

MISSOURI SURVEYOR

A Quarterly Publication of the
Missouri Society of Professional Surveyors

Jefferson City, Missouri

December 2022



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CALENDAR OF EVENTS

2023

February 15, 2023

Board Meeting
MSPS Office, Jefferson City, MO

May 4, 2023

Board Meeting
Lodge of Four Seasons
Lake Ozark, MO

April 28-29, 2023

45th Annual Spring Workshop
Lodge of Four Seasons
Lake Ozark, MO

July 15, 2023

Board Meeting
MSPS Office, Jefferson City, MO

August 14-16, 2023

Review Course Jefferson City, MO

September 28-30, 2023

66th Annual Meeting and Convention
Oasis Hotel, Springfield, MO

December 4, 2023

Board Meeting
MSPS Office, Jefferson City, MO

Additional Dates for

Spring Workshop

May 3-4, 2024

Cover: A Missouri River bluff,
decked out in its autumn livery
overlooks the Katy Trail.

Donald R. Martin, Editor



Notes from the Editor's Desk

Donald R. Martin



Welcome to the December 2022 edition of *Missouri Surveyor*. It comes during the time of year when we reflect on milestones met and achieved throughout the course of the year past, and make our plans for the year to come. As a Society, this has been a good year of accomplishments. From the unique circumstance of two legislative sessions this year, we had successes in each term. We continued our legacy of professional development with popular, interesting conferences. And we replenished the leadership ranks of our association with officers taking on the challenges of new roles and the addition of two directors to our board.

This all reflects a healthy organization with a motivated, active membership. “Engaged” is the right adjective to describe the relationships so many of our members have with MSPS. No where is that more evident than in the pages of this newsletter. Once again, peers from the rank-and-file have graced the pages of *Missouri Surveyor* with their thoughts, ideas, research and experience. Written contributions and photographs from those within our ranks – good reflections of the Missouri spirits of *can do* and *pitching in to help!* Thank you all for that you have offered, and the simple act of readers perusing our pages is appreciated.



Incoming President Ray Riggs (l) expressing appreciation for service to our outgoing President Brad McCloud by presenting a commemorative gavel and plaque at the MSPS Annual Conference.

Enjoy all that is presented in this edition. Be sure to see the articles from MSPS members Dick Elgin, Scott Faenger, Chris Ferguson and Steve Weible. And don't miss our special announcement on **Page 31!**

Well, I best break-it-down and bunch-it-up so I can start getting ready for the next edition ...I'll get back with ya' then... 🇲🇴

Donald

THE MISSOURI SURVEYOR

Published quarterly by the
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President's Message

Ray Riggs, PLS



As I write my first President's Message on the first day of November; I have just settled into my recliner after raking the dark, raking leaves. My "modus operandi" is as follows: rake the leaves into windrows, then into separate piles – rake the piles onto a tarp – bring the four corners of the tarp together – swing it onto my shoulder like a "Santa Claus" pack and haul them to the road ditch for burning. It's the way I do it because that's the way my dad did it.

Now, I realize there are perhaps other, more efficient, less back-breaking ways of raking leaves. If I were one of the Native Americans from the Osage tribe that occupied the Ozarks in pre-settlement times; I would rub two sticks together or use a fire-drill to start a fire and burn the savannah off; grass, briars, brush, leaves and all. Moving forward from raking; a lawn mower, as well as a gas-powered leaf blower can move the leaves from your yard... over to the neighbor's yard. And for the rich, lazy folks; there is the Pull-Behind-Leaf-Vacuum-Buggy-Thingy for a riding lawn mower!

My point in recounting an autumn evening chore is this: Technology has affected and improved, even the lowly task of "Leaf-Raking". (Honestly, the only reason I rake my leaves the old-fashioned way, is the good memories it brings back of my old Dad).

