

DETAILED INSTRUCTIONS FOR GTFS BUILDER

CREATING SHAPES DISPLAYED IN GOOGLE TRANSIT

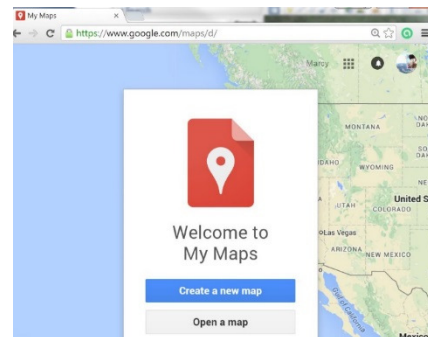
(see last page for quick guide/summary or short videos found here

<http://nationalrtap.org/supportcenter/Builder-Apps/GTFS-Builder/Advanced-Topics> shapes)

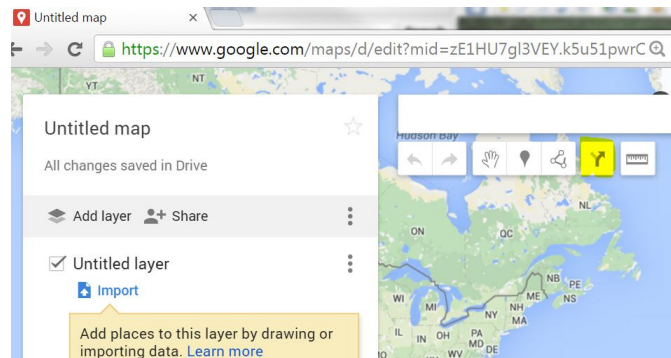
From Chrome or Firefox browser, Open Google.com/MyMaps
(You must log-in to a Google account)

google.com/mymaps

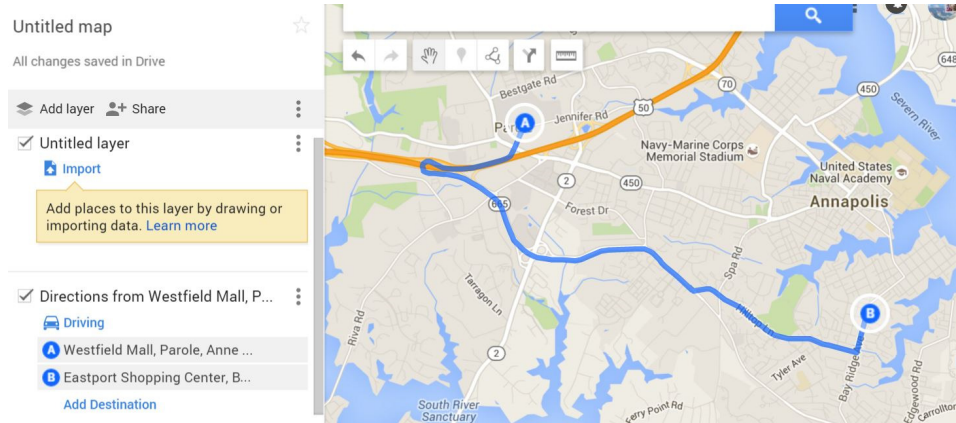
Click on Create a new map



Use Directions tool (we highlighted in yellow for you)



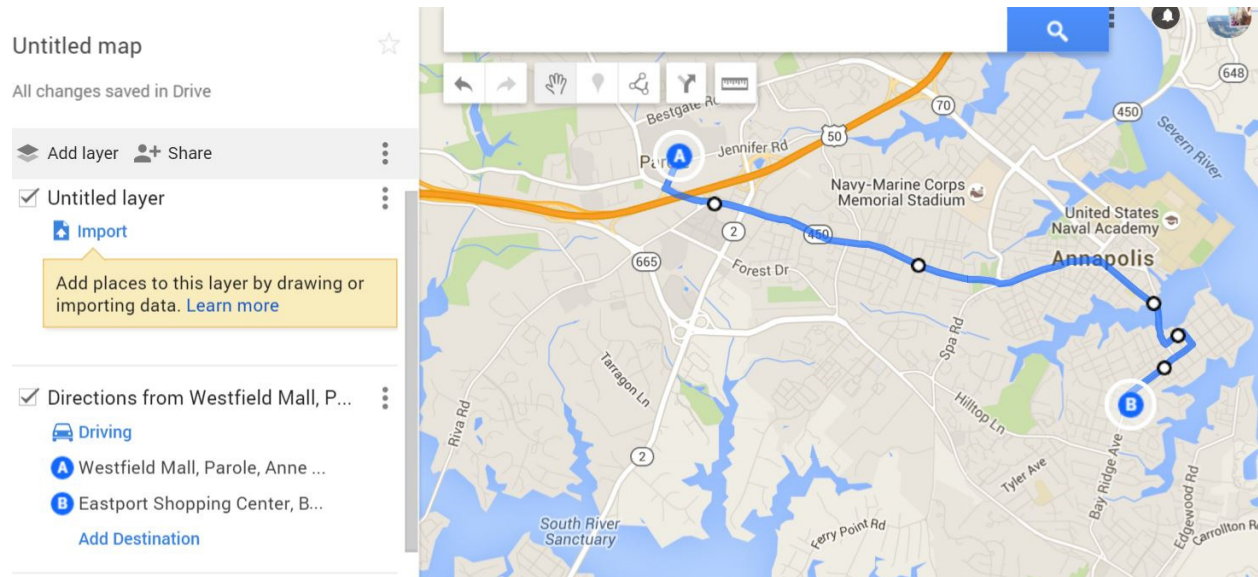
Create a new map using start and end point of bus route
(you can use places, mall, addresses or the lat/long from your stops data)



