

## Building a Geocache Route Using GSAK and MS Streets and Trips

### Overview

As geocachers travel the country, they often lament not being able to easily identify geocaches along their route. The following outlines a procedure to generate a geocache route using Geocaching Swiss Army Knife (GSAK) and Microsoft Streets and Trips. We'll use a route from Florence, SC to downtown Columbia, SC in our example to demonstrate the process.

### Basic Procedure

We'll take the following steps in building our route:

1. Generate a GSAK database containing potential caches along the route
2. Identify starting, intermediate, and final coordinates
3. Place the coordinates in GSAK and filter the geocaches to obtain the ones of interest along our route
4. Export the waypoints for the desired caches to our GPSr and Microsoft Streets and Trips.

### Detailed Procedure

1. Begin by building a GSAK database using downloaded GPX/LOC files from geocaching.com. Typically, you'll want to set your downloaded number of caches to the maximum (500 for premium members) and the range to the maximum as well. The maximum range for premium member downloads at geocaching.com is 500 miles.

The screenshot displays the 'Pocket Query Toolbox' interface on the Geocaching.com website. On the left is a navigation menu with links like 'GETTING STARTED', 'HIDE & SEEK A CACHE', 'FIND A BENCHMARK', 'TRACK TRAVEL BUGS', 'MY ACCOUNT', 'FORUMS', 'RESOURCES', and 'CONTACT US'. Below the menu is an advertisement for becoming a Premium Member. The main content area is titled 'New Pocket Query' with a 'return to list' link. It contains several filter sections: 'Query Name' with a text box containing 'Columbia, SC'; 'Days to Generate' with checkboxes for days of the week (Mon is checked); a checkbox for 'Only run this query once'; 'Show me' with a dropdown set to '500' and the word 'caches'; an 'of' section with radio buttons for 'Any type' and 'Selected types', followed by various cache type checkboxes (Traditional, Virtual, Event, Project APE, Locationless, Earthcache, Multi-cache, Letterbox Hybrid, Unknown, Webcam, Cache In Trash Out); a 'That (and)' section with checkboxes for search criteria like 'I haven't found', 'I have found', 'I don't own', 'I own', 'Are for members only', 'Are not on my ignore list', 'Are on my watch list', 'Found in the last 7 days', 'Have not been found', 'Have Travel Bugs', 'Updated in the last 7 days', 'Is Not Active', and 'Is Active' (checked); and an 'And' section with dropdowns for 'Terrain is' and 'Difficulty is', both set to 'greater than or equal to' and '1'.

**Within** ☒ None Selected

☐ Countries

Afghanistan  
Aland Isles  
Albania  
Algeria  
American Samoa

☐ States / Provinces

Alabama  
Alaska  
Alberta  
Antwerpen  
Arizona

**From Origin** ☐ None Selected

☐ Waypoint Name

☒ Postal Code

☐ By Coordinates

Degrees and minutes (MinDec)

N

W

☐ By Coordinates

Degrees and minutes (MinDec)

N

W

Within radius of

☒ mi ☐ km

**Placed during** ☒ None Selected

☐ the last week

☐ between    and

**Output to** ☒ this account's email address

☐ alternate email

**In the format** ☒ GPS Exchange Format (\*.gpx) [details](#)

☒ Also eBook Format (for handheld devices)

☒ Compress files into \*.zip format (recommended)

