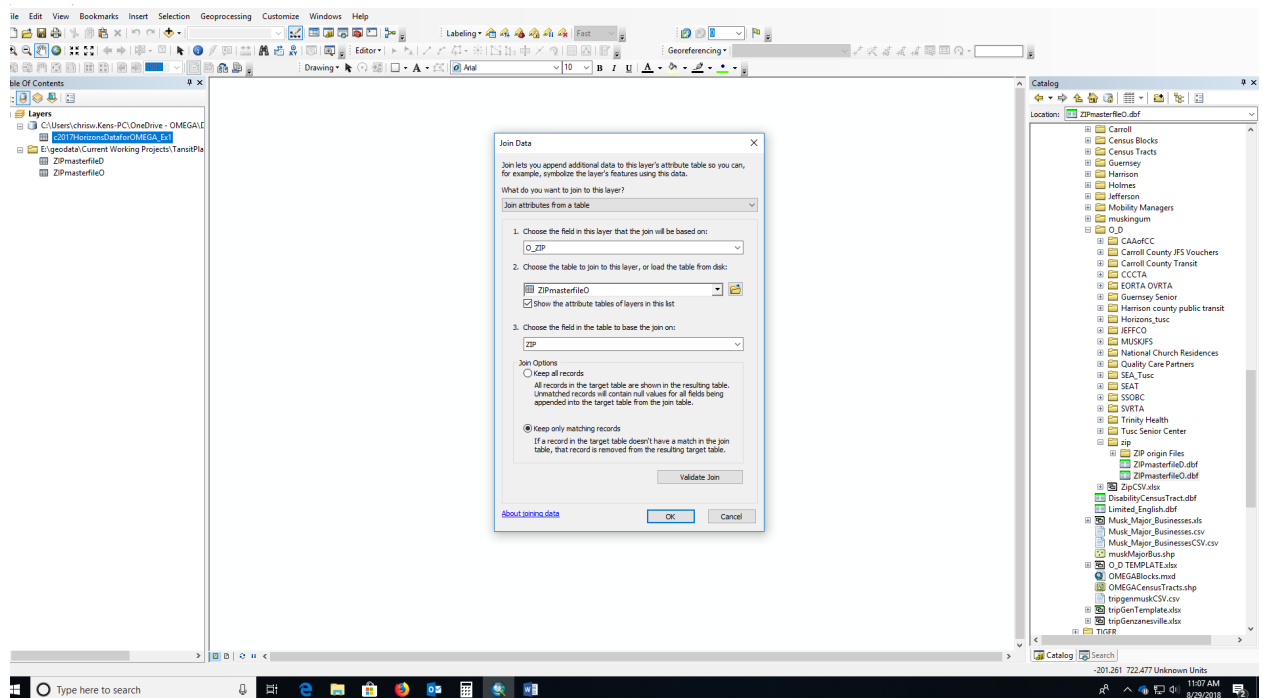


Appendix G.