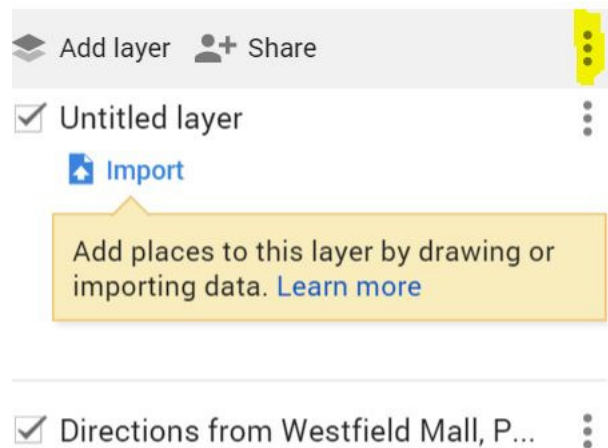
Change Untitled layer to a name if you will store this route in your Google Drive and continue to edit it (or create the reverse direction, modified trips to senior center, school, etc.)

Drag route lines to create a sketch of the bus route. Not necessary to get every little detail, but the closer you get in My Maps you will have fewer edits in Google Earth later.

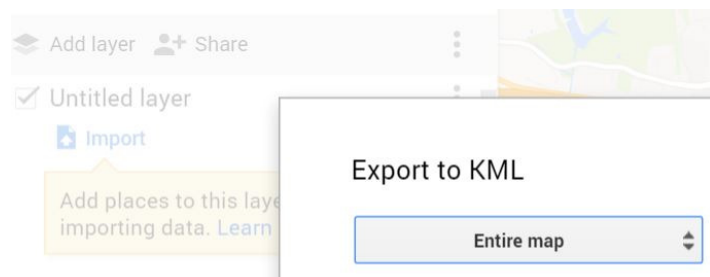
You drag by putting your mouse over the route line (blue) and pulling it to where you want. The map will display an open black circle that you can further pull on .



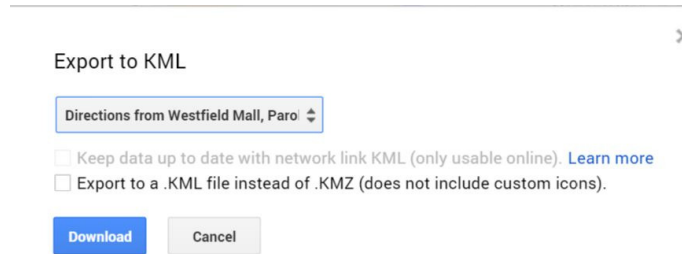
When satisfied, click on the 3 little dots to the right of “Add Layer / Share” to get drop down menu.



Choose Export KML,

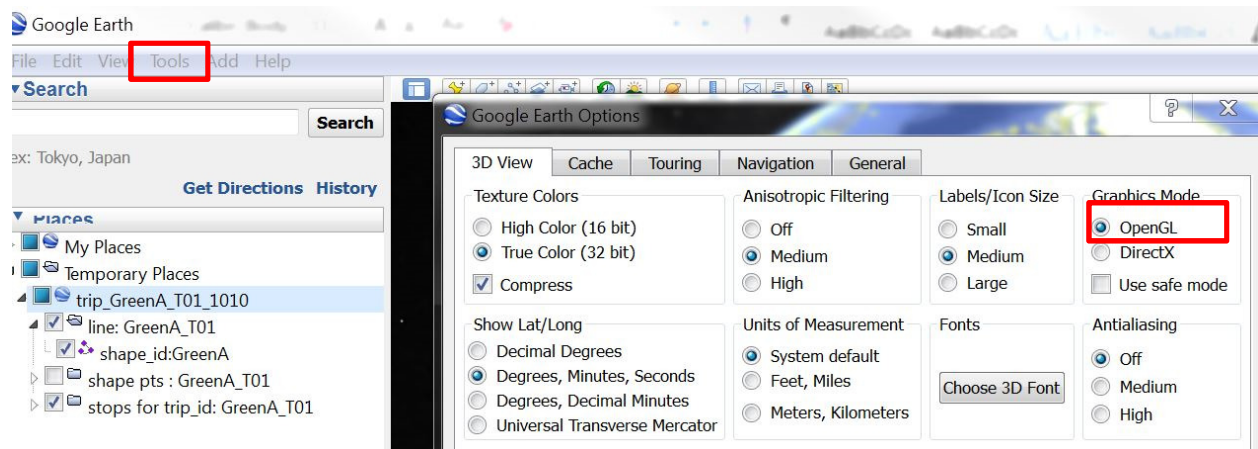


Choose **Directions from** . . . check the KML box, click **Download**, click **Open** (or double click to open directions file)