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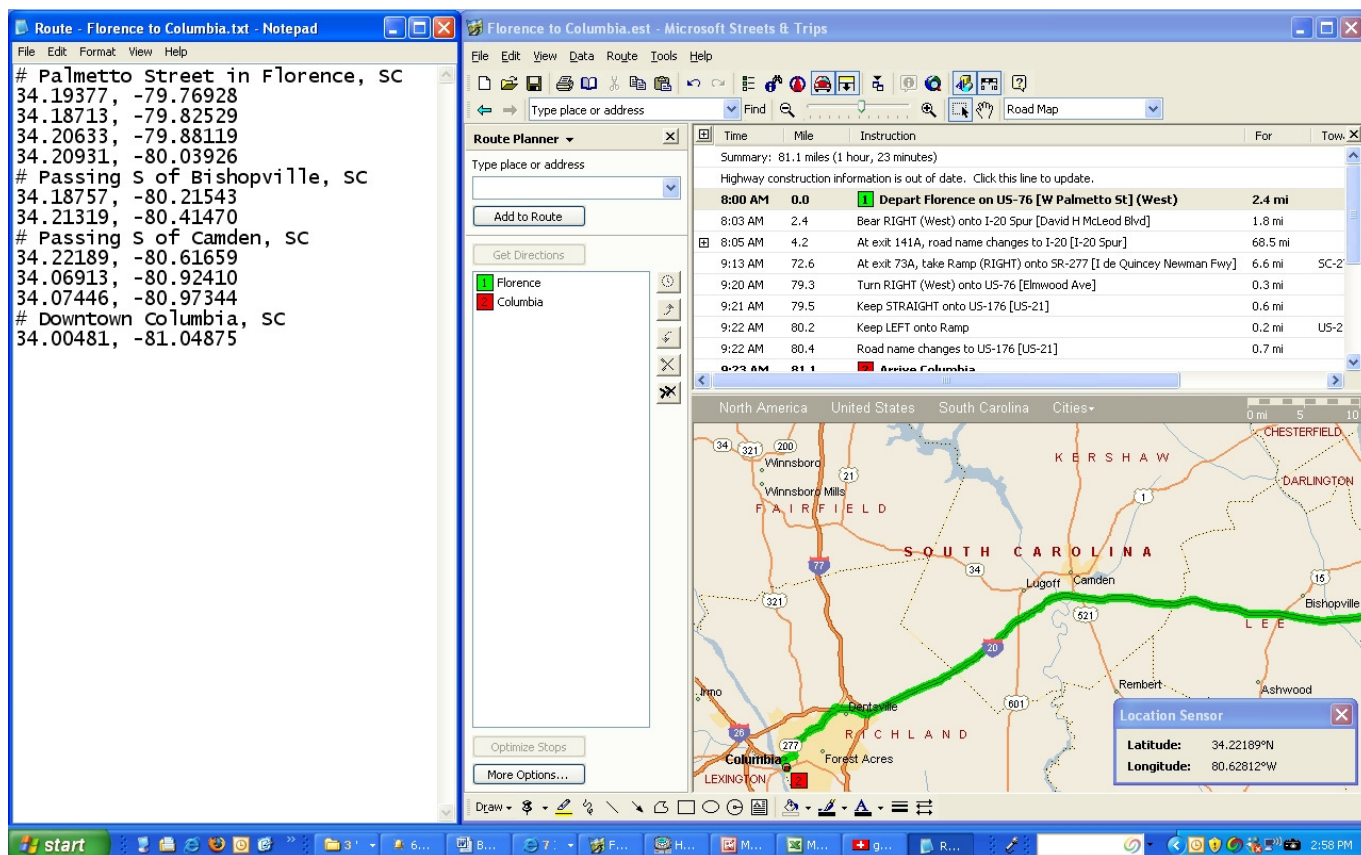
As the cache density varies from area to area, you'll need to experiment with how close you should select your geocaching.com download files. A distance of 50 miles between cities usually works fine, especially when the maximum number of caches is set at 500. Zip codes are available from the US Postal Service at <http://zip4.usps.com/zip4/welcome.jsp>. Alternatively, you can simply enter a waypoint coordinate in the middle of the desired city. These waypoint coordinates can be obtained from a number of sources, including the software that typically comes with your GPSr.

- Now that we have our database, we'll move to Microsoft Streets and Maps to identify our route coordinates. Specifically, what we want is to build a route using coordinates along the route. Unfortunately, GSAK does not currently have the capability to import a route of coordinates directly from Microsoft Streets and Maps. Instead, it will be necessary for us to manually build a "text" file and then import the text file in to GSAK. Although not automatic, the process is fortunately not too awfully cumbersome.

As you would any other trip route, add your starting and ending addresses in Microsoft Streets and Maps. If needed, refer to your Microsoft manual and/or help files for assistance on building a basic route. Press the "Get Directions" button to obtain your route. When the green route appears, select Tools and then Location Sensor. This will give you a window showing the coordinates of the current cursor location. As you move the cursor around the screen, you'll notice the coordinates will change.



