



THE FLORIDA SURVEYOR

February 2022
Volume XXX, Issue 2



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Knud's Thoughts on Practice & Education



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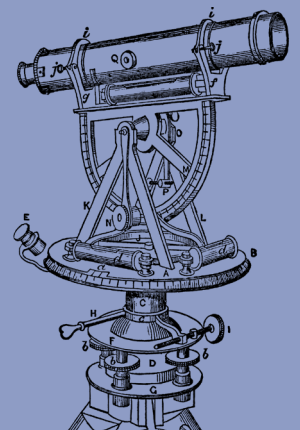
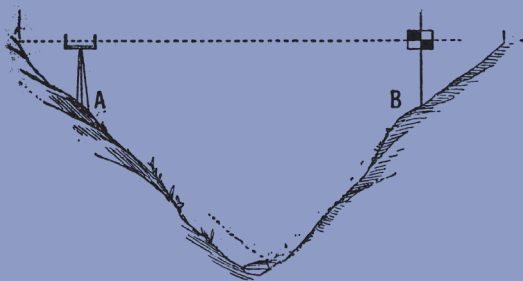
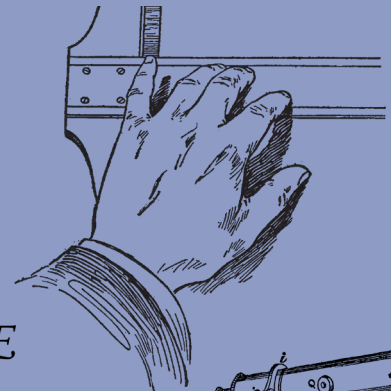
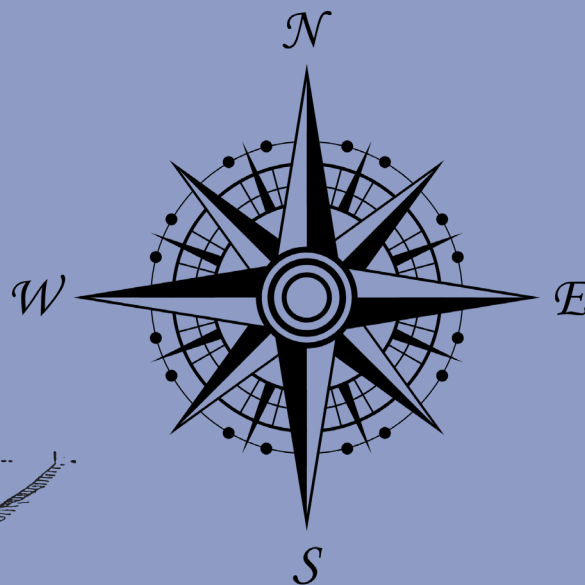
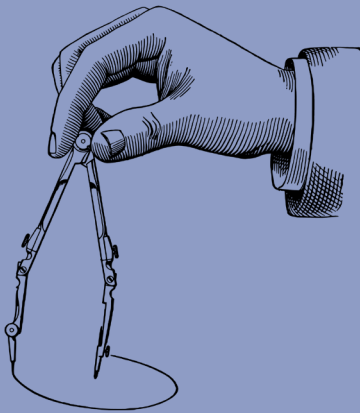
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PRESIDENT'S Message

Last month, I created a new FSMS Committee to help our members deal with probably the biggest concern in the provision of our professional services: Workforce Development (**WD**).

The newly formed Workforce Development Committee (**WDC**) has been charged with investigating methods to help our members recruit and train employees that help us provide our services, both field and office positions. Don Elder chairs this committee, and Allen Nobles is vice-chair.

Committee members also include:

Dianne Collins
Bon Dewitt, PhD
Nick DiGruttolo, PhD
Sam Hall
David Hyatt
Russ Hyatt
Brian Murphy
Ray Niles
Rick Pryce
Chad Thurner

The **WDC** held its first meeting in January, and I saw a lot of potential in the energy and ideas discussed during that meeting.

Our profession will realize a lot of beneficial collaboration with this committee and its members' vast and varied experiences, ideas, and momentum. After all, **WD** is an issue that affects us all who still practice the profession in addition to the public and consumers. Heck, it even stretches to other related service providers, such as title companies, realtors, construction and more.

This committee is not charged with developing anything related to PSM apprenticeship, and by that, I mean that the committee's focus is only on folks who want to make a career within the surveying and mapping profession, though not necessarily as a licensed PSM.

As most of you know, we are facing legislation that seeks to make it "easier" to become a licensed PSM, mostly by deleting the mandated 4-year degree requirement for licensure. Well, the **FACT** is that there is nothing easy about today's surveying and mapping profession, and this is rightly so, as many issues we face in our profession can and do affect the public, and easing the requirements to become licensed will **not** benefit the public.



President

Lou Campanile, Jr.

(954) 980-8888

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For sure, there are a lot of **extremely** qualified PSMs who do not have a 4-year degree, but the surveying profession has become so much more technically complicated since those folks took their exams. I know, I am one of those folks. Yes, I have a 4-year degree, as did my dad before me, but I know for a fact that, were my dad still alive, we both would most definitely feel blessed that we would not have to take today's licensing tests. The fact is that most of the technology has passed me by.

Yeah, I can still do a boundary survey and platting, but anything geospatially oriented, uh, no. Our profession has morphed into being so much more than boundary surveying, construction layout, or any other such facet that was the norm when I became licensed.

I attended the meeting of the Florida Board of Professional Surveyors and Mappers (BPSM) on January 25th. After that meeting, BPSM Executive Director Liz Compton emailed me the following data on those who passed the PS portion of the NCEES licensing exam: ***2020, 18 out of 35 passed the test (51.4%), and in 2021 it was 25 out of 59 (42.4%), and this was for folks who met the mandatory 4-year degree requirement.*** A 4-year degree is not a guarantee of passing **today's** licensing exams. It is easy to look back and see the way that technology has morphed our profession.

Now, extrapolate that level of change out into the future, and you will no doubt see today's newly licensed PSMs reminiscing of bygone days, like I today look back at myself, with my drafting pencils or India ink pens, making a survey come to life while sitting at my drafting table that is littered with electric eraser dust and pounce.

My, how far we have come. My, how far we will go.

Unlike allied professions (e.g., civil engineering), the surveying and mapping profession has grown in technology at a very rapid pace and will continue to be a dynamic profession that will have increasing Intellectual characteristics as well. Formal education allows one to adapt and perform critical thinking and reasoning as this will be increasingly employed in such a rapidly changing and progressing profession like ours.

And, yes, our profession is aged. There are much fewer licensees as a percentage of the general population today than when folks such as myself became licensed (35 years ago for me). However, because of the advances in technology, fewer can do more with less. To me, ours is a simple case of supply and demand. More supply, less demand. Less supply, more demand. And in order to facilitate our demand, we do not need an influx of licensees. We need more workforce to help us licensees facilitate that demand.

Good fodder for our Strategic Planning Retreat in Gainesville on March 18th & 19th.

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The Riparian Boundary Challenge

Question: Where's the boundary? Answer: It can depend on many factors, some unknown and unknowable to the surveyor.

DR. RICHARD L. ELGIN, PS, PE // 10.12.2021

The Riparian Boundary—Not Your Usual Boundary

In the United States, rivers, streams and lakes provide a natural boundary for millions of parcels along thousands of miles of boundary line. As boundaries, rivers are a natural monument, holding the highest priority in the order of conflicting title elements. Visible, their identity certain, they have been used by man as boundaries for millennia. However convenient. and as natural. visible.



substantial and inviting as they are for governments, treaties, and owners, they have one huge, troublesome characteristic: They move! There are many other issues related to using waterbodies as boundaries, but their ambulatory nature is what makes riparian boundaries different from all others. This boundary movement, influenced by the whims and vicissitudes of Mother Nature and the designs and construction of man, brings uncertainty. With movement, the extent of title and tract acreage changes; even small differences in fluvial processes can result in large differences in ownership. Landowners face uncertainty in something they desire to be firm and absolute: The location of the boundaries of their real property. Generally, owners do not like their boundaries to change, their acreages decreasing or increasing, their lands perhaps vanishing altogether. These boundaries can change by forces of nature that are not within the riparian's control. Or one's riparian boundary may be changed by others without the riparian owner's knowledge or permission, such as by artificially-induced river movements. Riparian boundaries frequently bring conjecture to the landowner, consternation to the surveyor, confusion to attorneys, confoundment to the courts and they have conflated commentators.



Aerial image illustrates past complex river movements. Today's boundary position will depend on the area's fluvial and title history.

Additionally troublesome is that riparian boundaries can be four-dimensional: In a plane, their North/East horizontal position can be affected by vertical movement of the waterbody. And time can affect the riparian/littoral boundary location. (If the river moved slowly or quickly can have an effect.) Four dimensions, very unlike its usual two-dimensional boundary brethren.

And most boundary disputes between adjoiners are personal and are based on emotions. The cost of litigating a boundary almost always far exceeds the value of the land in dispute. Not so in some riparian boundary disputes. At stake can be thousands of acres of land or issues worth tens of millions of dollars. The most epic boundary

litigation matter in United States history was a riparian boundary dispute: The famous "Red

River Litigation” between Oklahoma and Texas. That litigation spent the 1920s in and out of the U.S. Supreme Court and even at this date there remains an ongoing kerfuffle concerning the boundary. Another example is the current “Is it a river or is it a lake” question in Lake Catahoula in Louisiana (with huge ownership and other consequences).

Lex Aquae

With its foundation in English Common Law, courts and legislatures (both state and federal) have proclaimed “lex aquae,” the law of the water. Riparian (river) and littoral (lake or seashore) boundaries are part of that law. Riparian boundary law is complex, largely buried in court decisions that set precedents, and, like the shifting sands in a river, it has and will continue to evolve. But it establishes the rules and principles to be followed by the Professional Surveyor when determining the location of a riparian boundary.

Boundary control legal principles are fairly uniform nationwide, hence there are books by Skelton, Clark, Brown, Robillard, Wilson and others that do a good job of stating and explaining them. Some legal principles are broadly applicable nationwide. The general riparian rules for erosion, accretion and avulsion are examples and they are adequately covered by the authors listed above. Under the Equal Footing Doctrine, the federal government left most riparian issues to the states (while reserving federal interests). Because states can (and have) developed their own law and rules relative to water law and riparian boundaries, there are differences. Some riparian boundary issues are very state-specific. One doesn’t have to dig too deeply into riparian boundary subjects to find rules that are very different state-to-state: If a state owns the bed of a river that is navigable for title (not all states do), what is the title boundary between the state and the upland owner? If you said Ordinary High Water Line, you’d be correct for less than half the states. So, books by the authors listed above don’t delve too deeply into riparian boundaries...as they shouldn’t.



Mississippi River, Grand Gulf, Turner's Pt., New Carthage Reconnaissance for the use of the Mississippi Squadron; Gerdes, F. H.—United States Coast Survey; 1864 *Courtesy Library of Congress*

Some Examples

To illustrate how state-specific some riparian/littoral boundary issues can be, here are some questions or hypothetical situations. For your jurisdiction, state the applicable legal principle, along with any qualifying statements or explanations necessary. No answers are supplied with this quiz because there is not one answer that will be correct for all 50 states and federal lands. One or two will be close to the same nationwide, but even they will need a qualifying note or two.

If you've not accomplished many surveys of riparian tracts, you may not have thought of or encountered some of these circumstances. All of these issues have been before the courts. It is likely these issues are settled for your state. (Perhaps not to the specificity desired by the Professional Surveyor, but the general principle can be stated.)

1. For a non-navigable stream, what line is the boundary between opposite landowners? Define, exactly, that line and how it is located.
2. Who owns the bed of a waterbody that is navigable for title? Is it the State in trust for the public? Is it the upland landowner but subject to an easement in the public for commerce and recreation? Or is it in some other entity?
3. Suppose the bed of a river is navigable for title and is owned by the State. Where is the boundary between the State and the upland owner? Define, exactly, that line and how is it located.
4. Who owns an island that forms in a navigable river?
5. On a navigable river that has barge and commercial traffic, for the states on opposite sides of the river, where is the state boundary? Define, exactly, that line, and how is it located.
6. Suppose a non-navigable lake that was meandered by the GLO slowly goes dry. The littoral owners hire you to survey their lakebed ownership. First, do these upland littoral owners have any rights in the now dry lakebed? Describe how you proceed.
7. Suppose that post-avulsion on a navigable river, there's a cutoff lake, formed from the abandoned channel. The cutoff lake partially fills in. Who owns the bed of this cutoff lake?
8. Owner A conveys to B "all lands north of the river," then Owner A conveys to C, "all lands south of the north bank of the river." Based on those facts what is C's northerly title line?
9. For your state, are the legal principles different for a river as compared to a lake? If so, define or distinguish the difference between a river and a lake.

