APPENDIX 17A – NETWORK COUNT ATTRIBUTION

Network Creation

A network to be used for both Visum and ArcGIS processes can be created from an all streets statewide network. For example, for the Newport model, the TomTom all streets network was chosen and then clipped to the model or project area; in some cases a different original network may be chosen for the base network. If the user desires, a base-map of OR-Trans (already a shapefile) can be clipped and used in ArcGIS in place of the TomTom all streets network. The following covers network creation using both processes. Although networks are typically created in ArcGIS using already created shapefiles, creating a shapefile from a Visum network is uncommon but not unheard of.

### Network Shapefile Creation in ArcGIS

After a base network has been decided on, a study network needs to be created. It is necessary to clip the chosen network down to the study area to limit the amount of extra space taken by the network and to limit the amount of time it takes to load the network in ArcGIS.

1. Open ArcGIS and load the desired boundary file (e.g. of a city, a model, a county) of the network. Most of these are available on the GIS drive or through the ODOT GIS toolbar. A model boundary will only be available if there is a current model existing for the study area.

2. Open the base network file. To the right is a screenshot of the OR-Trans Network at the statewide level. This is why it is necessary to clip to the study area. The thousands of extra roadways not only take up storage space but they also take an exponential amount of time to load.

3. Zoom into the study area. And use the select by location tool to select the portion of the network that is within the boundary file.
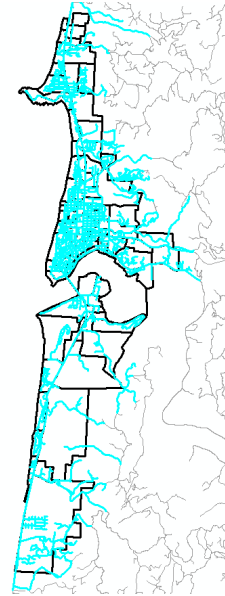
4. Right click the base network layer and choose to export the data. Make sure 'selected features' is selected in the Export Data popup. Select the appropriate location to save the new shapefile. (The original roadway network can now be removed as well.)
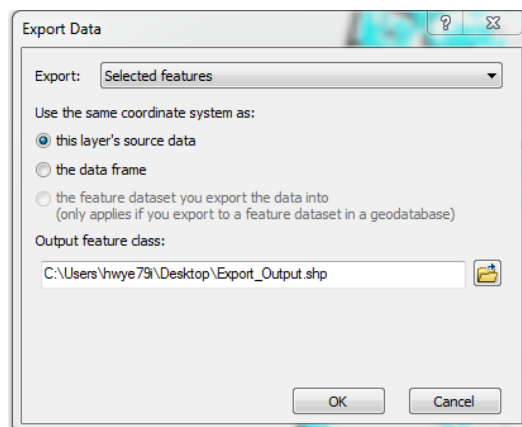

Network Shapefile Creation from Visum

Creating a network shapefile from a Visum all-streets model, although not unheard of, is uncommon. The below steps cover the basic process if this is desired. A shapefile created from Visum can be directly imported into an mxd file in ArcGIS, and used similarly to the shapefile created from the above directions.

2

1. Open the Visum Version file, and make sure there are no selections or filters currently being used. Do this by making sure there are no "red dots" on the right side of any of the network elements and also by making sure there are no "filter funnels" selected.
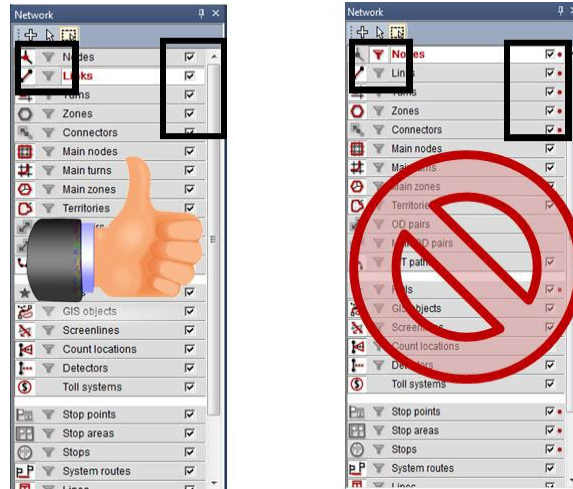
2. Select File→Export→Shapefile and navigate to the folder where the shapefiles are to be stored.
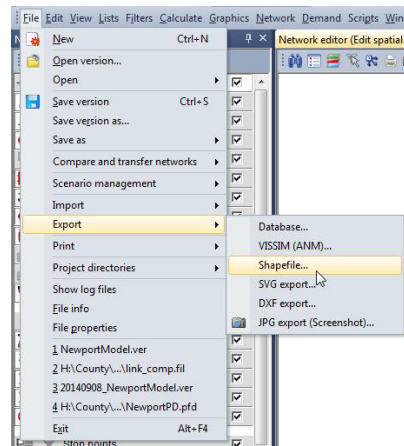
3. Choose which shapefiles that need to be exported. If both nodes and links are chosen, they will be exported as two separate shapefiles. Particular attributes can be chosen for export to the shapefile by utilizing the columns selection.
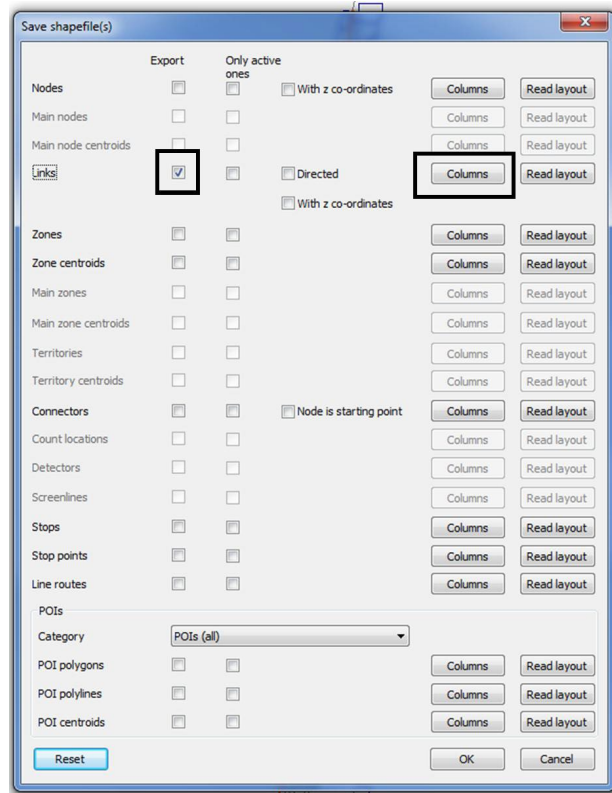
4. This creates the shapefile; simply bring it into the chosen *.mxd file with the other shapefiles.

