

United State Department Interior

BUREAU OF LAND MANAGEMENT

Oregon State Office

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In Reply Refer to:
5400 (OR-931) P

June 16, 2004

EMS TRANSMISSION 06/18/04
Instruction Memorandum No. OR-2004-086
Expires: 9/30/2005

To: All District Managers

From: State Director, Oregon/Washington

Subject: Use of Global Positioning Systems in Preparing Timber Sales

Program Area: Timber Management - Timber Sale Preparation

Purpose: To provide direction for the use of Global Positioning Systems (GPS) in the traverse of timber sale cutting areas, and the preparation of timber sales contracts and exhibits.

Policy/Action: All timber sale boundary traverses and various resource locations such as wildlife trees or stream locations, etc., which are located using GPS and which are placed on timber sale exhibits, or used in timber sale design feasibility analysis or cruises shall be gathered and disseminated by applying the following direction and standards:

1. General Standards:

- a. All crew members shall be trained in the proper use of equipment. Districts shall establish training procedures for the use of equipment and software.
- b. All data shall be differentially corrected. The closest reference station is preferred, but any station within a 300 mile range is acceptable.
- c. Mission planning software (e.g., Quick Plan or its equivalent) should be used to determine the best time of day, number of satellites available, and the best satellite geometry (position dilution of precision) to ensure the best possible data collection.

2. Data Collection Standards:

- a. The Trimble Pro XLR is the resource grade receiver most commonly being used by Oregon/Washington Bureau of Land Management employees. For this receiver, or its equivalent, the data collection standards are:

1. A Position Dilution of Precision (PDOP) no greater than eight.
2. Minimum elevation of satellites of 15 degrees above the horizon.
3. 3-D manual mode (minimum of four satellites tracked).
4. A minimum of 60 positions at each turning point of a timber sale boundary polygon will be collected and averaged into a single position for that point.
5. A signal to noise ratio of six is recommended. A minimum of a signal to noise ratio of four may be used for individual readings.

b. Different receivers or different collection standards may be used provided that they result in collection of data which meets the Federal Geographic Data Committee Geospatial Positioning accuracy standards part three, National Standard for Spatial Data Accuracy, FGDC-STD-007.3-1998. This standard requires a 13.9 meter horizontal accuracy for each point at the 95 percent confidence level for a 1:24000 map. The Trimble Pro XLR receiver has been tested and shown to meet or exceed this standard in cover types typically found in Western Oregon, assuming the data collection standards listed above in 1 and 2a are met. Additional testing from a variety of receivers has been completed and results are compiled at the testing website www.fs.fed.us/database/gps. Test results vary by cover type. Receivers should be selected which meet the above accuracy in the cover type typical of the project area.

c. Where GPS data is used in projects in combination with other traverse methods, such as compass and chain, or Criterion lasers, etc., use a minimum of two points common to both methods to spatially and rotationally align the mixed collection methods, thereby providing a common coordinate system.

3. Notification to Timber Sale Purchasers:

Timber sale Exhibit As and timber sale notices/prospectuses shall include notification to purchasers that GPS has been used in the computation of acres. The following language shall be included in the timber sale notice and prospectus, and on the Exhibit A:

“Acres shown on Exhibit A have been computed using a (specify make and model) Global Positioning System receiver. Acreage was calculated based on Global Positioning System traverse procedures including differential correction.”

Timeframe: For all timber sales to be offered in FY 2005 and later

Budget Impact: None

Background: Over the last few years, the use of GPS to acquire spatial information related to the layout and preparation of timber sales has become widespread. The Timber Sale Handbook, H-5420-1, Preparation for Sale, prescribes a maximum closure accuracy for compass and chain

traverses. This standard is necessary for sufficient accuracy of timber cruises dependent on acreage, and for appraisal purposes. Due to the nature of GPS technology, traditional measures of accuracy, such as closure, are not applicable. Spatial information is gathered and used to expand plot-based cruise data, prepare Exhibit As for timber sales, and place harvest polygon information in the Forest Operations Inventory. It is essential that this data be at an acceptable level of accuracy.

Manual/Handbook Sections Affected: When the Timber Sale Handbook, H-5420-1, Preparation for Sale, is updated, this change will be incorporated into the Sale Mapping section.

Coordination: Coordination occurred with district field users and Ken Bays, State Geodesist.

Contact: Refer questions to Lyndon Werner, OR-931, at 503-808-6071, or Bill Hatton, OR-931, at 503-808-6015.

Districts with Unions are reminded to notify their unions of this Instruction Memorandum and satisfy any bargaining obligations before implementation. Your servicing Human Resources Office or Labor Relations Specialist can provide you assistance in this matter.

Signed by
Cathy L. Harris
Acting Associate State Director

Authenticated by
Mary O'Leary
Management Assistant

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