



# Pennsylvania Society of Land Surveyors

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## **Statement on Mapping and Positioning Services Including Inventory, Asset Management, and Unlicensed Activity**

### **Introduction**

Technology has rapidly changed the tools and methodologies utilized to perform measurements and derive representations of the configuration of the earth's surface and fixed objects thereon or related thereto from those measurements. These tools have become affordable and simple enough to use that most citizens in the Commonwealth of Pennsylvania own or utilize them. While this wide spread use comes with the benefit of increased knowledge and demand for these services it also means an increase in the number of unlicensed providers offering these services, proposing or suggesting specifications, providing estimates, and actually performing these services. The general public is contracting for these services with increasing frequency and is expecting a certain level of accuracy, but the general public does not have the education, experience, or expertise to specify and/or evaluate the accuracy of the deliverable(s) or suitability for their needs. Similarly, unlicensed providers frequently lack the education, experience, or expertise required to evaluate the accuracy of their deliverables relying only on their or their sales person's interpretation of product specifications. Relying on the accuracy of data generated by unlicensed persons puts the safety, health or property and general welfare at risk. It also unknowingly opens the person contracting for the services up to increased liability when they share the data expecting it to satisfy certain accuracy requirements.

### **PSLS Position**

The Pennsylvania Society of Land Surveyors position is that activities referred to, but not limited to, as mapping, field inventory, or asset management performed in the Commonwealth of Pennsylvania without the direct supervision of an individual licensed as a Professional Land Surveyor or Professional Engineer by the Commonwealth are in violation of the Engineer, Land Surveyor and Geologist Registration Law (Registration Law), Act of May 23, 1945 P.L. 913, No. 367 Cl. 63 which was enacted to "safeguard the life, health or property and to promote the general welfare".

These activities typically fall under Section 2 (j)(ii) of the Registration Law which, in part, defines Engineering Land Surveys as surveys for:

"(ii) the determination of the configuration or contour of the earth's surface, or the position of fixed objects thereon or related thereto by means of measuring lines and angles and applying the principles of mathematics, photogrammetry or other measurement methods;"

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and sometimes fall under Sections 2(j)(iii) and/or 2 (j)(v)

“(iii) geodetic survey, underground survey and hydrographic survey;”

“(v) the determination of quantities of materials;”

Historically Engineering Land Surveys have been performed by licensed Professional Land Surveyors who are required to have appropriate and proven education, experience, and expertise in performing measurements, applying mathematical and statistical principles, utilizing independent quality control processes to analyze the measurements, using mathematical principles to convert the measurements into representations of the configuration of the earth’s surface or objects thereon or related thereto, and using mathematical and statistical principles to evaluate the accuracy of the resulting representations. Deliverables resulting from an Engineering Land Survey are required to be certified and signed and sealed by an appropriately licensed professional for protection of the general public.

Technology has made it affordable and easy, if not invisible to the end user, to perform measurements and convert the measurements to representations. However, technology alone cannot analyze these measurements, apply appropriate quality control processes, or ascertain the resulting accuracies. A human being with knowledge and understanding of the procedures and methodologies employed and their potential errors is still needed. Additionally, the deliverables are not being certified, so there is no guarantee the deliverables satisfies the expressed or implied accuracy requirements. These failures are what put the life, health or property and general welfare at risk when these services are contracted, especially when used for engineering, planning, permitting, and regulatory purposes. The degree to which this may happen depends on the intended use of the deliverables. Professional Land Surveyors are experienced in assessing the intended use and evaluating the accuracy requirements to develop a survey that will satisfy the client’s needs and the deliverable will be properly documented and certify the accuracy requirements have been satisfied.

Arguments have been made that these new technologies do not measure lines and angles and/or that mathematical principles are not used. PSLS knows of no technology that does not require the direct or indirect measurement of lines and angles and the use of mathematical principles to determine the configuration or contour of the earth’s surface, or the position of fixed objects thereon or related thereto. Technology hides these measurements and/or mathematical principles from the user which is what makes them so attractive and easy to use. The user must perform proper procedures and know how to interrogate the results to assess the accuracy of the mathematically derived representations. If the user fails to understand that measurements are being performed and mathematical principles are being applied they are not capable of understanding the potential errors or evaluating the accuracy of the deliverables.

Another concern is the increasing frequency with which these deliverables are shared with third parties and/or the general public. When a deliverable quoted to a specified accuracy is shared with another

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party that uses it for a purpose other than the original intended purpose, errors tend to be exposed and liability becomes an issue. The party originally contracting for the services may become liable for damages incurred because unknown to them the data did not satisfy the accuracy requirement originally contracted for.

Furthermore, PSLS is concerned that providers of these services cannot be held as accountable as licensed professionals when deliverables do not satisfy the client's requirements. The unlicensed provider can be sued for breach of contract but there is nothing preventing an unlicensed provider from continuing to offer the services. When a professional is found in violation they are subject to disciplinary action from the licensing authority and may lose their license rendering them unable to lawfully continue offering their services. This is another way the Registration Law "safeguard the life, health or property and to promote the general welfare".

PSLS acknowledges that exemptions do exist in the Registration Law. Typically exemptions are for those acting under the supervision of a licensed professional, officers and employees of the United States Government performing work for said government, and organizations performing work on their property for internal use. All of the exemptions listed in Section 5, Exemptions from Licensure, of the Registration Law are acknowledged by PSLS.

This position is based on the collective wisdom, experience, and accepted practices in surveying of our current and past members as well as our review of the items in the supporting materials section of this document. PSLS is a statewide professional organization formed May 6, 1969 with a current roster of approximately 850 members interested in the profession of surveying. Over 600 of our current members are licensed Professional Land Surveyors in the Commonwealth of Pennsylvania.

## **Supporting Materials**

Engineer, Land Surveyor and Geologist Registration Law, Act of May 23, 1945 P.L. 913, No. 367 Cl. 63

Pennsylvania Society of Land Surveyors Manual of Practice

## **Notes**

This position statement was drafted by the PSLS Geospatial Committee and approved by the PSLS Board of Directors on June 13, 2014.

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