

Using Fusion Tables to map out bike thefts in Ottawa

Sometimes people understand a story a lot better when they can *see* the trend you're describing. It could be the proximity of a halfway house to a school; the proximity pay-day loan shops to low-income neighborhoods. Or, in the case of this tutorial, hot spots for bike thefts and needle drop-off points.

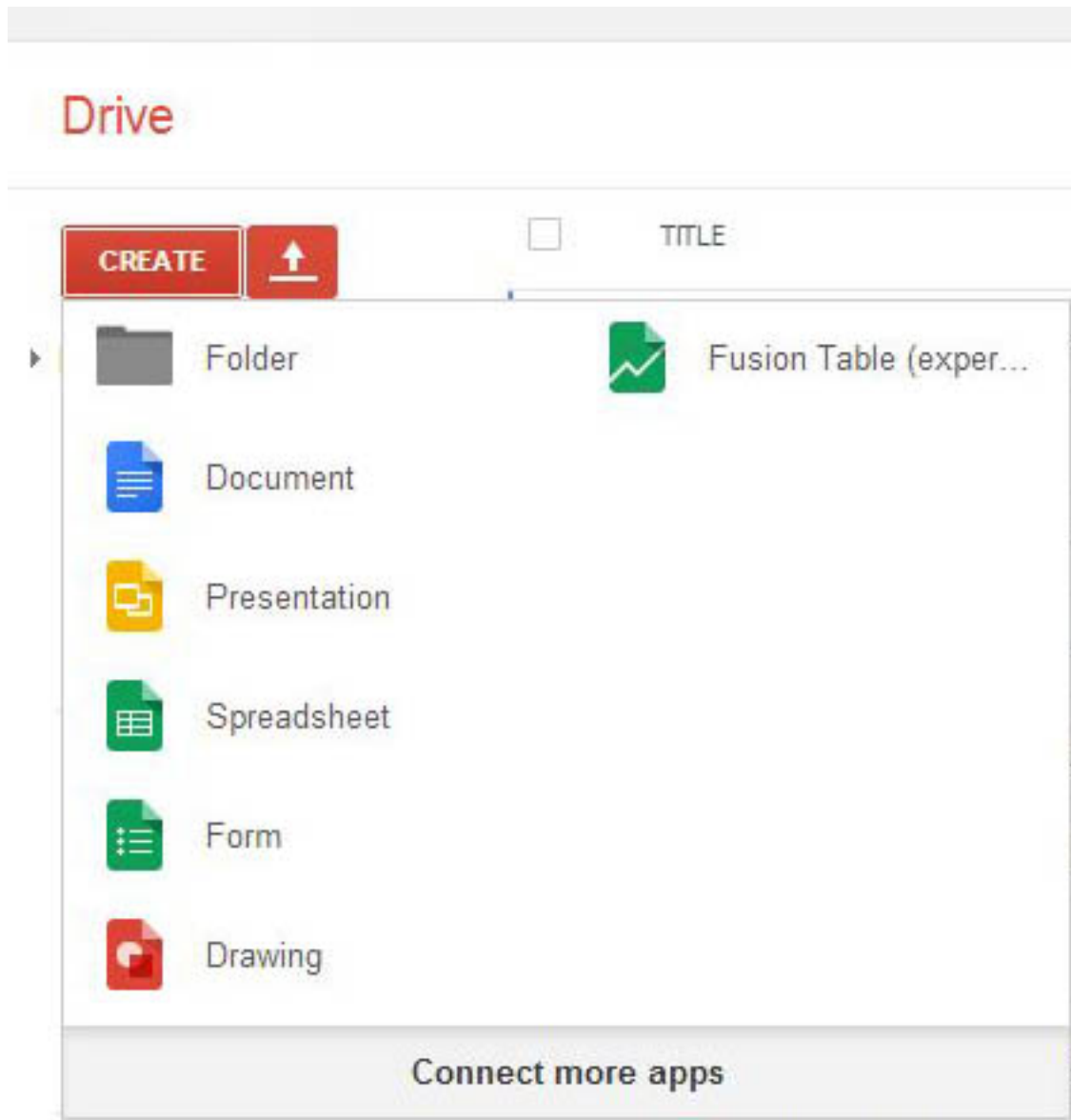
Google's Fusion Tables help audiences see these trends that our stories describe. And the good news is the learning curve shallow.

In this tutorial, we'll learn how to import two Ottawa data sets: bike-theft and needle drop-off locations.

So let's get started.

- 1) Create folder for this tutorial.
- 2) Use the "save as" option to download the bike-theft csv [file](#)


3) Go to your Google Drive





4) If you don't have a Fusion Table app, click on the "Connect more apps" tab, type the term "Fusion Table" into the search bar and download the app. If you already have the app, click on it to

import the bike-theft file.

Import new table ✕

 From this computer

 Google Spreadsheets

 Create empty table

No file chosen

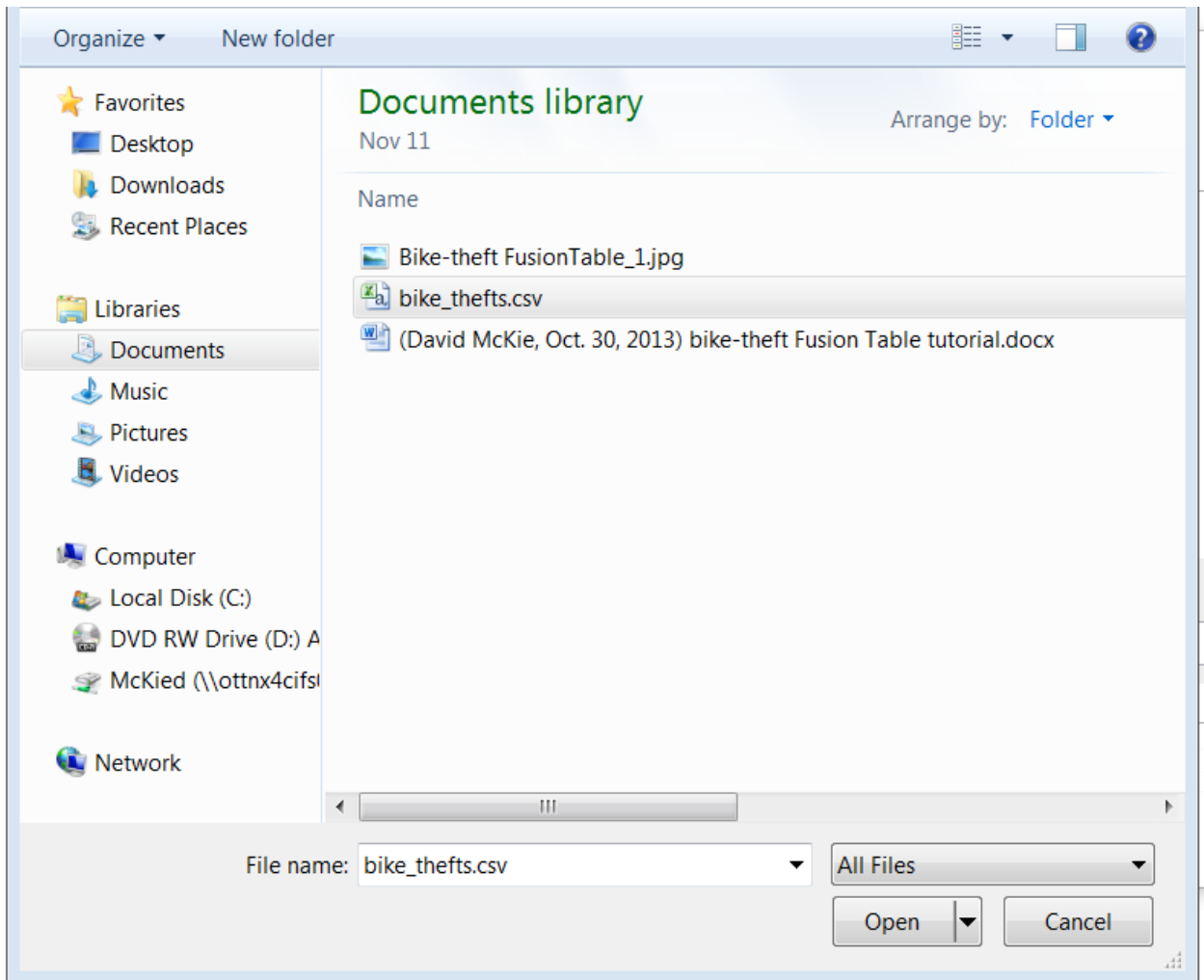
You can upload spreadsheets, delimited text files (.csv, .tsv, or .txt), and Keyhole Markup Language files (.kml) [Learn more](#)