10. The GLO meander line is practically never the upland owner's boundary. As the successor to the patentee, the patent being a lot made fractional by a waterbody, the waterbody is the boundary, not the meander line. Can there be an exception, the meander line being the boundary?
11. Suppose in the deed of a riparian tract, its acreage is given. A current survey shows that the acreage mentioned does not include the accretions to the tract that have been added since the deed was written (but has been used in subsequent conveyances for many years). Are the accretions conveyed by the later deeds?
12. Does your jurisdiction embrace or reject re-emergence? That is, suppose that by erosion an advancing river completely erodes and washes away a parcel. The river then retreats, accretions forming where the parcel formerly was located. Who gets title to the "re-emerged" parcel? Does the original owner's title "re-emerge," or, does title accrete and inure to the benefit of the owner of the last mainland the river touched (who could have been previously non-riparian)?
13. On a stream that is non-navigable for title (the upland owner(s) holding title to the bed) does the public have the right to float-fish or canoe through the property? Camp on its banks?
14. Suppose artificial improvements to the banks or in the channel of a river create changes downstream by erosion and accretion. Do the usual legal principles of riparian boundaries still apply?
15. When does the apportionment of an accretion stop, the apportionment becoming fixed? That is, as an accretion grows and changes shape its apportioned lines move as well. When do those lines become fixed?
16. Is there a difference between navigability for title and regulatory navigability? Is there a nexus between the two? Who decides if a river is navigable for title? Who decides regulatory navigability?
17. Is, or can there be a difference between federal navigability and state navigability? Can a river be navigable for title under the state test, but non-navigable under the federal test? Can the state test and federal test be different?
18. Is the river adjoining the tract you are surveying navigable or non-navigable for title? How do you know? Will it make a difference in the survey? Yes! For your state, who determines if a river is navigable for title? [By the way, is there a difference between navigability for title and regulatory navigability? The answer is yes. I know of no state where they are identical. But, in riparian boundaries, statements such as this are dangerous. It seems there is always an exception.]

Note that these questions/situations are focused on inland, nontidal rivers and lakes. Just as many questions could be posed for tidal boundaries.

The Challenge

Each state needs its own manual that addresses its riparian and littoral boundary location principles. Coastal states should include its tidal boundaries. To accomplish this, all riparian/littoral decisions related to boundaries need to be discovered, indexed by topic, read, abstracted, then summarized. With these summaries and aided by learned articles on the subjects, publications and statutes, the legal principles can be stated. The product will be a book on riparian/littoral boundaries specific to the jurisdiction. This has been done for only one state, Arkansas. See "Riparian Boundaries for Arkansas" by the author of this article. Pages: 288. Tables: 30. Figures: 12. Within that book, the answers for each question given above can be found.

To start your state's manual, for the questions/circumstances in the examples given above, do the case law and statute law research necessary to state the legal principle or provide guidance on the matter, specific for your jurisdiction. Cite the applicable decisions and summarize them. Once this is accomplished for each state and the federal lands, someone with high professional knowledge of and experience with riparian/littoral boundaries and who is an excellent writer with lots of energy and unlimited time and resources can edit the resulting tome about inland, nontidal riparian and littoral boundaries and coastal tidal boundaries. It would be a herculean task. That's why no one has done this to date.

This "challenge" is made somewhat in jest, but posing the questions/situations is not. They illustrate how complex riparian boundaries can be, and how statespecific they can be. ■

About the Author

Dr. Richard L. Elgin, PS, PE

Dr. Richard Elgin, PS, PE is a surveying practitioner, educator, researcher, collector and author. He co-developed the "ASTRO" software products and co-authored the Lietz/Sokkia ephemeris. He wrote *The U.S. Public Land Survey System for Missouri and Riparian Boundaries for Arkansas* and *Shoulda Played the Flute* (a memoir of his year flying helicopters in Vietnam) and *Riparian Boundaries for Missouri* (in press). He owns a large collection of early American surveying equipment, rides a Moots bicycle and drives an Alfa Romeo 1600 GT Junior. Dick's articles have appeared in "American Surveyor" for many years. He may be reached at: elgin1682@gmail.com



STRATEGIC PLANNING RETREAT

Please join us for our Strategic Planning Retreat in Gainesville, Florida. This retreat is Open for All to attend, and offers a venue for professional surveyors and mappers to bring forth major issues they are facing within the industry. Click the Link below to see the Meeting Agenda and Register your room for a discounted rate.

When & Where: **Friday, March 18, 2022**

Austin Cary Forest Campus
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Saturday, March 19, 2022

Aloft By Marriot University Area
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Gainesville, FL 32607

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Duncan-Parnell Announces Acquisition of Pro-Line Survey Supply

Charlotte, NC – February 1, 2022 – Duncan-Parnell Inc., a North Carolina-based provider of equipment, software and services for surveyors, architects, engineers and the construction industry, announced that it has entered into an agreement to acquire Pro-Line Survey Supply. Pro-Line is a distributor of geospatial positioning equipment, serving surveying, construction and mapping professionals in Florida for the past 24 years.

The acquisition allows Duncan-Parnell to further expand and strengthen its presence in Florida and its offering of Trimble geospatial products and services to survey and mapping professionals and engineers in the state. It will maintain the Pro-Line branch location in Jacksonville, as well as its employees.

“I am very excited to have Pro-Line join our team,” commented Mark Duncan, president of Duncan-Parnell. He continued, “They have done a great job in serving their customers and providing solutions for the geospatial industry in Florida for the past two decades. Pro-Line has deep relationships with their customers based on their approach to service; a trait that we at Duncan-Parnell strive for ourselves. “

Added Duncan, “At Duncan-Parnell, we strive to create lifelong relationships built on value. So, I look forward to creating even stronger relationships with surveyors in the Jacksonville metro area and continuing to be a partner to the industry across the state of Florida and being there to continue and expand upon the support and solutions that Pro-Line has provided for the past 24 years.”

About Duncan-Parnell

Duncan-Parnell is an independent, family-owned company since 1946, offering a diverse portfolio of products and services. Offering solutions to the geospatial industry, and being a Trimble dealer for 25 years, Duncan-Parnell also provides wide-format printing equipment, as well as signage and graphic services. With now 16 physical locations across the Southeast including the Carolinas, Georgia, Virginia and Florida, Duncan-Parnell has grown to be a trusted supplier of hardware, software and services that provide efficiency and greater productivity to the customers and industries they serve.



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Happy New Year to those who celebrate the Chinese and Vietnamese New Year on February 1st! I wish you all prosperity in this new year! This is the year of the tiger. The people born in the year of the tiger are predicted to be brave, confident, competitive and display great levels of willpower, or so that is what it says on MSN.com. So if you're expecting this year, enjoy your little tiger, sounds like there are going to be some surveyors in the mix.

In this month's article I am going to share my experience in getting certified for the FAA Part 107 certification.

I have been wanting to get certified for some time but have been putting it off due to my workload requirements and taking work home. Starting late last year I signed up for the Comprehensive Online Drone Course at Clemson University. The course is tailored for Contractors and Surveyors and I highly recommend it. The professor is Dr. Joseph Burgett, a tenured professor in the Nieri Family Department of Construction Science and Management at Clemson University. He is a General Contractor and extremely knowledgeable about drones and the use of them in mapping applications. The course goes through getting certified and then taking you through collection of data. What was unique to me about this course was the use of the Zephyr Simulator. Where I would operate a drone there are so many restrictions to airspace with a number of airports, Class B, C and D airspace, heliports, and TFR's from sport stadiums and such. I wanted the ability to use the simulator, not because I am scared to fly the drone, but to make sure I was extremely comfortable in precise applications.



The course does a great job in preparing you for the exam, but I did also use other resources in addition to what I gleaned from the lectures. Dr. Burgett is very relatable and is easy to follow. I put in easily 20 hours in preparing for the

exam, in which I did pass. See one thing I hear a number of people say is that you cannot really keep line of sight on a drone with trees and such. That is wrong, you are required to do so, you may not be using visual observers, or you may need to use a pilot to maintain line of sight on the drone. The simulator does make you a better operator if you do not have extensive stick time. The course will make you think more about mission planning and knowing what you may need to do to properly approach a situation. You have to create a flight plan, you have to



No Robo-Grading

That's right! This course is taught by an actual human being. No robo-grading. You'll benefit from customized feedback from Dr. Joe Burgett, a nationally recognized drone researcher and professor from Clemson University.



Part 107 License

Earning your Part 107 Remote Pilots Certificate is required by the FAA for all commercial drone operations. This course walks you through everything you need to know to pass the exam. We have a 98% pass rate.



Learn to Fly with Simulator

Our cutting edge flight simulator teaches you how to fly. You'll learn stick control, how to gauge distance and feel confident operating a drone before putting an actual aircraft at risk. Software and controller included.



3D Models and Maps

Drones can provide great marketing material but that is just the tip of the iceberg. Create and share 3D as-builts, maps and orthophotos to update your client and document progress. Software included.



Compliance Tools

Passing the Part 107 test is one thing but knowing how to stay compliant is another. You'll learn about professional tools to request ATC authorization, airspace, weather, and much more. All apps and online tools included.



Photo-grammetry

Use drone data to collect linear, area, and volumetric quantity take-off information. This course shows you how to collect data, incorporate ground control points, edit models and make the most out of your data

prepare to submit a waiver, you even perform quantity takeoffs from data. The class uses Bentley's Context Capture, Pix4D Capture and several applications to show you how to prepare to fly, how to collect data, and how to manipulate data for providing deliverables.

Now I did the self-paced course, which I am still glad that I did, but I did put work first at times and that set me back some. I have continually worked to catch back up and am getting close to finishing. I do feel that I am much more prepared than if I had studied and not taken a course. I would recommend anyone that is interested in taking the step to becoming certified to find a course that works for them to really immerse yourself in the concepts and learn more about the approach and applications upon which you use and interact with the data. In my research even before this class, I have found that they are having really good results when using Context Capture, which is a big reason why I wanted to take the class in addition to the simulator.

Until Next Month my Friends!

Sincerely,

Richard Allen

You can reach me at Richard.Allen@orlando.gov or 407.246.2788.

FSMS SHOUT OUT

The Florida Surveying and Mapping Society would like to **SHOUT OUT** and send a special **Thank You** to **Mr. Richard D. Pryce, PLS/PSM** for almost **20 years** of incredible service with the Equipment Theft Committee.

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CST Study Group & Paper Exam

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when: Thursdays, 5 - 6 pm

- Cost is Free
- Topics will vary each week
- Exam Levels 1-3
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- 8+ years' experience that demonstrates measurable career and technical progression

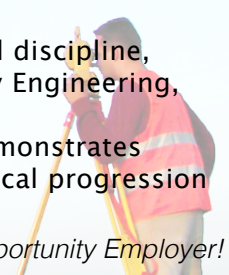
Surveyor & Mapper - Senior:

- Bachelor's Degree in a related discipline, such as but limited to, Survey Engineering, Geomatics and GIS
- 6+ years' experience that demonstrates measurable career and technical progression

Surveyor & Mapper - Staff:

- Bachelor's Degree in a related discipline, such as but limited to, Survey Engineering, Geomatics and GIS
- 4+ years' experience that demonstrates measurable career and technical progression

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Indiana's Oldest State Worker, Bob Vollmer, passes at age 104 –

Author: WTHR.com staff

Published: 5:03 PM EST January 12, 2022

Updated: 5:58 PM EST January 12, 2022

INDIANAPOLIS — Bob Vollmer, who retired as Indiana's oldest state worker in 2020, has died at age 104.

Vollmer left his post at the Indiana Department of Natural Resources after more than 56 years. In 2016, Gov. Eric Holcomb presented him with the Sagamore of the Wabash — the state's highest award that honors individuals for their service to Indiana.

As a man whose mother lived to 108 years old, Vollmer previously told 13 WTHR News work was the key to a long life. "That's the secret. A lot of people stop too quick. Don't stop. You keep going until you can't stop anymore," Vollmer said in 2020.

Vollmer — a World War II veteran who was known to still carry his draft card — once thought about retiring when he was 75. Instead, he put in 27 more years of work, surveying Indiana's countryside. For his 100th birthday, state officials dedicated a sign in his name at Brown County State Park.

After his retirement, Vollmer said he planned to sleep in more and go to Cracker Barrel. He also hoped to spend more time with his grandchildren, great-grandchildren and great-great-grandchildren.





“A lot of people stop too quick. Don't stop. You keep going until you can't stop anymore.”

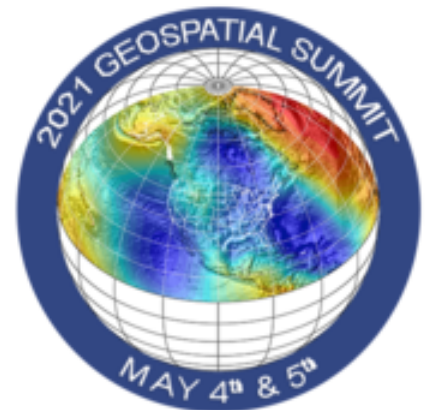


National Geodetic Survey

NGS FY2021 Year in Review Accomplishments

As we begin a new calendar year, NGS reflects on what we've done and decides on our new goals for the coming year. With this in mind, we would like to highlight some accomplishments and welcome your feedback moving forward.