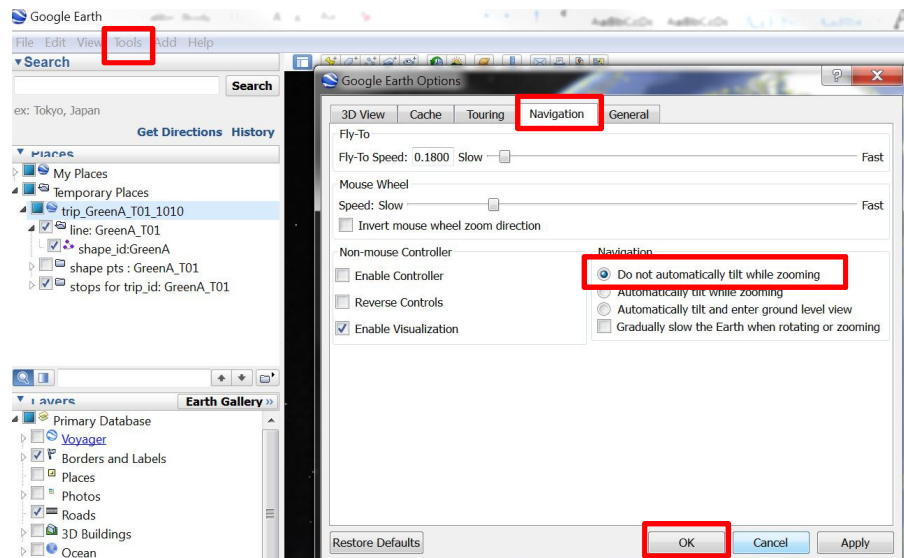


Open Google Earth & be certain you are in Open GL

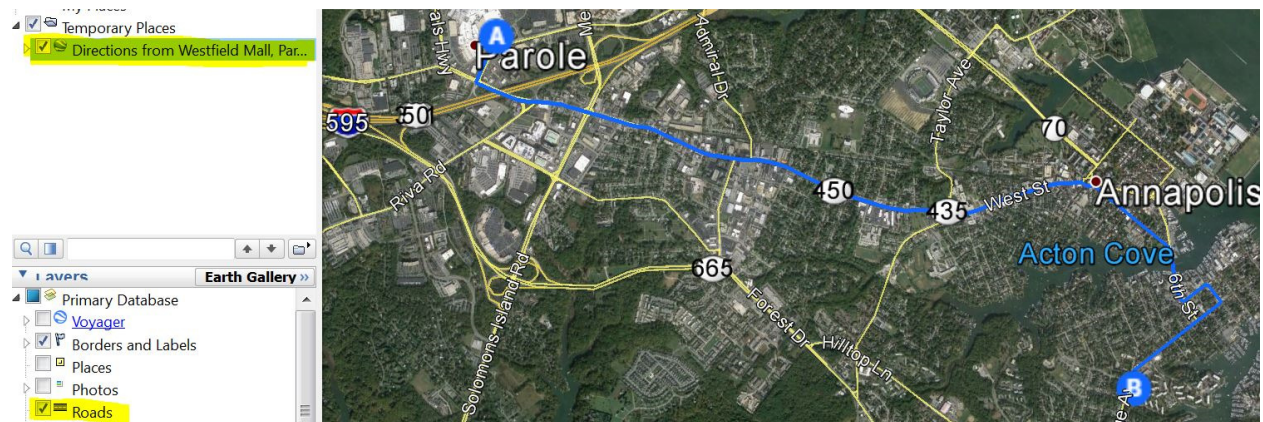
Google Earth > Tools > 3D View > Select (radio button) Open GL > Apply



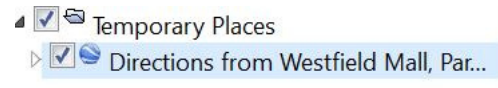
Eliminate tilting Google Earth > Tools > Navigation > Select (radio button) Do not automatically tilt while zooming > OK



Google Earth should open up with the bus route displayed.
Check under Primary Database that Roads is turned on.

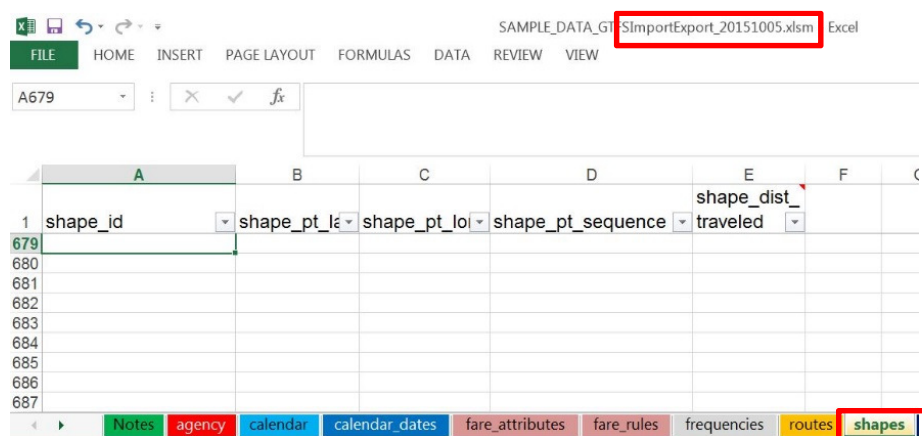


Right click on the globe listed under **Temporary Places**.
Copy.



Open ImportExport
Workbook.

Go to Shapes tab.
Scroll down to find an
open line, or blank
row.

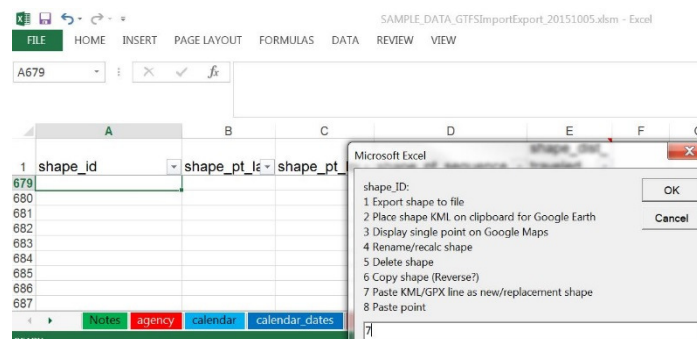


Double click in the Shapes ID column.

