

## **A Note About GPS Formats**

Unfortunately, different companies use a few different formats to express latitude and longitude. This is a little like the difference between inches and feet. In practice you can readily find out what format your GPS or program wants, and just use that format.

Probably the most common format is to divide the earth into 360 degrees and express latitude and longitude in degrees. In this format, Station Road Bridge is at N41.31868 W81.59158. Values are given in this format in the first two numeric columns of Bill Miller's table and are called "Decimal Degrees". Many car GPSs can use this, including Garmins and TomToms.

A similar format uses the same numbers but expresses North as a positive number and West as a negative one. In this case, Station Road Bridge is at 41.31868 -81.59158. This format is used by the MapQuest web site.

Alternately, you could divide the earth into 360 degrees and then divide each degree into 60 minutes. In this format Station Road Bridge would have a longitude of W81 degrees and 35.495 minutes (which could be displayed as W81° 35.495'), and a latitude of N41 degrees and 19.121 minutes (which could be displayed as N41° 19.121'); all four values have to be put into your GPS. Values in this format are given in the final two numeric columns in Bill Miller's table, and are called "Degrees and Decimal Minutes".

Less often you might even see the earth divided into 360 degrees, each degree divided into 60 minutes, and each minute divided into 60 seconds. We don't list values in this format, but can help you with it if you need it.

## **Using Latitude and Longitude with Your GPS**

Since each GPS type has different screens, the exact way to use latitude and longitude will vary from type to type.

In general, press an icon that says "Go To" or something similar. This should give you a choice between several ways of picking a destination (such as Favorites, or Address or Points of Interest). Scroll through your options (probably using the "down arrow" button) until you find one that says "Location" or "Coordinates" or "Latitude/Longitude" or something similar. Choose that option by pressing on it and you should get boxes into which you can enter a latitude and longitude for your destination.

Take a look at the values displayed in these boxes. If the displayed coordinates have only a degree symbol (ex: N41.31868°), you want to use the "Decimal Degrees" values listed in the table of GPS Coordinates (these are in the first two numeric columns). If the displayed coordinates use degrees and minutes (ex: W81° 35.495'), use the "Degree and Decimal Minutes" values listed in the last two columns of the table; the table will give two values for latitude and two for longitude.

Your GPS may not use N and W with the latitude and longitude, but may use a "-" sign with the longitude; in this case, drop the 'N' from the latitude in our table and replace the "W" with a "-". For example for Station Road Bridge, use 41.31868 and -81.59158 instead of the N41.31868 and

W81.59158 shown in the table.

Many GPS units (especially Garmins) let you choose which format to use by touching a button that is labeled 'Format'.

## **Getting Driving Directions Using Latitude and Longitude**

You can get driving directions on the Internet from a number of sites, including Google Maps ([www.google.com/maps](http://www.google.com/maps)), Bing ([www.bing.com/maps](http://www.bing.com/maps)) or MapQuest ([www.mapquest.com](http://www.mapquest.com)). I find that the first two are easier to use because they are more tolerant of the format you use in entering longitude and latitude. The free Google Map App for smart phones also works fine with Latitudes and Longitudes.

For Google (computer or smart phone) or Bing, enter the latitude and longitude as a location (ex: N41.31868 W81.59158). For Mapquest enter the latitude and longitude without the 'N', and replace the 'W' with a minus sign (ex: 41.31868 -81.59158).

Bill Miller is happy to answer questions if you call him at his phone number listed in the club directory. Bob Shroy will also help if you call or email him, with the number or address listed in the club directory. Bill uses a TomTom and Bob uses a Garmin, but both can talk about several kinds.