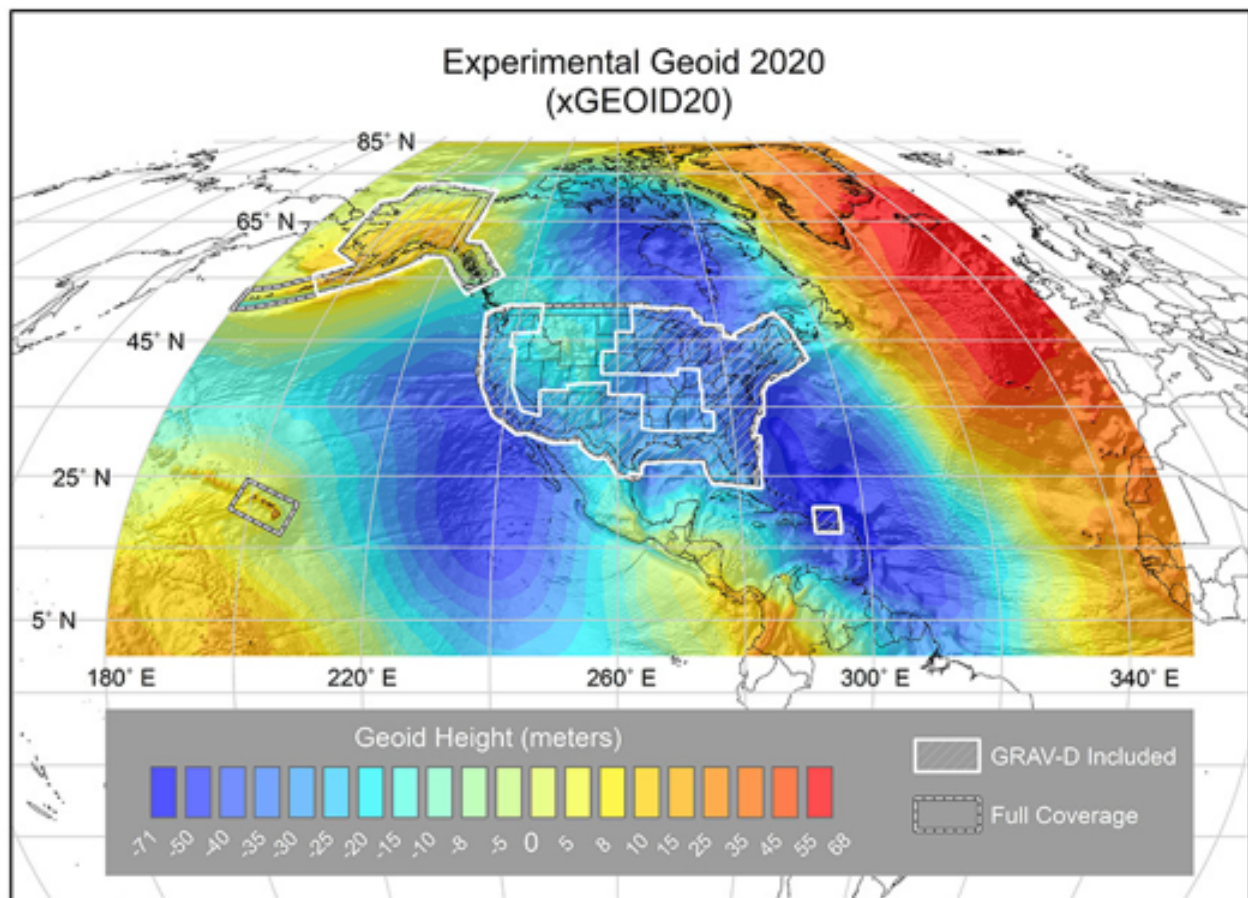
As part of the National Ocean Service Year in Review, NGS published **5 Significant Accomplishments for FY2021**:



1. **US, Canada, Mexico Collaborate on Height Model:** In June 2021, the Experimental Geoid Model 2020 (xGEOID20) was released, reaching another milestone as we prepare for the future geopotential datum.
2. **NGS Releases New Guidance, Holds Summit on Modernized NSRS:** The Blueprint for the Modernized National Spatial Reference System (NSRS) Parts 1, 2, and 3 was revised in 2021, and more than 1,000 people attended the virtual Geospatial Summit in May 2021.
3. **NGS Develops Robotic System for Astronomical Measurements:** These efforts will aid geoid studies and bridge the gap between classical and modern geodetic techniques.
4. **NGS Increases Coastal Mapping, Gravity Data Collection in Alaska:** Completing work in this challenging location pushed the GRAV-D data collection to 90% complete, and NGS also increased its coastal mapping collection efforts in Alaska.

5. **NGS Implements New Coastal Mapping Camera:** Images from the new system are twice as sharp and cover twice the area as images from the previous camera. Monitor the Continually Updated Shoreline Product (CUSP) to see high quality images in the future!

We recognize there are many other activities that could have been written about. In fact, consider [reviewing our past News Bulletins](#) online to refresh your memory.



This is a graphical representation of the experimental geoid that displays differences in heights on a color spectrum and includes measured gravity data.

Surveying History



Fig. 25 N. 2.

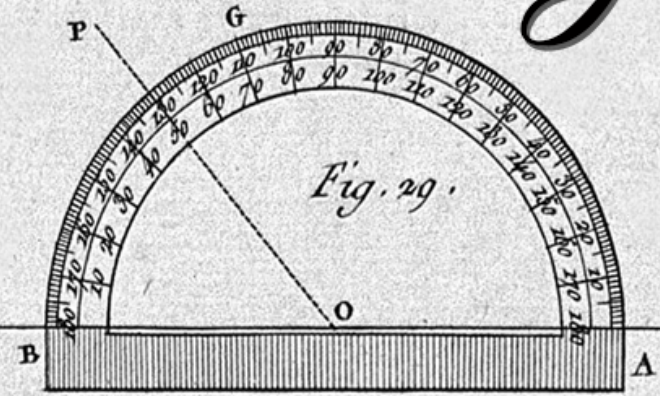


Fig. 29.



Fig. 16.

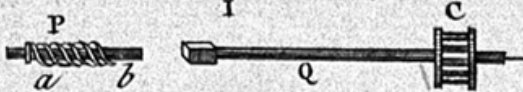
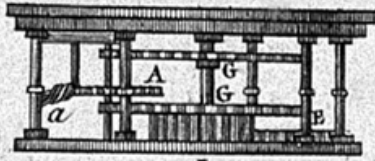


Fig. 23.

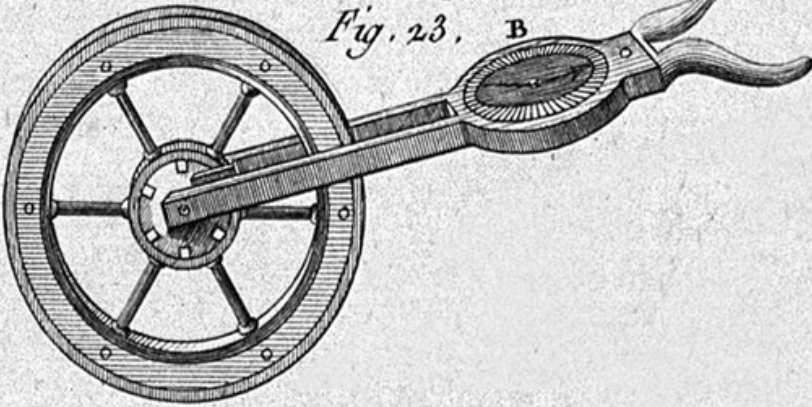


Fig. 16.

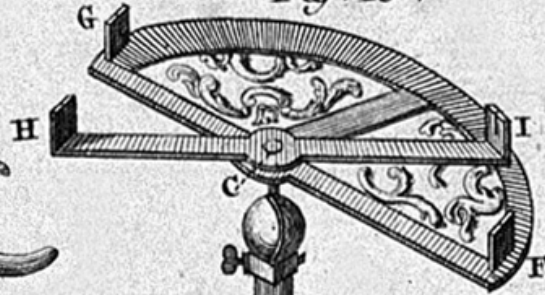
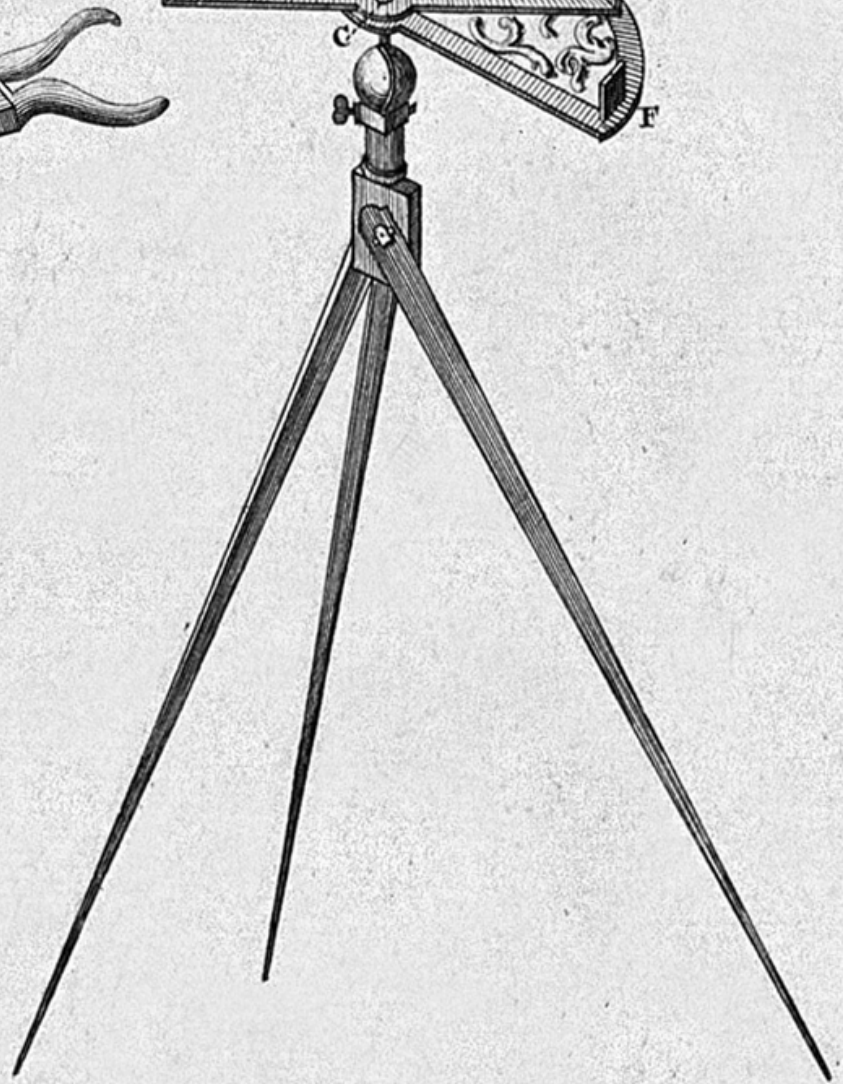
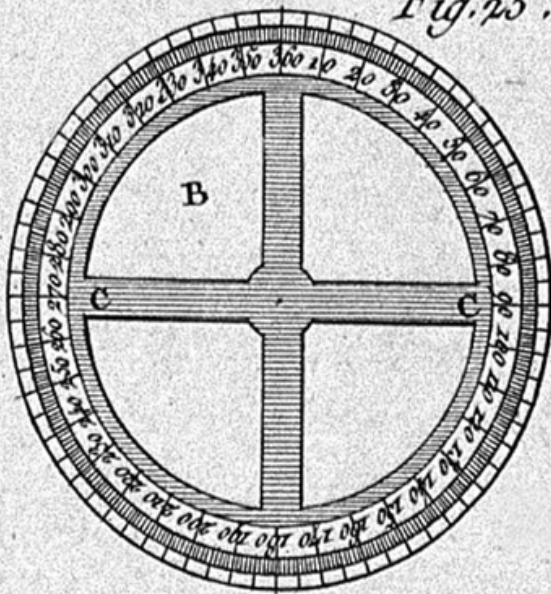


Fig. 25.



A Brief History of Public Lands —

FSMS Lecture Presentation from Past Pioneers – *Continued* –

A SHADOW OF THINGS PAST:

IN THE PROFESSION OF LAND SURVEYING, history plays a dominant role. We do not know of anyone who appreciates the importance of history as much as the land surveyor.

Daily, the land surveyor comes in contact with things of the past. It is this phase that makes his work both interesting and challenging. It is a perfectly natural procedure for him to refer back to old deeds, original field notes, old maps and plats, and old abstracts of title. The information he gleaned from these documents is necessary and valuable to him. He must, in fact, have it to do the work accurately and efficiently.

In order to retrace old original surveys, he must search first for clues in these various documents that will be of help to him in retracing the work of the pioneer land surveyors. He then goes into the field equipped with these clues and searches for old Spanish and English Grant corners, as well as old Georgia land lot corners, and original U.S. Government Land Survey corners. This requires unusual skill and knowledge on his part.

We can recall to memory many instances in our work in which history has played a very prominent part. Only recently we were made quite

aware of this fact in a job we were asked to do in connection with a legal suit, which has been appealed in the United States District Court, involving the correctness of certain old Georgia Lot lines, which were affected by the shift or change in the boundary line between Georgia and Florida. At first, the lands involved were surveyed as a part of the state of Georgia, then later a joint official survey of the Georgia-Florida boundary line located the same land in the state of Florida.

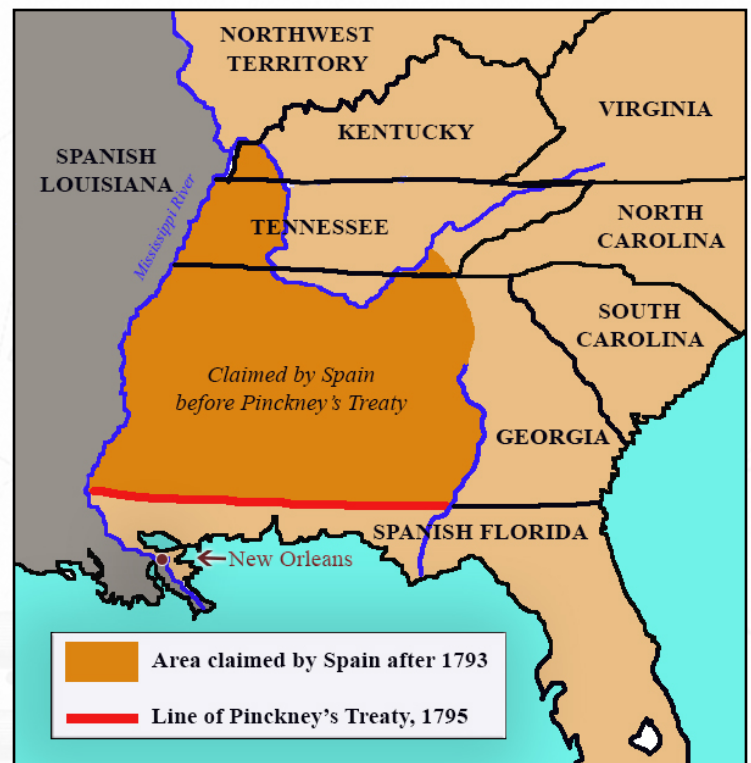
In 1879, a re-survey of that portion of Georgia that was ceded to Florida was made for the U.S. Surveyor General of the state of Florida. The Defendant in the lawsuit claims the re-survey fails to follow the original survey made by the authority of the state of Georgia and is therefore of no legal effect. The Defendant articulates that if the lands in dispute were located according to the survey by which the state of Georgia granted or patented the land, there would be no encroachments of the land; that the encroachments alleged by the Plaintiff results from the Plaintiff seeking to locate the lot lines according to the re-survey of 1879. The Defendant further states that the true line would be established by projecting the lot lines currently recognized in Georgia into Florida, but says that if the re-survey of 1879 is followed, it will cause “jogs” of approximately half

a mile with respect to the true lines currently recognized in Georgia. (If, however, Defendant is allowed to project the lot lines being used in Georgia down into Florida, the gain would be several thousand feet.)