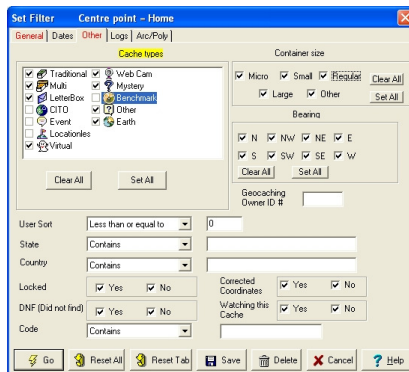
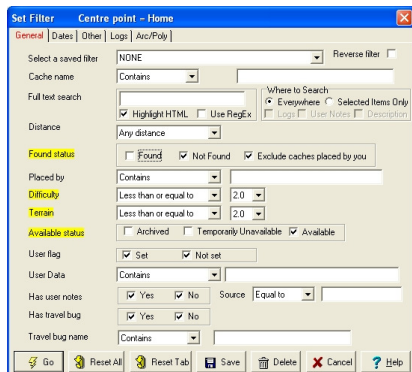
Next, open your Microsoft Notepad program. Notepad comes with Windows and can be found in the Accessories subfolder in the programs on your Start Menu. We're going to copy the route's coordinates to Notepad and ultimately to GSAK. Moving back to Microsoft Streets and Maps, begin this process by placing the cursor on the route's Starting Point and noting the coordinates. Type these coordinates in to Notepad. You may find it easier to place your Notepad window side-by-side with a Microsoft Streets and Maps window so you can see both at once. Continue moving the cursor along your route noting the coordinates in Notepad as you go.



Keep in mind, you can literally use just two points: your starting point and your end point. However, the more coordinates you take along your route will allow you to draw a tighter arc of coordinates around your route. If your total route is less than 100 miles, you can probably take as few as a half dozen points and be sufficiently accurate with a radius of say, 2 to 10 miles. However, if you want a tighter radius of 0.5 mile, you'll need to take more points. Obviously, the "straightness" of your route will also have a big impact on the number of points you should take.

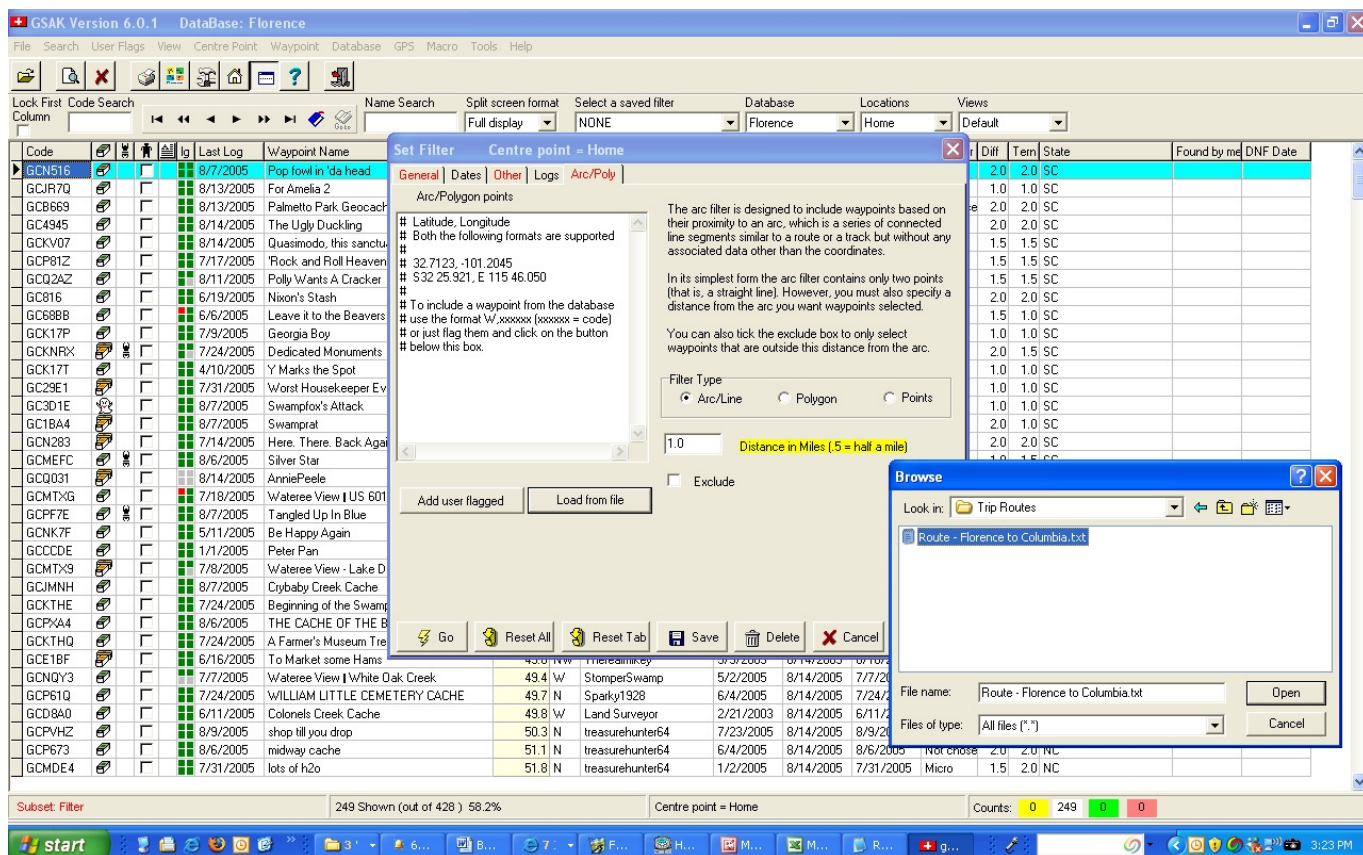
Notice that because the United States is located in the western hemisphere, we must add a minus sign before the longitude when we place it in Notepad. We've also taken the liberty of adding some comment lines. GSAK will treat anything on a line behind a # to be a comment. When you're done, save the Notepad file to your hard disk. Note the name and location as we'll be loading the file in to GSAK.