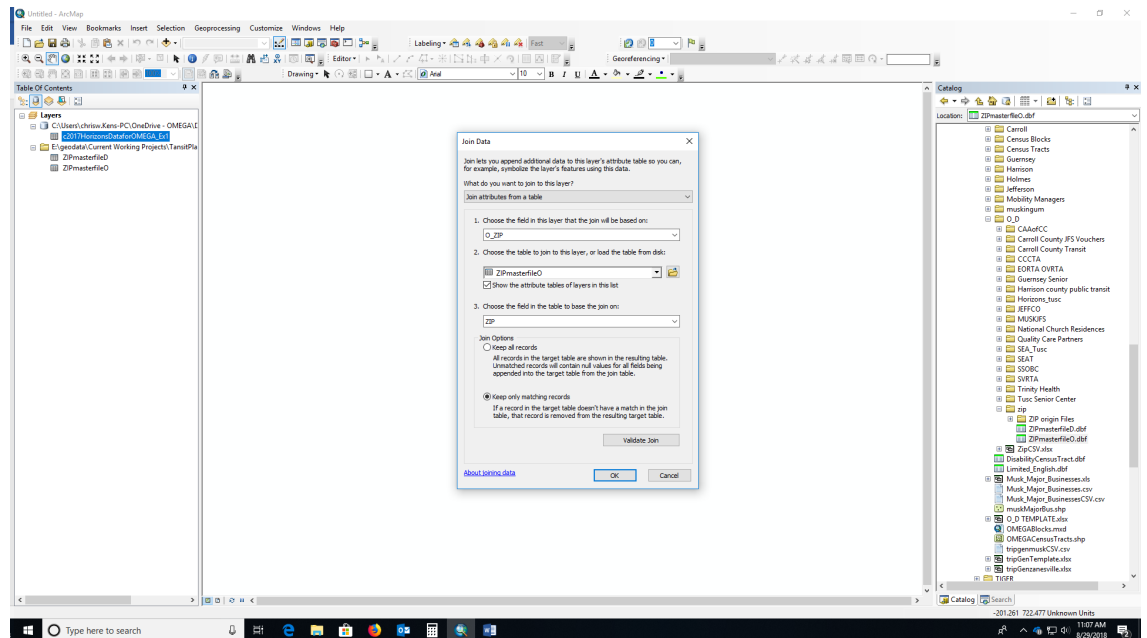
Origin-Destination Process

1. Save excel file as a csv in Transitplans>O\_D> “File Folder”
2. Open up excel to table conversion tool
  - a. Search>excel to table
3. For input excel file
  - a. Add excel file from tansitplans>O\_D> “file folder”
4. For output table
  - a. Save in a designated folder or leave as is, it will automatically save in a default folder
5. Click ok
6. New table will be in the table of contents under source
7. Right click table and open to confirm that table is correct
8. Right click table in the TOC
  - a. Scroll to Data>export
  - b. Click export
9. In output table click the folder to the right to save database file to the correct folder in transit plans
  - a. Save as type
  - b. Needs to be changed to dBase table
  - c. Also change that name to corresponding transit name
10. Click save
11. Then ok



12. Click yes to add new table to current map
13. Add zipmasterfileD.dbf and ZipmasterfileO.dbf from transitplans>O\_D>zip folder to the TOC
14. Join the Database file in TOC to ZIPmasterfileO and then ZIPmasterfileD based on the zipcode
  - a. This will give you the lat and long of the origin and also destination
  - b. Might be a good idea to export the joined table as a .dbf so it is saved in the file folder for future use.

C.



d.

15. Next open up the XY To Line (Data Management) tool

a. TIP: use the search bar.

16. Input the joined table

a. Output feature class should be saved to destination folder. It will be a shapefile of all the trip lines.

