

Surveying Licensure in the United States:

The Licensure Process and Efforts to Promote the Surveying Profession

Patrick Tami and Jerry Carter, United States

Key Words: Licensure, Candidate Population, Future of Surveying Task Force, Model Law, Model Rules

SUMMARY

The decline in the number of individuals entering the surveying profession in the United States has reached a crucial point. Advances in technology, economic conditions and enhanced educational requirements now being required for licensure has significantly limited the number of individuals that view surveying as a viable profession. NCEES and its member boards view this dilemma as a potential threat to the future health, safety and welfare of U.S. citizens and the building environment at large. This paper provides a history of licensure in the U.S., the creation of NCEES to help provide greater mobility and uniformed laws and regulations and the growing trend of fewer individuals opting for the surveying profession as a career. Also discussed are recent efforts by NCEES and surveying related entities to come together to attempt to address this trend and to provide potential solutions to mitigate this problem.

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(9111)

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1. Surveying in the United States

The profession of surveying has been integral to the early development of the United States. Surveyors played an important role in the settlement of the colonies and included such famous Americans as George Washington, Thomas Jefferson, Abraham Lincoln and Daniel Boone. The original charter from the King of England establishing Virginia essentially granted land from the Atlantic to the Pacific oceans. Surveyors were required to mark boundaries and plot parcels of land for the new settlers.

In a number of countries, the governments entitle the surveying profession with control of its entrance requirements and rights to practice. In the United States, however, the legislative branch of the government holds this regulatory power, which resides not with the federal government but with individual states. The Tenth Amendment to the U.S. Constitution grants to the states all powers not accorded to the central government nor explicitly denied them. These powers include the right to legal jurisdiction over their sovereign territories, including the right to regulate professions. Every state in the union as well as legal territories therefore have laws controlling and regulating surveyors practicing under their jurisdiction. This government control grows from the nature of our laws. The enabling statements justifying professional licensing boards refer to “their responsibilities in regulating the practice of land surveying as it relates to the welfare of the public in safeguarding life, health and property.” The public interest is further protected by allowing only registrants to identify themselves as land surveyors. Because each state with its own board registers land surveyors within its own boundaries, problems developed in the history of registration for those who wished to practice in more than one state. To become registered, however, was a time-consuming process. Land Surveyors had to report to every board and meet the specific requirements for each state. Because the states all had laws that developed to meet particular and often idiosyncratic needs, these laws were quite different from one another. It became clear to many in the profession that some national body was needed to coordinate the various state boards.

The first requirement for surveying licensure was established in California in 1891. Wyoming was the first state to exercise the Constitutional power to regulate the engineering profession. In 1903, 31-year-old Clarence T. Johnston had accepted the position of State Engineer. Of significant interest is that the rationale for the creation of the first engineering statutes was based upon improper surveying practices. Johnston found the office in poor condition, the main problem being the fact that untrained individuals were working as engineers and land surveyors. A state law mandated that all people who wished to use state water to irrigate land had to file an application for

a permit. The law also required that a map be filed to outline streams, canals, and reservoirs, as well as the lands to be irrigated. As Johnston wrote in a letter years later, he “discovered that lawyers, notaries, and others were making the maps and signing them as engineers or surveyors,” and this practice led to confusing and inaccurate records. With the help of some colleagues, Johnston prepared a bill designed to remedy this problem. Although it met with much resistance from those benefiting from the lack of regulation, “the Wyoming legislature passed the bill. After it took effect, Johnston noted, “A most astonishing change took place within a few months in the character of maps and plans filed with the applications for permits.”

2. The Creation of the National Council of Examiners for Engineering and Surveying

In 1920, a small group of forward-looking representatives from seven state boards met to found what today is known as the National Council of Examiners for Engineering and Surveying (NCEES). NCEES is a confederation of the 50 state board and 5 U.S. territories that regulate the engineering and surveying profession. Throughout the years, its objective has remained remarkably clear: to assist its Member Boards in their duty to protect the public’s health, safety, and welfare. Member Boards are delegated with the authority to and are charged with the responsibility of administering the provisions of the laws of their respective states/territories/jurisdictions, which is an exercise of the police powers reserved to the states by the U.S. Constitution. A majority of the Boards now administer the provisions of laws governing more than one profession, e.g., engineering and land surveying; engineering, architecture, and landscape architecture, etc. Some states have separate Boards for each profession. Governors appoint engineer/land surveyor members to serve on the Boards, usually from a short list of nominees furnished by the representative professional society/societies in their respective states.

