



July 21st, 2016

Dean Lakshmi N. Reddi
College of Engineering
New Mexico State University

Dean Reddi,

The New Mexico Department of Transportation (NMDOT) – Survey & Lands Engineering is submitting this letter in support of maintaining the higher education being provided through NMSU’s Surveying Engineering (SE) Program. This program meets the need of a four-year degree entry standard by the U.S. Department of Labor to be recognized as a professional surveyor and the requirements of the New Mexico Board of Licensure for Professional Engineers and Professional Surveyors (The Board) for professional surveying licensure. If the SE Program is cut by NMSU, the four-year degree requirement for surveying licensure will be eliminated by The Board. This impact is significant to public services and works entrusted to the NMDOT. This action will lead to the eradication of the surveying professional in New Mexico with supporting court/federal rules that define professional as needing at minimum a four year-degree.

A 1992 Florida Supreme Court case declared that surveying was not a profession because of the lack of a four-year degree standard. Kentucky courts have also stated that surveying is not a profession because of the lack of a four-year degree standard. The U.S. Department of Labor recently decided surveying is not a learned profession because of the lack of a four-year standard for entry. In response to the above court decisions, the states of Kentucky and Florida now have four-year requirements. – NCEES Benefits of a Four-Year Degree Requirement for Surveying Licensure

Considering the health, safety, and welfare of the public lowering this standard will lead to significant losses and hardship.

An exam alone is not a good filter for public protection.

Public protection is provided by adherence to the three-legged stool of licensure—**education**, experience, and examination. On its national exams, NCEES sets a cut score so that the minimally competent candidate will pass. However, **the main filter for public protection in a learned profession is college admission and completion of a college program**, not an exam. Lawyers, architects, doctors, dentists, and engineers pass their professional exams because they were highly selected by (1) college admissions and (2) completing the required program. The exam is not the most effective public protection method, just “one leg” of the total process. – NCEES Benefits of a Four-Year Degree Requirement for Surveying Licensure

With the modern applications in surveying and mapping to support design and construction of infrastructure, technical experience alone is not adequate for professional licensure preparation. The technical process of field surveying has become programmed and automated leading to technicians being expert button pushers who don’t understand the underlying theory of the applications involved. There is evidence showing that a four-year degree requirement leads to reduced disciplinary action. Public protection related to this has been served through the SE Program and the four-year degree requirement in NM.

Susana Martinez
Governor

Tom Church
Cabinet Secretary

Commissioners

Ronald Schmeits
Chairman
District 4

Dr. Kenneth White
Secretary
District 1

David Sepich
Commissioner
District 2

Keith Mortensen
Commissioner
District 3

Butch Mathews
Commissioner
District 5

Jackson Gibson
Commissioner
District 6

The NMDOT currently has twelve (12) licensed surveyors employed. Of these twelve, seven (7) of them are graduates from the NMSU Surveying Engineering Program and one (1) of them from the program at Organ Institute of Technology. One (1) NMSU graduate is currently a Survey Intern working towards licensure. The DOT currently has five vacancies between three District Offices and the General Office that needs to be served with a NM licensed professional surveyor. The DOT's future need for surveyors over the next year is 2 to 3; the next five years is 3 to 5; the next ten years is 5 to 10.

The DOT has experienced significant benefits from hiring survey graduates. Since the hiring of survey graduates to fill management and supervisory surveying positions, NMDOT's Survey & Lands Engineering (SLE) has fully implemented a field-to-finish workflow into their standard field procedures utilizing control/feature coding. The electronic survey point data collection supports an automated process in which points being surveyed are defined by codes. These codes carry with it the instruction on how a point, line, or shape will be generated graphically in a software design package. This methodology of survey data collection requires surveyor oversight to stay organized and methodically plan while performing field surveys. These codes and features now control the automatic generation of two-dimensional or three-dimensional mapping features, symbol/block insertions, and text labeling. This field-to-finish process functions as a built-in QA/QC process that is taking place during field observations and it has significantly reduced computer aided drafting and surface modeling time required for producing a final product for delivery. Until four years ago, data collection was primarily based on a point-by-point concept with notes and line work being recorded and sketched in a field book. In a time consuming manner these notes and sketches were then transferred manually into a software design package point by point. With the implementation of control and feature coding a point is no longer just a point. Based on its control and feature code, a point can begin a line, end a line, lie along a line, form a curve, close a figure, and provide detail information on monuments, location items, and structures. SLE's production directly related to this has more than tripled, allowing SLE to support more projects internally as well as needs by other departments not directly related to projects in the STIP. The relentless efforts by SLE to have Trimble Navigation support NMDOT's frame work created to provide a complete field-to-finish process utilizing Civil-3D finally lead to Trimble Navigation working directly with SLE to develop the export software tool that was needed by NMDOT. These efforts began four years ago and finally came to fruition last year. This software tool is now being utilized industry wide by other DOT agencies as well as industries such as the oil and gas industry throughout the U.S. and other Countries. This accomplishment is directly related to the hiring of survey graduates from a four-year program.

