

Route Planning 201

By now we know how to create waypoints manually in Streets and Trips, how to make a CSV file, Excel File (XLSX), or TXT file of way points and how to import them into Streets and Trips, direct into GPSU and how to import a Streets and Trips File into GPSU. Finally we learned how to export those waypoints into a GPS unit from GPSU.

NOTE FOR MAPSOURCE USERS:

IF YOU USE MAPSOURCE FOR ROUTE PLANNING ALL THIS IS NOT OF MUCH USE. Mapsource allows you to make your route and it will directly connect to your GPS unit and you can download any routes and waypoints created. If you are provided a GPX file by your Rallymaster (RM) you can load those waypoints direct into Mapsource and then download those direct to your GPS unit. That cuts out a bunch of steps but (at least for me) loses some of the ability to manipulate waypoints, their names and their values PRIOR to uploading to a mapping program. MY HOPE IS THAT SOMEONE MORE KNOWLEDGEABLE WILL WRITE A SIMILAR TUTORIAL USING MAPSOURCE.

What you will learn with this lesson

- Importing a set of digital waypoints into Excel.
- Manipulating those waypoints to :
 1. Match the waypoint to the Rally Pack for easy referencing on the road.
 2. Create a code to name each waypoint to something more informative.
 3. Sorting, grouping and preparing to export those groups to Streets and Trips.
- Export to Streets and Trips in groups.
- Manipulate those groups in Streets and Trips to uniquely identify them.
- Create a basic Route.
- Export to GPSU.

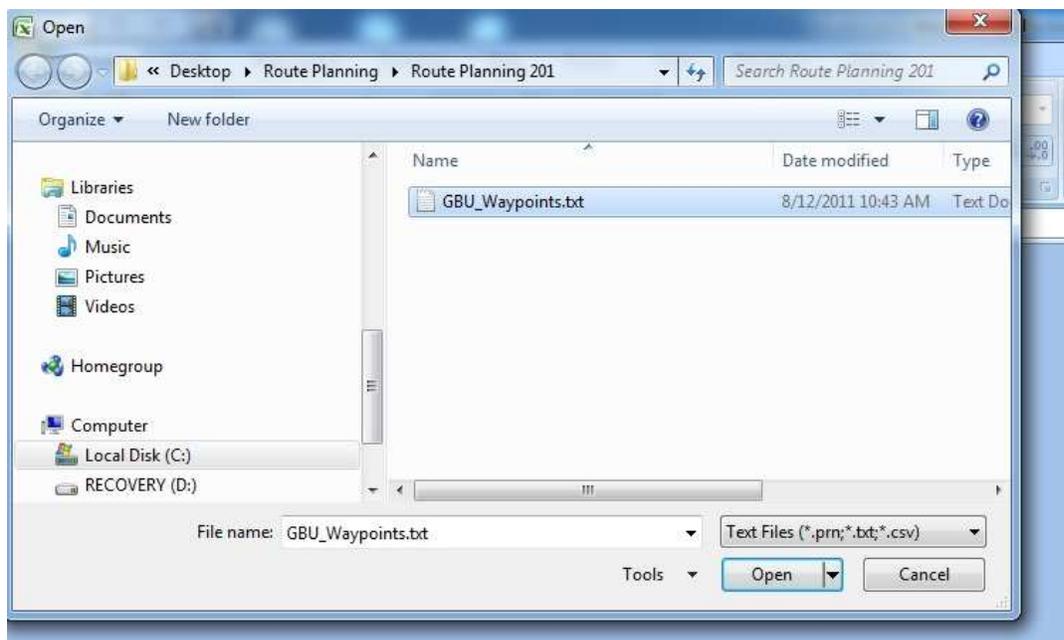
Lets get started. For this example I will use information presented and made public by RM Bob and Sylvie Torter in the recently run Good, Bad and Ugly Rally. This rally provided waypoints a week before the rally so they gave you plenty of time to look things over. The values for each bonus was provided in a separate rally pack the night before the rally start.

- The RM provided the bonuses in the following formats:
- GDB – Direct import into Mapsource 6.3 or 6.5
- GPX – GPS Exchange format for direct import into a GPS device, Mapsource, Google Maps
- KML- For use with Google Earth, Google Maps etc.
- TXT – General Text file

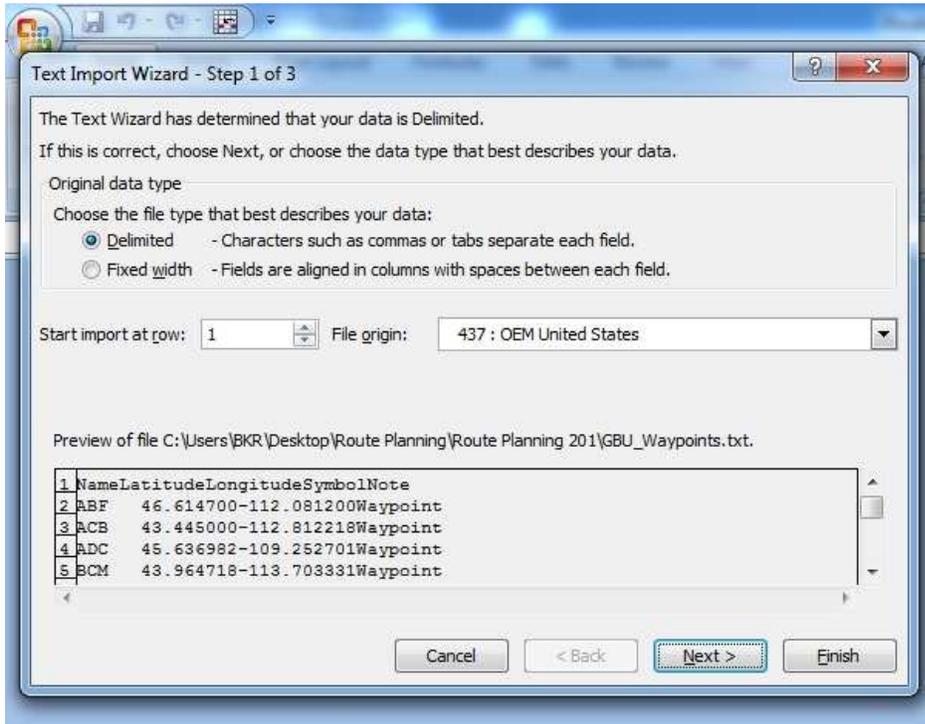
What we are going to use is the TXT file. So lets take a look at this. I will just open this file using “Notepad” which is a windows accessory program.