b. Start X Field

i. O\_LNG

c. Start Y Field

i. O\_LAT

d. END X FIELD

i. D\_LNG

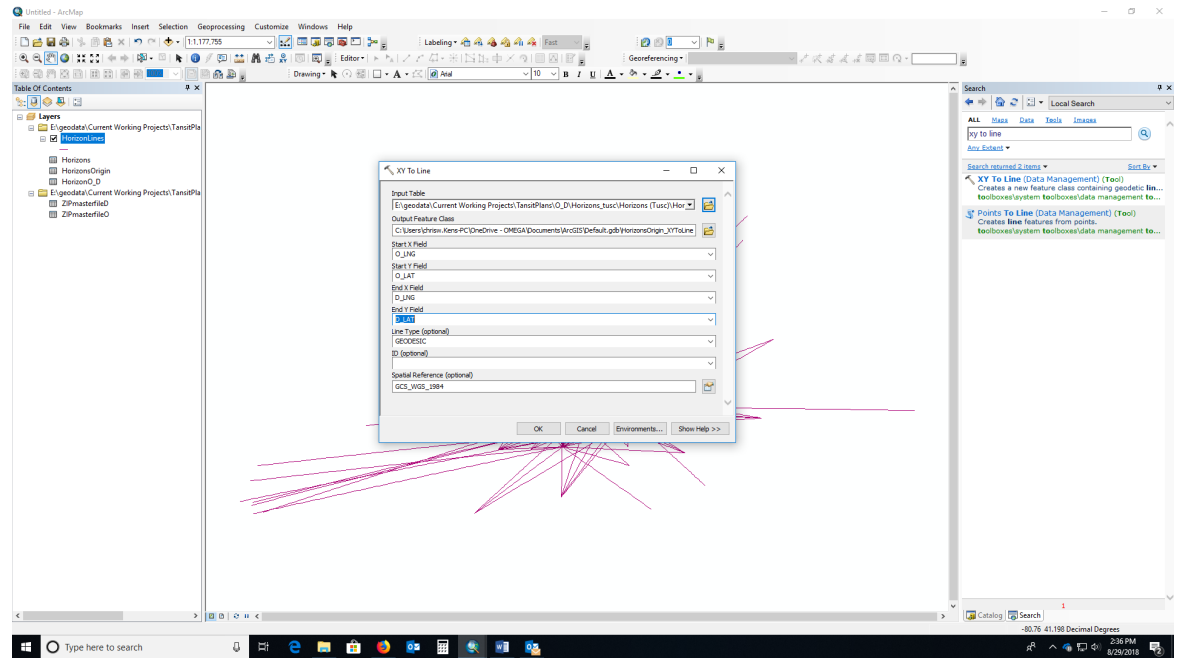
e. END Y Field

i. D\_LAT

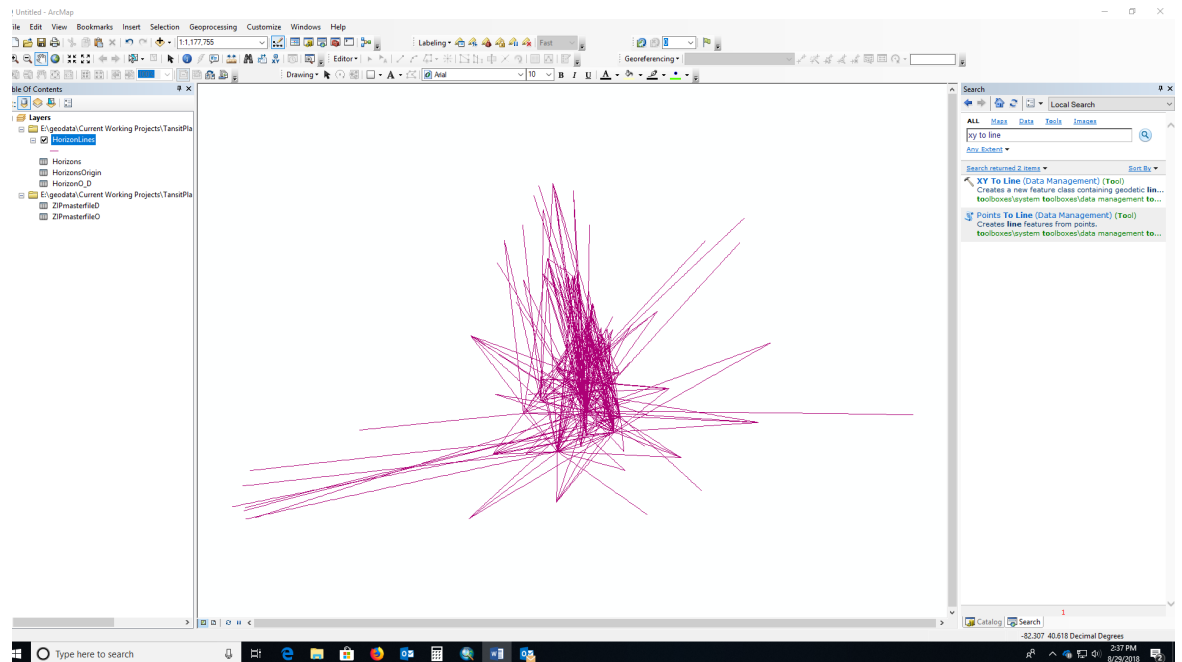
f. Line type can stay GEODESIC

g. ID can stay blank (unless there is a TRIP\_COUNT field, in which case, add that here)