All NMDOT's surveyors are practicing surveyors with daily oversight providing geospatial information necessary for the development of planning, design, construction, and maintenance of the New Mexico State Transportation System. NMDOT surveyors also work closely with the Districts to assist and provide operational support between the Districts and the General Office.

I am hopeful that the significance of losing the SE Program has been conveyed. Thank you for your time and consideration.

Sincerely,



Mark L. Marrujo, P.S.

Survey & Lands Engineering Manager

New Mexico Department of Transportation



NEW MEXICO DEPARTMENT OF
TRANSPORTATION

The Surveying Engineering Program at NMSU is an essential component of the surveying profession. The signatures listed below are in support of the University retaining the Surveying Engineering Program. This will enable this profession to maintain the high standards that have been established.

<u>Tom Church</u>	<u></u>	<u>Cabinet Secretary</u>	<u>tom.church@state.nm.us</u>
Name	Signature	Title	Email

<u>Anthony Lopez</u>	<u></u>	<u>Dep Sec.</u>	<u>Anthony.Lopez@state.nm.us</u>
Name	Signature	Title	Email

<u>Armando Armendariz</u>	<u></u>	<u>Division Director</u>	<u>armando.armendariz@state.nm.us</u>
Name	Signature	Title	Email

<u>RAYMOND TRUJILLO</u>	<u></u>	<u>BRIDGE BUREAU CHIEF</u>	<u>raymond.trujillo@state.nm.us</u>
Name	Signature	Title	Email

<u>Ted Barber</u>	<u></u>	<u>Bureau Manager</u>	<u>ted.barber@state.nm.us</u>
Name	Signature	Title	Email

<u>CHRIS PAPPAS</u>	<u></u>	<u>A. SURVEY SECTION MANAGER</u>	<u>CHRIS.PAPPAS@state.nm.us</u>
Name	Signature	Title	Email

<u>Robert Sexton</u>	<u></u>	<u>Lead Engineering Mgr.</u>	<u>rob.sexton@state.nm.us</u>
Name	Signature	Title	Email



New Mexico DEPARTMENT OF
TRANSPORTATION

The Surveying Engineering Program at NMSU is an essential component of the surveying profession. The signatures listed below are in support of the University retaining the Surveying Engineering Program. This will enable this profession to maintain the high standards that have been established.

<u>Thomas D. Weckman</u>	<u></u>	<u>SURVEY SUPERVISOR</u>	<u>THOMAS.D.WECKMAN@STATE.NM.US</u>
Name	Signature	Title	Email
<u>Conrad F. Roybel</u>	<u></u>	<u>Surveyor Supervisor</u>	<u>Conrad.roybel@state.nm.us</u>
Name	Signature	Title	Email
<u>Jason Smith</u>	<u></u>	<u>SURVEY SUPERVISOR</u>	<u>Jason.Smith@state.nm.us</u>
Name	Signature	Title	Email
<u>Lyle A. Kretz</u>	<u></u>	<u>Surveyor Supervisor</u>	<u>Lyle.A.Kretz@state.nm.us</u>
Name	Signature	Title	Email
<u>William A Bowers</u>	<u></u>	<u>Surveyor Advanced</u>	<u>William.Bowers@state.nm.us</u>
Name	Signature	Title	Email
<u>Richard L. Garcia</u>	<u></u>	<u>Staff Manager</u>	<u>Richard.L.Garcia1@state.nm.us</u>
Name	Signature	Title	Email
<u>JOSEPH CHAVEZ</u>	<u></u>	<u>ENG. COORD. B</u>	<u>joseph.e.chavez@state.nm.us</u>
Name	Signature	Title	Email