HAZARD VULNERABILITY DATA EXPLORER

DATA EXPLORATION WIDGET FOR FLORIDA SOCIAL VULNERABILITY INDEX (SoVI), MEDICAL VULNERABILITY INDEX (MedVI), HAZARDS VULNERABILITY (HazVI) INDEX AND COMMUNITY RESILIENCE INDEX

2014 User's Guide

Use Cases 1

Exploring County/City Levels: Identifying Vulnerabilities

Planning Program
Bureau of Preparedness and Response
Division of Emergency Preparedness and Community Support

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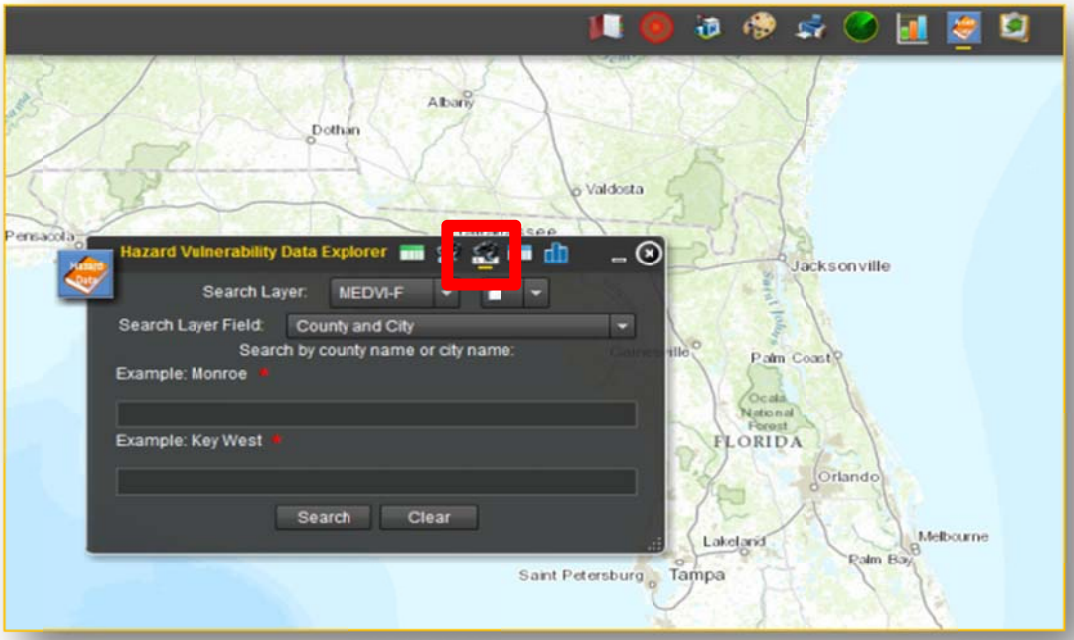
Use Cases

This set of exercises will help to better familiarize you to the set of HVDE data search widgets. The answers to the exercises are in the Answer Key section of this guide.

Open the HVDE widget at

1. http://gis.doh.state.fl.us/ESF8PlanningMap/ The widget is also available at http://129.252.37.169:8400/medviapp/index.html
2. Identify the icon on the screen:

3. After you do that you should see the following screen:



The widget automatically opens with the *Text Search* functionality enabled. This portion of the widget enables us to utilize the data provided by the HVDE (MedVI, SoVI, and HazVI) alone or in combination with specific hazard layers for exploration, planning, and reporting.

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Exploring County/City Level Hazards: Identifying Vulnerabilities

Guided Exercises

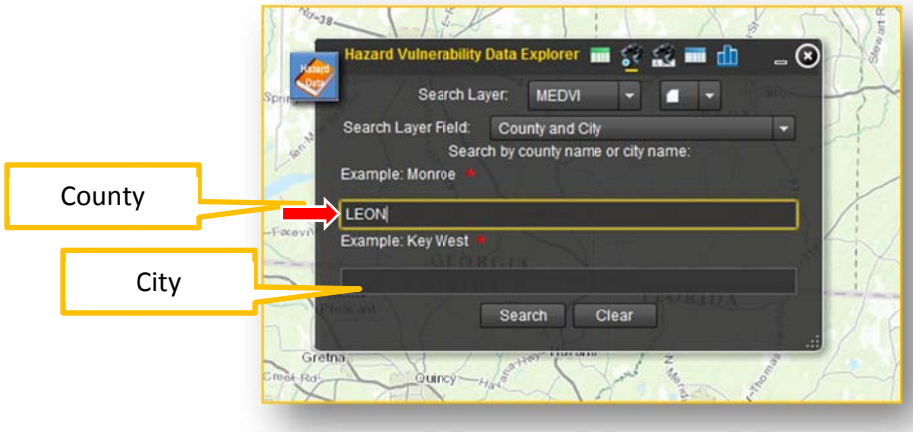
Exercise 1: Identifying County and City Vulnerabilities

Using the *Text Search* feature, answer the following questions about both your county and city of interest. Note, you may have to take your data out of the widget and into Excel to answer some of these questions.

1. How many census tracts within each place exhibit high SoVI, MedVI and HazVI

County of Interest: Leon	City of Interest: Tampa
a. SoVI b. MedVI c. HazVI	d. SoVI e. MedVI f. HazVI

1. The county and city of interest are Leon and Tampa respectively.
2. Write "Leon" in the *County Field* and click the *Search* button.



a. The following windows will appear:
   - The Results Window.
   - The Features Box.
   - The Info Box (this box appears when a specific place is clicked on in the map or in the Results Window).

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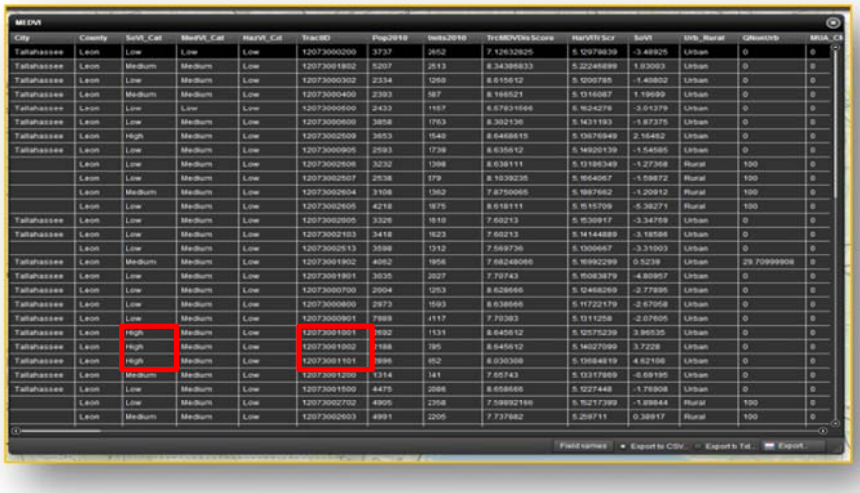
3. In order to count the census tracts with high SoVI, MedVI and HazVI, expand the Results Window. Clicking on the column header sort the records A-Z or Z-A

a. Count the tracts manually, or export the data as a .csv file to perform the counts (recommended). Add the file type (.csv) to the file name as necessary to save it correctly. This file will open in Excel.



