Chapter 6

Building Maps with Google Fusion Tables

Summary: The Google Fusion Tables is described as "experimental", which means that it always in beta format. Still, as we saw in Chapter 6, the application provides an excellent way of displaying data in a map, either by plotting the geographic coordinates such as longitude and latitude that are part of the dataset that you're uploading, or by linking to a KML file, the native format for Google Maps and an open standard. This tutorial will focus on building maps with Fusion Tables, as opposed to a general guide, which you'll find in Chapter 8's "A Guide to Google Fusion Tables Visualizations."

There are two popular ways that many journalists use Fusion Tables. To plot points such as nursing homes or restaurants that have failed inspections, criminal offences, or federal contaminated sites. Fusion tables also allow us to combine KML files that we learned about on page 121 of Chapter 8 with tables in Excel or csv format that group the kind of information we just described in boundaries like federal or provincial ridings, municipal boundaries, countries; or states and counties in the United States. Those shapes defined by the boundaries can be assigned colours that correspond to the kind of information they contain. For instance, darker colours convey a higher concentration of frequently inspected nursing homes, restaurants, or contaminated sites that need to be cleaned up.

In this tutorial, we'll learn how to construct both types of maps; one with points, the other with polygons. We'll assume that you have the Fusion Table app.
If you don't, then please consult Chapter 8's "A Guide to Google Fusion Tables Visualizations."

What you will learn:
1. Upload and create a map using geographic coordinates.
2. Upload a KML and csv files.
3. Combine a KML file with a table in csv format.
4. Colour code your map.

Task 1: Upload and create a map using geographic coordinates.

For this task, we'll be using a table containing the list of federal contaminated sites that can be found on the Treasury Board of Canada Secretariat's site.

Find Sites by Classification

The table below summarizes the number of sites in the inventory by thei the ☐ National Classification System of the Canadian Council of Ministers

Classification Type	Suspected	Active	Closed	Total
High Priority for Action	1	733	908	1,642
Medium Priority for Action	0	1,763	1,359	3,122
Low Priority for Action	0	1,395	932	2,327
Insufficient Information	0	109	371	480
Not a Priority for Action	0	392	2,356	2,748

The file we'll download "Active" sites in the first category, "High Priority for Action." Click the number 733, which may change depending on when the federal government department in question gets around to cleaning up the site, an expensive endeavour.

Search Results

Search Results Summary	
Criteria:	• Classification: High Priority for Action • Limited to Active Sites Select Additional Criteria...
Sort Key:	Federal Site Identifier (ascending)
Sites Found:	733

Alternate Views

Choose an alternate view: [Map] [XML] [CSV] [Financials Report]

Select the "CSV" format.

Select "Tombstone Data", give it a label that makes more sense than the generic one, and save the file to the folder on your hard drive that you'll be using for this tutorial.

The file contains 30 columns and 733 rows, with each one representing a site.

As we learned in Chapter 8, it's best to keep things simple when mapping.

Scroll to the far right, and you'll see the longitude and latitude coordinates that Fusion Tables will use to place the sites.

Latitude	Longitude	Coordinate Reference System
62.60667	-113.465556	NAD83 (EPSG4269)
62.34056	-112.746389	NAD83 (EPSG4269)
64.27361	-115.204722	NAD83 (EPSG4269)
66.00414	-118.073309	NAD83 (EPSG4269)
61.96278	-128.216111	NAD83 (EPSG4269)
62.98472	-113.204167	NAD83 (EPSG4269)
78.12368	-103.177136	NAD83 (EPSG4269)
75.36099	-105.72743	NAD83 (EPSG4269)
67.20528	-118.591667	NAD83 (EPSG4269)
76.33841	-98.694458	NAD83 (EPSG4269)
76.13333	-104.033333	NAD83 (EPSG4269)
77.34953	-105.30697	NAD83 (EPSG4269)
63.11197	-77.938633	NAD83 (EPSG4269)
63.03139	-113.135	NAD83 (EPSG4269)
69.00691	-134.672628	NAD83 (EPSG4269)
61.325	-111.792222	NAD83 (EPSG4269)

Column AD even contains the Coordinate Reference System, which Chapter 7 covers in detail.

Save a copy of this table as an Excel file, which will allow us to do some basic analysis that will determine what we upload.

As we explained in Chapters 6 and 8, the key to effective visualizations like maps is to keep things simple. In this case, we have a table that contains information about the contaminated sites for which many federal government departments are responsible. And the sites are in various forms of clean up. We could use a Fusion Table to group the departments and count the number of contaminated sites they contain. If you can't remember how to construct one, please refer to Chapter 4's pivot table tutorial.

We can see that Indigenous and Norther Affairs Canada has the highest number of sites, many of which are reserves. So we might chose to return to our table, select those sites, paste them into a new file, save it as a csv, which we'll upload to Fusion Tables. To continue the tutorial, you can also upload the new csv file by clicking here.