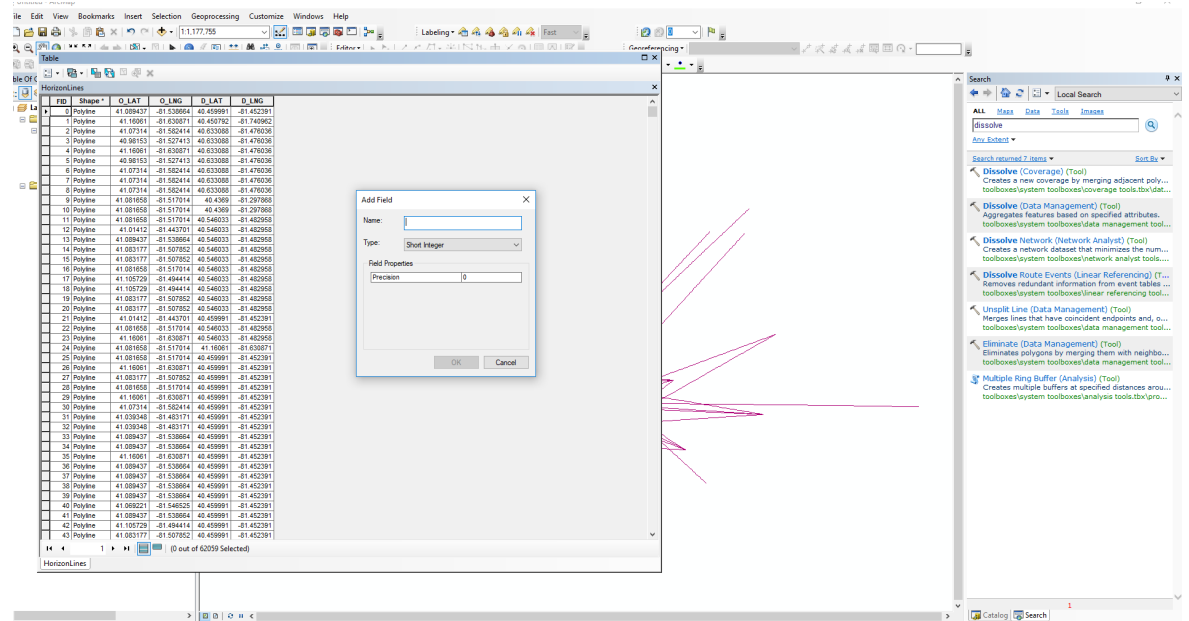
h.



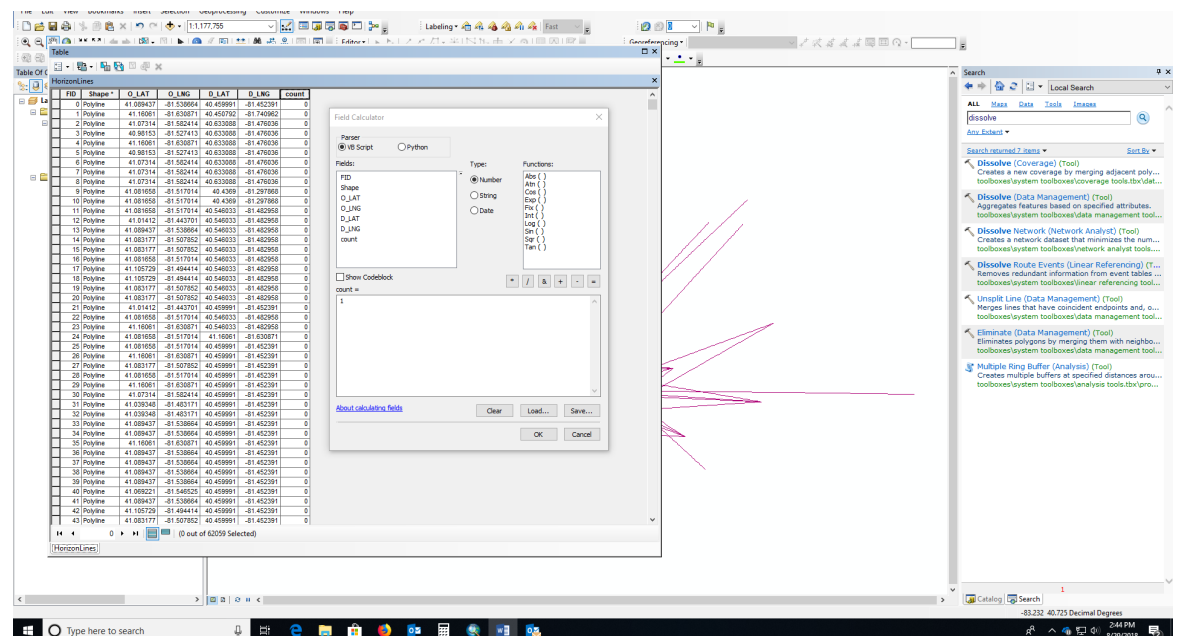
- i.
17. Click ok
18.
  - a. You now have a line shape file
  - b.



- c.
19. Open table for the new line shapefile from the TOC
  - a. Add a field from the drop down menu in table options (skip this part if you have TRIP\_COUNT field)
  - b.



