

**Introduction** - This document explains how to use Google Maps to develop county line crossing files for use in CQ/X. The following two methods are described:

**Google Path Method.** In this method, which was first supported in CQ/X version 1.7.9.1 the user draws a Google Map representation of the planned route. Using a “KML” link on the Google Map download a file containing the lat/lon values describing the path of the route and submit it to CQ/X which then analyzes the route, determines the county line crossing points, and builds the necessary crossing file and other data. This is a very simple method enabling easy modification of the route with the only requirement being the development of some skill at drawing the map and making sure that the resulting path goes where you intend to go.

**Google Map Overlay Method.** In this method the State/Regional county overlays and associated Google maps available on the [Tools page of the CQ/X website](#) are used to develop the county line crossing files for use in CQ/X. This method requires the user to enable a tool from Google's Maps Lab and using the tool to pick off the lat/lon of each crossing point and then copy and paste the latitude and longitude values into a crossing file.

The county line crossing file is a simple space-delimited text file listing, in the order of travel, each of the county line crossings. The format of each row of the crossing file used in the Google Path Method is:

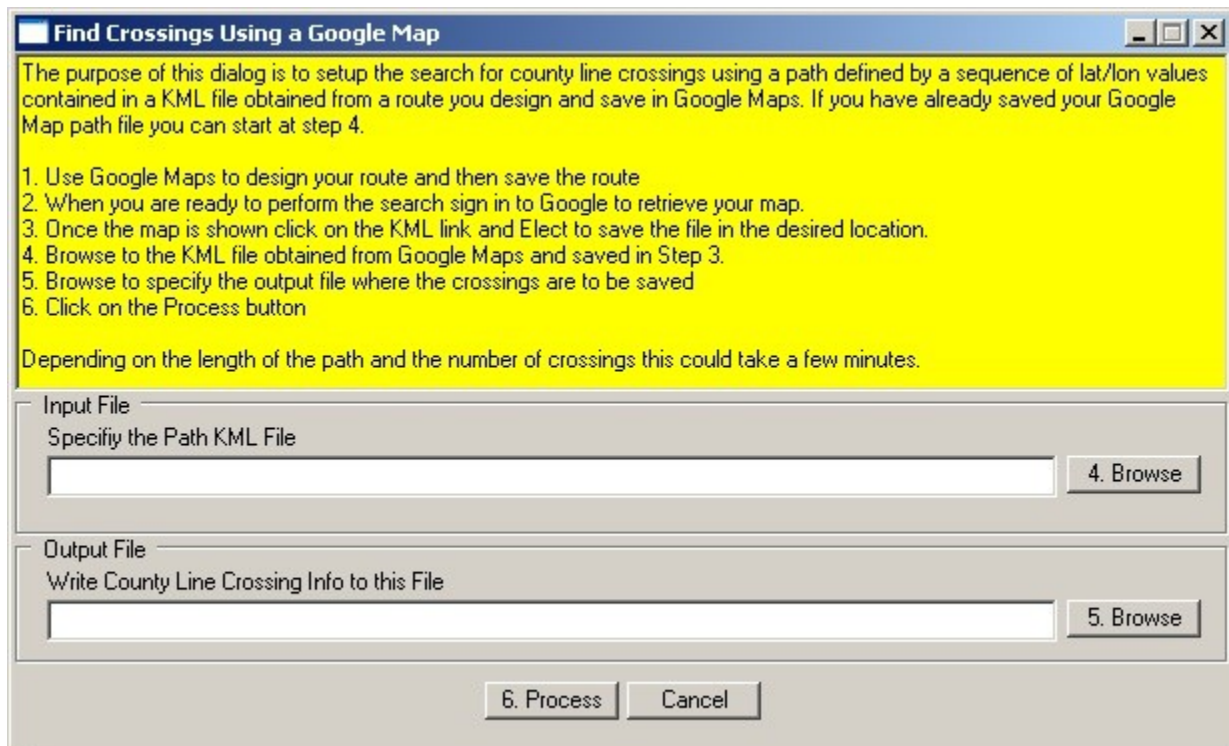
FromCounty-ToCounty HwyLabel Latitude Longitude DistanceFromStart

The only difference in the file used in the Google Map Overlay Method is that the DistanceFromStart item is not included. Since the file is space-delimited there should be no spaces within any of the items. So, for example, the county Red River should be entered as RedRiver and a highway such as US 183 should be entered as US183. Highway labels are more for the human user but they do serve to uniquely identify crossings if there are multiple exits from a county. Their only role is in displaying information to the user in order to distinguish two crossings involving the same two counties. In the crossing file north latitude is entered as a positive value and west longitude is entered as a negative value. In the Google Path Method all of these requirements are handled for you by the software except that the method is not able to provide the Highway identifier.