There have been many other questions arising over the boundary line. The Secretary of State in Georgia has received numerous inquiries from lumber firms in South Georgia asking – “Where does the line run?” It was explained that the timber cutting rights of the firm extended to the line between the two states; and that another concern in Florida owned the property up to the line. Both concerns wished to cut their timber up to the line, but neither desired to cut on the other’s property. Many legal disputes have arisen over the varying state lines. Both states have given title to the same piece of property, each believing it is within its own territory.

For us to have a better understanding of these questions arising over the Florida-Georgia line, let us go back to the year 1795, the year the treaty was made between the United States and Spain. This treaty was known as the Pinckney-Godoy Treaty.

One of the provisions of this important treaty was **“the establishment of the Southern limits of the United States from the Atlantic to the Mississippi, by a well-defined line between the United States and the Spanish provinces of East and West Florida.”** (Up to that time, Georgia was the



southernmost of the original thirteen colonies, extending west to the Mississippi River and included in her domains wide stretches of territory which are now included in the states of Alabama and Mississippi.)

By the treaty of 1795, the Florida boundary was settled. The boundary between Georgia and the Spanish provinces of Florida was defined as follows:

“The southern boundary of the United States which divides their territory from the Spanish colonies of East and West Florida shall be designated by a line beginning on the River Mississippi, at the northernmost part of the 31 degree of latitude North of the Equator, which from thence shall be drawn due East to the middle of the River Apalachicola, or Catahouche, thence along the middle thereof to its junction with the Flint; thence straight to the head of St.

Mary's River, and thence down the middle thereof to the Atlantic Ocean.” (Article II, Treaty Between U.S. and Spain, 1795, European Treaties, Vol. 8, p. 140)

In this Treaty of 1795, there was also a provision for a joint survey of the line by two surveyors, Major Andrew Ellicott, who was appointed as Commissioner by the United States, and Captain Stephen Minor, who was appointed as Commissioner by His Catholic Majesty of Spain.

SIDENOTE:

Major Ellicott was a surveyor and mathematician born in Pennsylvania on January 24, 1754. He was called “the greatest Scientific man in America of his time.” George Washington, Thomas Jefferson, and Benjamin Franklin spoke of him in the very highest of terms.

He served under Washington in the American Revolutionary War as a major. Ellicott was a Quaker, but he did not hesitate to bear arms for his country. He received his Master of Arts degree from the College of William and Mary in 1784. Major Ellicott was appointed by the state of Virginia in 1784 to complete the survey of the boundary line between that state and Pennsylvania, carrying on the line of Mason and Dixon, famous later as the dividing line between slavery and freedom, which Charles Mason and Jeremiah Dixon had been forced by the Native Americans to abandon, in 1767.

While engaged in fixing the boundary of New York, he made the first actual measurements of the entire

Major Andrew Ellicott

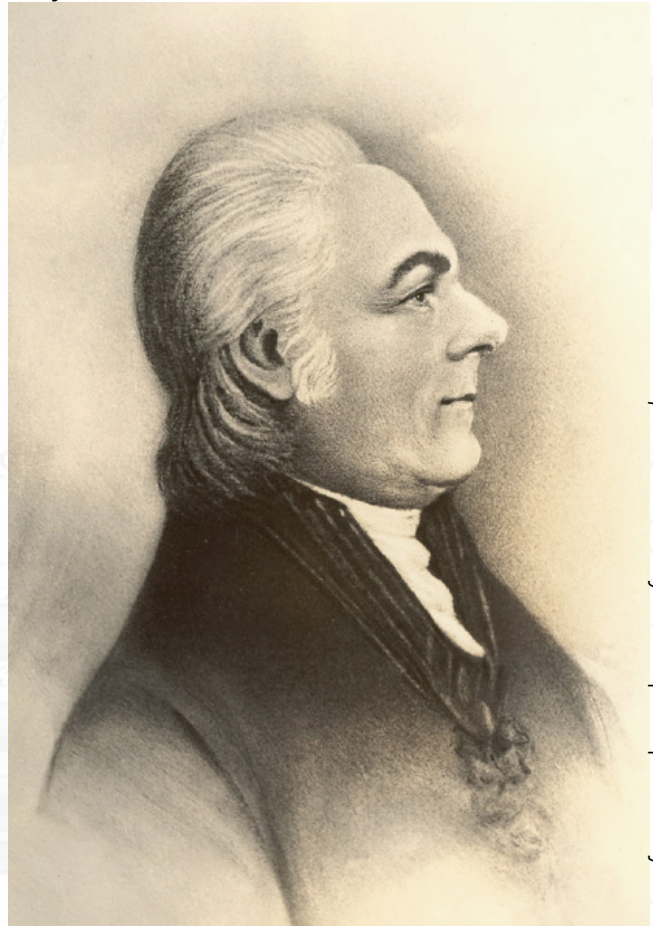


photo courtesy of: Explorepahistory.com

length of the Niagara River, and the falls and rapids from Lake Erie to Lake Ontario. When the Falls were re-measured one hundred years later, his measurements were found to be almost exact. The precision of his work was remarkable. Please note, that during these times it was necessary for him to make his own instruments. There were very few roads, and these instruments were carried over very rough terrain and were very easily thrown out of adjustment.

In 1791, Congress approved George Washington's selection of a site for our Capitol on the River Potomac. Congress then proceeded to select an architect to layout the Capital City and a land surveyor to survey the site. Major Ellicott was selected as the surveyor, and Pierre Charles

L'Enfant, a French military engineer was chosen as architect. Thomas Jefferson requested Ellicott to go immediately to Georgetown to commence the survey.

Trouble arose between L'Enfant and the Commissioners. Matters became so bad that L'Enfant was dismissed, and Major Ellicott had the task of completing his share of work. Since L'Enfant's plan which he had submitted to the President had failed to meet with entire approval and had been returned to him, Ellicott was requested to draw a new plan, which was made from his knowledge of the plan of L'Enfant and from his actual surveys on the ground. In the end, it was Ellicott's plan and not L'Enfant's which was adopted and engraved.

Major Ellicott set out on his duties in connection with the Florida-United States Boundary on the 16th of September 1796. The instructions issued to him were as follows:

“So far as the boundary line is a parallel of latitude, you will ascertain the same with all practicable accuracy and erect permanent monuments of stone where attainable and at other places of the earth. In the latter case, it may be eligible to plant in the ground large posts of cedar or other durable wood two or three at each monument in the range of the line, and to bury them up with several feet of earth, so that by being concealed they may not be liable to rot. The mounds of earth may be oblong in the range of the boundary line. Where cedar or other durable wood is found, a large post may be erected in the

center of each mound, standing above ground with the words 'United States' cut on one side and 'Florida,' or 'Spanish Florida' on the other.” (Dept. of State Senate Documents, First Session, 20th Congress (104) p. 8)

When Ellicott reached Natchez, the Spanish authorities tried in every possible way to postpone the execution of the stipulation. He was forced to mark time up to 1798 when pressure was brought to bear on the Spanish, and they were evacuated from their posts. Immediately after the Spaniards departed, Ellicott left Natchez for Clarksville and started the survey of the boundary line. Here he was joined by Captain Stephen Minor and Mr. William Dunbar who represented the King of Spain.

Mr. Gillespie, a surveyor on behalf of the United States, started the guideline from the Coenecuh to the Chattahoochee. They were accompanied by a military escort of both the United States and Spain, as well as two chiefs and two warriors of the Creek Nation. Ellicott and Minor made a complete survey of the line from the Mississippi to the Chattahoochee and the Flint, but when they attempted to carry on from that point, the beginning of the present Georgia-Florida line, they were forced to abandon their work due to the hostilities of the Native Americans.

Governor Cayoso of the Spanish Colonies of Florida withdrew his troops at this time. Major Ellicott then

left by boat for the long trip around Florida to the St. Mary's River where he met Mr. Gillespie and his party, who had pushed their way through the wilderness from the mouth of the Flint River. As soon as Ellicott reached St. Marys, he unpacked his instruments and set up a course of observations. He then began his mathematical operations.

On the 26th of February 1800, Major Ellicott and Captain Minor took a party of laborers to the swamp and had a large mound of earth thrown up. This mound is at the point where the land boundary between the state of Georgia and Florida ends, the St. Mary's River being the boundary from thence eastward to the Atlantic. "Ellicott Mound" is indicated on all maps of Florida and Georgia near the head of the River St. Mary in the Okefenokee Swamp.

For his boundary work, Ellicott received the title of "Geographer General of the United States." Georgia was not pleased with Ellicott's line and stated that the mound was not set up at the right head of the St. Mary's River. This led to a boundary dispute between Georgia and Florida that lasted fifty years.

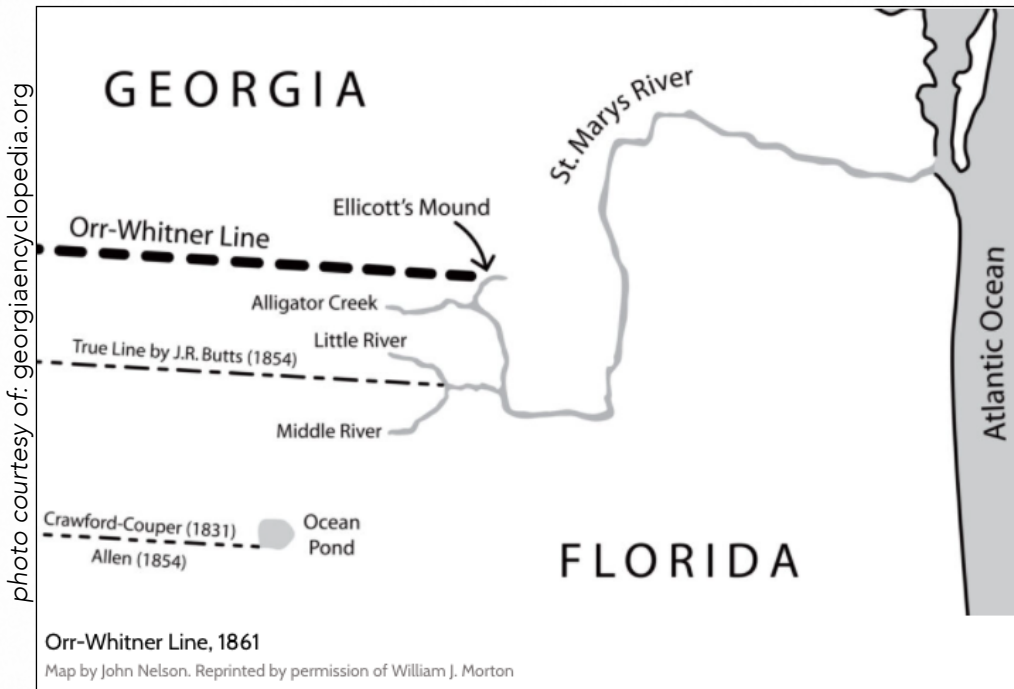
In 1817, Georgia appointed three commissioners to determine the correctness of Ellicott's decision about the source of the St. Mary's River. In 1819, after a thorough investigation by these three men, Georgia confirmed Ellicott's selection as being the true

head of the St. Mary's River. After receiving this report, Georgia then appointed Dr. William Greene to survey and run the boundary line from Ellicott's Mound to the conjunction of the Flint and Chattahoochee Rivers. Dr. Greene ran just part of the line, and even this work was termed incorrect.

On April 28, 1820, Colonel James C. Watson of Georgia was selected to run the line between the two states. In 1825, the Surveyor-General of the federal government for the territory of Florida appointed D.F. McNeil, a deputy surveyor, to run the boundary line. Again, the line differed from all other lines. This line ran north of the Greene and the Watson lines.

Litigation regarding the title of land arose, and it was in 1859 when the states of Georgia and Florida appointed two commissioners to go over the matter. Professor G.F. Orr represented the state of Georgia, while B.F. Whitner, Jr. represented the state of Florida. Mr. Orr and Mr. Whitner retraced Ellicott's boundary line in 1859 and marked the original surveyors' designation of the headwaters of the St. Mary's River with permanent marks and mile mounds. The line is about 160 miles long. This line, now known as the Orr-Whitner Boundary line was the final survey made and was accepted by both Florida and Georgia as the legal boundary line.

Florida ratified the boundary line in 1861 and Georgia ratified it in 1866 after the War Between the States.



and final boundary line.

The southern boundary of Georgia is described as follows:

“From Latitude 30° 42’ 42,” Longitude 80° 53’ 15,” thence along the Orr and Whitner line South 87° 17’ 22” East (average direction) 158-28/80 miles to a point 37 links north of the Ellicott mound on the St. Mary’s River. This line is marked by a succession of mounds about 10 ft

at the base and 5 ft high and separates Georgia from Florida.” (Boundaries, Areas, Geographic Centers and Altitudes of the United States and The Several States, Second Edition, Geological Survey Bulletin No. 817, U.S. Dept. of the Interior, 1930, p. 157)

RIVERSIDE

Francis J. Ross Grant:

Township 2 South, Range 26 East, Section 56.