- c.
- d. Label this new field count (skip this part if you have TRIP\_COUNT field)
- e. With a long integer as TYPE (skip this part if you have TRIP\_COUNT field)
- f. Right click the heading of the new field called count (skip this part if you have TRIP\_COUNT field)
- g. Click the Field Calculator (skip this part if you have TRIP\_COUNT field)
- h. Type "1" in the field calculator box (skip this part if you have TRIP\_COUNT field)
- i.



- j.
- k. Click ok (skip this part if you have TRIP\_COUNT field)
- l. You now should have 1 for every row in the count field. (skip this part if you have TRIP\_COUNT field)

20. Click to add another field and label is length

- Use double integer
- Right click field heading and then calculate geometry
- Calculate miles
- 

Table

Horizontal Lines

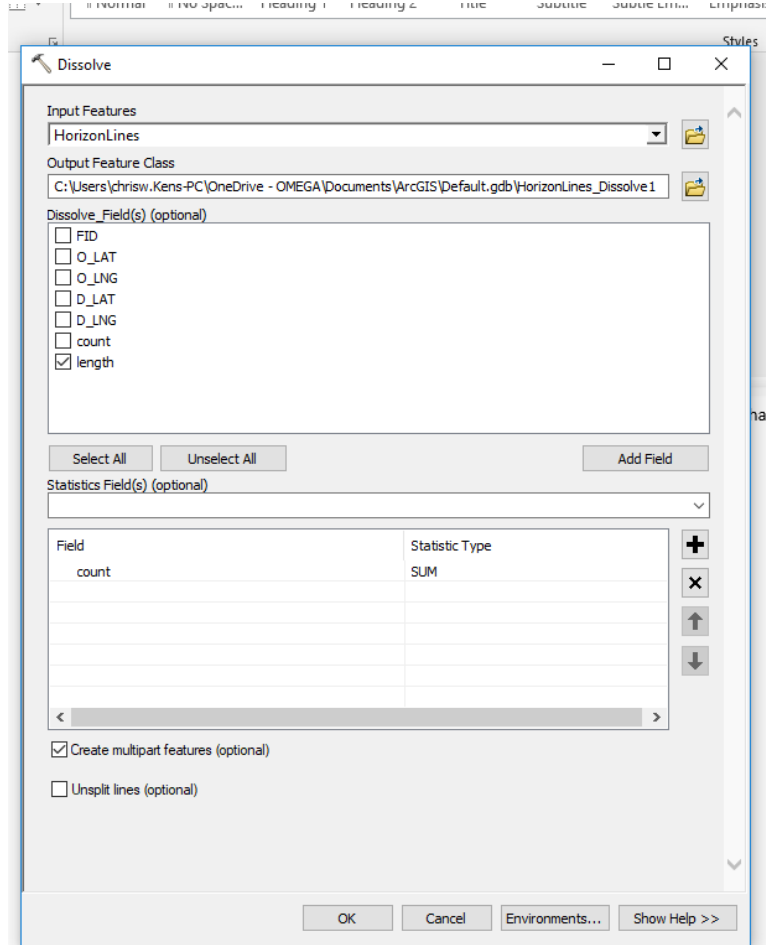
FID	Shape	O_LAT	O_LNG	D_LAT	D_LNG	count	length
0	Polyline	41.088437	-81.530664	40.458991	-81.452391	1	57.803458
1	Polyline	41.16061	-81.630871	40.450792	-81.740962	1	86.311641
2	Polyline	41.07314	-81.582414	40.633068	-81.476036	1	40.909502
3	Polyline	40.98153	-81.527413	40.633068	-81.476036	1	130.040287
4	Polyline	41.16061	-81.630871	40.633068	-81.476036	1	44.447151
5	Polyline	40.98153	-81.527413	40.633068	-81.476036	1	32.040287
6	Polyline	41.07314	-81.582414	40.633068	-81.476036	1	40.909502
7	Polyline	41.07314	-81.582414	40.633068	-81.476036	1	40.909502
8	Polyline	41.07314	-81.582414	40.633068	-81.476036	1	40.909502
9	Polyline	41.081658	-81.517914	40.4369	-81.297668	1	160.799542
10	Polyline	41.081658	-81.517914	40.4369	-81.297668	1	60.799542
11	Polyline	41.081658	-81.517914	40.548033	-81.482958	1	140.019152
12	Polyline	41.01412	-81.443701	40.548033	-81.482958	1	62.945151
13	Polyline	41.088437	-81.530664	40.548033	-81.482958	1	40.816638
14	Polyline	41.083777	-81.507852	40.548033	-81.482958	1	140.123089
15	Polyline	41.083777	-81.507852	40.548033	-81.482958	1	140.123089
16	Polyline	41.081658	-81.517914	40.548033	-81.482958	1	140.019152
17	Polyline	41.105729	-81.494414	40.548033	-81.482958	1	51.10894
18	Polyline	41.105729	-81.494414	40.548033	-81.482958	1	51.10894
19	Polyline	41.083777	-81.507852	40.548033	-81.482958	1	140.123089
20	Polyline	41.083777	-81.507852	40.548033	-81.482958	1	140.123089
21	Polyline	41.01412	-81.443701	40.458991	-81.452391	1	50.589779
22	Polyline	41.081658	-81.517914	40.548033	-81.482958	1	140.019152
23	Polyline	41.16061	-81.630871	40.548033	-81.482958	1	7.739617
24	Polyline	41.081658	-81.517914	41.16061	-81.630871	1	10.79415
