ID407.30

A. Background

This policy is an update to ID 450-GM, Part 407. Extensive field testing of our current handheld GPS systems, as well as newer GPS models, have shown that the level of accuracy of these systems using differential correction signals (either Wide Area Augmentation System (WAAS) or Nationwide Differential Global Positioning System (NDGPS)) can meet current NRCS spot checking tolerances in length or area measurements for practice certification when properly used by trained personnel. Handheld GPS units should never be used to verify elevational data.

WAAS coverage is available statewide. NDGPS coverage is available in parts of western and all of northern Idaho. Approximate NDGPS coverage is shown in Exhibit 1. Use of an external antenna can improve NDGPS reception. Use of an external antenna does not improve WAAS signal reception, but the antenna may improve the overall number of satellites available to the GPS. See Exhibit 2 to determine if WAAS is enabled. This policy does not apply to Real Time Kinematic (RTK) GPS units, also referred to as 'survey-grade'. RTK units can be used to measure any practice for certification.

B. Area Measurements

GPS can be used for measuring any area greater than 10.0 acres for practice certification. GPS units used for practice certification will be set to use either WAAS differential correction or connected to an NDGPS differential correction receiver. The type of setting and the value reflected by the unit for ***accuracy,*** Exhibit 3, at the time of the measurement will be documented in the check-out notes.

(1) Typical maximum acceptable errors for practice certification

Area Measurement	4%

C. Length Measurements

Handheld GPS can be used to measure lengths greater than 500 feet for practice certification as long as the overall land slope is less than 15%. GPS units used for practice certification will be set to use either WAAS differential correction or a NDGPS differential correction. The type of setting and the value reflected by the unit for ***accuracy,*** Exhibit 3, at the time of the measurement will be documented in the check-out notes.

For lengths less than 500 feet, an alternate method of measurement (such as a 200 ft chain, measuring wheel, electronic total station, etc) shall be used in order to assure that the measurement will meet current NRCS spot checking tolerances.

(1) Typical maximum acceptable errors for practice certification

Linear Measurement	2%

D. Verification of GPS Data for Practice Certification

All area and length measurements obtained with GPS units for practice certification must be downloaded into a GIS or CAD system for verification of the proper location of the conservation practice. GPS position data will be stored electronically, in hardcopy or both in the cooperators file.

E. Use of Digital Orthophotography for Practice Certification

Areas and lengths that are very WELL-DEFINED (visually) on Digital Orthophotography and represent CURRENT field conditions, can be digitized and measured using GIS or CAD software. Lengths shall not be measured if the land slope is over 10%.