Or search public data tables

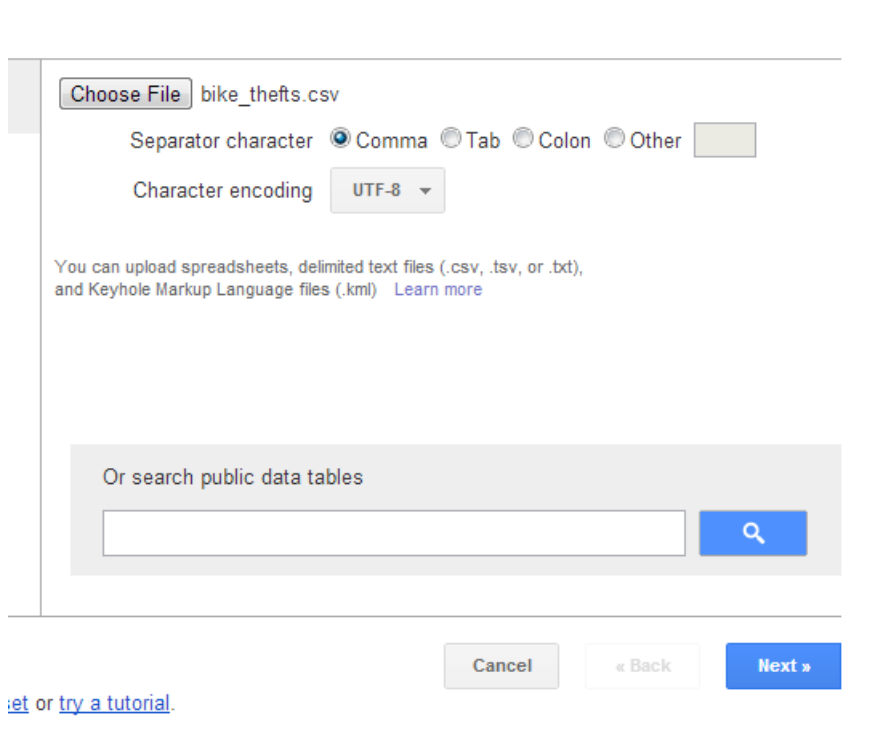
New to Fusion Tables?

Take a peek! [Play with a data set](#) or [try a tutorial](#).

5) Click the “Choose File” tab and browse for the bike-theft csv file, which should be in a folder you’ve created for this tutorial.



6) Once you've chosen the bike-theft data, select the "Open" tab, and then the "Next" tab in the Fusion Tale dialogue box.



The screenshot shows a file upload dialog box. At the top, there is a "Choose File" button followed by the filename "bike_thefts.csv". Below this, there are radio buttons for "Separator character" with options: Comma (selected), Tab, Colon, and Other. To the right of these is a small grey box. Below the separator options is a "Character encoding" dropdown menu set to "UTF-8".

Below the encoding options, there is a text block: "You can upload spreadsheets, delimited text files (.csv, .tsv, or .txt), and Keyhole Markup Language files (.kml) [Learn more](#)".

At the bottom of the dialog, there is a section titled "Or search public data tables" containing a search input field and a blue search button with a magnifying glass icon.

At the very bottom of the dialog, there are three buttons: "Cancel", "« Back", and "Next »".

Below the dialog box, there is a link: [.et](#) or [try a tutorial](#).

7) The table appears next. Fusion Table allows you to import the table as is, or to choose the row where you want your import to

begin.

Import new table

Column names are in row 1

1	Latitude	Longitude	Date of crime	Timeday	Address_new
2	45.42891	-75.68533	Wednesday, January 13, 2010	17:56	300 BLOCK RIDEAU ST
3	45.4346	-75.65687	Tuesday, January 19, 2010	7:40	300 BLOCK FRONTENAC ST
4	45.39867	-75.70834	Wednesday, January 20, 2010	12:55	PRESTON Street, & ADELINE ST
5	45.42349	-75.69793	Thursday, January 21, 2010	12:03	1 BLOCK MICHEL RIEL PRIV
			Sunday,		300 BLOCK OUFFEN

Rows before the header row will be ignored.

New to Fusion Tables? Cancel « Back Next »

Take a peek! [Play with a data set](#) or [try a tutorial](#).

8) You can see that to the right of the “Column names are in row” prompt, there is a number. If you want to begin importing this table using a row further down, you can make the choice from the drop-down menu that appears when clicking the downward arrow to the right of the box containing the number “1”. This might be a factor if we’re importing a data set that contains a lot of extraneous information (dirty data!) in the first few rows. Since

this file is clean, select the next tab.

Import new table

Table name

Allow export ?

Attribute data to ?

Attribution page link

Description

For example, what would you like to remember about this table in a year?

New to Fusion Tables? [Play with a data set](#) or [try a tutorial](#).

Cancel « Back Finish

- 9) Fusion Tables uses the original file name, which you're free to change. There is also a description of when you imported the file.
- 10) Select the "Finish" tab.

bike_thefts

Imported at Wed Oct 30 17:10:27 PDT 2013 from bike_thefts.csv.