Network Count Attribution

For use in Visum or ArcGIS, counts must be added to the network. Instructions on how to obtain counts from OTMS are in Appendix 3C – OTMS Program Count Report Guide.

After gathering count data, the amount of time needed to attribute counts to the network in ArcGIS or Visum depends on a number of different elements. The first and most obvious is how many count locations are in the project area. If entering and exiting volume are dealt with rather than turning movements the spreadsheets identified below can be used to help with the processing of the count data. The more detailed the process is the more demanding it becomes. Using the spreadsheets is an automated and efficient method to help the analyst process counts. The spreadsheets go through each count and separate out directions and summarize the count information.

The spreadsheets also allow a user to process the entering volumes for an intersection count in a matter of minutes; currently there is only a semi-automated process for exiting volumes. The process for creating the count locations in both ArcGIS and in Visum is very similar. Due to the different types of counts that are available, the spreadsheets were created to help ease the burden of processing the counts and readying them to be attributed to the network. This process will be updated when more spreadsheets become available for more detailed count processing.

Before counts can be attributed to a network they need to be taken. Work with the ODOT traffic counting unit to make sure the counts are taken in the correct location, correct time

4

of year and that the correct kind of count is taken. Once the counts have been taken and entered into OTMS then they can be pulled, processed and attributed to the network. If new counts are not being taken the statewide count shapefile will help in locating available counts.

Visum Count Attribution

Once the needed count locations are identified and counts have been pulled, they will need to be "pre-processed" before they can be added to a Visum Network. The spreadsheets discussed below are designed to help in this process and to help the analyst process the different count types available. Entering volumes from turning movement counts can be calculated using the existing spreadsheet, but exiting volumes must still be created by hand. The spreadsheets do not currently offer a way to separate out turning movement information; this information must be entered by hand if it is desired. These spreadsheets simply create files that contain count location information as well as entering and exiting volumes for the intersection for each hour of count data.

The available spreadsheets create files that contain count location information as well as entering and exiting volumes. For the process for attributing count information in Visum refer to Excel Processor Guidelines.

Excel Processor Guidelines

A number of count processors have been created to facilitate setting up count files for import into Visum or ArcGIS.

[Excel Tube Count Processor (ATR Edit Sheet processor) Spreadsheet](#)

This [processor](#) cleans empty information from the OTMS ATR Edit sheets and summarizes the data. It can be used on a single ATR Edit sheet, although it is designed to be used to process multiple files at once in order to increase efficiency of count processing. This process also adds a VISUM ID for the count locations in VISUM.

5.   Pull the appropriate counts from OTMS. For this processor the counts should be pulled as "Volume by Hour by day for Month" as a *.csv formatted file. As the directions state above, in order to pull multiple reports at one time using the *.csv output, the date range pulled is probably many more days than actually contain data. Many of the spreadsheets created will look like the figure below.

6. If the Excel spreadsheet is pulled, the file will contain a tab for the combined direction and one for each direction for each of the sites. It is possible for a spreadsheet to only contain one direction and a combined tab. This would imply that the count was pulled wrong or that there was in-fact only one direction counted.

7. Make sure that all the tube counts are in the same folder. Then place the tube processor in a folder just above the folder that contains the tube counts.

> **YIELD** Due to the fact that sometimes macros fail, it is suggested that the counts you are wanting to process be COPIED into a separate folder for processing, keeping a folder with "raw" data. This will allow for a raw dataset to remain unprocessed in case there is an error in running the macro.

8. Open the tube processor spreadsheet and click the "Clean ATR Edit Sheets" button.
9. This will bring up a browser window. Navigate to the location where your counts are stored. There will not be anything in the folder (this is normal). The browser is just there as a way to set a path for Excel to find the files (the files are still there.) Click OK.
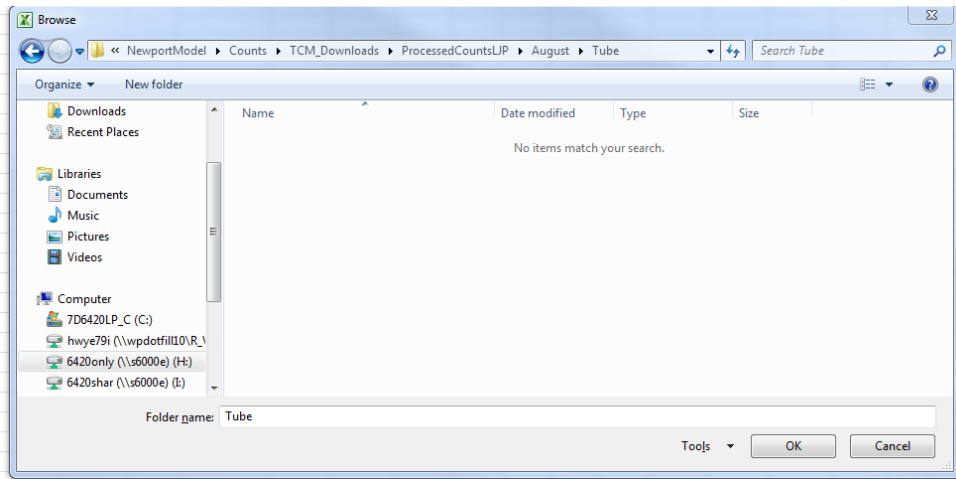
10. This removes all the empty (un-needed) cells from the spreadsheets and also removes any empty sheet within each of the workbooks within the specified folder. (This spreadsheet processes as many files as were placed in the folder).

11. When the "cleaning" macro is done running, a pop-up will indicate if there were any files with errors.

12. If there was no data pulled for a site and the sheets were empty it will tell how many instances occurred and will not save the changes to them.
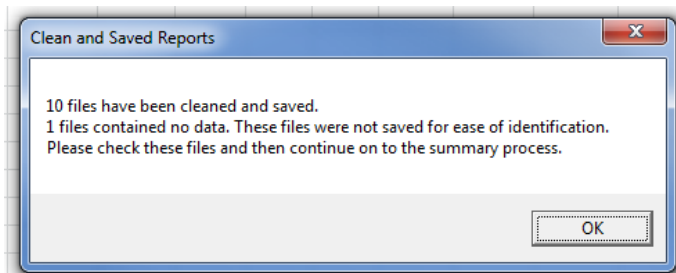
13. By not saving changes, the user can now go into the folder that contains the now "clean" counts, sort on the date and easily find those that have not been edited in the last few minutes and open them to find out what the bad data is. Most of the time this means that there was no data at the tube for the dates pulled, so check the count dates, sometimes there is bad count data and the count unit will not enter it into OTMS because of the bad data.