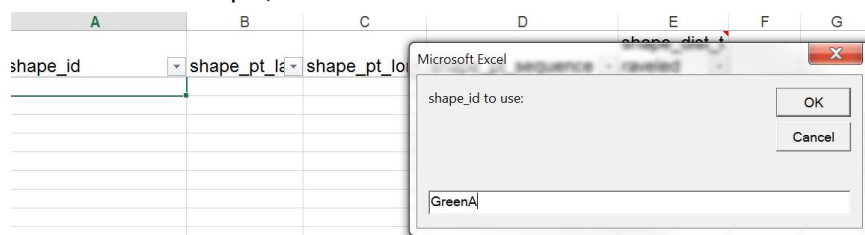
A menu will pop up.
(or type #) 7 and

hit OK <enter>

Choose



Name it. For example, GreenA for Green Route or 18ob for 18 Outbound. Select OK.



The lines will fill rows down with the shapes code.

A	B	C	D	E
shape_id	shape_pt_id	shape_pt_lo	shape_pt_sequence	shape_dist_traveled
GreenA	38.988174	-76.543898	1	0
GreenA	38.988104	-76.544105	2	0.02
GreenA	38.988042	-76.54425	3	0.034
GreenA	38.987994	-76.544359	4	0.045
GreenA	38.987927	-76.544487	5	0.058
GreenA	38.987845	-76.544572	6	0.07
GreenA	38.987807	-76.544606	7	0.075
GreenA	38.98766	-76.544633	8	0.091
GreenA	38.987588	-76.544556	9	0.102
GreenA	38.987567	-76.544469	10	0.11
GreenA	38.987457	-76.544319	11	0.127
GreenA	38.987331	-76.544157	12	0.147
GreenA	38.987278	-76.544091	13	0.155
GreenA	38.987132	-76.544276	14	0.178

Next we will
test/edit the
shape line
with the
stops along
the route.

ImportExport: Trips tab

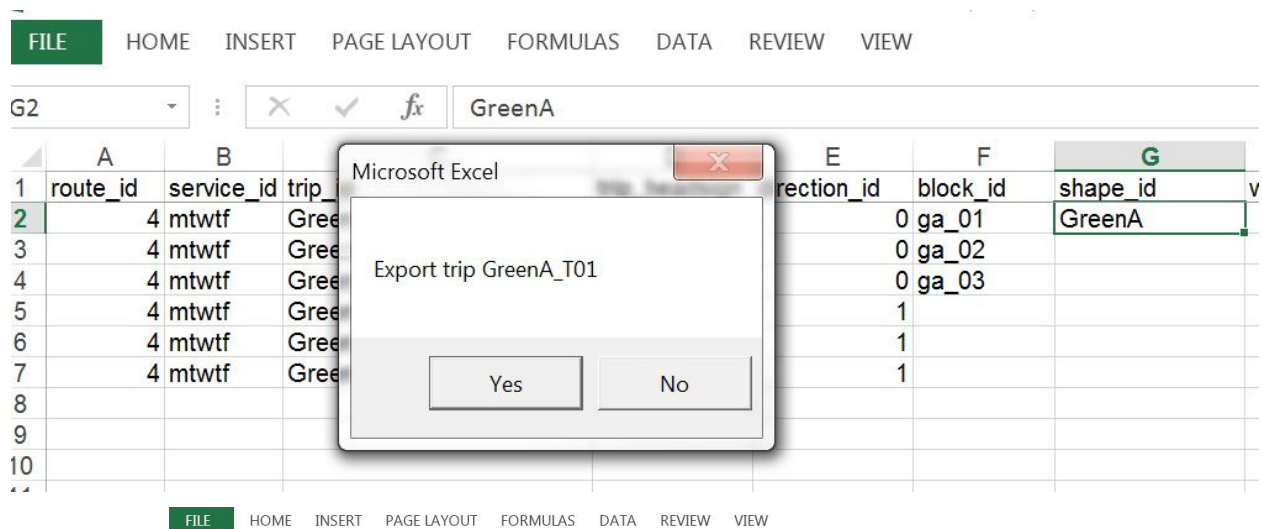
Assign the same shape_id (e.g. GreenA or 18ob) to the trip in trips tab: (one method is to right click on the Shape ID name and choose Copy).

Go to Trips tab. Paste into the Shape ID column next to the correct route.

