

Mapping discarded needles in Fusion Tables Tutorial

In the previous tutorials, we've learned how to [turn pivot tables into heat maps](#) and [place colour code geographic points using markers](#) that Fusion Tables recognizes.

The rationale for this tutorial using discarded needles reported to the city of Ottawa is to show how you can map the locations where city inspectors found the needles, and then show the hot spots on a heat map. We will then use the same data set for a tutorial in Tableau to show you how you can use the same data set to create yet a third visualization.

First a word about discarded needles data. Obtained using the city of [Ottawa's Freedom-of-Information Act](#), it's a subset of a larger [database of 311 calls](#) on the city of Ottawa's open data website. The difference here is that this data base contains exact addresses where city inspectors with Ottawa's property standards branch picked up discarded needles. The specific address allow us to create a heat map -- something we can also do with the city's data on its website because the categories are broken down by ward -- and place the locations on a map.

[CBC News](#) and the [Toronto Star](#) have used this data to tell stories.

So let's get started.

- 1) Download the discarded syringe table by clicking [here](#).
- 2) Copy the table in the master worksheet, paste it in a new worksheet named "WorkingCopy".
- 3) Insert a column to the right of the "Date" column and call it "Year."

4) Use the “Year” function to pull the year out of the date column.

B	C	D
Date	Year	Time
08/10/2005 0:00	=year(B2)	8:14:47 AM
07/11/2007 0:00		11:20:18 AM
02/05/2006 0:00		11:33:53 AM
02/05/2006 0:00		11:48:22 AM
02/05/2006 0:00		2:27:49 PM
02/11/2007 0:00		9:17:51 AM

5) Before copying the formula to the bottom of the table, be sure to format the value as “General”.

Date	Year	Time
08/10/2005 0:00	27/06/1905 0:00	8:14:47 AM
07/11/2007 0:00		11:20:18 AM
02/05/2006 0:00		11:33:53 AM
02/05/2006 0:00		11:48:22 AM
02/05/2006 0:00		2:27:49 PM
02/11/2007 0:00		9:17:51 AM
23/04/2007 0:00		11:13:31 AM
29/07/2007 0:00		7:01:24 PM

SR #	Date	Year	Time	Street Address
2005-377913	08/10/2005 0:00	27/06/1905 0:00	8:14:47 AM	WOODROFFE
2007-352275	07/11/2007 0:00		11:20:18 AM	CYRVILLE
2006-137456				
2006-137612				
2006-137929				
2007-347222				
2007-100317				
2007-229897				
2006-429436				
2006-103818				
2006-091608				
2006-216907				
2006-278215				
2006-324725				
2007-275083				
2005-383907				
2005-110274				
2006-057933				
2006-264051				
2007-348666				
2007-407523				
2005-094759				
2005-436312				
2007-267580				
2007-290053				
2004-465202				
2006-139143	03/05/2006 0:00		12:17:16 PM	CATHERINE

Format Cells

Number Alignment Font Border Fill Protection

Category:

- General
- Number
- Currency
- Accounting
- Date
- Time
- Percentage
- Fraction
- Scientific
- Text
- Special
- Custom

Sample

2005

General format cells have no specific number format.

OK Cancel

Date	Year	Time
08/10/2005 0:00	2005	8:14:47 AM
07/11/2007 0:00		11:20:18 AM
02/05/2006 0:00		11:33:53 AM
02/05/2006 0:00		11:48:22 AM
02/05/2006 0:00		2:27:49 PM
02/11/2007 0:00		9:17:51 AM
23/04/2007 0:00		11:13:31 AM
29/07/2007 0:00		7:01:24 PM
11/12/2006 0:00		7:48:53 AM

Date	Year	Time
08/10/2005 0:00	2005	8:14:47 AM
07/11/2007 0:00	2007	11:20:18 AM
02/05/2006 0:00	2006	11:33:53 AM
02/05/2006 0:00	2006	11:48:22 AM
02/05/2006 0:00	2006	2:27:49 PM
02/11/2007 0:00	2007	9:17:51 AM
23/04/2007 0:00	2007	11:13:31 AM
29/07/2007 0:00	2007	7:01:24 PM
11/12/2006 0:00	2006	7:48:53 AM
03/04/2006 0:00	2006	7:17:09 PM
23/03/2006 0:00	2006	9:24:34 AM
20/06/2006 0:00	2006	10:35:01 AM
29/07/2006 0:00	2006	9:53:36 AM
03/09/2006 0:00	2006	11:13:29 AM
30/08/2007 0:00	2007	3:46:49 PM
13/10/2005 0:00	2005	5:15:11 PM
19/04/2005 0:00	2005	1:46:26 PM
20/02/2006 0:00	2006	6:10:30 PM
19/07/2006 0:00	2006	2:41:06 PM
03/11/2007 0:00	2007	6:07:24 PM

6) Highlight the “Call Description” column and insert a column to the left.

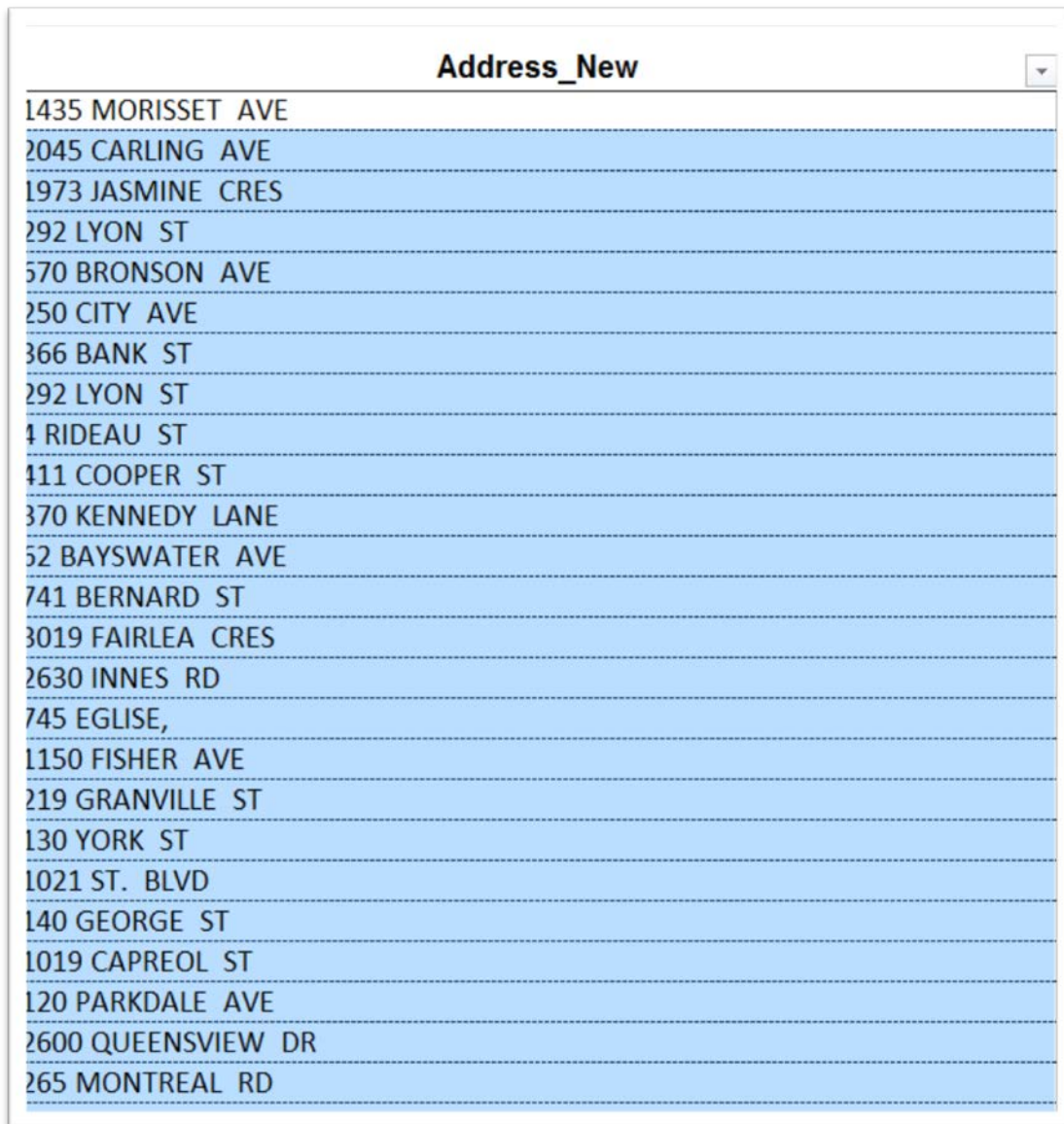
7) Call it “Address_New”.