Edited at 8:10 PM

File Edit Tools Help Rows 1 Cards 1 Map of Latitude

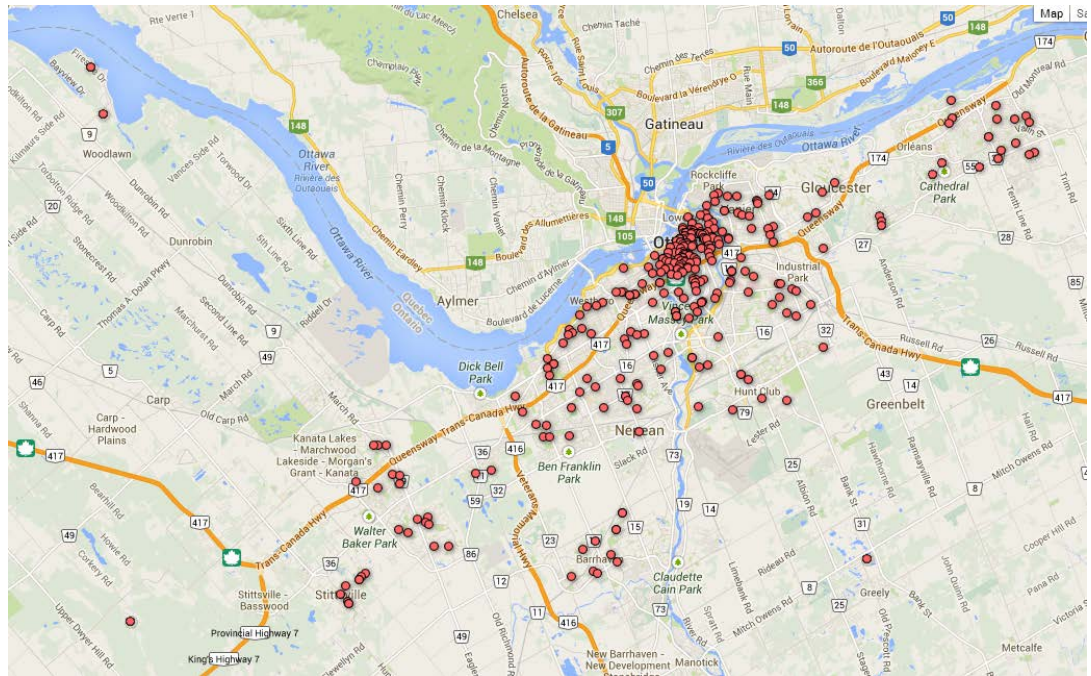
Filter No filters applied

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Latitude	Longitude	Date of crime	Timeday	Address_new
45.42891	-75.68533	Wednesday, January 13, 2010	17:56	300 BLOCK RIDEAU ST
45.4346	-75.65687	Tuesday, January 19, 2010	7:40	300 BLOCK FRONTENAC ST
45.39867	-75.70834	Wednesday, January 20, 2010	12:55	PRESTON Street, & ADELINE ST
45.42349	-75.69793	Thursday, January 21, 2010	12:03	1 BLOCK MICHEL RIEL PRIV
45.42349	-75.69793	Sunday, January 24, 2010	19:00	300 BLOCK QUEEN ELIZABETH DRWY
45.2697	-75.75459	Sunday, January 31, 2010	15:39	1 BLOCK BENTBROOK CRES
45.45695	-75.50004	Wednesday, February 10, 2010	14:28	4200 BLOCK INNES RD
45.50275	-76.08621	Friday, February 12, 2010	15:34	200 BLOCK LEN PURCELL DR
45.42604	-75.68421	Sunday, February 14, 2010	11:23	200 BLOCK WILBROD ST
45.34536	-75.76925	Monday, February 15, 2010	20:39	1 BLOCK NORTHGATE ST

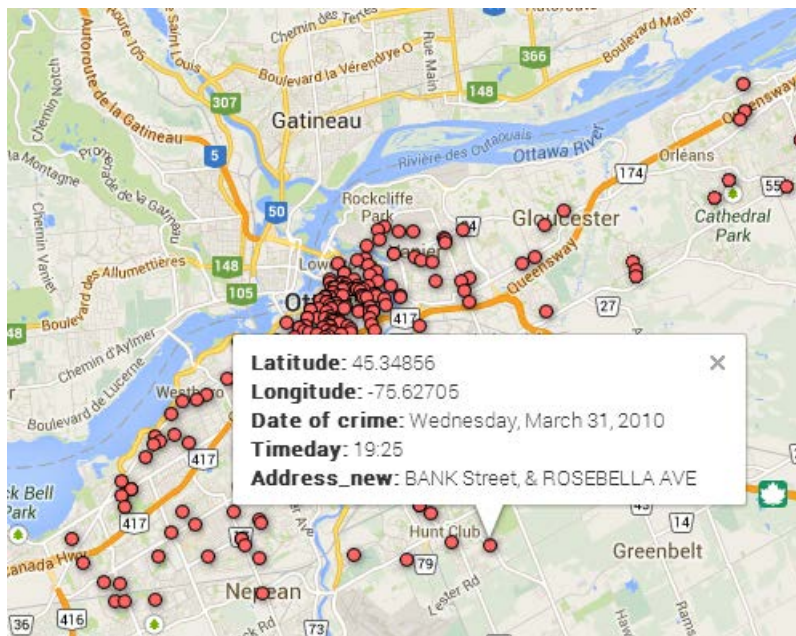
11)

12) Your table has been imported. Since Fusion Tables recognizes the latitude and longitude coordinates, there is no manual geo-coding to be done. To see the bike-theft points on the map, click the “Map of Latitude” tab at the top right-hand side.

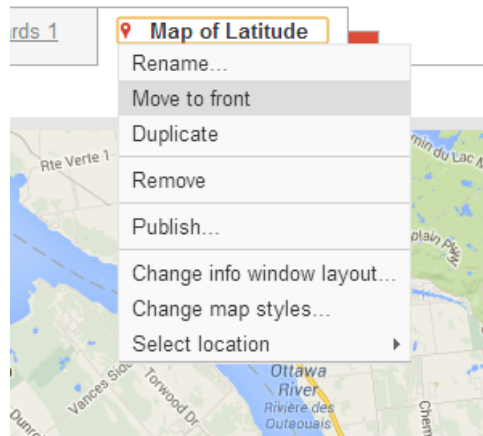


13)

14) Clicking on anyone of the points produces a pop-up box.



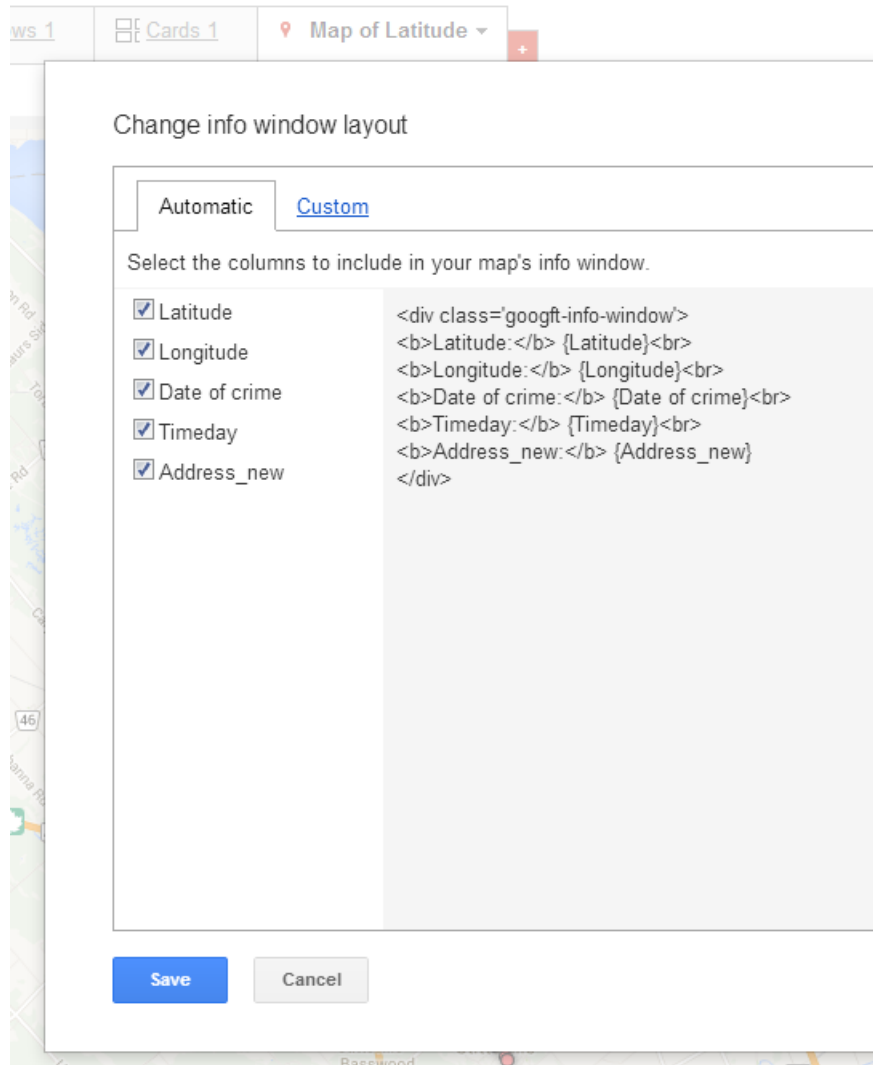
15) If you want to change the look of the information in the box, click on the downward arrow on the right-hand side of the “Map of Latitude” tab.