Name	Latitude	Longitude	Symbol	Note
ABF	46.614700	-112.081200	waypoint	
ACB	43.445000	-112.812218	waypoint	
ADC	45.636982	-109.252701	waypoint	
BCM	43.964718	-113.703331	waypoint	
BDP	43.825584	-111.906097	waypoint	
BFF	45.349667	-111.731949	waypoint	
BMG	46.757782	-114.082214	waypoint	
BNB	45.635834	-113.643333	waypoint	
BNT	45.162216	-112.998886	waypoint	
BSM	44.648849	-112.979782	waypoint	
BTG	45.002949	-109.414452	waypoint	
BTU	44.972401	-109.462181	waypoint	
CCB	45.775665	-108.795769	waypoint	
CCK	48.197216	-114.313080	waypoint	
CHM	46.436501	-108.564331	waypoint	
CHS	48.454498	-107.338249	waypoint	
CMM	45.735901	-109.757019	waypoint	
DBS	43.634048	-113.296417	waypoint	
DMH	46.267418	-114.142830	waypoint	
DSP	48.832001	-115.708069	waypoint	
EKG	45.963348	-112.506950	waypoint	
FBF	47.816818	-110.667931	waypoint	

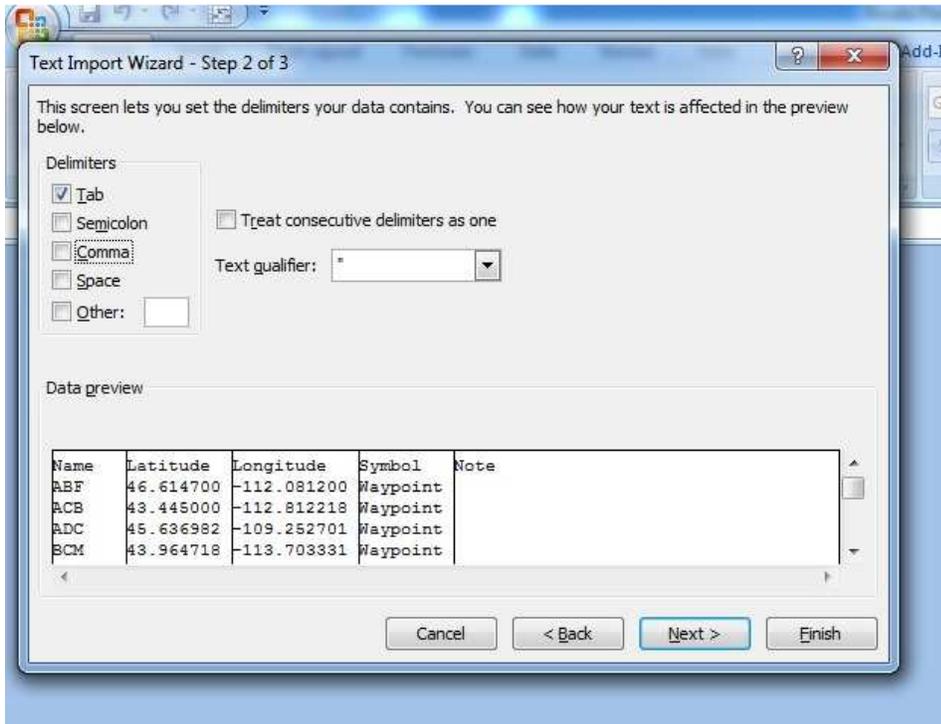
This is a beautiful file, clearly 5 columns, each separated with a Tab (Called Delimiting). Many times these are delimited by a comma but either way this can easily be imported into Excel with each column going into a nice cell in your excel spreadsheet. Just open Excel and use the “Open” command. In the “File Type” drop down box select “TXT” files and navigate to the directory containing your waypoints file. Select that file and hit open:



Once you request to “Open” the file you will be presented with a window asking how the file is delimited. Select the proper delimiting or if the file is separated by fixed width and select “next”.



With the next window you can see that Excel has recognized the columns and placed the data appropriately:



Hit finish and your data will be imported (if you select “next” you will be given the opportunity to make some definitions of each column but that is not normally necessary). The end result is a nice spreadsheet of your data (schawweet!!):

	A	B	C	D	E	F
1	Name	Latitude	Longitude	Symbol	Note	
2	ABF	46.6147	-112.0812	Waypoint		
3	ACB	43.445	-112.812218	Waypoint		
4	ADC	45.636982	-109.252701	Waypoint		
5	BCM	43.964718	-113.703331	Waypoint		
6	BDP	43.825584	-111.906097	Waypoint		
7	BFF	45.349667	-111.731949	Waypoint		
8	BMG	46.757782	-114.082214	Waypoint		
9	BNB	45.635834	-113.643333	Waypoint		
10	BNT	45.162216	-112.998886	Waypoint		
11	BSM	44.648849	-112.979782	Waypoint		
12	BTG	45.002949	-109.414452	Waypoint		
13	BTU	44.972401	-109.462181	Waypoint		
14	CCB	45.775665	-108.795769	Waypoint		
15	CCK	48.197216	-114.31308	Waypoint		
16	CHM	46.436501	-108.564331	Waypoint		
17	CHS	48.454498	-107.338249	Waypoint		

Now you are ready for some SERIOUS manipulation of your data!!! You can easily add columns, sort, copy data to different worksheets etc...

Manipulating Waypoints:

At this point I want to start to give some meaning to my waypoints. You can see that the RM has assigned a three letter designator to each waypoint that identifies them in his system. This is similar to many rallies but these points have NO MEANING to me at all.....

What does have meaning is the rally pack. This is the paperwork version of the bonuses that give you a description of each bonus, times it is open, point value, basic directions etc. Somewhere in that description will be the associated three letter designator.

IF THESE ARE LISTED IN ALPHABETICAL ORDER ON THE RALLY PACK – THEN THEY ARE USEFUL. By this I mean you can be sitting in front of bonus “CCK” and easily look it up in the rally pack to ensure what task you have to do, and fill in any required data (mileage, time, etc.)

With this in mind – one of the first things I do with my rally pack is to number each of the bonuses. I will rename these bonuses based on this number. THIS IS IMPORTANT..... When you are standing in front of that bonus you do not want to be leafing through a 45 page rally pack looking for “CODE: ABF”. It is

much easier to find “Bonus #1”, “Bonus #36” etc... This particular bonus pack was ALMOST in alphabetical order – but not quite, and I did not renumber it and regretted it as I was searching though it for those couple of exceptions...

The Code:

My coding system consists of three separate pieces of data:

1. The bonus number 001 – 999
2. The number of points for the bonus
3. Availability
 - A = Anytime
 - D = Daylight Only
 - LL = Limited, Check List
4. Is the bonus part of a thread, or tied to other bonuses

So a basic bonus is going to look like this: 032-2468A. A thread will look like this 046-AT3-3465 (where T3 means thread #3). I use the “000” format so when bonuses go into my GPS they are listed in order, otherwise the list would go like this 1, 11, 12, ... 19, 2, 20, 21. I want to see 001, 002, 003,009, 010, 011, 012....