8) We’ll use a concatenation function (pages 96 to 97 in our textbook) to combine the columns E,F and G. We must combine the address information because Fusion Tables needs a whole address in order to place the locations on a map.

D	E	F	G	H
Time	Street Address	Address	RD/ST/AV	Address_New
12:44:56 PM	MORISSET	1435	AVE	1435 MORISSET AVE

9) Notice the space between the quotation marks. Translated into English, the function in the screen shot above means that we have used the ampersand `&` to combine the bits in the three columns,

separated by spaces to make the addresses easier to read.



The image shows a screenshot of a table with the title "Address_New". The table contains 25 rows of addresses, each on a separate line. The addresses are: 1435 MORISSET AVE, 2045 CARLING AVE, 1973 JASMINE CRES, 292 LYON ST, 570 BRONSON AVE, 250 CITY AVE, 366 BANK ST, 292 LYON ST, 4 RIDEAU ST, 411 COOPER ST, 370 KENNEDY LANE, 52 BAYSWATER AVE, 741 BERNARD ST, 3019 FAIRLEA CRES, 2630 INNES RD, 745 EGLISE, 1150 FISHER AVE, 219 GRANVILLE ST, 130 YORK ST, 1021 ST. BLVD, 140 GEORGE ST, 1019 CAPREOL ST, 120 PARKDALE AVE, 2600 QUEENSVIEW DR, and 265 MONTREAL RD.

Address_New
1435 MORISSET AVE
2045 CARLING AVE
1973 JASMINE CRES
292 LYON ST
570 BRONSON AVE
250 CITY AVE
366 BANK ST
292 LYON ST
4 RIDEAU ST
411 COOPER ST
370 KENNEDY LANE
52 BAYSWATER AVE
741 BERNARD ST
3019 FAIRLEA CRES
2630 INNES RD
745 EGLISE,
1150 FISHER AVE
219 GRANVILLE ST
130 YORK ST
1021 ST. BLVD
140 GEORGE ST
1019 CAPREOL ST
120 PARKDALE AVE
2600 QUEENSVIEW DR
265 MONTREAL RD

- 10) We're almost there. But Google's Fusion Tables needs a bit more information to ensure that these addresses get placed in Ottawa and not some other city that may have a similar address.
- 11) So let's add a new field to the right of "Address_New", and call it, "Address_For_FT".

- 12) We will use a variation of the concatenation function to add the city, province and country to each address.

	A	B	C	D	E	F	G	H
1	SR #	Date	Time	Address #	Street Address	RD/ST/AVE	Address_New	Address_For_FT
2	2005-377913	08/10/2005 0:00	8:14:47 AM	1385	WOODROFFE	AVE	1385 WOODROFFE AVE	1385 WOODROFFE AVE Ottawa, Ontario, Canada
3	2007-352275	07/11/2007 0:00	11:20:18 AM	1021	CYRVILLE	RD	1021 CYRVILLE RD	

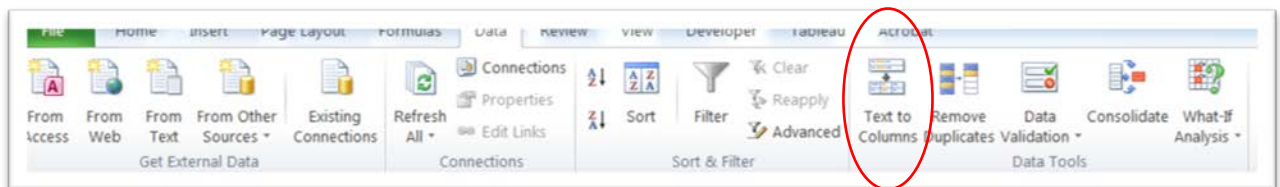
- 13) Make sure “Ottawa, Ontario, Canada” is within quotation marks, as you can see in the screenshot above.

- 14) Copy to the bottom.

Address_New	Address_For_FT
385 WOODROFFE AVE	1385 WOODROFFE AVE Ottawa, Ontario, Canada
YRVILLE 1021 RD	CYRVILLE 1021 RD Ottawa, Ontario, Canada
IDEAU 215 ST	RIDEAU 215 ST Ottawa, Ontario, Canada
IDEAU 217 ST	RIDEAU 217 ST Ottawa, Ontario, Canada
IDEAU 215 ST	RIDEAU 215 ST Ottawa, Ontario, Canada
IDEAU 450 ST	RIDEAU 450 ST Ottawa, Ontario, Canada
ARKDALE 466 AVE	PARKDALE 466 AVE Ottawa, Ontario, Canada
ILD 528 ST	OLD 528 ST Ottawa, Ontario, Canada
MICHAEL 1556 ST	MICHAEL 1556 ST Ottawa, Ontario, Canada
MEADOWLANDS 929 DR	MEADOWLANDS 929 DR Ottawa, Ontario, Canada
ISGAR 580 ST	LISGAR 580 ST Ottawa, Ontario, Canada
ING 285 AVE	KING 285 AVE Ottawa, Ontario, Canada
ING 285 AVE	KING 285 AVE Ottawa, Ontario, Canada
ING 206 AVE	KING 206 AVE Ottawa, Ontario, Canada
ING 284 AVE	KING 284 AVE Ottawa, Ontario, Canada
ISABELLA 64 ST	ISABELLA 64 ST Ottawa, Ontario, Canada
HOLMWOOD 111 AVE	HOLMWOOD 111 AVE Ottawa, Ontario, Canada
HARDONNAY 619 DR	CHARDONNAY 619 DR Ottawa, Ontario, Canada
HERON 1670 RD	HERON 1670 RD Ottawa, Ontario, Canada
COBOURG 110 ST	COBOURG 110 ST Ottawa, Ontario, Canada
CLARENCE 253 ST	CLARENCE 253 ST Ottawa, Ontario, Canada
CLARENCE 140 ST	CLARENCE 140 ST Ottawa, Ontario, Canada
CLARENCE 165 ST	CLARENCE 165 ST Ottawa, Ontario, Canada
CLARENCE 239 ST	CLARENCE 239 ST Ottawa, Ontario, Canada

- 15)
- 16) Now let's pull the numbers out of the “Ward” column, allowing us to merge the ward number with the similar column the Ward [KML file](#) we already have uploaded to our Google Drive.

