

BEFORE THE BOARD OF PROFESSIONAL ENGINEERS
AND PROFESSIONAL LAND SURVEYORS
DEPARTMENT OF LABOR AND INDUSTRY
STATE OF MONTANA

In the matter of the adoption NEW) NOTICE OF PUBLIC HEARING ON
RULES I through IV pertaining to) PROPOSED ADOPTION
professional land surveyor scope of)
practice activities)

TO: All Concerned Persons

1. On November 9, 2010, at 1:00 p.m., a public hearing will be held in room 439, 301 South Park Avenue, Helena, Montana to consider the proposed adoption of the above-stated rules.

2. The Department of Labor and Industry (department) will make reasonable accommodations for persons with disabilities who wish to participate in this public hearing or need an alternative accessible format of this notice. If you require an accommodation, contact the Board of Professional Engineers and Professional Land Surveyors (board) no later than 5:00 p.m., on November 5, 2010 to advise us of the nature of the accommodation that you need. Please contact Brooke Jasmin, Board of Professional Engineers and Professional Land Surveyors, 301 South Park Avenue, P.O. Box 200513, Helena, Montana 59620-0513; telephone (406) 841-2351; Montana Relay 1 (800) 253-4091; TDD (406) 444-2978; facsimile (406) 841-2309; e-mail dlibsdpels@mt.gov.

3. GENERAL STATEMENT OF REASONABLE NECESSITY: The board determined it is reasonably necessary to adopt proposed New Rules I through IV to address requests from both within and outside the profession of land surveying for clarification regarding whether certain activities (mostly arising as a consequence of developing technologies) require licensure as a professional land surveyor.

In particular, the board acknowledges receiving a number of questions and complaints regarding whether individuals using readily available consumer technologies were engaging in the unauthorized practice of land surveying. In response, the board formed an advisory group comprised of land surveyors, state, and local government agencies involved in land surveying issues, developers of geographic information systems (GIS), and global positioning system (GPS) users. Over the course of more than two years, the advisory group produced a consensus document, which formed the basic text of these proposed new rules.

The board therefore determined it is reasonable and necessary to propose new rules to provide clarification and guidance to licensees and the public regarding the scope of practice for licensed land surveyors.

4. The proposed new rules provide as follows:

NEW RULE I GENERAL PRINCIPLES (1) Boundary location and monumentation are considered the practice of land surveying.

(2) National Geodetic Survey (NGS) is considered authoritative; however, their land surveyors, when acting under government authority, are not required to be a professional land surveyor to perform geodetic control surveys.

(3) Numerical accuracy, for example, submeter, is not a basis for consideration as to whether a professional land surveyor is required.

(4) Consideration of what is being mapped is not a basis for determining whether a professional land surveyor is required. Consideration of what the information will be used for should determine whether a professional land surveyor is required. In other words, it is not what is mapped, but the intended use for the data that determines whether or not a professional land surveyor is required.

(5) Preparation of legal descriptions for transfer of interest in real property is limited to professional land surveyors.

(6) Anyone may use land surveying methods for their own personal needs on their own property. Examples include assessing probable property lines, topography, and locations of physical features.

(7) Anyone can use land surveying methods to determine dynamic perimeters such as fire fronts, weather fronts, moving vehicles, etc., for reporting to the public, posting on the Internet, or any other use not prohibited by these guidelines.

(8) These guidelines do not preclude surveys performed by professional engineers or other legally recognized professions or trades as allowed by state law or administrative rule.

AUTH: 37-1-131, 37-67-202, MCA

IMP: 37-1-131, 37-67-101, 37-67-301, MCA

NEW RULE II GEOMATICS DEFINITIONS (1) "Accuracy" may refer to expressed accuracy or implied accuracy.

(a) "Expressed accuracy" means designating a numerical value for spatial accuracy or spatial relationships between objects or data.

(b) "Implied accuracy" means designating things such as equipment, equipment operating procedures, field procedures, analysis, methodologies, etc. to support a spatial accuracy expectation.

(2) "Authoritative" means certifiably accurate, based on the expertise of one who is sanctioned by an established governmental authority.

(a) The following are examples of authoritative activities:

(i) the collection and evaluation of evidence with the intent to determine land boundary locations;

(ii) the collection, analysis, and evaluation of measurements, with the intent to certify the positional relationship of data sets to property boundaries, an elevation datum, or a geodetic control network;

(iii) the collection, analysis, and subsequent publication of positional information related to geodetic control; and

(iv) meeting or offering to meet a contractual spatial accuracy requirement, express or implied.

(b) Each of the authoritative activities identified as an example in (2)(a) must be performed by a professional land surveyor, with the following exceptions:

- (i) activities that may be performed by a person other than a land surveyor, under the laws of this state or of the United States;
- (ii) a geodesist recognized as an expert in the field of measurement science may perform activities described in (2)(a)(iii); and
- (iii) a professional engineer may perform activities described in (2)(a)(iv).

