Guidance - Installation And Use Of An MVUM Travel Aid For Garmin GPS Receivers

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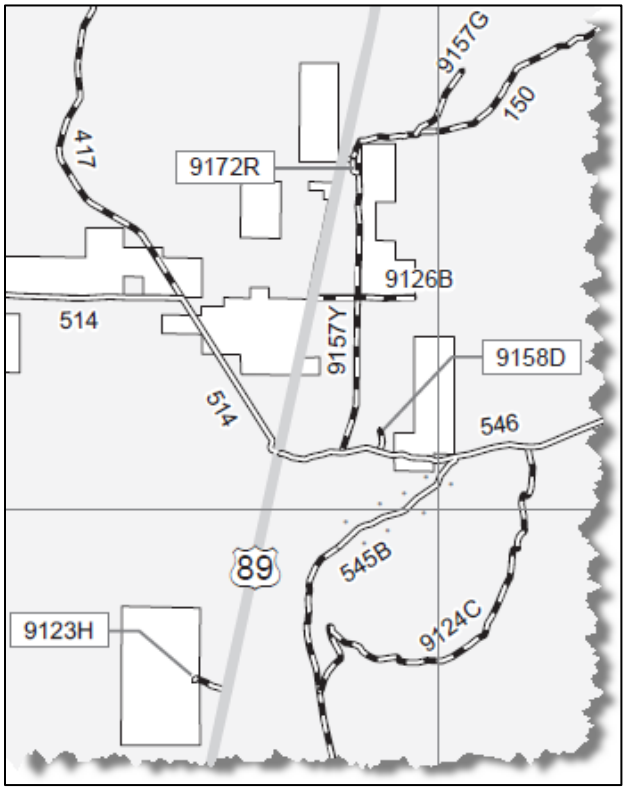
Background - The published Motor Vehicle Use Map (MVUM) is the legal document-of-record that designates roads, trails, and areas open to motorized use on Coconino National Forest. An example is illustrated at right.



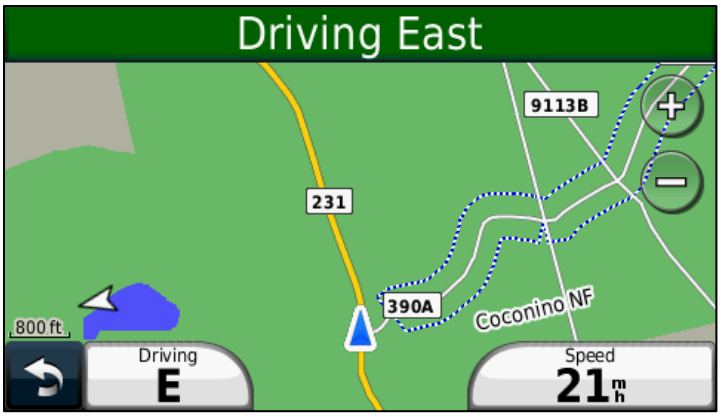
The published MVUM contains important information about road, trail, and area designations that motorists should always have close at hand. However, the MVUM's large size could make it difficult to handle, or refer to, while travelling, and some motorists have found that the MVUM's small map scale and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

In response to these concerns, Coconino National Forest developed a "Travel Aid" for Garmin GPS receivers that is designed to help motorists locate their position:

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

The Travel Aid is a supplement to, not a substitute for, the published hardcopy MVUM.

An example of the Travel Aid is illustrated at right on a Nüvi 40 LM.



Install the Travel Aid – Follow these steps to install the Travel Aid.

1. Refer to **Appendix A** to see a list of supported Garmin GPS receivers. Do not attempt to install the Travel Aid on an unsupported receiver.

2. If the receiver is supported, click **Start – Control Panel – Programs and Features** on the Windows-compatible PC (Windows 2000, XP, Vista, 7, or 8) 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:
   - CD shipped with a new Garmin GPS receiver,
   - Garmin MapSource or BaseCamp software CD or installation package, or
   - Garmin website at http://www8.garmin.com/support/download_details.jsp?id=591.

3. Browse to http://go.usa.gov/PEa on the internet, scroll to near the bottom of the page, click on the Garmin **Windows-compatible installer** link, and save the 6.2 MB installer file to the PC. Take note of the location where the installer was saved.

4. Turn the Garmin GPS receiver on, and connect it to the PC with its USB cable.

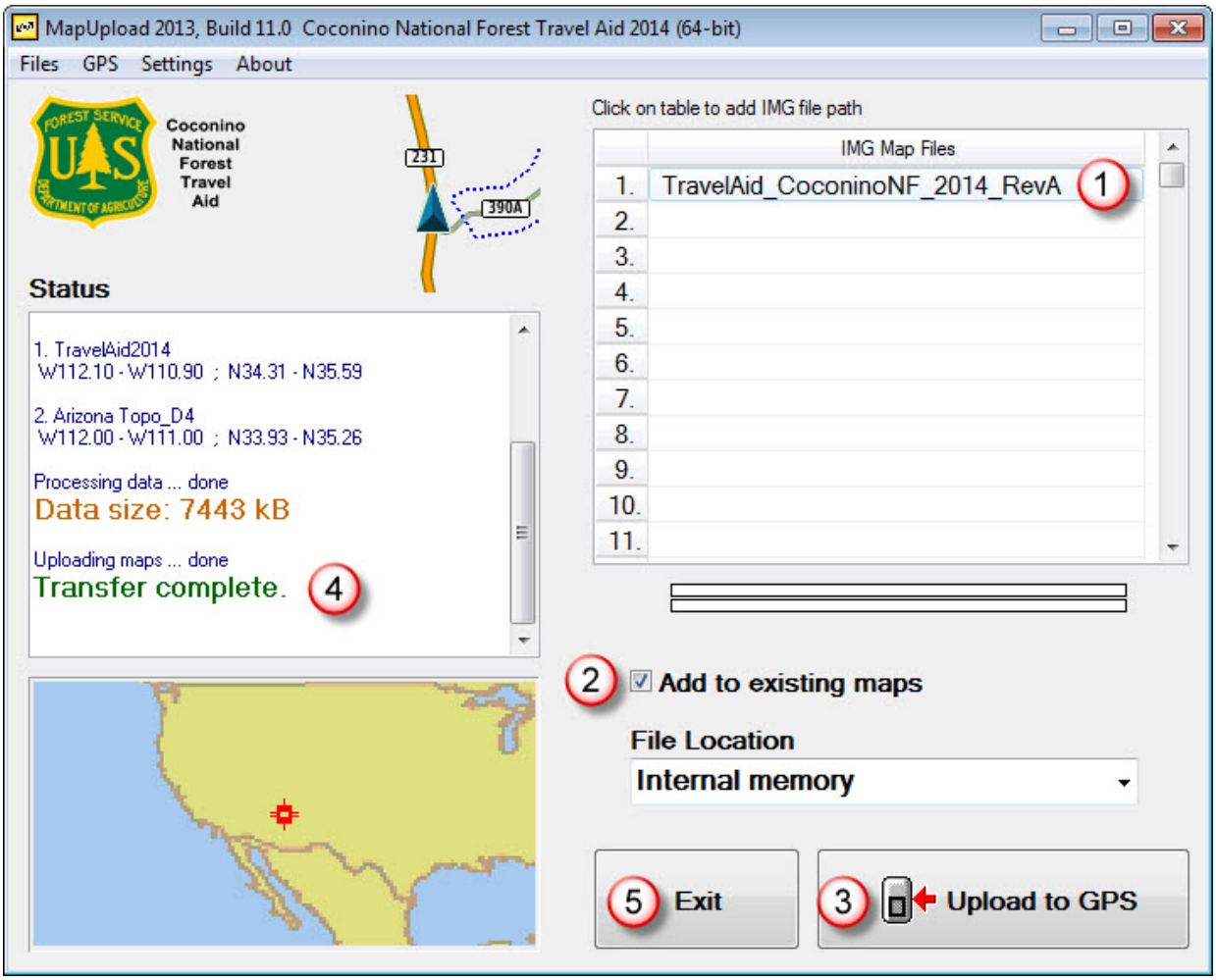
5. Browse to the installer's location on the PC, double-click it, and carry out this sequence of steps while referring to the illustration on the next page.
   - Item 1 – The Travel Aid's map is already pre-loaded, so no further action is required.
   - Item 2 – Check this box to merge Travel Aid map content with the receiver's existing supplemental map content, if any. **WARNING - If this box is not checked, any existing supplemental map content in the gmapsupp.img file will be permanently over-written!** The receiver's default base map (**gmapbmap.img**) and City Navigator map (**gmapprom.img**) are not affected when merging maps, and will not be over-written.

     Merging the Travel Aid map with a large supplemental mapset, such as an extensive MapSource library, **can be extremely time-consuming and subject to mishap**. Supplemental map content that cannot be easily reloaded from another source should be backed up prior to merging it with the Travel Aid's map.

- Item 3 – Click the **Upload to GPS** button to install the Travel Aid's map content.

- Item 4 – Take note of these 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 about 1.9 MB.

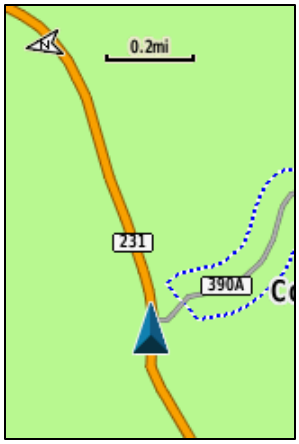
- Item 5 – Click **Exit** to complete the Travel Aid's installation.



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

Establish GPS reception - Turn the 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.

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



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

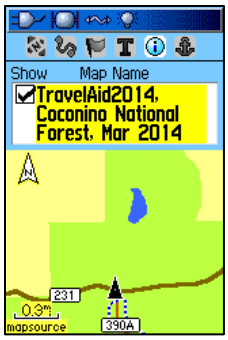
Color scheme - The map's color scheme was designed for daytime use, so it is recommended that users manually change their receiver's **Display Mode** to the "Daytime" setting.

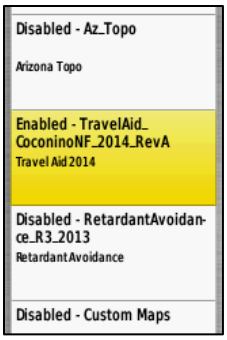
Map orientation - The map may be easier to interpret while travelling if its **Orientation** is set to "track up" instead of "north up". Regardless of the map's orientation, road and trail labels will automatically refresh and rotate themselves to remain visible and legible.

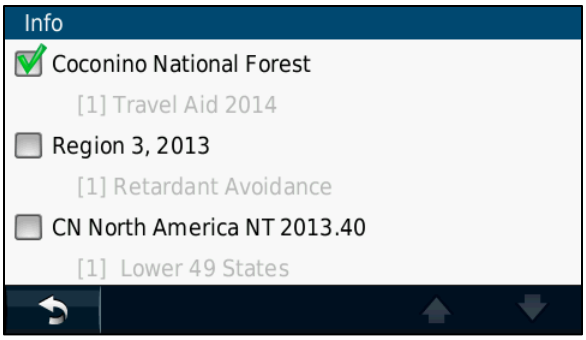
Position and direction of travel - The receiver's current position will be indicated by an arrowhead pointing in the direction of travel. In the example above, travel is towards the east along Road 231, a road that has been designated for highway-legal vehicles only.

Zoom levels – Different feature types, and their labels, will appear or disappear when zooming in or zooming out. When zooming in, for instance, major public highways will become visible before major Forest Service roads appear. And, in turn, major Forest Service roads will come into view prior to the appearance of minor Forest Service roads. Of course, the map may be viewed at any convenient zoom level, but the 800 ft through 0.3-mile zoom levels are typically preferred for general navigational use.

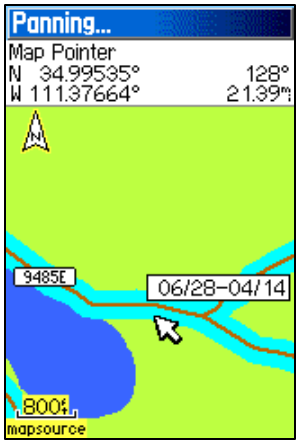
Hide or show the map – Generally, it is good practice to only have one map visible at any given time. Users can control Travel Aid map visibility by checking or un-checking its entry, or by enabling or disabling its content, in the receiver's **Map Setup** or **Info** sections. Examples of setting the Travel Aid's map visibility to "on" are shown below for a GPS Map 60CSx, GPS Map 62sc, and Nüvi 40 LM.







Feature identification – The receiver's map pointer may be used to "identify" a feature. In the example at right, identifying a road's seasonal designation indicator reveals that the road's season of use is June 28 – April 14.



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

Map clarity – Certain lighting conditions, limited screen size/resolution, and competition from other maps can impair map clarity. Zooming in, increasing screen backlighting, and turning off other maps may improve map clarity.

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

Roads and trails are not "routed" – Unlike commercial map content for the Garmin Nüvi, Tom Tom, Magellan RoadMate, and so on, the Travel Aid's roads and trails are not "routed", and do not provide "turn-by-turn" navigation.

Windows compatibility only – The Travel Aid's installer package is compatible only with PCs running Windows 2000, Windows XP, Windows Vista, Windows 7, or Windows 8.

Un-install the Travel Aid – Unfortunately, the Travel Aid's installer package does not include an un-install utility. There are two options for deleting a Travel Aid's map content from a receiver.

Option 1 – The **gmapsupp.img** file may be deleted from the receiver if the Travel Aid has not been merged with any other supplemental map content, or if the other supplemental map content can be easily reloaded from another source like MapSource, BaseCamp, or an SD card.

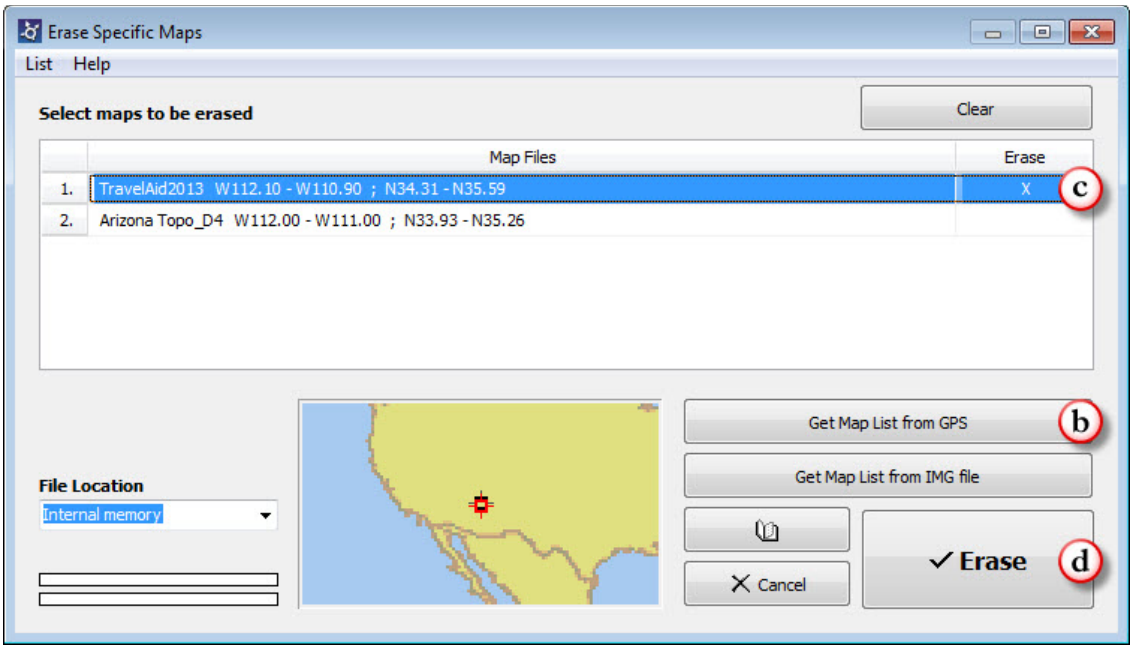
To delete this file, connect the receiver to a PC by its USB cable, browse the receiver's file system for the **gmapsupp.img** file, select it, and delete it. This file typically resides in the receiver's **.System**, **Garmin**, or **Map** folder.

Option 2 – Follow these steps if the Travel Aid has been merged with other supplemental map content, and if the other supplemental map content cannot be easily reloaded from another source like MapSource, BaseCamp, or an SD card.

1. Download and install the Mapwel demo software (http://www.mapwel.net/down.htm) on a Windows-compatible PC. The demo software is a free download.

2. Turn the receiver on, 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 **TravelAid2013** map (or whichever map is to be deleted), and
    d. Click **Erase**.



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 and labels differently, and at different zoom levels, depending upon their version of installed firmware.

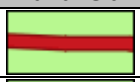
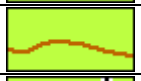
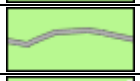
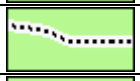
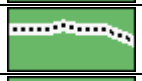
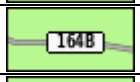
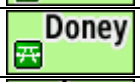
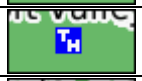
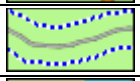
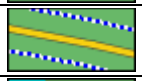
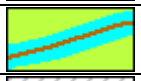
Although technically supported, **receivers having a grey-scale (non-color) screen are generally unsuitable for Travel Aid use**.

Supported Garmin GPS receivers include:

Garmin Nuvifone M20
Garmin Mobile XT
Garmin Aera
Garmin Oregon
Garmin Dakota
Garmin Colorado
Garmin Montana
Garmin Astro
Garmin Nuvi and Zumo (all models) - most of them do not display symbol (point) icons *
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

Appendix B – Travel Aid feature legend for different classes of Garmin GPS receiver

A class or model of receiver may display feature symbols and labels differently than another class or model, and at different zoom levels, depending upon their version of installed firmware. Examples of the variation likely to be observed are illustrated below.

Type Of Feature	Legacy handheld*	Current handheld	Automotive Nüvi
Public road or highway			
Road open to highway-legal vehicles only			
Road open to all vehicles			
Motorized trail open to all vehicles			
Motorized trail open to vehicles < 62 inches wide			
Motorized trail open to motorcycles			
Road label			
Motorized trail label			
Forest Service campground			
Picnic area			
Motorized trailhead			
Information site			
Boundary of area open to motorized off-route dispersed camping (blue and white dotted line)			
Route with seasonal designation (light blue background)			
Area open to motorized cross-country travel			
Wilderness area			
Water body			
Land of other ownership			
National Forest land			

* A legacy receiver is one that does not go into “mass storage mode” (its file system is not made automatically visible) when attached to a PC by its USB cable.