- 17) We'll use the “Text to Columns” option to separate the numbers.



- 18) Highlight the “Ward” column, and click on the “Text to Columns” option (covered on pages 97 and 98 of the textbook).

The screenshot shows the 'Convert Text to Columns Wizard - Step 1 of 3' dialog box. The text inside reads: 'The Text Wizard has determined that your data is Delimited. If this is correct, choose Next, or choose the data type that best describes your data.' Under 'Original data type', there are two options: 'Delimited' (selected and circled in red) and 'Fixed width'. Below this is a 'Preview of selected data:' section with a list box containing: '1 Ward', '2 WARD 8', '3 WARD 11', '4 WARD 12', '5 WARD 12', and '6 WARD 12'. At the bottom of the dialog, there are buttons for 'Cancel', '< Back', 'Next >' (circled in red), and 'Finish'. In the background, an Excel spreadsheet is visible with a table with columns 'Primary' and 'Ward'. The 'Ward' column is highlighted in blue. The table contains the following data:

Primary	Ward
Syringes	WARD 8
Syringes	WARD 11
Syringes	WARD 12
Syringes	WARD 12
Syringes	WARD 12
Syringes	WARD 12
Syringes	WARD 15
Syringes	WARD 12
Syringes	WARD 18
Syringes	WARD 16
Syringes	WARD 14
tario, Canada	Property Standards Needles/Syringes WARD 12
tario, Canada	Property Standards Needles/Syringes WARD 12
tario, Canada	Property Standards Needles/Syringes WARD 12
tario, Canada	Property Standards Needles/Syringes WARD 12
ntario, Canada	Property Standards Needles/Syringes WARD 17

- 19) Excel considers it a “delimited” file because a space separates the name “WARD” from the number.
- 20) Choose the “Next” tab.
- 21) Excel will always default to “Tab”.

22) We want space, so check that box.

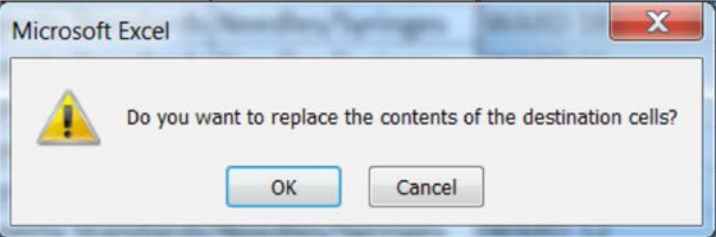
The screenshot shows the 'Convert Text to Columns Wizard - Step 2 of 3' dialog box. In the 'Delimiters' section, the 'Space' checkbox is checked and circled in red. The 'Text qualifier' is set to a double quote. The 'Data preview' section shows a list of 'Ward' values: 'Ward', 'WARD 8', 'WARD 11', 'WARD 12', 'WARD 12', 'WARD 12', 'WARD 12', 'WARD 15', 'WARD 12', 'WARD 18', 'WARD 16', and 'WARD 14'. A vertical line separates the 'Ward' column from the 'WARD' values. The 'Next >' button is circled in red. The background shows a table with columns 'Primary' and 'Ward'.

Primary	Ward
Syringes	WARD 8
Syringes	WARD 11
Syringes	WARD 12
Syringes	WARD 12
Syringes	WARD 12
Syringes	WARD 12
Syringes	WARD 15
Syringes	WARD 12
Syringes	WARD 18
Syringes	WARD 16
Syringes	WARD 14
ntario, Canada	Property Standards
ntario, Canada	Property Standards
ntario, Canada	Property Standards
ntario, Canada	Property Standards
Ontario, Canada	Property Standards
tawa, Ontario, Canada	Property Standards
ttawa, Ontario, Canada	Property Standards
, Ontario, Canada	Property Standards
a, Ontario, Canada	Property Standards
a, Ontario, Canada	Property Standards
a, Ontario, Canada	Property Standards
a, Ontario, Canada	Property Standards
a, Ontario, Canada	Property Standards
Needles/Syringes	WARD 12
Needles/Syringes	WARD 12
Needles/Syringes	WARD 12
Needles/Syringes	WARD 12
Needles/Syringes	WARD 12
Needles/Syringes	WARD 17
Needles/Syringes	WARD 17
Needles/Syringes	WARD 19
Needles/Syringes	WARD 18
Needles/Syringes	WARD 12
Needles/Syringes	WARD 12
Needles/Syringes	WARD 12
Needles/Syringes	WARD 12

23) This tells Excel where to create a new column.

24) Select “Next” and then “Finish”.

J	K	L	M
Call Description	Summary	Ward	
Property Standards	Needles/Syringes	WARD 8	
Property Standards	Needles/Syringes	WARD 11	
Property Standards	Needles/Syringes	WARD 12	
Property Standards	Needles/Syringes	WARD 12	
Property Standards	Needles/Syringes	WARD 12	
Property Standards	Needles/Syringes	WARD 12	
Property Standards	Needles/Syringes	WARD 15	
Property Standards	Needles/Syringes	WARD 12	
Pro			
Pro			
Pro			
Pro			
Pro			
Property Standards	Needles/Syringes	WARD 12	
Property Standards	Needles/Syringes	WARD 17	



25) Excel wants to know if it’s okay for the new column containing the numbers to replace the contents in the adjacent cells. In this case it’s fine, because the column is blank. This might not be the case if we were using the “Text to Column” option in the middle of a table with columns on either side.

26) Select the “OK” tab.

J	K	L	M
Call Description	Summary	Ward	
Property Standards	Needles/Syringes	WARD	8
Property Standards	Needles/Syringes	WARD	11
Property Standards	Needles/Syringes	WARD	12
Property Standards	Needles/Syringes	WARD	12
Property Standards	Needles/Syringes	WARD	12
Property Standards	Needles/Syringes	WARD	12
Property Standards	Needles/Syringes	WARD	15
Property Standards	Needles/Syringes	WARD	12
Property Standards	Needles/Syringes	WARD	18
Property Standards	Needles/Syringes	WARD	16
Property Standards	Needles/Syringes	WARD	14
Property Standards	Needles/Syringes	WARD	12
Property Standards	Needles/Syringes	WARD	12
Property Standards	Needles/Syringes	WARD	12
Property Standards	Needles/Syringes	WARD	12
Property Standards	Needles/Syringes	WARD	17
Property Standards	Needles/Syringes	WARD	17

27) Label column M “Ward_No.”