(3) "Certification" means a written assurance, warranty, guarantee, or official representation that some act has or has not been done, or some event has occurred, or some legal formality has been complied with. Persons or entities providing certifications do so utilizing specific authority, licensure, or jurisdiction granted by law. Certification requires special knowledge, expertise and/or authority, generally held by a responsible official. The following are examples of certification:

- (a) the certification that a professional land surveyor applies to a certificate of survey; and
- (b) the certification of the locational accuracy of a Geographic Information System (GIS) product.

(4) "Control" may refer to geodetic control, mapping control, or survey control.

(a) "Geodetic control" means a set of permanently monumented control points, also commonly referred to as "stations," whose coordinates are established by geodetic surveying methodology.

(i) Geodetic control work may only be performed by a professional land surveyor or a federal agency designated to perform such surveys.

(ii) Geodetic control provides a common, consistent, and accurate reference system for establishing coordinates from which supplemental surveying, engineering, and mapping work is performed and to which any geographic data may be tied.

(iii) All National Spatial Data Infrastructure (NSDI) framework data and users' applications data require geodetic control to register spatial data.

(iv) The official national common reference system is designated the National Spatial Reference System (NSRS). Mapping and surveying works may be connected to the NSRS by tying new projects to previously established control points that are part of the NSRS. The fundamental geodetic control for the United States is provided through the National Oceanic and Atmospheric Administration's National Geodetic Survey (NGS) managed by NSRS. Geodetic control includes horizontal and vertical control monuments that are part of the NSRS (the NGS database).

(b) "Mapping control" means any horizontal or vertical coordinate position used to control maps that are not included in the definitions of geodetic or survey control.

(i) Mapping control provides the framework for the spatial placement of nonauthoritative products such as aerial photography, parcel mapping, and Geographic Information Systems (GIS).

(ii) Mapping control may or may not require a professional land surveyor, depending upon the intended use of the products.

(iii) Mapping control is typically, though not necessarily, based on an official reference system or geodetic datum.

(iv) Mapping control may be accomplished with various levels of accuracy and by various methods depending upon the intended use of the products.

(v) Control for georeferencing GIS data, some aerial photography, resource mapping, and inventory mapping may not require supervision by a professional land surveyor.

(vi) Control for aerial photography for use in functions included in the practice of land surveying or engineering surveying (i.e. boundary determination or engineering design) must be performed under the direct supervision of a professional land surveyor.

(c) "Survey control" means any horizontal or vertical coordinate position used to control fixed works of engineering or legal land boundaries. Survey control may only be performed by a professional land surveyor (or a federal agency designated to perform such surveys). Survey control may or may not be based upon any official reference system or geodetic datum. Survey control may be based on assumed coordinates, or geodetic control, or property corners, or Public Land Survey System (PLSS) corners, or randomly selected points. Survey control may be accomplished in various levels of accuracy and by various methods depending upon the use of the finished product. The following are examples of survey control:

(i) control for construction projects;

(ii) control for subdivision platting;

(iii) control for boundary surveys;

(iv) control created or tied for cadastral surveys for the Bureau of Land Management;

(v) control created or tied for geodetic ties for plats or surveys;

(vi) control created or tied for boundary surveys;

(vii) control created or tied for subdivision design or staking;

(viii) control created or tied for construction staking; and

(ix) control created or tied for American Land Title Association surveys.

(5) "Geomatics" means the science and technology dealing with the character and structure of geospatial information, its methods of capture, organization, classification, qualification, analysis, management, display, and dissemination, as well as the infrastructure necessary for the optimal use of this information.

(6) "Photogrammetry and remote sensing" means the art, science, and technology of obtaining reliable information from noncontact imaging and other sensor systems about the earth and its environment, and other physical objects and processes through recording, measuring, analyzing, and representation.

(7) "Spatial data" means information that identifies the geographic location and characteristics of natural or constructed features and boundaries on the surface of the earth. This information may be derived from, among other things, remote sensing, mapping, and surveying technologies. Spatial data may also be known as geospatial data.

AUTH: 37-1-131, 37-67-202, MCA

IMP: 37-1-131, 37-67-101, 37-67-301, MCA

NEW RULE III ACTIVITIES INCLUDED WITHIN SURVEYING PRACTICE

(1) Activities that must be accomplished under the responsible charge of a professional land surveyor, unless specifically exempted in [NEW RULE IV], include, but are not limited to the following:

(a) The creation of maps and georeferenced databases representing authoritative locations for boundaries, fixed works of engineering, or topography.

