Tutorial for mapping Toronto's 2013 fire hydrant parking ticket data

[Toronto](#), like cities including [Vancouver](#), [Edmonton](#), [Ottawa](#) and [Halifax](#), has an open data site with lots of great data to download. The data sets include restaurant inspections, names of lobbyists, and parking data.

The Canadian Press' [Steve Rennie](#) produced an interesting story about the address where motorists received the highest number of tickets for parking too close to a fire hydrant during the years 2008 and 2013.

You can see the online story and video by clicking [here](#).

If the link is broken, please click [here](#) for a PDF version of the story.

For the purposes of this tutorial, we won't be downloading the data sets for 2008 to 2014.

Instead, we'll just focus on one year. Because each year contains slightly more than two million records, you won't be able to download the entire data set in Excel 2007 or the more recent versions since they have a limit of one million records.

If you already know how to use the data base manager, Access, or MyQL or SQL Server, then you can work with the entire data set, just like Steve did.

If you want to use Excel just for the purposes of conducting the exercise, then you'll only be working with half the data set, which will produce an inaccurate result.

What I've done with the file you're about to download is use Access to produce a new table that creates a new column that includes the city,

province and country which is necessary for Fusion Tables; filters for fire hydrant infractions; groups the infractions by address; and then filters for the top twenty sites.

Please download the file by clicking here. Save the file in a folder that's easy to find.

Your table should look like the screen grab below.

	A	B	C	D	E	F	G	H
1	Hydrant_Count	Address	City_Province_Country	AddressforFT				
2	609	393 UNIVERSITY AVE	Toronto, Ontario, Canada	393 UNIVERSITY AVE, Toronto, Ontario, Canada				
3	336	99 ATLANTIC AVE	Toronto, Ontario, Canada	99 ATLANTIC AVE, Toronto, Ontario, Canada				
4	285	33 ELMHURST AVE	Toronto, Ontario, Canada	33 ELMHURST AVE, Toronto, Ontario, Canada				
5	274	112 MERTON ST	Toronto, Ontario, Canada	112 MERTON ST, Toronto, Ontario, Canada				
6	255	361 UNIVERSITY AVE	Toronto, Ontario, Canada	361 UNIVERSITY AVE, Toronto, Ontario, Canada				
7	242	21 GLEBE RD E	Toronto, Ontario, Canada	21 GLEBE RD E, Toronto, Ontario, Canada				
8	218	56 THE ESPLANADE	Toronto, Ontario, Canada	56 THE ESPLANADE, Toronto, Ontario, Canada				
9	205	6 SPRING GARDEN AVE	Toronto, Ontario, Canada	6 SPRING GARDEN AVE, Toronto, Ontario, Canada				
10	201	91 BELLEVUE AVE	Toronto, Ontario, Canada	91 BELLEVUE AVE, Toronto, Ontario, Canada				
11	200	5519 YONGE ST	Toronto, Ontario, Canada	5519 YONGE ST, Toronto, Ontario, Canada				
12	191	592 MARKHAM ST	Toronto, Ontario, Canada	592 MARKHAM ST, Toronto, Ontario, Canada				
13	187	25 BELLEVUE AVE	Toronto, Ontario, Canada	25 BELLEVUE AVE, Toronto, Ontario, Canada				
14	185	500 WELLINGTON ST W	Toronto, Ontario, Canada	500 WELLINGTON ST W, Toronto, Ontario, Canada				
15	174	5100 YONGE ST	Toronto, Ontario, Canada	5100 YONGE ST, Toronto, Ontario, Canada				
16	167	17 LILLIAN ST	Toronto, Ontario, Canada	17 LILLIAN ST, Toronto, Ontario, Canada				
17	162	43 ELM ST	Toronto, Ontario, Canada	43 ELM ST, Toronto, Ontario, Canada				
18	157	387 QUEEN ST W	Toronto, Ontario, Canada	387 QUEEN ST W, Toronto, Ontario, Canada				
19	155	43 HANNA AVE	Toronto, Ontario, Canada	43 HANNA AVE, Toronto, Ontario, Canada				
20	153	5460 YONGE ST	Toronto, Ontario, Canada	5460 YONGE ST, Toronto, Ontario, Canada				
21	146	186 SPADINA AVE	Toronto, Ontario, Canada	186 SPADINA AVE, Toronto, Ontario, Canada				

Top twenty works for two key reasons: we frequently tell stories using the top 10 or 20,and this is a reasonable number to map, which is possible because we're created a new address field that includes the city, province and country.

Upload the table to Fusion Tables.

Continue with the import until the table is fully loaded.