28) This is the column we’ll merge with the corresponding column in the Ward KML file to create a heat map.

29) But first, we’re going to plot the individual addresses in the “Address_For_FT” column on a map.

30) To make the data set manageable for readers, let’s select the two most recent years, 2012 and 2013, which, when sorting column B in descending order, tell us that the most recent date is Sept. 12, 2013.

	A	B	C
	SR #	Date	Year
2	201301164852	09/12/2013 0:00	2013
3	201301147690	30/11/2013 0:00	2013
4	201301147690	30/11/2013 0:00	2013
5	201301120711	19/11/2013 0:00	2013
6	201301115079	16/11/2013 0:00	2013
7	201301112981	15/11/2013 0:00	2013
8	201301108201	13/11/2013 0:00	2013
9	201301104687	12/11/2013 0:00	2013
0	201301102439	11/11/2013 0:00	2013
1	201301090945	05/11/2013 0:00	2013
2	201301080549	31/10/2013 0:00	2013
3	201301079132	31/10/2013 0:00	2013

31)

32) Filter the table for the years 2012 and 2013, giving us 272 records out of a total of 911.

	A	B	C	D	E	F	
1	SR #	Date	Year	Time	Street Address	Address	RD
2	201301164852	09/12/2013 0:00	2013	12:44:56 PM	MORISSET	1435	AVE
3	201301147690	30/11/2013 0:00	2013	9:46:21 PM	CARLING	2045	AVE
4	201301147690	30/11/2013 0:00	2013	9:46:21 PM	JASMINE	1973	CRE
5	201301120711	19/11/2013 0:00	2013	2:22:06 PM	LYON	292	ST
6	201301115079	16/11/2013 0:00	2013	11:43:29 PM	BRONSON	670	AVE
7	201301112981	15/11/2013 0:00	2013	2:04:21 PM	CITY	250	AVE
8	201301108201	13/11/2013 0:00	2013	5:38:11 PM	BANK	366	ST
9	201301104687	12/11/2013 0:00	2013	12:49:24 PM	LYON	292	ST
10	201301102439	11/11/2013 0:00	2013	9:36:59 AM	RIDEAU	4	ST
11	201301090945	05/11/2013 0:00	2013	11:02:58 AM	COOPER	411	ST
12	201301080549	31/10/2013 0:00	2013	3:50:11 PM	KENNEDY	370	LAN
13	201301079132	31/10/2013 0:00	2013	9:12:27 AM	BAYSWATER	62	AVE
14	201301052904	19/10/2013 0:00	2013	10:26:27 AM	BERNARD	741	ST
15	201301049448	17/10/2013 0:00	2013	4:08:34 PM	FAIRLEA	3019	CRE
16	201301042330	15/10/2013 0:00	2013	11:43:30 AM	INNES	2630	RD
17	201301040205	13/10/2013 0:00	2013	2:17:15 PM	EGLISE,	745	
18	201301030683	09/10/2013 0:00	2013	9:36:44 AM	FISHER	1150	AVE
19	201301028028	08/10/2013 0:00	2013	10:30:18 AM	GRANVILLE	219	ST
20	201301021193	04/10/2013 0:00	2013	5:46:17 PM	YORK	130	ST
21	201300987295	21/09/2013 0:00	2013	9:24:09 AM	ST.	1021	BLV
22	201300978580	18/09/2013 0:00	2013	10:08:16 AM	GEORGE	140	ST
23	201300980712	18/09/2013 0:00	2013	7:42:30 PM	CAPREOL	1019	ST
24	2013-042670	17/09/2013 0:00	2013	7:18:06 PM	PARKDALE	120	AVE
25	201300961672	11/09/2013 0:00	2013	5:02:00 PM	QUEENSVIEW	2600	DR
26	2013-042087	11/09/2013 0:00	2013	6:38:35 PM	MONTREAL	265	RD
27	201300956774	10/09/2013 0:00	2013	12:23:46 PM	YORK	153	ST
28	201300935897	03/09/2013 0:00	2013	2:21:52 PM	HUNT	300	RD
29	201300935984	03/09/2013 0:00	2013	2:33:46 PM	SOMERSET	721	ST

Ready: 272 of 911 records found

33) Select the filtered table, copy and paste it into a new worksheet, which you can call “SyringesforFT”.

34) Label the worksheet “Syringes”. (NOTE: MAKE SURE THAT YOU CREATE A NEW WORKSHEET FOR THIS TABLE. FUSION TABLES CAN ONLY HANDLE WORKBOOKS WITH SINGLE WORKSHEETS. IF YOU FORGET TO DO THIS, THEN FUSION TABLES WILL DEFAULT TO THE FIRST WORKSHEET IN THE WORKBOOK.)

35) Upload the file to Fusion Tables.

Import new table ×

Column names are in row 1

1	SR #	Date	Year	Time	Street Addr...	Addr... #	RD/S...	Addr...
2	20130...	12/9/13 0:00	2013	12:44:56 PM	MORI...	1435	AVE	MORI.. 1435 AVE
3	20130...	11/30/13 0:00	2013	9:46:21 PM	CARL...	2045	AVE	CARL.. 2045 AVE
4	20130...	11/30/13	2013	9:46:21	JASM...	1973	CRES	JASM..

Rows before the header row will be ignored.

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

Cancel « Back Next »

SyringesforFT
 reported at Thu Oct 23 21:20:54 PDT 2014 from SyringesforFT.xlsx.
 edited at 12:21 AM

File Edit Tools Help Rows 1 Cards 1 Map of Address_For_F...

Filter No filters applied

1-100 of 272

IR #	Date	Year	Time	Street Address	Address #	RD/ST/AVE	Address_New	Address_For_FT	Call Description	Summary	Ward	Ward_No.
201301164852	12/9/13 0:00	2013	12:44:56 PM	MORISSET	1435	AVE	1435 MORISSET AVE	1435 MORISSET AVE Ottawa, Ontario, Canada	Needles/Syringes	Property Standards	WARD	16
201301147690	11/30/13 0:00	2013	9:46:21 PM	CARLING	2045	AVE	2045 CARLING AVE	2045 CARLING AVE Ottawa, Ontario, Canada	Needles/Syringes	Property Standards	WARD	11
201301147690	11/30/13 0:00	2013	9:46:21 PM	JASMINE	1973	CRES	1973 JASMINE CRES	1973 JASMINE CRES Ottawa, Ontario, Canada	Needles/Syringes	Property Standards	WARD	11
201301120711	11/19/13 0:00	2013	2:22:06 PM	LYON	292	ST	292 LYON ST	292 LYON ST Ottawa, Ontario, Canada	Needles/Syringes	Property Standards	WARD	14
201301115079	11/16/13 0:00	2013	11:43:29 PM	BRONSON	670	AVE	670 BRONSON AVE	670 BRONSON AVE Ottawa, Ontario, Canada	Needles/Syringes	Property Standards	WARD	17
201301112981	11/15/13 0:00	2013	2:04:21 PM	CITY	250	AVE	250 CITY AVE	250 CITY AVE Ottawa, Ontario, Canada	Needles/Syringes	Property Standards	WARD	14
201301108201	11/13/13 0:00	2013	5:38:11 PM	BANK	366	ST	366 BANK ST	366 BANK ST Ottawa, Ontario, Canada	Needles/Syringes	Property Standards	WARD	14
201301104687	11/12/13 0:00	2013	12:49:24 PM	LYON	292	ST	292 LYON ST	292 LYON ST Ottawa, Ontario, Canada	Needles/Syringes	Property Standards	WARD	14
201301102439	11/11/13 0:00	2013	9:36:59 AM	RIDEAU	4	ST	4 RIDEAU ST	4 RIDEAU ST Ottawa, Ontario, Canada	Needles/Syringes	Property Standards	WARD	12
201301090945	11/5/13 0:00	2013	11:02:58 AM	COOPER	411	ST	411 COOPER ST	411 COOPER ST Ottawa, Ontario, Canada	Needles/Syringes	Property Standards	WARD	14

- 36) The yellow means that Fusion Tables has recognized our new address column as the one to geocode (a process discussed in our textbook’s mapping section on page 206 and 207).
- 37) If it didn’t, you’d have to manually change the data type for this column from “text” to “location” by going to the “Edit” from the menu above, and then to the “Change columns” option.
- 38) Fortunately, we don’t have to do this. To see what this table looks like on a map, select the “Map of Address” tab at the top right.

SyringestorFT
 Reported at Thu Oct 23 21:20:54 PDT 2014 from SyringesforFT.xlsx.
 Edited at 12:21 AM

File Edit Tools Help Rows 1 Cards 1 Map of Address_For_F...

Filter No filters applied

1-100 of 272

IR #	Date	Year	Time	Street Address	Address #	RD/ST/AVE	Address_New	Address_For_FT	Call D
201301164852	12/9/13 0:00	2013	12:44:56 PM	MORISSET	1435	AVE	1435 MORISSET AVE	1435 MORISSET AVE Ottawa, Ontario, Canada	Needk
201301147690	11/30/13 0:00	2013	9:46:21 PM	CARLING	2045	AVE	2045 CARLING AVE	2045 CARLING AVE Ottawa, Ontario, Canada	Needk
201301147690	11/30/13 0:00	2013	9:46:21 PM	JASMINE	1973	CRES	1973 JASMINE CRES	1973 JASMINE CRES Ottawa, Ontario, Canada	Needk
201301120711	11/19/13 0:00	2013	2:22:06 PM	LYON	292	ST	292 LYON ST	292 LYON ST Ottawa, Ontario, Canada	Needk

Address_For_F...

Geocode

Use the Google Maps Geocoding service to place addresses on the map. [Learn more](#)

Location column

Address_For_FT

Geocoding only uses location information in the selected column

▶ Add location hint

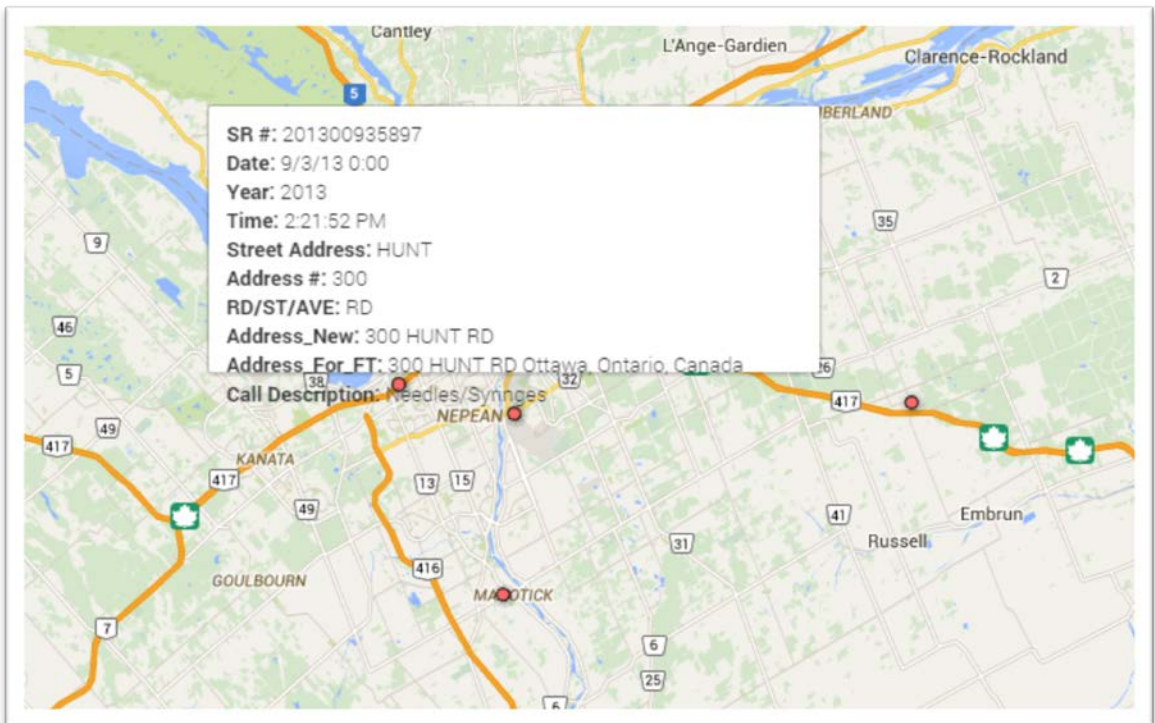
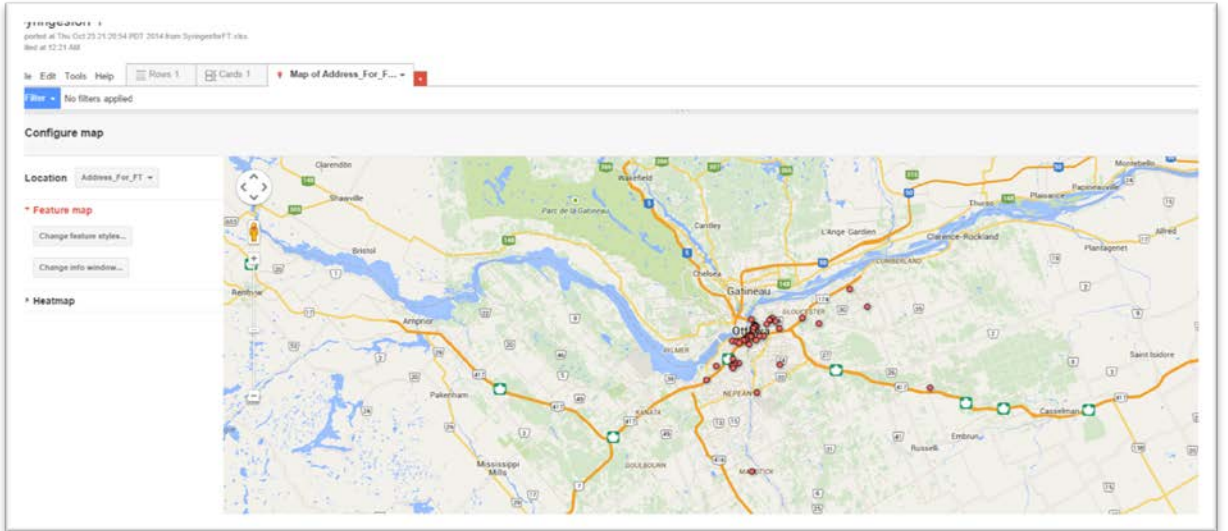
Geocoded 5 of at least 272 ungeocoded rows