Analysis Procedure Manual   Last Updated 05/2022
Appendix 17A Network Count Attribution

14. If there were files that were not cleaned, investigate further why they were not cleaned. In the example above, the file contains no data, and therefore is not relevant.
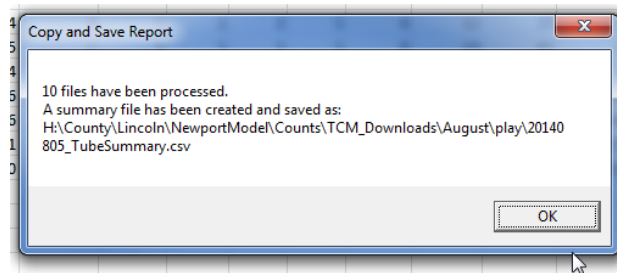
15. Move files that contain "bad" data into a separate folder so the summarize processor does not try to summarize them.

16. Once you have dealt with the spreadsheets that have "bad data", click the summarize data button in the processor spreadsheet.

17. This will again bring up a browser window. Navigate to the location where the counts are stored. There will not be anything in the folder (this is normal). The browser is just there as a way to set a path for Excel to find the files. Click OK.

18. This will now process the good "clean" counts and break down the count information. This creates a csv file with a summary of the count information. This count information is now ready to be used in VISUM.

19. After summarizing the data Excel will again kick out a popup to tell how many files it has processed, and where it saved the summary csv. It automatically saves the csv in the same folder the counts are in and then opens it. This allows the user to obtain an overview if it is summarizing all of the counts.

[Excel Turn Count Processor (Intersection Video or TimeMark Count) Spreadsheet](#)

Analysis Procedure Manual   Last Updated 05/2022
Appendix 17A Network Count Attribution

This processor summarizes the entering volume per leg. It does not summarize turning movements or exiting volume. This spreadsheet breaks down the entering volume for the intersection for each leg. It also creates a VISUM count ID for each count location.

1. Make sure that all the intersection counts are in the same folder. Then place the turn processor in a folder just above the folder that contains the intersection counts.
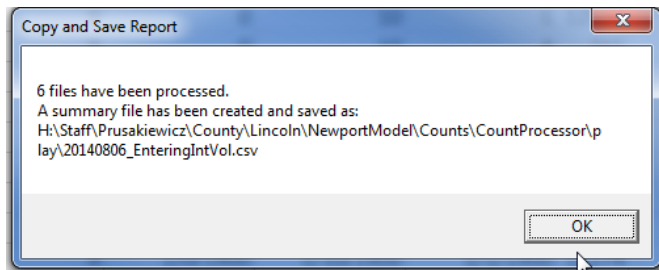

Due to the fact that sometimes macros fail, it is suggested that the counts that are to be processed be COPIED into a separate folder for processing, keeping a folder with "raw" data. This will allow for a raw dataset to remain unprocessed in case there is an error in running the macro.

2. Open the Turn processor, and click the summarize data button. This will bring up a browser window. Navigate to the location where your counts are stored. There will be not anything in the folder (this is normal). The browser is just there as a way to set a path for Excel to find the files (the files ae still there). Click OK.
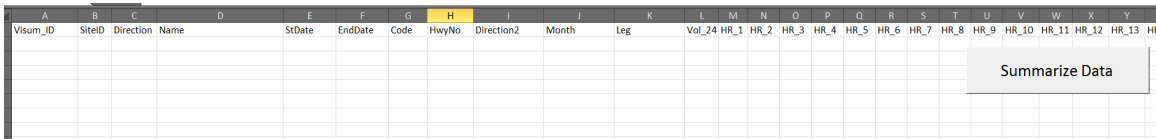

This will create a summary for each direction summing the total entering volume into each leg. When the spreadsheet is done summarizing the files within the specified folder a popup will outline how many files have been processed and where the csv summary has been saved. It will then open the csv for review.


6 files have been processed.
A summary file has been created and saved as:
H:\Staff\Prusakiewicz\County\Lincoln\NewportModel\Counts\CountProcessor\play\20140806_EnteringIntVol.csv

[Exiting Volume Calculation Spreadsheet](#)

A [spreadsheet](#) is available to help with the creation of the Visum IDs and some other basic information. The count information must still be hand entered into the spreadsheet but the macros enable the Visum ID and other information to be calculated, and exported in the same format of the first two.

1. In the Exit Visum ID spreadsheet, there are seven greyed out columns that do not require any entry by the user. This spreadsheet requires a new row for each exiting direction. For an intersection with four legs this means there will be four rows with the same SiteID, Name, DateRange, and HwyNo. The only items that will change for each row will be the direction and the hour counts.
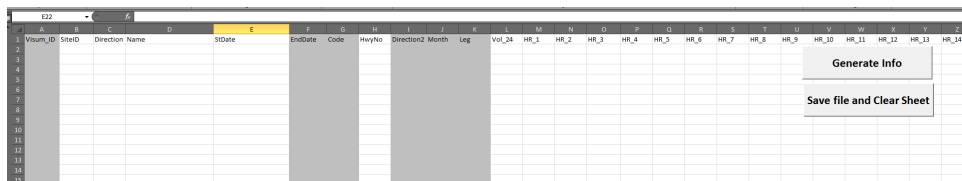

2. Open two instances of Excel; this will allow placing an open workbook from Excel on each screen if there are dual monitors available.
    a. To do this go to the Start menu and open Excel. Once it is completely open, open a second instance in the same way. This is the only way to be able to have two instances of Excel open.
    b. In the first instance, open the Exit Visum ID macro enabled spreadsheet, and in the second open the first intersectional count. (Hint: Go to an Window Explorer window and double click the two files, they will both open in the first instance of Excel; Use the open function in Excel or drag and drop the file in Excel.)
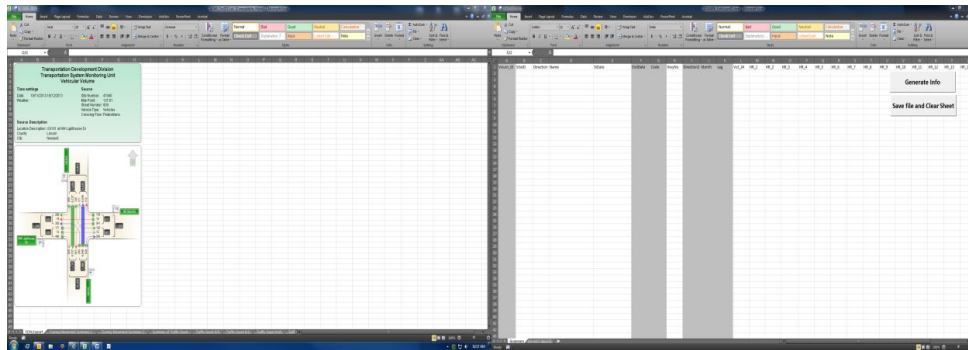
3. Using the information from the top of the Turning Movement Summary 1 tab, place the appropriate information into the Visum Exit spreadsheet. (Note: The date field needs to be typed using the same format as provided in the turning

