

Introduction - This document describes how to post a route plan using a KML file and the Google Maps engine. The use of KML files described here is probably the most basic possible use of these files and Google Maps, barely scratching the surface of their capabilities. Nonetheless it's an interesting way to distribute a route plan for a QSO party. Here's an overview of what you need to do:

1. Describe your route in any of several ways including as a series of counties, as a series of latitude and longitude points describing the county line crossings, and/or as a route trace to be overlaid on the counties.
2. Add some description for each county and/or point that tells the viewer what that item represents
3. Package this information up in a KML file.
4. Place the KML file on a web server to make it available to Google Maps.
5. Copy the URL for the KML file into the Google Maps search box.
6. When Google Maps locates the KML file it will present the map along with a link for viewing the map on a web page and a window containing the html required to embed the map in a web page
7. Finally you paste the HTML into the body of the web page that is going to contain the map and place the web page on the server.

Here are some details about the above process.

1.0 Constructing a Route

There are several ways you could choose to describe your planned route. In the following it is assumed that you will be using CQ/X to build the KML file and, for that reason, discussion will focus on the following methods, all available using CQ/X:

- Describe the route as a simple sequence of counties
- Describe the route as a trace of the roads to be taken overlaying the sequence of counties
- Describe the route as a series of county line crossings overlaying the sequence of counties

1.1 Describing the Route Using a Simple Sequence of Counties

In order to post your route as a simple sequence of counties use the menu item **QP Tools | Plan Route**. On the resulting dialog choose the first county and then follow with the counties in the order in which they will be covered. Once the list is complete click on the button labeled **Export As KML**. In the resulting dialog insert the call sign to be used, select whether the route is Saturday Only, Sunday Only, or Both Days. If the route is for Both Days you will also need to select Sunday's starting county and indicate whether that county will also be the last Saturday county. Once those inputs have been provided click on the button labeled **Prepare KML File**. After review of the KML file you are ready to place the file on a web server as described in section 2.0 below.

1.2 Describing the Route As a Trace of the Roads to be Taken

In order to describe your route as a trace of the roads to be taken you should start with a trip planning program such as MS Streets & Trips. After developing a general idea of where you want to go you need to define that plan in S&T – a 2010 or later version of S&T is required in order to perform the GPX export in Step 1 below. In the following it will be assumed that you have started up CQ/X and have started the desired QSO party. Also for a multi-day trip the process is usually more manageable if it is separated into separate processes for each day.

Step 1: Define your route for the day in S&T and use the S&T menu item **Data | Export to GPX File** to export the route as a GPX file.

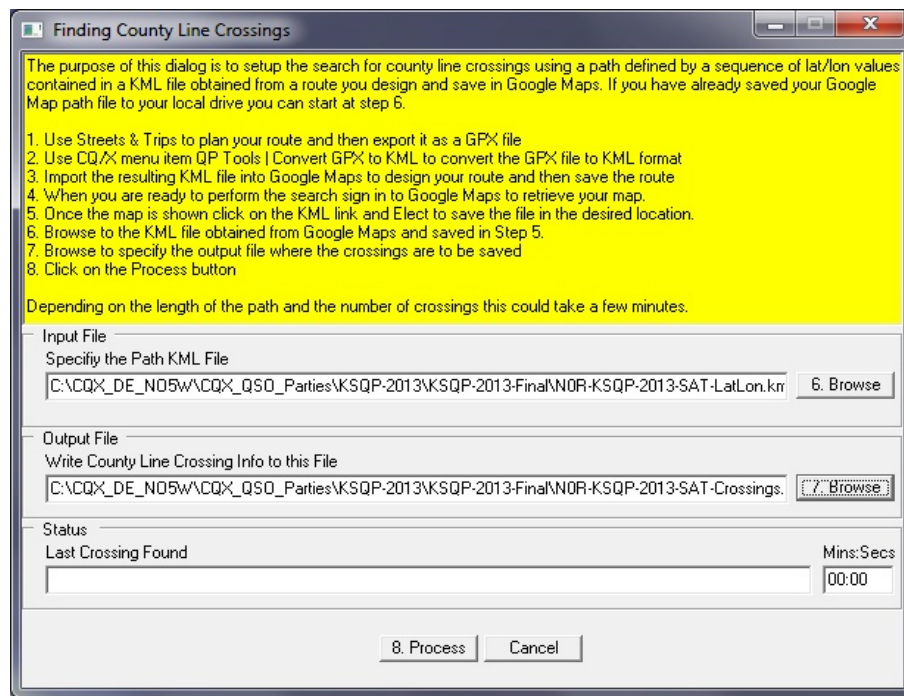
Step 2: In CQ/X use the menu item **QP Tools | Convert GPX to KML** to activate the conversion dialog. On that dialog browse to the GPX file from Step 1 and select it as the GPX source file. Specify a file into which to save the KML data and then click on the Convert button to perform the conversion.