TopHydrantsforFT_Access

Imported at Tue Aug 12 19:05:33 PDT 2014 from TopHydrantsforFT_Access.xlsx.
Edited at 11:09 PM

File   Edit   Tools   Help   ☰ **Rows 1 ▾**   ⊟ Cards 1   ♦ Map of City_Province…

Filter ▾   No filters applied

|◄ ◄   1-20 of 20   ► ►►|

Hydrant_Count	Address	City_Province_Country	AddressforFT
609	393 UNIVERSITY AVE	Toronto, Ontario, Canada	393 UNIVERSITY AVE, Toronto, Ontario, Canada
336	99 ATLANTIC AVE	Toronto, Ontario, Canada	99 ATLANTIC AVE, Toronto, Ontario, Canada
285	33 ELMHURST AVE	Toronto, Ontario, Canada	33 ELMHURST AVE, Toronto, Ontario, Canada
274	112 MERTON ST	Toronto, Ontario, Canada	112 MERTON ST, Toronto, Ontario, Canada
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242	21 GLEBE RD E	Toronto, Ontario, Canada	21 GLEBE RD E, Toronto, Ontario, Canada
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You'll notice that FT has identified two address fields. We have to tell it which one to geocode. We'll use "AddressforFT" because it has the street address in addition to the city, province and country, details FT will use.

In order to tell FT which address field to geocode, go to the "Edit" in the menu and select the "Change Columns" option.

Select the "City_Province_Country" field.

You'll notice that FT has identified it as a "Location" type (which is why it's in yellow). We want to change it to "Text".

TopHydrantsforFT_Access
Imported at Tue Aug 12 19:05:33 PDT 2014 from TopHydrantsforFT_Access.xlsx.
Edited at 11:09 PM

File   Edit   Tools   Help   ≡ Rows 1 ▾   ⊞ Cards 1   ♀ Map of City_Province...   +

Filter ▾   No filters applied

⏮ ◀   1-20 of 20   ▶ ⏭

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242	21 GLEBE RD E	Toronto, Ontario, Canada	21 GLEBE RD E, Toronto, Ontario, Canada
218	56 THE ESPLANADE	Toronto, Ontario, Canada	56 THE ESPLANADE, Toronto, Ontario, Canada

Change columns   ✕

Hydrant_Count	Number
Address	Text
City_Province_Country	⬆ ⬇ ✕
AddressforFT	Location

Name
City_Province_Country

Description

Type
Text ⇕

Format
None ⇕

Data entry   Learn more
☐ Validate data
List of drop-down items

Save   Cancel

There is no need to touch the second address field because FT has already identified it as a location. So just save the result.

Hydrant_Count	Address	City_Province_Country	AddressforFT
609	393 UNIVERSITY AVE	Toronto, Ontario, Canada	393 UNIVERSITY AVE, Toronto, Ontario, Canada
336	99 ATLANTIC AVE	Toronto, Ontario, Canada	99 ATLANTIC AVE, Toronto, Ontario, Canada
285	33 ELMHURST AVE	Toronto, Ontario, Canada	33 ELMHURST AVE, Toronto, Ontario, Canada
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Now FT has identified only one field as a location. Select the "Map_City_Province" Tab at the top right.

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File Edit Tools Help   ≡ Rows 1 ▾   ⊟ Cards 1   📍 Map of City_Province...   +

Filter ▾   No filters applied

|◀ ◀   1-20 of 20   ▶ ▶▶

Hydrant_Count	Address	City_Province_Country	AddressforFT
609	393 UNIVERSITY AVE	Toronto, Ontario, Canada	393 UNIVERSITY AVE, Toronto, Ontario, Canada

