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nothing
so powerful
as truth"*
DANIEL WEBSTER



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2021 National Surveyors Week

March 21-27, 2021 • Visit nps.us.com

Global Surveyors Day: March 23



NEW HAMPSHIRE UNION LEADER • MONDAY, MARCH 22, 2021 • PAGE B4

SURVEYING

■ **More than you think:** Drones, lasers, building models, 3D software and more.

By **Michael Carter**
Docent Survey

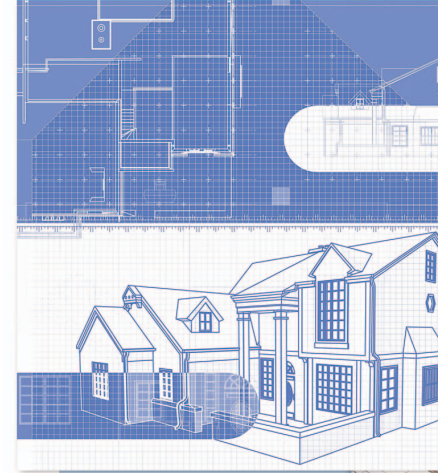
HOW WOULD YOU like to be a scientist, or an adventurer, or an historian? Would you like to learn about ancient tools and techniques, or do you prefer to work with some of the most modern technologies available? Would you like to work in the heart of major cities around the world, or in remote rural areas far away from any roads? Would you like to work in an office using a variety of sophisticated softwares, or would you like to work outside exploring different places? Better yet, how would you like to do any or all of these things in a career for which there is enormous demand? If that sounds appealing, please keep reading. That career exists, and we call it Surveying.

Surveying is a licensed profession under the jurisdiction of the State Office of Professional Licensure and Certification, which is the same office that licenses architects, engineers, and several other professions. This is important, as the surveyor's duty is to meet the standard of care dictated by laws, rules, standards and ethics that are in place so that design professionals and landowners can rely on the survey professional's measurements and expert opinions.

When you think of a surveyor, you quite likely think of a person standing beside a tripod peering through a transit. We certainly do that frequently, but that is just one small part of a vast scope of work that our profession is becoming involved in.

3D laser scanning

Surveyors are experts at measuring things and representing and communicating our measurements in ways that other people can understand. As an example, we use 3D laser scanners to survey entire buildings inside and out, and then use sophisticated software to create 3D models of the structural and architectural features of the buildings as well as the pipes, valves, ducting, conduits, and other features related to the utilities in the building. This creates the foundation for our architectural and engineering clients to create a Building Information Model (BIM) of the facility, which is an enormously valuable tool for the building owners and stake-holders. In an indus-



... WITH A VERY BRIGHT FUTURE

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trial or school building, for example, a BIM could allow the facilities team to know the exact model number of every motor and compressor used in the HVAC system, what the recommended preventative maintenance schedule is for each, and when that PM work was last performed and/or is coming due for each of those components. It is interesting to consider that for as valuable as a given piece of land is, the building that rests upon that land often costs many times more than the actual plot of land is worth. A thorough BIM "map" of that building should be an excellent investment.

UAV operators

Surveyors also use Unmanned Aerial Vehicles (UAVs, sometimes called drones) to perform detailed measurements on features that are difficult to reach with ground-based measuring systems. One of the members of our survey team, for example, has

an extensive background in photography and also earned a "Remote Pilot Certificate" through the Federal Aviation Administration (FAA). He uses a tablet to guide our quadcopter over an area to be surveyed and takes very high-resolution photos that we use to create a variety of valuable deliverables for our clients.

Virtual 3D displays

With the ever-increasing demand for detailed geospatial data about our environment, manufacturers are constantly innovating to create and combine technological advancements that give surveyors amazing new tool sets. We, in turn, create increasingly detailed measurements and representations of the built environment around us that, among other things, provide the foundation for increasing use of augmented reality (AR) and mixed reality (MR). The days of large paper rolls of 2D plan sets on construc-

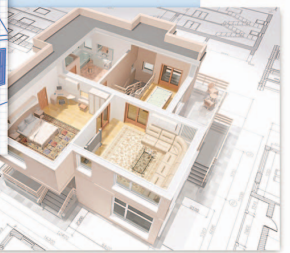
tion sites are drawing to a close. The Architecture, Engineering, and Construction (AEC) industries are transitioning to the use of 3D documentation in electronic format, so builders are starting to use AR headsets that provide virtual 3D displays of what needs to be built — exactly where it needs to be built — as the modern builder walks/drives around a project site. Surveyors play a crucial role in making that possible.

