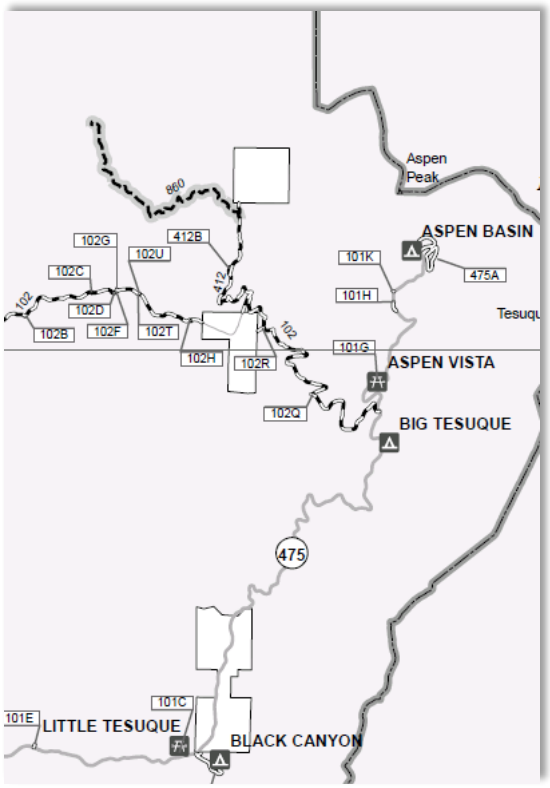
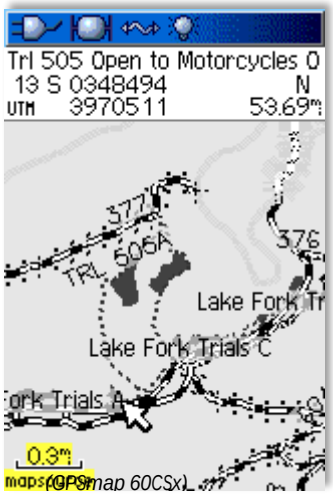
Guidance On Installation And Use Of A Travel Aid For Garmin GPS Receivers

Background - The published Motor Vehicle Use Map (MVUM) is the official document-of-record that designates roads, trails, and areas open to public motorized use on the Santa Fe National Forest. An example is illustrated at right.



The published MVUM contains important information about road, trail, and area designations that motorists should always have close at hand. However, the MVUM's large size could make it difficult to handle, or refer to, while travelling, and some motorists have found that the MVUM's small map scale and spare design make it difficult to locate themselves with confidence along the roads and trails that it portrays.



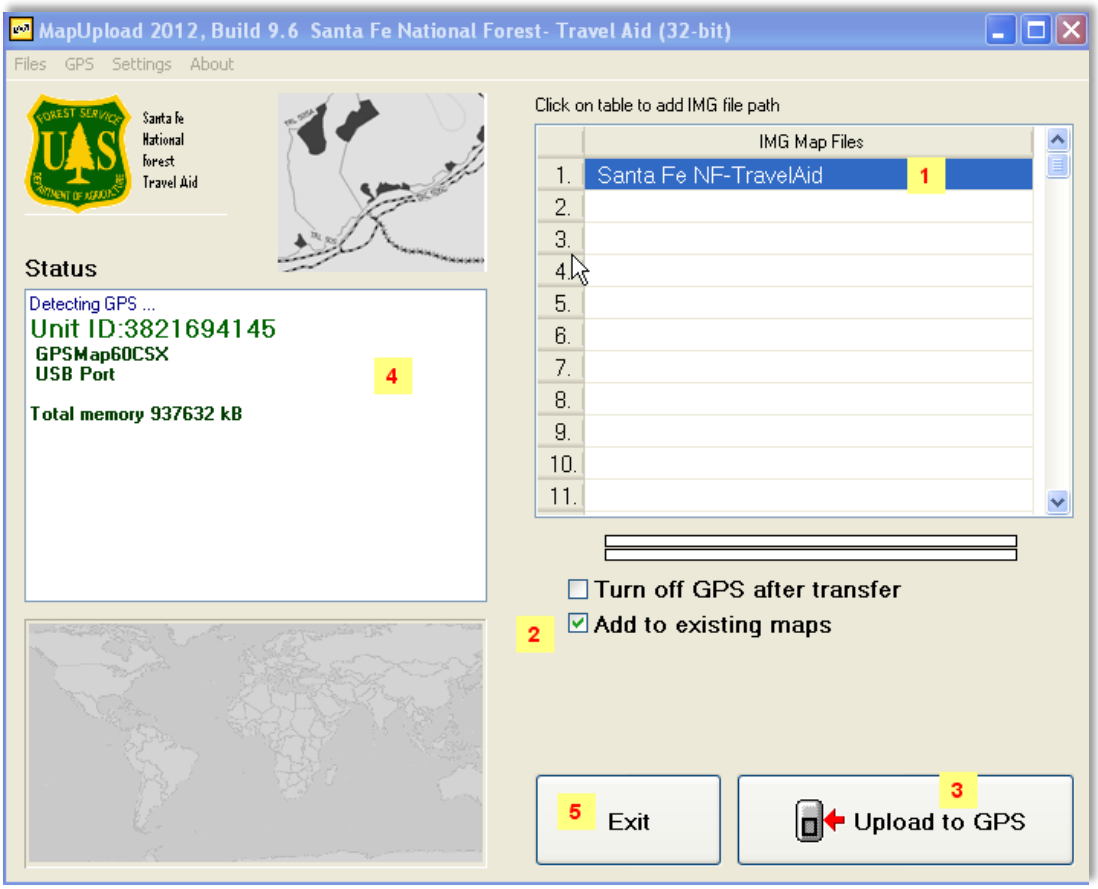
In response to these issues, Santa Fe National Forest has developed a Travel Aid for Garmin GPS receivers (example at left) that is designed to help motorists locate their position:

- Along designated roads or trails,
- Within areas open to motorized cross-country travel,
- Relative to motorized dispersed camping corridors, and
- With respect to seasonally open routes.

Two versions have been provided. The first one (***Santa Fe NF-TravelAid.img***) contains the standard gray-scale symbology used in the Motor Vehicle Use Map (MVUM). Unfortunately, since certain symbols don't display as well on the newer models, a second version has been provided in color which is suited for the newer models (***Santa Fe NF-TravelAid_color.img***). Either version should work, but if you have a newer Garmin, the color version may be better suited to it. You may have to experiment with which version works better for you .

Install the Travel Aid for older units (non-GPX- based ex. GPSMap 60, 76 series, or eTrex HC series) – Follow these steps to install the Travel Aid

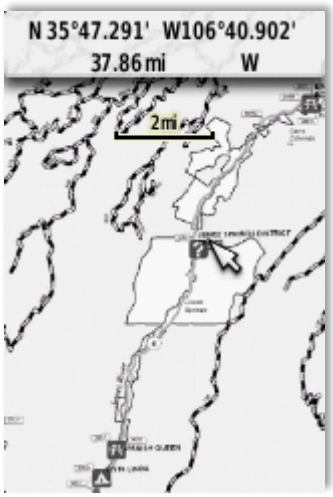
1. Keep this document handy, as it provides guidance on installation of the Travel Aid.
2. Refer to **Appendix A** to see a list of supported Garmin GPS receivers Click **Start – Control Panel – Add or Remove Programs** on the Windows PC (2000, XP, Vista, or 7) that will be used to perform the installation, and determine if a **Garmin USB Drivers** entry is present. If not, the drivers must be installed on the PC before proceeding. Garmin USB drivers can be obtained from these sources:
   a. CD shipped with a new Garmin GPS receiver,
   b. Garmin MapSource or BaseCamp software CD or installation package, or
   c. Garmin website at http://www8.garmin.com/support/download_details.jsp?id=591.
3. Save the Garmin Installer package file (~5 MB) to the PC – (Garmin_TravelAid_SFE.exe)
4. Turn on the Garmin GPS receiver, and connect it to the PC with its USB cable.
5. Double-click the **Garmin Installer package** file, and note, or carry out, the numbered items described below. The installer's appearance may vary somewhat.



- Item 1 – The Travel Aid's map is already pre-loaded. No further action is required.
- Item 2 – Check this box to merge Travel Aid map content with the receiver's existing supplemental maps. If this box is not checked, existing supplemental map content in the `gmapsupp.img` file will be permanently over-written! The default base map and City Navigator map (`gmapbmap.img` and `gmapprom.img`) are not affected. An alternative would be to install the Travel Aid on a separate micro-SD card, and swap cards as needed. NOTE: Merging the Travel Aid map with a large supplemental mapset, like MapSource data, can be extremely time-consuming!
- Item 3 – Click the **Upload to GPS** button to install the Travel Aid's map content.
- Item 4 - Note the status messages, and wait for the "Transfer complete" message before proceeding. Do not operate the GPS receiver during the Travel Aid's installation. Travel Aid map content totals only about 2 MB.
- Item 5 – Click **Exit** to complete the Travel Aid's installation.

Use the Travel Aid – These topics describe general operation and use of the Travel Aid.

Establish GPS reception - Turn the GPS receiver on outdoors, and wait for it to establish a position fix before using the Travel Aid. Receivers vary, but most provide an indication that GPS reception has been established, or that the receiver is ready for navigation.



(GPSMap 62sc with KMZ)

Map page - Display the Map page (left) by cycling through the receiver's page sequence, or by opening it from the receiver's menu.

Feature display – Refer to **Appendix B** for an example of the symbols used to represent the Travel Aid's features.

If it is not already so, change the map's Detail setting to "Most" in the receiver's map setup section. The map's color scheme was designed for daytime use, so it is recommended that users manually change their receiver's Display Mode to the "Daytime" setting. The map may be easier to interpret if its Orientation is set to "track up" (for more setup recommendations see Appendix B).

Position and direction of travel - The receiver's current position will be indicated by an arrowhead pointing in the direction of travel.

Feature identification – Use the receiver's Map Pointer to identify unlabeled features.

Zoom levels – Different feature types will appear at different zoom levels. When zooming in, for instance, roads designated for highway-legal vehicles will be visible prior to the appearance of roads designated for all vehicles. The map may be viewed at any convenient zoom level, but the 0.2-mile through 0.5-mile zoom levels are typically preferred for general use.

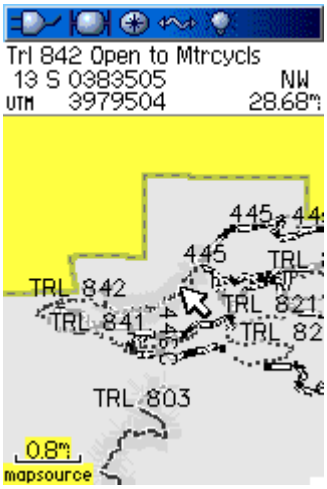
Hide the map – Users can hide the Travel Aid's map by un-checking its "Show" entry in the receiver's Map Setup section, as at right.

Travel Aid limitations – Unfortunately, the Travel Aid is **not a perfect solution**. The following topics describe some of its limitations.

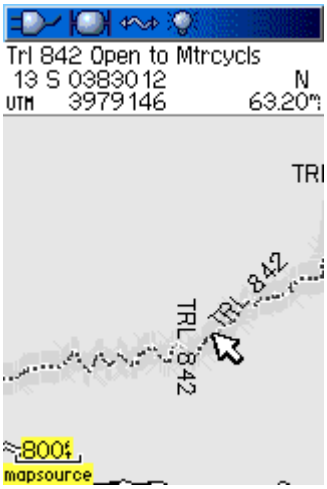
Map visibility – Certain lighting conditions, and limited screen size/resolution, can impair map visibility. Zoom in, show "most" detail, and increase screen backlight to improve map visibility.

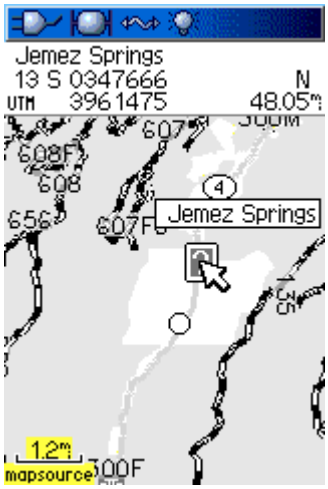
Feature display - Different Garmin GPS receiver models display feature symbols differently, and at different zoom levels, depending upon their version of installed firmware.

Road and trail labels – Some receivers display fewer labels, and may drop labels altogether as they zoom in. (The images below are from GPSmap 60csx)



(GPSmap 60csx)





Roads and trails are not “routable” – Unlike commercial map content for the Garmin Nüvi, Tom Tom, Magellan RoadMate, and so on, the Travel Aid’s roads and trails are not “routable”.

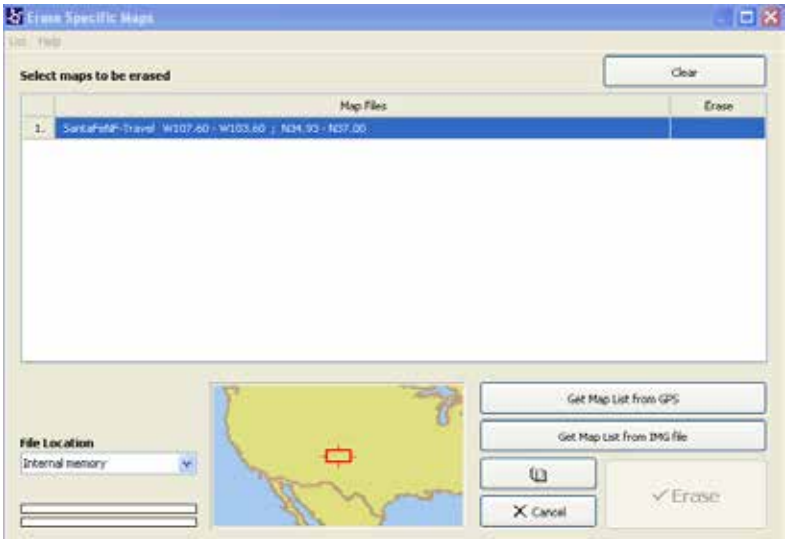
Windows compatibility only – The Travel Aid’s installer package is compatible only with PCs running Windows 2000, Windows XP, Windows Vista, or Windows 7.

Pink or green screen – See **Appendix C** if a pink or green screen appears instead of the map.

Un-install the Travel Aid – Unfortunately, the Travel Aid’s installer package does not include an un-install utility. Follow these steps to remove the Travel Aid from a Garmin GPS receiver (this is only necessary on the older Garmin models).

1. Download and install the Mapwel Demo software (http://www.mapwel.net/down.htm) on a Windows PC.
2. Turn on the Garmin GPS receiver, and connect it to the PC with its USB cable.
3. Start the Mapwel Demo software, click **No** when prompted to register, and:

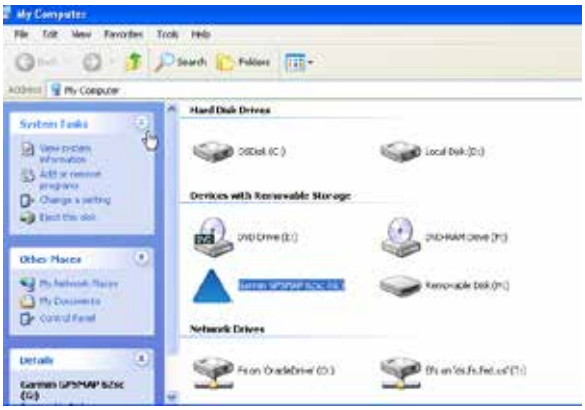
    a. In Mapwel, click GPS – Erase Specific Maps,
    b. Click Get Map List From GPS,
    c. Select the **Motorized_routes** map, and d. Click **Erase**.



Install the Travel Aid for newer units (GPX- based ex. GPSMap 62, 78 series, Oregon series) – Follow these steps to install the Travel Aid

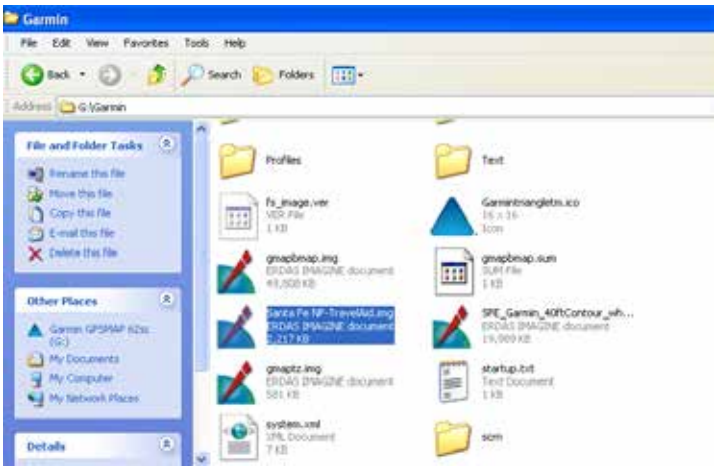
For newer Garmin units, the install package is not necessary and you can just drag-and-drop the IMG map file onto your unit.

Step 1: Connect your Garmin Unit to the computer and then navigate to the unit with File Explorer or under 'My Computer':

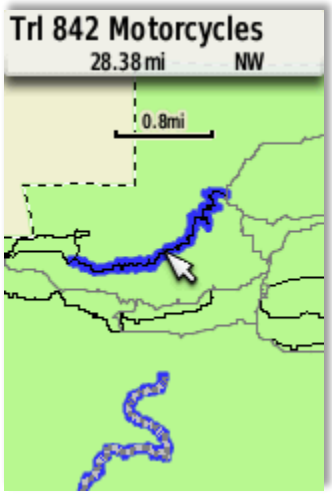


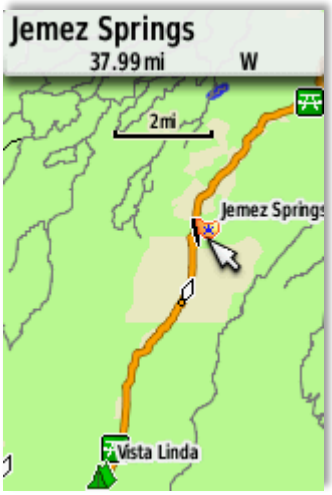
Step 2: Double click the Garmin Drive and navigate to the Garmin Folder:

Step 3: Drag the image file which you downloaded from the website ***Santa Fe NF-TravelAid_color.img*** into the Garmin folder. If there are other maps in the folder as well, they can be left as is. But you may want to turn off (hide) these maps in your GPS unit as indicated above. Finally close the file explorer window and disconnect the GPS.



(The display images below are from the GPSMap 62sc)

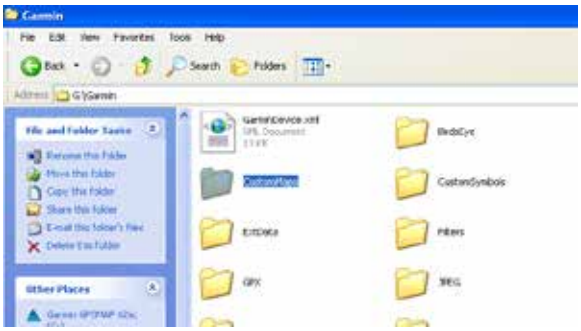




Another product that has been provided is a KMZ for newer Garmin Units.

This KMZ (***SantaFe_TravelAid_raster.kmz***) is just a tiled image picture of the Motor Vehicle Use Map (MVUM). Thus it will look just like the paper Motor Vehicle Use Map but you won't be able to query any of it with your cursor.

To add the map, just drag the KMZ into the “CustomMaps” folder of the Garmin unit.



Appendix A – List of supported Garmin GPS receivers

The Travel Aid should be installed only on Garmin GPS receivers that are supported by the Travel Aid's development software, as listed below. Unfortunately, "supported" is a relative term, as these receivers may display feature symbols differently, and at different zoom levels, depending upon their version of installed firmware.

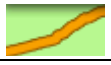
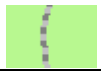
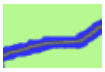
- Garmin ® Nuvifone M20 ™
- Garmin ® Mobile XT ™
- Garmin ® Aera ™
- Garmin ® Oregon ™
- Garmin ® Dakota ™
- Garmin ® Colorado ™
- Garmin ® Montana ™
- Garmin ® Astro ™
- Garmin ® Nuvi and Zumo (all models) ™
- Garmin ® Edge 605, 705, 800 ™
- Garmin ® iQue M3, M4, M5 ™
- Garmin ® eTrex 20, 30 ™
- Garmin ® eTrex Summit HC ™
- Garmin ® eTrex Venture Cx, HC ™
- Garmin ® eTrex Legend C, Cx, HCx ™
- Garmin ® eTrex Vista, C, Cx, HCx ™
- Garmin ® Rino 120, 130, 520, 530, 520HCx, 530HCx ™
- Garmin ® GPS V ™
- Garmin ® GPSMAP 60C, 60CS, 60Cx, 60CSx, 62, 62s, 62st ™
- Garmin ® GPSMAP 76, 76S, 76C, 76CS, 76Cx, 76CSx, 78, 78s, 78sc ™
- Garmin ® GPSMAP 176, 176C, 276C, 376C, 378, 478C ™
- Garmin ® GPSMAP 96, 96C, 196, 296, 396, 496 ™
- Garmin ® GPSMAP 620 - only routing maps in automotive mode ™
- Garmin ® Quest, Quest 2 ™
- Garmin ® Street Pilot i2, i3, i5 ™
- Garmin ® Street Pilot c320, c330, c340 ™
- Garmin ® Street Pilot c530, c550, 580 ™
- Garmin ® Street Pilot 2610, 2620, 2650, 2660 ™

**Disclaimer: This travel aid has not been verified on all these devices, but in principle it should work. Similar travel aids from other forests have worked on these devices.*

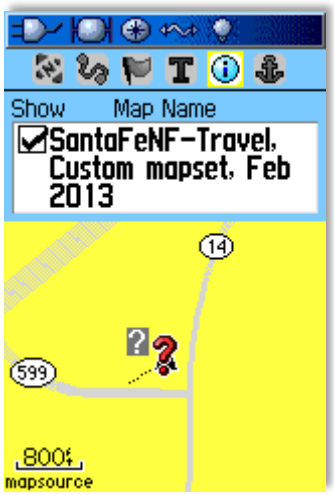
Appendix B – Travel Aid feature legend for older and newer models of Garmin GPS receiver

This table displays the typical symbol set for the Black and White and the Color version of the Travel Aid. Unfortunately, different Garmin GPS receiver models may display feature symbols differently, and at different zoom levels, depending upon their version of installed firmware.

In addition to many others, older receivers include the GPSMap 60C and 76C series. Newer receivers include the Oregon, Montana, GPSMap 62, and GPSMap 78 series.

Type Of Feature	Black and White	Color
Public road or highway		
Road open to highway-legal vehicles only		
Road open to all vehicles		
Motorized trail open to motorcycles only		
Motorized trail open to vehicles 50 inches, or less, in width		
Campground		
Picnic area		
Information site		
Seasonal Routes		
Corridors open to motorized off-road dispersed camping		
Area open to motorized cross-country travel		
Wilderness area		
Water body		

Map Setup Options- Suggested configuration for older units (i.e. GPSMap 60 series):



- General Tab: Detail=Most, Auto Zoom= On, Lock on Road= On
- Tracks Tab: Defaults
- Points Tab: Map Points Max Zoom= 1.2km, (the rest AUTO)
- Text Tab: Map Points Text Size= Medium, (the rest Small or None)
- Information Tab: Have the Travel Aid map be the only one checked, other maps
    - might interfere with symbology. Contour/Topo maps should be fine.

Map Setup Options- Suggested configuration for newer units (i.e. GPSMap 62s series):

- Advanced Map Setup
  Zoom Levels: Land Cover= 120km (the rest AUTO), Text Size: All Small,
  Detail: Most, Shaded Relief: Show if Available
- Map Information: Disable all maps except the MVUM. The default Worldwide
  DEM can be left on to provide hill-shade, or a contour map can be left on-the contour lines should show through.

Appendix C – Solutions for the Travel Aid appearing as a solid pink or green screen

Issue – Many Garmin receivers will initially display a solid pink or green screen instead of the Travel Aid's map. To change this you may need to disable the Base Map.

Solution for older models (non GPX-based) – For example, receivers in this category might include the eTrex HC series, or the GPSMap 76C series.

The solution for this category of receiver is to "hide" the receiver's built-in base map. Receiver firmware varies, but equivalent functionality should be available for most models.

1. Press **Page** until the receiver's Map page is displayed.
2. Press **Menu**, select **Setup Map**, select the **Information** tab (the red circle above right), and press **Menu** again.
3. Select **Hide Basemap** (the yellow highlight above right), and press **Enter**

Solution for newer (GPX-based) handheld receivers – For example, receivers in this category might include the Oregon series, or the GPSMap 62 series.

The solution for this category of receiver is to "disable" the receiver's built-in base map. Receiver firmware varies, but equivalent functionality should be available for most models. The solution described here is based on a GPSMap 62sc.

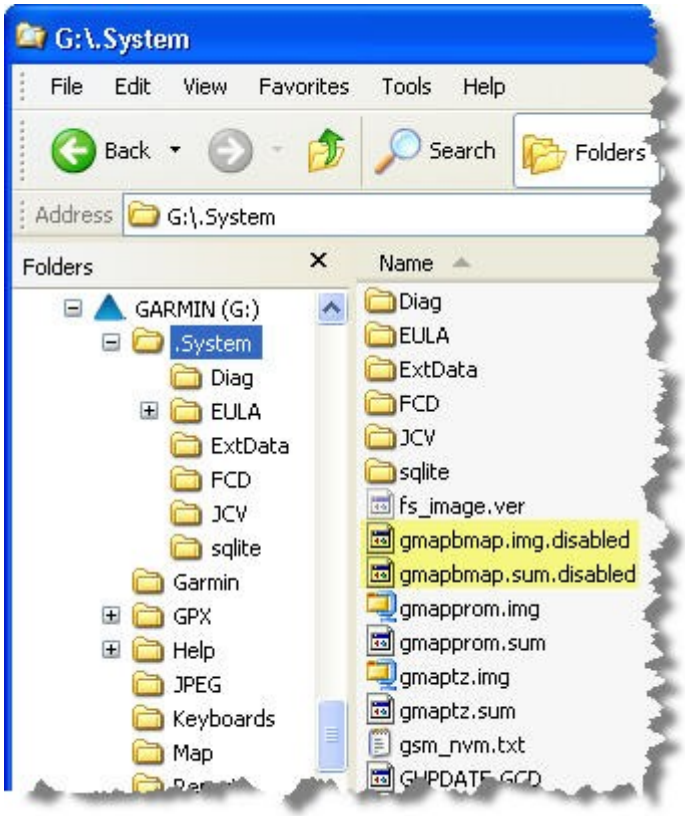
1. Press **Page** until the receiver's Map page is displayed.
2. Press **Menu**, select **Setup Map**, and then press **Enter**.
3. Select the **Map Information Select Map** section, and press **Enter**.
4. Select the **Basemap**, press **Enter**, select **Disable**, and press **Enter** again.

Solution for Nüvi automotive receivers – For example, receivers in this category might include the Nüvi 255W, or the Nüvi 50LM.

The general solution for this category of receiver is to "disable" its built-in base map file by renaming it. **Never rename or delete the `gmaptz.img` file or the `gmapprom.img` file!**

1. In some models, the built-in base map file resides in a hidden folder named **`.System`**. In this event, it will be necessary to use Windows Explorer on the PC to temporarily make that folder visible by **showing hidden files and folders**, and **un-hiding protected operating system files**, as illustrated at right. To do so in Windows Explorer, click **Tools – Folder Options…**, and then click on the **View** tab.

2. To disable the base map file, connect the receiver to a PC with its USB cable. Then browse to the device's **`.System`** folder, **`Garmin`** folder, or **`Map`** folder, and rename the **`gmapbmap.img`** file (the built-in base map file) to **`gmapbmap.img.disabled`**, as illustrated at right.

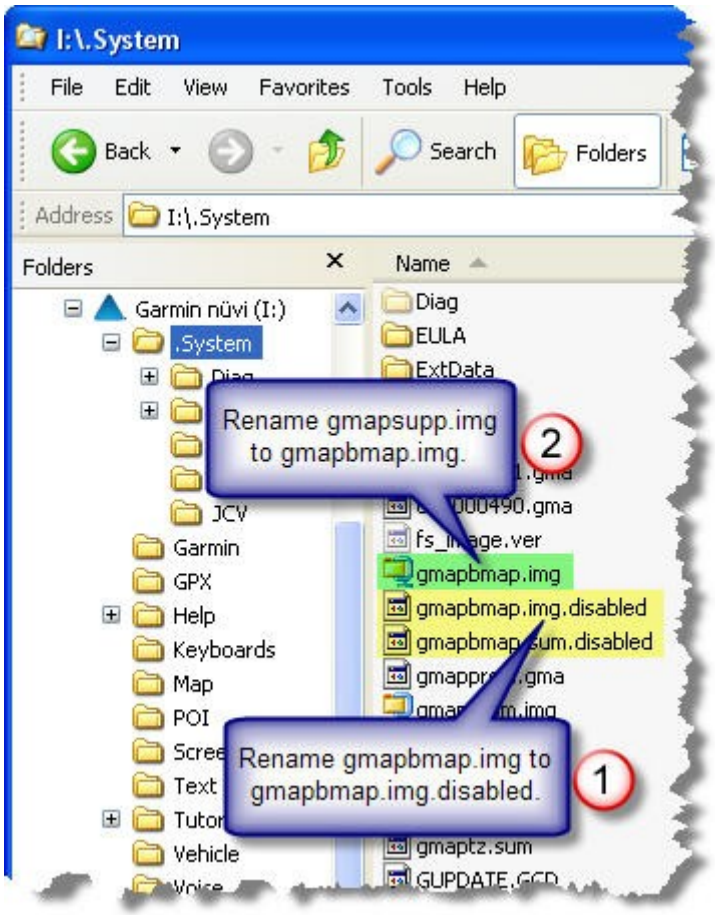


Re-hide protected operating system files once renaming is complete.

In some Nüvi models, the process described above will result in both the Travel Aid map and the Nüvi's City Navigator map being displayed simultaneously, as at left. This situation may be remedied by substituting the Travel Aid's map for the original built-in base map using this procedure.

1. Rename the Nüvi's **`gmapbmap.img`** file to **`gmapbmap.img.disabled`**, as previously described.
2. Rename the Travel Aid's **`gmapsupp.img`** file to **`gmapbmap.img`**.

Result – The Nüvi's City Navigator (CN) map will now be the only entry in the Nüvi's list of maps. Check the City Navigator map **On** to view it, or check the City Navigator map **Off** to view the Travel Aid map.



Carl Beyerhelm, GIS Specialist, Coconino National Forest, Revised 14-July-2012. Revised 19-Jan-2013, Timothy Downing, GIS Specialist, Santa Fe National Forest