FT will take a few seconds to geocode the information.
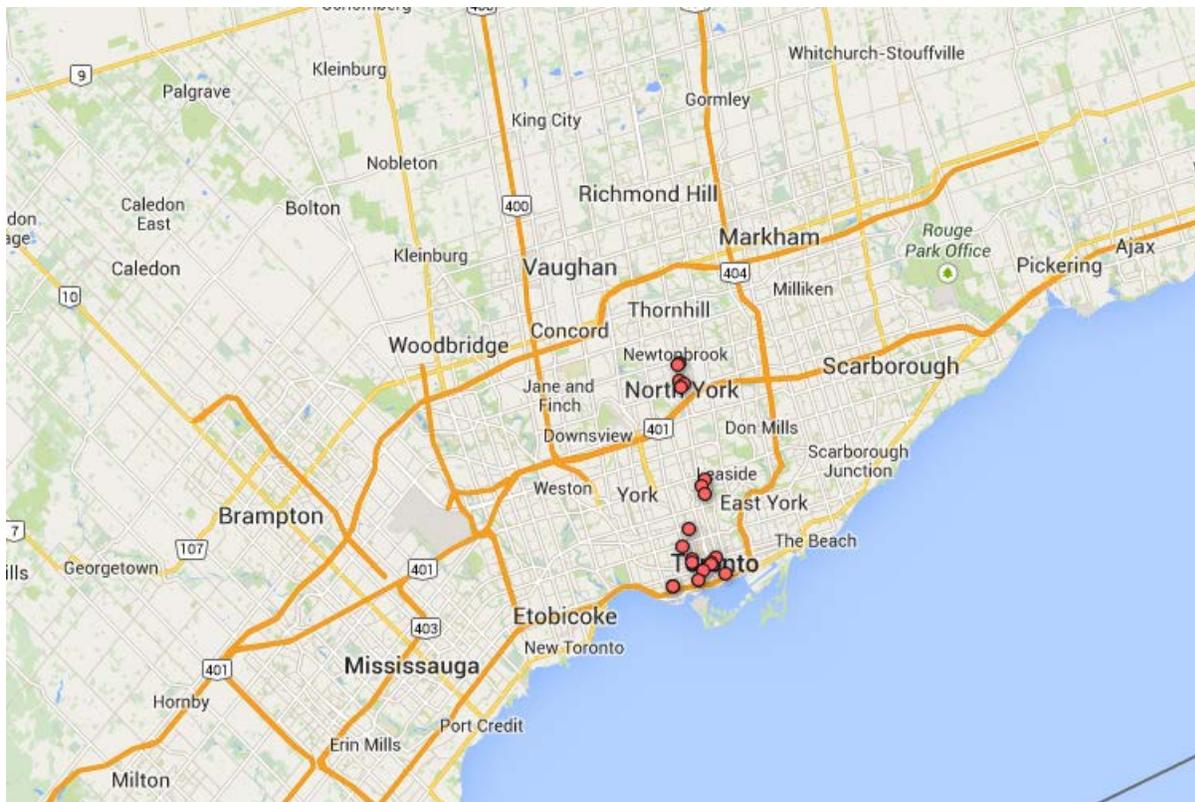
Now let's change the markers to allow our audience to distinguish the locations with the highest number of infractions. Select the "Change feature styles" tab to the left.
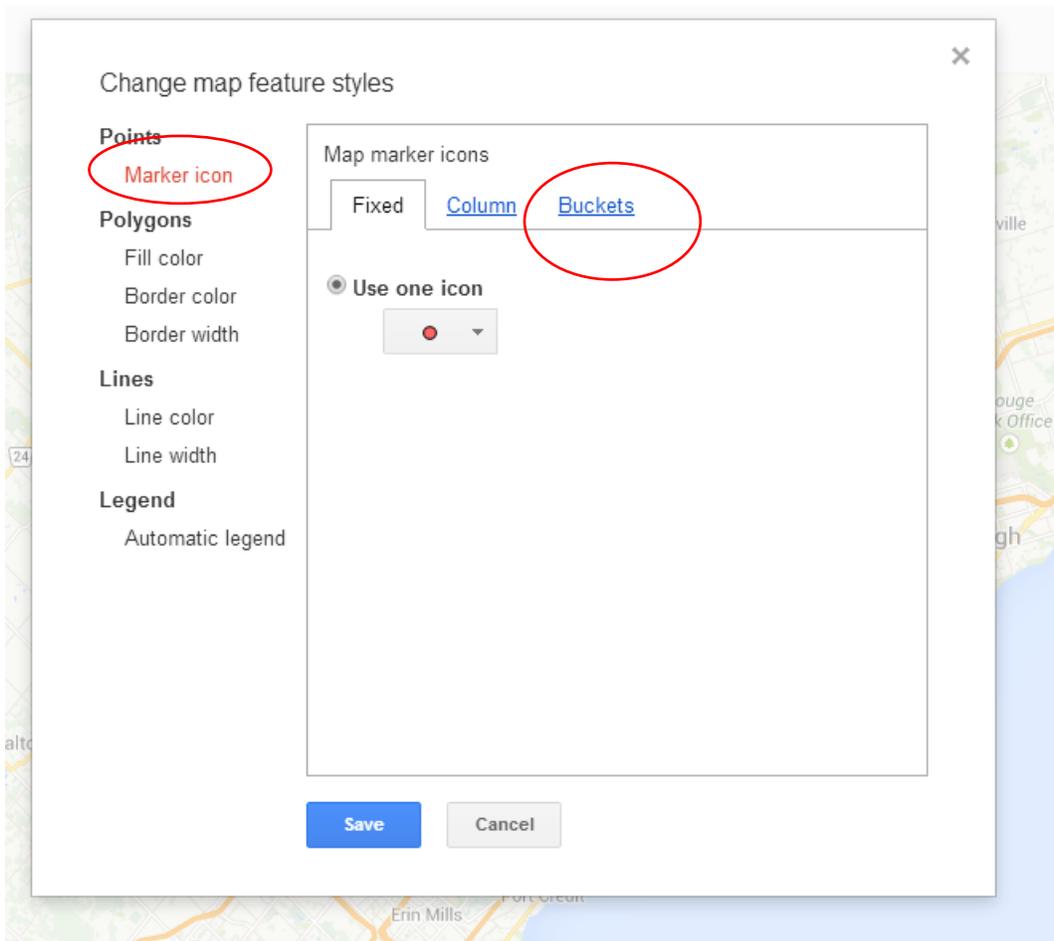
Select the "Buckets" option. Then divide the "buckets" into three categories.