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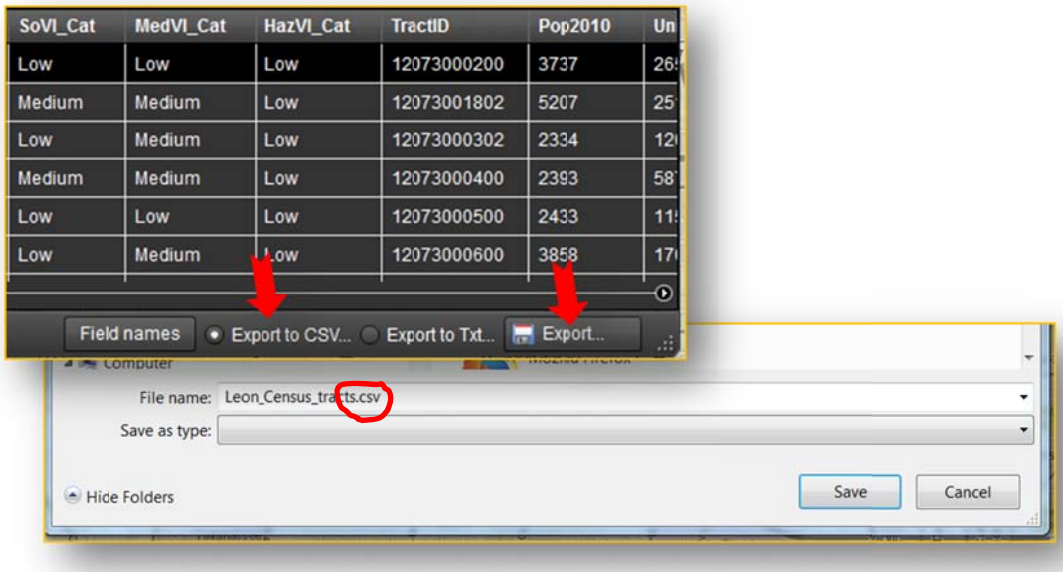
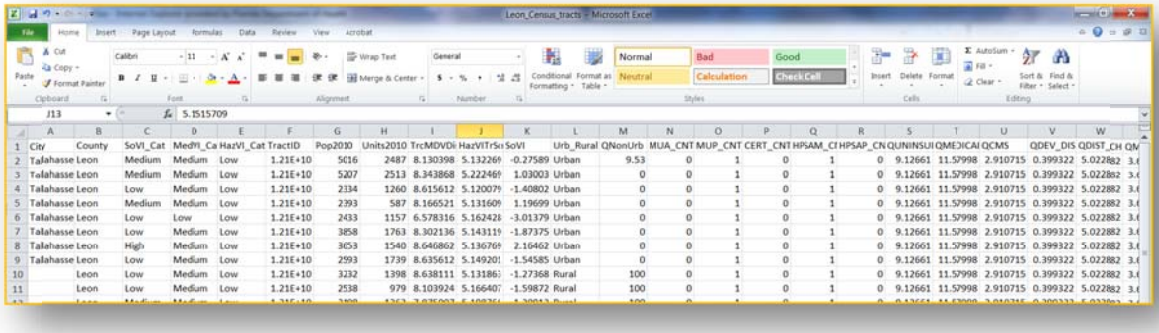


4. In order to determine the number of census tracts with high vulnerability indexes in the csv/Excel file:

SoVI_Cat	MedVI_Cat	HazVI_Cat	TractID
Social Vulnerability Index category	Medical Vulnerability Index category	Hazards Vulnerability Index category	Tract ID



a. Identify the columns with the information (use the data dictionary to understand name conventions. The data dictionary can be opened from the HVDE *Field Names* button).
b. SoVI category: The easiest way to determine the number of tracts is to sort A-Z the column of the category.
c. Count the number of tracts in the column *TractID* by selecting the cells with the "High" sub category; then find the count displayed at the bottom bar. This method is useful and fast when there are just a few records.

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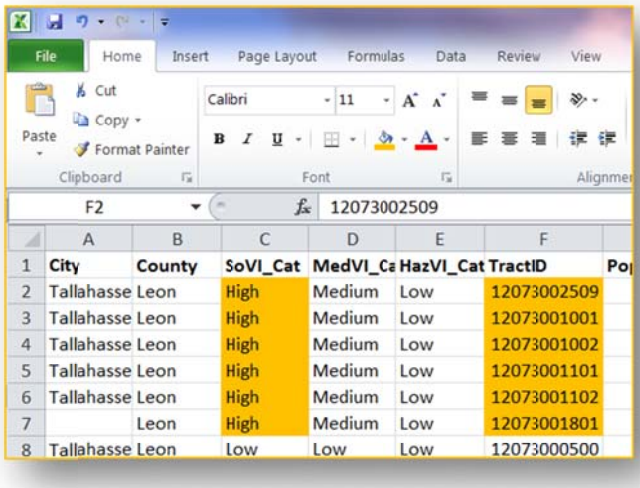
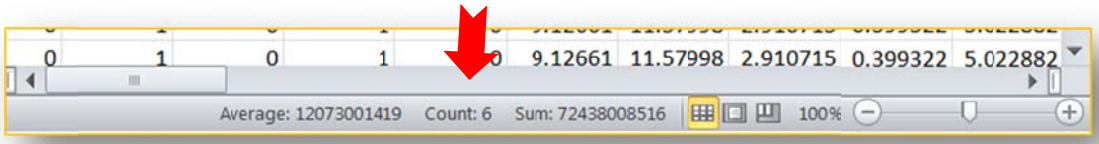


	City	County	SoVI_Cat	MedVI_Ca	HazVI_Cat	TractID	Po
2	Tallahasse	Leon	High	Medium	Low	12073002509	
3	Tallahasse	Leon	High	Medium	Low	12073001001	
4	Tallahasse	Leon	High	Medium	Low	12073001002	
5	Tallahasse	Leon	High	Medium	Low	12073001101	
6	Tallahasse	Leon	High	Medium	Low	12073001102	
7		Leon	High	Medium	Low	12073001801	
8	Tallahasse	Leon	Low	Low	Low	12073000500	



d. Repeat the same process to identify the number of tracts with high MedVI and HazVI.