I also use the “-“ between the bonus number and the value so that I can easily see both. The Availability does not need a Hyphen being at the end of the bonus.

Finally, I will put a small “e” after it all if I have to estimate where the bonus is and it is not an exact location. I cannot take credit for this little deviation – I stole this from the great Jim Owen, who has actually won a rally or three.

With this coding convention I can easily see what is important when I look at a list on my GPS. I can relate that very quickly to my rally pack and It is short enough to be legible on the GPS screen. Even better you will see how I can easily compare one route against another because I just add up the points from the Streets and Trips “Route” screen (this is important).

So lets take a look at the rally pack and make some additions. I have copied the first two bonuses – Right at the top I would put 001, 002 and to that I would add the rest of my code. I would do that by hand but here have typed it in:

Arches Sculpture 243 points Daylight Only
2915 Country Club Ave
Helena, MT

001-243D

N46 36.882 W112 04.872 (46.614700, -112.081200)

Take a photo of the arch. (See sample photo)

The sculpture is a ceramic arch located at the Archie Bray Foundation. Go down the small driveway, entrance marked by artist studios sign.

Date: _____ Time: _____ Odometer: _____ Code: ABF Approved: _____

Harbor Candy Radio Station 492 points Anytime

002-492A

Main St

Atomic City , ID

N43 26.700 W112 48.733 (43.445000, -112.812218)

Take a photo of the radio station (that looks like a blue radio) that says Harbor Candy Radio Station.

The radio station building looks like a giant radio. There is a 5 mile dirt/gravel access road to the area. The dirt road is in good condition.

Date: _____ Time: _____ Odometer: _____ Code: ACB Approved: _____

A Note About E-Boni Spreadsheet

What we are going to do at this point is similar to using a spreadsheet with Macro's that has been created by some rallyists called E-Boni. If you are satisfied with that – go ahead and use it. I do not like it because I want to relate my bonus pack to the bonus in my GPS in a format that I understand better (I have found that pays BIG dividends once on the road), that helps me decide on a route and provides me information in itself. DOING THAT TAKES SOME TIME. It took me manually about an hour to:

1. Number the Rally Pack
2. Import the test file to my spreadsheet
3. Add the five columns (Number, Points, Availability, Thread, Code)
4. Populate those columns. (this is what takes the time – but is the most useful)
5. Sort the Spreadsheet
6. Create the Four separate worksheets, High, Medium, Low, Threads

Doing this manually allows me to make alterations and refinements that E-Boni is not capable of. Knowing the manual steps allows you to whatever the rallymaster throws at you.

So we now have our electronic file in a spreadsheet and the rallypack numbered/coded. Now we have to enter that information into our spreadsheet for each bonus. To do that I will perform the following

1. Add a column for "Number"
 - a. Format this cell as "Text" instead of a number so that you will retain the "000" format.
2. Add a column for points
3. Add a column for availability
4. Add a column for Threads
5. Add a column where I will put it all together called "Code"
 - a. Use the function "Concatenate" to create this by adding the "Number" value, a "-", The "Points", The "Availability" and finally the "Thread" value to the formula. Use "Insert Formula" and find Concatenate in the "Text" formulas and just add each cell. Then after you have put the formula successfully in a single cell, copy it down to the rest of the column.

The final Result looks like this:

	A	B	C	D	E	F	G	H	I	J
1	Name	Number	Points	Avail	Thread	Code	Latitude	Longitude	Symbol	Note
2	ABF	001	243	A		001-243A	46.6147	-112.0812	Waypoint	
3	ACB	002	492	A		002-492A	43.445	-112.812218	Waypoint	
4	ADC	003	272	LL		003-272LL	45.636982	-109.252701	Waypoint	
5	BCM	004	586	A		004-586A	43.964718	-113.703331	Waypoint	
6	BDP	005	254	A		005-254A	43.825584	-111.906097	Waypoint	
7	BFF	006	158	A		006-158A	45.349667	-111.731949	Waypoint	
8	BMG	007	449	A		007-449A	46.757782	-114.082214	Waypoint	
9	BNB	008	373	A		008-373A	45.635834	-113.643333	Waypoint	
10	BNT	009	218	LL		009-218LL	45.162216	-112.998886	Waypoint	
11	BSM	056		D	T1-1324	056-DT1-1324	44.648849	-112.979782	Waypoint	
12	BSN	055		D	T1-1324	055-DT1-1324	44.989449	-112.97982	Waypoint	
13	BSS	057		D	T1-1324	057-DT1-1324	44.70705	-112.686096	Waypoint	
14	BTG	020	258	A		020-258A	45.002949	-109.414452	Waypoint	
15	BTU	021	613	D		021-613D	44.972401	-109.462181	Waypoint	
16	CCB	022	372	A		022-372A	45.775665	-108.795769	Waypoint	
17	CCY	023	599	A		023-599A	49.197216	-114.21209	Waypoint	

Notice how the bonuses with Thread information do not have points – I do not want to be chasing after a bonus thinking it has a set amount of points if it requires me to get additional bonuses to get all the points. That particular code keeps me from making this mistake on the road.

I do not just put in a single column “Code” and enter the code because using separate columns just takes a few extra minutes – the benefits are that I can now sort by each of the individual columns. Sort the list by points, sort by number (even though they are entered as text), sort the list with all the threads all together.

I sort the list by point value, high to low. What I see immediately is there are 54 standard bonuses and 28 that are part of threads (they show up at the end because they are listed a having no points – the points are included in the Thread column). I want to separate these into four groups (High, Medium, Low, and threads) so I create four new worksheets.