2.1 NCEES Services

The vision of NCEES is to provide leadership in professional licensure of engineers and surveyors through excellence in uniform laws, licensing standards, and professional ethics in order to safeguard the health, safety, and welfare of the public and to shape the future of professional licensure.

The mission of NCEES is to advance licensure for engineers and surveyors in order to safeguard the health, safety, and welfare of the public.

This mission is supported through its member boards, board of directors, staff, board administrators, and volunteers by:

- Providing outstanding nationally normed examinations for engineers and surveyors
- Providing uniform model laws and model rules for adoption by the member boards
- Promoting professional ethics among all engineers and surveyors
- Coordinating with domestic and international organizations to advance licensure of all engineers and surveyors

2.2 Model Law and Model Rules

NCEES serves as an organization through which its members—the engineering and surveying licensure boards in all U.S. states and territories—can counsel and act together to better discharge their duties as individual, autonomous regulatory agencies. One of the primary ways NCEES fulfills its vision and supports its mission is by providing the *Model Law* and *Model Rules* for adoption by its member boards.

The NCEES *Model Law* sets forth broad ideas about the regulation of engineering and surveying licensure. It is an enabling document that defines the board's powers and duties. It is designed to assist legislative counsels, legislators, and NCEES members in preparing new or amendatory legislation. Each line in the sections is numbered to facilitate use of this document as a working model. The *Model Rules* complements the *Model Law* by providing model rules and regulations for the ways member boards can carry out the general concepts introduced and set forth in the law.

While it is designed to explain broad provisions stated in the *Model Law* by offering the details from an administrative perspective, the *Model Rules*, just like a board's regulations or rulemaking process, functions only within the authority granted by the *Model Law*. The *Model Rules* is designed to assist NCEES member board members, board counsel, and board administrators in preparing and updating board rules.

Revisions to the *Model Law* and *Model Rules* are decided at the NCEES annual business meeting each year. By vote, the majority of NCEES member boards have agreed that the language in them represents the gold standard for engineering and surveying licensure requirements in the United States.

Although there are nuances in the requirements for licensure among the NCEES member boards, all require a combination of education, experience and technical examinations in order to obtain a license as a Professional Engineer or Surveyor. The standard as recommended by the *Model Law* is as follows:

1. Certification or Enrollment as a Surveyor Intern

The following shall be considered as minimum evidence that the applicant is qualified for certification or enrollment as a surveyor intern.

- a. Graduating from a surveying program of 4 years or more accredited the Engineering Accreditation Commission of ABET (EAC/ABET), the Engineering Technology Accreditation Commission of ABET (ETAC/ABET), the Applied and Natural Science Accreditation Commission of ABET (ANSAC/ABET), or meeting the requirements of the NCEES Surveying Education Standard

- b. Graduating from a program related to surveying of 4 years or more as approved by the board and with a specific record of 2 years of progressive experience in surveying

c. Graduating from a program of 4 years or more as approved by the board and with a specific record of 4 years of progressive experience in surveying

In addition to satisfying one of the above requirements, the applicant shall pass the NCEES Fundamentals of Surveying (FS) examination.

2. Licensure as a Professional Surveyor

a. Initial Licensure as a Professional Surveyor

A surveyor intern with a specific record of 4 years or more of combined office and progressive field experience satisfactory to the board in surveying, of which a minimum of 3 years of progressive field experience satisfactory on surveying projects under the supervision of a professional surveyor, shall be admitted to the NCEES Principles and Practice of Surveying examination and any required state-specific examinations. Upon passing these examinations, the applicant shall be licensed as a professional surveyor, if otherwise qualified.