2%

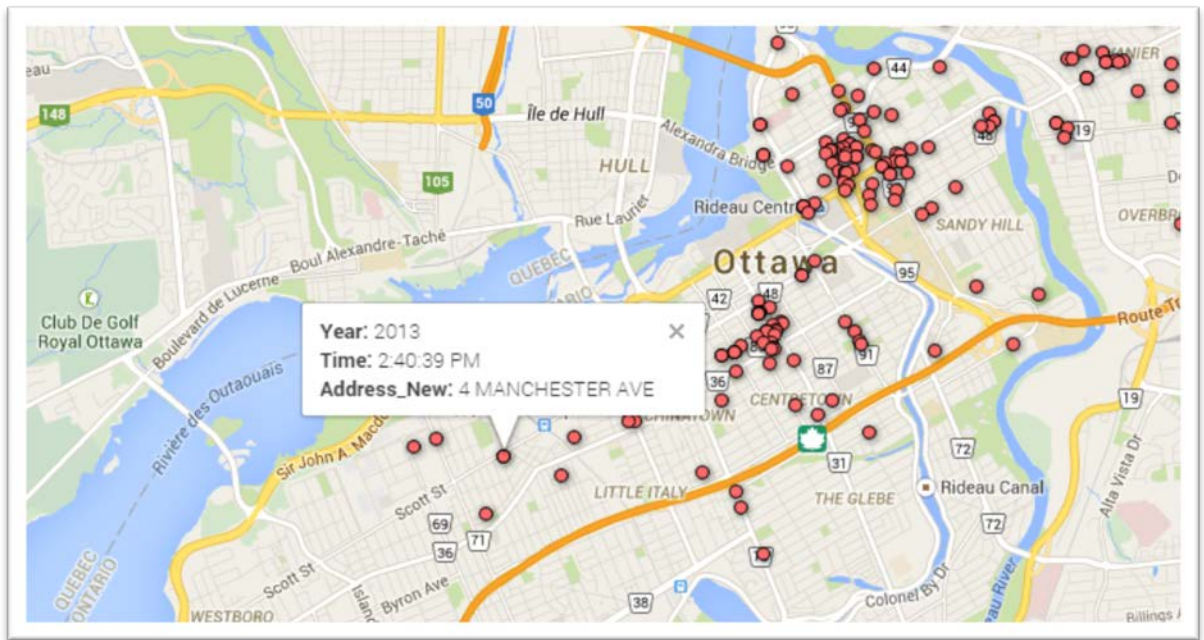
Quality: 0% ambiguous

Pause geocoding Cancel

39) The geocoding could take a minute or two. So be patient. The larger the data set, the more time it takes, one of the reasons we filtered our data for the period of 2012 and the first nine months of 2013.



- 40) You can follow the steps from the previous mapping tutorial to clean up your pop-up box.

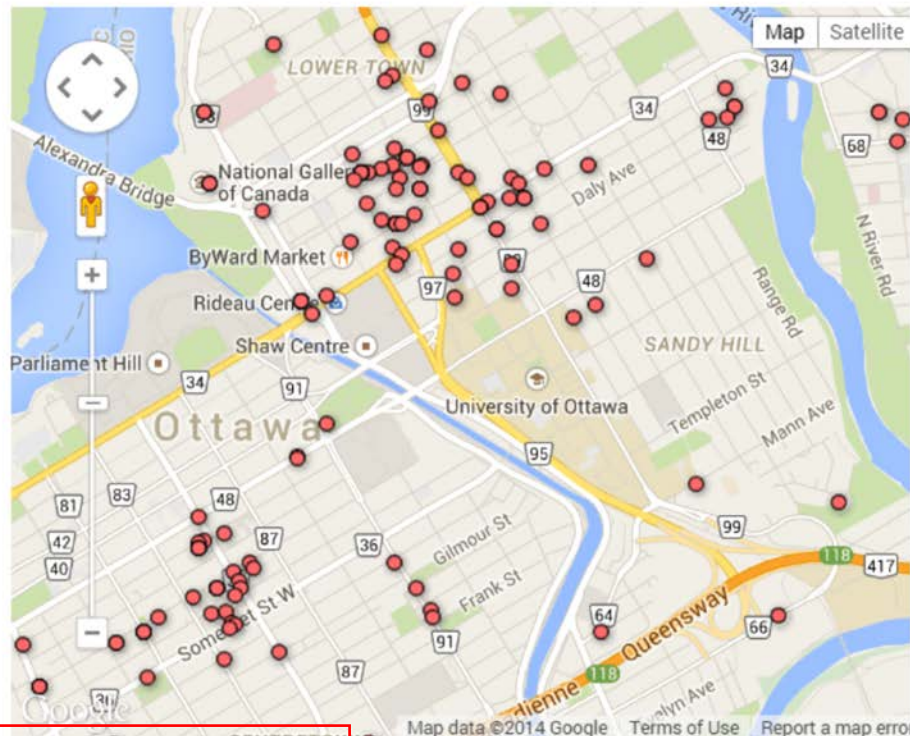


- 41) Once you're happy with the result, share it and get the embed code for your blog post.
- 42) Let's give ourselves the ability to allow people to search this map by selecting the ward number. To do this, we'll dip into another tutorial (from another course) on mapping Toronto parking-infraction data. Steps explaining how to use the wizard, begins on the [tutorial's](#) page 16.
- 43) To learn how to embed the code from the Fusion Table Layer Wizard, consult this [tutorial](#).
- 44) Your result should look like this screen grab, which you can also find [here](#).

Needles Per Ward

🕒 October 24, 2014 📄 Visualizations 👤 David McKie ✎ Edit

➕ Share / Save 📘 🐦 📌



- 45) Now that we have a visualization that we can filter according to, let's create a heat map that will allow us to identify hot spots.
- 46) Return to our "workingcopy" worksheet, create a pivot table for the years 2012 and 2013, and sort the results in the "Grand Total" column in descending order to see which wards have the

highest numbers.

Count of SR #	Column Labels		
Row Labels	2012	2013	Grand Total
12	84	36	120
14	32	17	49
16	17	9	26
15	5	9	14
13	5	5	10
0 1	6	2	8
1 11	2	6	8
2 17	3	4	7
3 10	3	2	5
4 18	3	1	4
5 8	3	1	4
6 7	4	4	8
7 19	2	1	3
8 21	2	1	3
9 23	1	1	2
0 9	2	2	4
1 4	2	2	4
2 22	1	1	2
3 2	1	1	2
Grand Total	172	100	272

- 47) If you're happy with the result, copy the pivot table, using Excel's "paste special" to paste the table into a new worksheet.
- 48) Clean up the top by deleting the extraneous row
- 49) Rename column A, "Ward_No. (Which you can also rename in FT) delete the "Grand Total" row at the bottom, but be sure to keep the "Grand Total" column.

50) Rename the worksheet “DiscardedSyringesforHeatMap”.

	A	B	C	D
1	Ward_No	2012	2013	Grand_Total
2	12	84	36	120
3	14	32	17	49
4	16	17	9	26
5	15	5	9	14
6	13	5	5	10
7	1	6	2	8
8	11	2	6	8
9	17	3	4	7
10	10	3	2	5
11	18	3	1	4
12	8	3	1	4
13	7		4	4
14	19	2	1	3
15	21	2		2
16	23	1	1	2
17	9	2		2
18	4	2		2
19	22		1	1
20	2		1	1
21				

51) What we’ve done so far is to create a master Excel workbook that contains all the original files we’ll use for each visualization.

52) Copy this worksheet, paste it into a new Excel workbook, and name it “DiscardedSyringesforHeatMap”

53) Name the worksheet “DiscardedSyinges”, and upload it to Fusion Tables.

DiscardedSyringesforHeatMap

Imported at Fri Oct 24 06:41:44 PDT 2014 from DiscardedSyringesforHeatMap.xlsx.
 Edited at 9:41 AM

File Edit Tools Help Rows 1 Cards 1

Filter No filters applied

1-19 of 19

Ward_No	2012	2013	Grand_Total
12	84	36	120
14	32	17	49
16	17	9	26
15	5	9	14
13	5	5	10
1	6	2	8
11	2	6	8
17	3	4	7
10	3	2	5
18	3	1	4
8	3	1	4
7		4	4
19	2	1	3
21	2		2
23	1	1	2
9	2		2
4	2		2
22		1	1
2		1	1

54)

55) You may notice that some of the ward numbers are missing. That's because not every ward contains discarded needles. It turns out wards, 3, 5, 6 and 20 contain no needles. This means that the ward numbers in the KML file we downloaded will not have any corresponding numbers, leaving blanks in our heat map. This didn't matter in the previous step, because we were only placing the needle locations on the map, irrespective of what ward they were in.

- 56) And if we were only creating a graphic (as we will eventually do in Tableau), this wouldn't matter much. But for a map, blank spots looks strange. To get around this problem, let's assign zero values to the four wards we've mentioned.
- 57) There are two ways to do this. You can add add rows to the table that you've uploaded.

DiscardedSyringesforHeatMap

Imported at Sun Oct 26 08:35:21 PDT 2014 from DiscardedSyringesforHeatMap.x
Edited at 11:35 AM

File Edit Tools Help

Rows 1

Cards 1



Add row

Edit row

Duplicate row

Delete selected row

Delete all rows

Add column

Add formula column

Change columns

Ward

Total

120

49

26

14

10

11

2

6

8

4

6

2

2

DiscardedSyringesforHeatMap
 Imported at Sun Oct 26 08:35:21 PDT 2014 from DiscardedSyringesforHeatMap.xlsx.
 Edited at 11:35 AM

File Edit Tools Help Rows 1 Cards 1

Filter No filters applied. Sorted by Grand_Total

1-23 of 23

Ward_No	2012	2013	Grand_Total
12	84	36	120
14	32	17	49
16	17	9	26
15	5	9	14
13	5	5	10
11	2	6	8
1	6	2	8
17	3	4	7
10	3	2	5
18	3	1	4
8	3	1	4
7	0	4	4
19	2	1	3
23	1	1	2
21	2	0	2
9	2	0	2
4	2	0	2
22	0	1	1
2	0	1	1
20	0	0	0
6	0	0	0
5	0	0	0
3	0	0	0

58) Or, you can do the same in your original Excel file, which you'd have to upload again.

	A	B	C	D
1	Ward_No	2012	2013	Grand_Total
2	12	84	36	120
3	14	32	17	49
4	16	17	9	26
5	15	5	9	14
6	13	5	5	10
7	1	6	2	8
8	11	2	6	8
9	17	3	4	7
10	10	3	2	5
11	7	0	4	4
12	8	3	1	4
13	18	3	1	4
14	19	2	1	3
15	4	2	0	2
16	9	2	0	2
17	21	2	0	2
18	23	1	1	2
19	2	0	1	1
20	22	0	1	1
21	3	0	0	0
22	5	0	0	0
23	6	0	0	0
24	20	0	0	0

59)

60) Either method is fine.

61) Now use the steps we learned in the [Mapping Ottawa Crime Rate Tutorial](#) to merge this discarded syringe table with the Ottawa Wards [KML file](#) which is already on your Google Drive. If you

still need to download a version, please click [here](#).

Merge of DiscardedSyringesforHeatMap and CityWards2010ForTutorial

Attribution unknown - Edited at 11:35 AM

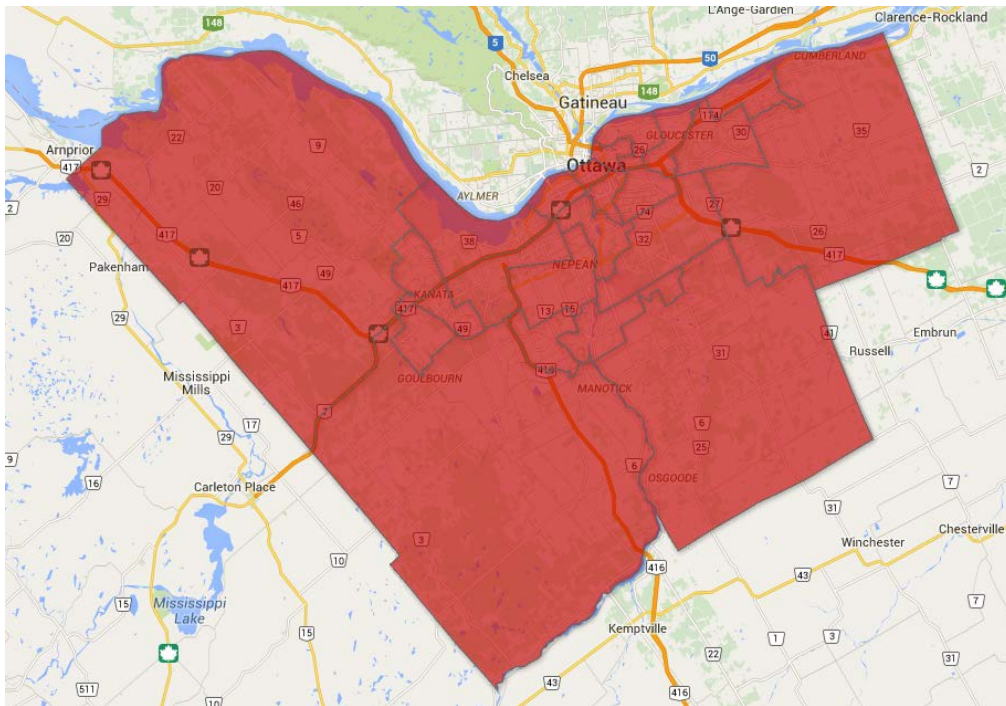
File Edit Tools Help Rows 1 Cards 1 Map of geometry