Bounded on the North by McCoy’s Creek

Bounded on the East and South by St. Johns River

Bounded on the West by the bend in streets between Barrs and King Street.

Riverside is one of the very few pieces of land that can be traced from the Spanish Crown to the present time. This is an excellent example to illustrate a specific case of just how

To summarize, four distinct lines were run:

1. Survey made on behalf of the United States and Spain by Andrew Ellicott, Commissioner for the United States, and Stephen Minor, Commissioner for Spain. The survey was completed in 1800.
2. Watson's survey was authorized by the state of Georgia in 1820. Georgia claimed up to the Watson boundary line and made grants of land to the line.
3. McNeil Survey authorized by the federal government for the territory of Florida in 1825. The McNeil line was relied upon for more than twenty years as the proper location of the boundary. Florida claimed up to the McNeil line, which was further north than the Watson line.
4. Orr-Whitner survey was made in 1859 under the authority of both Georgia and Florida. Their survey moved the line further north and was ratified by both states as the official

the title changed from the time of the Treaty of 1821 to our present day.

1. Spanish Crown to the United States of America – Treaty of 1821 – Annotated Federal Statutes, Vol. 7, p. 742.

Under this treaty, the United States acquired “The Floridas” with all the public and vacant lands of the ceded territory.

2. The United States of America to Land Commissioners, District of East Florida – Land Grant Act – An act of Congress approved on May 8, 1822 – provides for the appointment of Commissioners to ascertain claims and title to lands in East Florida, as well as provides for survey and disposal of the public lands.

3. February 11, 1801 – 800 acres

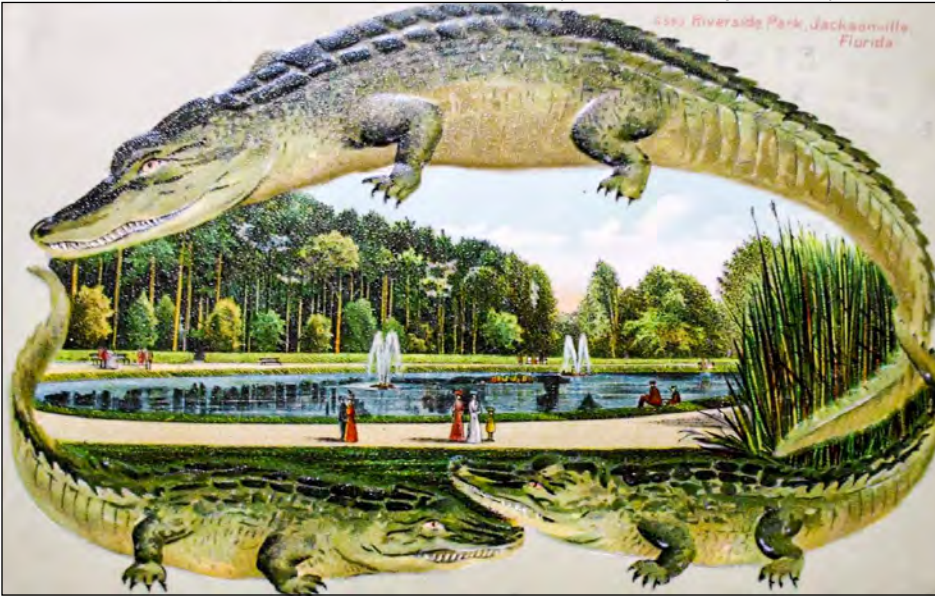
of land lying on St. Johns River, opposite Cow Ford, by concession from Governor White to Philip Dell. This tract was known thereafter as “Dell’s Bluff.” Conveyed by Philip Dell to John H. McIntosh on January 11, 1805. (This was later confirmed to McIntosh by the Land Grant Commissioners.

4. On October 4, 1823, by Warranty Deed, the land was conveyed by McIntosh to Francis J. Ross.

5. On December 6, 1833, Ross deeded the 800 acres by deed to Joseph B. Lancaster. Lancaster held it for ten years from December 6, 1833, to May 1, 1844. He sold six acres during this time – three acres to Blanchard and Rider for a mill site at the mouth of McCoy’s Creek. He then deeded the balance of the 800 acres back to Ross by Warranty Deed for the sum of \$2,500.



photo courtesy of: floridamemory.com



6. On March 24, 1845, Francis J. Ross conveyed said land to William B. Ross. William B. Ross, in turn, conveyed it to James Winter on February 6, 1847. Winter died and the tract of land went to his heirs.

7. H.H. Hoeg and G.S. Emery, Commissioners of James Winter's estate, conveyed to Uriah Bowden a portion of the 800 acres on April 23, 1866.

8. On April 25, 1868, Uriah Bowden conveyed by deed said tract of land to Miles Price.

9. On June 8, 1868, Miles Price conveyed the then 500 acres to E.M. Cheney by Trust Deed. The trust was conveyed to John M. Forbes, a Boston millionaire, for \$10,000 in gold.

10. The property was then platted for Forbes as a subdivision to be known as "Riverside." The plat of the subdivision was recorded in Deed Book Q, Page

31, of the former public records of Duval County on February 1, 1869. (Plat Book 1, p. 109)

11. Benjamin S. Brigg and Sir Swire Smith, as Trustees for British interests, acquired those portions of land not sold by Forbes under Plat Book 1, p. 109, by deed on June 25, 1892. They in turn deeded the land by Trustees Deed to the

Indian River Association, Limited, which was a corporation under the laws of the Kingdom of Great Britain.

12. Soon after acquiring the land in 1893, the British Corporation donated to the city of Jacksonville the fourteen acres that had been set aside for a park on the original Forbes plat, with the provision it be improved and kept up as a park. This park is known as "Riverside Park."

13. On February 20, 1904, the Indian River Association, Ltd. made a new subdivision (or re-platted) that portion of 'Old Riverside.' This was unimproved land and was bounded as follows:

Southeast by Park Street; Northeast by Margaret Street; Northwest by Gilmore Street, and Southwest by the Ross Grant Line. The Re-Plat is captioned "New Subdivision of part of Riverside," and is recorded in Plat Book Two, p. 24. ■

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PLACE
SUCCESS
COMES
BEFORE
WORK
IS IN THE
DICTIONARY.**

STUBBY CURRENCE

HARD WORK

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of FSMS. Our award winning publication informs members eleven months of the year of national, state, and district events and accomplishments, as well as articles relevant to the surveying profession. The latest educational offerings are also included.

Thoughts on Professional Practice and Education

Article 3: Eliminate Experience Requirement for Licensing

by Knud E. Hermansen P.L.S., P.E., Ph.D., Esq.

This is the third article I have prepared in a series giving thoughts on professional practice and education. This topic, I have no doubt, will leave blood on the walls – a metaphor only. I will have good friends that take issue with some of my thoughts. Old age allows opinions to be expressed in a manner that youth cannot do or does so inappropriately. When I was young, I often cared what people thought of my opinions. Having reached an old age, I have come to realize another person's opinion about me has never paid a single bill I owed. Living to an old age allows friends to mature and enemies to be cultivated.

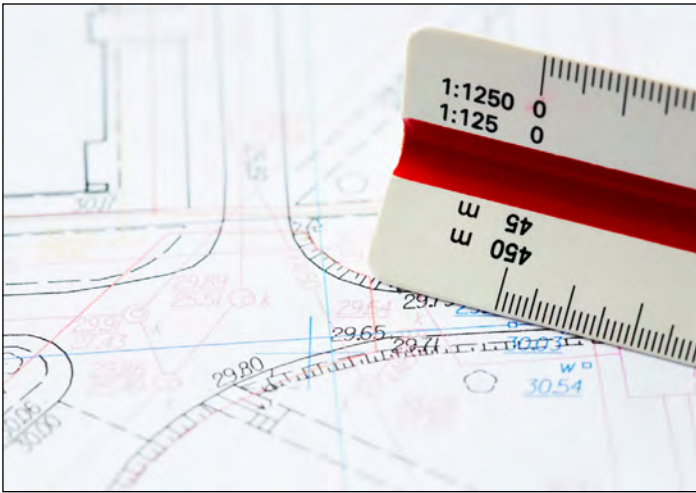
I will not give a long discourse on my experience, education, and practice. Suffice to say my first of many survey licenses was achieved in 1978 before many that will read this article were born. I will even surmise that my last professional license, that of an attorney, was achieved before many readers of this article were born. I have seen and experienced much in my life that allows for many opinions.

In this missive I will touch the often-sensitive topic of experience requirements for the surveying program graduate. I will begin by stating I am not so much advocating for change as I am suggesting the profession consider



changes. As is so often the case, the way a person did things in their past causes them to feel that way is the best way to do things in the future. I had six years of experience before obtaining my survey license based entirely on my experience. That is my story. Why isn't my way the best way in this case? Old age has taught me there is often a wide chasm between what was done and what should be done - what is wanted is not always what is needed.

I hoist the target as I once did fifty years ago as a young Marine working the 'butts' at the rifle range. Here is the target: *I suggest that experience not be required for licensing of a graduate of an accredited surveying program.* There I have made my statement and shown the target. I can already hear the shots and bullets passing through my hoisted target from readers. Some reader is already



writing to the editor stating in so many words, with heated passion, that my unsolicited advice is meddling and is not welcome. What is present, works. Perhaps that thought will be the consensus of most of the individuals that read this article.

Why would I make such a statement? Surely as old as I am, I must recognize that experience has taught me far more than four years of surveying education. I must have learned important knowledge that was never available through education. My answer to both statements is a resounding ‘yes.’ I must emphasize that important knowledge, complete knowledge, or

The purpose of licensing is to protect the public. Licensing is to ensure the licensee has attained the minimum level of knowledge, established by the profession that is thought necessary for competent practice.

”

extensive knowledge is not the purpose of licensing. The purpose of licensing is to protect the public. Licensing is to ensure the licensee has attained the minimum level of knowledge, established by the profession that is thought necessary for competent practice.

Let us not fool ourselves in thinking two or four years of experience is a constant learning process for an individual. It is not. In many cases, experience is merely the repetition of a limited number of survey tasks repeated over many years. An individual that has spent four years surveying urban lots has probably gained the extent of new knowledge after only three months of employment and after surveying one or two of their first urban lots.

Some readers will counter by claiming that rather than less experience, more detailed experience is required in the licensing application. The application would have to show various complexities and scope of services for experience to count toward licensure. I would suggest that such specificity to experience qualifications will deny licensing for

many individuals that work for small survey firms with limited clientele needs or individuals working for large firms that are slotted in specific services offered by the large firm. Such a move will further limit the number of licensees in our profession. The number of licensed surveyors is already

declining from a lack of new and younger licensees.

Back to my days in the Marines, I have cause to look at the large target over my head. There is a new hole from the shooter. The shooter states that my suggestion would allow someone to graduate, be licensed, and provide services to the public soon after graduation. Valuable property rights will be in jeopardy because services will be entrusted to the licensed surveyor without any experience. Incompetence will run unchecked within the profession. The professions' good reputation will collapse. Millions of dollars in property values will be jeopardized.

I think not. Over 34,000 lawyers graduate each year from law school. Every law school graduate can take the bar exam immediately following graduation. Within months of graduation every one that passes the bar exam can legally practice law without showing one single day of experience. These new, inexperienced lawyers can prepare deeds, write estate plans, argue for clients in court, and so much more. Do they? Of course not. A very few lawyers perhaps - but most work under the guidance of experienced practitioners. I expect the vast majority of surveyors licensed upon graduation after passing their exams will work for experienced surveyors. Very few would set up a practice on their own soon after graduation.

I could go on and shall do so only to beat this argument to reasonable size for some to swallow. There are over 14,000 pharmacists that graduate each

year, are licensed after graduation, and dispense controlled and potentially dangerous and deadly drugs. There are over 155,000 nurses that graduate each year and become licensed RNs mere weeks after graduation and make life and death health decisions for patients, dispensing drugs, taking care of injuries, and so on. There are over 10,000 officers commissioned each year without any prior experience in combat leadership that are placed in charge of soldiers, sailors, airmen, and marines or multi-million-dollar airplanes and make decision affecting lives in combat. (The Lord knows as a Marine sergeant I had my concerns about some new 2nd lieutenants.) I could go on with statistics and facts about ministers, doctors, dentists, cosmetologists, teachers, and other professions that allow graduates to have licenses soon after graduation. I believe I have made my point. Surveying and engineering are in a small minority of professions that continue to require experience in addition to their education before licensing.

So, what is wrong with requiring experience before licensing? I believe it hinders efforts to attract new members to our profession. For an eighteen-year-old high school graduate, the time required to obtain a four-year surveying degree along with four-years of relevant experience to become licensed as a surveyor is a long commitment. The high school graduate can be a licensed engineer in the same time, or become a teacher, nurse, military officer, accountant, forester, electrician, and plumber four years sooner or a

lawyer, doctor, dentist, pharmacists, minister, veterinarian, occupational therapist, and architect in one year less. Must the surveying profession erect barriers upon roads that few choose to travel anyway?

Having given my opinion, I now offer advice by suggesting the NCEES model law be changed to allow licensing with a four-year degree and state legislatures adopt this option. At the very least, states should allow graduates to take both their fundamentals of surveying and professional surveying exams near graduation allowing licensing as soon as experience has been achieved. Some licensing boards have already adopted this option. I will speak more on this latter option in a subsequent article.

About the Author

Knud E. Hermansen

P.L.S., P.E., Ph.D., Esq.