I was reminded again of this technology dynamic at our 65th Annual Meeting at the Sheraton Westport Chalet in Maryland Heights, Missouri. I commend MSPS Executive Director – Sandra Boeckman; the MSPS Annual Meeting Committee; Stan Emerick – MSPS St. Louis Chapter President and all of the St. Louis Chapter Members that made the meeting a Huge Success!

On Thursday and Friday, while some participants were learning the latest advances in Drone Scanning Technology; others (we) were finding out their (our) GPS technology is not as precise and accurate as they (we) thought. Dr. Elgin took us to the rivers and creeks with his session on surveying riparian tracts and Darrell Pratte kept us grounded with a review of our Missouri Standards. And for those east, across "The Big Muddy"; David Sherrill taught Professional Conduct and Ethics for the Illinois PLS's.

The Saturday sessions were mainly focused on the Surveyor and Railroad Right-of-way. Charlie Tucker brought us up-to-date and down-to-earth with his expertise on everything railroad. I was amazed at the resources that are available to the surveyor that must work along the railways. These sessions also brought to light some safety and liability issues that are unique to the railroad. I can certainly see where changes may need to be made to fieldwork procedures when accessing railroad right-of-way. To be frank, Charlie made me almost afraid to drive across a railroad crossing!

All of these advancements in technology and access to more resources bring more care and responsibility for us surveyors. We must take the time to "know" our equipment – its strengths and its limits. Our field procedures may need to be tweaked or even radically adjusted to meet the standards mandated by Chapter 60. It will probably require more time allotted to record research. But I believe the public will benefit and we will be rewarded with a better quality and more detailed product for our clients.

Finally, as we enjoy this wonderful Christmas Season, please remember that Jesus is the true "Point of Beginning"! 🇺🇸

Ray

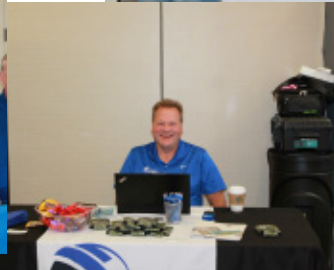
Thank You, Exhibitors & Speakers!

65th Annual Meeting of MSPS

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Carlson Software
 E38 Survey Solutions
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 Laser Specialists, Inc.
 Leica Geosystems
 MO Dept. of Agriculture-Land Survey Program
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Thank You, Exhibitors & Speakers!

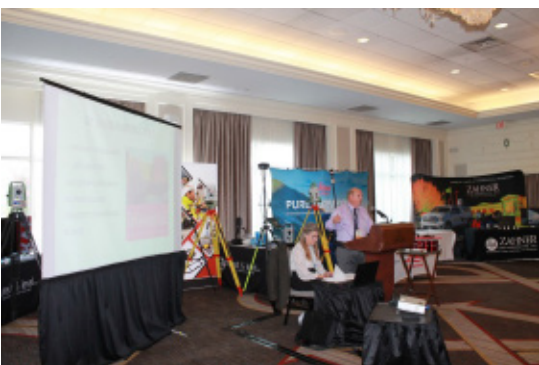
65th Annual Meeting of MSPS

SPEAKERS

Tom Bryant, PLS
Timothy W. Burch, PLS
Jeff Clay, PLS
Matt Davis

Kevin DeSain, PLS
Dr. Dick Elgin, PLS, PE
Stan Emerick, PLS
Darrell D. Pratte, PLS
Mark Schnesk

David J. Sherrill, PLS
Pat Stack
Charles Tucker, PLS
Derek W. Twente, PLS



News from the MSPS Annual Meeting

by Donald Martin

MSPS Lifetime Achievement Award – Sandra Boeckman

During the MSPS Annual Business Meeting on October 7th at the Sheraton Westport Chalet Hotel in St. Louis, the Award/Nominations Committee Chair, Earl Graham completed his report with the surprise presentation of a special award. Executive Director Sandy Boeckman was recognized with a Lifetime Achievement Awards from MSPS. The presentation went something like the following...