Step 3: Now log into your Google account, select the Maps option, then select My Places and click on the Create Map button. Provide some meaningful name and description of your map. Click on the “Import” link to the left of the Done/Save/Edit buttons and use the resulting dialog to specify to upload the file that resulted from the conversion in Step 2. When the upload is finished a multi-segment line will be drawn connecting the lat/lon points contained in the KML file. In Edit mode right click on the line and select “Turn On Snap to Roads”. Click Done to save the map.

Step 4: After the previous step you should have a red Edit button. Click on the Edit button and review the map making sure it follows the same roads as your source S&T map. If it does not follow the same roads click on the map and drag it to modify the route. When satisfied with the map click Done. You should then see a link labeled “KML” on the left hand panel of the map. If no such link appears exit Google Maps and log back in.

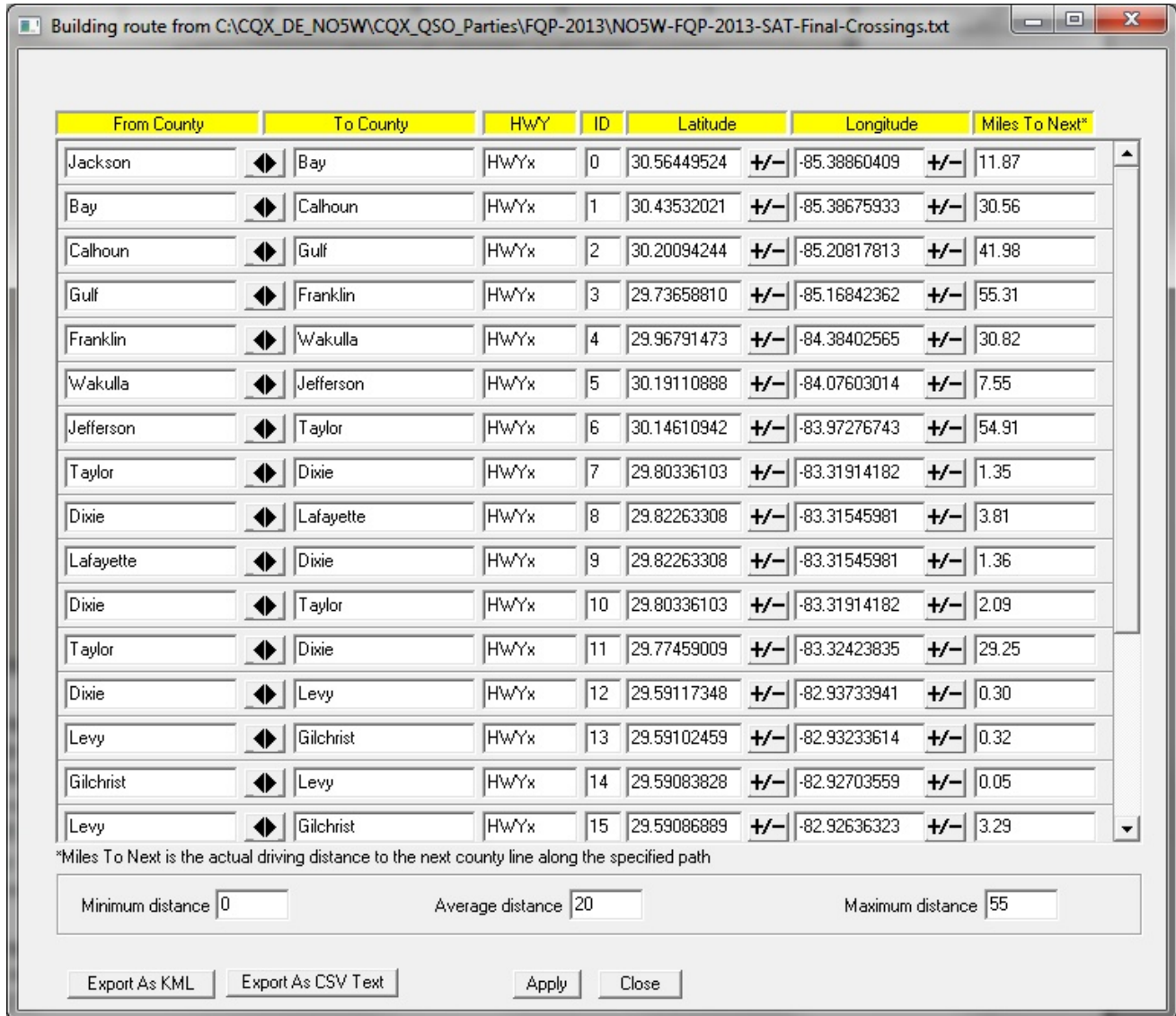
Step 5: After logging back into GM select My Places and then select the map from Step 4. At that point you should see a link labeled “KML” and next to it a circular blue and white icon. Click on the KML link and elect to save the file. This is a file of latitude and longitude values that describe the route and which you will use in the next step to find the county line crossings. Before leaving GM click on the circular icon and elect to save that file. This is a small file that contains network link information that, once it is embedded in a KML file, will allow a Google Maps server to draw the trace of the route.