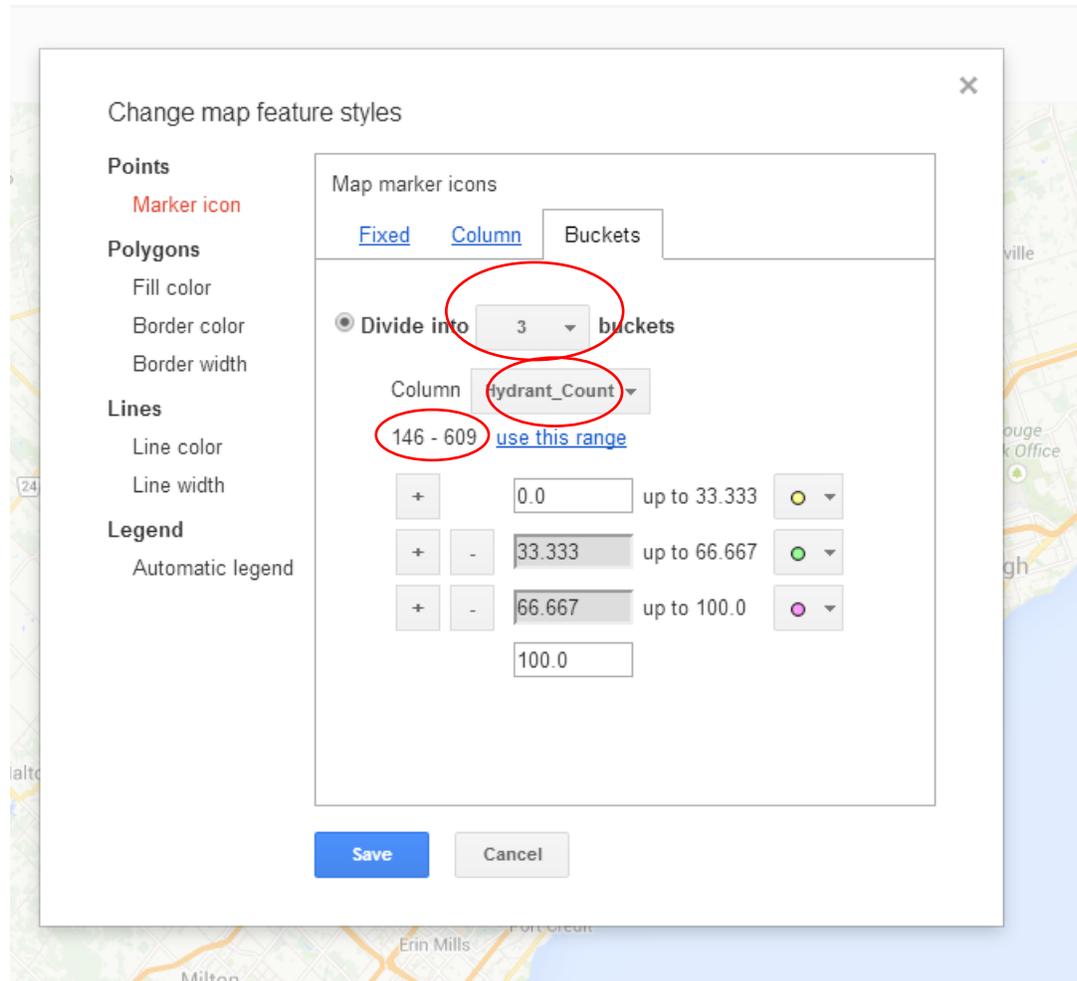
You'll notice that selecting the number of buckets provides the range of infractions in your table from lowest to highest. You can select as many categories as you want. But for mapping, it's perhaps easier to choose a low number, which makes it easier to spot the hot spot --393 University Avenue, the site of 609 infractions in 2013.

