

In 2005 the General Assembly unanimously passed and Governor Warner signed HB 2863, a bill to amend Title 54.1-400 of the Code of Virginia to require all practitioners of photogrammetry (aerial surveying, or mapping maps and measurements from (aerial) photographs) to be licensed as land surveyors or land surveyor photogrammetrists. This action was necessary to protect the public from mapping that was performed by unlicensed and unregulated individuals for all types of development and maintenance of real property on both public and private lands. The newly enacted law specifically applied to mapping related to design, modification, or construction of improvements to real property, or for flood plain determination.

Legislative action came as a result of an exhaustive and open study by the Board of Architects, Professional Engineers, Land Surveyors, Certified Interior Designers, and Landscape Architects (APELSCIDLA) of the Department of Professional and Occupational Regulation (DPOR). During the public input and comment leading to the passage of this legislation, the Geographic Information Systems (GIS) community, particularly in the Virginia Information Technologies Agency (VITA) and some local government GIS coordinators, were fearful that such licensure and regulation that would result in greater cost of their acquisition of base mapping data. In order to remedy those concerns, the licensing of photogrammetrists was limited to mapping related to design, modification, or construction of improvements to real property, or for flood plain determination.

Virginia law (§ 54.1-402.C.) and the regulations of the Department of Professional and Occupational Regulation (18 VAC 10-20-310) only exempts from the licensing requirement such photogrammetric mapping that will NOT be used for "Any determination of topography or contours, or any depiction of physical improvements, property lines or boundaries is for general information only and shall not be used for the design, modification, or construction of improvements to real property or for flood plain determination."

The compromise legislation not only created a loophole with regard to important mapping activities, but created an "exemption" that was difficult to understand and impossible to enforce. Moreover, it exempted mapping services impacting public health, safety and welfare from the qualifications based selection (QBS) process for professional services codified in Virginia's "mini-Brooks Act", § 2.2-4301. This selection process has long been deemed appropriate for professional services of all types and essentially ensures that any prospective contractor for professional services is qualified to perform the task being advertised before negotiation of a fee that is fair and reasonable to the government. Maintaining that the base mapping photogrammetrists and others were asked to provide was not professional work would allow Virginia's information agencies to contract with firms primarily on price. In other words, the "low bidder" would secure these contracts even if others were more qualified, had better technology, past performance, or the best value.

Pursuant to § 54.1-402.C and 18 VAC 10-20-310, a disclaimer is required on any photogrammetric mapping that falls within the exemption and is not performed by a licensed surveyor or surveyor-photogrammetrist. That disclaimer is required to state, "Any determination of topography or contours, or any depiction of physical improvements, property lines or boundaries is for general information only

and shall not be used for the design, modification, or construction of improvements to real property or for flood plain determination”.

In the years since the passage of the Title 54.1-402 amendment, there have been many occurrences of this mapping being used for purposes clearly outside the intended scope stated by the GIS community at the time of passage. Most notably was the 2009 FEMA mapping update to Virginia’s Flood Insurance Rate Maps. Floodplain determination is a clearly stated as a task requiring a licensed individual. These maps are used by government offices to regulate development in the floodplain and also to respond to disasters that may result in loss of not only dollars, but human life as well.

According to FEMA, Lee County, Russell County, Scott County, Smyth County, Washington County, and Wise County all used VGIN topographic data, which was not performed by a licensed professional and was contracted based on price, not professional qualifications.

The APELSCIDLA board has found that notwithstanding the law and disclaimer, this mapping is often used for preliminary design, site design, planning, and other engineering related projects. Even though a disclaimer is required to accompany any mapping not prepared under the supervision of a surveying professional, this disclaimer is disregarded or misunderstood and the mapping is used for unintended purposes. This has been noted in guidance issued in [2015](#) and 2016 ([available here](#)).

As determined by numerous studies and findings by the APELSCIDLA board, neither professional licensing nor QBS results in higher costs. In fact, studies show this procurement process for selecting design professionals saves money in total life cycle costs of projects.

The cost associated with having a licensed surveyor or licensed photogrammetrist oversee the creation of mapping is nominal in the overall cost of a project. However, the benefits of having a surveying professional involved are numerous. Requiring the licensed surveyor to oversee mapping projects ensures that mapping data meets accepted professional standards. The location of physical features on the Earth and their relative position to one another is what land surveyors and surveyor photogrammetrists do every day. It only makes sense to involve the surveyor when creating maps since that is an important part of the definition of Land Surveying in the Code of Virginia and APELSCIDLA/DPOR regulations. Allowing mapping to be used by the public or any other entity without the oversight of the surveying profession can be considered negligent.

Looking to the future it is imperative that Virginia sets in motion a statutory framework that will ensure the best data possible to make the most of limited resources and to protect public health, safety and welfare. The American Public Works Association (APWA) reports that an underground utility line is hit somewhere in the United States every 60 seconds. As mapping technologies evolve and layers are added and geographic information systems are populated there should come a time when this type of incident is minimized with accurate and reliable mapping. When excavators and others come in contact with utilities due to a lack of accurate location data, there can be costly and disruptive loss of service, damage to the environment, and loss of life. E-911 mapping demands highly accurate mapping to assure that address, building locations, distances and other geographic information enables first responders, EMS law enforcement and other personnel to efficiently locate and serve those in need.

Virginia's design professional regulatory agency, DPOR (Department of Professional and Occupational Regulation)'s licensing board, APELSCIDLA (Architects-Professional Engineers-Land Surveyors- Certified Interior Designers-Landscape Architects) has issued a guidance document in the form of a letter to the Virginia Information Technology Agency and localities regarding the data and services VITA requisitions on behalf of the Virginia Geographic Information Network (VGIN) advising VITA that the state wide base mapping is in fact a professional surveying service and should be accomplished under the direct supervision of a licensed Land Surveyor or Land Surveyor Photogrammetrist. This information has been met with total disregard and the current contract for statewide base mapping has once again been contracted as a fee based procurement without a requirement for responsible supervision by a licensed professional.

The Virginia Association of Surveyors believes that the disclaimer placed in metadata and on agency web pages, but not on each map product, is being used to create the illusion that what is professionally collected data is not. To remedy this issue, legislation to remove the exemption provisions regarding photogrammetry and surveying should be introduced and enacted into law. In doing so the citizens of Virginia can be assured that they are getting data that has been prepared by someone who is not only qualified to do so but who is willing to stand behind this work and be held accountable for errors just as any other professional is required to do. This will protect the public health, welfare and safety.

FYI

Example of disclaimer:

https://tdds.cr.usgs.gov/metadata/ortho/18S/UG/18SUG825520_201302_0x3000m_4B_1.htm