2.3 NCEES Licensure Examinations

NCEES develops and scores the Fundamentals of Surveying (FS) and Principals and Practice of Surveying (PS) examinations for surveying licensure. The FS examination is generally the first step in the process to become licensed as a professional surveyor. It is designed for recent graduates and students who are close to finishing an undergraduate surveying degree from an ABET accredited program. The PS exam is designed to test an applicant's ability to practice the surveying profession competently and who have gained at least four years of professional experience.

The FS exam is a computer-based test (CBT). It is closed book with an electronic reference. Examinees have 6 hours to complete the FS exam, which contains 110 multiple-choice questions. The FS exam uses the US Customary System (USCS) of units. The knowledge areas that are tested through this examination include the following:

- a. Mathematics
- b. Basic sciences
- c. Spatial data acquisition and reduction
- d. Survey computations and computer applications
- e. Statistics and adjustments
- f. Geodesy
- g. Boundary and cadastral survey law
- h. Photogrammetry
- i. Survey Processes and methods
- j. Geographic information systems

- k. Graphical communication and mapping
- l. Professional communication
- m. Business concepts

The pass rate for first-time takers of the FS examination for the last six months of 2016 was 46% and 25% for repeat takers.

The PS exam was converted to a computer-based examination in the fall of 2016. It is a closed book examination with an electronic reference. Examinees have 7 hours to complete the exam, which contains 100 questions. The exam uses the U.S. Customary System (USCS) of units. The exam is developed with questions that will require a variety of approaches and methodologies, including design, analysis, and application. The computer-based PS exam also introduces a new testing component: alternative item types (AITs). AITs are questions other than traditional multiple-choice questions. The CBT PS exam incorporates commonly used alternative item types that include but are not limited to the following:

- Multiple correct options—allows multiple choices to be correct
- Point and click—requires examinees to click on part of a graphic to answer
- Drag and drop—requires examinees to click on and drag items to match, sort, rank, or label
- Fill in the blank—provides a space for examinees to enter a response to the question

The knowledge areas tested include the following:

1. Legal principles
2. Professional survey practices
3. Standards and specifications
4. Business/Professional practices
5. Types of Surveys

Since the conversion to computer-based occurred in October 2016, the only statistics available are for first-time takers and that pass rate is 60%.

3. Crisis in the Surveying Profession

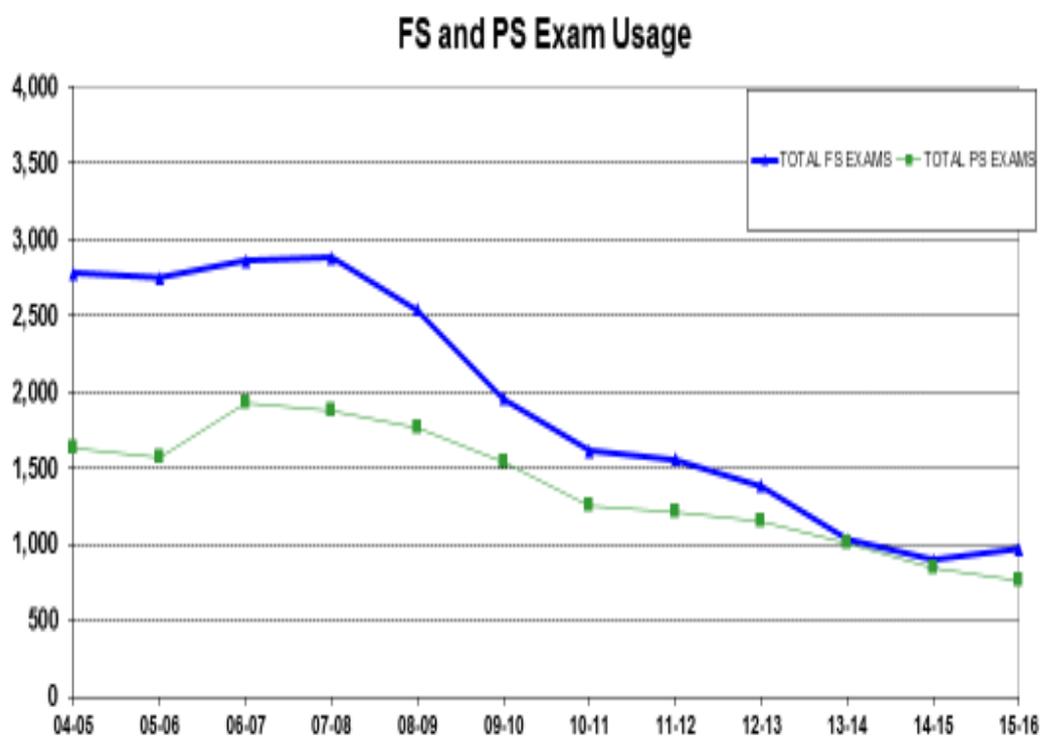
As of 2015, there were in excess of 53,000 individuals who were licensed in the United States as a Professional Land Surveyor (PLS). While the average age of a PLS in the U.S. is nearing 60, there has been a dramatic decrease in the number of individuals entering the surveying profession in recent years. The U.S. Bureau of Labor Statistics reports that the mean average wage for a PLS is \$62,000 U.S. dollars, which suggests that the surveying profession offers a competitive salary for those entering the field. The Bureau also predicted a 2% decline in the total number of PLSs between 2014 and 2024.