A	B	C	D	E	F	G	H	I
route_id	service_id	trip_id	trip_headsign	direction_id	block_id	shape_id	wheelchair_accessible	bikes_allowed
4	mtwtf	GreenA_T01	Mall to Eastpo	0	ga_01	GreenA	1	1
4	mtwtf	GreenA_T02	Mall to Eastpo	0	ga_02		1	1
4	mtwtf	GreenA_T03	Mall to Eastpo	0	ga_03		1	1
4	mtwtf	GreenB_T01	Eastport to Mæ	1			1	1
4	mtwtf	GreenB_T02	Eastport to Mæ	1			1	1
4	mtwtf	GreenB_T03	Eastport to Mæ	1			1	1

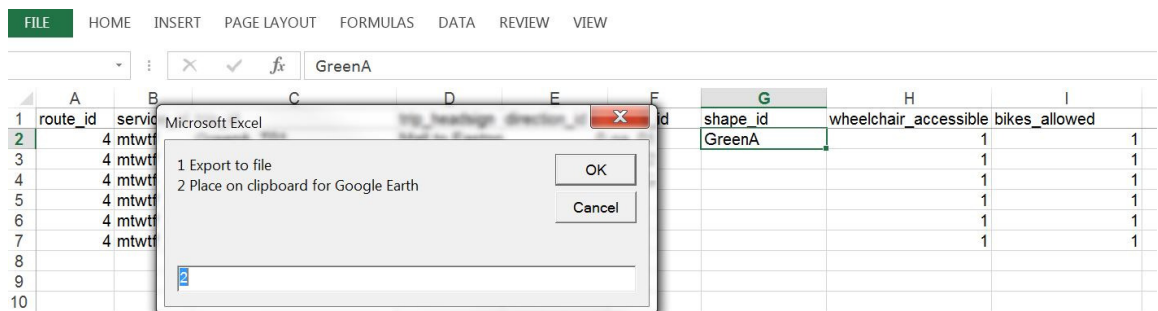
... calendar_dates fare_attributes fare_rules frequencies routes shapes stops stop_times trips transfers feed_info ... (+)

Double click on the shape ID you just pasted and a menu will pop up.



Yes, OK.

2, OK.



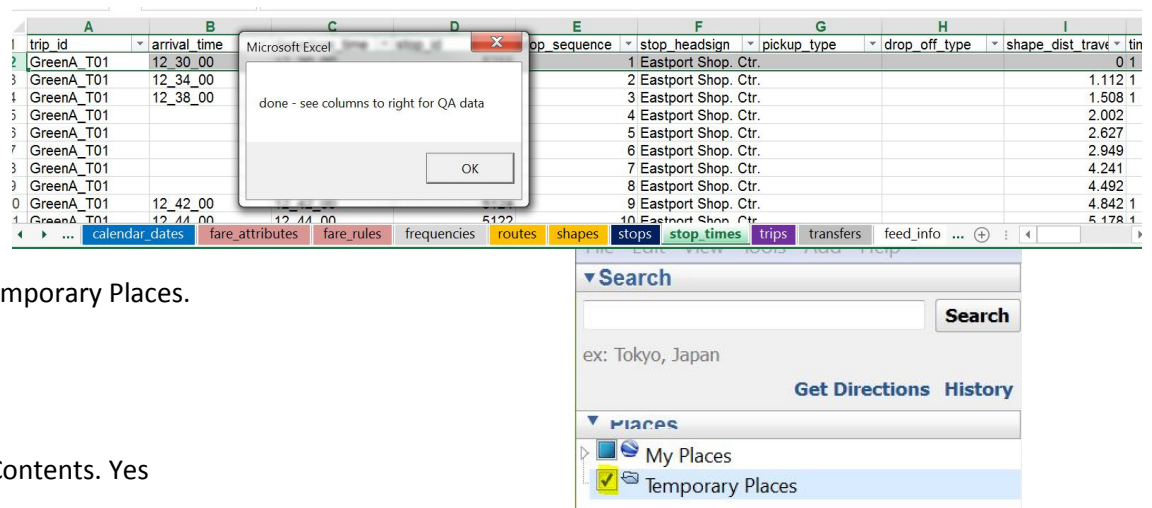
Done, OK.

Go back to
Google Earth.

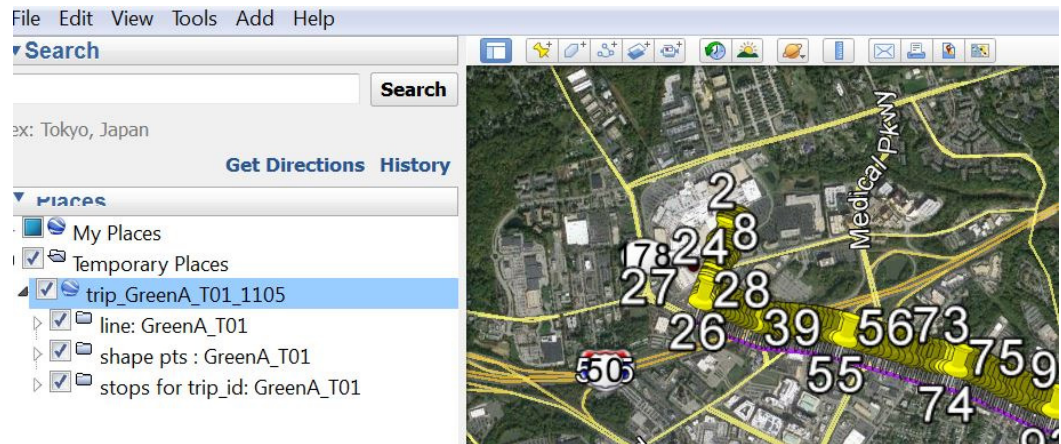
Right click on Temporary Places.

Choose Delete Contents. Yes

Right click on Temporary Places again and Paste.