16)

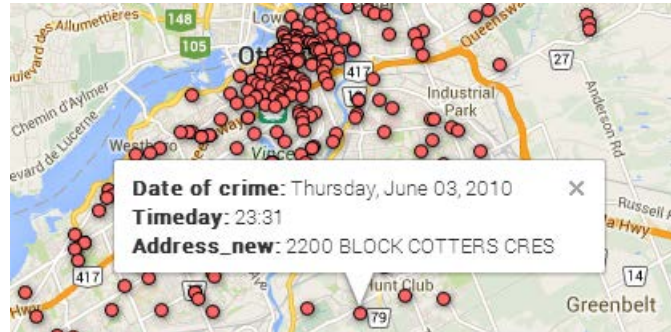
17)

Choose the “Change info window layout” option.



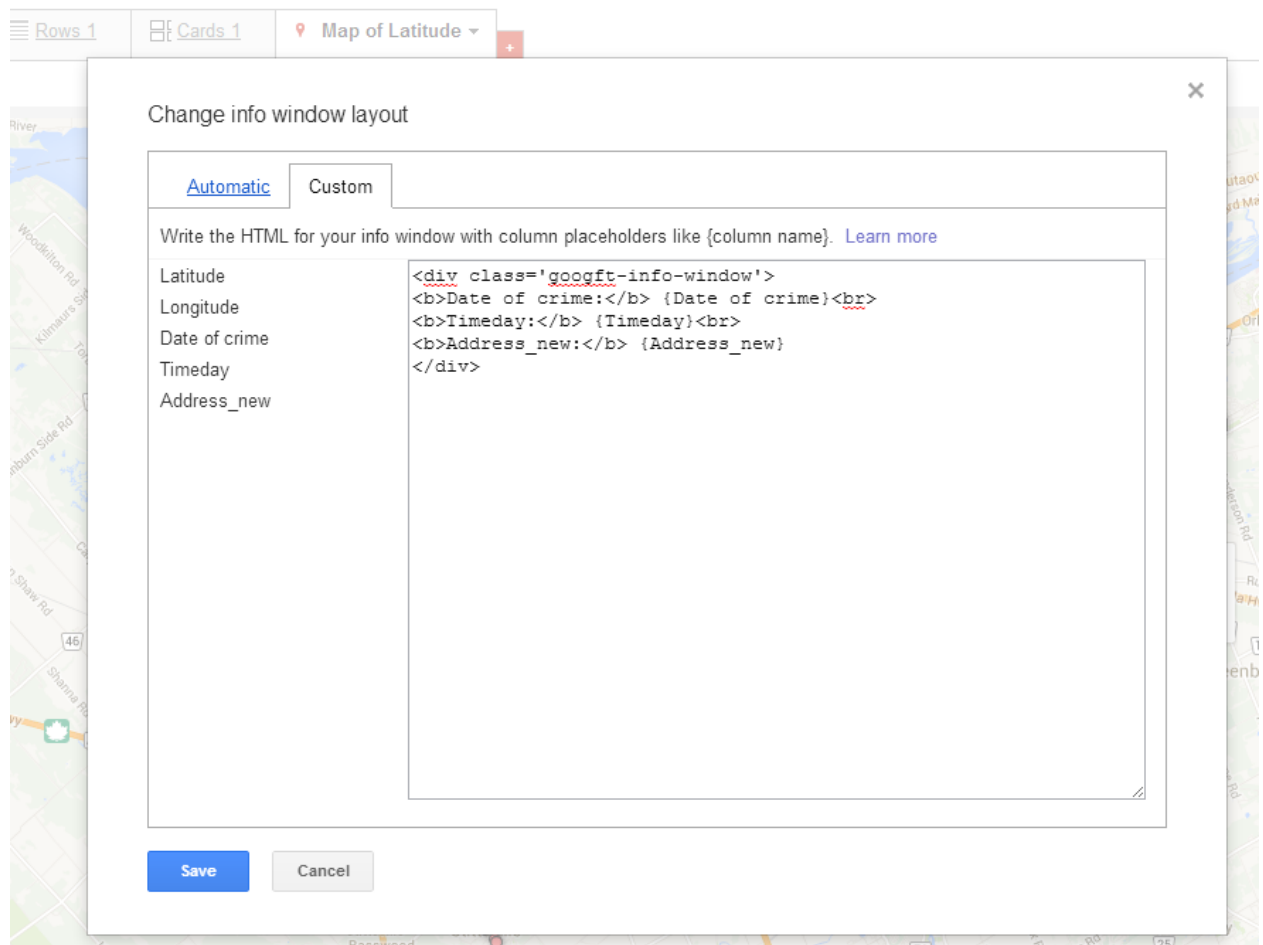
18)

- 19) De-select the fields you do not want to appear in the pop-up box. We don't need to see the Latitude and Longitude fields, so de-select them, and hit the "Save" tab.



- 20)
- 21) This result is cleaner.
- 22) But what if we want to change the titles? To do so, return to the "Change info window layout" box and select the "Custom" tab. The view is familiar to those who have a little bit of HTML

knowledge.

