Introduction - This document explains how to use Google Maps (GM), and CQ/X to develop county line crossing files for use in CQ/X using the Google Path KML file method.

In this method, which was first developed and supported in CQ/X version 1.7.9.1 the user defines a route on Google Maps and then, using a menu item on the Google Map, a KML file containing the lat/lon values describing the path of the route is downloaded. The downloaded file is then submitted to CQ/X which refines the lat/lon values in order to analyze the route, determine the county line crossing points, and build the necessary crossing file and other data. Each step is very simple requiring only moving and saving of files with the only additional requirement being the development of some skill at using Google Maps and tweaking/editing the map to make sure that the resulting path goes where you plan to go.

The Google Path Process Steps - After developing a general idea of where you want to go you need to define that plan to Google Maps. For a multi-day trip the process is usually more manageable if it is divided into separate processes for each day. Also it is useful to create folders that will contain the files generated for each day of your trip.

Step 1: Startup CQ/X and select the desired QSO party. In drawing your route on Google Maps it will be useful to have an overlay of the counties in order to get a visual idea of which counties your route will cover and where there may be short detours that enable coverage of additional counties. Use CQ/X menu item **QPTools | Route Planning Using Google Maps | Generate a County Overlay for Google Maps** and follow the instructions on the resulting dialog to create an overlay KML file. Save the file to the appropriate folder and with a name that is easy to remember – a name containing "Overlay" would be a good idea.

Step 2: Log into your Google account, select the Maps option, then select Your Places, click on Maps, and then click on the Create Map button. Provide some meaningful name and description of your map. Click on the "Import" link under "Untitled Layer" and use the resulting dialog to specify the overlay KML from Step 1 to upload as a layer. When the upload is finished the GM will have a layer containing the county outlines. Note that this layer can be turned on/off using the check box next to the name of the layer. If desired you may want to name the layer.

Step 3: It is useful to pin down starting and ending destinations and possibly a few in between. To do this click on the GM button that looks like a branching road . This will result in a pair of edit boxes in which to define the starting and ending points on another layer. When this is done a possible path between the points will be drawn on the map. The path will probably need some modification to cover the counties of interest. To modify the route turn off the county overlay and hover over the existing route until it is highlighted by the Google server. Once a small bubble appears click on it and drag the map as desired and then click off the map to save the change and prepare for the next one. You might want to check your change by turning back on the county overlay. Repeat this process until you are

satisfied that your route covers the desired counties and takes advantage of any short detours.

Step 4: Once satisfied with your route use the GM menu item to the right of the map title and select the **Export to KML/KMZ** option. In the resulting dialog choose the option to download the Directions part of the map as a KML file. Save the KML file in the folder you are using for this part of the trip and it is a good idea to include "LatLon" as part of the name to remind you that the file contains latitude and longitude values that describe your route.

Step 5: Now in CQ/X click on the menu item **QP Tools | Route Planning Using Google Maps | Build Plan Using Google Map Data** to open the Finding County Line Crossings dialog shown below. On that dialog browse to the file saved in the previous step to specify that file as the Path KML File and use the other browse button to specify the file to which the crossing information will be written – it is a good idea to include "CountyCrossings" or something similar in the name of the file. Once those files are specified click on the Process button to begin the county line determination process. The status box will indicate the latest crossing found and the time elapsed since the start of the process.
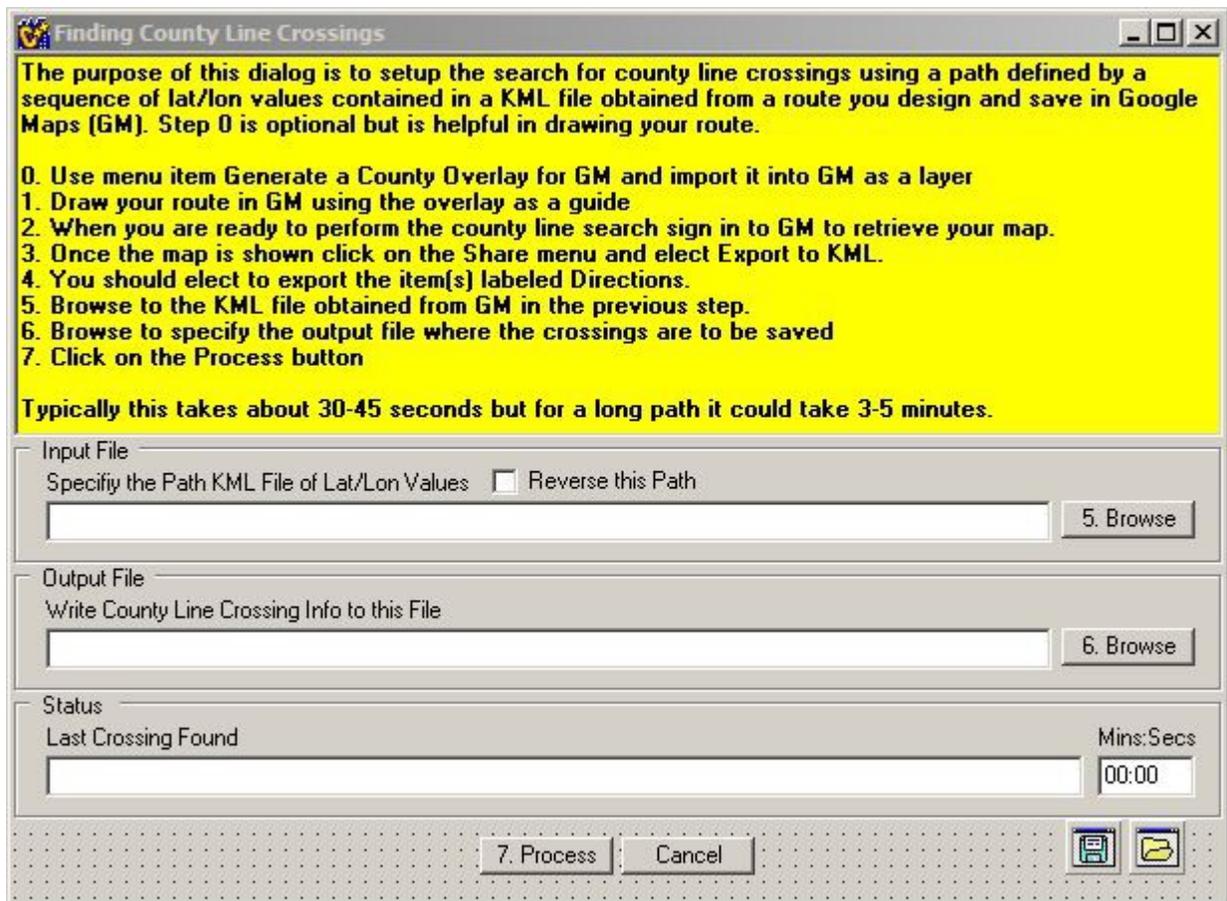
Step 6: Depending on the complexity/length of the route and the speed of your computer the processing in Step 5 could take 20-30 seconds or perhaps up to 5minutes or more if it is a very long route. When the process completes the following dialog showing the crossings will appear. The dialog shows the sequence of county line crossings with each crossing having a From County, a To County, a Latitude and Longitude, and a Miles to Next. Note that when using the Google Map Path method the Miles to Next is the actual driving distance from one crossing to the next. A highway label can also be included but this information must be entered manually and in general is not required.