Analysis Procedure Manual   Last Updated 05/2022
Appendix 17A Network Count Attribution

movement summary tab. MM/DD/YYYY-MM/DD/YYYY). If the format is placed differently the macro may error out or cause incorrect results.
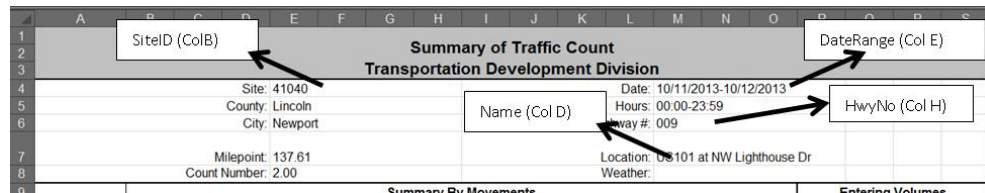
4. When entering in the direction, these must be chosen from a drop down menu and is associated with the direction of travel. For example, SB means a southbound vehicle count.

5. Using the Turning Movement Summary 1 tab, summarize each hours exiting vehicles. The easiest way to do this is to create an "Exiting" volumes group of columns, add up each exiting leg and the use the fill down option to fill down to all 24 hours.

6. After placing the formulas in the first row, highlighting the four new cells and hovering over the bottom right corner, the cursor will change to a black crosshair. Double click and it will fill down to the last row.

7. After filling down for each 15-minute period, the hour values must be calculated. It is easiest to do this by again utilizing Excel's fill down option. This time only place a formula in the first hour row, and fill down from the top.

8. The easiest way to move this information to the Visum Exit ID spreadsheet is to then filter the hour exit volumes, and remove the blanks. Then copy and paste it

11

within the same spreadsheet, but instead using the past special and pasting only values, and then copy the pasted values and paste them transposed. This allows all directions for the intersection to be pasted in at the same time.

9. Below you will find an example of one full intersection entered into the spreadsheet.

10. After completely entering in the intersectional counts into the spreadsheet press the generate info button. This will fill in the greyed out cells.

Figure 1: Generated information after all intersections have been added.

11. Next by clicking the 'Save File and Clear Sheet' button the spreadsheet will kick out a new csv file that contains the calculated information and also will clear the ExitVisumID spreadsheet and then open the new csv file that is ready to add headings to and place into the desired visualization tool.
   a. If placing the counts in ArcGIS continue to Attachment A.
   b. If placing the counts in VISUM continue to the next section, Count Locations in VISUM.

Count Locations in VISUM

Counts must be placed on the VISUM network, by hand and individually. These count locations are directionally specific. Therefore for each bi-directional tube count there will be two VISUM count locations. This also means that for a four-legged intersection, there will be a total of eight counts placed on the VISUM network for a single intersection count in OTMS.

The count processors that were run in the above steps summarize the counts directionally so the total number of results in the spreadsheets is the total number of count locations that will be needed in VISUM. The best way to start this process is with a shapefile that contains the locations of the counts.

Analysis Procedure Manual   Last Updated 05/2022
Appendix 17A Network Count Attribution

1. Open the count shapefile in ArcGIS (or open the .dbf file in Excel) to make sure that the OTMS ID is an attribute within the shapefile. If it is not, or the shapefile does not exist, create a shapefile that contains the location of the counts, along with the OTMS ID associated with each count. This helps visually in VISUM when placing counts.

2. Open the VISUM network, and select network, POI categories.
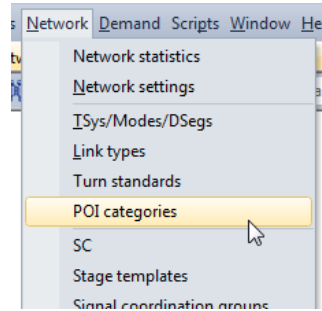
3. Create a new category called Counts. Make sure the super category is left blank.
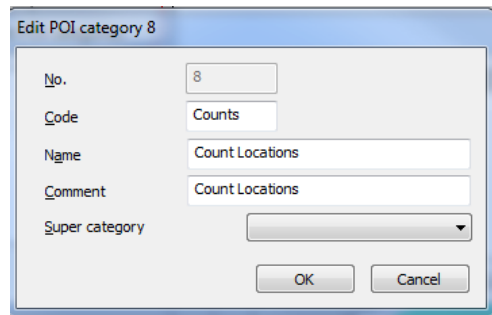
4. In the file dropdown menu choose File→Import→Shapefile.

5. Navigate to the location of the shapefile.
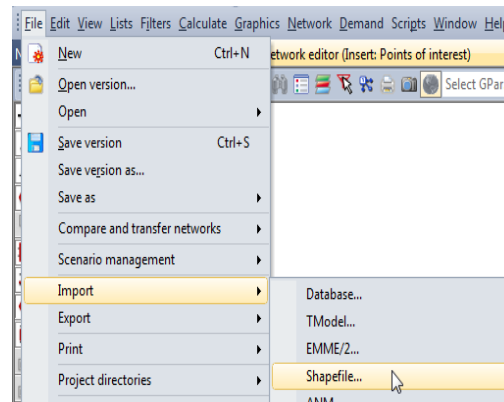
6. In the read shapefile popup menu check the "Read additively" box. Then from the dropdown box next to read as, choose POI. The POI option will not be there unless the read additively box is checked. Then a new dropdown menu called POI category will become visible. Choose the POI category counts that was created in Step 3.
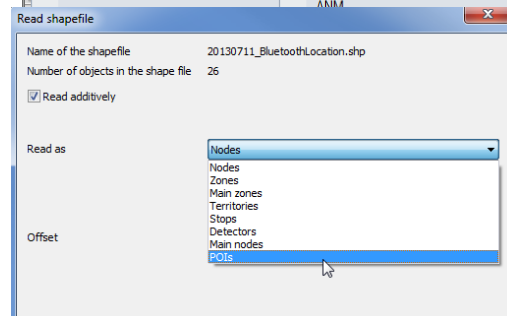
Analysis Procedure Manual   Last Updated 05/2022
Appendix 17A Network Count Attribution

7. In the Read Attributes browser select "new" and choose the type of input for each attribute to be brought in from ArcGIS.

Column	SourceAttributeID	Source data type	Target attr.	Target data type	
1	ID	N	ID	Number with decima	Edit
2	ROADOWNER	C	ROADOWNER	Text	Edit
3	NUMBER	C	TCM_ID	Integer	Edit
4	PREFIX	C	...	Text	New
5	NAME	C	Name	Text	New
6	TYPE	C	...	Text	New

8. Edit the graphic parameters of the new POIs so that they display as their OTMS ID instead of the default red star.

9. Open the Excel workbook that contains the count locations that are to be added (one of the 3 created in the above steps). Have VISUM open on one screen and the Excel spreadsheet on the other.

Analysis Procedure Manual   Last Updated 05/2022
Appendix 17A Network Count Attribution
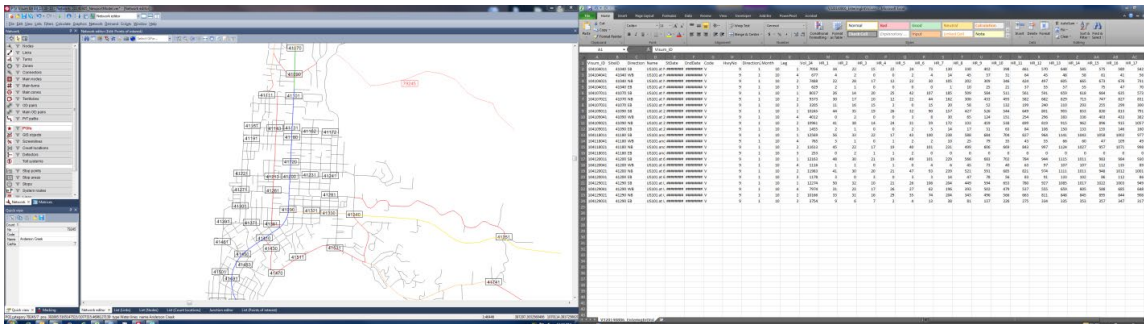
It is suggested that the intermediate step of combining the information created from the three spreadsheets be taken. This way all count locations are in one spreadsheet instead of three. Those counts processed with the tube processor will not have a "leg", "name" or a "month" attribute column. Therefore combining the spreadsheets will require some simple formatting.

10. Start by making sure that there are no selections made. Check that there are no red dots next to any of the network objects in the network toolbar.
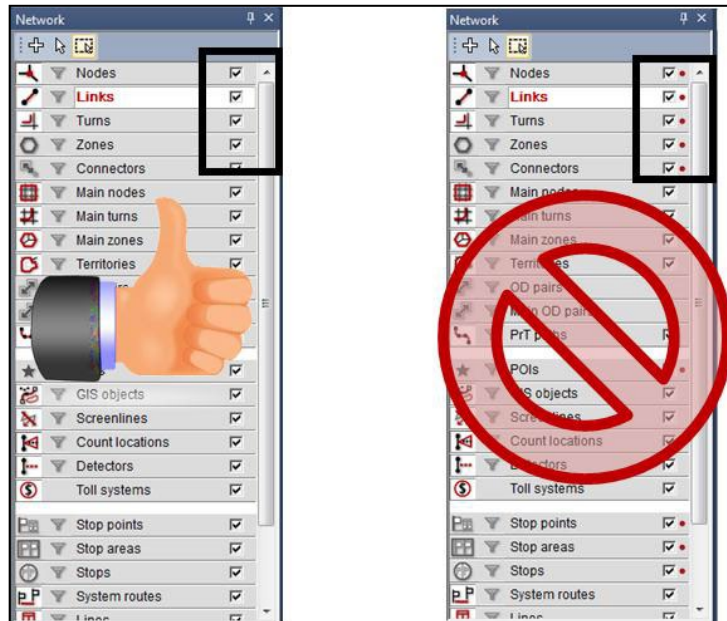
11. Using the multi-select tool () make a selection of the area that is started from:
    a. By working on only a portion of the project it makes it seem less overwhelming.
    b. In working on only a selection of the network, it allows the analyst to focus on the smaller area. The biggest thing is to remember to re-select all before continuing on to the next task.
    c. Save out the current selection, so that if something happens the user can always come back and be working on the same selection that was started with. Do this by selecting the "save spatial selection button from the multi-select toolbar).
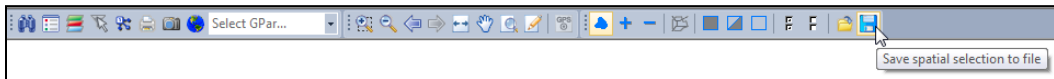
12. Select count locations on the network, and choose the insert mode (which cross).

13. Starting on one end of the selection, work across it, stopping at areas that have a POI of a count location.

14. At each POI count location insert the appropriate count locations. Using the Direction column to know which leg the count goes on if it is a turn count. If it is a tube count the OTMS ID will tell which leg to place the count on.
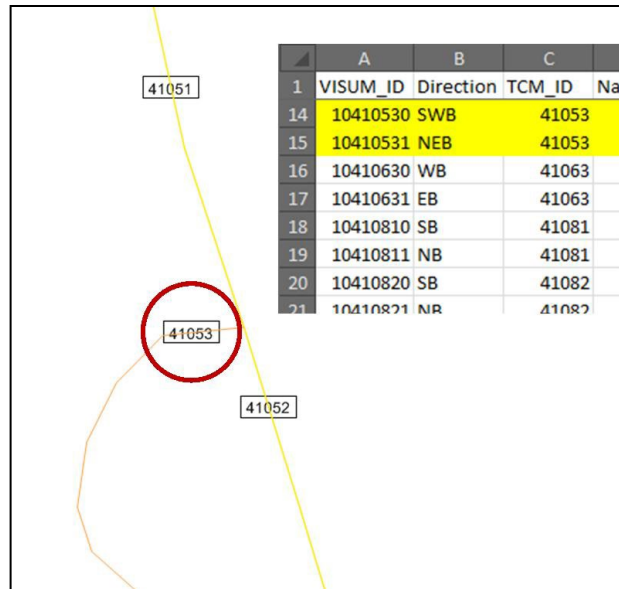
15. Click on the side of the link associated with the count to add a new count to the network. Put the appropriate VISUM ID number in the number field, leave type as 0, Code can be left blank, the Name field can be left blank.
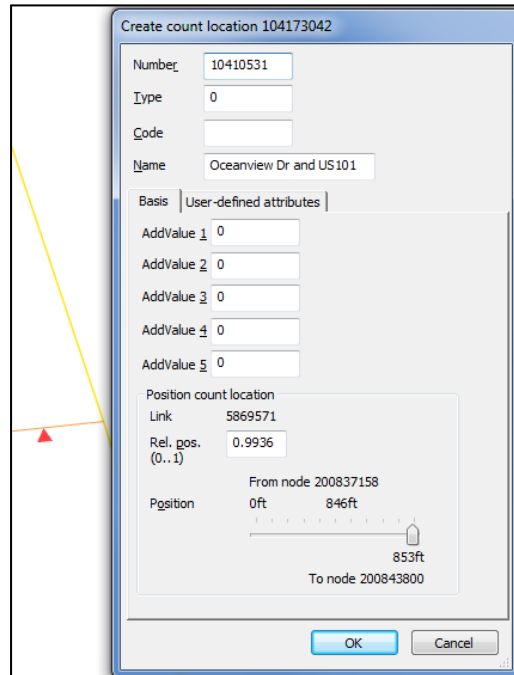
⚠️ YIELD *If the count is a tube count and there is a need for the name , it will have to hand entered into the name field. If this was an intersection count, or there is not a need for the name of the intersection, there is no need to enter the name field because it will be imported when the count information is imported.*

17

16. For each tube count there will be two count locations that need to be added to VISUM. For each intersection count there will need to be four count locations added in VISUM. For example, in the above figure the OTMS ID 41053 would have two count locations associated with it in VISUM. The two count locations (10410530 and 10410531) represent the entering and exiting vehicles. The counts are placed link specific. So in the case of the above example, once counts are placed the intersection would look like the figure below.
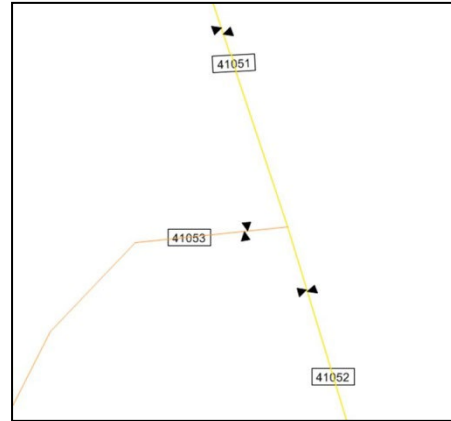
> ⚠️ **YIELD** The best way to make sure the VISUM IDs remain the same between the Excel spreadsheet and VISUM is to copy and paste from the Excel worksheet directly into VISUM.

17. After inserting the count locations in the current selection, click the multi select tool.

   a. Then select the invert spatial selection button.
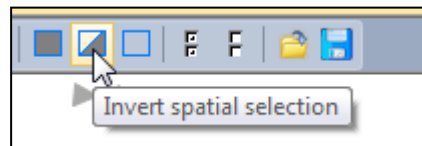
   b. Make sure the "set spatial selection to exclusive state" tool is selected.
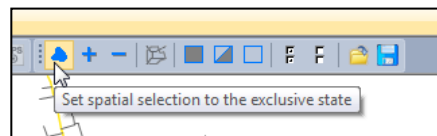
   c. Select a new section to begin work on and return to step 14.

18. Once all the count locations are created in VISUM, the attributes and therefore the count information from the spreadsheet can be brought into VISUM.

19. If the three spreadsheets have not been combined into one single spreadsheet, this must be done now.

20. Insert a row above row number one.

	A	B	C	D	E	F	G	
1								
2	VISUM_ID	Direction	TCM_ID	Name	StDate	EndDate	Code	Hwy
3	10410210	SB	41021		10/27/2013	11/1/2013	T	
4	10410211	NB	41021		10/27/2013	11/1/2013	T	
5	10410220	SB	41022		10/27/2013	11/1/2013	T	
6	10410221	NB	41022		10/27/2013	11/1/2013	T	
7	10410230	WB	41023		10/27/2013	11/2/2013	T	

21. Make sure that the VISUM_ID column is in column A.

22. In cell A1 type $VISION

23. In cell A2 replace VISUM_ID with $COUNTLOCATION:NO

	A	B	C	D	E	F	G	H	I	J
1	$VISION									
2	$COUNTLOCATION:NO	Direction	TCM_ID	Name	StDate	EndDate	Code	HwyNo	Direction2	Mont
3	10410210	SB	41021		10/27/2013	11/1/2013	T		9	0
4	10410211	NB	41021		10/27/2013	11/1/2013	T		9	1
5	10410220	SB	41022		10/27/2013	11/1/2013	T		9	0
6	10410221	NB	41022		10/27/2013	11/1/2013	T		9	1
7	10410230	WB	41023		10/27/2013	11/2/2013	T		0	0
8	10410231	EB	41023		10/27/2013	11/2/2013	T		0	1
9	10410240	WB	41024		10/27/2013	11/2/2013	T		0	0

24. Select and copy all cells that contain data.

> **YIELD**   Do not simply select all cells. Sometimes VISUM has issues when trying to paste in a bunch of empty cells.

25. In VISUM, right click on Count Locations in the network toolbar and select List.
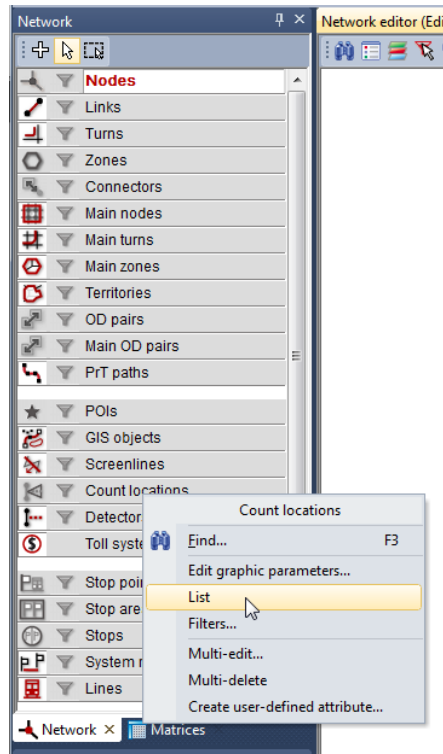
26. In the List (Count Locations) tab, choose the paste button.
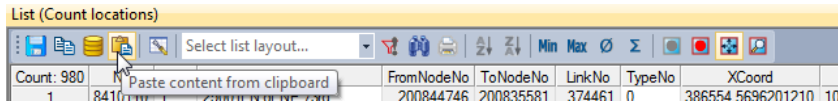
27. This will bring up the 'Read Attributes' table. This screen is where the specific types of the attributes are defined. Those that pop up in the "Target attr." column mean that there is already an attribute defined with the exact name. In the case of Name and Code this is on purpose.

20

28. To define a new attribute click new in the far right column and define the type (integer, text, number with decimals etc.) of the new attributes.

Column	SourceAttributeID	SourceAttributeName	Target attr.	
1	NO	Number		
2	DIRECTION	DIRECTION	DIRECTION	Edit
3	TCM_ID	TCM_ID	TCM_ID	Edit
4	NAME	Name	Name	New
5	STDATE	STDATE	STDATE	Edit
6	ENDDATE	ENDDATE	ENDDATE	Edit
7	CODE	Code	Code	New
8	HWYNO	HWYNO	HWYNO	Edit
9	DIRECTION2	DIRECTION2	DIRECTION2	Edit
10	MONTH	MONTH	MONTH	Edit
11	LEG	LEG	LEG	Edit

29. After clicking OK, VISUM may warn the user when there is an object in the spreadsheet but not in VISUM. Write down the ones that cause an error and look more into it once the import is complete.

30. After importing the data, review it by clicking on the select attributes button ( ) and selecting those user defined attributes that were just added.

List (Count locations)

No	TCM_ID	Code	Name	STDATE	ENDDATE	HWYNO	DIRECTION	DIRECTION2
1	104129010	41290 V	US101 at US20 (Olive St)	10/11/2013	10/12/2013	9	SB	0
2	104129011	41290 V	US101 at US20 (Olive St)	10/11/2013	10/12/2013	9	SB	1
3	104129020	41290 V	US101 at US20 (Olive St)	10/11/2013	10/12/2013	9	NB	0
4	104129021	41290 V	US101 at US20 (Olive St)	10/11/2013	10/12/2013	9	NB	1
5	104129030	41290 V	US101 at US20 (Olive St)	10/11/2013	10/12/2013	9	EB	0
6	104129031	41290 V	US101 at US20 (Olive St)	10/11/2013	10/12/2013	9	EB	1
7	104129040	41290 V	US101 at US20 (Olive St)	10/11/2013	10/12/2013	9	WB	0
8	104129041	41290 V	US101 at US20 (Olive St)	10/11/2013	10/12/2013	9	WB	1
9	104104010	41040 V	US101 at NW Lighthouse Dr	10/11/2013	10/12/2013	9	SB	0
10	104104011	41040 V	US101 at NW Lighthouse Dr	10/11/2013	10/12/2013	9	SB	1
11	104104020	41040 V	US101 at NW Lighthouse Dr	10/11/2013	10/12/2013	9	NB	0
12	104104021	41040 V	US101 at NW Lighthouse Dr	10/11/2013	10/12/2013	9	NB	1
13	104104030	41040 V	US101 at NW Lighthouse Dr	10/11/2013	10/12/2013	9	EB	0
14	104104031	41040 V	US101 at NW Lighthouse Dr	10/11/2013	10/12/2013	9	EB	1
15	104104040	41040 V	US101 at NW Lighthouse Dr	10/11/2013	10/12/2013	9	WB	0
16	104104041	41040 V	US101 at NW Lighthouse Dr	10/11/2013	10/12/2013	9	WB	1
17	104107010	41070 V	US101 at NW 25th St	10/9/2013	10/10/2013	9	SB	0
18	104107011	41070 V	US101 at NW 25th St	10/9/2013	10/10/2013	9	SB	1

31. It is best to do some spot checking, just to make sure that the counts were placed in the right location and that when then number for a count location was chosen, a number was not swapped.

ArcGIS Count Attribution

Similar to the Visum process, counts used in ArcGIS will need to be "pre-processed" in a nearly identical fashion in order to be properly attributed to the network. As mentioned above, there are spreadsheets available to help with the "pre-processing" of a few different types of counts. The spreadsheets were originally created to help with model creation in Visum therefore there are some cleaning steps that will need to be completed in order to best use them in ArcGIS. The following is a how to process for attributing the counts to network in ArcGIS after following the steps provided in Excel Processor Guidelines.

This process begins with pulling counts, and using the provided Excel spreadsheets to process the counts. For instructions on how to pull the counts see Appendix 3C – OTMS Program Count Report Guide.

1. Process and aggregate the counts into one single spreadsheet. A picture of a final spreadsheet can be found below. The Visum ID is simply an ID used because each SiteID will have multiple rows and is no longer a unique identifier. (This heading could be changed to any project appropriate heading).

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Visum_ID	SiteID	Direction	Name	StDate	EndDate	Code	HwyNo	Direction2	Month	Leg	Vol_24	HR_1	HR_2	HR_3
2	84104010	41040	SB	US101 at NW Lighthouse Dr	8/16/2013	8/17/2013	V	9	0	8	1	9156	34	15	1
3	84104040	41040	WB	US101 at NW Lighthouse Dr	8/16/2013	8/17/2013	V	9	0	8	4	777	5	0	
4	84104020	41040	NB	US101 at NW Lighthouse Dr	8/16/2013	8/17/2013	V	9	0	8	2	9714	34	31	1
5	84104030	41040	EB	US101 at NW Lighthouse Dr	8/16/2013	8/17/2013	V	9	0	8	3	1145	1	1	
6	84107010	41070	SB	US101 at NW 25th St	8/14/2013	8/15/2013	V	9	0	8	1	10534	41	22	2
7	84107020	41070	NB	US101 at NW 25th St	8/14/2013	8/15/2013	V	9	0	8	2	11680	48	21	2
8	84107030	41070	EB	US101 at NW 25th St	8/14/2013	8/15/2013	V	9	0	8	3	3768	34	8	
9	84109010	41090	SB	US101 at 20th St	8/16/2013	8/17/2013	V	9	0	8	1	12571	62	25	2

2. Open the spreadsheet that was saved back in the count instructions, which contains Latitude and Longitudinal information for your counts. (The clipped statewide count shapefile).

3. Copy the Site Number, Axle Factor, Lat, Long, Last Short, and Category information and paste it into a separate tab in the combined count sheet file.

	A	B	C	D	E	F
1	Site_Numbe	Axle_Facto	Latitude	Longitude	Last_Short	Category Site_
2	41040	-	44.675263	-124.060336	10/11/2013	Video
3	41041	13220	44.041165	-121.332649	10/8/2013	Volume
4	41042	13220	44.041786	-121.331417	10/9/2013	Volume
5	41043	13220	44.042083	-121.333270	10/9/2013	Volume
6	41044	13220	44.040668	-121.317334	10/9/2013	Volume
7	41070	-	44.654520	-124.052989	10/9/2013	Video
8	41071	13220	44.035095	-121.263680	10/7/2013	Volume
9	41072	13220	44.034578	-121.263680	10/7/2013	Volume
10	41073	13220	44.019576	-121.332154	10/8/2013	Volume
11	41074	13220	44.019233	-121.332730	10/8/2013	Volume
12	41075	13220	44.019589	-121.332631	10/9/2013	Volume
13	41076	13220	44.019175	-121.332253	10/8/2013	Volume
14	41077	13220	44.007533	-121.323386	10/7/2013	Volume
15	41078	13220	44.007158	-121.322819	10/7/2013	Volume
16	41090	-	44.651513	-124.052980	10/11/2013	Video
17	41091	13220	44.008245	-121.284077	10/7/2013	Volume
18	41092	13220	44.007695	-121.284059	10/7/2013	Volume
19	41096	13220	44.291007	-121.219730	10/2/2013	Volume
20	41097	13220	44.291271	-121.219298	10/2/2013	Volume
21	41098	13220	44.290705	-121.219272	10/2/2013	Volume
22	41099	13220	44.290949	-121.197715	10/2/2013	Volume
23						

4. Once it is in the count sheet, it can be used to utilize VLOOKUP in Excel to be able to gain location information and other needed details.

5. Select the Lat, Long, and OTMS ID information and "Name" it.

Clipboard		Font		Align
SiteList	▼	fx	Site_Numbe	

	A	B	C	D	E	F
1	Site_Numbe	Axle_Facto	Latitude	Longitude	Last_Short	Category
2	41040	-	44.675263	-124.060336	10/11/2013	Video
3	41041	13220	44.041165	-121.332649	10/8/2013	Volume
4	41042	13220	44.041786	-121.331417	10/9/2013	Volume
5	41043	13220	44.042083	-121.333270	10/9/2013	Volume
6	41044	13220	44.040668	-121.317334	10/9/2013	Volume
7	41070	-	44.654520	-124.052989	10/9/2013	Video
8	41071	13220	44.035095	-121.263680	10/7/2013	Volume
9	41072	13220	44.034578	-121.263680	10/7/2013	Volume
10	41073	13220	44.019576	-121.332154	10/8/2013	Volume
11	41074	13220	44.019233	-121.332730	10/8/2013	Volume
12	41075	13220	44.019589	-121.332631	10/9/2013	Volume
13	41076	13220	44.019175	-121.332253	10/8/2013	Volume
14	41077	13220	44.007533	-121.323386	10/7/2013	Volume
15	41078	13220	44.007158	-121.322819	10/7/2013	Volume
16	41090	-	44.651513	-124.052980	10/11/2013	Video
17	41091	13220	44.008245	-121.284077	10/7/2013	Volume
18	41092	13220	44.007695	-121.284059	10/7/2013	Volume
19	41096	13220	44.291007	-121.219730	10/2/2013	Volume
20	41097	13220	44.291271	-121.219298	10/2/2013	Volume
21	41098	13220	44.290705	-121.219272	10/2/2013	Volume
22	41099	13220	44.290949	-121.197715	10/2/2013	Volume
23						

6. Add new columns to bring the new information into the spreadsheet.

23

	A	B	C	D	E	F	G	H	I	
1	Visum_ID	SiteID	Direction	Name	Axle_FactorID	Latitude	Longitude	StDate	EndDate	Co
2	84104010	41040	SB	US101 at NW Lighthouse Dr				8/16/2013	8/17/2013	V
3	84104040	41040	WB	US101 at NW Lighthouse Dr				8/16/2013	8/17/2013	V
4	84104020	41040	NB	US101 at NW Lighthouse Dr				8/16/2013	8/17/2013	V
5	84104030	41040	EB	US101 at NW Lighthouse Dr				8/16/2013	8/17/2013	V
6	84107010	41070	SB	US101 at NW 25th St				8/14/2013	8/15/2013	V
7	84107020	41070	NB	US101 at NW 25th St				8/14/2013	8/15/2013	V
8	84107030	41070	EB	US101 at NW 25th St				8/14/2013	8/15/2013	V
9	84109010	41090	SB	US101 at 20th St				8/16/2013	8/17/2013	V
10	84109040	41090	WB	US101 at 20th St				8/16/2013	8/17/2013	V
11	84109020	41090	NB	US101 at 20th St				8/16/2013	8/17/2013	V
12	84109030	41090	EB	US101 at 20th St				8/16/2013	8/17/2013	V
13	84118010	41180	SB	US101 and 11th St				8/14/2013	8/15/2013	V
14	84118040	41180	WB	US101 and 11th St				8/14/2013	8/15/2013	V
15	84118020	41180	NB	US101 and 11th St				8/14/2013	8/15/2013	V

7. Use VLOOKUP on the count sheet to lookup the count location information from the "Named" table.

F2 =VLOOKUP(B2,SiteList,3, FALSE)

	A	B	C	D	E	F	G	
1	Visum_ID	SiteID	Direction	Name	Axle_FactorID	Latitude	Longitude	S
2	84104010	41040	SB	US101 at NW Lighthouse Dr	-	44.675263	-124.060336	8
3	84104040	41040	WB	US101 at NW Lighthouse Dr	-	44.675263	-124.060336	8
4	84104020	41040	NB	US101 at NW Lighthouse Dr	-	44.675263	-124.060336	8
5	84104030	41040	EB	US101 at NW Lighthouse Dr	-	44.675263	-124.060336	8
6	84107010	41070	SB	US101 at NW 25th St	-	44.65452	-124.052989	8
7	84107020	41070	NB	US101 at NW 25th St	-	44.65452	-124.052989	8
8	84107030	41070	EB	US101 at NW 25th St	-	44.65452	-124.052989	8
9	84109010	41090	SB	US101 at 20th St	-	44.651513	-124.05298	8
10	84109040	41090	WB	US101 at 20th St	-	44.651513	-124.05298	8
11	84109020	41090	NB	US101 at 20th St	-	44.651513	-124.05298	8
12	84109030	41090	EB	US101 at 20th St	-	44.651513	-124.05298	8

> YIELD
>
> *Counts that are tube counts need to be axle factored. The column titled Axle_FactorID will contain the OTMS Site ID of the count number to use for an axle factor if one is required for the latest count. If the column contains a "-" as shown above, then the count is a class count and does not need to be axle factored.*

8. Save the file.

9. Open ArcGIS and click cancel when it prompts you to choose an mxd file to open.

10. Right click in the center of the screen and click data frame properties.

11. Choose the coordinate system tab.

12. In the coordinate system box, expand the Predefined folder, then Geographic Coordinate System, then North America, then NAD 1983.

13. Click File→add data→XY Data and navigate to the spreadsheet just created with the count data and Latitude/Longitude information.

14. Right click on the newly added XY data and select Data→Export Data.

15. Choose the data frame for the coordinate system, and use the folder button to navigate to the folder that will be used to save the shapefile.

16. Choose to add the shapefile after its creation, and remove the original XY data.

17. Load the network files and any other chosen boundary file.

18. Because the same Latitude and Longitude is used for all count locations, there is a possibility that multiple points may be placed on top of each other. It is recommended that the analyst take the time to go to each count location and move the counts to the proper leg of the intersection.

19. The figure below shows what it will look like before and after the hand cleaning.