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Cautions to Geospatial Professionals

in context of California statutes defining the Practice of Surveying

Prepared jointly by the California Geographic Information Association and the California Chapter of the Geospatial Professional Network
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Navigating the boundaries between land surveyors, engineers, professional geologists, and geospatial (GIS) professionals is crucial for maintaining the integrity of each field. Although land surveying and geospatial work complement each other, they differ significantly in scope and focus. In California, surveyors are licensed by the California Board for Professional Engineers, Land Surveyors, and Geologists (the Board) and the activities exclusively reserved for Professional Land Surveyors (PLS) are defined by the Professional Land Surveyors' Act (PLSA) as codified in Section 8700 - 8805 of the California Business and Professions Code[1], specifically Section 8726 (a).

To summarize, the Statute defines the Practice of Survey in California for which a license is required:

1. Locates, relocates, establishes, reestablishes, or retraces the alignment or elevation for any of the fixed works embraced within the practice of civil engineering, as described in Section 6731.
2. Determines the configuration or contour of the earth's surface, or the position of fixed objects above, on, or below the surface of the earth by applying the principles of mathematics or photogrammetry, and
3. Locates, relocates, establishes, reestablishes, or retraces any property line or boundary of any parcel of land, right-of-way, easement, or alignment of those lines or boundaries.

Surveyors may create surveys for subdivisions, set monuments, create site plans and deeds, and determine the accuracy of maps and documents related to land surveying tasks.

There is no equivalent recognition for the geospatial profession, and some individuals and companies have been cited by the Board for geospatial activities reserved for Professional Land Surveyors, with fines issued for as much as $2,000. In order to help raise awareness and protect the California geospatial community, a cross-organizational committee consisting of members from the California Geographic Information Association (CGIA) and the California Chapter of the Geospatial Professional Network (GPN) was convened, along with other non-affiliated individuals.

While the Statute and the Board do not explicitly define terms such as "locate," "relocate," "establish," "reestablish," "retrace," or "determine," nor distinguish them from "display" and "depict," the Board has cited map makers whose map products display fixed works, boundary lines, terrain contours, and dimensions. It is important to note that these maps were not intended to serve as legally admissible, authoritative records to locate or establish the legal position, or to determine the location of the mapped objects.

Some of the wording within the definition of land surveying provided by Section 8726 of the PLSA is open to interpretation. Multiple citations related to the production of site plans are based on the combination of Sections 8726(a)(1) and 8726(a)(3). Another citation made a statement to the effect that "Computing and generating contours constitutes the practice of land surveying", quoting Section 8726(a)(2) "Determines the configuration or contour of the earth's surface…" and Section 8726(a)(13) "Creates, prepares, or modifies electronic or computerized data in the performance of activities [described in preceding sections]". The law, as written, is not clear. Citations have been issued even when the geospatial products included a disclaimer. With all of this in mind, this committee recommends that California's geospatial community be familiar with the following overleaf:

[1] Business and Professions Code, Chapter 15: Land Surveyors, Article 3

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Don't ***Geospatial professionals should avoid activities which the Board interprets as the scope of land surveying in California.***	***Do*** ***Geospatial professionals should follow these general best practices to comply with the code and help foster collaboration with Professional Land Surveyors.***
Prepare documents that depict dimensions from fixed works* to or along boundary lines. Adding dimensions to products such as the preparation of site plans has been cited as violating section 8726(a)(1) & 8726(a)(3). *Fixed works as defined in 6731 **Use GNSS/GPS to collect the position of surface or subsurface fixed works, including utility elements.** Displaying the position of utilities or other fixed objects may be interpreted as "determining" their location in violation of sections 8726(a)(1) or 8726(a)(2). **Compile topographical information to generate digital elevation models and digital terrain models, planimetric mapping, contour mapping, or photogrammetry.** Developing data that describes the contour of earth's surface may be interpreted as "determining," and violate section 8726(a)(2). Similarly, determining elevation of objects is reserved for licensed surveyors 8726(a)(2). **Determine parcel boundaries or correct boundary errors.** Modifying parcel boundaries may be interpreted as "establishing" and violate section 8726(a)(3). Fitting boundary lines to conform with other mapped features (including other boundary lines) may be interpreted as violating section 8726(a)(13). **Determine the accuracy of maps or survey data.** Rendering a statement regarding the accuracy of maps or measured survey data violates section 8726(a)(14). **Offer to procure surveying services.** Procuring or offering to procure land surveying work violates section 8726(a)(9).	**Read the California Business and Professions Code.** Make informed decisions about activities to avoid, risks, and potential ambiguities. **Include disclaimer language on your data and maps.** Clearly state that your maps are "not a survey product." However, a disclaimer cannot be assumed to protect the geospatial professional from citation, particularly if the product could be confused with the products of a surveyor. **Provide comprehensive metadata.** Cite the sources of the data, including citations or links to the original survey documents when possible. Provide a statement of intent or purpose of the map or dataset. Include contact information for the map creator. Specify the reference frame, projection, datum, and epoch of the map coordinates. Indicate the date(s) of data collection and compilation, describe the method of compilation or integration of various map data themes. Provide a statement of locational accuracy for various map data themes. Note, however, that accuracy should be determined by a Professional Land Surveyor. **Engage with surveyors.** Include licensed surveyors in your professional network. Understand the complementary nature of surveyors' work and GIS mapping, learn the science behind surveyors' techniques, and demonstrate how geospatial approaches can aid surveyors' operations while distinguishing geospatial professionals' work from the practice of surveying. **Advocate for clearer regulations and collaboration.** Work with professional organizations to seek clarification or amendments to laws affecting the geospatial profession, ensuring a more distinct boundary between geospatial and surveying work.