Step 6: Click on the CQ/X menu item **QP Tools | Build Plan Using a Google Map** to open the Find Crossings Using a Google Map 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 you want to write the crossing information. Once those files are specified click on the Process button to begin the county line determination process. After a few seconds the status box will begin indicating the latest crossing found and the time required.



Step 7: Depending on the complexity/length of the route the processing in Step 6 could take 20-30 seconds or perhaps up to a minute 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 8: As a check of your Google Map route it is a good idea to import the crossings determined in Step 7 back into S&T. To do this click on the button labeled “Export as CSV Text” 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. If any “off route” crossings are found you will need to return to the Google Map and Edit the map to bring it in line with the S&T map. Then repeat Steps 5-8 until the S&T map and the Google map are in agreement. [In a small number of cases you might decide that the route proposed by Google is better and decide to modify the S&T map to agree with the Google map].

Step 9: Once you are satisfied with the Google map and the associated KML file that you downloaded be sure to save the KML file. This file will serve as the source file from which to define your route to CQ/X and once you are underway results obtained from it will be used to display distance to next crossing as well as distance to next waypoint. Also be sure to save the file that you downloaded from Google Maps using the small circular icon as the network link contained in that file will be used to display your route on a Google Map.

Step 10: Now to develop the KML file that will be used by Google Map to post your route click on the Export As KML button on the above dialog. This will bring up the following dialog for preparing your KML file.

