSSF	DE	312	0	15	31200US379801077580	31200U	3.79801E+11	Wilmington city, DE; Philadelphia-Camden-Wilmington, PA-NJ-DC-MD Metro Area
18	ACSSF	DE	500	0	16	50000US10000	50000U	1000	Congressional District (at Large) (113th Congress), Delaware
19	ACSSF	DE	795	0	17	79500US1000101	79500U	1000101	New Castle County (East Central)--Wilmington City PUMA, Delaware
20	ACSSF	DE	795	0	18	79500US1000102	79500U	1000102	New Castle County (North)--Hockessin PUMA, Delaware
21	ACSSF	DE	795	0	19	79500US1000103	79500U	1000103	New Castle County (West Central)--Newark City & Brookside PUMA, Delaware
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23	ACSSF	DE	795	0	21	79500US1000200	79500U	1000200	Kent County--Dover City PUMA, Delaware
24	ACSSF	DE	795	0	22	79500US1000300	79500U	1000300	Sussex County PUMA, Delaware
25	ACSSF	DE	970	0	23	97000US1000200	97000U	1000200	Christina School District, Delaware
26	ACSSF	DE	970	0	24	97000US1000230	97000U	1000230	Colonial School District, Delaware
27	ACSSF	DE	970	0	25	97000US1000680	97000U	1000680	Indian River School District, Delaware
28	ACSSF	DE	970	0	26	97000US1001240	97000U	1001240	Brandywine School District, Delaware
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8	ACSSF	DE	40	C1	6	040C1US10	040C1U		10 Delaware -- In metropolitan statistical area -- In principal
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12	ACSSF	DE	40	H0	10	040H0US10	040H0U		10 Delaware -- Not in metropolitan statistical area
13	ACSSF	DE	50	0	11	05000US10001	05000U		10001 Kent County, Delaware
14	ACSSF	DE	50	0	12	05000US10003	05000U		10003 New Castle County, Delaware
15	ACSSF	DE	50	0	13	05000US10005	05000U		10005 Sussex County, Delaware
16	ACSSF	DE	160	0	14	16000US1077580	16000U		1077580 Wilmington city, Delaware

- 9) The ACS Summary File and the TIGER/Line Shapefile should now be ready to be joined using GIS software. Visit “Working with TIGER/Line Shapefiles” at <https://www.census.gov/programs-surveys/geography/about/training/how-tos.html> to learn more about how to access and use the TIGER/Line Shapefiles.