- Going back to GSAK, we're now going to load the Notepad file we just created. We'll do this as part of a GSAK database "filter." The GSAK filter icon is the "sheet of paper with a magnifying glass." The filter is reset by clicking on the red "X." The first filter screen, the general screen, allows us to set difficulty and terrain limits, as well as various other options. If you are limited by the amount of time available to cache, you might want to optionally limit your caches while traveling to a "2" difficulty and a "2" terrain. Likewise, you will probably want to limit your search to "active" caches that you have not found or own.

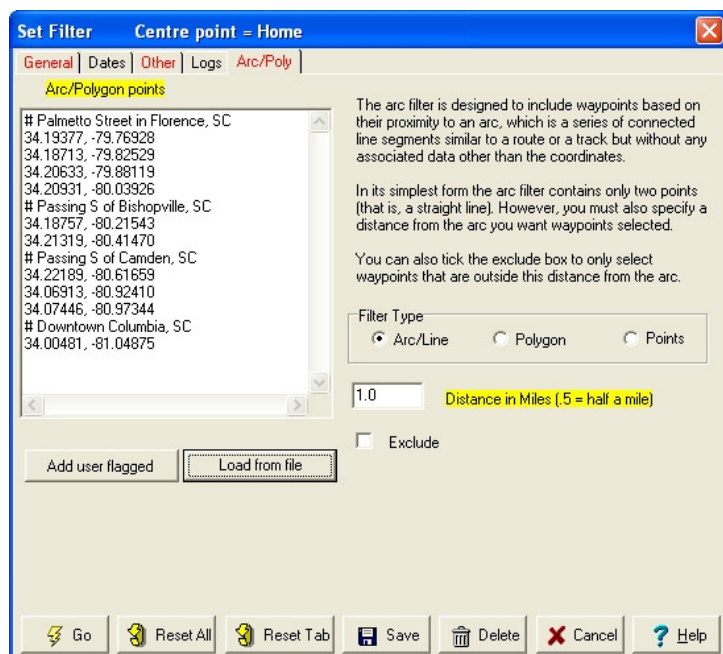


Similarly, on the "Other" tab, you will probably want to limit your search to traditional, multi, letterbox, etc. caches ... no events, locationless, or CITO.