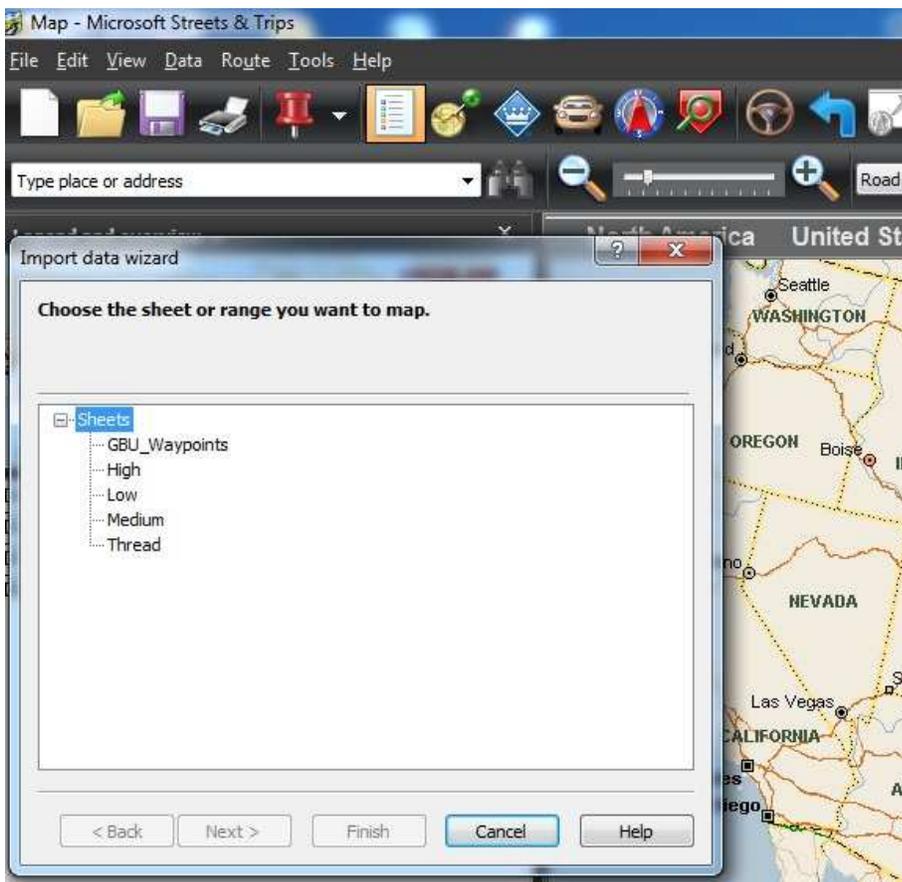
1. I copy the first 18 to “High”
2. I copy the next 18 to “Medium”
3. I copy the next 18 to “Low”
4. Finally I copy the 28 Thread bonuses to “Threads”
 - a. Just as a note – I also included the “Hotel” in this list – you NEED that!!

After doing this I have a spreadsheet that has 5 worksheets. If you have a newer version of Streets and Trips (2010 or newer) you can just save this file. You can import one WORKSHEET to Streets and Trips at a time. If you have an older version of Streets and Trips you will need to save each of the worksheets SEPARATELY as a “CSV” file for import.

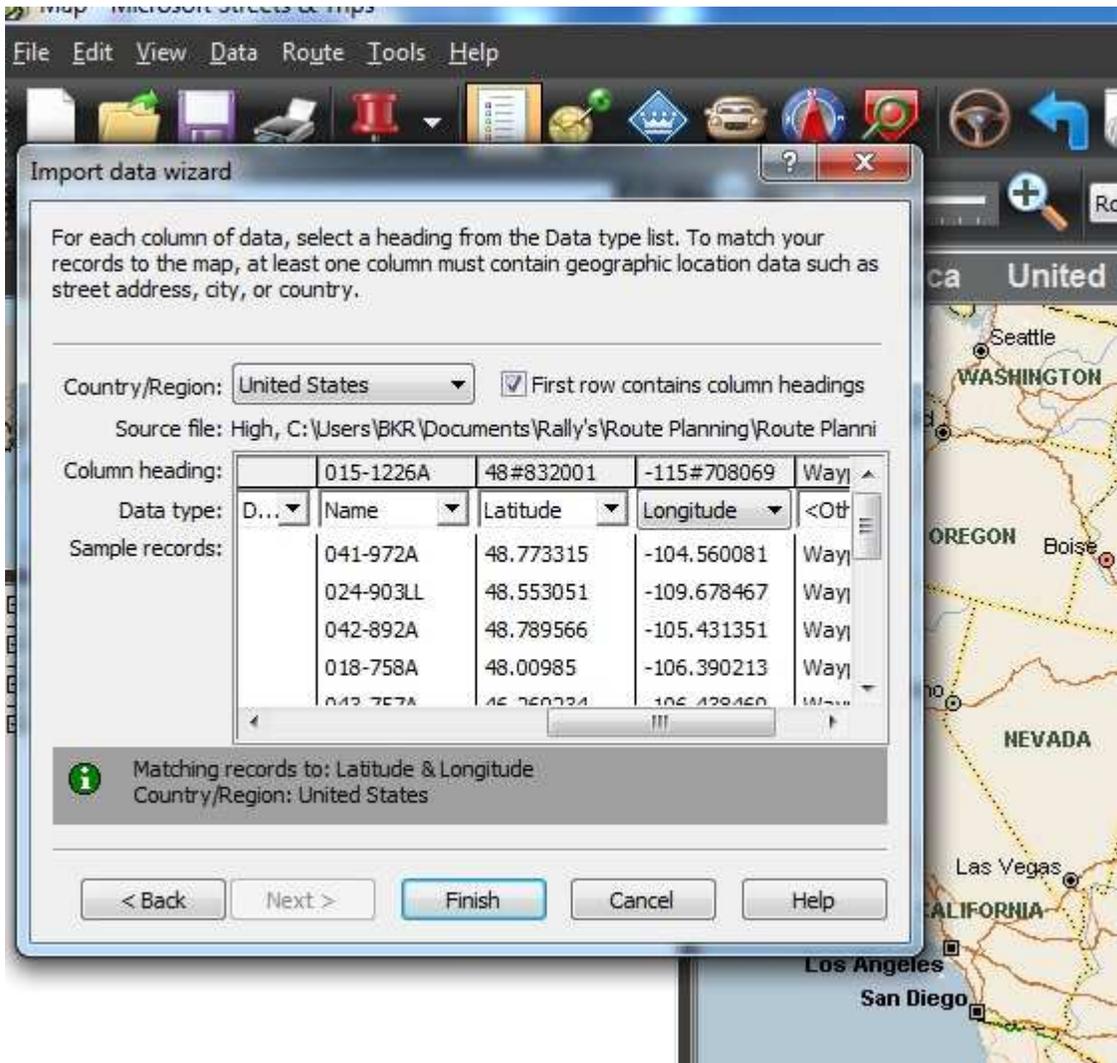
The Finished Workbook looks like this – notice the different Worksheets at the bottom tabs on the Workbook. We are currently looking at just the “High” Worksheet:

	A	B	C	D	E	F	G	H	I
1	DSP	015	1226	A		015-1226A	48.832	-115.708	Waypoint
2	ORD	041	972	A		041-972A	48.77332	-104.56	Waypoint
3	HBP	024	903	LL		024-903LL	48.55305	-109.678	Waypoint
4	PTC	042	892	A		042-892A	48.78957	-105.431	Waypoint
5	FPL	018	758	A		018-758A	48.00985	-106.39	Waypoint
6	RCR	043	757	A		043-757A	46.26923	-106.438	Waypoint
7	RMC	045	749	A		045-749A	44.37747	-114.256	Waypoint
8	OCT	037	716	A		037-716A	47.41287	-105.584	Waypoint
9	CHS	011	666	A		011-666A	48.4545	-107.338	Waypoint
10	BTU	021	613	D		021-613D	44.9724	-109.462	Waypoint