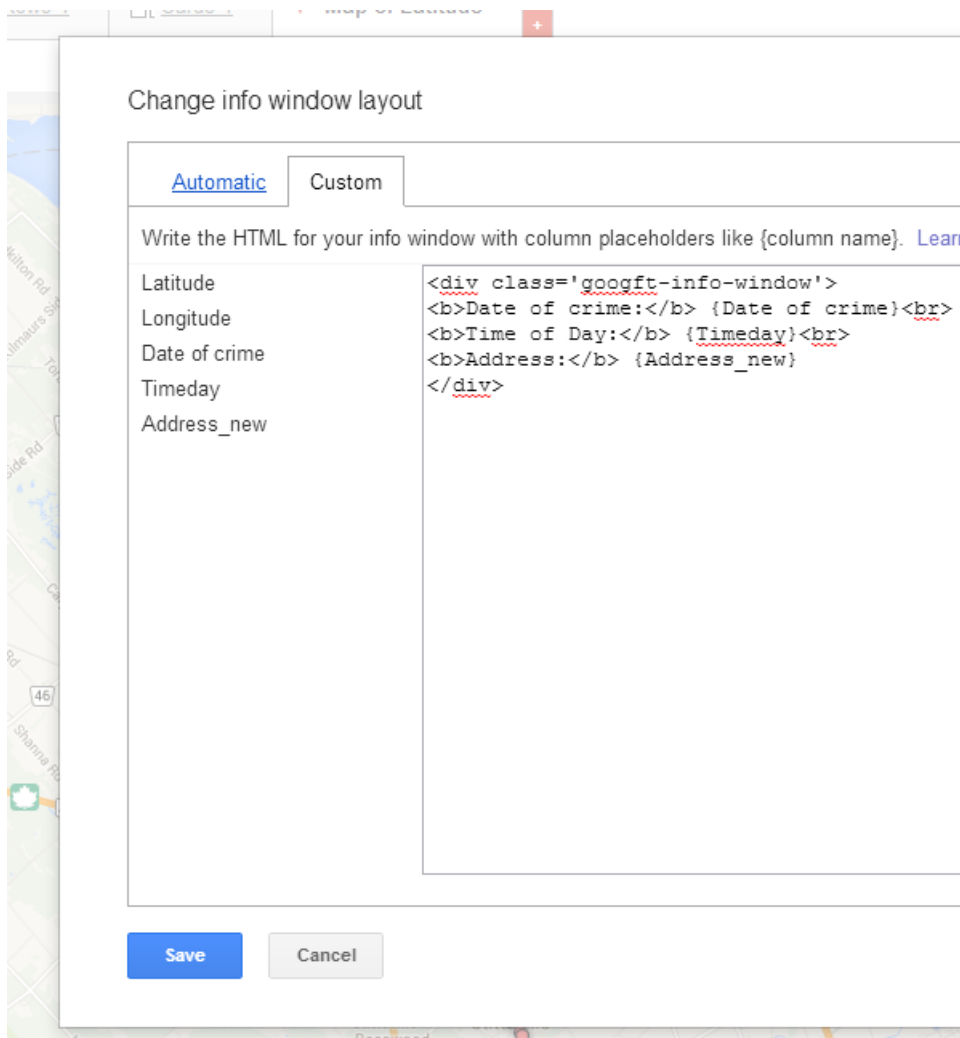


- 23) You can change anything to the left of the colon. So let's change the "Timeday" field to "Time of Day" and the Address_new field to "Address".

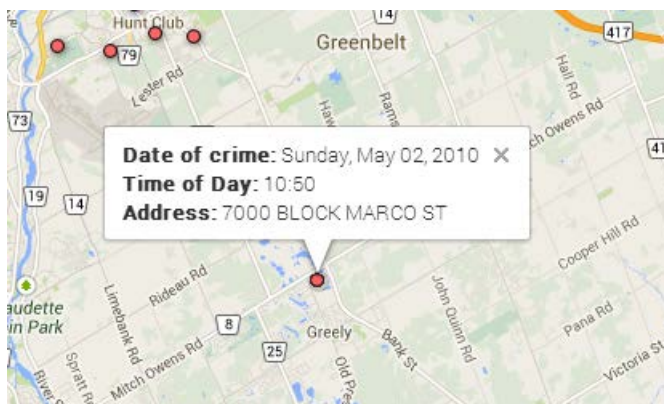
info window with column placeholders like {column name}. [Learn more](#)

```
<div class='googft-info-window'>  
<b>Date of crime:</b> {Date of crime}<br>  
<b>Time of Day:</b> {Timeday}<br>  
<b>Address:</b> {Address_new}  
</div>
```

24) Save the new titles.



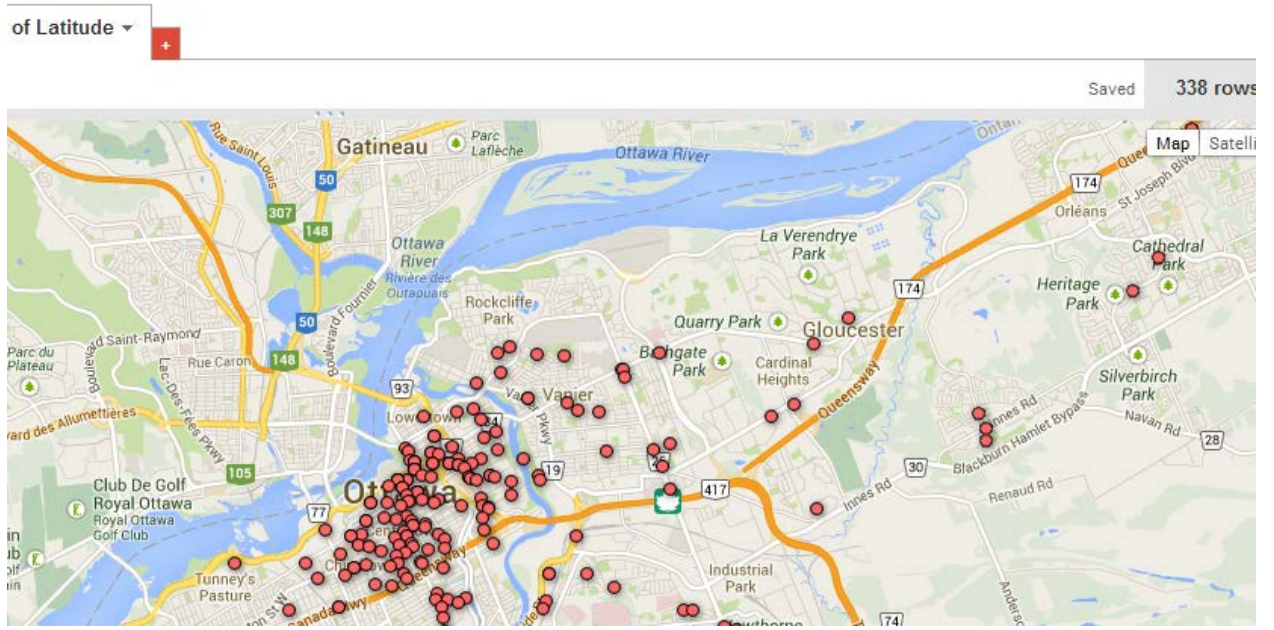
25) Click on a bike-theft spot to see the cleaner result.



26) By selecting the plus-sign to zoom in, we can see that the thefts tend to be concentrated around the downtown core.

27) If you're happy with the result and want to share it, select the "Share" tab to the top right-hand side.

Share





Sharing settings

Link to share (only accessible by collaborators)

https://www.google.com/fusiontables/DataSource?docid=1j3iuyS_wpXyzMh0wLs5hv

Who has access

	Private - Only the people listed below can access	Change...
	David McKie (you) david_mckie@cbc.ca	Is owner