5. In order to determine the number of census tracts for the city of interest (Tampa).

   Note: The methods of filtering data or creating a pivot table are also an alternative. Creating a pivot table is useful for larger number of records and to present results as a table or a chart.

   a. Searching for the information for Tampa: In the "City" field of the *Text Search Box* write "Tampa" and then click on the *Search* button.

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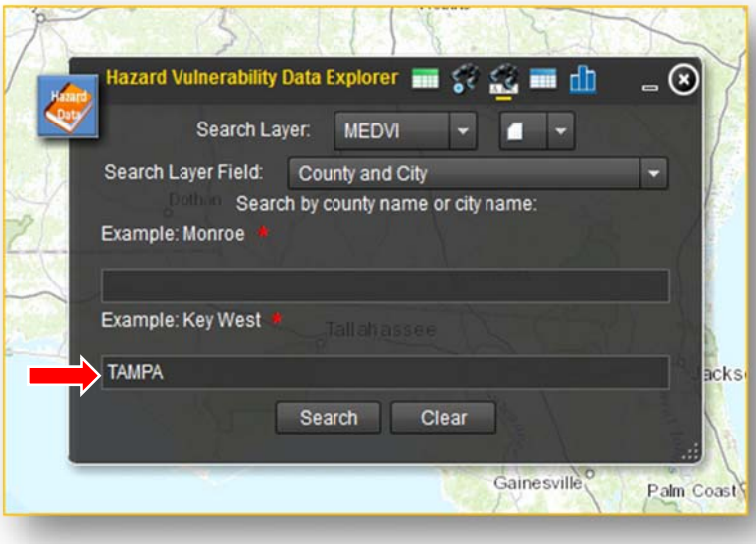
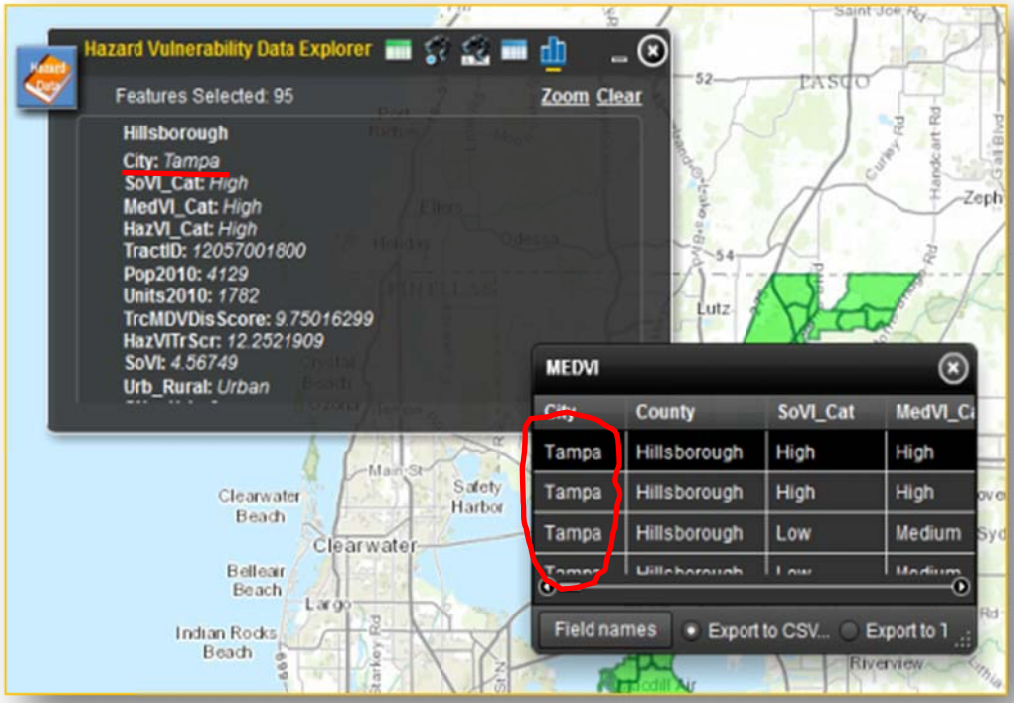


b. The Info Box and the Results Window appear. Export the information in the Results Window as a .csv file.



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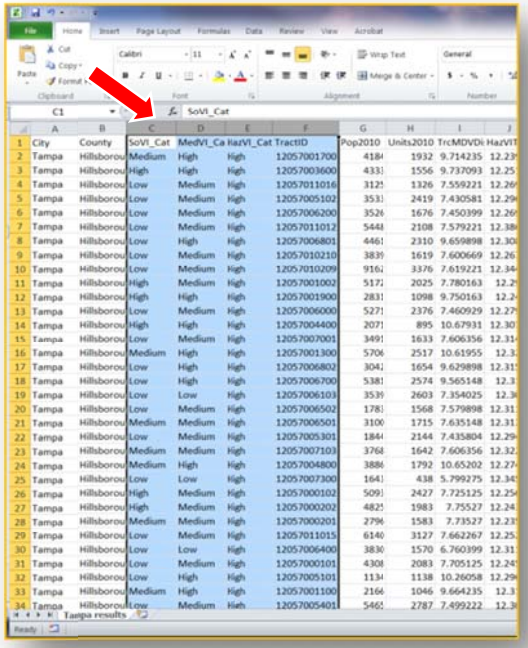
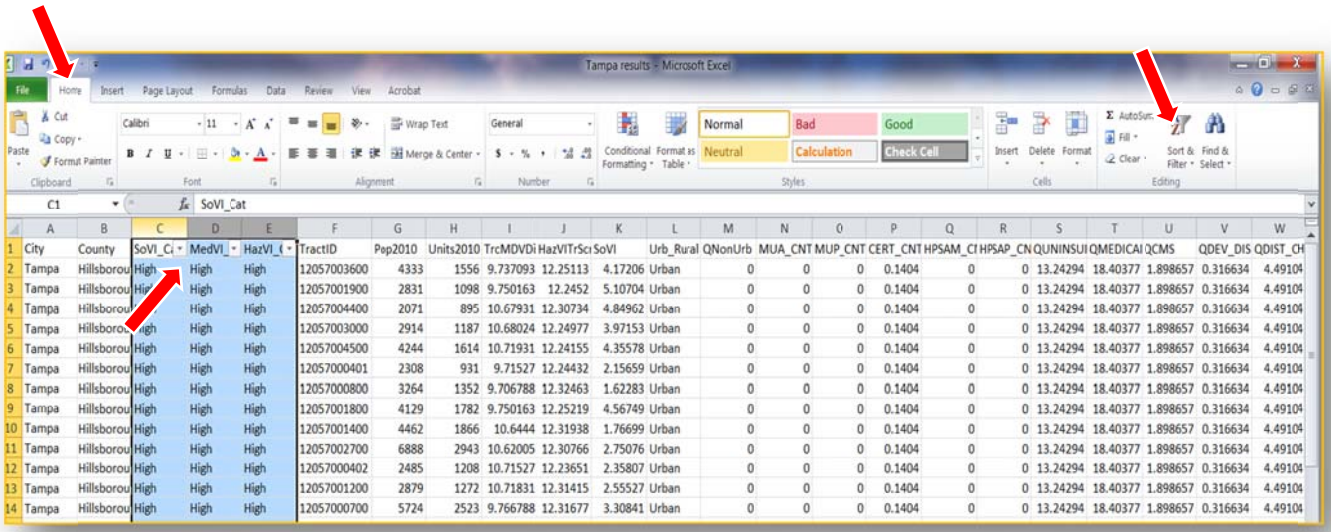
c. In the .csv file (Excel) identify the columns with the information required.