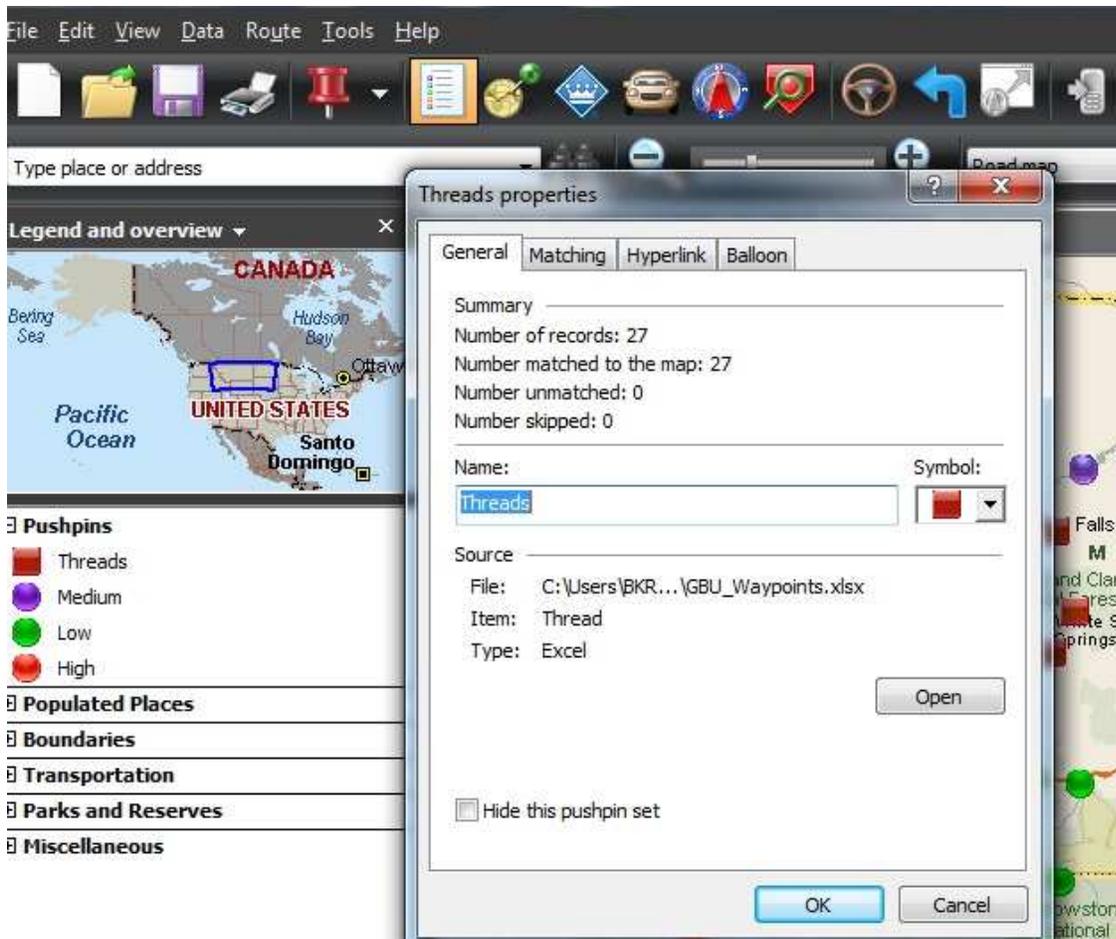
Now I close this and am ready to import the waypoints into Streets and Trips. I call up my S&T and choose “Data”, “Import Wizard” and navigate to the Excel file we just created. Clicking on that brings up the input box that asks “which worksheet do you want to import:



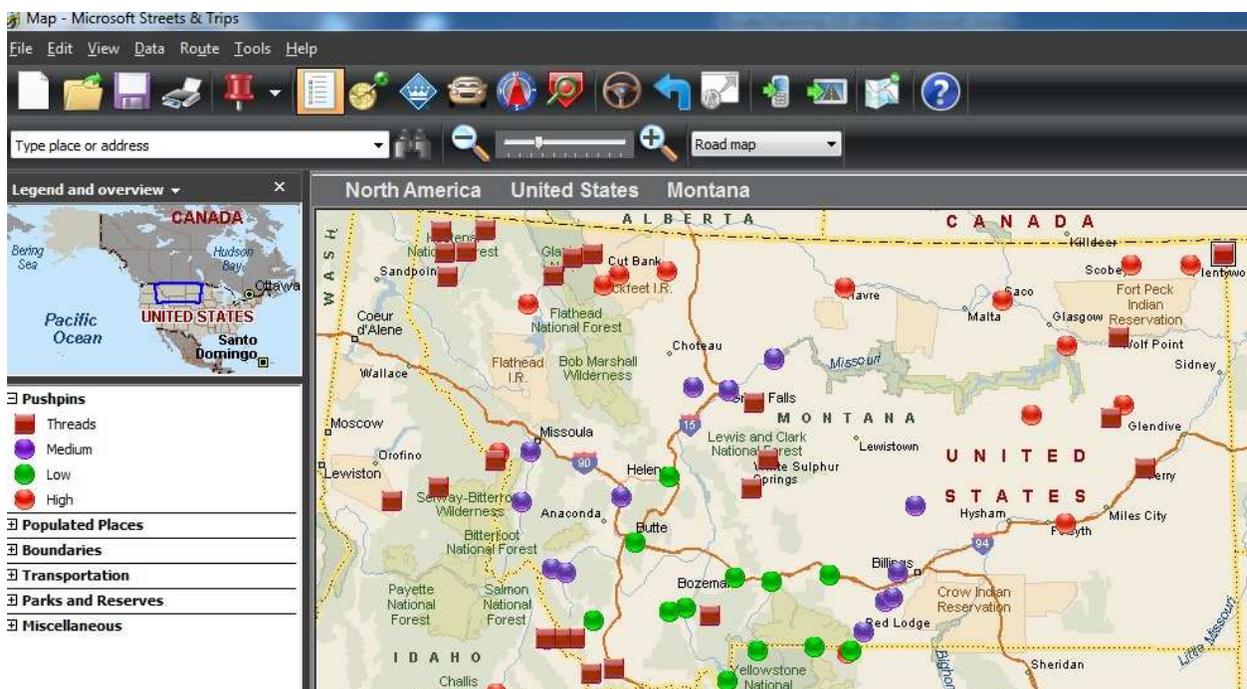
Now you import each of the four separate worksheets, High, Medium, Low and Thread one at a time. This creates a set of pushpins for each separate worksheet. When importing you will be offered a input box like shown below – you use the pulldown menus to tell Streets and Trips that the “Code” column is called “Name” and identify the “Latitude” and “Longitude” columns to Streets and Trips. These are the only three columns you will be importing.