Knud E. Hermansen began his surveying career in the United States Marine Corp. over 30 years ago. After completion of basic training, Knud was sent to surveying school and spent the next three years with the 2nd Topographic Platoon, 8th Engineer Battalion performing control surveys throughout the world. After his release from active duty as a sergeant, Knud worked for various consulting firms providing a wide range of services involving boundary surveys, site development, and engineering. During the last several years, Knud has

provided consulting services in land surveying, civil engineering, and law. Much of Knud's present consulting activities involve boundary disputes, easements, land development, liability, title, and contract issues.

Knud taught at Penn State University for four years before teaching at the University of Maine. He teaches in the Surveying Engineering Technology program, as well as the Construction Engineering Technology program. He currently teaches three to four courses a semester – from basic surveying to construction law.

Courtesy of: [The University of Maine: Surveying and Engineering Technology](#)

† Other books and articles by Knud can be found at <https://umaine.edu/svt/faculty/hermansen-articles/>

2022 Membership Renewals

2022 FSMS Memberships are Open for New Members and those needing to Renew!

Please Log Into your FSMS Membership Account to Renew and Update your contact information.

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NSRS Modernization News

Issue 27 January 2022

For all issues of **NSRS Modernization News**, visit:
geodesy.noaa.gov/datums/newdatums/TrackOurProgress.shtml

Well, it's 2022...

...and since many components of the modernized NSRS will have "2022" in their name, NGS anticipates questions about the release date. Despite best efforts, the modernized NSRS will not be released for a few more years. This was formally announced in June 2020 with [this announcement](#).

New Paper

A new paper was released last quarter, relevant to NSRS modernization: [The Mathematical Relation between IFVM2022 as Expressed in ITRF2020 with IFVM2022 as Expressed in the Four Terrestrial Reference Frames of the Modernized NSRS with Dependence on EP2022](#) (Smith, Roman, and McFarland), NOAA TM NOS NGS 90: It documents the equations relating the Intra-frame Deformation Model of 2022 (IFDM2022, formerly called IFVM2022) across ITRF2020, NATRF2022, PATRF2022, CATRF2022, and MATRF2022.

IFVM2022 Renamed IFDM2022

To improve accuracy in nomenclature, NGS—in collaboration with the Canadian Geodetic Survey—has changed the name of the Intra-Frame Velocity Model (IFVM2022) to Intra-Frame Deformation Model (IFDM2022).

Progress in Ongoing Projects

There are currently **33 ongoing projects** related to NSRS modernization around NGS. Here are some highlights:

GVX and OPUS-Projects 5.0 (Project Manager: Dr. Daniel Gillins)

Real-time kinematic (RTK) or post-processed GNSS vectors in [GVX file format](#) can now be uploaded into [Beta OPUS-Projects 5.0](#) for least squares adjustment. Both Trimble and Topcon have released new tools in their software for exporting GVX files. Leica and i-GAGE are also developing GVX exporters. Please collect RTK data on survey marks, export results in the GVX format, and upload the GVX files to Beta OPUS-Projects 5.0 and provide NGS with feedback on the workflow.

Heads up! **GVX format will be slightly updated in the next 12 months!** In 2022 NGS will release an update to GVX in a joint roll-out with new formats LVX (leveling) and CVX (angles and distances). The update is driven by a need for greater consistency among the formats.

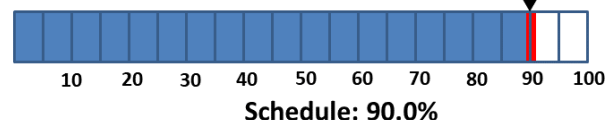
GPS Campaign for Transformations (Project Manager: Galen Scott)

NGS officially extended the GPS on Bench Marks Campaign's cut-off date by one year to **December 31, 2022**. Partners are encouraged to continue to collect and submit GPS data to NGS for modernizing the National Spatial Reference System.

GRAV-D progress last quarter: **up 1.3% to 90.9%**

AHEAD OF (new) Schedule!

Recently: Idaho, Tennessee



NGS GPS on Bench Marks

Welcome to the 2022 kick-off edition of GPS on Bench Marks Update. Now that NGS has officially extended the GPSONBM Campaign's cut-off date until December 31, 2022, there's time to get out there to fill remaining data gaps. Partners are encouraged to collect and submit GPS data to NGS for use in developing products to be launched with the Modernized National Spatial Reference System.

Campaign Countdown

We now have another 11 months until the December 31st, 2022 cut-off date to collect and submit GPS data to NGS for use in products to be launched with the Modernized National Spatial Reference System. NGS will use the GPSONBM data received by the cut-off date to compute the initial set of 2020.00 Reference Epoch Coordinates (REC) that will be released with the modernized system. This initial set of RECs will be used to build the 2022 Transformation Tool. By getting your data to NGS before the cut-off, you can help us improve the transformation tool in your area and be ready with updated coordinates on the marks you use when the Modernized NSRS is released.



Recent Progress

Thanks to the enthusiasm and dedication of people around the country, record amounts of valuable geospatial data were submitted to NGS every month throughout 2021! The graph illustrates that the momentum we generated in 2020 increased significantly in 2021. The map shows that data came in from all over the country last year. While Minnesota and Wisconsin have led the pack for the last two years, many other states made great strides toward their data coverage goals in 2021. Check out the [GPSonBM Progress Dashboard](#) to see how your state is doing. If you are up for a little competition (or collaboration), check the [OPUS Shared Solutions Dashboard](#) to see who in your state is submitting GPS data.

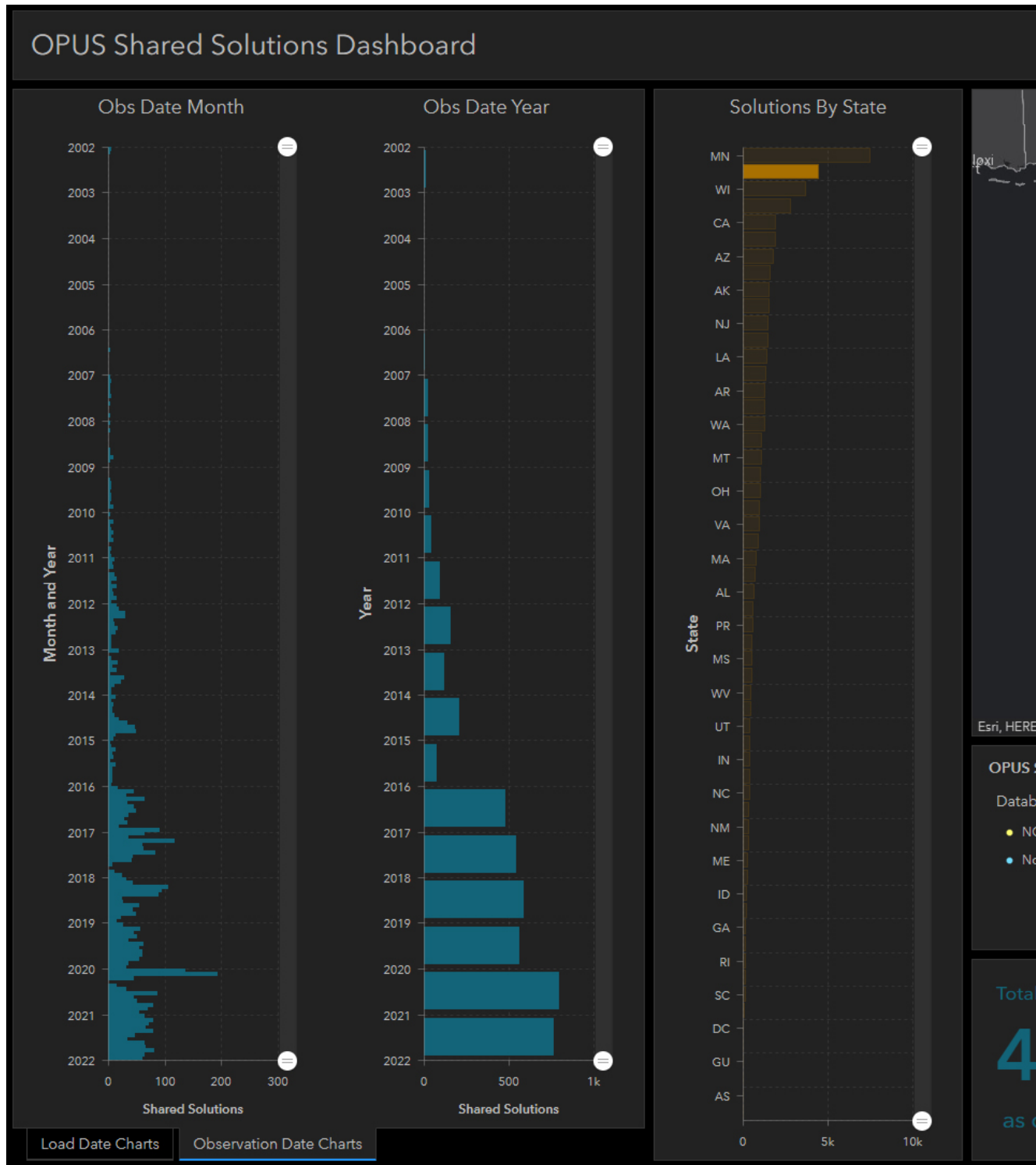
GPSonBM SCOREBOARD FINAL RESULTS FOR 2021





OPUS Shared Solutions as of January 1, 2022

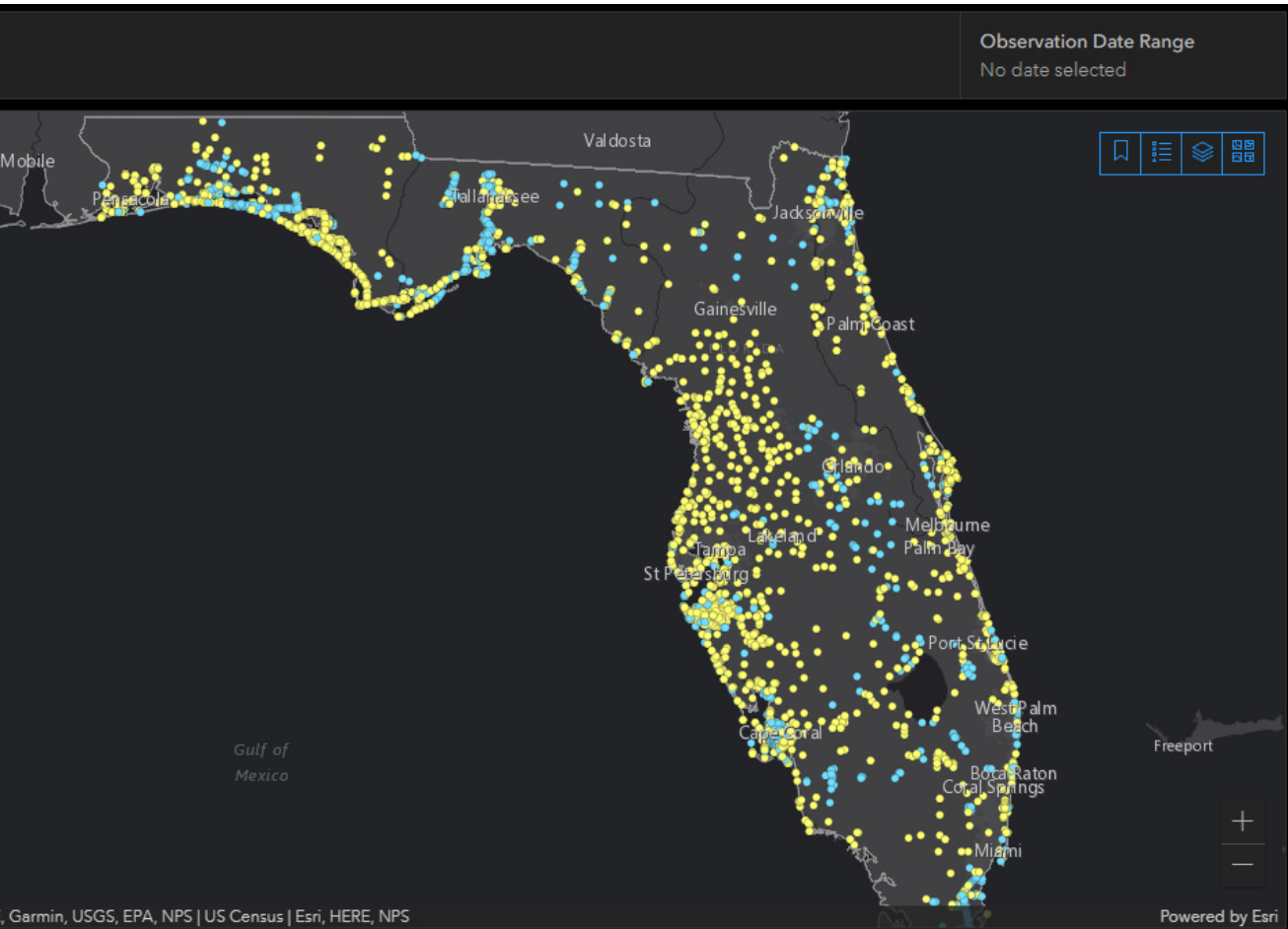
Florida is 2nd in number of Shared Solutions added to the NGS Database = **4,427**