Examples include:

(i) legal boundary surveys;

(ii) establishing or locating the extent, alignment, and acreage included in rights of way, easements, or other legal interests in real property;

(iii) engineering surveys for designs; and

(iv) as-built surveys.

(b) Preparing or offering to prepare a certificate of survey or plat.

(c) Preparing or offering to prepare legal descriptions or exhibits, and computation of associated acreage of real property boundaries, easements, or other legal interests in real property. Lands acquired for state highways are specifically exempted under 76-3-209, MCA.

(d) Original data acquisition or the resolution of conflicts between multiple data sources, when used for the authoritative location of features within data themes. Examples include:

(i) elevation and hydrography;

(ii) fixed works of engineering;

(iii) private and public boundaries; and

(iv) cadastral information.

(e) Original data acquisition by contract or second parties for authoritative purposes.

(f) Authoritative certification of positional accuracy of maps or measured survey data.

(g) Authoritative adjustments or authoritative interpretation of survey data.

(h) Geographic Information System (GIS)-based parcel or cadastral mapping used for authoritative boundary definition purposes wherein land title or development rights for individual parcels are or may be affected. Examples include:

(i) If the boundary of an administrative district is proposed to run "diagonally across section eight from the Northeast to the Southwest corners of said section" and a GIS-based map showing that line is adopted as the official representation of the boundary, that map must be prepared by, or under the direction of, a professional land surveyor.

(ii) If the boundary of an administrative district is proposed to run "one-half mile northeasterly of and parallel to County Road #4", and a GIS-based map showing that line is adopted as the official representation of the boundary, that map must be prepared by, or under the direction of, a professional land surveyor.

(iii) If a GIS-based map is used only to provide a graphical representation of that boundary, but authoritative determination of the boundary location is dependent upon survey of the described off-set line, preparation of the map need not be accomplished under the responsible charge of a professional land surveyor.

(i) Authoritative interpretation of maps, deeds, or other land title records to document or present evidence to assist in resolving conflicting boundaries.

(j) Acquisition and or verification of field data required to authoritatively position fixed works of engineering or cadastral data relative to control. Examples include:

(i) determination and identification of corner points; and

(ii) authoritative collection or calculation and compilation of geodetic coordinates of Public Land Survey System (PLSS) or any monument controlling a property line.

(k) Analysis, adjustment, or transformation of cadastral data with respect to geodetic control within a GIS, resulting in the certification of positional accuracy.

(l) Providing or offering to provide geodetic control/survey control and some types of mapping control.

(m) Establishing ground control and quality control proofing for remote sensing and photogrammetric products when used for authoritative purpose.

AUTH: 37-1-131, 37-67-202, MCA

IMP: 37-1-131, 37-67-101, 37-67-301, MCA

NEW RULE IV ACTIVITIES EXCLUDED FROM SURVEYING PRACTICE

(1) A distinction must be made between making and documenting original measurements in the creation of survey products, versus the copying, interpretation, or representation of those measurements. Further, a distinction must be made according to the intent, use, or purpose of measurement products to determine an authoritative location, versus the use of those products as a locational reference for planning, infrastructure management, and general information. The following items are not to be included as activities within the definition of land surveying:

(a) Items and activities exempted in 60-2-209, MCA and 76-3-209, MCA.

(b) The creation of any map not used for the authoritative location of property boundaries, the definition of the shape or contour of the earth, or the location of fixed works of engineering. Examples include but are not limited to maps:

(i) prepared by private firms or government agencies for use as guides to motorists, boaters, aviators, or pedestrians;

(ii) prepared for publication in a gazetteer or atlas as an educational tool or reference publication;

(iii) prepared for or by educational institutions for use in the curriculum of any course of study;

(iv) produced by any electronic or print media firm as an illustrative guide to the geographic location of any event; and

(v) prepared by laypersons for conversational or illustrative purposes, including advertising material and users guides.

(c) The transcription of previously georeferenced data into a Geographic Information System (GIS) or Land Information System (LIS) by manual or electronic means, and the maintenance thereof, provided the data are clearly not intended to indicate:

(i) the authoritative location of property or administrative boundaries, easements, rights of way, or other legal interest in real property;