The great outdoors

And as all of these technological advancements are happening, we still get to work in beautiful outdoor settings that often involve hiking in the forests, walking through small rivers in chest waders as we survey the river-bottom topography, or working from a kayak or other small boat to survey slightly deeper waters. My company has also collaborated with



A GREAT CAREER CHOICE ...



METRO CREATIVE CONNECTION

► See **Surveying**, Page B5

Recruiting your help to 'Get Kids Into Surveying'

The National Society of Professional Surveyors is an organization that strives to establish and further common interests, objectives, and political effort that would help bind the surveying profession into a unified body in the United States.

The NSPS is governed by a board of directors, which meets twice per year. NSPS has working agreements with state surveying organizations, such as NHLISA,

which are represented on the NSPS Board of Directors, and with the NSPS Foundation, which is the arm of the association that donates funds to schools for curriculum development, assists members with disaster relief, and provides scholarships to students.

There's a global skills shortage in surveying — to attract the next generation to our profession NSPS is running a long-term "Get

Kids Into Survey" campaign to entice children and teenagers about careers in surveying. NSPS can't do it without the support of the surveying and education community, so we're asking for your help. Practitioners, schools, and industry representatives are asked to sponsor the production of one or more fabulous "Get Kids Into Survey" posters, which NSPS will ship directly to sponsors. Sponsors can get their busi-

ness logo placed right onto the poster. NHLISA will assist sponsors with what to do once they sign up to educate the educators about surveying education. NHLISA currently sponsors the Trig Star Program that brings real world education regarding the application of math and science directly to the classroom. Contact NHLISA for more information about NH initiatives.

If you visit NSPS.org you can

find out all the information you need to know about the program, including forthcoming poster editions, distribution details for past posters, and what you get as part of your sponsorship package. Please help us, if you can, to insure the future of the profession, and promote you schools or business mission at the same time!

*"Get Kids Into Survey" is sponsored by the National Society of Professional Surveyors.

SPONSORED CONTENT

To learn about the member benefits of the New Hampshire Land Surveyors Association, visit the nhlsa.org website and click the Membership link.

Fifty-plus years of improving the surveying profession

The origins of the New Hampshire Land Surveyors Association closely relate to legislation for the registration of land surveyors in New Hampshire.

Up to 1969, anyone could offer his or her surveying services to the public without any professional training. Surveying was often a by-product of engineering or forestry projects, and not considered a profession on its own. This sense of casual practice occasionally proved defective and costly to land owners.

Registration of surveyors occurred around the United States throughout the 1950s and 1960s. In New Hampshire, the first attempt to pass a law in 1965 failed when surveyors could not agree on some provisions of a proposed bill. Four years later, the Legislature passed a law requiring all surveyors, before offering surveying ser-

vices, to be registered by a state Board of Registration. The law became effective on July 1, 1970, and New Hampshire became the last state to impose such a requirement.

When the 1965 legislation failed to pass, many surveyors realized the need to overcome their differences, and form an association that represented all interests. The first organization formed in Keene when the Cheshire-Sullivan County Land Surveyors Association held its first meeting in early 1969. The group attracted many more individuals, and the association reorganized as the New Hampshire Land Surveyors Association on March 4, 1969.

The new group immediately supported the 1969 legislative bill mentioned above which called for the registration of surveyors. Even after passage of the

registration law, the association actively supported the registration process by testifying before the 1979 Sunset Review Committee. Other testimony has supported such bills as House Bill No. 147 prohibiting the destruction of boundary markers, which became law on June 11, 1983.

In an effort to promote improved surveying practices around the state, standards and ethics were first adopted in 1972 and significantly revised in 1981. These attempts to summarize good surveying methods.