Exhibit 1 - Idaho NDGPS Coverage

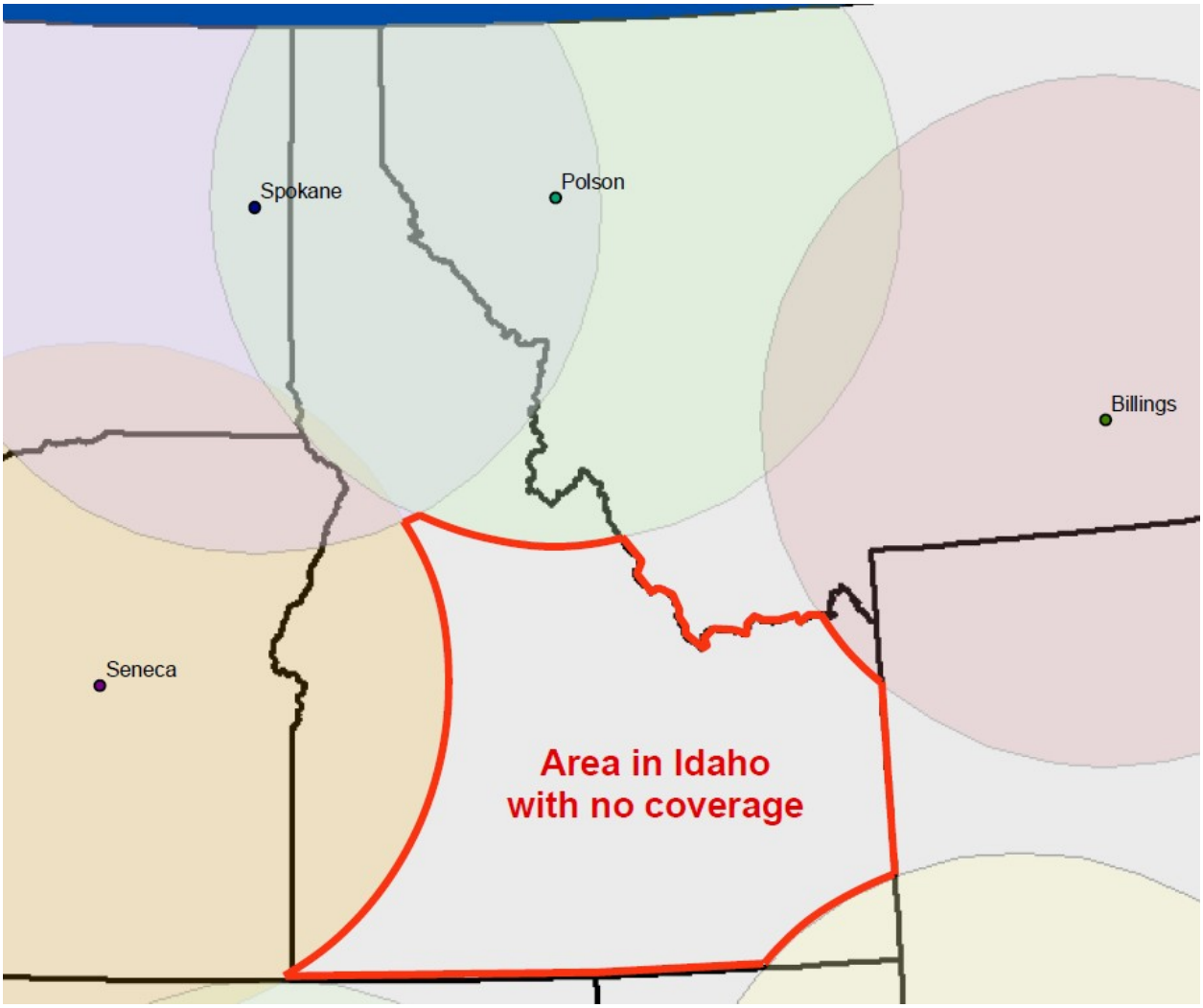


Exhibit 2 - WAAS Enabled on Garmin GPSmap76

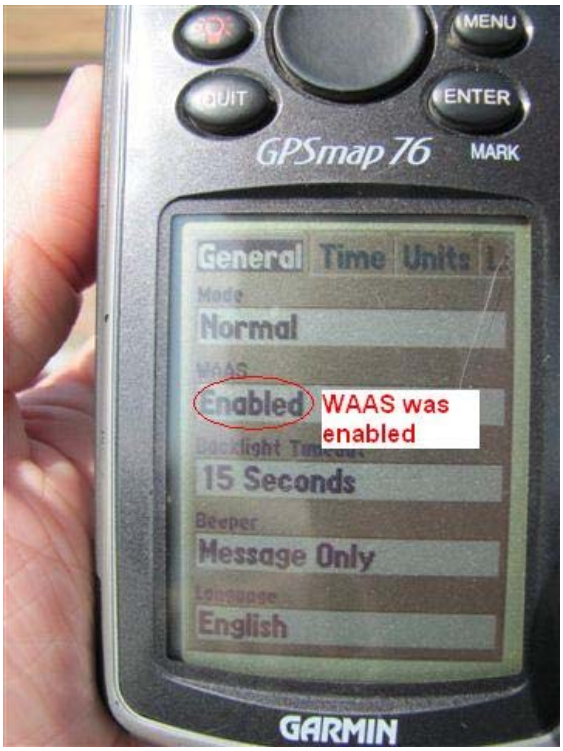
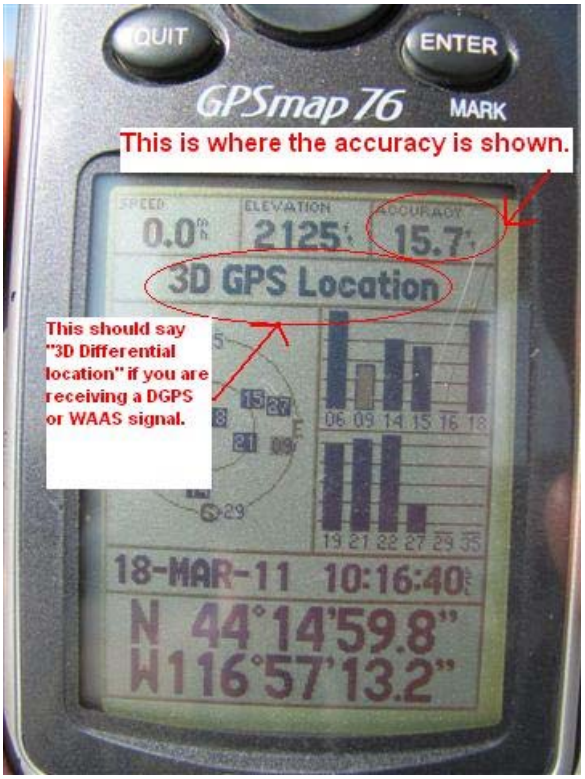


Exhibit 3 - Accuracy Reading on Garmin GPSmap76


QUIT
ENTER
GPSmap 76
MARK
This is where the accuracy is shown.
SPEED
0.0
ELEVATION
2125
ACCURACY
15.7
3D GPS Location
This should say "3D Differential location" if you are receiving a DGPS or WAAS signal.
18-MAR-11 10:16:40
N 44°14'59.8"
W116°57'13.2"