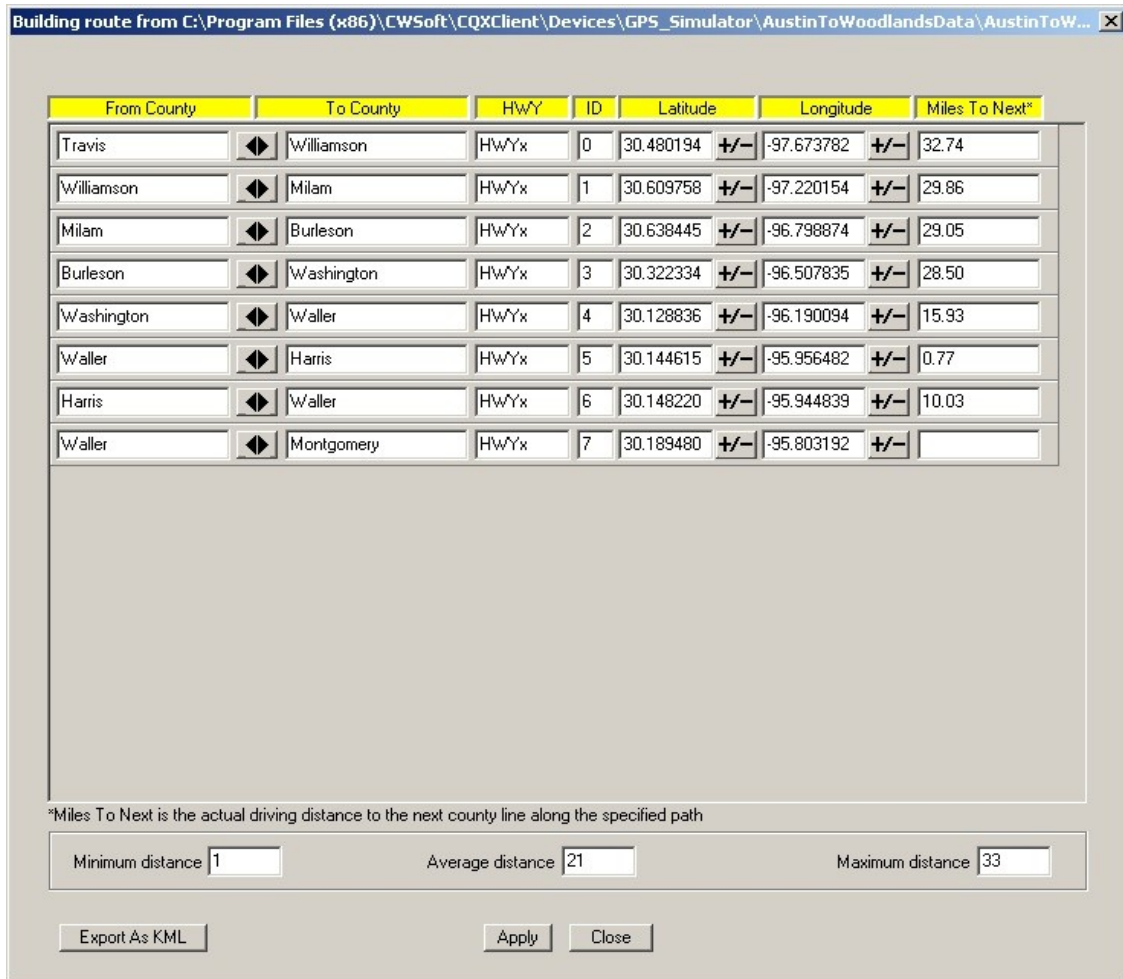
The crossing file could also be built using a mapping program such as Streets and Trips and that is the method I used for several years. The tedious part of the S&T approach is locating the crossing point and then typing in the latitude and longitude of the point to five or six decimal places. The Google maps approaches described below greatly simplify the process.

**The Google Path Process** - After developing a general idea of where you want to go you need to draw that plan on a Google Map and then download a file of latitude and longitude values that describe the route. Here's how you do that.

- 1: The document [QSO Party Route Definition](#) available on the [documentation page of the CQ/X website](#) describes the steps necessary for drawing your route plan on a Google Map. Please follow the steps in that document to create and save a map of your route.
2. Once you have completed step 1 and are ready to process your route plan make sure that in CQ/X you have selected the QSO party associated with the route. Then select the menu item **QPTools | Build Plan Using a Google Map**. This will open the following dialog



3. When you are ready to perform the process return to Google and sign in to retrieve your map.
4. Once the map is shown click on the “KML” link and elect to save the path file in a desired location on your desktop
5. Browse to the path KML file obtained from Google Maps and saved in Step 4.
6. Browse to specify the output file where you want to store your crossings
7. Click on the Process button
8. In a few seconds the following dialog listing the found county line crossings will appear.