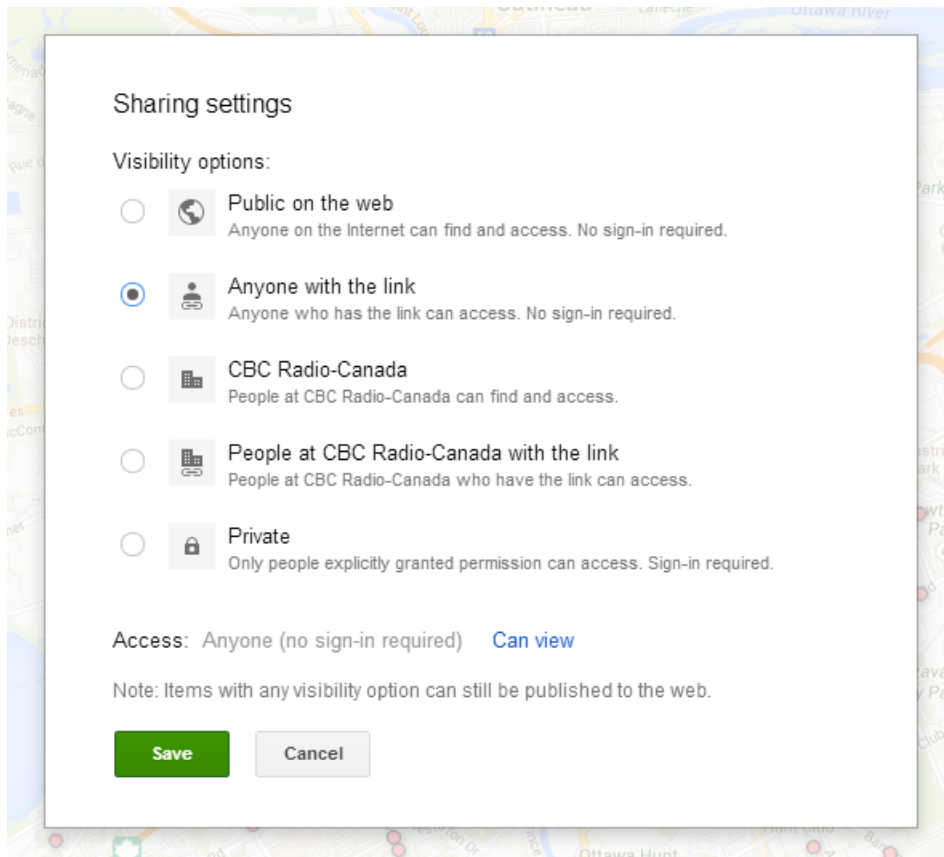
Invite people:

Editors will be allowed to add people and change the permissions. [\[Change\]](#)

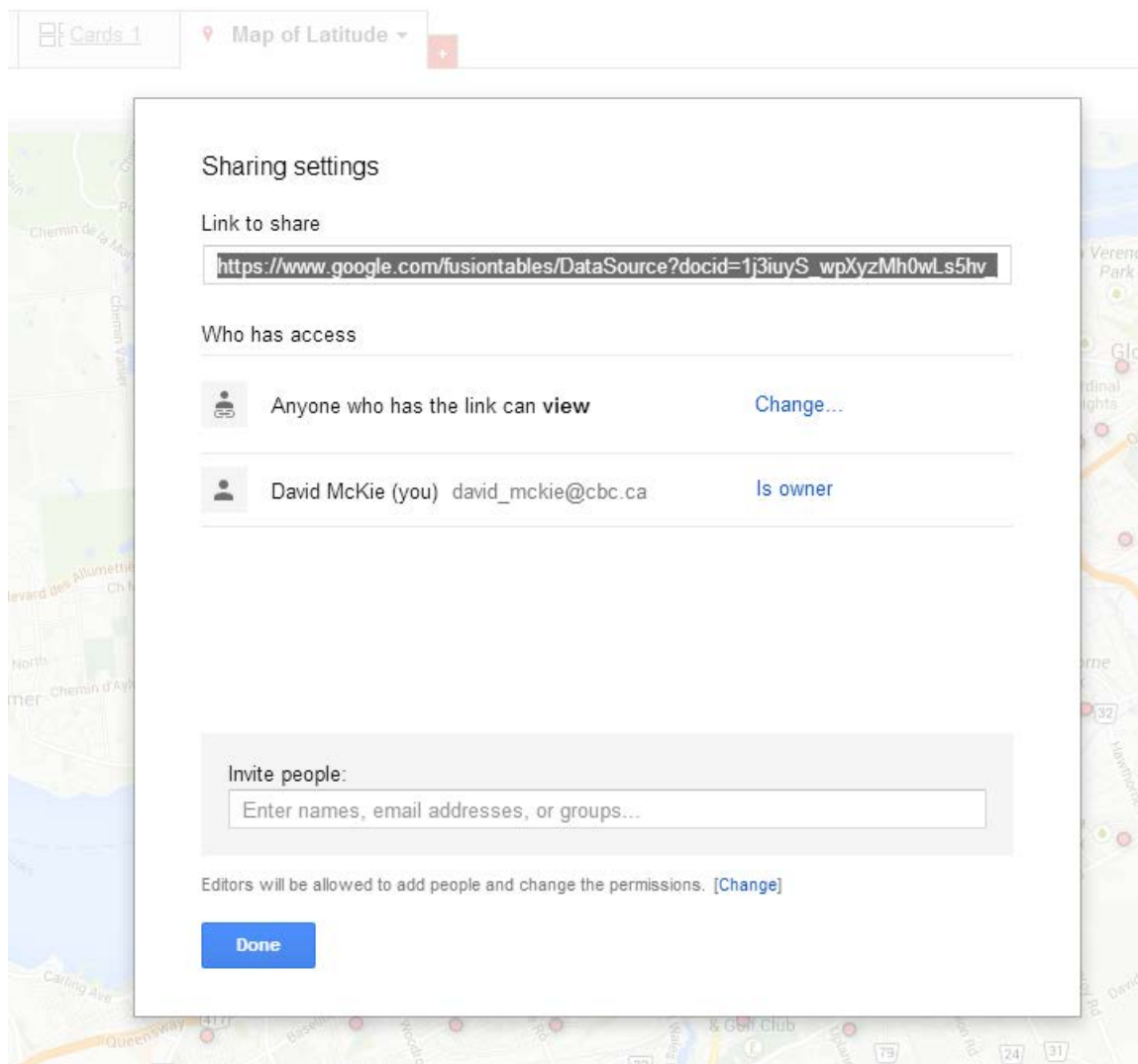
[Done](#)

28)

- 29) To share the URL, select the “Change” tab to the right of the “Private – Only people listed below can access” prompt.



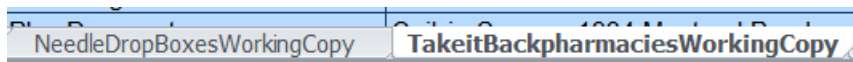
- 30) Select the “Anyone who has the link can view” option. Save the result.



- 31) Select the “Done” tab.
- 32) This was a fairly straightforward exercise to import the bike-theft data, mainly because it already contained the longitude and latitude coordinates, which Fusion Tables geocodes easily and accurately. But what if the file you want to display on the map only has street addresses, which is often the case when we’re working with data that we’ve either downloaded from the Internet (covered on pages 43 to 56 of Computer-Assisted

Reporting), built ourselves or obtained through an access-to-information or freedom-of-information request (Covered in chapter eight of Computer-Assisted Reporting).

- 33) To work with a file that contains only addresses, let's go to the City of Ottawa's "[Data catalogue](#)" page, and select the "Needle Drop Boxes and Take it Back! Pharmacies" file. We only have the option of importing it as a csv or xls (Excel 2003) file. Download the file, and save it to the folder we've created for this tutorial.
- 34) Open the Excel file, which contains two tabs: one for Needle Drop Boxes; the other for Take it Back! Pharmacies. Both tables have two columns in common: "Name" and "Address". This means we can create a master table to accommodate the two types of locations people (drug addicts, no doubt) use to drop off their needles.
- 35) Paste the city of Ottawa's Data catalogue URL into the first available cell in the first row of each worksheet.
- 36) As is the custom when working with data in Excel, create a "workingcopy" version of each table.



- 37) Create a fourth column in the needle dropbox working copy, which we'll call "DropLocation". Type "Need Drop Boxes" into D2 and copy the name to the bottom.

- 43) Paste both tables into the master worksheet. Remember, you only need to copy and paste the column titles once.
- 44) To create an address field that Fusion Tables can use to accurately geocode, insert a new column to the right to the address field. Call it "Address_new". Use the "concatenation" function (95-97 in Computer-Assisted Reporting) to add the "city", "province" and "country" the street address.