To support these efforts, the New Hampshire Land Surveyors Association also sponsors short courses and seminars on such projects as boundary law, history, mathematics, soils, tree identification, and astrometric positioning.

The association holds annual equipment shows

which introduce new technology to the professionals. Another aspect of the educational program of the association is the publication of the Benchmark (a journal) and the TMB (a newsletter), as well as several books and pamphlets.

The association sponsors two scholarship awards, one in the name of the late Elton Roberts of Concord, the other in the name of the late Allan Plumb of Marlow. The awards are given to students planning a career in surveying.

Throughout its 50-year plus history, the NHLSA has supported programs that are intended to safeguard the rights of New Hampshire's land owners. Its members are committed to improving their professional skills and the association tries to offer the instruction necessary.

To learn more, visit nhlsa.org.

TFMoran Honors Our First Class Survey Team

We recognize the dedication and outstanding work of our Survey Department Managers:



Michael Hammer, LLS, PLS
Survey Department Manager - Bedford

Michael Hammer manages TFMoran's Bedford Survey Department. He brings over 30 years of survey experience to the team and is licensed in the states of New Hampshire and Massachusetts. Mr. Hammer has extensive experience in commercial, residential, and municipal projects. He has a professional certificate in Land Surveying from Wentworth Institute of Technology. He was elected in 2021 to the New Hampshire Land Surveyors Association Executive Committee as Education Director.



Brenda Kolbow, LLS, PLS
Survey Department Manager - Portsmouth

Brenda Kolbow manages TFMoran's Seacoast Division Survey Department. She has nearly 20 years of survey experience and is licensed in the states of New Hampshire, Maine, and North Carolina. Ms. Kolbow has a degree in Surveying Technology at Western Piedmont Community College. She is responsible for the management and coordination of survey projects with staff, clients, contractors, and regulatory officials from proposal through the completion of construction.

All engineering work is ultimately based on accurate survey. Whether it takes place outdoors or indoors; it all begins with survey – a solid understanding of existing conditions – and ends with survey – making sure the work is put in the right place. That is why we at TFMoran are proud to recognize National Surveyors Week. Our history of combining the best in survey with the best in engineering stretches back over 50 years. Join us this week as we honor our first class survey team:

Corey Colwell, LLS Michael Hammer, LLS, PLS Brenda Kolbow, LLS, PLS Hans Mertsch, LLS, PLS Tom Berube, LLS, PLS Stephen Bibeau, LLS Philip Trombley, PLS Mo Vander Pol, III, SIT

RECENT LAND SURVEYING PROJECTS:



Members First Credit Union – Manchester



NH SportsDome – Hooksett



The Chandler Apartments – Bedford



Planet Honda – Tilton



Wentworth by the Sea Country Club Pavilion – Rye



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Surveying

From Page B4

other teams of surveyors whose job involves working from larger boats as they survey and map the ocean floor along our nation's coasts and harbors.

Research and legwork

Before surveyors arrive at a site to set up their tripods for a boundary survey, you can be sure that someone on that survey team spent a great deal of time doing research in a variety of places including Town or City Records, at the Registry of Deeds, and quite possibly in the State Archives in Concord and/or other sites. In the eastern part of the U.S., the documents involved in that research are often old hand-written script pages dating back to the early days of our nation or even into the colonial periods. A surveyor must also understand how the courts decide boundary dispute issues, as there are typically ambiguities in

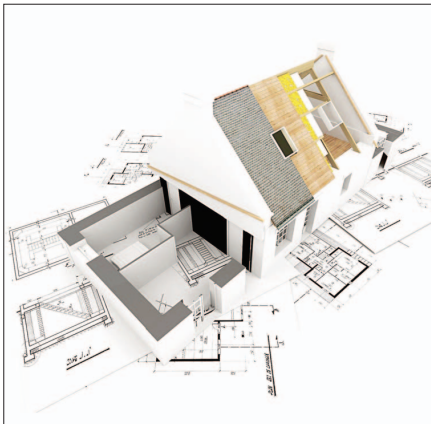
property descriptions, corner monuments called for may be very difficult to find (or may have been obliterated), and in most instances old measurements do not match with those made by modern instruments. It is essential that these issues be evaluated by a licensed professional because these issues concern the boundary of land that is precious to people economically and emotionally.