- (ii) the definition of the shape or contour of the earth; and
- (iii) the location of fixed works of engineering.
- (d) The transcription of public record data into a GIS- or LIS-based cadastre (tax maps and associated records) by manual or electronic means, and the maintenance of that cadastre, provided the data are clearly not intended to authoritatively represent property or administrative boundaries or easements, rights of way, or other legal interests in real property. Examples include:
 - (i) tax maps;
 - (ii) zoning maps; and
 - (iii) school district maps.
- (e) The preparation of any document by any federal government agency that does not define real property boundaries. Examples include:
 - (i) civilian and military versions of quadrangle topographic maps;
 - (ii) military maps;
 - (iii) satellite imagery;
 - (iv) aerial photography; and
 - (v) orthoimagery.
- (f) The incorporation or use of documents or databases prepared by any federal agency into a GIS/LIS. Examples include:
 - (i) census and demographic data;
 - (ii) quadrangle topographic maps; and
 - (iii) military maps.
- (g) Inventory maps and databases created by any individual or organization, in either hardcopy or electronic form of physical features, facilities, or infrastructure that are wholly contained within properties to which they have rights or for which they have management or regulatory responsibility. The distribution of these maps and/or databases outside the organization must contain appropriate metadata clearly indicating that the data is not for design.
- (h) Maps and databases depicting the distribution of natural resources or phenomena. Examples include, but are not limited to, maps prepared by:
 - (i) foresters;
 - (ii) geologists;
 - (iii) soil scientists;
 - (iv) geophysicists;
 - (v) biologists;
 - (vi) archeologists; and
 - (vii) historians.
- (i) Maps and georeferenced databases depicting physical features and events prepared by any government agency where the access to that data is restricted by law. This includes georeferenced data generated by law enforcement agencies involving crime statistics and criminal activities.
- (j) Engineering surveys performed by a professional engineer as specifically allowed under 37-67-101(4), MCA.
- (k) Work ordinarily performed by persons who operate or maintain machinery or equipment, communication lines, signal circuits, electric power lines, or pipelines.

(l) The preparation of documents that create, assign, reference, or transfer interests in real property by reference to a legal description prepared by a professional land surveyor. Examples include, but are not limited to:

- (i) contracts;
- (ii) deeds;
- (iii) easements;
- (iv) certificates of location for mining claims;
- (v) rights of way; and
- (vi) similar documents, which may incorporate or make reference to:
 - (A) plats;
 - (B) certificates of survey;
 - (C) narrative legal descriptions; or
 - (D) exhibits prepared by a professional land surveyor.
- (m) Operating and publishing data from a continuously operating reference station (CORS).
- (n) Original data acquisition by contract or second parties for nonauthoritative purposes when the metadata is clearly labeled "Not for Design."
- (o) The acquisition, preparation, processing, manipulation, or certification of final products or original data developed or collected by remote sensing or photogrammetric methods. Control may be derived from existing sources for remote sensing or photogrammetric products, where spatial accuracy is not critical and specific map accuracy standards are not required.

AUTH: 37-1-131, 37-67-202, MCA

IMP: 37-1-131, 37-67-101, 37-67-103, 37-67-301, MCA

5. Concerned persons may present their data, views, or arguments either orally or in writing at the hearing. Written data, views, or arguments may also be submitted to the Board of Professional Engineers and Professional Land Surveyors, 301 South Park Avenue, P.O. Box 200513, Helena, Montana 59620-0513, by facsimile to (406) 841-2309, or by e-mail to dlibsdpels@mt.gov, and must be received no later than 5:00 p.m., November 17, 2010.

6. An electronic copy of this Notice of Public Hearing is available through the department and board's site on the World Wide Web at www.landsurveyor.mt.gov. The department strives to make the electronic copy of this notice conform to the official version of the notice, as printed in the Montana Administrative Register, but advises all concerned persons that in the event of a discrepancy between the official printed text of the notice and the electronic version of the notice, only the official printed text will be considered. In addition, although the department strives to keep its web site accessible at all times, concerned persons should be aware that the web site may be unavailable during some periods, due to system maintenance or technical problems, and that technical difficulties in accessing or posting to the e-mail address do not excuse late submission of comments.

7. The board maintains a list of interested persons who wish to receive notices of rulemaking actions proposed by this board. Persons who wish to have

their name added to the list shall make a written request that includes the name, e-mail, and mailing address of the person to receive notices and specifies the person wishes to receive notices regarding all board administrative rulemaking proceedings or other administrative proceedings. The request must indicate whether e-mail or standard mail is preferred. Such written request may be sent or delivered to the Board of Professional Engineers and Professional Land Surveyors, 301 South Park Avenue, P.O. Box 200513, Helena, Montana 59620-0513, faxed to the office at (406) 841-2309, e-mailed to dlibsdpels@mt.gov, or made by completing a request form at any rules hearing held by the agency.

8. The bill sponsor contact requirements of 2-4-302, MCA, do not apply.

9. Mary Tapper, attorney, has been designated to preside over and conduct this hearing.

BOARD OF PROFESSIONAL ENGINEERS
AND PROFESSIONAL LAND SURVEYORS
DAVID ELIAS, PRESIDING OFFICER

/s/ DARCEE L. MOE
Darcee L. Moe
Alternate Rule Reviewer

/s/ KEITH KELLY
Keith Kelly, Commissioner
DEPARTMENT OF LABOR AND INDUSTRY

Certified to the Secretary of State October 4, 2010