Advances in technology as well as increased education requirements have certainly impacted the overall number of PLSs. However, as technologies become more complex, opportunities will be

best for surveyors, cartographers, and photogrammetrists who have a bachelor’s degree and strong technical skills. Increasing demand for geographic data, as opposed to traditional surveying services, will mean better opportunities for cartographers and photogrammetrists who are involved in the development and use of geographic and land information systems.

While the average age of surveying examinees has been fairly steady over the past five years, the number of examinees taking the FS and PS exams has decreased greatly. The following chart depicts the declining trend in candidates taking the FS and PS examinations between 2004 and 2016.

FS and PS Exam Trends



3.1 Future of Surveying Task Force

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Collaborating with other professional organizations helps NCEES advance licensure for engineers and surveyors now and in the future. The decline in the number of examinees taking the FS and PS exams prompted NCEES to establish a task force to evaluate what NCEES can do to mitigate the low number of candidates seeking licensure as professional surveyors and better market the value of a career in the surveying profession. The task force quickly determined that NCEES should participate in a larger stakeholder effort to enhance the existing NCEES surveying marketing efforts in order to determine:

- How licensed surveyors make a difference in society
- How this can be effectively branded through a coordinated marketing plan
- The most effective means of marketing the profession and licensure to potential candidates of all ages and backgrounds, from elementary-school students to veterans of military service.

The group representing 18 different surveying related entities met in January and June 2016 to identify reasons for the downward trend in examinee numbers and strategies to strengthen the future of the surveying profession. The group identified three focus areas to reverse the trend: national brand and image, educating and education, and recruiting and mentoring. Task groups will continue work to address these areas through mid-2017.

A significant element identified during the forum is improving the image of the profession. Participants believe boosting the profession's image and increasing public awareness will help keep surveying relevant in the future. Other important elements include addressing changes in technology and the varying definitions of the practice of surveying.

Representatives from the following organizations participated in the forum:

- American Council of Engineering Companies (ACEC) Council of Professional Surveyors
- American Association for Geodetic Surveying
- American Society for Photogrammetry and Remote Sensing
- American Society of Civil Engineers' Utility Engineering and Surveying Institute
- *American Surveyor* magazine
- Bureau of Land Management
- Colonial States Boards of Surveyor Registration
- International Federation of Surveyors
- MAPPS
- National Association of County Surveyors
- National Geodetic Survey
- National Society of Professional Surveyors
- *Point of Beginning* magazine
- NCEES Emerging Engineers and Surveyors Group
- Surveying and Geomatics Educators Society
- U.S. Geological Survey
- Western Federation of Professional Surveyors