d. Filter the information to determine tracts with high SoVI, MedVI, and HazVI in Tampa: Select the SoVI, MedVI, and HazVI columns. On the *Home Tab* select *Sort & Filter.* The filter scroll-down arrow will appear at the header of each column selected.



e. Filter the categories in the SoVI column by checking the "*High"* box, and click "OK".

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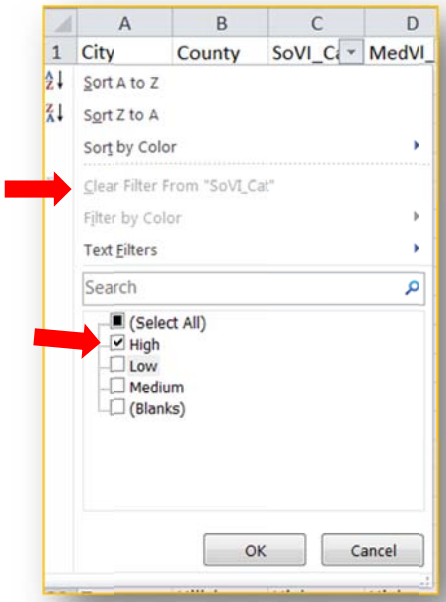
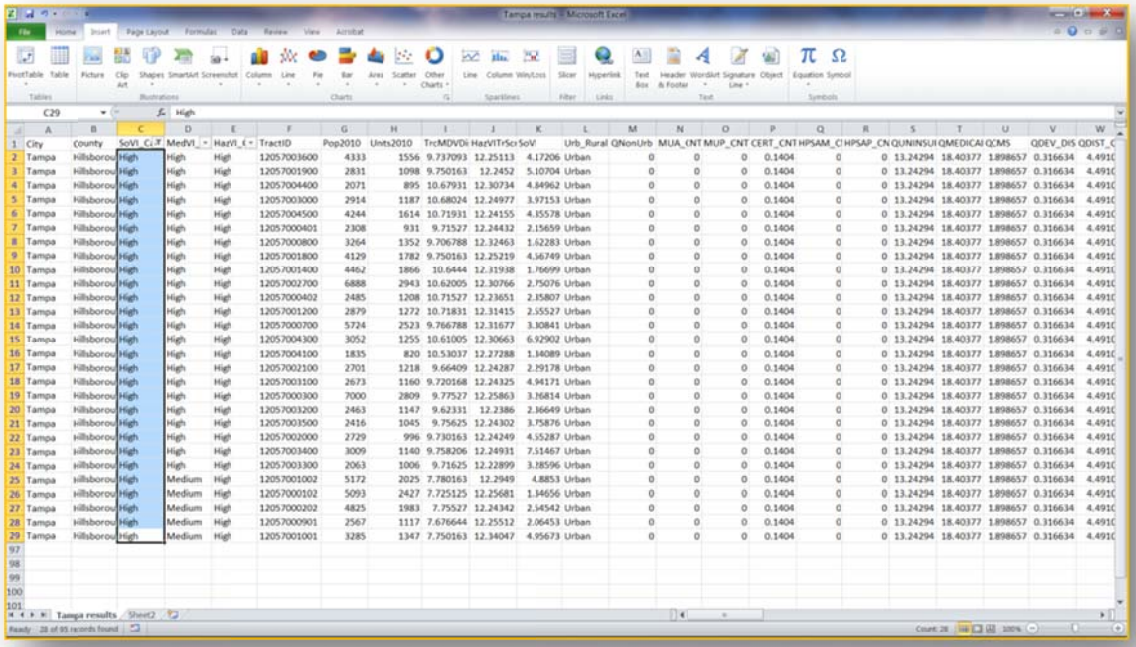


A new spreadsheet with the filtered information will appear. Count the records under SoVI, and clear the filter from SoVI. *Note: Do not select the header of the column when counting the total number of records.*



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f. Proceed to filter the columns for MedVI and HazVI and count the tracts.

Exercise 2: Determining population within vulnerable areas

2. What is the highest, lowest, and mean number of people (2010) within each of these highly vulnerable areas

County of Interest: Leon	City of Interest: Tampa
a. SoVI SoVI highest: SoVI lowest: SoVI mean: b. MedVI MedVI highest: MedVI lowest: MedVI mean: c. HazVI HazVI highest: HazVI lowest: HazVI mean:	d. SoVI SoVI highest: SoVI lowest: SoVI mean: e. MedVI MedVI highest: MedVI lowest: MedVI mean: f. HazVI HazVI highest: HazVI lowest: HazVI mean:

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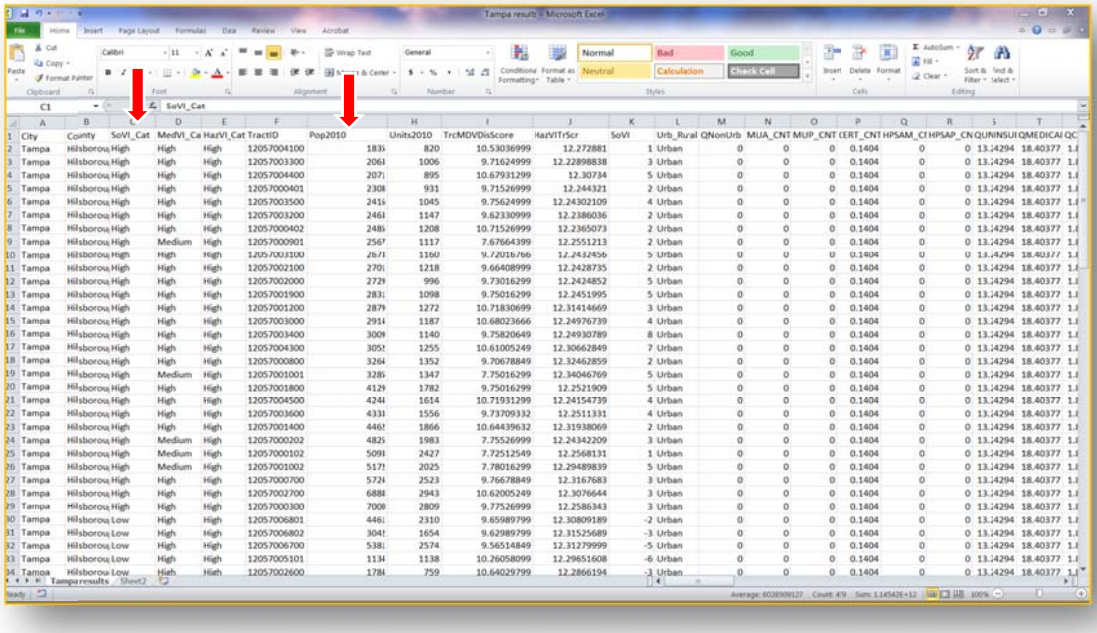
1. In the .csv file with the information regarding Tampa identify the SoVI column and the Population column named *POP2010*.



Note: Alternatively, before filtering, you can hide the columns in between (MedVI, HazVI and TractID) by selecting them, clicking on the right bottom of the mouse and selecting the option "Hide".

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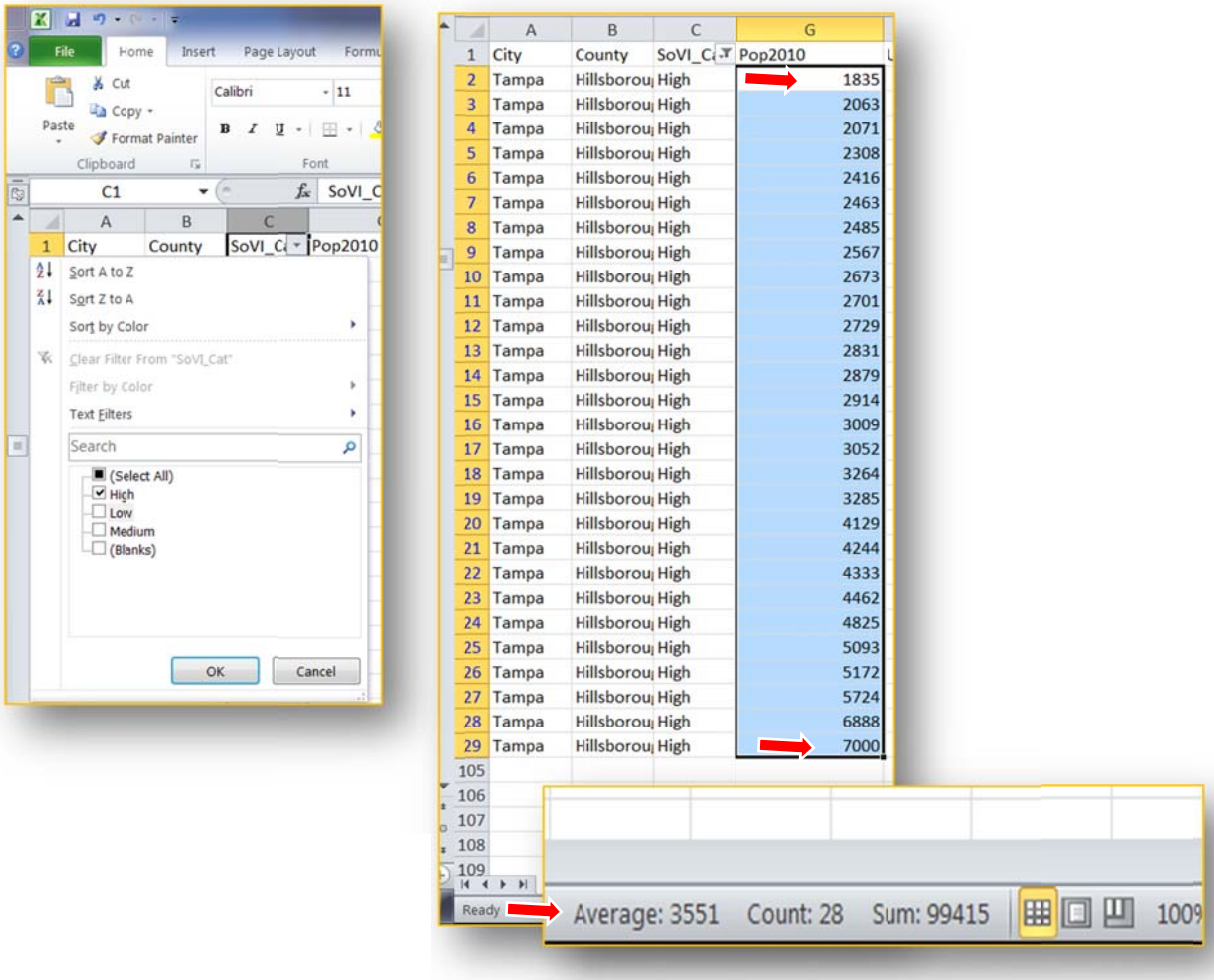
a. Filter the SoVI Column by checking the box "*High*".



b. Sort the *POP2010* column A-Z to see the population values in ascending order.
c. Determine the lowest number and the highest number.
d. Select the column *POP2010* and find the average on the bottom bar.
e. Repeat the same procedure and estimate the highest, lowest and average population in high MedVI areas in Leon County.