The Awards Committee has completed its work for 2022; the work of naming recipients of our two awards:

The Survey-of-the-Year Award...
...and the Robert Myers Service Award

This is a task made difficult because so many of our members are accomplished and acclaimed. MSPS has many who are deserving of recognition and honors. Imagine our challenge. For example, consider the following:

- Accomplished professional having spent almost 40 years with us.
- So long, and so close. It is as though we've grown-up together.
- Serving with us in tough times and good. Formative years for this person, and for this association.
- Growing their own family, while growing the MSPS family.
- They've gone from working for others to business owner in that time...always with us on their side.
- So renowned for good work, that their reputation is national in our profession.
- A *confidante* to almost every leader in our Society, yet never an officer.
- Considered a friend to each member, and a friend to us all as one, MSPS.
- So diligent as to be at every meeting. So dedicated as to take every call.
- So well versed as to be the best keeper of our lore...and all of our institutional knowledge.
- Many would affirm this person is loyal to us, yet they imagine it is we who have remained loyal to them.
- Being so close with members, this person is not only about business...
- ...but the "personal" side of life. Sometimes, sharing such closeness as to be at weddings...
- ...even to be at funerals. Sharing in the triumphs and travails of those in MSPS.
- So close, this person has even shared their own family with us. Accompanied by spouse...
- ...children, those loved by them. You only do that among good friends and family.
- This person's work ethic is so tenacious the Energizer Bunny could take lessons.



Sandra Boeckman after receiving award with Tim Burch, MSPS Executive Director

Sound impressive? This is not one of the recipients of our two standing awards. Yet so worthy of something...some kind of recognition. Now you can see how hard the Committee's task is. Before any of you sitting out there among the membership gets too carried away and thinking I am describing you...well, not this time. Here is what I am up to!

On behalf of the Society, the Awards Committee has advised the Board of Directors that special recognition is called for; that not all contributions fit neatly into our traditional awards; that someone is worthy of being honored above others.

(continued on page 8)



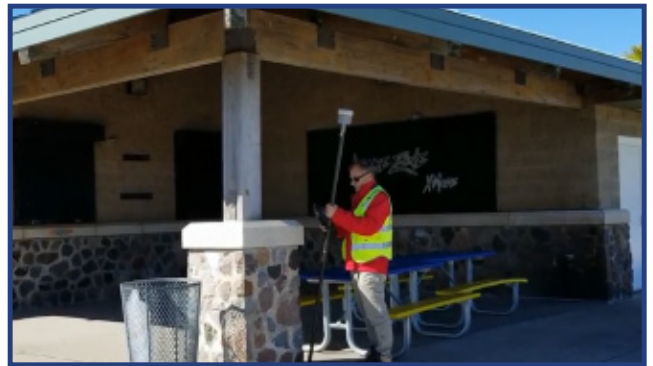
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News from the MSPS Annual Meeting *(continued)*

And our Directors and Officers have all agreed. If not clear yet, here it is –

In 1985, she became our Executive Director and has remained so every year. A master of what are considered some of the finest conventions and meetings throughout our national surveying community, she is who directors of the National Society of Professional Surveys cite as one of the few, very best state executives. They have always praised her work when MSPS host national events. And they cite her as an example of how associations should be run.

After working with our contracted management firm, she took the risk of going into business for herself. In 1998, S & J Management Group was born. She took that risk...and took us with her. So loyal, yet she considers it to be us who are loyal, staying on while she was a start-up.

She has guided every President, brought order to every Board. She is available to every member, answering our questions, returning our calls, and serving our requests. She has at times been present in our most personal life events, like the true friend she is. She knows some of our families, almost like a relative.

And speaking of families, she has shared hers with us. How many of you mistook Jim Boeckman for a surveyor, a member? He was around so much! Sure, there was golf, but there was also duty at Sandy's side, helping where needed. Together they raised three beautiful daughters, and they too were at our meetings. Not just vacationing and playing in the pool, they were working. We have even seen her parents working at our conferences. And in the time she has given us, she has gone from "working mom" to "grand matriarch" as she and Jim are atop a clan of not only three daughters, but six grandchildren and one great-grandchild. Oh, and there is a second on the way!