Now comes the tricky part. You must open the “Legend and Overview” pane from the tools menu. This will show you the pushpins – four separate sets that were just entered. Right click on any of the sets to bring up the “properties” box. You can now rename and assign a separate symbol to each set. I use a round Red Ball for High value, Blue for Medium Value, Green for Small Value and finally a red Square for the threads. I’ve found these to show up well for me so I do not miss any while planning my route.



The final Map looks like this:



It seems like it has been a long time getting here – but you are now ready to start actually setting up a route.

This basic work takes time but will save much time when out on the road, and will make the next steps easy when trying to decide upon a basic route.

SAVE THIS MAP AS “BASIC WAYPOINTS” , this way you can recall it over and over and create many routes for comparison.

Route Generation:

First I want to decide how long I want my route to be. This is a 32 hour rally, I was well rested and I should be able to get a hotel room for a short period if necessary. From experience I know the following:

1. A good pace for multiday rallies is 45 mph including rest time (1,080 miles/day).
2. A difficult pace is 62.5 mph – a BBG.
3. A 24 hour rally normally runs 1,100 – 1,400 miles (kind of a sprint)
4. This rally has 8 hours more than a 24 hour rally.
5. This rally requires 1,300 miles to be considered a finisher.

So I can pretty easily deduce that I could run a normal 24 hour rally, take 4 hours of rest and then do a final 4 hours back to the Hotel. So at the bottom end I am looking at:

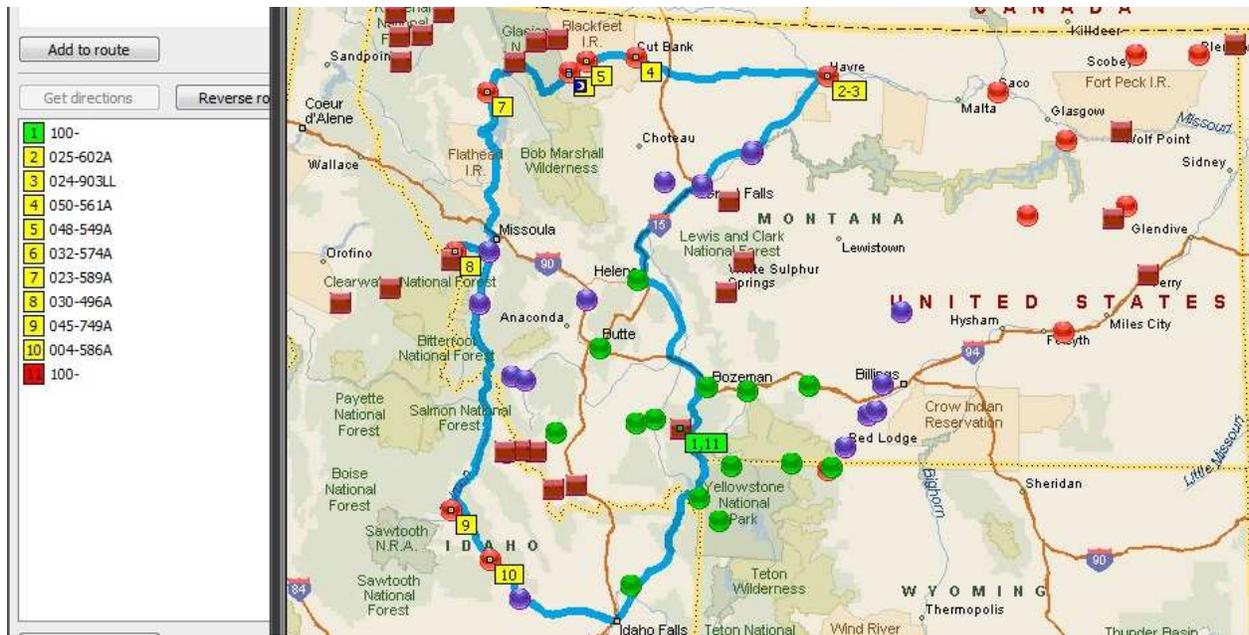
1,080 miles per day + 4 hours at 45 mph = 1260 miles, Round up to 1,300 to be a finisher.

At the top end:

1,400 miles per day + 4 hours at 62.5 = 1,650 miles

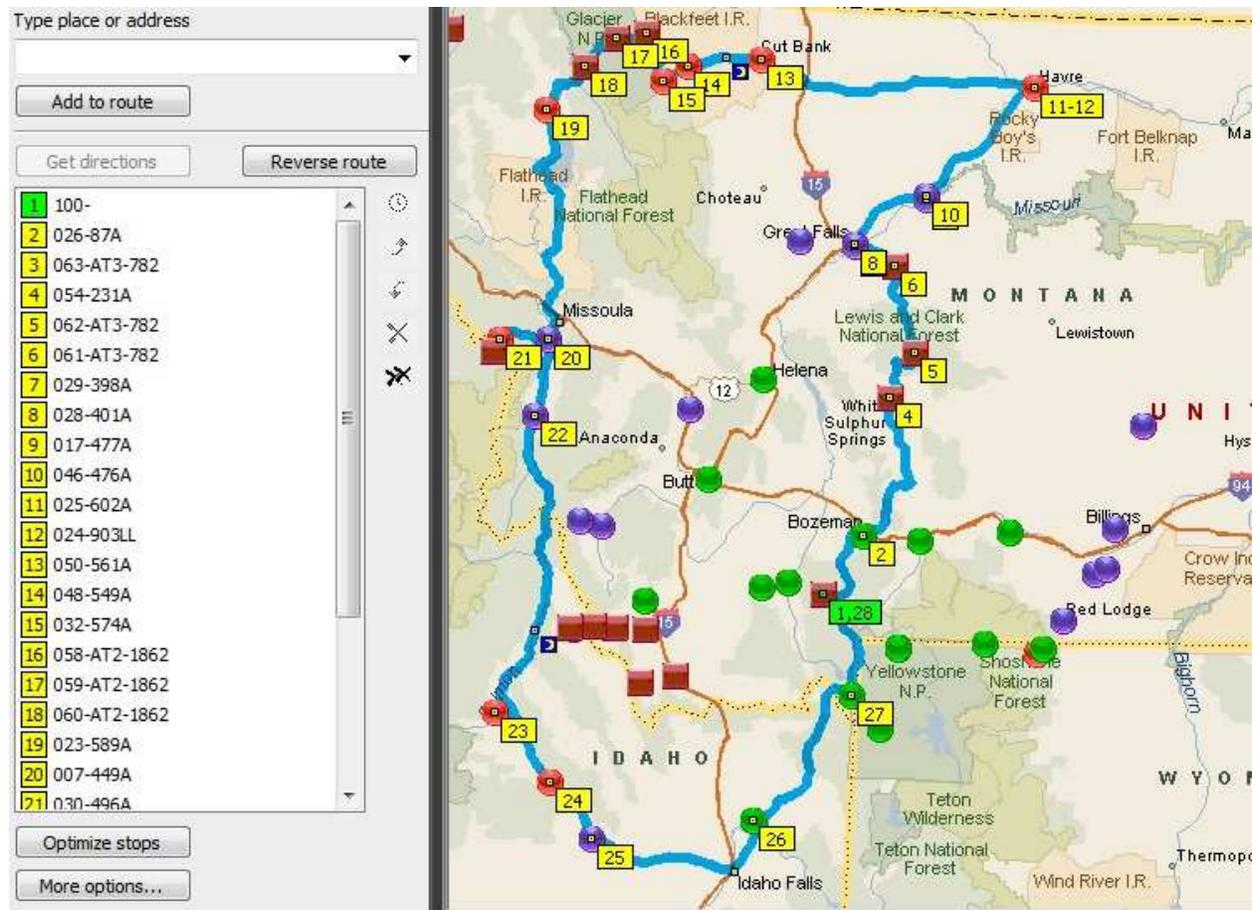
With my range of 1,300 to 1,650 I am ready to start routing. If you look at this map the square just south of Bozeman is the Rally Hotel (Rally Headquarters). This is where you will start and end. What really stands out is the group of Red to the North West and the more spread out group to the North East. There is also a grouping to the South West (not all shown in this picture). Looking at the clusters, the values of the groups I felt the biggest value group was the North West cluster, Second was the North East Cluster (which was more spread apart) and the tight cluster in the South West came in third.

Working with JUST the Red Circles (Regular Bonuses) I lay out a basic route which comes up like this:

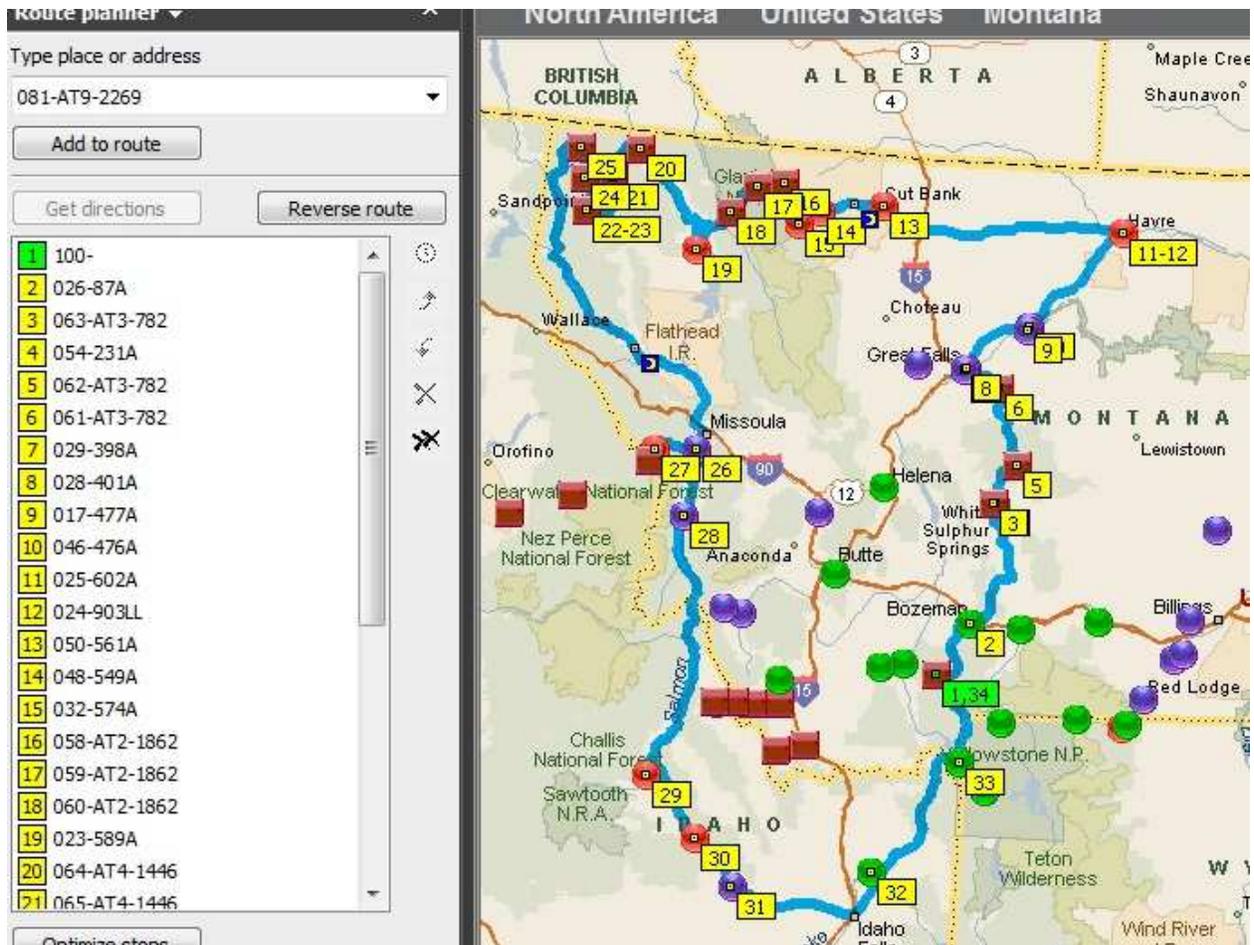


Note how I change the left window to show me the Route Waypoints and only the red ones are selected right now. You can see there are many more bonuses that are on the route but just not added to the route yet. This basic route was 1,314 miles.