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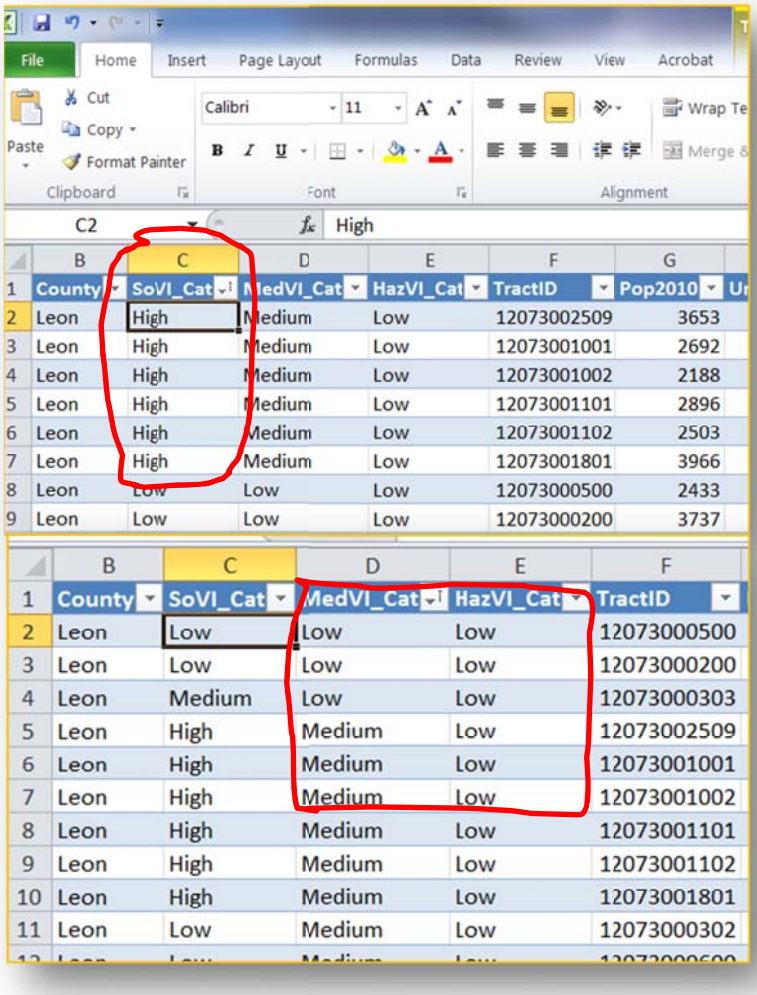
Exercise 3: Determining areas with multiple vulnerabilities

3. How many tracts exhibit a triple threat of high SoVI, high MedVI, and high HazVI in each of your areas of interest?

County of Interest: Leon	City of Interest: Tampa
a.	b.

1. In the Leon County Excel file, sort the SoVI column and identify the tracts with *High* vulnerability; repeat the same procedure for the MedVI and HazVI columns.



	B	C	D	E	F	G
1	County	SoVI_Cat	MedVI_Cat	HazVI_Cat	TractID	Pop2010
2	Leon	High	Medium	Low	12073002509	3653
3	Leon	High	Medium	Low	12073001001	2692
4	Leon	High	Medium	Low	12073001002	2188
5	Leon	High	Medium	Low	12073001101	2896
6	Leon	High	Medium	Low	12073001102	2503
7	Leon	High	Medium	Low	12073001801	3966
8	Leon	Low	Low	Low	12073000500	2433
9	Leon	Low	Low	Low	12073000200	3737

	B	C	D	E	F
1	County	SoVI_Cat	MedVI_Cat	HazVI_Cat	TractID
2	Leon	Low	Low	Low	12073000500
3	Leon	Low	Low	Low	12073000200
4	Leon	Medium	Low	Low	12073000303
5	Leon	High	Medium	Low	12073002509
6	Leon	High	Medium	Low	12073001001
7	Leon	High	Medium	Low	12073001002
8	Leon	High	Medium	Low	12073001101
9	Leon	High	Medium	Low	12073001102
10	Leon	High	Medium	Low	12073001801
11	Leon	Low	Medium	Low	12073000302

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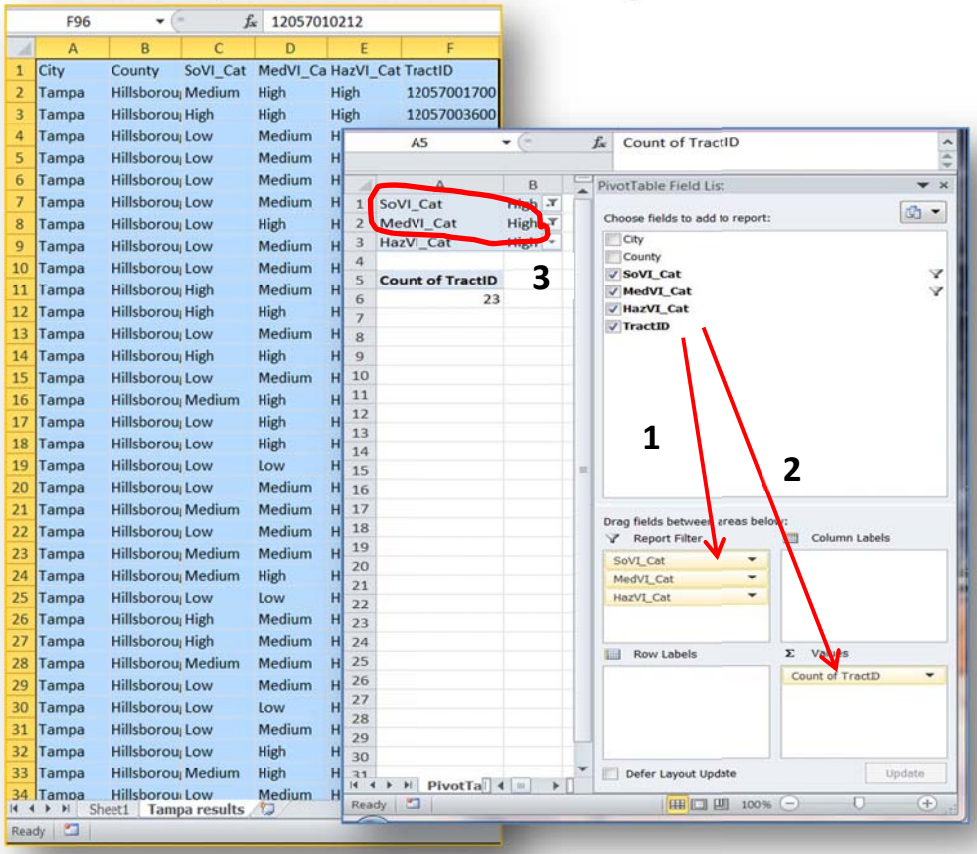
2. Determine the number of tracts that have a triple threat of high SoVI, MedVI and HazVI in Tampa by filtering the data.
   a Activate the filter application in the home menu by selecting the SoVI, MedVI and HazVI columns and then clicking on the *Sort & Filter* icon.
   b Filter the SoVI column first by selecting "High" in the *Sort & Filter* window. A new window with only the High SoVI records will appear. In the same window filter the MedVI and HazVI columns.

3. Pivot tables are an option when working with a large dataset. The steps to build a pivot table are shown as an alternative. Use the following features to build the pivot table.

   a Select the information for the pivot table. In the Insert Tab click on Pivot Table.
   - The *PivotTable Tools* appear. In the *Field List Box*, choose the fields to move (step 1) in the Report Filter window (MedVI_Cat, HazVI_Cat and SoVI_Cat); and TractID (step 2) to the Values window.
   - In the Pivot Table body sort the fields (step 3) by choosing HIGH. The records with a HIGH vulnerability will be sorted for all three categories.