So we'll select three buckets, or range of values: 146 to 200; 200 to 336; and 336 to 610. Your selection should resemble the screen grab below.
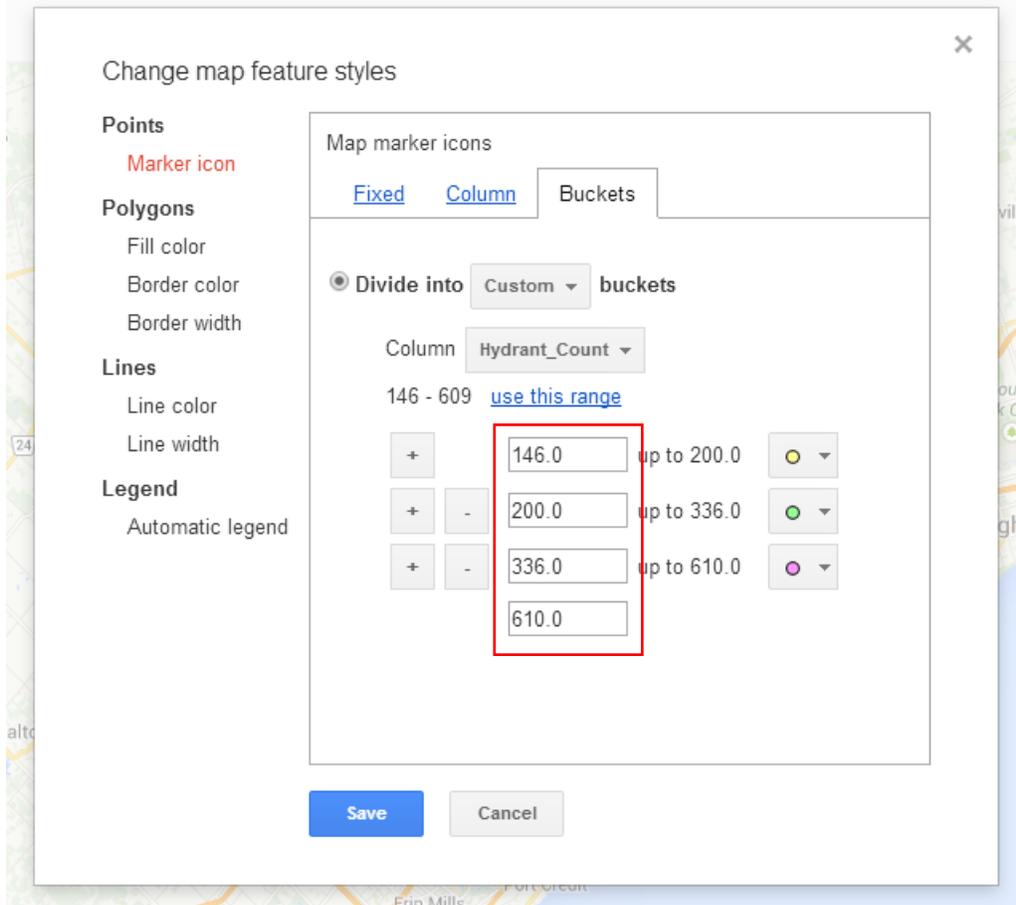
The colours FT has assigned are too small.