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Solutions

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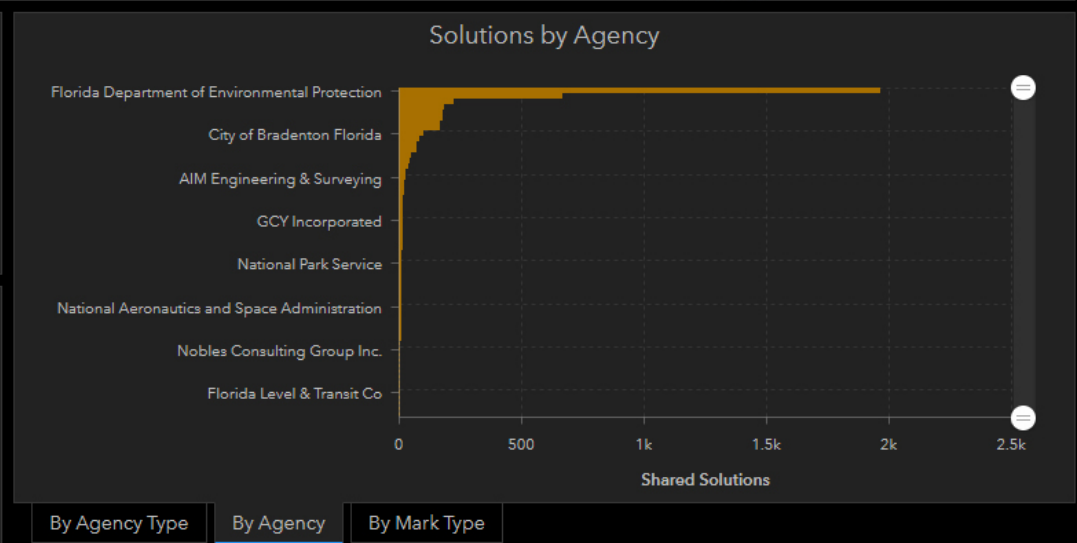
GS mark

on-NGS mark

Shared Solutions

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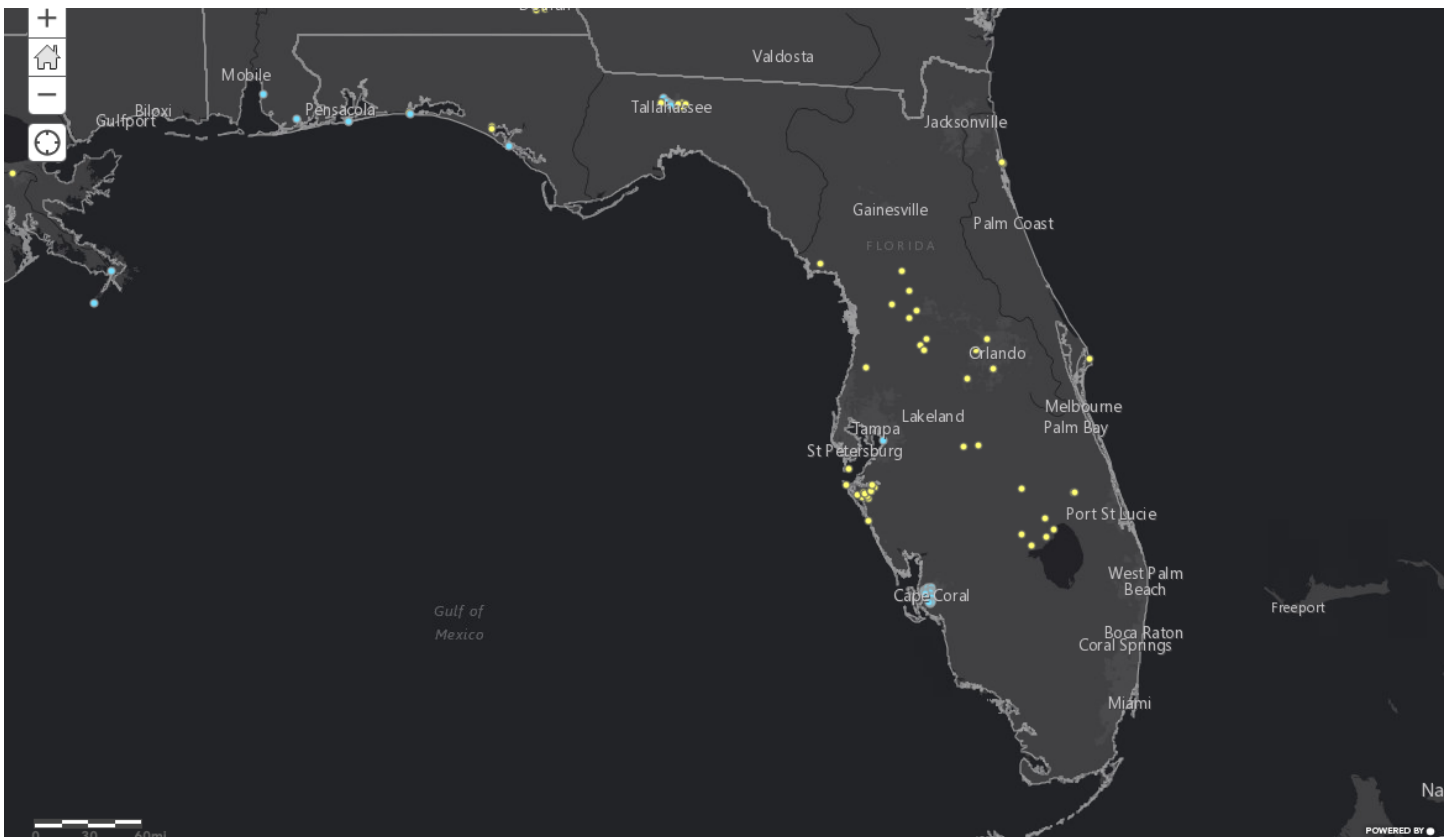
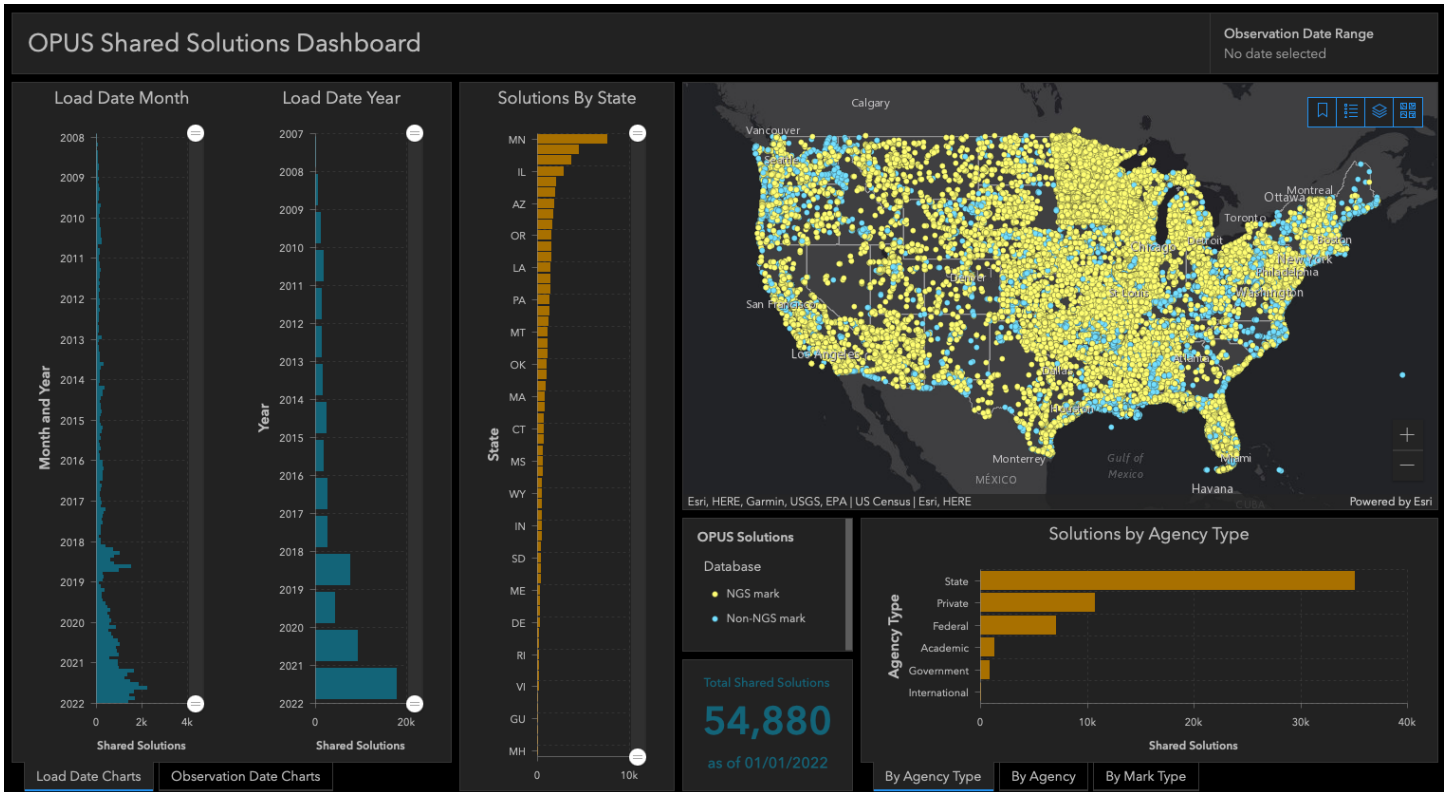
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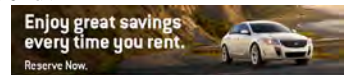


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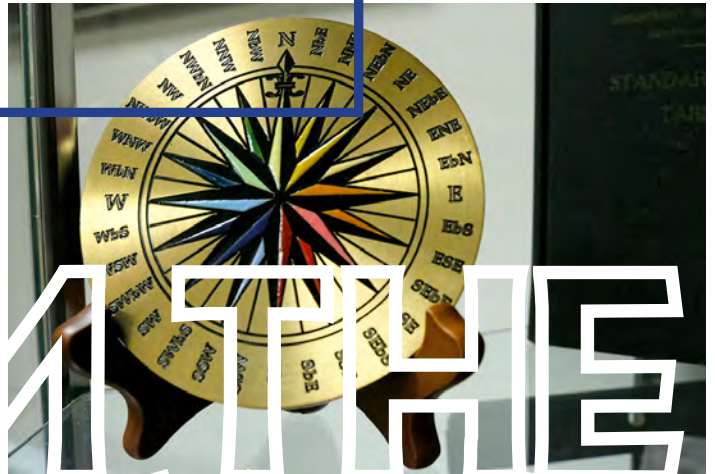
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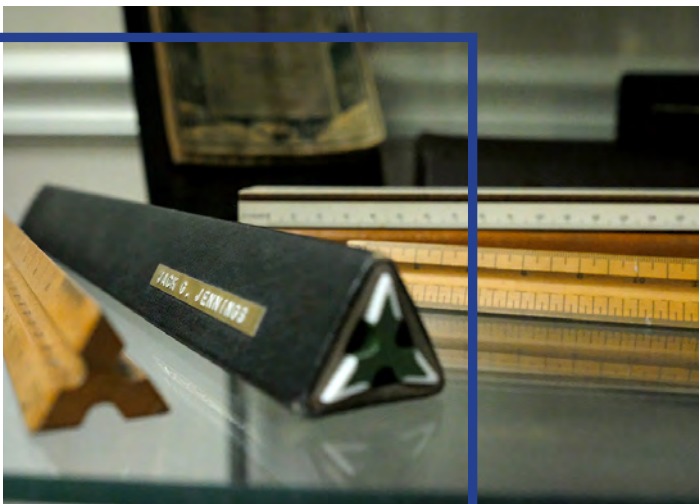
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FROM THE ARCHIVES



The Future Public Image of The Land Surveyor

by F. WM. PAFFORD

WHEN I WAS INVITED TO TALK TO you about the public image of the land surveyor, I was delighted. And, I thought, at last someone has asked me to speak on a subject I am eminently qualified to discuss and, further, a talk I can prepare without a great deal of work.

Certainly the public is well aware that land surveying is an old and honored profession and that our predecessors played an important role in the founding and development of Our Country.

Undoubtedly the public views surveyors in their proper perspective, as men who are precise and analytical in their work, possessing excellent deductive powers and the ability to follow things to their logical conclusion regardless of the difficulties.

Everyone certainly appreciates the importance of surveying to our society and recognizes that surveyors value, above all other things, the accuracy and correctness of their work a rather rare quality today.

The present day public image of surveyors must be one of a dedicated and outstanding group of professionals and there is no reason to believe that the future image will be any different.

However, it occurred to me that I might just possibly, have a lightly prejudiced point of view, and, wanting

to present to you a truly representative report, I asked a few of my friends who are not connected with surveying, what their image of a surveyor is, and, I want to tell you, I received some pretty discouraging answers.

But after all, the opinion of a few of my obviously narrow-minded friends is hardly a representative poll of the public's opinion; so, I embarked on a campaign of asking everyone I met what their image of a surveyor was, and you may be shocked to learn that the majority of the people I asked did not have any image at all, and, furthermore, they did not seem to be particularly concerned that they had overlooked us.

However, there were some to whom I talked that did have a definite image of surveyors, and it seemed to me they took a rather keen delight in telling me what they thought of us.

It now became clear to me that what had at first appeared to be a simple task was developing into quite a project. Furthermore, knowing absolutely nothing about conducting public opinion surveys or what to do with the information assuming I could collect it, I found myself with a subject I had suddenly become eminently unqualified to discuss.

But, by this time, the programs were printed and distributed and your Chairman was not about to let me "off

the hook,” so there was nothing to do but proceed the best I could.

I did take heart from one observation I have made. In my limited experience in dealing with public relation firms, I have noticed that, in analyzing your problem, they do not tell you anything you do not already know. They just state the problem in an organized way, and once it is clearly defined, many of the solutions become obvious.

So the approach I have taken is to attempt to analyze in somewhat broad generalities what, based on my experience, I believe to be our present public image, some of the reasons for it, and some obvious things we might do to improve it. I assume we are all interested in acquiring the best image possible.

Like the public relation firms, I am not going to say anything you do not already know, but perhaps we can have a little fun this afternoon in analyzing not only the public, but also indulging in a bit of self-analysis to better understand how the public arrives at its image of surveyors.

For the purpose of our discussion, let us define the public as including everyone who does not earn his living from some aspect of surveying. The lists of the public are practically endless, so let's arbitrarily divide them into the following four general classifications:

1. That segment of the public which has had no contact with surveyors and has not even noticed us.

2. That segment which has had some direct contact with us as surveyors, but not in our professional capacity, and which also includes those who have observed us working.
3. Those who have had occasional professional contact with us.
4. Those who have continuing professional contact with us.

Now, let us consider each group separately. The first group is made up of those individuals who have had no contact with us whatsoever. They have never had occasion to use our services, nor have they paid any particular attention to surveyors one way or the other. This is probably the largest group, and I do not believe they have any distinct image of surveyors nor are they the slightest bit interested.

Undoubtedly, this group has seen a movie or read a novel wherein a surveyor was probably incorrectly portrayed in some minor role, or they may have read that George Washington was a surveyor, but they were not particularly impressed and the chances are they do not even remember it.

I am sure that when the Benson Syndicate scandal came to light in the 1880's, some of this segment of the public became cognizant of surveyors and probably at that time had an image of surveyors as fraudulent and dishonest individuals. But this is “water under the bridge,” and currently I do not think

CHALLENGING FUTURE FOR THE LAND SURVEYOR

they have any particular picture of us one way or the other, and, barring another national scandal or the first man on the moon being a surveyor, we probably will not see any change in their future attitude unless we undertake an active program to do something about it.

Assuming we do want to do something about our public image, not only with this segment but with all our public, the thing that immediately comes to mind is general public relation programs.

Being a little “gun shy” of public relations, I did some library research on the subject to see what I could learn about it. It has been said that the only thing that 100,000 professional public relations people have in common is their inability to come up with a common definition of the term, but in my reading I found substantial areas of agreement which we could well heed.

One thing they agree on is that they do not undertake programs for clients until they are sure the client is deserving of the support of public opinion by his actions. In general, I believe surveyors do deserve the support of public opinion, but this is not to imply that I think we have our house in “apple pie” order. Continued realistic guidance within the profession is not only beneficial but necessary if we are to truly deserve the support of public opinion.

I gather that one of the problems

of public relation firms is to see that the clients' activities are of sufficient interest to attract the public's attention.

If this is a valid conclusion, then we have certainly “missed the boat” on the missile race and the Peace Corps. Here are two areas of national interest where surveyors are visually in the foreground, and through an aggressive public relation program, we could capitalize on this opportunity to tell our story to a receptive public.

There is also agreement on the importance of little things, such as a well-typed letter, an adjustment made promptly, the telephone answered sincerely and pleasantly, courtesy, and good appearance. Good public relations can be the result of many little things.

One definition of public relations that appealed to me was “do right and tell the world,” and this theme ran through most of what I read.

Our professional policies and practices might be above reproach, but if the public is not informed, or if they misunderstand and misinterpret what we do, then we are no further ahead, however well we try to conduct ourselves. Therefore, the doing is not enough; it must be supplemented by the telling.

As individuals we cannot do much “telling the world,” but now that we have abandoned our ostrich attitude of a few decades ago, through our societies and associations, we can, if we so desire,

do quite a bit toward bringing a good image to the attention of the public, and also make all surveyors aware of the importance of so doing.

Any program we collectively undertake with this first group of the public can only produce exponential returns with our other three groups.

The second group includes those who have had some direct contact with us, but not in a professional capacity, and those who have observed us working. This group, I believe, has the most mistaken image of surveyors, and not without some justification. Let us consider from their point of view a few examples of the kind of contact they are likely to have with us.

Historically, in the rural areas when the residents saw a survey party, it often meant that someone was going to take some of their property, or that they were going to be assessed for some improvement they probably did not want. To them the surveyor meant trouble of some sort, and, in my experience, in rural areas this opinion still exists.

In the urban and suburban areas, a survey party frequently means that someone is going to tear up the street and create some disturbance and inconvenience for the residents.

The bearer of bad news is seldom popular. Now I realize that this type of thing is a result of the kind of work we do and that we have no control over

it, but I do think we often compound the aggravation. We are notorious trespassers, and to a great many farmers a surveyor is someone to be viewed over the sights of a shotgun.

Another little matter that does not win us any popularity contests is our preemptive attitude toward public streets. We know that the streets and highways were constructed to provide us a clear line for chaining, but the public has not yet become aware of this. For a surprising number of people, their only contact with surveyors has been through the front bumper of their car, and this leaves them with a rather vivid impression of surveyors as traffic hazards.

To the casual observer a survey party does not appear to be particularly hard at work, and when the party is really working hard, they are back away from the highways where the public has little opportunity to observe them. This was brought to my attention a few years ago when a gentleman came into my office seeking employment. He was a retired salesman, about 60 years old, and during the interview he told me that all his life he had seen surveyors standing around in the fresh air and sun, talking, and he had reached the age where he thought he would really enjoy this type of work.

While we are on the subject, a 6- or 7- man Government survey party holding a summit conference in the

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middle of the road does not do much for the tax-paying public's image of surveyors.

As I said, a good deal of this is beyond our control; the impression is created by the nature of our activities. But I think you will agree there are some pretty obvious corrections we could make; a little common sense, thoughtfulness, and courtesy will go a long way in correcting some of this impression.

The next group includes those who have occasional professional contact with surveyors and possibly only once during their lifetime. Our difficulty here is that too often we have only an indirect contact with them. Frequently, our services are obtained on their behalf by someone acting as their agent, for example, an architect, an attorney, a department head, or worse than this, a purchasing agent; and we do not have the opportunity to deal directly with the person for whom the work is being done. Too often his first awareness of us is when he receives a copy of a map and an invoice. He does not understand the map and feels the bill is too high.

At best, working through a third party is a bad situation; the client does not get to know us at all, he is frequently misinformed as to exactly what services we are to render, he often is given the impression surveying is just another sub-craft working under the direction of his architect, and, in this arrangement, if

anyone's image is going to be enhanced it will be that of the agent, not the surveyor. Human nature being what it is, the surveyor is often unjustly accused of some error or omission under this third-party arrangement, and when he does meet the client, it is in a defensive position, which certainly does not create the best impression.

I think the surveyor should make every effort to deal directly with the client in his professional capacity, and, if necessary, he should go out of his way to create an opportunity for the client to get to know us.

Quite often people from this group, particularly in private practice, order the survey by phone or letter, and to the surveyor it is just another survey. But to the client it is the *only* survey, and, bear in mind, we are dealing with one of his most treasured possessions, his land.

All surveys are the result of an agreement between a client and the surveyor; either may refuse to proceed. The client tells the surveyor what he wants accomplished; the surveyor appraises the problem and informs the client as to what must be done. The surveyor serves the client faithfully but refuses to do that which is illegal, unethical, or violates his duty to the public, adjoining, interested parties, or to his fellow practitioners.

The surveyor has an ethical obligation to question the client in sufficient detail to obtain a thorough

understanding of the client's needs and requirements; the surveyor also has an ethical obligation to fully inform the client of his needs.

Remember, a client is normally incompetent to reach a just agreement until such time as he is fully informed of the nature of the problem.

The client expects and is entitled to receive a thorough professional discussion of his problem and a detailed explanation of what services you are going to render him. Anything less not only creates a poor impression but deprives the client of your professional advice and judgment.

I think one of the most important attributes a surveyor can develop is a sincere professional telephone personality and the willingness to spend the time to thoroughly investigate the client's problem.

This brings us to the last group, those with whom we have continuing professional contact. In private practice they are those individuals we think of as regular clients, or in the agencies, as an engineering department or planning staff. It is with this group that we form the most positive image, and I believe that they, of the four groups, have the most nearly correct image, because through continuing contact they have an opportunity to really know us and to understand some of our problems, and they have developed an appreciation of the value of surveying to the successful

completion of their projects.

Probably more important is the fact that individuals in this group are in their own fields confronted with keeping pace with the population-explosion, rising land values, and more complicated structures, and for all of us this is compounded by everything having to be accomplished on an accelerated time schedule. These people have come to appreciate the fact that surveyors also are keeping pace, and this causes them to view us in a different perspective.

Another thing that causes this group to view us in a different and elevated perspective is when we refuse to barter our services in the market place. Most of the people in this group are willing to view surveyors as professionals, if we act accordingly.

I think the most constructive step we can take, not only with this group but within our own profession, is to stop apologizing for not being civil engineers and stand on our own professional two feet. Surveyors have nothing to apologize for; admittedly, for several generations most of us were reluctant to change our ways, but these were times when many others were also complacent.

Let me summarize, as I see it, what is happening today, all of which I feel will have a definite effect on our future image.

Surveyors currently not only accept but demand the best in instrumentation: photogrammetry is

CHALLENGING FUTURE FOR THE LAND SURVEYOR

a standard tool; electronic distance measuring has become a routine operation; there is certainly no reluctance to avail ourselves of electronic computers; consider the amount of Government-agency sponsored research to advance the technology; we have and are forming strong associations and societies; we have raised wages and improved working conditions; we have joined with members of allied professions to work together in solving problems in areas of common interests; we continue to raise technical and professional standards; we are interested in and support our educators; we have made substantial contributions to the accelerated postwar development of the Country; we are becoming a strong voice with our legislators in matters affecting the profession; we donate our services to those who could not otherwise afford them; we subscribe to and abide by high canons of ethics; and we have joined together to work toward developing an economic and social climate for the professional practice of surveying for those who desire to practice professionally. In short, collectively we are acquiring the attributes of an aggressive and vibrant profession; and if we continue to do so, this is the image that those who have continuing contact with us will see.

Perhaps I have been a bit facetious in some of the examples I have selected to illustrate my points, and I am sure

each of you from your own experience can supply many more. The point is that our overall public image is a composite of everything we do, both collectively and as individuals.

The image of surveying is not all good nor is it all bad. Some of the “less good” aspects can be confronted by the profession through attention to realistic guidance and general public relations programs. Some of the unfavorable image problems will have to be carried along as expected burdens of the profession.

Now we come to the subject of my talk, “The Future Public Image of The Land Surveyor.” Honestly, I do not know for certain what it is going to be. But I will make this one prediction; whatever the future public image of the surveyor is, it will be a reflection of the picture *we* paint.



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4th Annual

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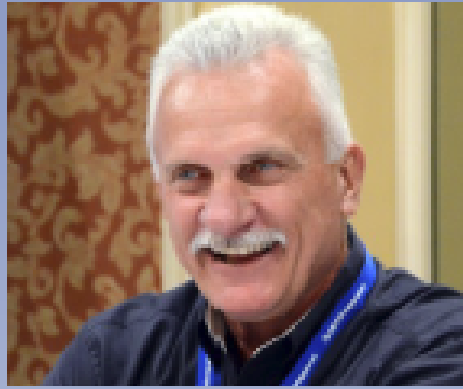
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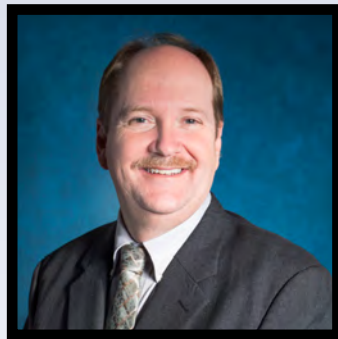
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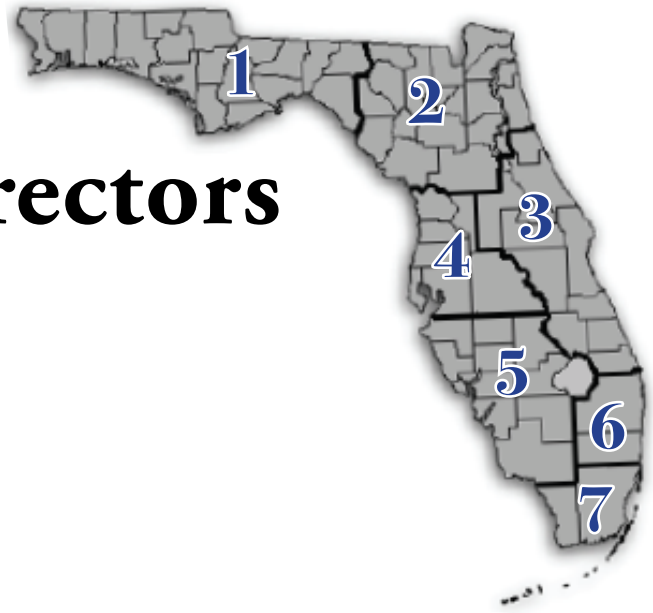
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FLORIDA SURVEYING & MAPPING POLITICAL ACTION COMMITTEE

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FSMPAC (Florida Surveying & Mapping Political Action Committee) is a non-partisan, non-profit Political Committee formed under Florida law by FSMS to support the profession in legislative and political activities.

Without regard to political party affiliation, contributions and support are made to candidates and political parties that understand issues and initiatives important to the profession.

How does FSMPAC work?

Our mission is accomplished through voluntary contributions by concerned Surveyors and Mappers interested in promoting and protecting our profession. Funds are used to research, select and support the election of candidates who are supportive of our concerns.

Why do I need to be involved?

Involvement in your PAC is essential to maintaining a dialogue with elected officials and candidates that understand the importance of our profession to the organized development of Florida's infrastructure, as well as the impacts of undue regulation on our practice.

There will always be interest groups that have agendas contrary to the interests of our profession, and given the opportunity will encroach on our practice.

This reality demands that we remain vigilant and maintain a well-funded PAC to support and defend our interests. Without your support and input, the PAC cannot effectively complete its mission.

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