Setting KML File Parameters

Call Sign: Placemark Name Format: <Call> Crossing #<n>: <Contest Name>

Days of Crossings

Saturday Only Sunday Only Both Days No Days

Select Sunday's Start:

Optional Includes

County Boundary Polygons

County Line Crossing Placemarks

APRS Tracking for Call Sign:

Planned Path from File:

Planned Second Path:

For use by the QSO Party Webmaster

Stations Active in Each County from the Active Stations File

Active Stns File:

Show only those counties having no activity

Show Multiple APRS Tracks and Planned Paths

Show County Hunter Needs for Each County Based On the Needs File

Needs File:

KML Data Will Be Written To

Directory: C:\Program Files (x86)\CW\Soft\CQXClient\Maps\KSQP_MAPS\

As File:

Show KML on Completion

In this dialog insert the call sign or label to be used in naming the file, select whether the route is Saturday Only, Sunday Only, or Both Days. If the route is for Both Days you will also need to select Sunday's starting county and indicate whether that county will also be the last Saturday county. Once those inputs have been provided click on those items in the Optional

Includes group that you want to include in the KML file. To include the planned route trace(s) click on the applicable planned path boxes and then browse to the file(s) you saved when you used that small circular icon to download. If you include the planned path it is somewhat redundant to include the county line crossing placemarks but if those are desired click on that box. Finally click on the button labeled **Prepare KML File**. After review of the KML file you are ready to place the file on a web server as described in section 2.0 below.

1.3 Describe the route as a series of county line crossings overlaying the sequence of counties

In order to describe your route as a series of county line crossings overlaying the sequence of counties use the same steps as in section 1.2 being sure in Step 10 to check the boxes labeled County Boundary Polygons and County Line Crossing Placemarks.

2.0 Place the KML File on a Web Server

In order for Google Maps to access the KML file the file must be placed on some web server that is accessible by Google Maps. This could be your own personal web server or web site or, if its offered by the sponsoring organization of the QSO party, the web site of the QSO party. If the file is to reside on the sponsoring organization's website then the remaining steps will more than likely need to be performed by the web master of the site.

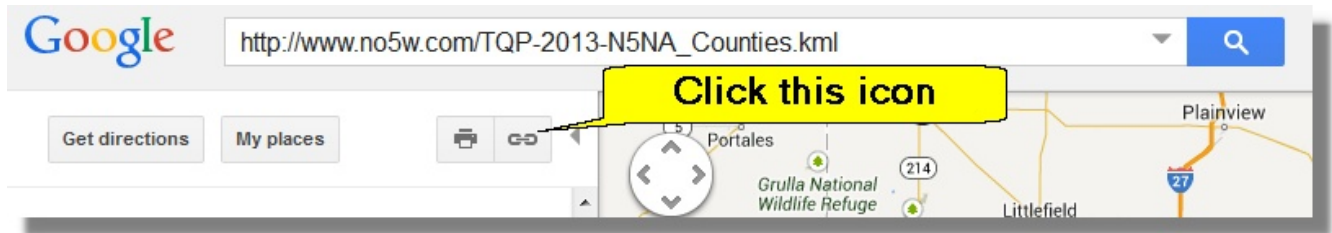
3.0 Prepare a Web Page Container

When you carry out step 4 below you will need to paste some HTML into the web page that is going to contain the map. It's a good idea to prepare the skeleton of the web page at this point. So do that using your favorite web page design tool – I use NVU which is a free web designer tool. Here's what your page skeleton may look like and will vary depending on whether you are using style sheets, and whether you include meta data at the top of the file.