Next appears your shape line with the route's stop locations, as a purple line with yellow pins for the shape points (all the rows you saw in Excel)

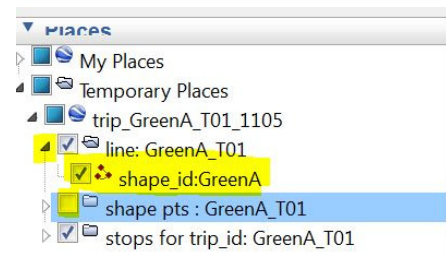


OPTIONAL you can change the color (default is yellow) of the push pins for stops (vs. shape points)

Right click on stops for trip_id:<Trip#> then Properties > Click on Share Style > Click on the Push Pin in the Upper right corner (blue is default) and choose a color you like! Now your stops will appear different than the nodes along the purple line.

Open up "line" by selecting the empty triangle – it will flip to fill & show you "shape_id:<shapename>"

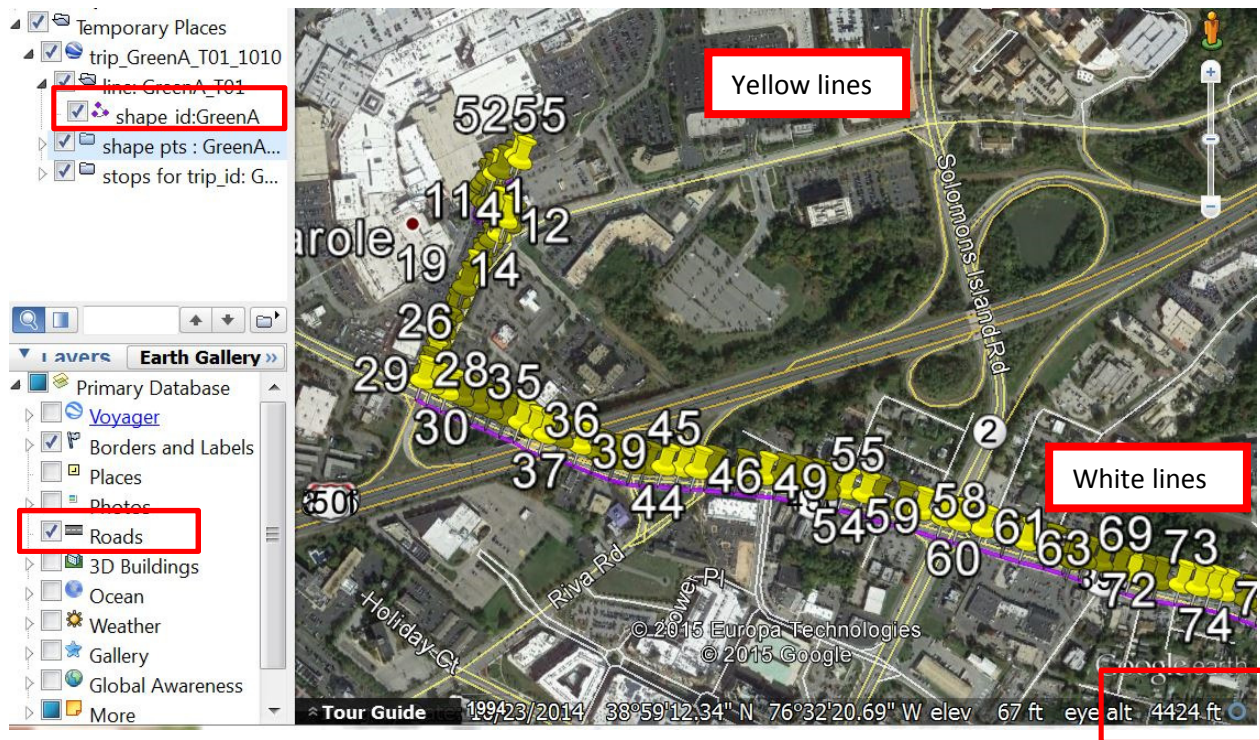
Uncheck the Shapes Pts box to declutter the map.



**** To edit the map, Right click on the Shapes_id line.** Click on Properties, near the bottom of the menu. This opens a pop up menu. Move it to the side, if necessary so you can see the map to edit.

Make necessary edits on the map.

Follow the Yellow or White centerline of the road (do not trace the sidewalk). The centerline can be seen around 4000 ft altitude



Use the arrow and zoom tools (upper right corner of map) to move around the map.

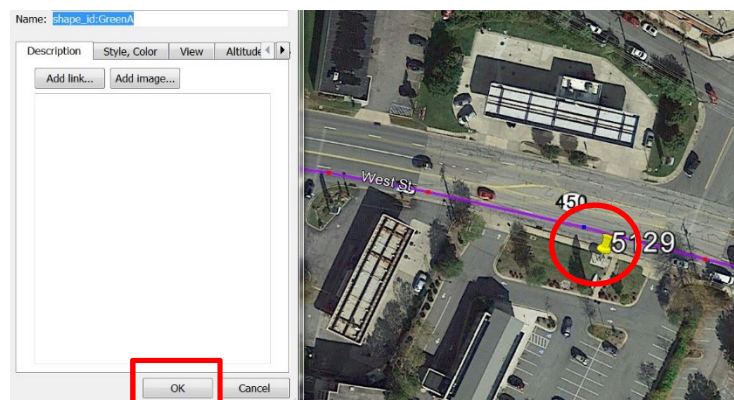
You may alternatively use the wheel on your mouse (if you have one) to zoom in & zoom out

Right click to undo or choose cancel (vs. OK & save).