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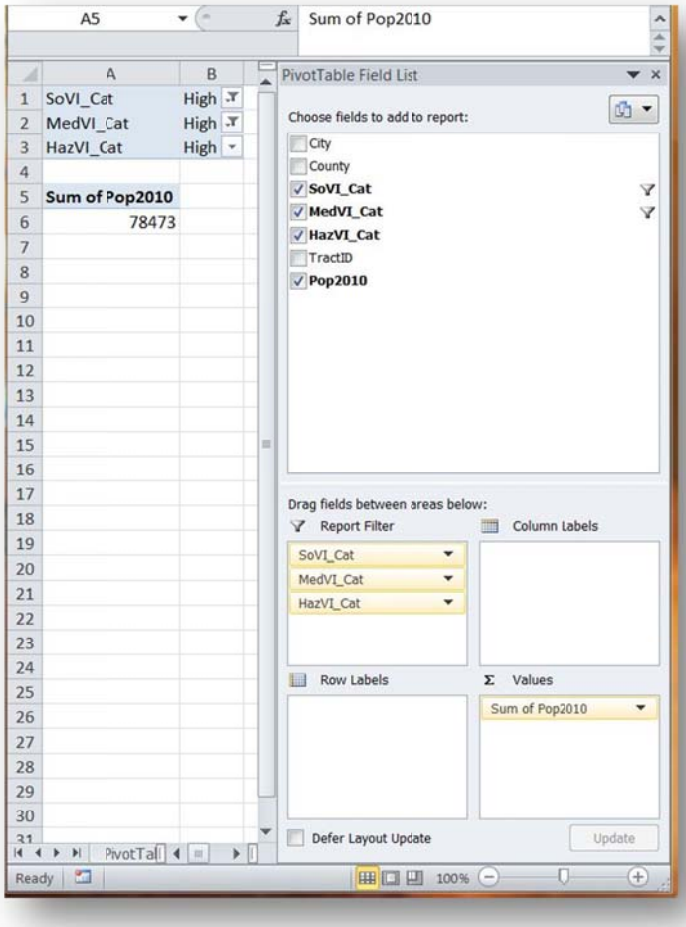
Exercise 4: Determining population within areas with multiple vulnerabilities

4. What is the population within these most vulnerable areas?

County of Interest: Leon	City of Interest: Tampa
a.	b.

1. Create a Pivot Table with the *MedVI_Cat, HazVI_Cat, SoVI_Cat,* and *Pop2010* columns.
   a. Move *MedVI_Cat, HazVI_Cat* , and *SoVI_Cat* into the report filter window
   b. Move *Pop2010* into the Values, and select *Summarize Values By Sum* on the *Calculations* Bar.



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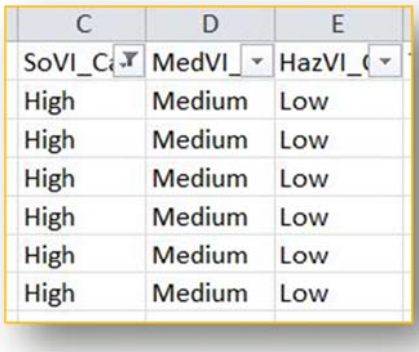
Exercise 5: Determining housing units in areas with multiple vulnerabilities

5. How many housing units are in these areas?

County of Interest: Leon	City of Interest: Tampa
a.	b.

1. Determine the number of housing units in Tampa that have a triple threat of high SoVI, MedVI and HazVI in Tampa by filtering the data.
   a Activate the filter application in the home menu by selecting the SoVI, MedVI and HazVI columns and then clicking on the *Sort & Filter* icon.



C	D	E
SoVI_C	MedVI_	HazVI_
High	Medium	Low
High	Medium	Low
High	Medium	Low
High	Medium	Low
High	Medium	Low
High	Medium	Low

   b Filter the SoVI column first by selecting “High” in the *Sort & Filter* window. A new window with only the High SoVI records will appear. In the same window filter the “High” subcategory for the MedVI and HazVI columns. The window will show only records in the high subcategory for SoVI. The columns MedVI and HazVI do not have records in the high vulnerable subcategory.

2. Pivot tables are an option when working with a large dataset. The steps to build a pivot table are shown as an alternative. Use the following features to build the pivot table. Create a Pivot Table with the *MedVI_Cat, HazVI_Cat, SoVI_Cat,* and *Units2010* columns:
   a. Move *MedVI_Cat, HazVI_Cat,* and *SoVI_Cat* into the Report Filter window, and filter by selecting “HIGH”.
   b. Move *Units2010* into the Values window.

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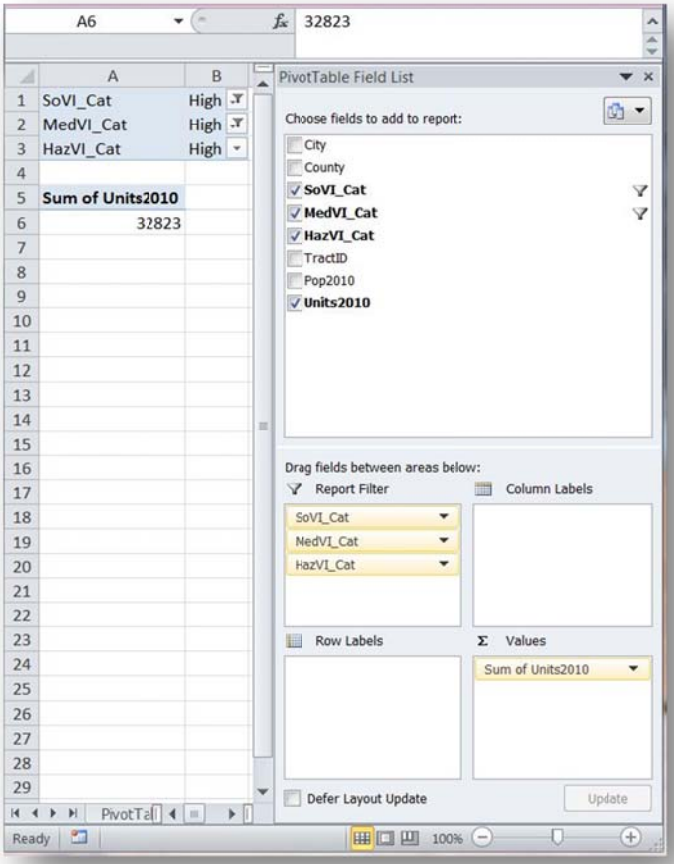

