

## Google Earth

---

Google Earth Pro for Desktop is a free mapping tool that provides an easy way to see how census tract boundaries relate to other geographic features in a familiar context. The Census Bureau has recently made this possible by publishing generalized and detailed 2020 tract and county boundaries in a format (.shp) compatible with Google Earth.

Installing Google Earth isn't complicated. To get started, go [here](#), decide whether or not you want Chrome by checking the boxes at the top of the screen, and click Agree & Download. The installation is a bit different depending on whether you have a Mac or PC. Detailed installation information can be found at <https://support.google.com/earth/answer/21955?hl=en>.

## Census Tract Boundaries in Shapefiles

---

Once you have successfully installed Google Earth Pro, you'll need to retrieve the tract boundaries from the Census Bureau. To download the shapefile (.shp) boundaries, open the browser of your choice and navigate to <https://www2.census.gov/geo/tiger/TIGER2021/TRACT/>. This directory contains the detailed 2020 tract boundaries by state as zip files (see Figure 1).











Name	Last modified	Size	Description
 Parent Directory		-	
 tl_2021_01_tract.zip	22-Sep-2021 15:49	11M	
 tl_2021_02_tract.zip	22-Sep-2021 15:49	3.0M	
 tl_2021_04_tract.zip	22-Sep-2021 15:49	8.1M	
 tl_2021_05_tract.zip	22-Sep-2021 15:49	10M	
 tl_2021_06_tract.zip	22-Sep-2021 15:50	31M	
 tl_2021_08_tract.zip	22-Sep-2021 15:50	8.0M	
 tl_2021_09_tract.zip	22-Sep-2021 15:50	2.6M	
 tl_2021_10_tract.zip	22-Sep-2021 07:49	1.1M	
 tl_2021_11_tract.zip	22-Sep-2021 15:50	357K	

Figure 1: Census Tract Boundary Files

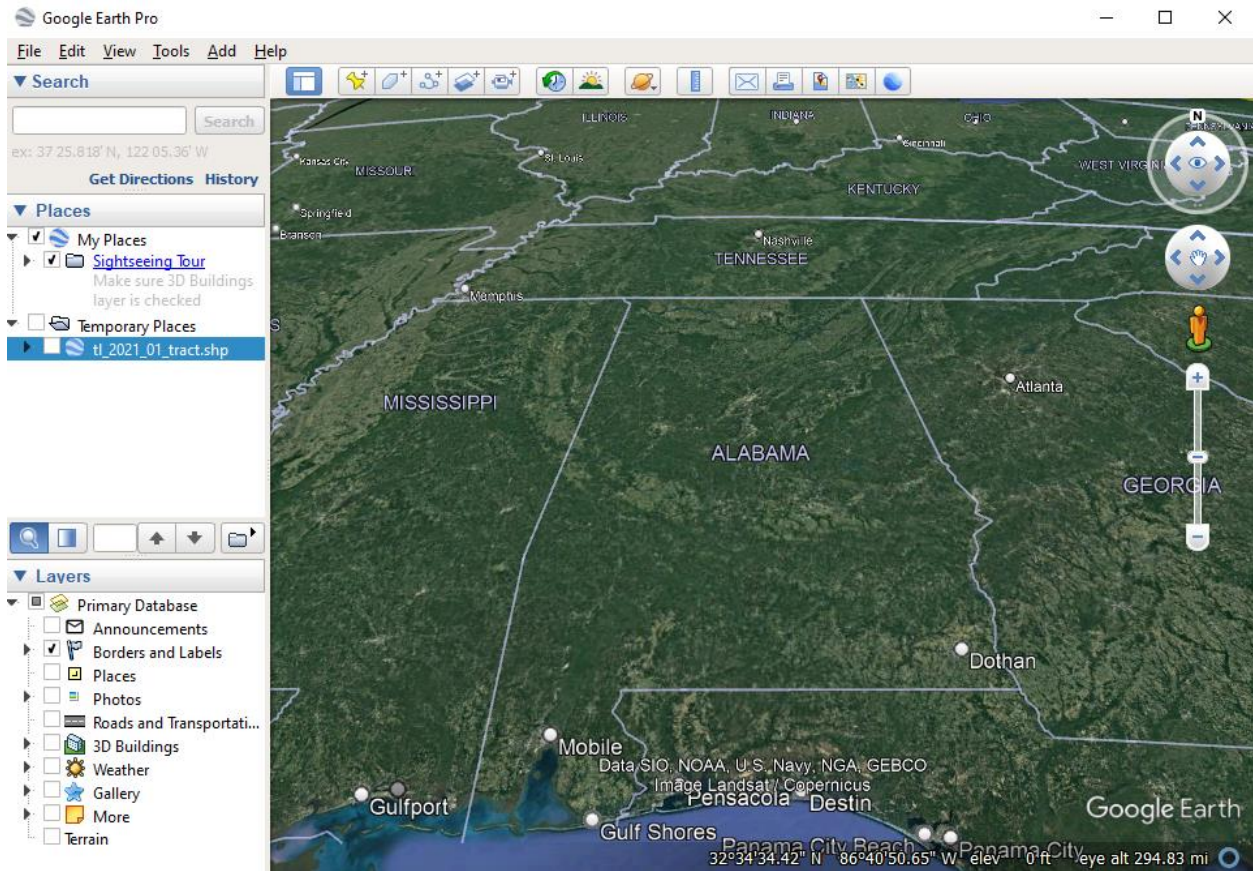
Census has organized the boundaries into separate zip files by state, where the two-digit number in the file name after the year is the state FIPS code. Unless you happen to know the FIPS codes for the states you want, you'll need to go [here](#) to figure it out. For example, if you were interested in tract boundaries for Alabama, you'd need to download the file "tl\_2021\_01\_tract.zip" since Alabama's FIPS code is 01. Just right click the file, select Save Link As... and save the file locally.