Keep in mind, all of the options on the first several screens are personal preferences ... you can create a route of caches by leaving the GSAK defaults in place.



The key screen for generating a route is the last tab, the Arc/Poly tab shown above. Begin by determining the maximum distance from your route that you would like to cache. Enter this distance in miles ... distances in tenths of a mile are acceptable. When making a cross-country trip you may want to limit the distance to a half mile or so. If it's less than 50 miles from the start to ending point, you may want to go as great as 10 miles. Once the desired distance has been entered, click on the "Load from File" tab and a browse window will pop up as shown in the figure. Browse to the Notepad file we created earlier. In our example, the name of the file was Route – Florence to Columbia.txt. We placed it in a subfolder called Trip Routes. Use a folder and naming convention you're comfortable with.



As you can see from the figure to the left, our Notepad list of coordinates has now been pulled in to GSAK.

If you want to change any additional options, you can do so now. You can also save this filter by clicking on the Save button in the middle of the bottom row of buttons. When everything is configured the way you'd like, click on the Go button in the lower left corner. Your database will now be filtered to the criteria you've selected.

Keep in mind you must save the filter again if you make additional changes. A saved filter can be retrieved by selecting it on the first (General) tab.



Your result will be as shown below. In our example, there are 21 active caches with a 2/2 rating or less along our route between Florence and Columbia, SC. All of these caches are within 2 miles of our route (in this case I-20).

Code	Last Log	Waypoint Name	Miles	Brg	Placed By	Placed	Last GPX	Last Found	Container	Diff	Tern	State
GCPQ2D	8/14/2005	Shopping #1: It's a Bull's Eye!	3.1	E	Team Tigerz	7/14/2005	8/15/2005	8/14/2005	Micro	1.0	1.0	SC
GCPTTX	8/14/2005	Shopping #2: \$100 Store	3.9	E	Team Tigerz	7/21/2005	8/15/2005	8/14/2005	Small	1.5	1.5	SC
GCPEQ3	7/30/2005	History Series #8: The Heisman Trophy Wnrr	21.5	W	Team Tigerz	6/25/2005	8/15/2005	7/30/2005	Micro	1.0	2.0	SC
GCPF7E	8/14/2005	Tangled Up In Blue	44.3	W	StomperSwamp	6/26/2005	8/15/2005	8/14/2005	Regular	1.5	1.5	SC
GCQ4N3	8/16/2005	Camp Mudstow's Escape	58.6	W	cassiev2	8/13/2005	8/15/2005		Regular	1.5	1.5	SC
GCHND1	8/3/2005	PPM - Quinine Hill	63.8	W	jon & miki	2/9/2004	8/15/2005	8/3/2005	Micro	1.5	1.5	SC
GCJZNV	6/26/2005	Love-30	66.0	W	The Commissar	7/13/2004	8/15/2005	6/26/2005	Micro	2.0	1.5	SC
GCJZTG	6/10/2005	Gratitude Train	66.1	W	Prairie Dog 76	7/15/2004	8/15/2005	6/10/2005	Small	2.0	2.0	SC
GCA44	8/11/2005	Reach for the Stars!	66.3	W	Overcashed	1/25/2003	8/15/2005	8/11/2005	Small	1.5	1.5	SC
GCKNJH	2/26/2005	Kick The Bucket XV	66.4	W	Estevanico	9/27/2004	3/7/2005	2/26/2005	Micro	2.0	1.5	SC
GCKGRH	2/26/2005	Kick The Bucket X	66.5	W	Prairie Dog 76	9/10/2004	3/7/2005	2/26/2005	Micro	2.0	1.0	SC
GCMPWF	5/22/2005	PE USC Micro #3	66.7	W	pe4meusc	2/6/2005	5/30/2005	5/22/2005	Micro	2.0	1.0	SC
GCKGJV	3/4/2005	Kick The Bucket VI	66.7	W	The Commissar	9/8/2004	3/7/2005	3/4/2005	Micro	1.5	1.5	SC
GCNDJ2	8/2/2005	Money Money Money	66.9	W	-NIGHTHAWK-	4/13/2005	8/15/2005	8/2/2005	Small	1.5	1.5	SC
GCP1JT	8/14/2005	Vista	66.9	W	TruthWax	5/24/2005	8/15/2005	8/14/2005	Micro	2.0	1.0	SC
GCJHM8	5/29/2005	Check It Out!	67.3	W	The Commissar	5/26/2004	8/15/2005	5/29/2005	Micro	2.0	1.5	SC
GCMG1G	6/12/2005	SITTING BY THE RIVER	67.5	W	cls group	1/12/2005	8/15/2005	6/12/2005	Micro	2.0	1.5	SC
GCM2R6	5/26/2005	PEUSC Micro 1	67.6	W	pe4meusc	11/15/2004	5/30/2005	5/26/2005	Small	1.0	1.0	SC
GCD060	1/24/2005	Elmwood memorial	67.6	W	waterbaron	2/5/2003	3/7/2005	1/24/2005	Regular	2.0	1.0	SC