25	Polyline	41.081658	-81.517914	40.458991	-81.452391	1	56.966378
26	Polyline	41.16061	-81.630871	40.458991	-81.452391	1	65.209448
27	Polyline	41.083777	-81.507852	40.458991	-81.452391	1	157.048225
28	Polyline	41.081658	-81.517914	40.458991	-81.452391	1	56.966378
29	Polyline	41.16061	-81.630871	40.458991	-81.452391	1	65.209448
30	Polyline	41.07314	-81.582414	40.458991	-81.452391	1	56.718721
31	Polyline	41.039348	-81.483171	40.458991	-81.452391	1	52.842169
32	Polyline	41.039348	-81.483171	40.458991	-81.452391	1	52.842169
33	Polyline	41.088437	-81.530664	40.458991	-81.452391	1	157.803458
34	Polyline	41.088437	-81.530664	40.458991	-81.452391	1	157.803458
35	Polyline	41.16061	-81.630871	40.458991	-81.452391	1	65.209448
36	Polyline	41.088437	-81.530664	40.458991	-81.452391	1	157.803458
37	Polyline	41.088437	-81.530664	40.458991	-81.452391	1	157.803458
38	Polyline	41.088437	-81.530664	40.458991	-81.452391	1	157.803458
39	Polyline	41.088437	-81.530664	40.458991	-81.452391	1	157.803458
40	Polyline	41.082221	-81.548525	40.458991	-81.452391	1	56.019222
41	Polyline	41.088437	-81.530664	40.458991	-81.452391	1	157.803458
42	Polyline	41.105729	-81.494414	40.458991	-81.452391	1	56.961698
43	Polyline	41.083777	-81.507852	40.458991	-81.452391	1	157.048225
44	Polyline	41.16061	-81.630871	40.458991	-81.452391	1	65.209448
45	Polyline	41.088437	-81.530664	40.458991	-81.452391	1	157.803458
46	Polyline	41.088437	-81.530664	40.458991	-81.452391	1	157.803458
47	Polyline	41.081658	-81.517914	40.458991	-81.452391	1	56.966378
48	Polyline	41.07314	-81.582414	40.458991	-81.452391	1	56.718721
49	Polyline	41.083777	-81.507852	40.458991	-81.452391	1	157.048225
50	Polyline	41.083777	-81.507852	40.458991	-81.452391	1	157.048225
51	Polyline	41.083777	-81.507852	40.458991	-81.452391	1	157.048225
52	Polyline	41.083777	-81.507852	40.458991	-81.452391	1	157.048225
53	Polyline	41.083777	-81.507852	40.458991	-81.452391	1	157.048225
54	Polyline	41.081658	-81.517914	40.458991	-81.452391	1	56.966378
55	Polyline	41.01412	-81.443701	40.458991	-81.452391	1	50.589779
56	Polyline	41.081658	-81.517914	40.458991	-81.452391	1	56.966378
57	Polyline	41.16061	-81.630871	40.458991	-81.452391	1	65.209448
58	Polyline	41.105729	-81.494414	40.458991	-81.452391	1	56.961698

Horizontal Lines

- 
- Note: if you can't calculate, add in the OMEGA county shapefile so that arcgis has a coordinate system in the data frame to reference (and change coordinate system of data frame to WGS 1984 Web Mercator Auxiliary Sphere if you forget to add OMEGA county shapefile first).