So let's change them. Click on the downward arrow to the right of the yellow circle.
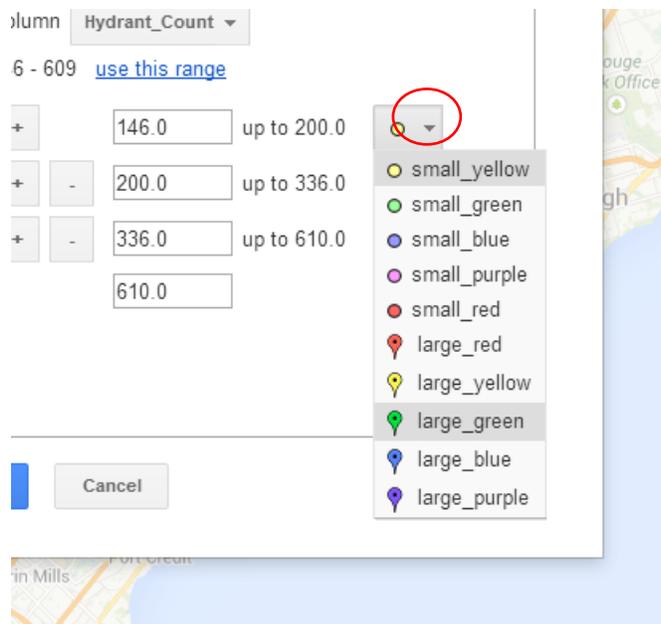
Select large_yellow. Repeat the same process for the 200-336 category, giving it large_red; and the large_purple for the largest category or bucket.
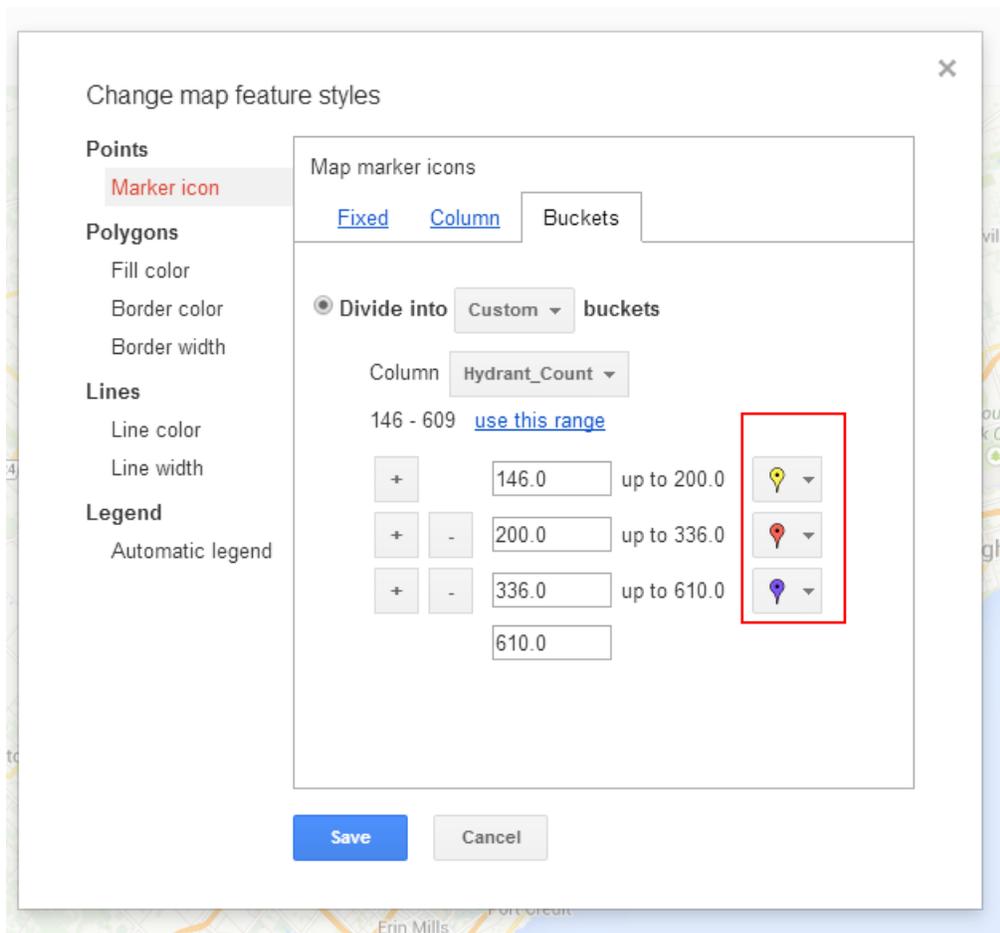
Before we save the result, let's give the map a legend. Select the "Automatic legend" option to the left. And check the box beside the "Show marker legend" option.
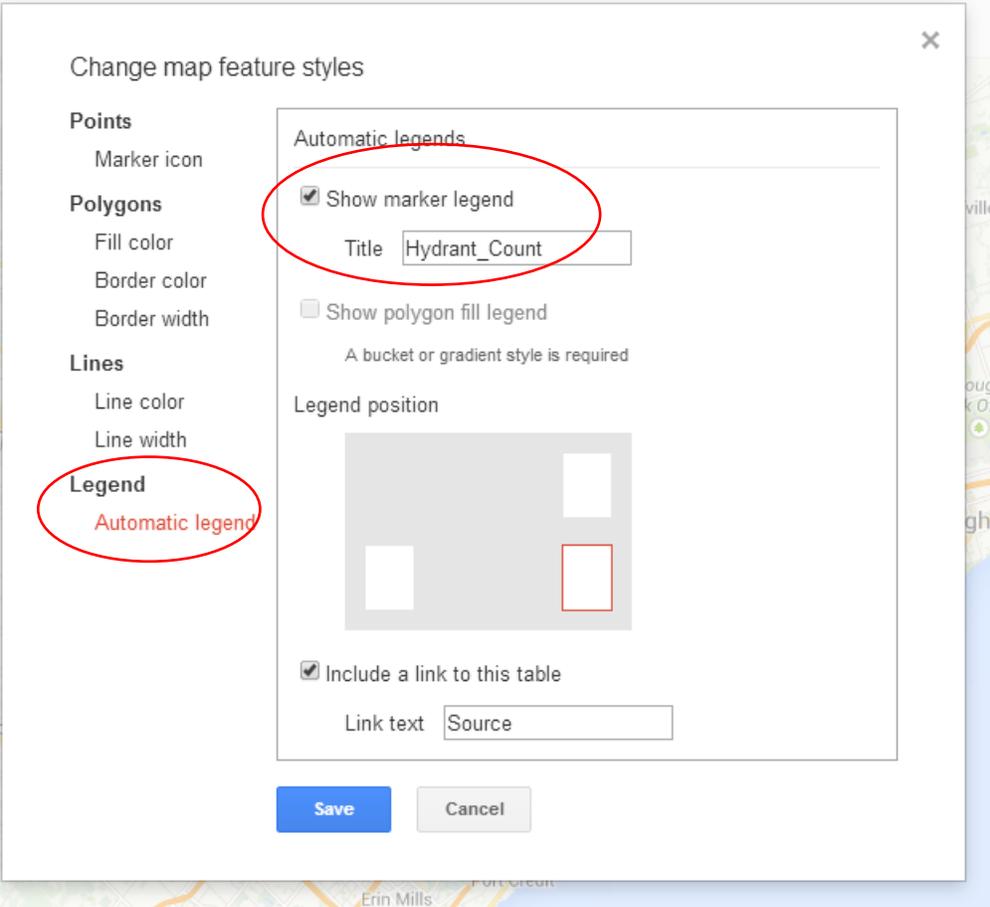
Save the result.
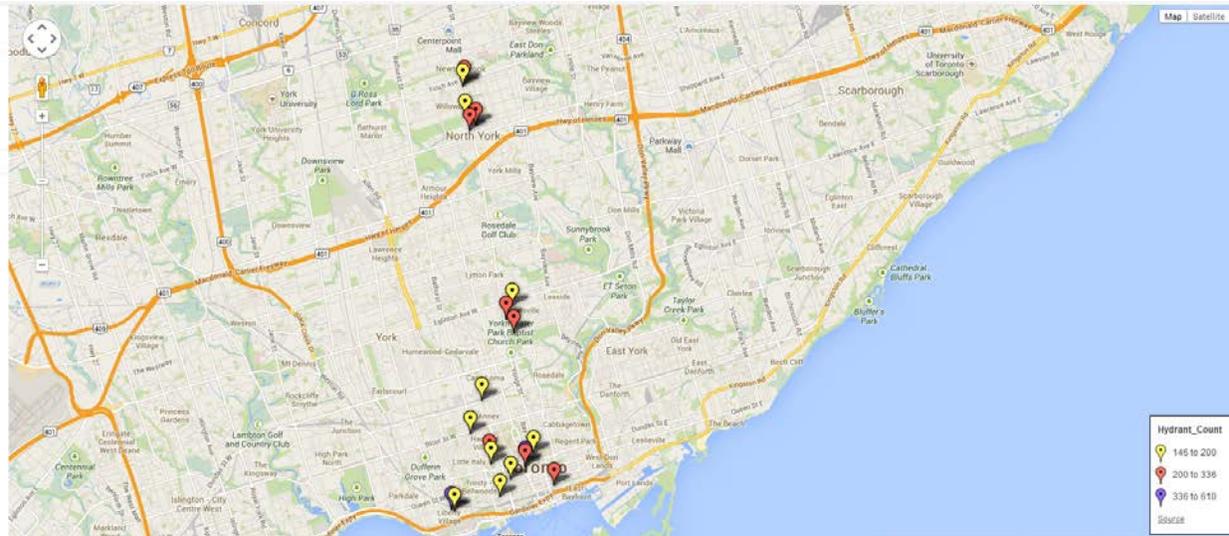
Locate the marker that represents the number one site.
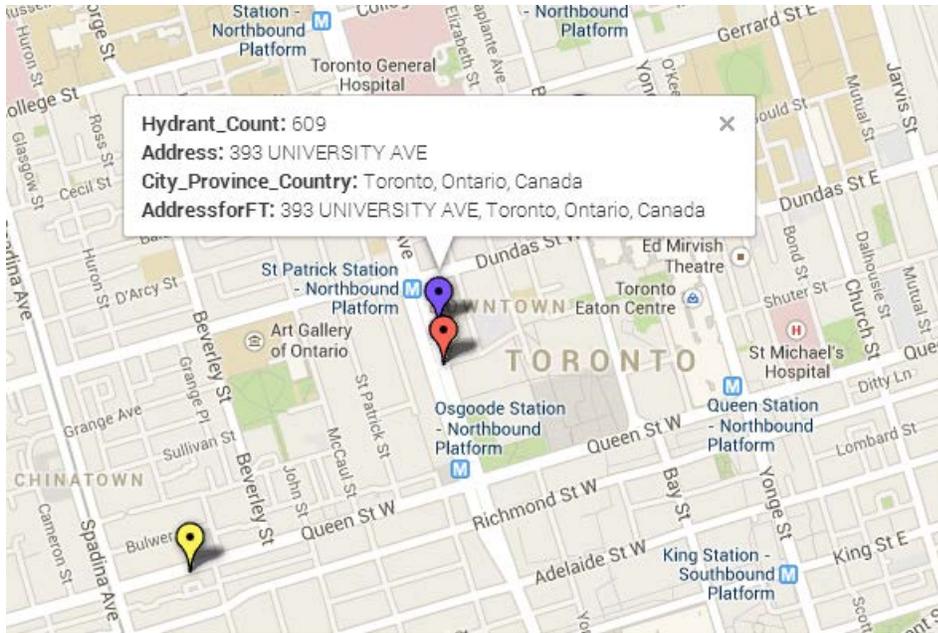
The pop-up box is too busy. All we need to see is the hydrant count and the actual address (393 University Avenue). Select the "Change info window" tab to the left.