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– *xyHt* magazine

Primary strengths of the profession and surveyors in general were cited by the group as their passion for what they do and for the industry. Another strength was identified as the desire of the profession and everyone in the room to address the issue of the dwindling number of surveyors taking the test, and the fact that everyone felt it was of such primary importance that those in attendance took time out from their worlds to come together to create a plan for the future. Additional strengths included the history of the profession (cited as the oldest true profession), and that surveying is a profession and not a trade. The fact that surveying provides society with safety and security, that people need surveyors and that surveying makes the world a better place were key strengths of the profession. It was noted that people in the world don't realize this. Pride, value, humility, aspiration to be technically savvy and the rugged, yet geeky image of a surveyor was considered a strength not only in recruiting to the field and educating, but in the desired image.

The lack of understanding of what surveying is and definition to those outside the profession was quickly identified as the top weakness. Image was cited as the next most critical weakness, with lack of interest in becoming licensed as the third most prominent weakness. Technology, also cited as an opportunity later, was noted as a weakness as it defines us (we are our own worst enemy). Public awareness (lack thereof), and lack of mentors were also the areas receiving the top votes as weaknesses needing solutions by the group. Additional notes included lack of people, market changes, enrollment of students in the field, demographics, programs, the profession not being ready to transition to the technology, society not being ready for the technology education, code of ethics, clients wanting more out of less and less, and that much of the above in the way of weaknesses is a global problem, not just a national problem.

Solutions discussed were heavily weighted toward more outreach, promotion and advertising about surveying in non-traditional markets. Having a unified approach across the nation to the image/national brand of surveying was also highly ranked. Education and mentoring were also very high on the priorities for solutions to the number of surveyors entering the profession and taking the exam. Tiered licenses received a vote, and additional ideas included surveyors taking the lead 11 | Page themselves in solving the issue. Creating awareness was cited, along with having publications be the champions for getting the message out.

Potential solutions offered by the task force included:

- Extend professional reach to encompass reduced cost of technology, changing market, growing economy and more activity to create and express opportunity in the profession.
- Develop more outreach, promotion and advertising about surveying in non-traditional markets.
- Have a unified approach across the nation to the image/national brand of surveying.
- Educate and mentor as solutions to the number of surveyors entering the profession and taking the exam. Engage surveyors in taking the lead themselves in solving the issue.
- Create awareness by having publications be the champions for getting the message out.

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- Improve the image of the profession + the state board (perception).
- In our changing society – define what falls under surveying

The National Society of Professional Surveyors has officially taken the lead for the Future of Surveying Task Force and NCEES continues to serve as a resource and will provide funding to support the activities of this group.

3.2 NCEES Surveying Award

A recommendation provided to the members of NCEES by the Future of Surveying Task Force was the creation of a surveying award to be awarded annually to surveying programs of distinction. This matter was debated by the member boards during the 2016 NCEES Annual Meeting and a motion to authorize the implementation of an NCEES Professional Surveying Program of Distinction for a trial period of five cycles was approved.

The NCEES Surveying Education Award recognizes surveying/geomatics programs that best reflect NCEES' mission to advance licensure for engineers and surveyors in order to safeguard the health, safety, and welfare of the public. Up to 10 programs can be selected each year to receive a \$10,000 cash award. Use of the funds awarded is encouraged to be incorporated into the surveying/geomatics program.

An email announcement with entry instructions was distributed to 52 schools on March 22, 2016. The announcement coincided with National Surveyors Week. The Future of Surveying Task Force provided the distribution list and questions for the application. Public Affairs staff developed the online application, a special landing page at ncees.org to promote the award, and placed online digital advertisements with xyHt. The deadline for applications was June 1, 2016. NCEES received 39 entries from 38 programs for the inaugural award cycle.

The jury panel was selected by the Future of Surveying Task Force. The jury met at NCEES headquarters on June 23 and 24 to select the winners. Of the 39 entries, there were two duplicates from the same institution, which the jury decided to review and score as separate entries.

The jury selected 10 winning programs to receive a \$10,000 cash award. Of the winning programs,

- all had at least one full-time licensed surveyor on staff
- 8 were 4-year bachelor's degree programs
- 2 were 2-year associate degree programs
- 5 were ASAC/ABET-accredited
- 2 were EAC/ABET-accredited
- 1 was ETAC/ABET-accredited
- 1 was accredited by the North Central Association of Colleges and Schools

- 1 was accredited by the Higher Learning Commission

Participating schools were encouraged to share a survey with their students. A total of 86 students from 11 schools responded. This information will be added to existing student survey and focus group data, which is used to develop and measure surveying-related marketing and promotional efforts.

Application data trends

As this is the first cycle for this award, the following information provides an overview of the types of programs that submitted an application and highlights the winning programs in each category.

Total number of applications	39
Total number of programs	38

Number of full-time licensed faculty represented

Total programs with 0 licensed full-time faculty	12
Total programs with 1 licensed full-time faculty	16
Total programs with 2 licensed full-time faculty	8
Total programs with 3 licensed full-time faculty	2
Total programs with 4 or more licensed full-time faculty	0

Winning programs with 0 licensed full-time faculty	0
Winning programs with 1 licensed full-time faculty	5
Winning programs with 2 licensed full-time faculty	4
Winning programs with 3 licensed full-time faculty	1
Winning programs with 4 or more licensed full-time faculty	0

Number of licensed adjunct faculty represented

Total programs with 0 licensed adjunct faculty	14
Total programs with 1 licensed adjunct faculty	13
Total programs with 2 licensed adjunct faculty	6
Total programs with 3 licensed adjunct faculty	0
Total programs with 4 licensed adjunct faculty	0
Total programs with 5 licensed adjunct faculty	2
Total programs with 6 licensed adjunct faculty	3
Total programs with 7 or more licensed adjunct faculty	0

Winning programs with 0 licensed adjunct faculty	4
Winning programs with 1 licensed adjunct faculty	3
Winning programs with 2 licensed adjunct faculty	2
Winning programs with 3 licensed adjunct faculty	0
Winning programs with 4 licensed adjunct faculty	0
Winning programs with 5 licensed adjunct faculty	0
Winning programs with 6 licensed adjunct faculty	1
Winning programs with 7 or more licensed adjunct faculty	0

Number of accredited programs represented	
Total EAC/ABET programs	5
Total ASAC/ABET programs	8
Total ETAC/ABET programs	7
Total Regional programs	10
Total unaccredited programs	8
Winning EAC/ABET programs	2
Winning ASAC/ABET programs	5
Winning ETAC/ABET programs	1
Winning Regional programs	2
Winning unaccredited programs	0

FS Exam

Total programs that require the FS as a condition for graduation	5
Total programs that are considering requiring students to register for or take the FS as a condition for graduation	13
Total programs that do not and are not considering requiring students to take the FS as a condition for graduation	20
Winning programs that require the FS as a condition for graduation	3
Winning programs that are considering requiring students to register for or take the FS as a condition for graduation	5
Winning programs that do not and are not considering requiring students to take the FS as a condition for graduation	2

4. Conclusions

Land surveying was started being practiced thousands of years back. It is, in fact, one of the oldest professions in the world. If land surveying could be replaced by another technique, then it would have been done years ago. Land surveying is so important, even in modern times, that it's here to stay. Land surveying is critical in the world we live in today. A professional land surveyor can help to eliminate issues that arise because of land boundaries. They are also the first people to be called in when advances and improvements are being made to public spaces and land we all use regularly. It is important to recognize that only one job of a surveyor is boundary line management the many other hats they were ensure public safety and allow us modern day conveniences such as bridges, roads and airports

Today, land surveying has changed greatly. There is high tech equipment available that can measure quickly and accurately allowing more work to be done by fewer people. Unfortunately, other people besides land surveyors are also using the new high tech equipment. Construction companies, utility companies and others are purchasing this high tech equipment so they can do

their own surveying. Many large surveying firms in my area have downsized their staff. The decline in land surveying staff combined with the reduced need for land surveying is bringing the prices for land surveys way down. This seems to defy the logic that if fewer land surveyors are doing more of the work then they should be making more money.

The next generation of Land Surveyors will be stimulated by the technical advances in our industry. This “Tech Savvy” generation thrives in industries where technology continues to expand. Promotion of GIS, GPS, Laser Scanning, UAV’s, Digital Orthographic Photography, and other advancements will entice the handheld millennial generation, satisfying their continuing desire for technical advancement.

In order to promote surveying as a career, the following steps must be taken:

- 1) Recognize that direct measurement is no longer a critical skill in geospatial work.
- 2) Recognize that the degree of complexity in spatial data collection and processing is expanding faster than current education programs can handle it, so on-the-job training is far too slow and process for a comprehensive understanding of the discipline.
- 3) Most potential recruits to the profession are seeking something very different to traditional surveying, and unless this can be offered, they will not be attracted.
- 4) Surveying/geomatics is far broader a career than most people inside it recognize, so promotional efforts need to go beyond our traditional views of possible geospatial careers.

It is and will continue to be the responsibility of organizations such as NCEES and NSPS to promote the value of licensure as a professional land surveyor in order to ensure that the health, safety and welfare of the general public continues to be met. There are a number of changes that will be required in the practice of the profession based upon demands upon surveyors and the explosion of technology and the leaders of our organizations will need to have greater engagement with the consuming public and the ability to make changes in regulations where needed in order to further the profession.

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BIOGRAPHICAL NOTES



Mr. Patrick J. Tami is a Professional Land Surveyor with more than 37 years of professional surveying experience. Mr. Tami is a nationally recognized expert in land surveying laws, regulations and standards and has been involved in developing, grading, and reviewing the state and national exams for professional land surveying licensure since 2001. He was appointed three times by California Governors to the Board for Professional Engineers, Land Surveyors and Geologist, serving from 2006 to 2016. In addition, he has authored numerous professional papers and has instructed continuing education of attorneys, engineers, realtors and surveyors. Tami has served as Vice President of the NCEES Western Zone and is currently the President-Elect of NCEES>

Registration:

1987, Professional Land Surveyor, CA, 5816

Years of Experience: 37

Education:

Coursework, Survey and Photogrammetry, Diablo Valley College & California State University, Fresno

Expertise:

Surveying laws, regulations and standards; boundary law; mobile and terrestrial LiDAR, Unmanned Aerial System (UAS), robotic total station, Global Positioning Systems (GPS) and hydrographic sonar equipment

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Jerry Carter is the Chief Executive Officer for the National Council of Examiners for Engineering and Surveying (NCEES). In this position, Carter serves as the chief of staff and the secretary of the NCEES Corporation. As the Council's chief employed officer, Carter has full authority for the management of Council affairs, to include oversight of a staff of seventy-two professionals and an annual operating budget in excess of \$28 million dollars. Carter also serves as the NCEES Representative to the International Engineering Alliance for which he represents the interests of the state and territorial boards of engineering in matters relating to international licensure. Carter has represented NCEES in visits to Japan, Korea, Singapore, Egypt, Saudi Arabia, the United Arab Emirates, Australia and New Zealand and serves as a Consultant to the Office of the United States Trade Representative. Prior to being named as CEO, Carter served as Director of Corporate Affairs at the Council. He has been employed by NCEES since 2001.

Before joining NCEES, Carter was the Executive Director of the North Carolina Board of Examiners for Engineers and Surveyors in Raleigh, N.C from 1992-2001. During his tenure with the North Carolina Board, Carter was instrumental in pursuing revisions to the North Carolina Engineering and Surveying Practice Act to update requirements and to reflect current day practices to include mandatory continuing education for all licensees as a condition of renewal. Carter also was responsible for updating the technology employed at the Board office to include the development of propriety software for use in processing applications, renewals and retaining historical information on licensees.

Carter is a graduate of Atlantic Christian College located in Wilson, North Carolina where he was awarded a B.A. with a double major in Psychology and Sociology and a minor in history. He has completed graduate courses in Public Administration at both East Carolina University and North Carolina State University and is a graduate of the Center for Creative Leadership located in Colorado Springs, Colorado where he is certified in strategic planning and leadership coaching.