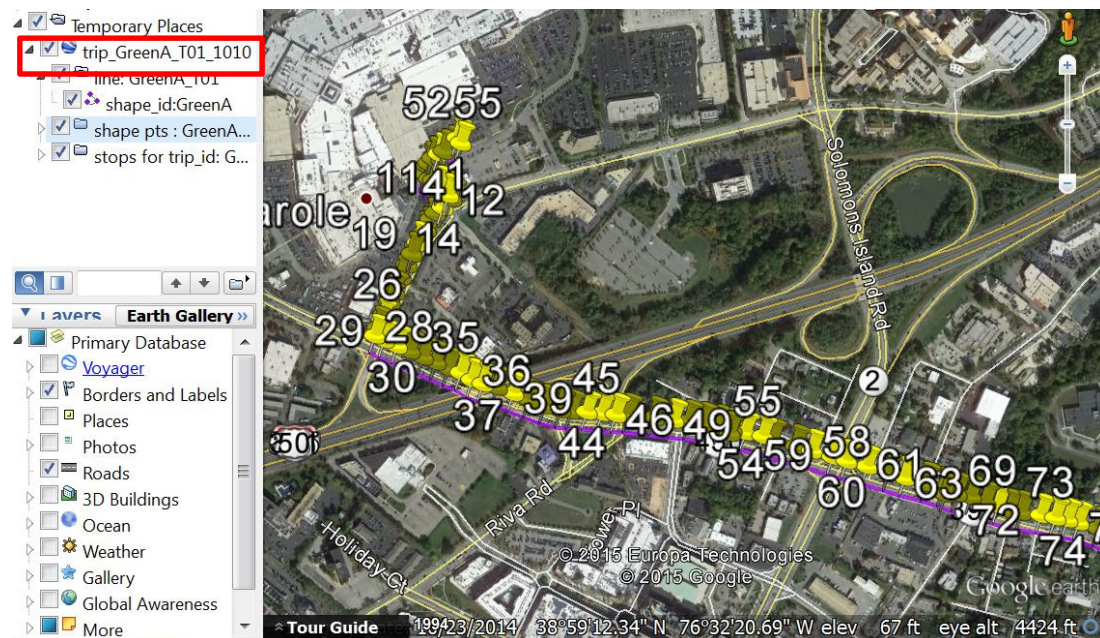


Make sure there is a red dot (or blue if you are moving or editing the dot along the purple shape line) near and ahead of every bus stop (marked with a yellow pin.)

When done editing, click OK on the Properties pop up.



Right click on the “globe” under Temporary Places. Copy.



Go back to ImportExport workbook. Go to Shapes tab.

Scroll down to find a blank row.

Double click in column A, Shapes ID. Menu pops up.

Choose 7 and hit OK

Type in the same name you used earlier.

Replace? YES

Delete? OK

Go to the Trips tab. Double click on the Shapes ID. Menu pops up.

Yes?, OK.

2, OK.

Done, OK.

This will open up a list of messages in the Stop Times tab. If there are any too far from a bus stop, there will be an error message of “more than 30”. Make note of the bus stop numbers and return to Google Earth to adjust. Again, make sure there is a dot near every bus stop. Repeat from ** until you get no error messages of >50.

Save the worksheet!

Go back to Google Earth. Right click on Temporary Places. Delete contents. Yes.

Go back to Google My Maps. Right click on 3 dots again and delete the map so you can start the next route.

Repeat this section until all the routes are done.

ADDING THE (New) SHAPE_ID INTO SCHEDULES WORKBOOK

Open Schedules Worksheet.

Go to schedules (V2 or V3) tab

Go to the line at the top of the first route that show Bus Route:Name.

Scroll over to the columns T01, T02.

	G	H	I	J	K	L	M	N	O	P	Q	R
	stop_desc	stop_headsign	pickup_type	drop_off_type	timed_stop	wait_time	timepoint	wheelchair_accessible	bikes_allowed	T01	T02	T03
2								1	1	GreenA	GreenA	GreenA
3	Westfield Mall	Eastport Shop. Ctr.			1		1			12:30:00	13:00:00	13:30:00
4	West St. at Somerville	Eastport Shop. Ctr.			1		1			12:34:00	13:04:00	13:34:00
5	West St. opp. Library	Eastport Shop. Ctr.			1		1			12:38:00	13:08:00	13:38:00
6	West St. at Parole St.	Eastport Shop. Ctr.								*	*	*
7	West St. at Admiral Dr.	Eastport Shop. Ctr.								*	*	*
8	West St. at Legion Ave.	Eastport Shop. Ctr.								*	*	*
9	West St. at Ames Court Blvd	Eastport Shop. Ctr.								*	*	*

In the T01 column, type in the name of the Shape ID. For example, GreenA or 18ob. Copy the name across the row. However, if there is a different route name for some trips, you can type in the unique Shape ID name. Continue down through all the routes, doing this for each one.

GENERATE SCHEDULES AND GTFS:

Schedules Workbook: Go to Notes tab. (Make sure contents are “enabled” at top of worksheet.)

Click on Clear. Done, OK.

Click on Generate. Done, OK.

Go to the Stop_Times tab (green). Put cursor in top left corner (A1). Right click. Copy.

Go to the Stop_Times tab (green) in the ImportExport Workbook. Put cursor in top left corner (A1).

Right click. Paste.

