



Operating an Unmanned Aerial System (UAS) and Derived Survey Products from UAS Sensors in North Carolina

Requirements to Operate a UAS in North Carolina

The NCDOT Division of Aviation (DoA) has the responsibility to ensure safe and legal UAS operation in North Carolina. This is achieved through a permitting process that includes possessing an FAA Airman Certificate, passing the NCDOT UAS Knowledge Test, and registering the UAS through the FAA's UAS website. Please see:

- <https://www.ncdot.gov/aviation/uas/>
- NC GS 63-95. Training required for operation of unmanned aircraft systems
- NC GS 63-96. Permit required for commercial operation of unmanned aircraft systems

Land Surveying in North Carolina

The practice of Land Surveying in North Carolina is set forth in General Statute 89C-3(7) which in part defines land surveying as:

- "Determining the configuration or contour of the earth's surface or the position of fixed objects on the earth's surface by measuring lines and angles and applying the principles of mathematics or photogrammetry"
- "Creating, preparing, or modifying electronic or computerized data, including land information systems and geographic information systems relative to the performance of the practice of land surveying"

General Statute 89C-3(7) does not specify whether the aerial photography or aerial LiDAR data was acquired using a manned aircraft or unmanned aircraft.

A derived survey product has coordinates and can be used to perform accurate, reliable measurements. Examples of derived survey products from manned or UAS sensors are orthophotos, orthomosaics, point clouds, LAS files, and elevation models.

This is considered the practice of Land Surveying in North Carolina, and as such, is regulated by the North Carolina Board of Examiners for Engineers and Surveyors which requires the provider of these materials to be a properly licensed NC PLS. Please see:

- <http://www.ncbels.org/> (NCBEEES Newsletters [Fall 2017](#) and [Spring 2016](#))
- NCBELS Rule 21 NCAC 56 .1606. Specifications for Topographic and Planimetric Mapping, including Ground, Airborne, and Space borne Surveys
- NCBELS Policy BP-0510-2. Oblique Aerial Imaging Policy
- NCBELS Policy BP-1007-2. Volume Computation Surveys Policy