Now go to your Google Drive, and select your Fusion Table App.
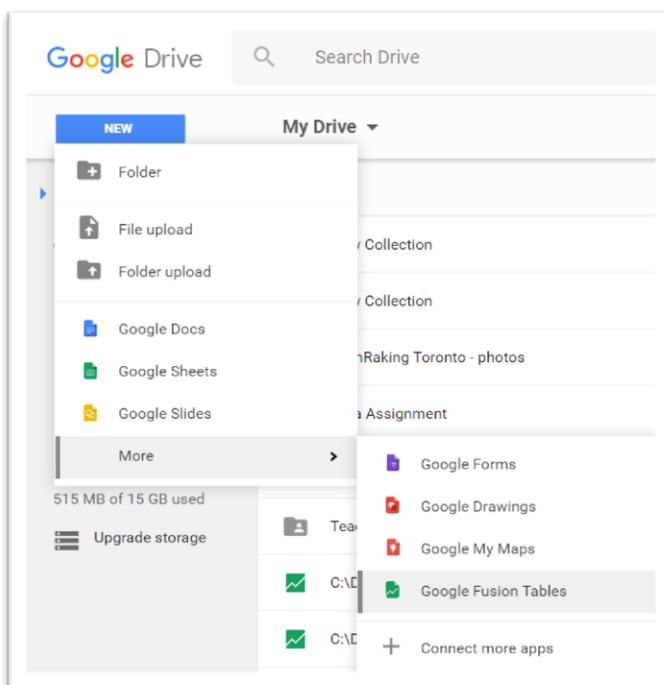
Select the Fusion Tables app, and browse for your csv file.
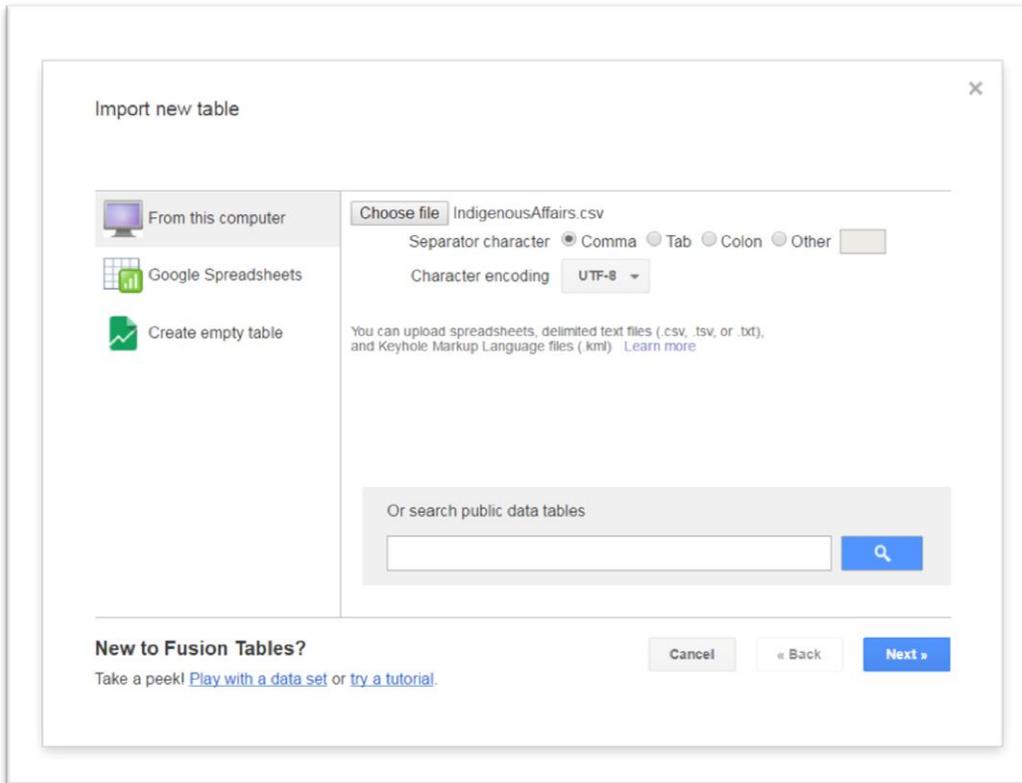
Select the "Next" tab.
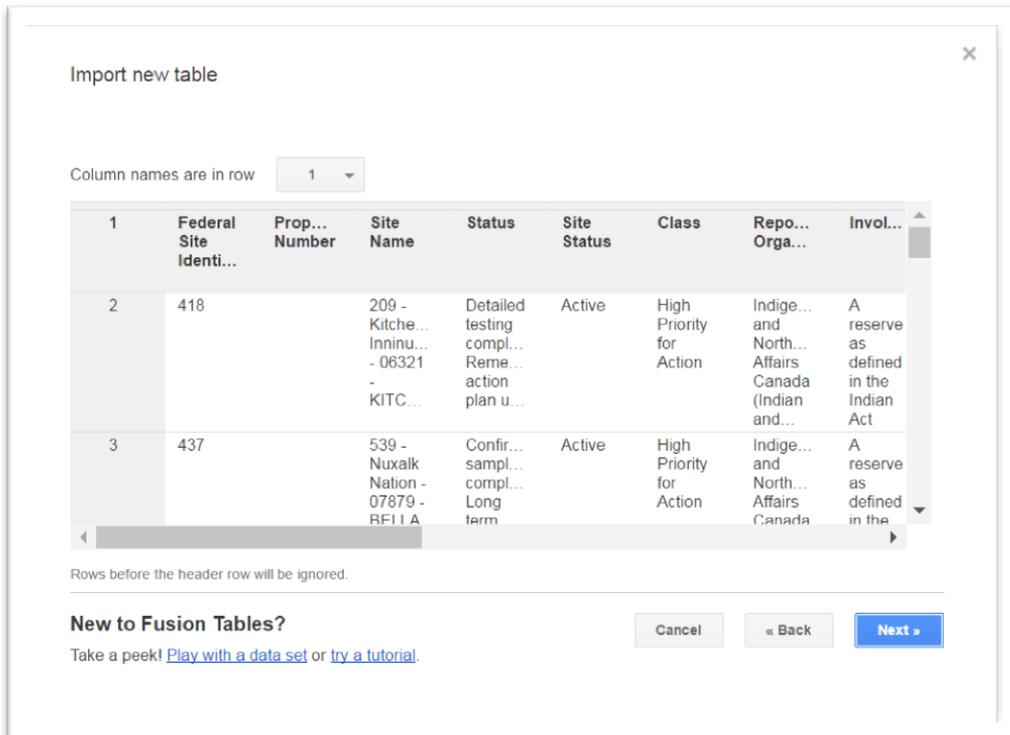
If your table doesn't begin at the first row, you use the tab just above the table to select the correct row that contains the column labels. This is okay. So select the "Next" tab.

Here we have the table name, which can change. As well, we can add to the generic description. For instance, information about the table that you might want to share. The generic information is fine. So select "Finish."

We know that Fusion Tables has mapped the contaminated sites' longitude and latitudes because it has provided us with a "Map" tab, just to the left of the "plus" sign. Click the "Map" tab.
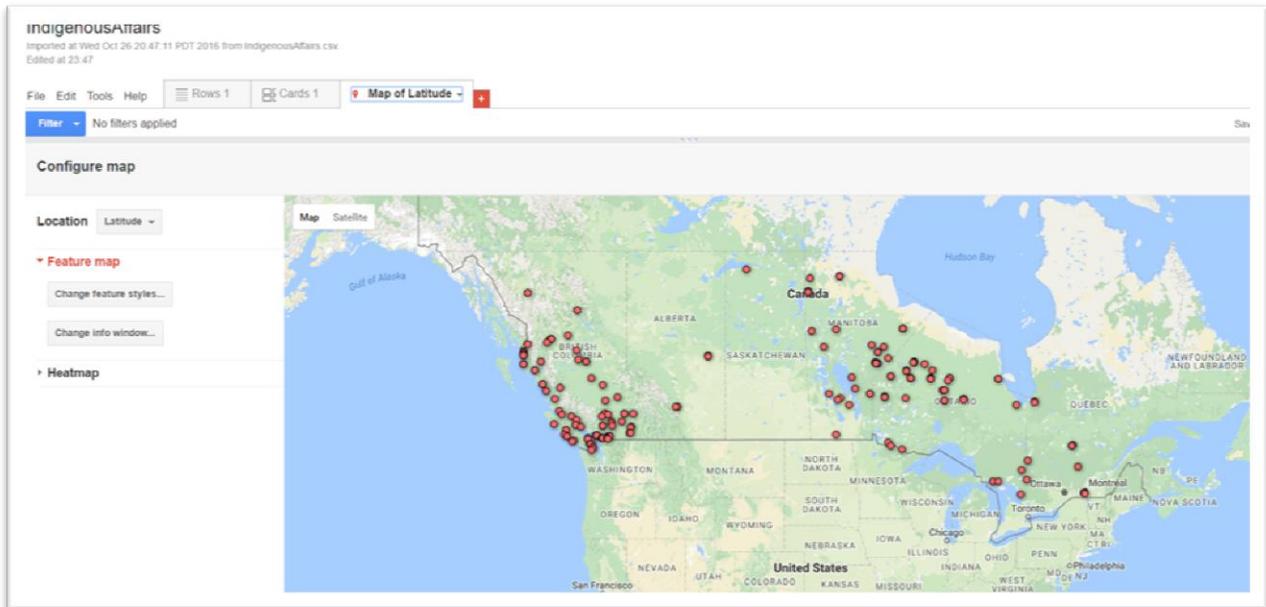
We can see the Fusion Table has used the geographic coordinates to place the contaminated sites onto the base map which is explained on pages 118–119 in Chapter 6.