I save this as "Route 1" and then start to add more bonuses. I first add all of the bonuses that the route goes right through. Then I add the three Red Boxes just in the North West corner of the route in Glacier National Park. I also add the route along the East side of the route on the way to the bonus in Great Falls. The result does not add that many miles but does add significant points :



Notice how the list of bonuses has expanded significantly as I added all those on the route and additional Route Bonuses. While this added a 782 point route and a 1,862 route it only added some 21 miles and now stands at 1,344 miles. Feeling frisky I decide to add the two routes in the upper North West Corner. These are remote roads and will be difficult but I am at the lower end of the miles and want something more towards the top. Again I save this map as Route 2 before adding anything. I add the bonuses and get this result:

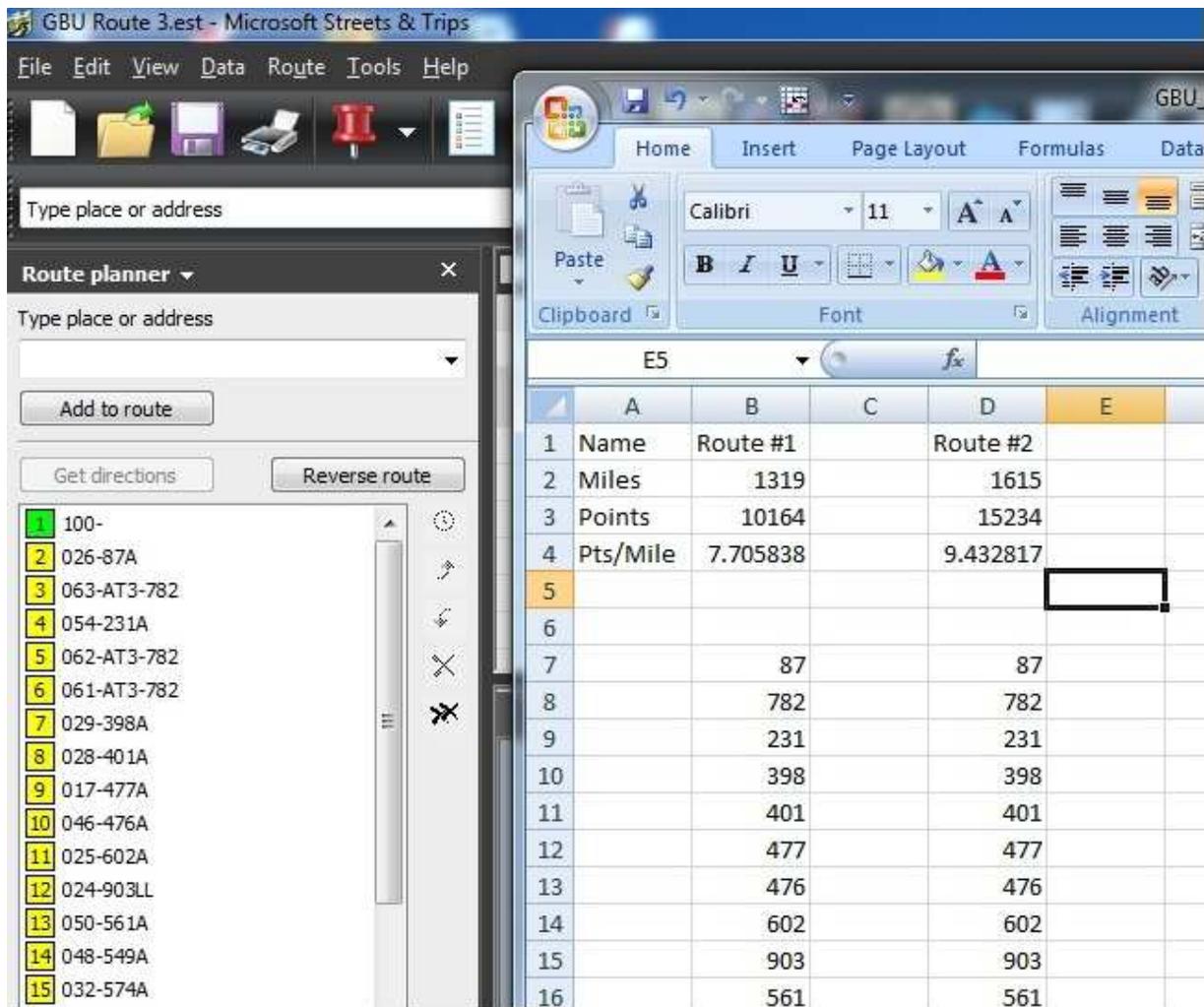


Now I am up to some 32 stops and 1,615 miles. This is about the extent of what I am shooting at. I can see some big routes down in the South West corner of the route. I looked at those and they were difficult roads and Daylight only. I am traveling counterclockwise to get bonuses 11-12 which are over 1,500 points but Look at #12 in the route list – see that LL there? That tells me I had to be there before 5:00 pm closing for the big 900 pt part of that bonus.

While I am on it - Look at the Route List. See how nicely it is laid out because of our code. With this list I can easily:

1. Copy down the bonuses in order (by hand), which you will see is how I do my on road routing.
2. Easily see limitations (and this one has mostly “A” or anytime bonuses)
3. VERY EASILY add up the points in a route.

Now that I have created some rally’s it is time to add another worksheet to our Excel Spreadsheet. I call this worksheet “Comparison”. It is where I rapidly list the points in a route, the mileage and make a comparison from one to another. Really nice thing about Streets and Trips is I can call up both the map and the spreadsheet and put each in a window and VERY QUICKLY add up the value of the route. This is what it looks like:



You can see how easy it is to place the two side by side and copy over the bonus values. Not only can I evaluate many different routes quickly – When I am done I have a list of my targeted bonuses and can easily use this at the rally table to verify my score – or just know about what my score should be.

A multitude of routes could be generated for comparison quite quickly at this time. I could create a route to the North East and maybe even try one going through Yellowstone where there are several high value bonuses for comparison – but that is repetitive.

Final Step – Rout to the Road:

Now we need to go back to Lesson 101 and download the appropriate waypoints (from my selected route) to GPSU and then onto my GPS. I will demonstrate how I like to download routes to my GPS in a later lesson, but most of the time I simply look at my route list on Streets and Trips and write down the bonuses in order from the Route List on a piece of paper. It is very simple (KISS).

When I do this I will write down the full list in order and circle those that define the route in general (the corners or critical waypoints that define the route). Once on the road I start by loading in the first few bonuses using "Via"s" on my GPS. While on the road I will add to that list as the day goes on. I do not want the full list as 32 bonuses takes too much computing power to keep it updated. What I will sometimes do is create a separate route (and name it) on the GPS using just the waypoints that define the route. I only use a single GPS so I can recall that route anytime – update it by removing the points I have already passed and it will tell me the time to get back to the finish.

Reality is for me I usually do not even go through that much detail. I can make a good wag at where I am in my route progress just based on time and mileage but if I am worried about it I can call up that basic route. If I was a two GPS guy I would put that basic route in my second GPS and that would tell me time to finish during the rally.

I hope this has been helpful. If you have questions please feel free to contact me directly.

Brian R.