- To generate a GPX file containing just these caches, we go to the GSAK export menu ... i.e., click on File ... Export ... GPX/Loc File. This will give you a screen like the one shown below. Determine the File name and set the other options as desired. When you're ready, click on the Generate button. Just like before, you can save your GPX/LOC File generation options. You can now transfer your GPX/LOC file to your GPSr (click on GPS ... Send Waypoints). You can also email the GPX/LOC file to a caching partner who will be traveling with you.

**Export GPX/LOC File**

File type to generate:  
☒ GPX file  
☐ LOC file

☒ Include user notes in export.  
☒ Include GSAK extra fields in export

Waypoint name:  
 You can build the waypoint name using tags (see help)  
  Maximum characters

File name to create:  
 (Select from most recent)  
 File=Raleigh - 050812.gpx Path=C:\Documents and Settings\Mike.ZD7198CL\My Documents\Geocachi

Problem characters to remove from description:

Cache description format:

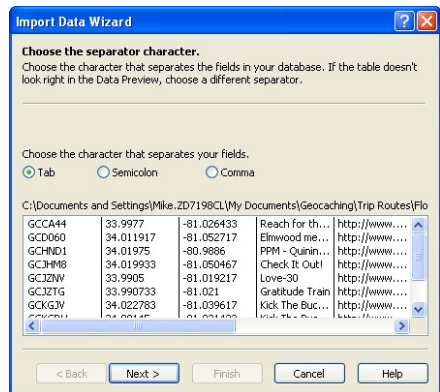
Logs:  
 Limit number of logs to export:  ☐ Always include my logs

Settings:

☐ Make symbols (<sym> element) same as last GPS send  
☐ Output original rather than corrected coordinates