This is a career that for whatever reason has been "off the radar screen" of many guidance and career counselors for a long time. Meanwhile, the demand for surveying has been growing tremendously and is forecasted to continue doing so. People with skills (even entry-level skills) in surveying profession are therefore in very high demand today.

In conclusion, if you are a young man or woman looking to enter an exciting,

high paying and rewarding career, or if you're considering leaving your existing career to enter a more enjoyable one, surveying is a very good place to look. Our work is interesting, challenging, and every-changing as new technologies emerge, but as we move forward with these technologies we also walk carefully and deliberately in the footsteps of those who preceded us centuries ago, including several of our nation's founding fathers. If you're interested, please reach out to a surveyor to find out more. Our company has welcomed young people to come with us and spend "a day in the life of a surveyor" to begin to get a feel for the profession. As the summer approaches, there may be opportunities to intern with a survey firm. Please don't hesitate to call and ask!

Michael Carter is the Director of 3D Mapping at Doucet Survey, LLC.



METRO CREATIVE CONNECTION

*The State of New Hampshire
By His Excellency
Christopher T. Sununu, Governor
A Proclamation*

In the year of our Lord Two Thousand and Twenty One

**LAND SURVEYORS WEEK
MARCH 21-27, 2021**

WHEREAS, for the past 52 years, the New Hampshire Land Surveyor's Association has aimed to provide a public benefit by helping licensed land surveyors grow professionally beyond licensure, and to achieve excellence in their profession through professional outreach and education programs; and

WHEREAS, Land Surveyors are very important to infrastructure in the State of New Hampshire and are worthy of our appreciation; and

WHEREAS, Land Surveyors also provide a public benefit by helping local communities know where to construct roads, bridges, and other public buildings; and

WHEREAS, there are over 40,000 licensed land surveyors nationally who all serve in roles including surveying, land mapping, and land information systems; and

WHEREAS, through their dedication and hard work, land surveyors and their employees contribute to our local communities by helping place bridges and other public utilities;

NOW, THEREFORE, I, CHRISTOPHER T. SUNUNU, GOVERNOR of the State of New Hampshire, do hereby proclaim **MARCH 21-27, 2021** as **LAND SURVEYORS WEEK** in the State of New Hampshire, and call this to the attention of all citizens.



IN TESTIMONY WHEREOF, I have hereunto set my hand and caused the Seal of the State of New Hampshire to be affixed this 26th day of February, 2021.

Christopher T. Sununu
Christopher T. Sununu
Governor

2021 National Surveyors Week

March 21–27, 2021

{ Global Surveyors Day }
Tuesday, March 23



Download the Volunteer Kit

Get great ideas about activities to try in your region. Visit nsp.us.com and enter **volunteer kit** in the search bar.

Get Kids Into Survey

Distribute posters! We have a variety available—just pay postage. Order yours today at getkidsintosurvey.com



Distribute Brochures

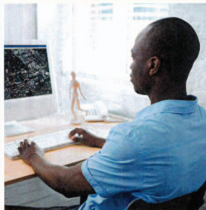
For a supply of surveying brochures, please contact Trisha Milburn at NSPS.

✉ trisha.milburn@nsp.us.com



Try This In Your Region

- 1) Have Survey Day at the mall
- 2) Sponsor a Trig-Star Test
- 3) Conduct a Boy Scouts Merit Badge event
- 4) Obtain a proclamation from your state or local government
- 5) Organize Geocaching or Benchmark Hunting: <https://geocaching.com/mark>
- 6) Try Surveying Mark Recon: oceanservice@noaa.gov/education/for_fun/SurveyMarkHunting.pdf
- 7) Plan GPS on Benchmarks: <https://geodesy.noaa.gov/GPSonBM/>



Talk About Surveying

- Local civic clubs (American Legion, Elks, Grange, Kiwanis, Lions, Rotary, Ruritan, VFW, etc.)
- Professional organizations (realtors, attorneys, bankers, title agents, etc.)
- Teachers and school counselors