Step 7(Optional): If you have a copy of Streets & Trips and have drawn your route on S&T as a check of your Google Map route it is a good idea to import the crossings determined in Steps 5-6 into S&T. To do this click on the button labeled "Export Crossings as CSV for S/T Notes" on the above crossings dialog. Then go to the S&T map and use the menu item **Data | Import Data Wizard** to import the

crossings. Review the location of the crossings to see if there are any that are not on the S&T route line and change either the S&T map or the Google Map to make them in agreement. Assuming you are using S&T during your trip you might be referring to it from time to time and it will be confusing if route in CQ/X and the one in S&T are different.

Step 8(Optional): Another export option is to "Export Crossings as CSV for CQ/X Waypoints" which will allow you to import the crossings as waypoints in CQ/X. This can be handy in being able to monitor the distance to each of the crossings.

Step 9: Once you have all the desired exports from the Found Crossings Dialog click on Apply to bring the route defined by the KML into CQ/X for real-time use. Also be sure to save the KML file. This file will serve as the source file from which to define your route to CQ/X as explained in the following section.

Multiple-Day Operational Considerations - As mentioned at the beginning it is often useful to split a multi-day route into a set of maps with a separate map for each day. In that case you will need to perform the above steps for each day and after completing Step 9 for each day you will have an associated KML file. You should save those KML files in a common directory and each with a name that is indicative of the day to which it applies. For example lets say we have KMLs for our Saturday and Sunday routes for the 2017 Florida QSO Party. We might name the files

> FQP-2017-SAT-LatLon.kml
> FQP-2017-SUN-LatLon.kml

When starting up CQ/X at the start of Saturday (or the night before in preparation for Saturday) you would use the file FQP-2017-SAT-LatLon.kml and the menu item **QP Tools | Route Planning Using Google Maps | Build Plan Using Google Map Data** to initialize the route information for Saturday. If during Saturday you shut down CQ/X, on restart it will not be necessary to redo the Build Plan Using Google Map Data as that information will be automatically reloaded unless you tell CQ/X to build the route from a different KML.

Now on Sunday morning at the start (or after the Saturday session is over and in preparation for Sunday) you would use the file FQP-2017-SUN-LatLon.kml and the menu item **QP Tools | Route Planning Using Google Maps | Build Plan Using Google Map Data** to initialize the route information for Sunday. If during Sunday you shut down CQ/X, on restart it will not be necessary to redo the Build Plan Using a Google Map as that information will be automatically reloaded unless you tell CQ/X to build the route from a different KML.

In summary the main point here is that the KML files downloaded from Google Maps contain the information required to construct your county line crossings and should be viewed as the starting point

from which to build your crossings for each day. For that reason they should be carefully named and saved in a location that you can remember and easily access. Be sure to save them on a drive or memory stick that you will be taking with you on your trip – they won't do you much good if they are back at the home QTH and you are somewhere in the boonies!