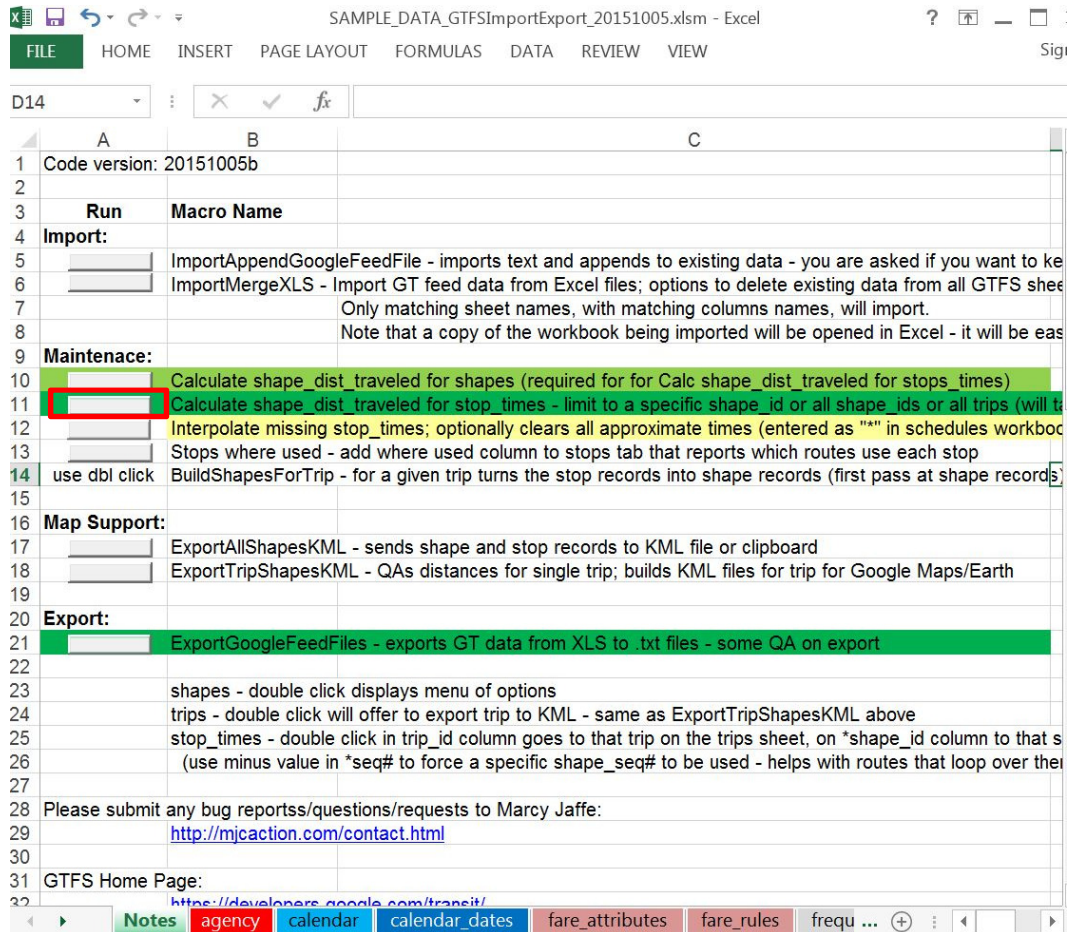
Go back to Schedules Worksheet

Go to the Trips tab (purple). Put cursor in top left corner (A1). Right click. Copy.

Go to the Trips tab (purple) in the ImportExport Workbook. Put cursor in top left corner (A1). Right click. Paste.

Save both worksheets.

ImportExport Notes tab> Test all shapes > Calculate shape_dist_traveled > select "*" and enter 1



Look at stop_times tab, resolve any issues

When all data issues are resolved, export to zip file and test with feed validator tools.

CREATE SHAPE IN GTFS BUILDER

SUMMARY OF STEPS

1. In Chrome or Firefox log-in to your Google Account
2. Open MyMaps: Create new Map (Sketch the start/end with lat/long or places)
3. Edit MyMaps (Pull on blue line) so sketch is nearly exact routing
4. Create KML (three dots) select > Directions (Downloads KML file)
5. Double click on downloaded KML, opens in Google Earth
6. Right click on Globe >> COPY
7. Open ImportExport > Shapes Tab > Empty Row >>PASTE
8. Name the shape (shape_id), e.g. GreenA or 18ob (Data fills down)
9. ImportExport > Trips Tab > Enter shape_id for row or trip in that direction
10. Double click on row with shape_id
11. Google Earth > Temporary Places > Delete any content (right click > Delete)
12. Google Earth > Temporary Places > Paste
13. Open up Globe > Open up line > right click shape_id > (bottom) select properties
14. Edit the purple line; add or move shape points to new roads and to assign one "dot" to each stop along the route > OK (saves these edits)
15. Right click on Temporary Places > Copy
16. Open ImportExport > Shapes (tab) > empty row > double click
17. Pop-up > Choose 7 and hit OK > Type in the same name you used earlier > Replace? YES> Delete? OK
18. Test trips again> ImportExport Trips (tab) > double click on row with shape_id
19. ImportExport stop_times (tab) > are all stops less than 50 meters from a dot along the shape, if not go to step 12 and edit the line again in Google Earth and complete steps 13-18 until all data is less than 50 meters
20. Schedules workbook: Assign the shape_id to top of column (T01, T02)
21. Schedules workbook: Notes tab > clear > generate stop_times and trips
22. Copy stop_times and trips to tabs with the same names in ImportExport Workbook
23. ImportExport workbook: Notes tab> Test all shapes > Calculate shape_dist_traveled > select "*" and enter 1
24. Resolve any shapes issues (missing shapes, stop too far from the shape)
25. Generate/Export GTFS & test with feed validator