	Alignment	Number	Styles	Cells	Editin
=CONCATENATE(B2," ","Ottawa"," ","Ontario"," ","Canada")					
	B		C		
	Address	Address_New			
	700-251 Bank Street	700-251 Bank Street, Ottawa, Ontario, Canada			
	737 Gladstone Avenue				
	199 Montreal Road				

- 45) In this formula, we've inserted commas to separate the street address from the city, province and country. To do so, we need to place the comma and the space in quotation marks, followed by another comma to add, Ottawa, Ontario and Canada,

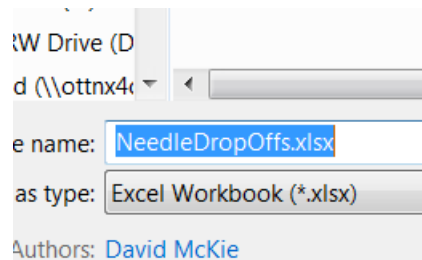
which also have to be inside quotation marks. Copy the formula.

=CONCATENATE(B2,"","Ottawa","","Ontario","","Canada")

	B	C
	Address	Address_New
	700-251 Bank Street	700-251 Bank Street, Ottawa, Ontario, Canada
	737 Gladstone Avenue	737 Gladstone Avenue, Ottawa, Ontario, Canada
	199 Montreal Road	199 Montreal Road, Ottawa, Ontario, Canada
	151 George Street	151 George Street, Ottawa, Ontario, Canada
vices	900 Merivale Road	900 Merivale Road, Ottawa, Ontario, Canada
	22 O'Meara Street	22 O'Meara Street, Ottawa, Ontario, Canada
	507 Bank Street	507 Bank Street, Ottawa, Ontario, Canada
re	420 Cooper Street	420 Cooper Street , Ottawa, Ontario, Canada
io	401 Smyth Road	401 Smyth Road, Ottawa, Ontario, Canada
.CRC, Dental, Le Patro	40 Cobourg Street	40 Cobourg Street, Ottawa, Ontario, Canada
	100 Constellation Crescent	100 Constellation Crescent, Ottawa, Ontario, Canada
re	179 Clarence Street	179 Clarence Street, Ottawa, Ontario, Canada
vice Centre	8243 Victoria Street, Metcalfe	8243 Victoria Street, Metcalfe, Ottawa, Ontario, Canada
o public access)	735 Industrial Avenue	735 Industrial Avenue, Ottawa, Ontario, Canada
	941 Clyde Avenue	941 Clyde Avenue, Ottawa, Ontario, Canada
	43 Bruyère Street	43 Bruyère Street, Ottawa, Ontario, Canada
	3845 Richmond Road	3845 Richmond Road, Ottawa, Ontario, Canada
	500 Charlemagne Boulevard	500 Charlemagne Boulevard, Ottawa, Ontario, Canada
	135 Preston Street	135 Preston Street, Ottawa, Ontario, Canada
	1075 Greenbank Road	1075 Greenbank Road, Ottawa, Ontario, Canada
	380 Eagleson Road	380 Eagleson Road, Ottawa, Ontario, Canada
	1445 Carling Avenue	1445 Carling Avenue, Ottawa, Ontario, Canada
	635 O'Connor Street	635 O'Connor Street, Ottawa, Ontario, Canada
	530 King Edward Avenue	530 King Edward Avenue, Ottawa, Ontario, Canada
	1300 Woodroffe Avenue	1300 Woodroffe Avenue, Ottawa, Ontario, Canada
	1397 Richmond Road	1397 Richmond Road, Ottawa, Ontario, Canada
	230 Viewmount Drive	230 Viewmount Drive, Ottawa, Ontario, Canada
	3336 McCarthy Drive	3336 McCarthy Drive, Ottawa, Ontario, Canada
	900 Industrial Avenue	900 Industrial Avenue, Ottawa, Ontario, Canada
	2355 Alta Vista Drive	2355 Alta Vista Drive, Ottawa, Ontario, Canada
	900 Montreal Road	900 Montreal Road, Ottawa, Ontario, Canada
	6213 Jean D'Arc Boulevard	6213 Jean D'Arc Boulevard, Ottawa, Ontario, Canada
	1700 Blair Road	1700 Blair Road, Ottawa, Ontario, Canada

46) Copy this table, paste it into a new file, we can call “Needle Drop-offs”.

47) This is the file we will pull into Fusion Tables.



48)

49) Import this file into Fusion Tables.

NeedleDropOffs

Imported at Wed Oct 30 18:15:11 PDT 2013 from NeedleDropOffs.xlsx.
Edited at 9:15 PM

File Edit Tools Help Rows 1 Cards 1 Map of Address_New

Filter No filters applied

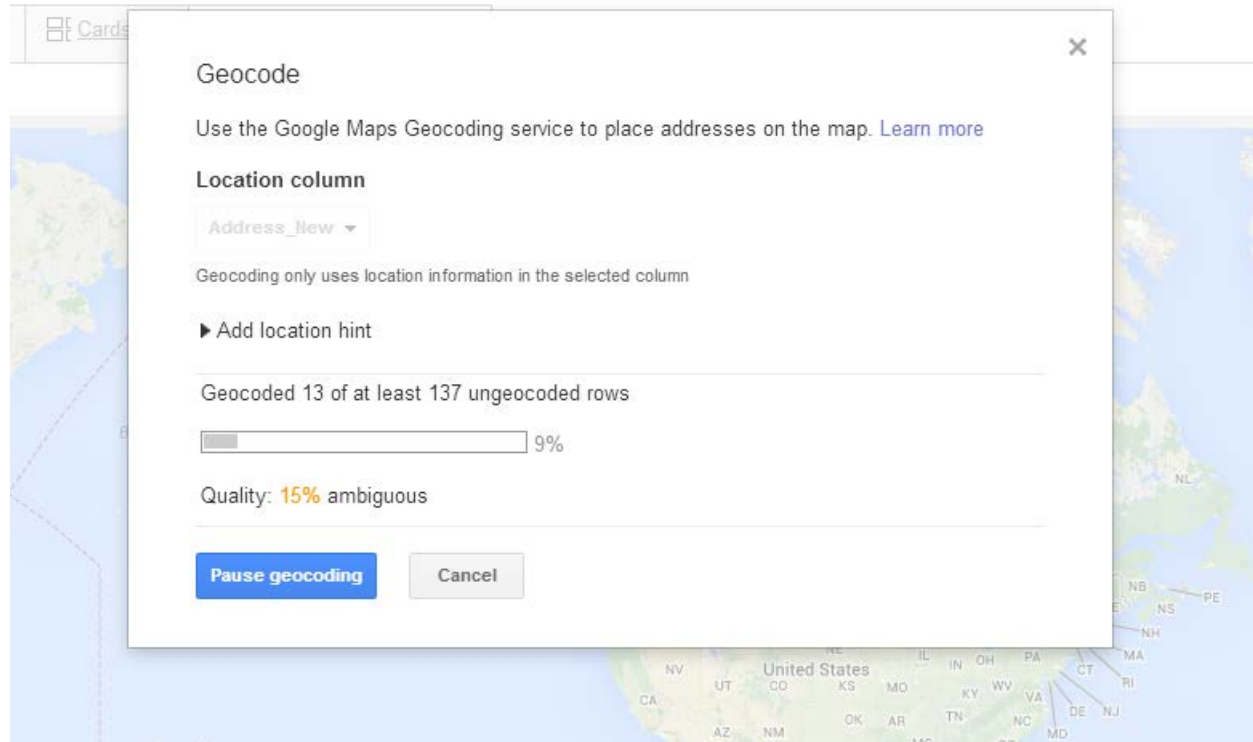
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Name	Address	Address_New	Drop Location
Aids Committee of Ottawa	700-251 Bank Street	700-251 Bank Street, Ottawa, Ontario, Canada	Need Drop Boxes
Bell Pharmacy	737 Gladstone Avenue	737 Gladstone Avenue, Ottawa, Ontario, Canada	Need Drop Boxes
Burger King	199 Montreal Road	199 Montreal Road, Ottawa, Ontario, Canada	Need Drop Boxes
Capital Parking Lot	151 George Street	151 George Street, Ottawa, Ontario, Canada	Need Drop Boxes
Carlington Community & Health Services	900 Merivale Road	900 Merivale Road, Ottawa, Ontario, Canada	Need Drop Boxes
Causeway	22 O'Meara Street	22 O'Meara Street, Ottawa, Ontario, Canada	Need Drop Boxes