Click on one of the red dots to see the information in the pop-up box.
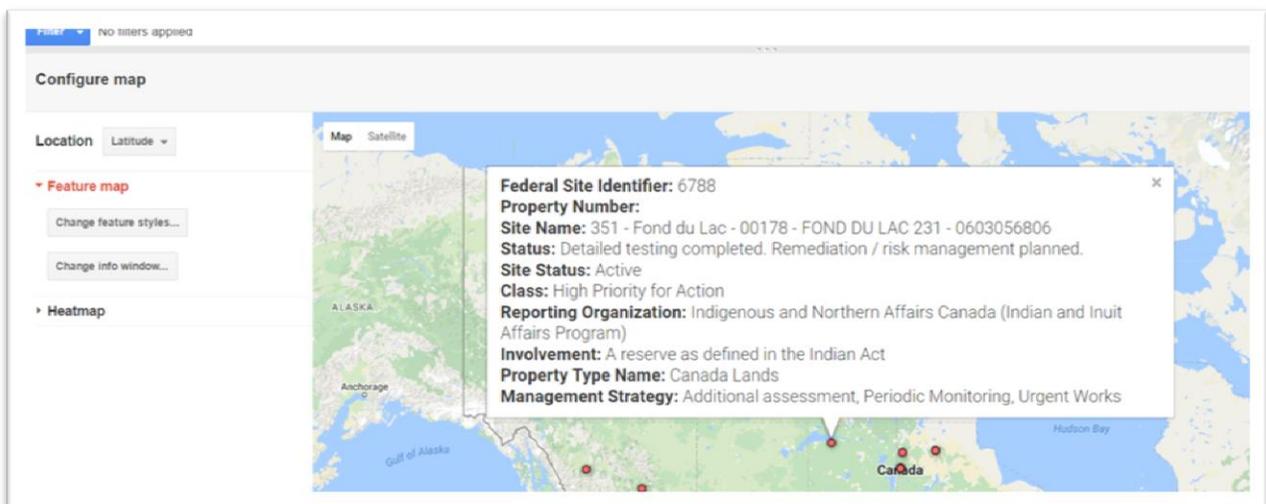
This is too much information. Remember, we've gone to the trouble of filtering the dataset for the department that owns the greatest number of high priority

contaminated sites. So we must continue to keep things simple. This means only displaying the essential information in the pop-up boxes.

To do this, click the "Change info window" tab to the left.
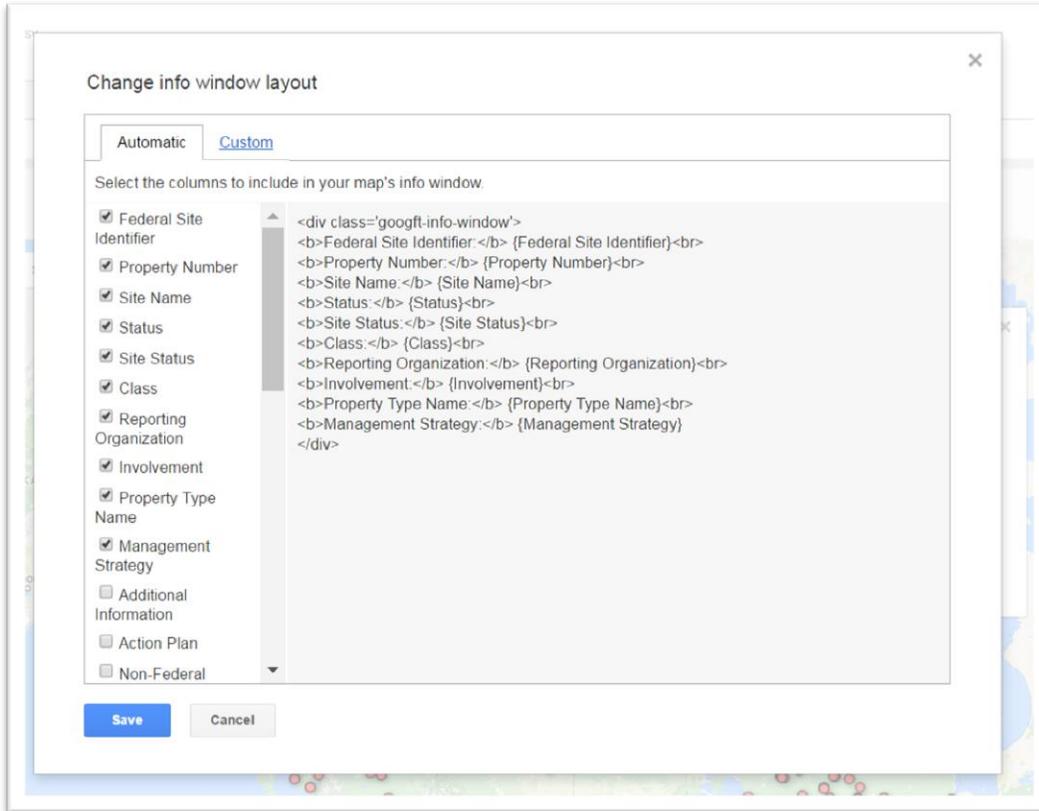
Because there are so many columns, Fusion Tables has only selected the first few. Select the columns you want, and de-select the rest.
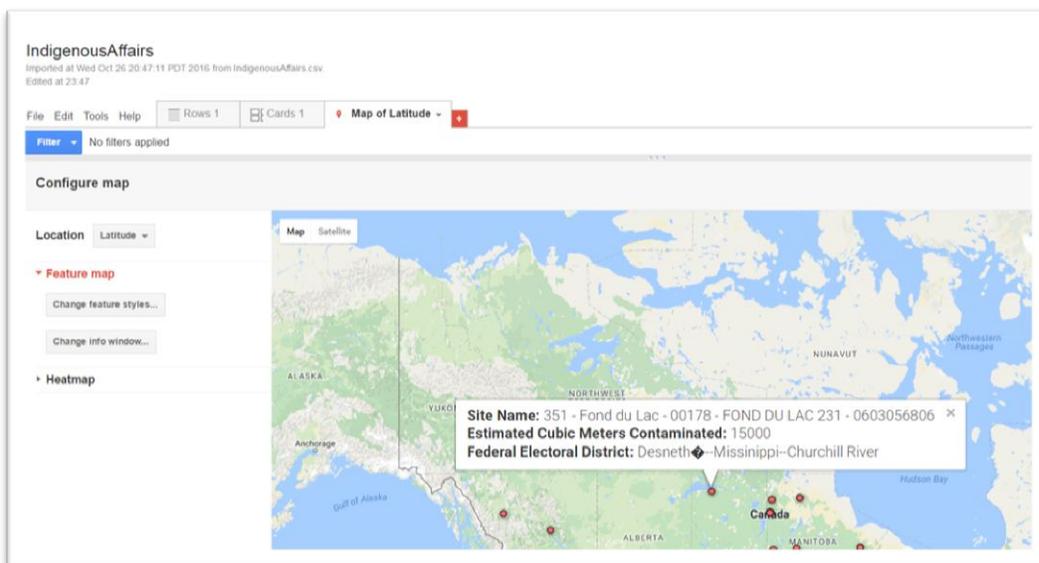
That's better. Ultimately, the choice is yours. Just keep it simple. If you wanted to change the labels in your pop-up box, you could return to the "Change info window", and click the "Custom" tab, where you can use some html coding to change the titles to the left of the colons. The information to the right belongs to the original table and can not be altered.

If we're happy with the result, we can share the file, but clicking on the "Share" tab at the top right, which produces a dialogue box.

Change the first setting under "Who has access".
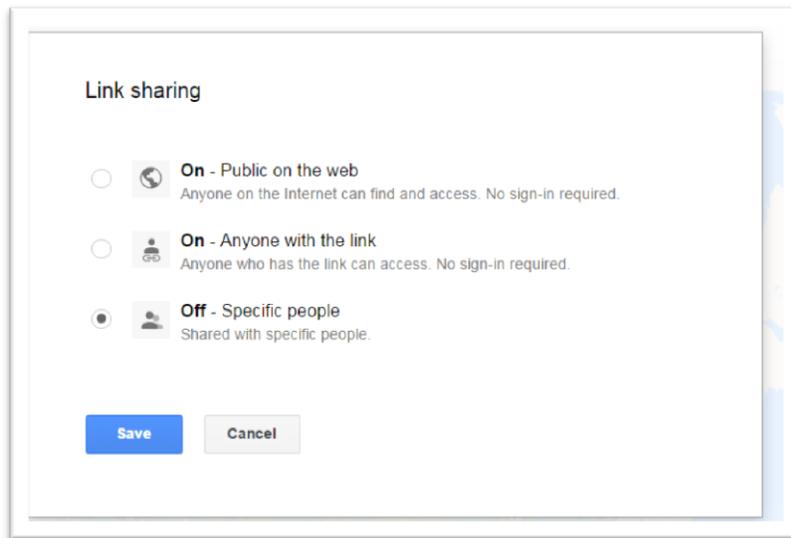
You can select either of the first two options. If you're really happy with the result and want to embed the map into your story, select the first option. If you want to restrict access to colleagues for the time being, then select the second option. For the purposes of this exercise, let's choose the first one, and then save the resuslt.
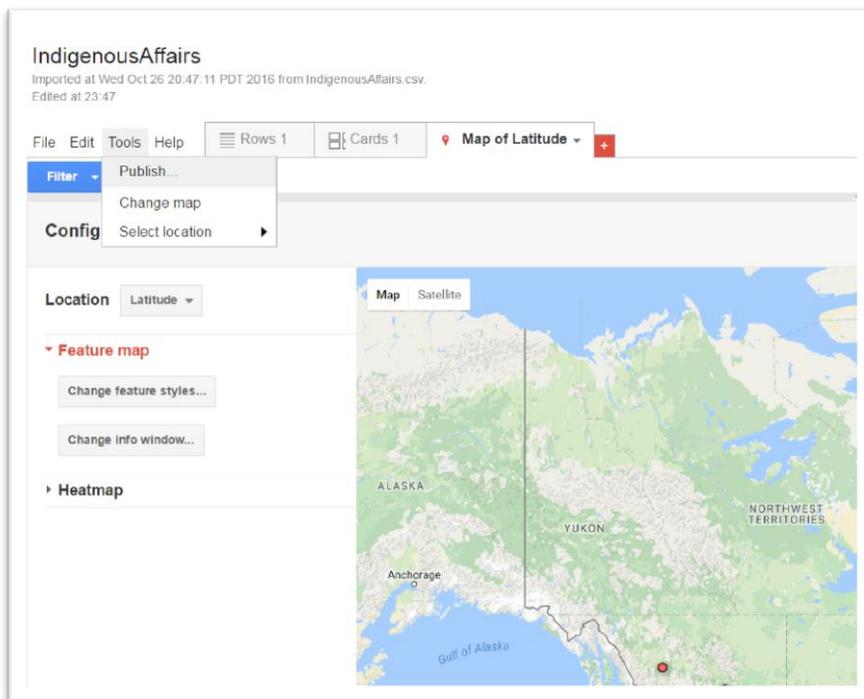
Select the "Publish" option.
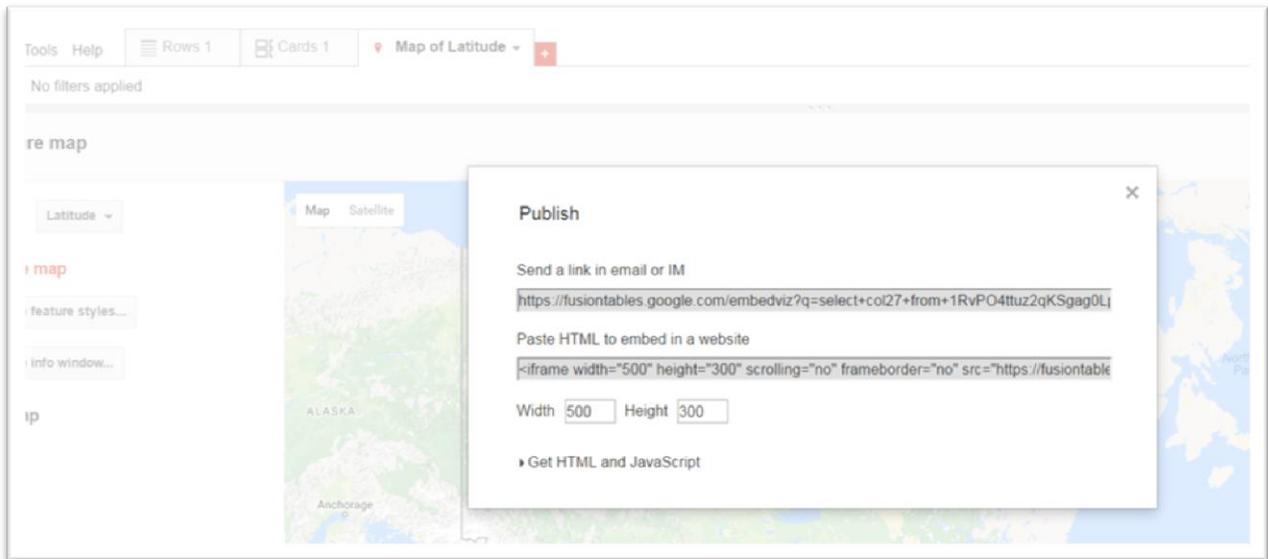
You can change the dimensions if you're not happy with the default settings. If you are, then simply copy, paste, and then embed the HTML code into your blog.
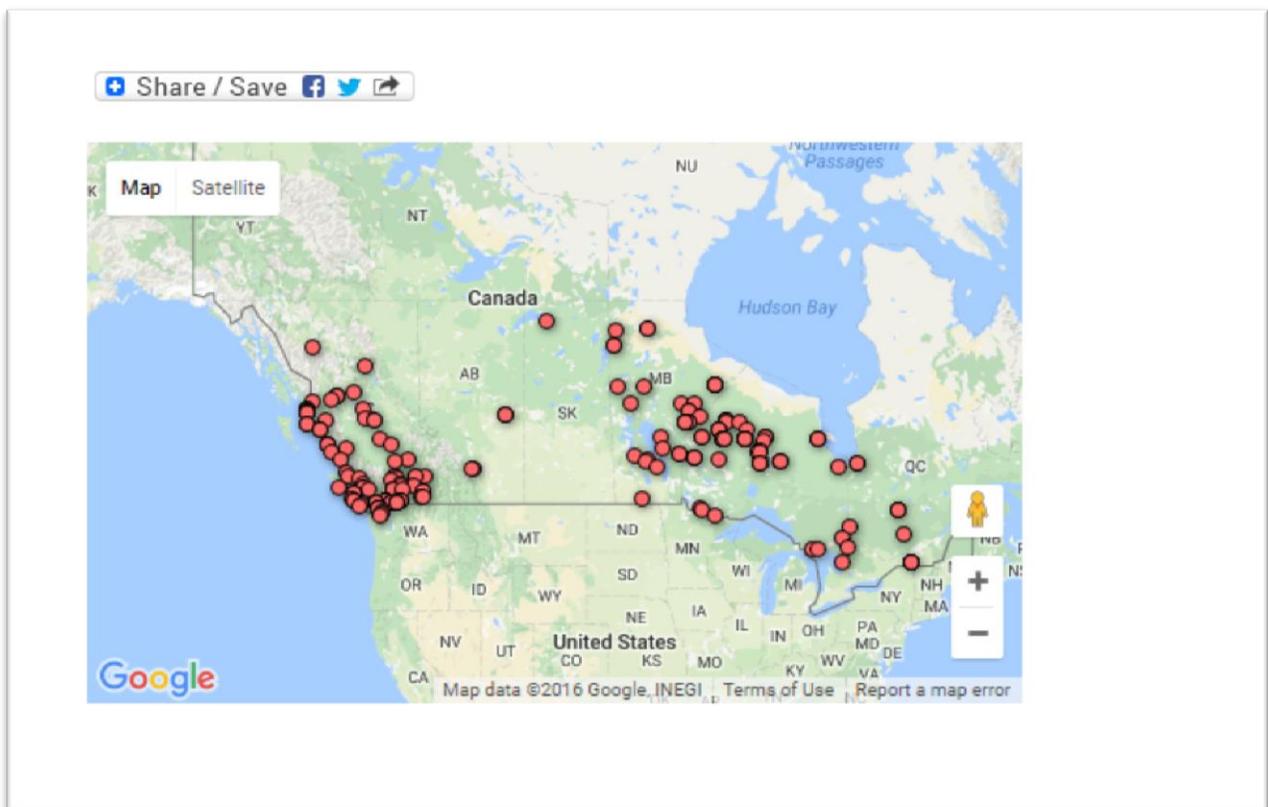
Task 2: Upload a KML file.

In addition to displaying points on a map, Fusion Tables can also combine a csv or Excel file that contains groupings of information to a KML file, which as we learned on page 121 of Chapter 6 is a native map format of Google Maps. Joining files comes in handy when, for instance, we want to see which city wards in the KML file may contain the highest number of restaurants with lousy inspection records, the highest rates of break-and-enters, or the most noise complaints for a given year.

For this tutorial we'll choose the latter. We will see which city of Ottawa wards had the highest number of noise complaints between 2013 and 2015.

Click here to down the KML file that contains the city wards.

Upload it to Fusion Tables, using the same steps in Task 1.

The third column contains the geographic information Fusion Tables needs to place the boundary on the Ottawa base map.
Complete the steps.

Click on the "Map of geometry" tab to see the boundaries.

Task 3: Combine a KML file with a table in csv format.

Now let's join the csv file, which when merged, will populate each ward with a number of ward complaints. Return to the table, by selecting the "Rows 1" tab.
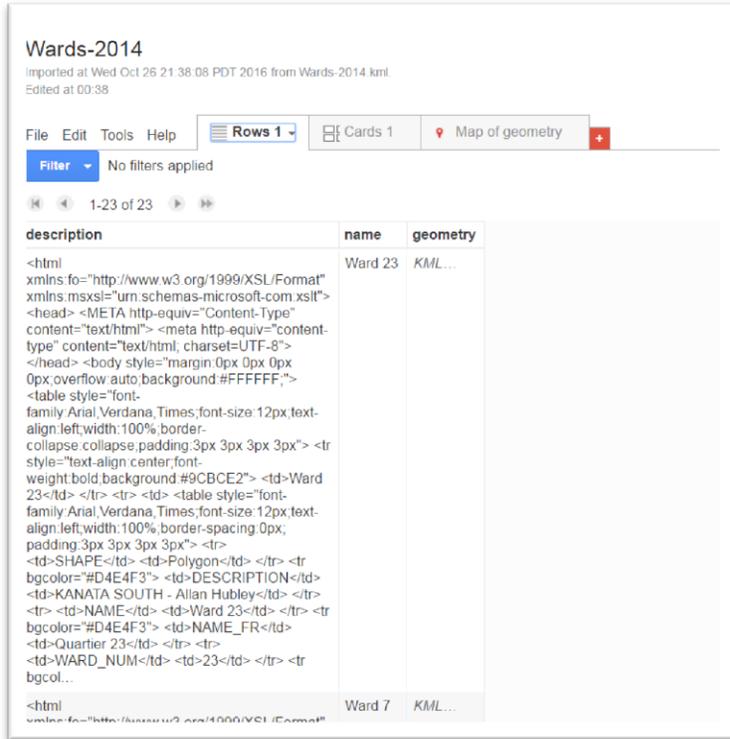
Now click here to obtain our csv file.
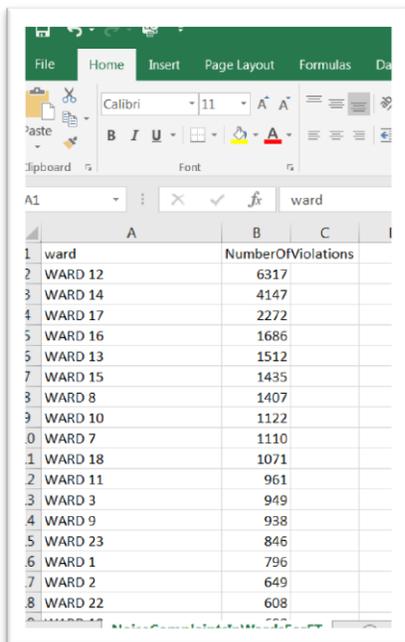
Save it in the same folder for this tutorial.

Upload it to Fusion Tables.

Now return to your KML table, and the second column in our KML file.

We will join these two columns to create a new layer. So let's stay with the KML file.
Click on the "File" portion of the menu.

Select "Merge" and browse to your csv file, which is on your Google Drive.
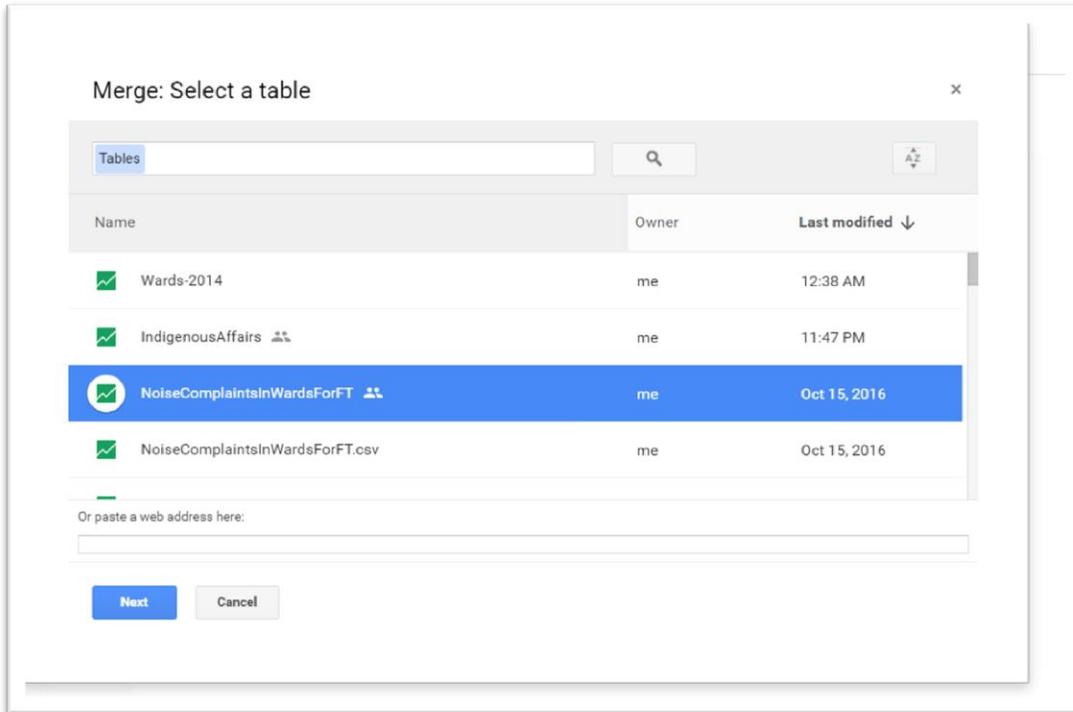
Note: This drive looks a little different from yours. However, we have selected the correct file to merge. So click the "Next" tab.
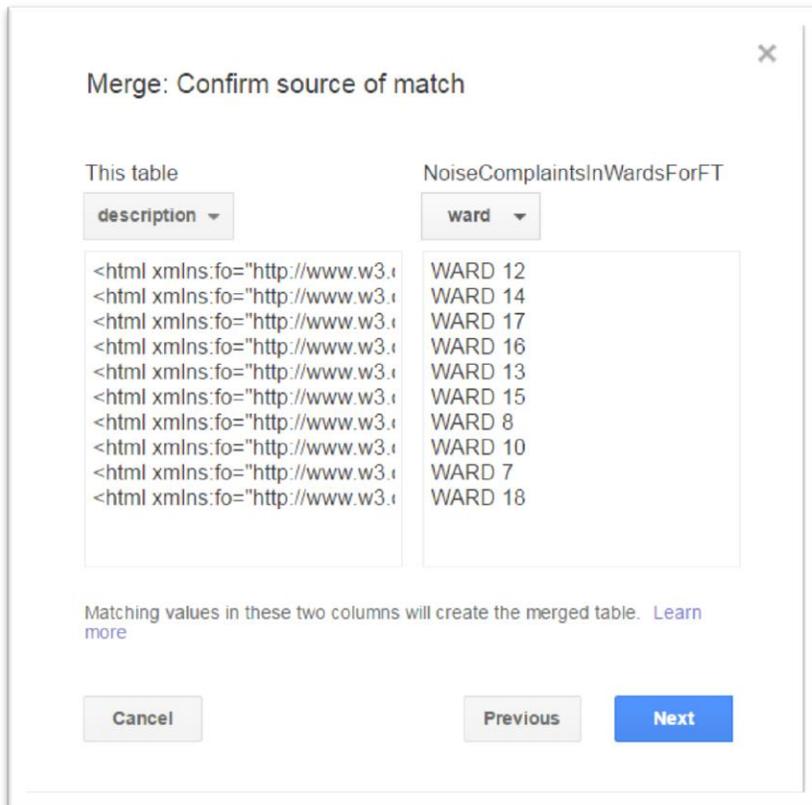
Click on the arrow to the right of the tab that contains the "description" label.

Select the "name" column.

Now we have identical columns that can be matched. Select "Next".
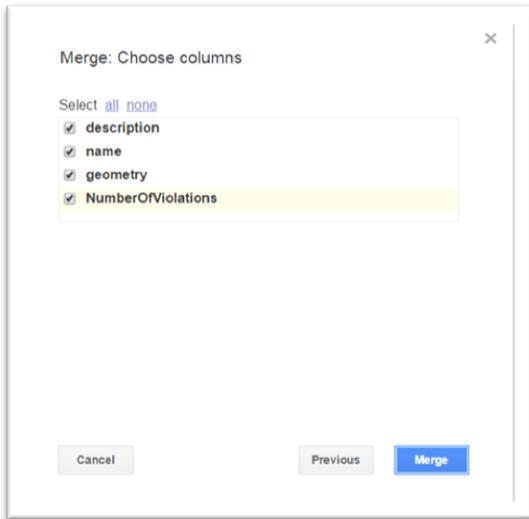

And "Merge."

Click "View table."
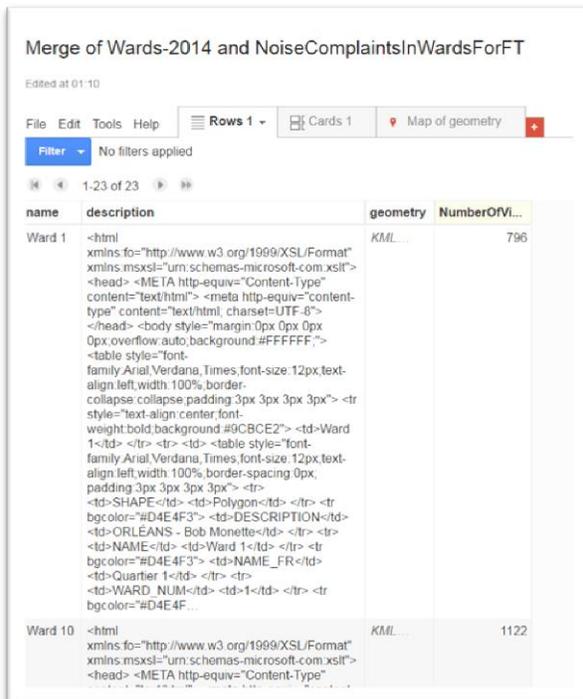
We can also see that the merged table has produced a "Map of geometry" tab. Select it.
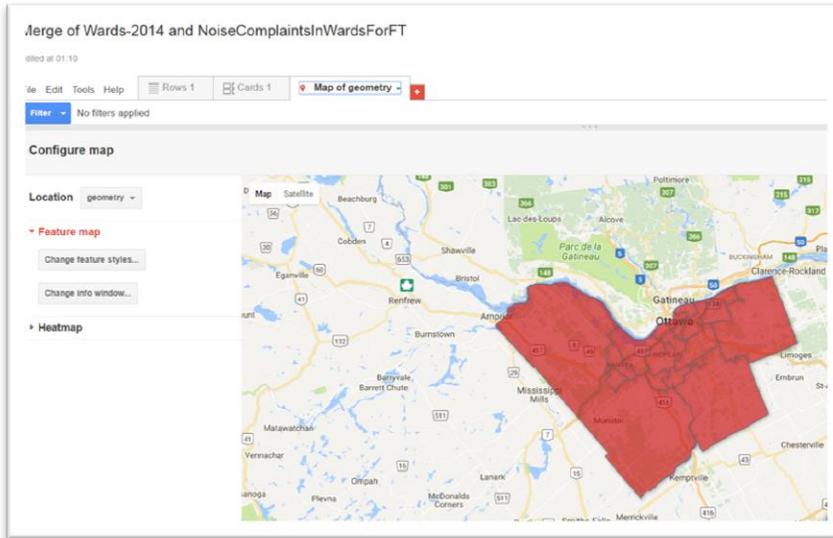

Don't be fooled by the colour. Fusion Tables needs instructions on how we want to colour-code the map.

Task 4: Colour code your map.

Select the "Change feature styles" tab.
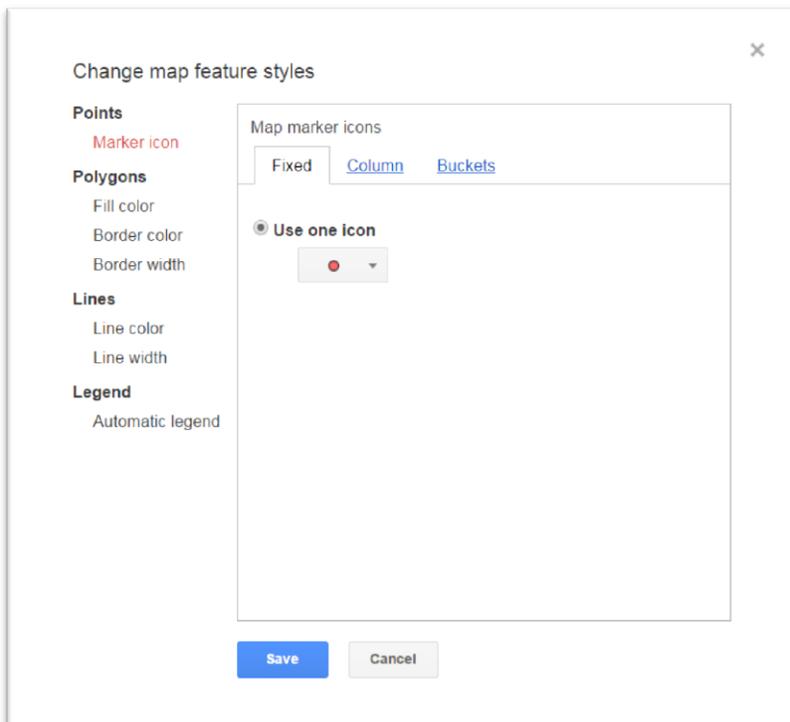
Now select the "Fill color" option under the "Polygons" section to the left.
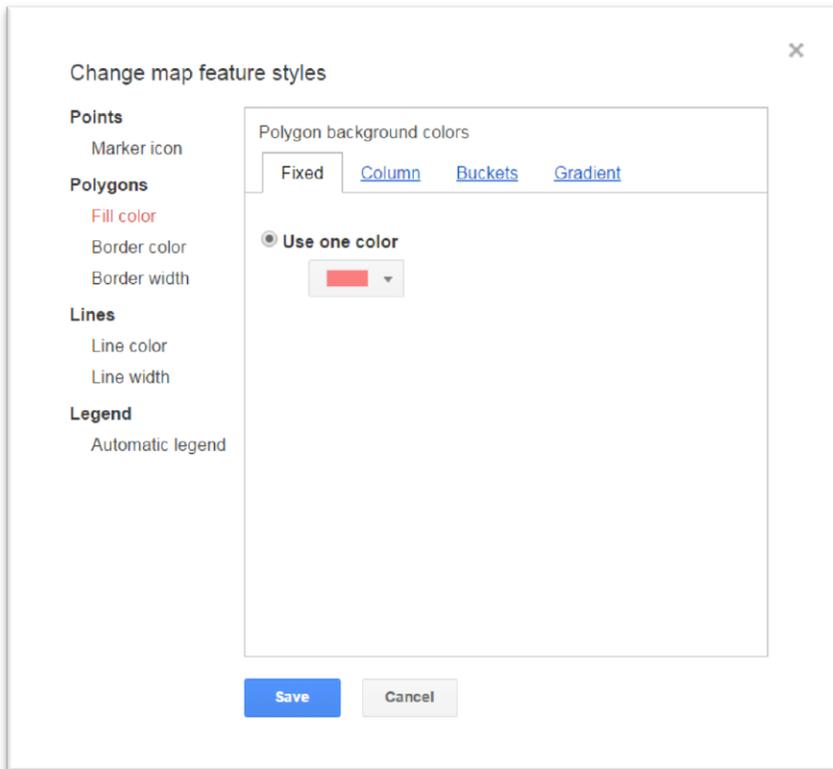

Select "Gradient."
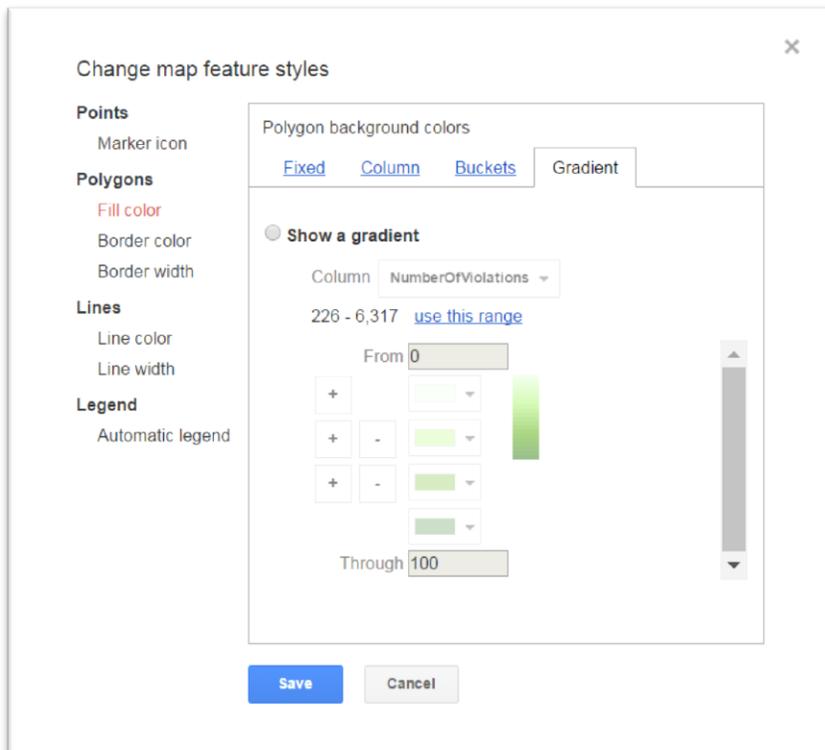
The column whose values we want to colour-code is correctly identified in the "Column" tab. And as such, has selected the correct range of values from the least to the most.

Activate "Show a gradient, and then click the "use this range" link.
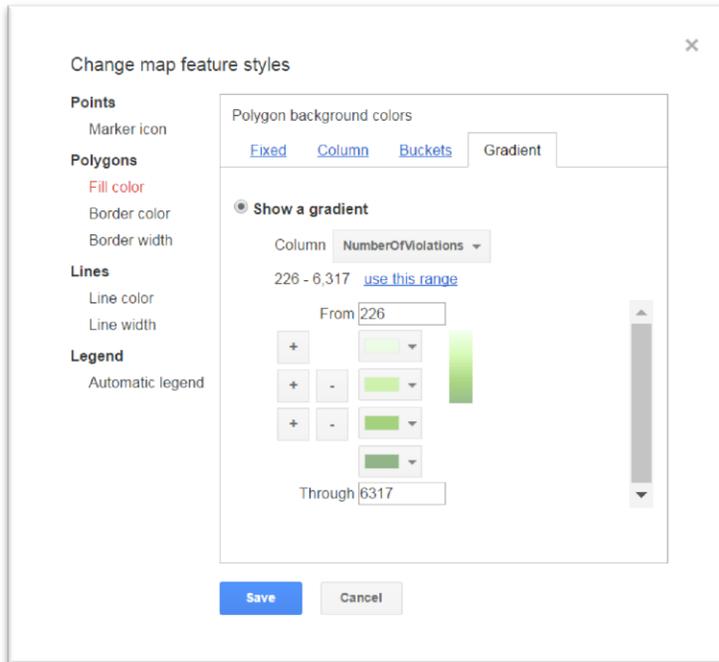
Now the range has been added to our gradient.
To select the legend, click the "Automatic legend" option to the left.
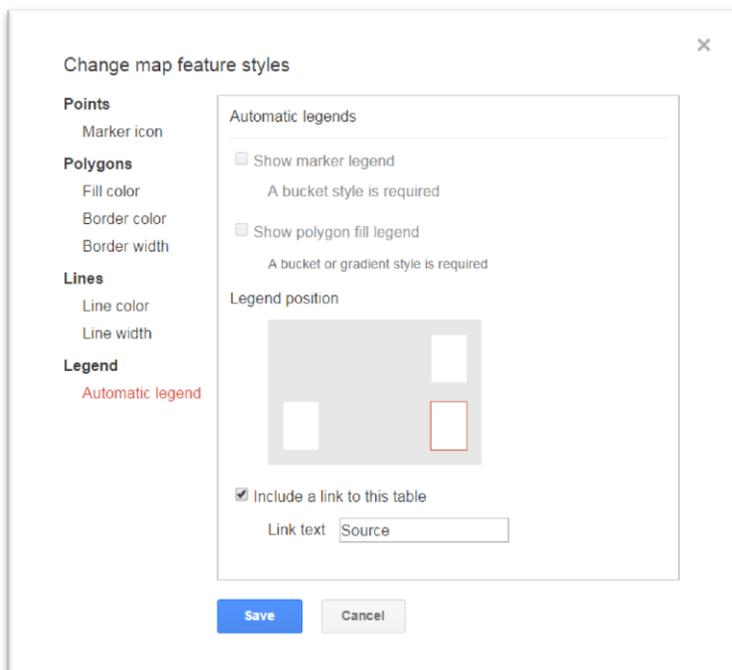
To the right, you have the option of changing the legend location on your map by clicking on one of the other two rectangles that are not highlighted. If you're happy with the location, then simply save the result to return to your map.
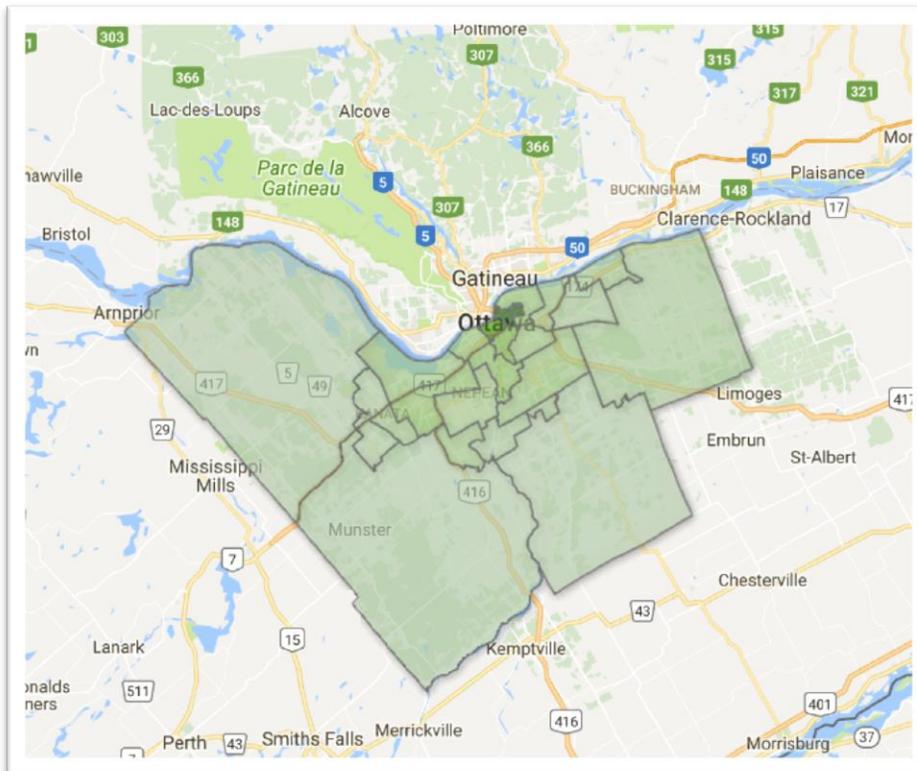
The colours could be a bit darker. So let's return to the "Change map features styles" dialogue box, and then to the "gradient" section.
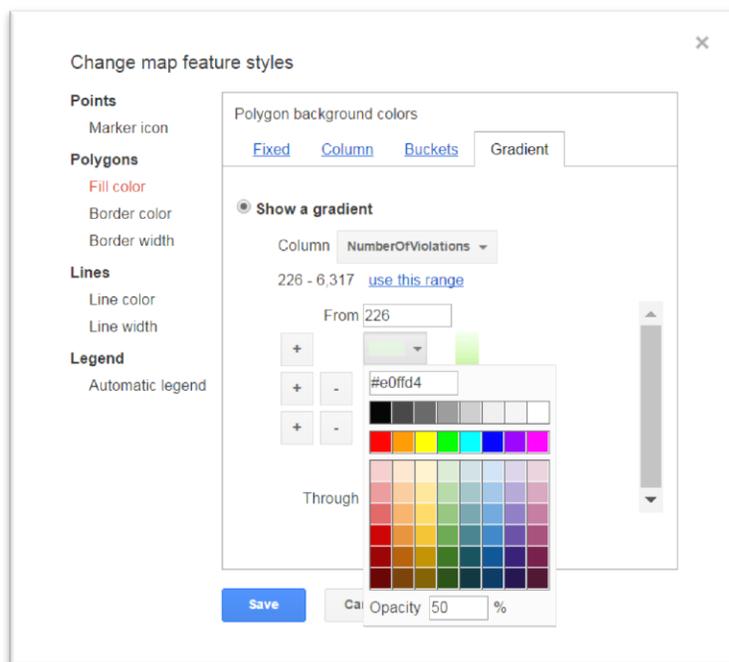
Clicking on each colour tab in the gradient produces a palette from which you can choose different options, including the "Opactity." Bump it up to 100% and to the same for the gradient's other colour tabs.

That's better.

The noisiest ward is Rideau-Vanier. No surprise, given that this officially designated tourist area minutes from Parliament Hill is one of the hubs of the downtown core's night life.

As we did in task 1, we can clean up our pop-up box, by de-selecting the categories we don't want, renaming key ones and using a bit of HTML code to get a title. If we're happy with the result, we can embed this map, too.

Fusions tables are a quick and easy way to display data in many stories. There is also the added advantage of the visualizations being stored on your Google Drive, making them easy to locate and share. However, because it is in perpetual experimental or beta format, the interface and options may change from time to time.