Filter No filters applied. Sorted by Grand_Total

1-23 of 23

Ward_No	2012	2013	Grand_Total	description	name	DESCRIPTIO	geometry
12	84	36	120		RIDEAU-VANIER	RIDEAU-VANIER	KML...
14	32	17	49		SOMERSET	SOMERSET	KML...
16	17	9	26		RIVER	RIVER	KML...
15	5	9	14		KITCHISSIPPI	KITCHISSIPPI	KML...
13	5	5	10		RIDEAU-ROCKCLIFFE	RIDEAU-ROCKCLIFFE	KML...
1	6	2	8		ORLEANS	ORLEANS	KML...
11	2	6	8		CAPITAL	BEACON HILL-CYRVILLE	KML...
17	3	4	7		CAPITAL	CAPITAL	KML...
10	3	2	5		GLOUCESTER-SOUTHGATE	GLOUCESTER-SOUTHGATE	KML...
18	3	1	4		BARRHAVEN	ALTA VISTA	KML...
7	0	4	4		BEACON HILL-CYRVILLE	BAY	KML...
8	3	1	4		COLLEGE	COLLEGE	KML...
19	2	1	3		CUMBERLAND	CUMBERLAND	KML...
21	2	0	2		RIDEAU-GOULBOURN	RIDEAU-GOULBOURN	KML...
23	1	1	2		KANATA SOUTH	KANATA SOUTH	KML...
4	2	0	2		KANATA NORTH	KANATA NORTH	KML...
9	2	0	2		KNOXDALE-MERIVALE	KNOXDALE-MERIVALE	KML...
2	0	1	1		INNES	INNES	KML...
22	0	1	1		GLOUCESTER-SOUTH NEPEAN	GLOUCESTER-SOUTH NEPEAN	KML...
20	0	0	0		OSGOODE	OSGOODE	KML...
3	0	0	0		BAY	BARRHAVEN	KML...
5	0	0	0		WEST CARLETON-MARCH	WEST CARLETON-MARCH	KML...
6	0	0	0		STITTSVILLE-KANATA WEST	STITTSVILLE-KANATA WEST	KML...

62) Select the “Map of geometry” tab to see the result.



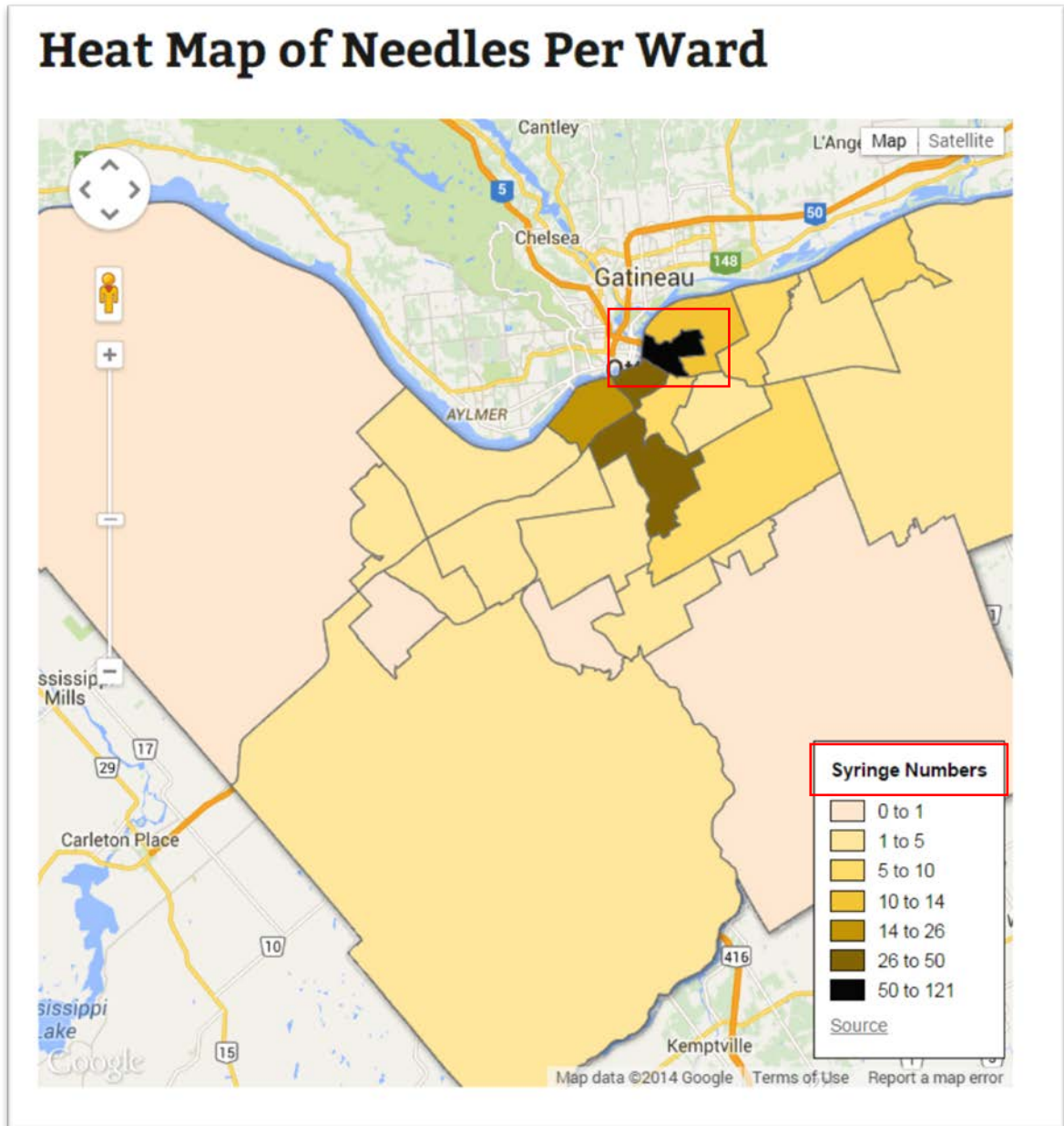
63) It's all the same colour. As we learned in the previous [Mapping Crime Rate Tutorial](#), we have to assign colours to each set of values.

64) It's best to do this, by sorting the row containing the values we care most about – Grand_Total – in descending order from 120 to 0.

65) Let's make the zeros the category one, the lowest ranking; one-to-five, the second; five-to-10, the third, 14, the fourth; 26, the fifth, 49, the sixth; and 120, the seventh.

66) It's best to use one colour ramp for each category, except for the hot spot, 120, which we will assign the colour black. In order to ensure the map is as vibrant as it can be, increase each colour's

“opacity” to 100%.



67) You can see that our zeros are the lightest colours. Had we not assigned zeros to those wards with no discarded syringes, Google would have left us with blank spaces.

68) The hot spot, Rideau-Vanier, is in black.

69) You’ll also notice that we’ve given the legend an appropriate title so people understand that they’re seeing.

70) So far in this tutorial, Fusion Tables has given us two ways of visualizing data on a map with the help of a KML file of Ottawa ward boundaries. Although Fusion Tables is excellent for mapping trends, it can also create tables. However, we will use another tool to accomplish this task, one that creates interactive tables and maps, allowing the audience additional ways to interact with your data.

71) You'll find that tutorial by clicking [here](#).

72) And for look at the visualizations on one page, click [here](#).