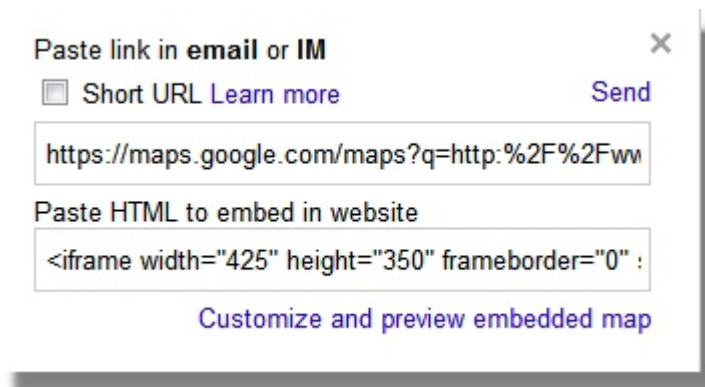
```
1. <!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
2. <html>
3. <head>
4.   <meta content="text/html; charset=ISO-8859-1"
5.   http-equiv="content-type">
6.   <link rel="stylesheet" href="CQX_StyleSheet.css"
7.   type="text/css">
8.   <title>CallSign 2007 XQP Route</title>
9.   <meta name="description"
10.  content="Map showing route of CallSign in the 2007 XXXX QSO Party.">
11.  <meta name="keywords"
12.  content="GPS, amateur, radio, contesting, mobile, QSO parties, Google maps, CallSign">
13. </head>
14. <body>
15. <h1>CallSign 2007 XQP Route</h1>
16. <!--Your HTML from Google Maps goes here-->
17. </body>
18. </html>
```

4.0 Copy URL into Google Maps Search Box

Open up your web browser and go to Google Maps. Paste the URL for the KML file that you placed on a web server into the Google Maps search box and click on the search button. Google Maps will locate the KML file and display the map for the data in the file or it will display an error message if there are problems with the file. Assuming your file has no errors there will be a link such as the following indicating information on how to embed the map into a web page.



Clicking on the icon shown above will result in a dialog of the following form



Once you click on the link labeled **Customize and preview embedded map** you'll be presented with the information shown on the screen shot below. After previewing the map to make sure it is what you were expecting find the window (3) below the map that advises to paste the HTML code into the web page that you want to contain the map.

Copy and paste this HTML to embed in your website

```
<iframe width="425" height="350" frameborder="0"
scrolling="no" marginheight="0" marginwidth="0"
src="https://maps.google.com/maps?f=q&
amp;source=s_q&hl=en&geocode=&
amp;q=http:%2F%2Fwww.no5w.com%2FTQP-
2013-N5NA_Counties.kml&aq=&
amp;sl=30.032996,-89.882563&
amp;sspn=0.471401,0.758743&ie=UTF8&
amp;t=m&z=8&output=embed"></iframe><br>
```

Be sure to highlight and copy all the HTML code provided by Google Maps into the web page container as shown at the beginning of this section. It's best to go into the source code view in your HTML development tool to ensure that you paste the code into the correct place. After the copy and paste are performed the source for your web page will look something like the figure below.

The Google Map resides in the <iframe></iframe> tag and there will be a link tag with the label View Larger Map. The data inside the iframe tag is mostly intelligible only to the Google Maps engine but there a few items you can experiment with to see their effect. The View Larger Map link can be moved around and changed in size and the label for it changed to suit your needs. Of course the final step is to check out the resulting page and once it is working to your satisfaction upload it to the web server.

```
1. <!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
2. <html>
3. <head>
4.   <meta content="text/html; charset=ISO-8859-1"
5.   http-equiv="content-type">
6.   <link rel="stylesheet" href="CQX_StyleSheet.css"
7.   type="text/css">
8.   <title>CallSign 2007 XQP Route</title>
9.   <meta name="description"
10.  content="Map showing route of CallSign in the 2007 XXXX QSO Party.">
11.   <meta name="keywords"
12.  content="GPS, amateur, radio, contesting, mobile, QSO parties, Google maps, CallSign, C
13. </head>
14. <body>
15. <h1>CallSign 2007 XQP Route</h1>
16. <!--Your HTML from Google Maps goes here-->
17. <iframe marginheight="0" marginwidth="0"
18.  src="http://maps.google.com/maps?f=q&hl=en&geocode=&q=http:%2F%2Fnc
19.  frameborder="0" height="350" scrolling="no"
20.  width="425"></iframe><br>
21. <a
22.  href="http://maps.google.com/maps?f=q&hl=en&geocode=&q=http:%2F%2Fr
23.  style="text-align: left;">View a Larger Map</a>
24. <br>
25. </body>
26. </html>
```