## Viewing Census Tract Boundaries in Google Earth

---

At this point, launch Google Earth, click File..., Open or Import..., or navigate to the location of the

shapefile (.shp) or files you downloaded from the Census Bureau, select the file, and click Open. You may need to change the file type you are looking for at the bottom right of the file select window to “ESRI Shape (\*.shp)” to display the file. Once you Import or Open the file, you should see something like Figure 2 below.



**Figure 2: 2020 Alabama Census Tracts, First Look**

You will be able to see the file you opened/imported on the left-hand side under “Temporary Places” as seen in the figure above. Once you select the file, you will see the entirety of the state highlighted in white as seen in Figure 3 below. While it’s clear that the file you downloaded is indeed for Alabama, the tract boundaries are impossible to see. This is because the default settings are white tract polygons with white boundaries. Fortunately, it’s easy to change the look of these polygons.

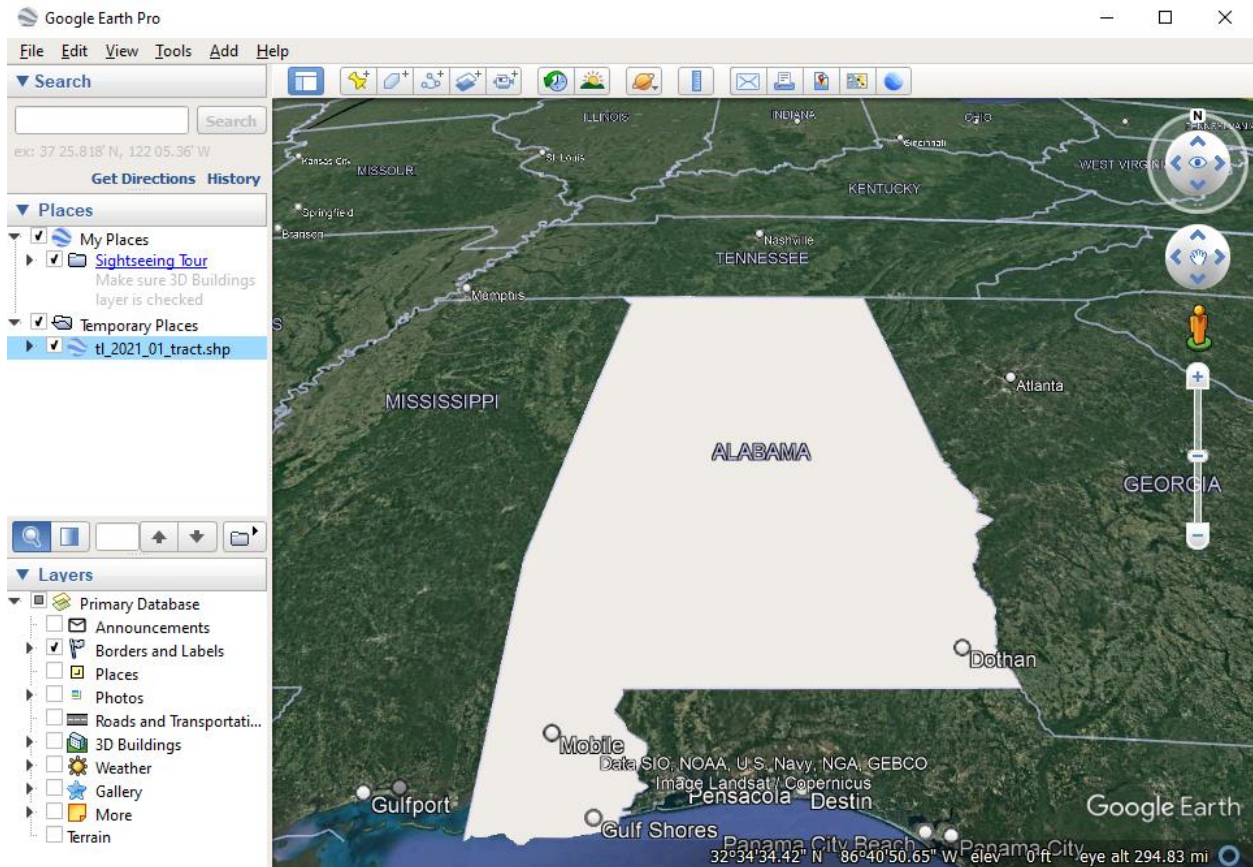


Figure 3: 2020 Alabama Census Tracts, Shapefile Selected

To modify how the census tracts are displayed, you will first need to Right-Click on the file that was selected to view and is highlighted under “Temporary Places” in Figure 3 for our example. Select “Properties” from the menu that pops up. This will bring you to the Properties interface which will look like Figure 4 when you select the “Style, Color” tab.

Select the “Share Style” button and select “OK” to be able to alter Lines and Areas as shown in Figure 5. You may play with the colors and width for Lines or similarly for Color, but for our example, we will have Line show up as red with a line width of 3.0. The Area portion will be 0% Opacity, as it is very distinct against the normal Google Earth view.

Once you are satisfied with the options set, select the “OK” button to see the results. Based on what we chose for our example, we see the output is Figure 6.

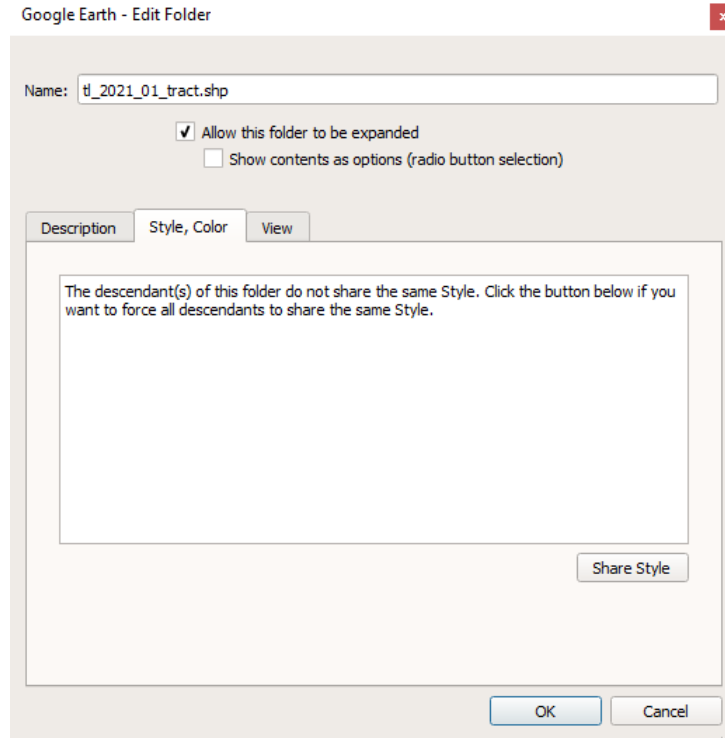


Figure 4: Changing the Look

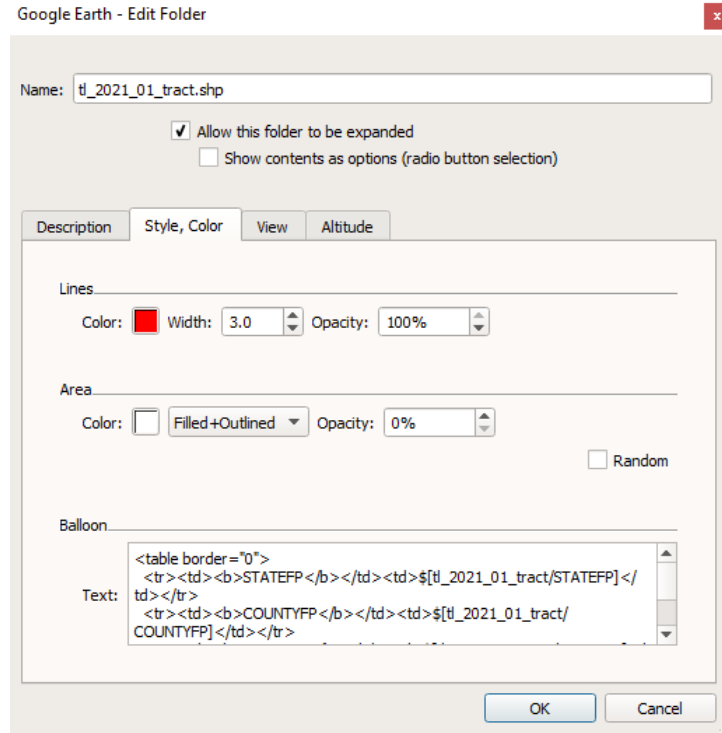


Figure 5: Changing the Look, Style & Color

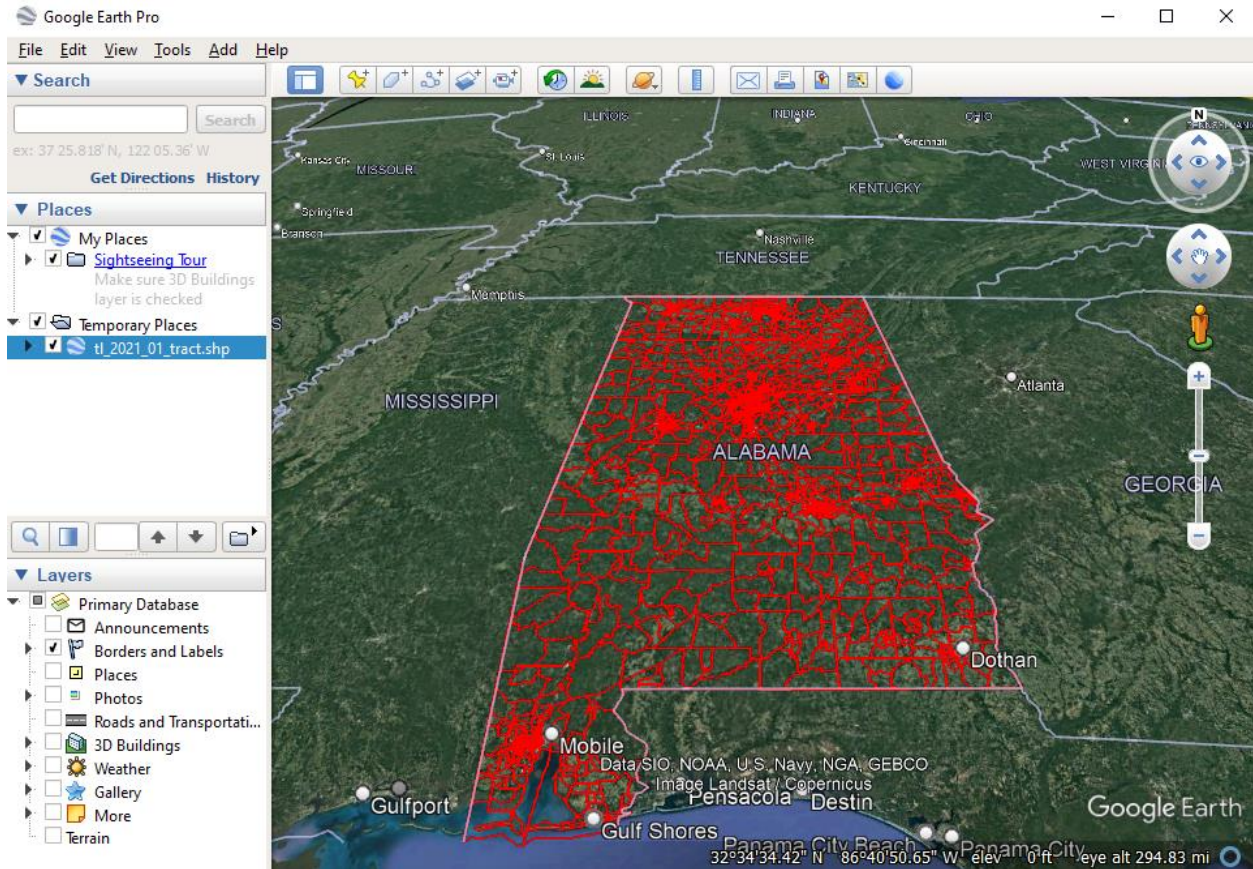


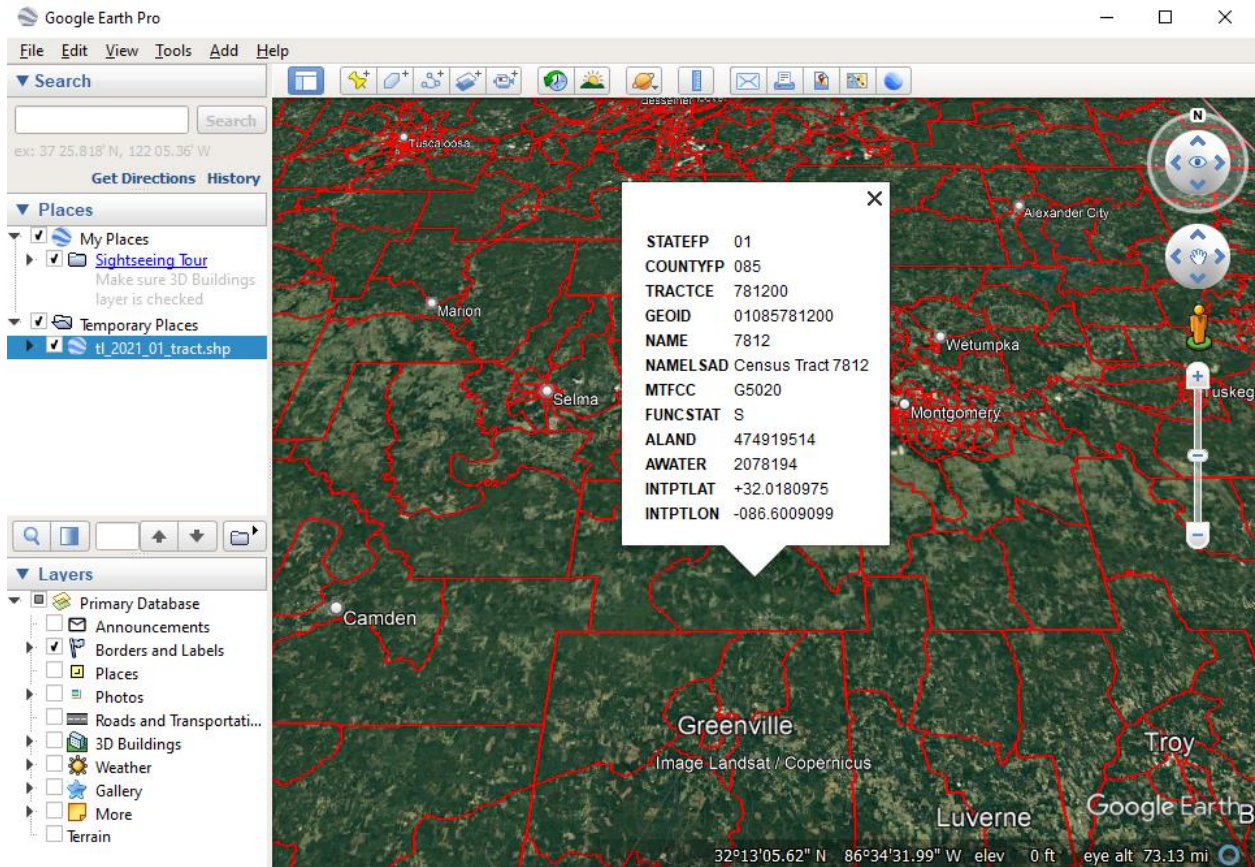
Figure 6: Alabama Census Tracts, Improved

You can save the changes in the appearance of the tract boundaries by right-clicking “tl\_2021\_01\_tract” under Temporary Places, Save Place As..., then save the file locally as a shapefile (shp).