Note that the Miles to Next shown in the rightmost column contains the actual driving distances from one county line to the next and the minimum, average, and maximum distances are also based on driving distances. Also note the Highway column (HWY) has been filled in with place holder values since the downloaded KML file does not contain highway information. If you require an indication of the actual highway involved in each crossing you can edit the HWY values and the crossing file specified in step 6 will be modified to include the highway information. Do not include any spaces in the highway notation.

The contents of the refined path file are not shown. This file is a refined version of the lat/lon information obtained from the KML file. The file contains lat/lon points spaced along the path so that the distance between points is no more than .25 miles, an indication of the distance of each point from the start and the results of county detection at each of the lat/lon points.

If desired from the above dialog you can also export the results as a KML file that will contain an

overlay of each of the counties along with a placemaker at each of the found county line crossings. If desired post this file to your website and ask Google Maps to find it and you can then examine how accurately the county lines have been located. Most of the crossings will be within a few hundred yards of the actual county line -- close enough for use in CQ/X distance/time to next calculations.

When you click the Apply button on the above dialog any modifications made to the crossing information will be saved in the same file -- the one from step 6-- and is ready to be used in actual operation to calculate distances to next county and to waypoints. On a restart of the program for the same QSO party you will have the option of reloading the crossing information produced by the above steps. It will only be necessary to repeat the above steps if you modify your route.

During operation the lat/lon data from the GPS is used to determine where you are along the path and from that how far it is to the next crossing and to specified waypoints. When you define the waypoints they are automatically bound to the path. Additional details regarding the operational aspects of this approach may be found in the program's help file/user manual.

**The Google Map Overlay Process** – To use the Google Map Overlay approach you should first develop a route plan. Once you have done that here are the steps for building the crossing file.

1. Create a text file listing each of the county line crossings in the order of travel including only the county names and the Highway label. When you finish this step you will have a file like the following example which is part of the crossing file for a trip in the Oklahoma QSO Party
  - Carter-Jefferson US70
  - Jefferson-Stephens US81
  - Stephens-Grady US81
  - Grady-Caddo US277
  - Caddo-Comanche US277
  - Comanche-Cotton US44
  - Cotton-Tillman SR5
  - Tillman-Jackson SR5
  - Jackson-Greer US283
  - Greer-Kiowa SR44
  - Kiowa-Greer SR44
  - Greer-Harmon SR9
  - Harmon-Beckham SR30
  - Beckham-RogerMills US283
  - RogerMills-Beckham US283
  - Beckham-Washita I40E
  - Washita-Custer I40E

Custer-Dewey SR47  
Dewey-Major US183  
Major-Woodward US270  
Woodward-Major US270  
Major-Woods US281  
Woods-Alfalfa SR45  
Alfalfa-Grant US64  
Grant-Garfield US64

Note that if you have a situation where you enter a county and then leave it through the same crossing be sure to include both directions in the file. For example see the Greer-Kiowa and Kiowa-Greer entries in the above listing. In this case we came out of Greer on a little jog in the route to pick up Kiowa, worked the pileup sitting just across the line in Kiowa, and then returned to Greer along the same route.

2. Now you're ready to add the latitude and longitude information. To do this click on the desired state/region link on the [County Line Crossing Tool page of the CQ/X website](#). This will bring up a container page containing a small Google map of the state/region overlaid with the county boundaries. Clicking on the link labeled **View a List of Counties and an Interactive Map** will give you access to the map you'll use in the next step.
3. When you open up Google maps in your browser you should see a small gear icon in the upper right hand corner which is used to enable various options including a set of options called Maps Labs. Click on that option and you will find several options which you can enable. For our purposes the one you want to enable is "**LatLng Marker**". This tool adds an option to the context menu that lets you drop a mini marker showing the latlng of the position that the cursor was pointing at when the context menu was evoked
4. Once you have the LatLng Marker tool enabled traverse around your route placing the LatLng Markers at each of the county line crossing points. Then you can highlight each of the markers and copy and paste the lat/lon values into your crossing file.
5. As a final step you should validate the file by importing it into CQ/X using the Build Route from Crossings option under the QP Tools menu. This will flag any errors such as misspelled county names, improper sequence of counties, bad lat/lon.