50)

51) Fusion Tables has highlighted what it thinks is the column you want to geocode. In this case, it has guessed correctly.

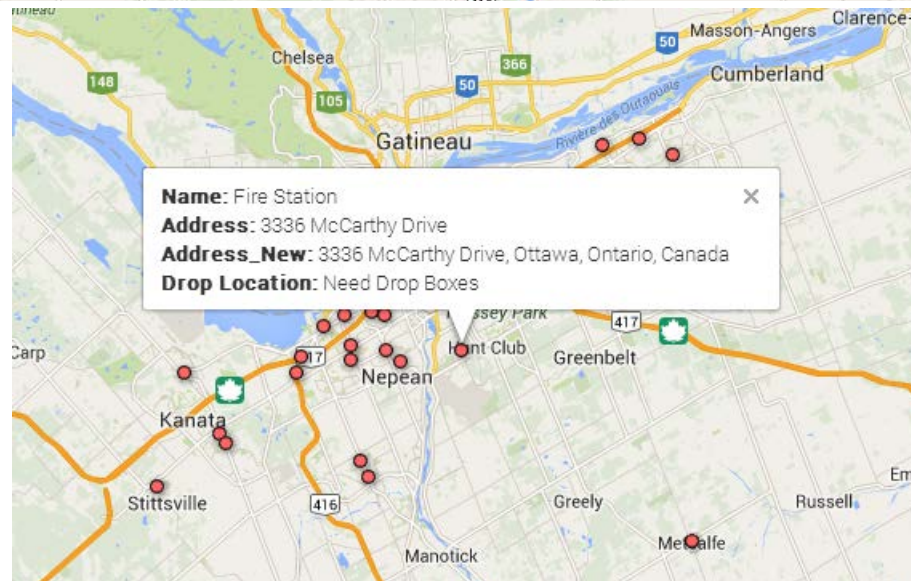
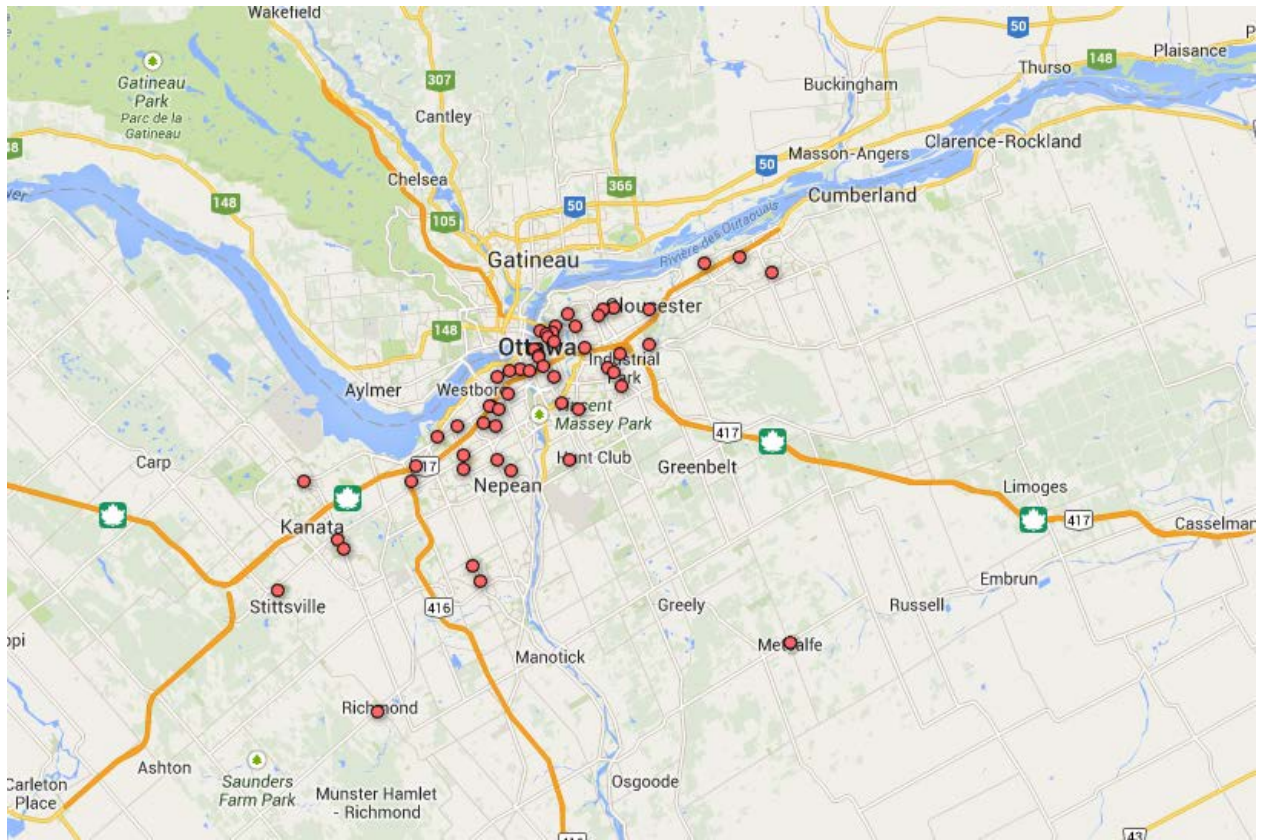
52) Click the Map of "Address_New" tab at the top right-hand side.



53)

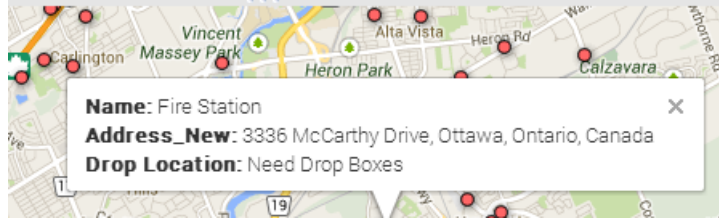
54) Before placing the addresses on the map, Fusion Tables will geocode the address field we created in the Excel file, a process which should only take a few minutes. Once the geocoding is

finished, the map is produced.



55)

56) We don't need two address fields. De-select the first address field in the "Change info" section's automatic section, or delete it in the custom section.



57)

58) Now we've learned to import two different types of files into Fusion Tables.

59) In the follow-up tutorial, we'll learn how to join these files to a city wards shape file to produce a heat map.