## Useful Features

Zooming in more closely will allow you to see how tract boundaries relate to the area your company serves. Figure 7 below shows how you can zoom in on a particular area and identify a particular tract. Clicking on the tract polygon will bring up a window that contains

1. The GEOID, which is the complete 11-digit census tract code (here, 010805781200 = Alabama FIPS code = 01 + Lowndes County = 085 + Tract = 781200). For more information about tract codes, see [More About Census Tracts](#).
2. The NAME, which is the census tract name (in this case, 7812)



**Figure 7: Census Tract Boundaries in Alabama with Information**

While not the most efficient tool for geocoding, you can nonetheless use Google Earth Pro to determine the census tract for an address. Using this approach allows you to see the point on the Earth that Google’s geocoding engine associates with an address.

Enter an address into the Search field at the upper left of the screen then click [Search](#). After you’re zoomed to the location, you can click the polygon that contains the address to show the census tract. Figure 8 shows a search I did for 600 Dexter Ave, Montgomery, AL 36104 (the address of the Alabama State Capitol). Clicking on the tract polygon revealed that it’s located in tract 01101000200.

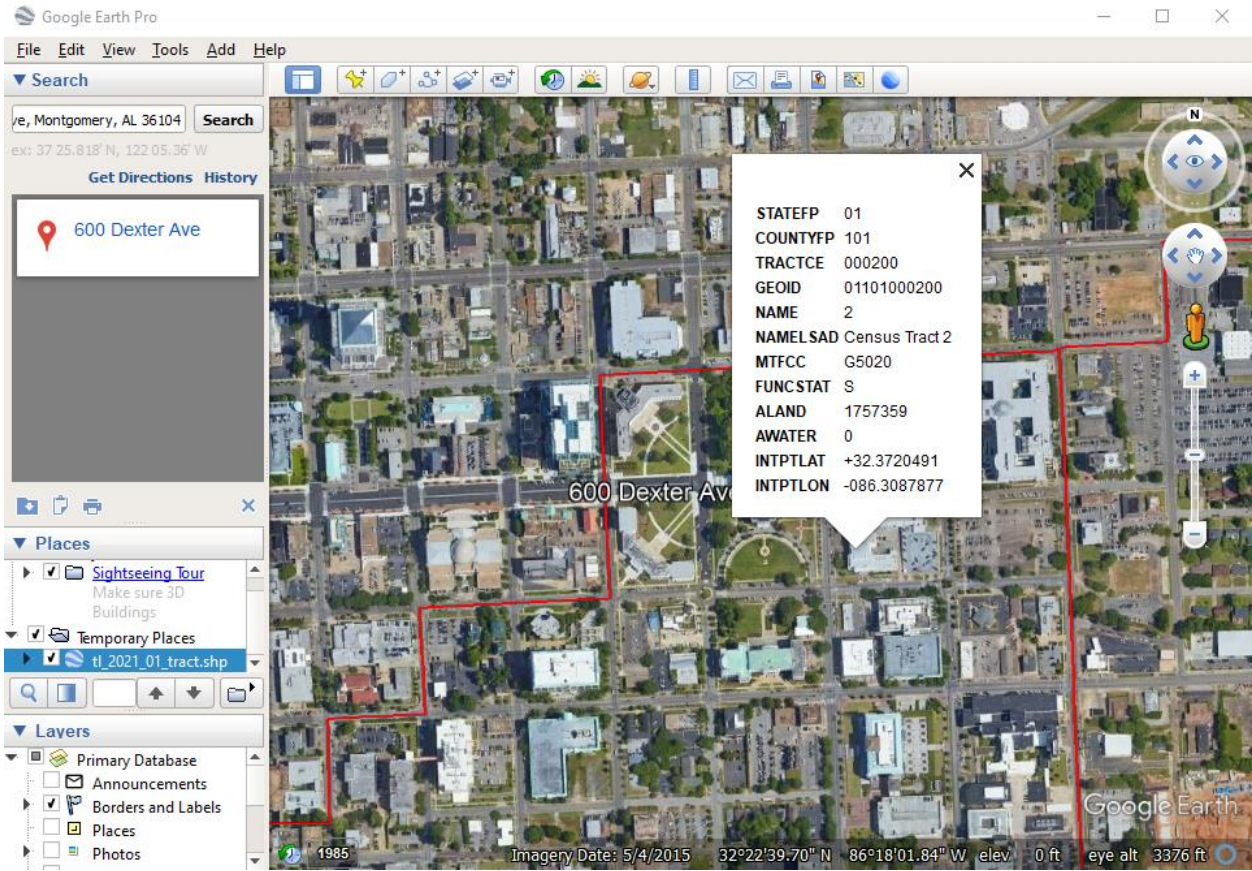


Figure 8: Alabama State Capitol Census Tract