- Next open up the dissolve (Data Management) Tool
- 
- Input features of the the line shapefile
  - Output to destination folder
- Dissolve field "length"
- For statistics field add in count (or TRIP\_COUNT field if you have it)
  - Statistic type is "SUM"
- Click ok
  - It should dissolve and add a new shapefile to the TOC

- b. This creates a new attribute table that sums each unique trip and give it one line.



27. From this point you can symbols each line depending on how you want it to look.

28.

For graduated symbols destination points (UNLESS YOU HAVE TRIP\_COUNT FIELD – SEE BELOW):

1. File → Add Data → Add XY Data → Use JOINed table (O\_DColumbianaCountyJOIN)
  - a. X Field: D\_LNG
  - b. Y Field: D\_LAT
  - c. Change coordinate system to GCS for them to show in correct place on map
2. Export data to destination folder and remove Events layer
3. Now we have destination points
4. Run Summary Statistics (Analysis) tool on Destination Pts feature class (save to new file geodatabase in Data folder)
  - a. Input Table: Destination\_Pts
  - b. Output Table: DestinationPts\_Stats in destination folder
  - c. Statistics Field: D\_ZIP
    - i. Statistic Type: SUM (don't really need it but we want frequency, can delete SUM field after we run tool)
    - ii. Case Field: D\_ZIP

- d. May have to create & save this to geodatabase
5. Join ZIPmasterfile D to DestinationPts\_Stats table based on D\_ZIP and ZIP
  - a. Export as dBASE table in destination folder for later use
6. Right click on DestinationPts\_JOIN and Display XY Data (D\_LNG, D\_LAT), changing coordinate system to GCS
7. Export as shapefile to destination folder, delete Events layer
8. Play around with graduated symbols based on FREQUENCY

#### IF YOU HAVE TRIP\_COUNT FIELD:

1. Right click on original Joined table (OVRTA2017\_JOIN) → Display XY Data
  - a. X Field: D\_LNG
  - b. Y Field: D\_LAT
  - c. Change coordinate system to GCS to display correctly
2. Export as shapefile to destination folder, delete Events layer
3. May have to dissolve
  - a. Dissolve field: D\_ZIP
  - b. Statistics field: TRIP\_COUNT
    - i. Type: SUM
4. Play around with graduated symbols based on TRIP\_COUNT

#### TO ADD CITY NAME:

1. Join original table by zip at end, then turn off any unnecessary fields
2. Export to destination folder in order to upload online with symbology

#### DISSOLVE BY CITY NAME:

#### CHANGE BREAKS

I found a way to merge all the zip codes into one for our major cities. You will have to nest a few “Ifs” in Excel before uploading it to ArcGIS. There are a few changes you will need to make when you add them in. I have highlighted them in red and will walk you through each step below. Be sure to copy only the highlighted section and make sure you capture ALL the ending parentheses or the formula won’t work.

1. Open spreadsheet.
2. After O\_Zip and D\_Zip add in a column. Name that column “O\_Merge” or “D\_Merge” as appropriate.
3. Copy the formula below into the first line under the header and press Enter
  - a. If using the standard template, the formula will work without adjustment
  - b. If not using the standard template, the formula will need an adjustment.
    - i. B2 should refer to the Origin city



- ii. G2 should refer to the Destination city
  - iii. D2 should refer to the Origin ZIP
  - iv. I2 should refer to the Destination ZIP
4. Once you have adjusted the formula (if needed), drag this formula down to the end of the data to make sure it applies to all rows.

Origin:

```
=IF(B2="columbus",43215,IF(B2="Cleveland",44101,IF(B2="Canton",44701,IF(B2="Youngstown",44405,IF(B2="Akron",44301,IF(B2="Pittsburgh",15201,D2))))))
```

Destination:

```
=IF(G2="columbus",43215,IF(G2="Cleveland",44101,IF(G2="Canton",44701,IF(G2="Youngstown",44405,IF(G2="Akron",44301,IF(G2="Pittsburgh",15201,I2))))))
```

\*Note to add to maps\*

\*Note: Each line denotes origin/destination data based on center of zip code area; may not reflect exact origin/destination locations.

\*Note: Each dot denotes destination data placed at center of zip code area; may not reflect exact destination location.

Publishing on ArcGIS Online: