

Navigating in New Jersey State Plane Coordinates with the MobileMapper Pro GPS

Mark Silver, ms@igage.com, +1 801 412-0011 x16
May 20, 2008

See also: Application Note: Using US State Plane Coordinate Systems in the MobileMapper receiver. Found online at:

ftp://ftp.magellangps.com/Mobile%20Mapping/Older%20Products/MM%20Pro/Application%20Notes/MM_Navigating_with_US_St_Plane.pdf

NOAA Manual NOS NGS 5: State Plane Coordinate System of 1983, By James E. Stem, found online at: http://www.ngs.noaa.gov/PUBS_LIB/ManualNOSNGS5.pdf

Please note that these instructions will set the receiver to display New Jersey State Plane Coordinates, however the GPS receiver will display Ellipsoidal elevation (not orthometric.) It is necessary to use the MobileMapper Office program to convert using Geoid03.

New Jersey State Plane 2900 Definition:

System:	Transverse Mercator
Central Meridian:	74.50 degrees
Scale Factor:	0.9999
Grid Origin Lat:	38.83333
Grid Origin Lon:	74.50000
False Easting:	150,000 meters (492,125.0 US Survey Feet)

We want US Survey feet so the “Units to Meters Conversion” is 0.30480061 (M/SFt)

Configuring the MobileMapper Pro Receiver:

1. Turn on the MobileMapper.
2. Press the **ENTER** button upon seeing the Agreement screen
3. Press the **MENU** button
4. Browse down the menu to **Setup** and press **ENTER**
5. Browse down the menu to **Map Datum** and press **ENTER**
6. Select **Primary** and press **ENTER**
7. Select **NAD83** and press **ENTER**
8. From **Map Datum**, press **ENTER**
9. Browse down and select **Secondary** and press **ENTER**
10. Select **NAD83** and press **ENTER**
11. Browse up the menu to **Coord System** and press **ENTER**
12. Select **Primary** and press **ENTER**
10. Select **User Grid** and press **ENTER**

11. On the **Projection** screen, select **Trans Merc** and press **ENTER**
12. On the User Grid screen “Latitude of origin” enter “38.83333N”
13. Select “Longitude of origin” and enter “74.50000W”
14. Select **NEXT** and press **ENTER** to reach the next screen.
15. Select “Scale Factor” and enter “0.99990650”
16. Select “Unit to meters conversion” and enter “0.30480061”
17. Select “False East at origin” and enter “+00492125.0”
18. Select “False north at origin” and enter “+00000000.0”
19. Select “**Done**” and press **ENTER**.

The primary coordinate system will now read in New Jersey State Plane US Survey Feet NAD83.

To navigate to a known State Plane Coordinate:

As an example, lets navigate to the New Jersey Capital Dome:

40 13 13.93838 N 074 46 11.86400 W NAD83 (Lat/Lon)
 416,742.943 SFeet E 505,362.456 SFeet N NJ NAD83 (State Plane)

1. From the main menu press **MENU**
2. Browse down to **Mark** then press **ENTER**
3. Use the arrow rocker to move the selection up to the **Name** and enter an appropriate name “CAPNJ”, press **ENTER** to move to Location
4. Press **ENTER** and edit the top number (the Easting) to “004-16-743”
5. Press **ENTER** and edit the bottom number (the Northing) to “005-05-362”
6. Press **ENTER** and enter the Elevation “39” ft
7. Now use the arrow keys to move down to **Save** and press **ENTER**

Now to navigate to the new waypoint:

1. From the main menu press **MENU**
2. Arrow down to **GOTO** and press **ENTER**
3. (if the message “A GOTO Already Exists...” is shown press YES to clear)
4. Highlight **User Waypoint** and press **ENTER**
5. Browse (up and down) to “CAPNJ” and press **ENTER**.

Use the NAV key to cycle through the navigation screens for assistance navigating to the chosen location.