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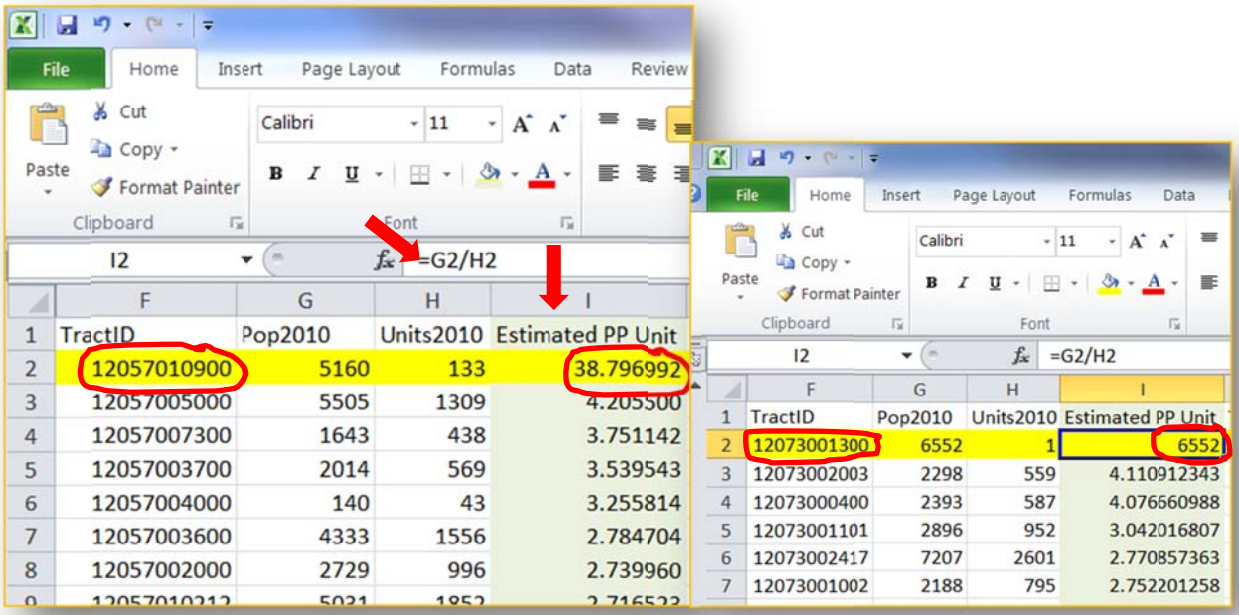
Exercise 6: Determining the census tracts with the highest number of people per housing unit

6. Can you determine which census tract has the highest number of people per unit? How many people per unit are in said census tract?

County of Interest: Leon	City of Interest: Tampa
a. Census Tract: People per unit:	b. Census Tract: People per unit:

1. In the Tampa Results .csv file identify the columns *TractID, Pop2010*, and *Units2010.*
   a. Insert a new column to the right and name it Estimates PP Unit (people per unit)
   b. Create a formula in the first cell on the PP Unit Column to divide *Pop2010* by *Units2010* (=G2/H2) and copy the formula in the other cells of the column.
   c. Sort the results in the new column Z-A (sort largest to smallest)
   d. Identify the census tract corresponding to the highest number of people (first number in the column) and the people per unit.
   e. Repeat the same procedure for LEON County.



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Practice Exercises

Exercise 1: Identifying County and City Vulnerabilities

Using the Text Search feature, answer the following questions about both your county and city of interest. Note: you may have to take your data out of the widget and into Excel to answer some of these questions.

1. How many census tracts within each place exhibit high SoVI, MedVI and HazVI?

County of Interest: Polk	City of Interest: Orlando
SoVI MedVI HazVI	SoVI MedVI HazVI

Exercise 2: Determining population within vulnerable areas

2. What is the highest, lowest, and mean number of people (2010) within each of these highly vulnerable areas?

County of Interest Polk	City of Interest Orlando
SoVI SoVI highest: SoVI lowest: SoVI mean: MedVI MedVI highest: MedVI lowest: MedVI mean: HazVI HazVI highest: HazVI lowest: HazVI mean:	SoVI SoVI highest: SoVI lowest: SoVI mean: MedVI MedVI highest: MedVI lowest: MedVI mean: HazVI HazVI highest: HazVI lowest: HazVI mean:

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Exercise 3: Determining areas with multiple vulnerabilities

3. How many tracts exhibit a triple threat of high SoVI, high MedVI, and high HazVI in each of your areas of interest?

County of Interest: Polk	City of Interest: Orlando
a.	b.

Exercise 4: Determining population within areas with multiple vulnerabilities

4. What is the population within these most vulnerable areas?

County of Interest: Polk	City of Interest: Orlando
a.	b.

Exercise 5: Determining housing unit in areas with multiple vulnerabilities

5. How many housing units are in these areas?

County of Interest: Polk	City of Interest: Orlando
a.	b.

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Exercise 6: Determining the census tracts with the highest number of people per housing unit

6. Can you determine which census tract has the highest number of people per unit? How many people per unit are in said census tract?

County of Interest: Polk	City of Interest: Orlando
a. Census Tract: People per unit:	b. Census Tract: People per unit:

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Answer Key

Guided Exercises: Leon County and the City of Tampa

Exercise 1: Identifying County and City Vulnerabilities

1a. 6

1b. 0

1c. 0

1d. 28

1e. 52

1f. 95

Exercise 2: Determining population within vulnerable areas

2a. 3966, 2188, 2983

2b. N/A

2c. N/A

2d. 7000, 1835, 3551*

2e. 7000, 1047, 3296

2f. 9162, 0, 3539

Exercise 3: Determining areas with multiple vulnerabilities

3a. 0

3b. 23

Exercise 4: Determining population within areas with multiple vulnerabilities

4a. N/A

4b. 78,473

Exercise 5: Determining housing units in areas with multiple vulnerabilities

5a. N/A

5b. 23,823

Exercise 6: Determining the census tracts with the highest number of people per housing unit

6a. 12073001300 - 6552

6b. 12057010900 – 38.796992

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Practice Exercises: Polk County and Orlando

Exercise 1: Identifying County and City Vulnerabilities

1a. 52

1b. 153

1c. 154

1d. 16

1e. 0

1f. 0

Exercise 2: Determining population within vulnerable areas

2a. 15614, 3, 4220

2b. 15614, 436, 3935

2c. 15614, 3, 3909

2d. 8260, 1224, 3968

2e. N/A

2f. N/A

Exercise 3: Determining areas with multiple vulnerabilities

3a. 51

3b. 0

Exercise 4: Determining population within areas with multiple vulnerabilities

4a. 219457

4b. N/A

Exercise 5: Determining housing unit in areas with multiple vulnerabilities

5a. 281214

5b. 114212

Exercise 6: Determining the census tracts with the highest number of people per housing unit

6a. 12105012404 – 8.36

6b. 12095014504 - 2.96

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