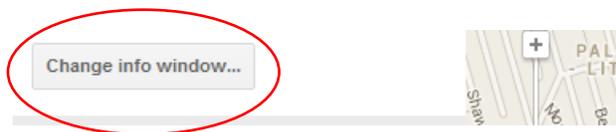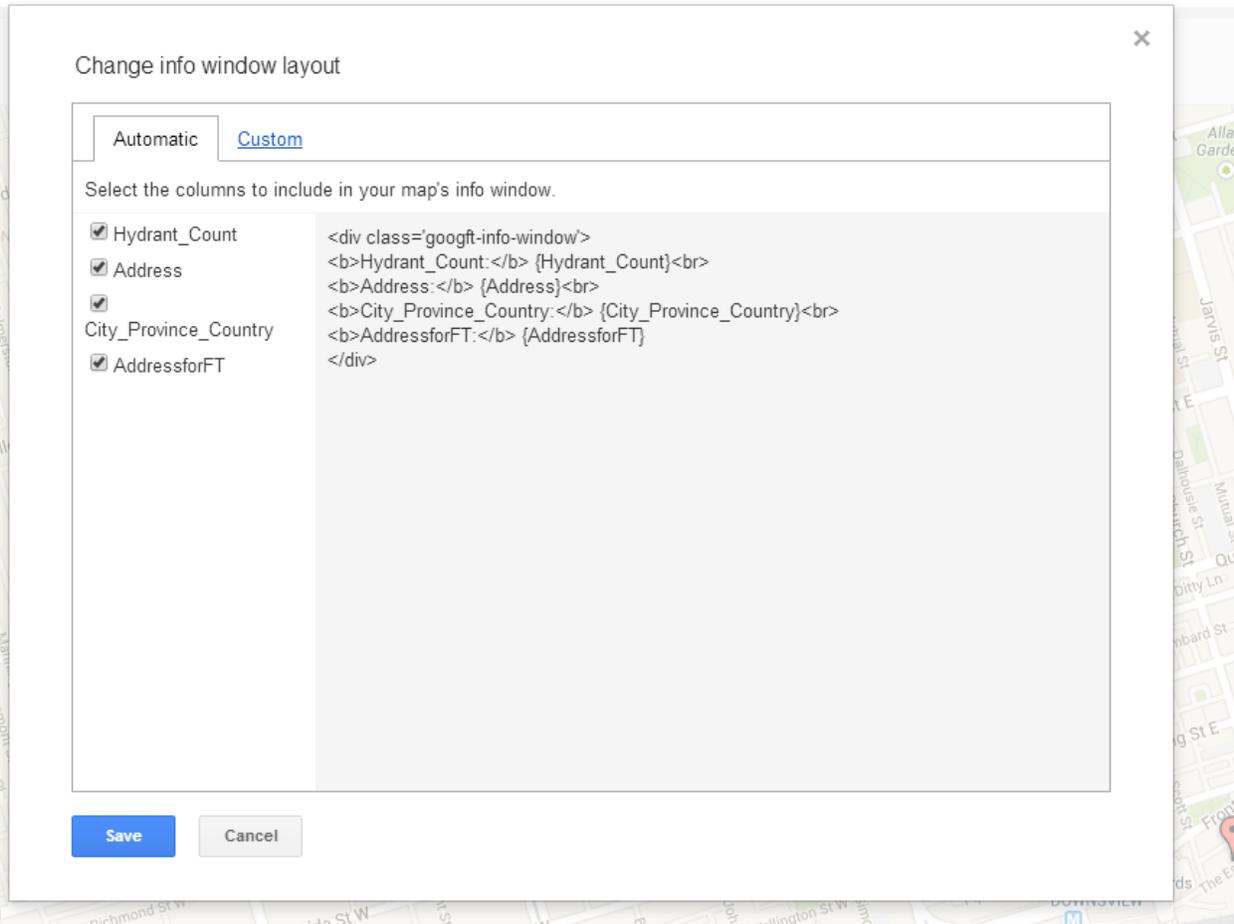
De-select the bottom two columns and save the result. And then click on the same marker.
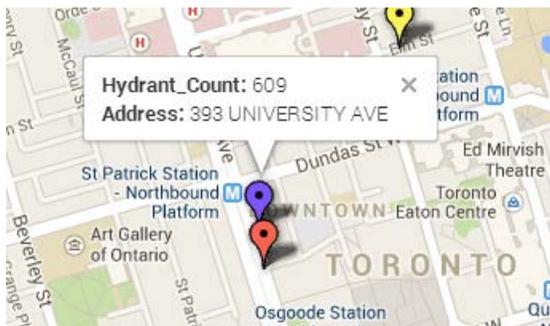
This ends the tutorial. For part two, we'll learn how to layer this map onto a second map containing the city's wards.

To do so, we'll use two new tools: the mapping program called [Qgis](), and [Fusion Tables, Layer Wizard]().