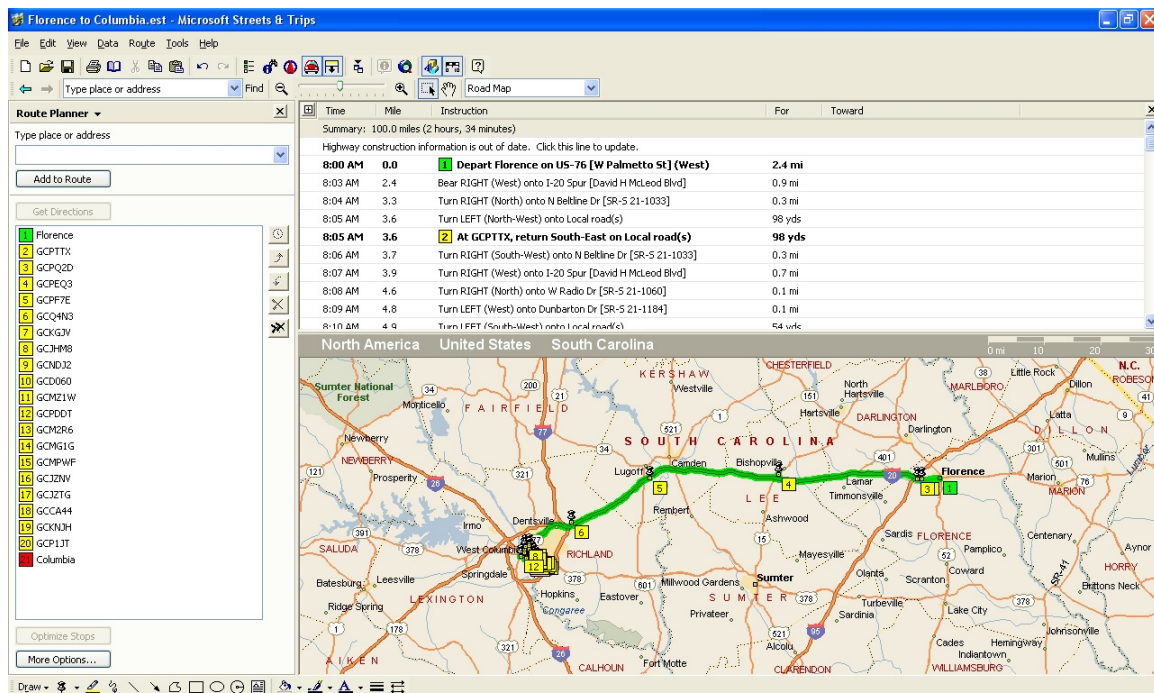
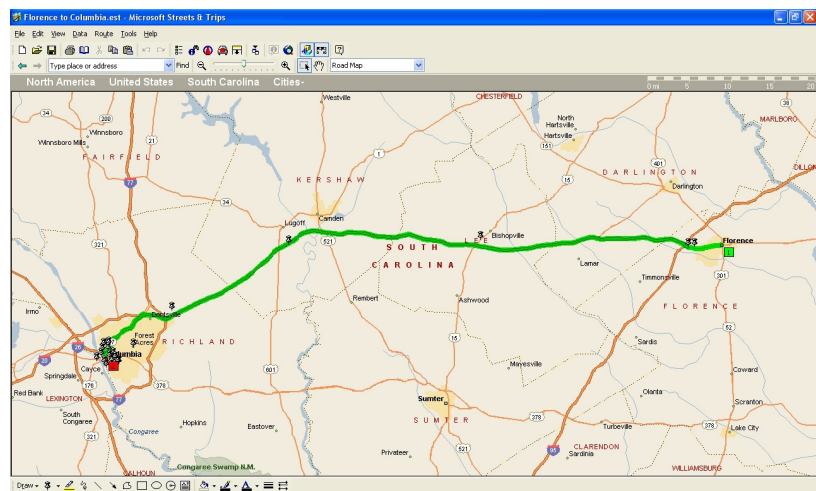
At this point, we're ready to export a second file to Microsoft Streets and Trips. The process is very similar ... click on File ... Export ... and Microsoft Streets and Trips Text File. This will generate a file with the "csv" extension that can be read by Microsoft Streets and Trips. Your export screen will look something like the next figure depending on the options you select. Don't forget to name your file and be sure to remember where the created file will be saved.

Moving back to Microsoft Streets and Trips, we're going to load the "csv" file we just created. We do this by selecting Data ... Import Data Wizard. The result will be a screen that looks similar to the one shown below.



There are a few waypoints along our route, with the majority being in the city of Columbia. The last thing we might want to do is include the waypoints in a written route with directions that we can print out. Do this by individually right clicking on each of the waypoints and selecting "Add as a Stop." When you're done, click on Get Directions. Your screen will look like the one shown below.

You're encouraged to leave the default options and just select Next. This will generate a second screen that you will click Finish on. In a few seconds, you will see the 21 waypoints appear on your Microsoft Streets and Trips map. Your screen should look similar to the one shown below.



A nice GSAK feature is the user friendly Help function. Click on the question mark icon and then any field on the resulting drop down menu. A short context sensitive tutorial/help window will then guide you through the screen.

You can now print your map with cache waypoints and directions. You can also optionally save it to your Pocket PC using Microsoft Pocket Streets and Trips. For caching partners without Microsoft Streets and Trips or a Pocket PC, you can email them an HTML web page file (click on File ... Save as a Web Page).

The above process is for Microsoft Streets and Trips. The steps are very similar for other mapping programs. Most of the major mapping programs have advantages and disadvantages. One of the key advantages of Microsoft's product is its ability to optimize your stops. This feature will generate the shortest possible path from start to finish through all of your caches waypoints. Obviously, this is an important feature given ever increasing fuel prices. Other programs automate the generation of the route coordinates. Find a program that best meets your needs!

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Team Tigerz  
Florence, SC