Our hardest worker, our smartest worker, and the most beautiful among us...we present this *Lifetime Achievement Award* to:

Sandy Boeckman, Executive Director

2022 MSPS Legislative Awards – Bernskoetter & Mayhew

The *Legislative Award*; our expression of gratitude to those who have helped this Society meet the goals we set in matters of statutory law and the political arena.

The 2022 General Session of the Missouri legislature - the 101st General Assembly began in January. And with it came the opportunity for enhancing the rules which govern the criteria for education and experience needed to become a land surveyor. MSPS had been seeking to do this for the last few years. Our goals were to improve the quality of prospective practitioners by increasing the required amount of education necessary to become a LS, while not placing a restrictive burden of time spent working to earn the "satisfactory professional field and office experience in land surveying" which is so critical to preparing a new surveyor. This meant changes to RSMo 327.314. It meant proposing new language to the statute, and surviving the law-making process.

The changes we wished to install came to be known as the "Education Bill" within MSPS, and it traveled a complex journey through the sausage grinder which is law making. For success, we needed we needed sponsors and we needed friends – friends in high-places. We got both, and we now honor our sponsors; an old friend and a new friend.

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News from the MSPS Annual Meeting (continued)

In the Missouri legislature, there is a statesman who peculiarly enough is a surveyor. We know him as a member of our Society, a respected peer, a successful business man; he is Don Mayhew. He is the Representative of District 121, the Rolla area of Phelps and Pulaski counties. The owner of Mayhew Engineering & Surveying in Crocker, Missouri, this legislative land surveyor was our sponsor in the House of Representatives. More than merely sponsor, he has been with us all the way, from advising in the crafting of the legislation, to his presence in committee meetings, and being an ambassador for surveyors and surveying in the legislature. Importantly, he educated his colleagues on the merits of our legislation. He was the on-site subject matter expert for our allies – allies like our new friend, Mike Bernskoetter of Jefferson City.

Mike Bernskoetter relates with surveyors. A small business owner and past president of a state association in his field, he understands the challenges of Missouri surveyors, the businesses, and our Society. And it didn't hurt that our Executive Director Sandy Boeckman is a friend of his. With Mayhew explaining our needs and ambitions, Bernkoetter joined the effort by put our proposed language into a Senate bill. He was the guide on that side of the Capitol in hearings, committee meetings and the chamber. By late in the session, with the steady hands of these two champions leading the way, they delivered a one-two punch of the MSPS language being adopted in the House on the 10th of May, then the Senate a day later on the 11th. We finally had our proposals declared *Truly Agreed and Finally Passed*. All that was left was the Governor's signature on June 7th – the new provision will now take effect on January 1, 2024.

With appreciation of your sponsorship and stewardship, and in honor of your contributions to the Missouri Society of Professional Surveyors, we offer our "thanks" by awarding to both the Surveyor and the Senator, our 2022 Legislative Award to:

Representative Don Mayhew, Missouri LS #2389 and Senator Mike Bernskoetter

Representative Don Mayhew of District 121 is from Crocker, Missouri in Pulaski County (30 miles west of Rolla). A Republican, he was elected to his first two-year term in November 2018. A licensed surveyor and engineer, the Representative is the owner of Mayhew Engineering and Surveying. He has served as the Pulaski County Surveyor for 10 years.

Mayhew is a past president of the Crocker School Board, he chaired the Pulaski County Justice Center Task Force, was on the board for Habitat for Humanity as well as the Crocker Park Board. A member of the NRA, is also proudly a member of the Missouri Society of Professional Surveyors. In the House of Representatives, Mayhew has the following committee assignments: Conservation and Natural Resources, Vice-Chairman; Subcommittee on Appropriations - General Administration, Vice-Chairman; Subcommittee on Federal Stimulus Spending; Ways and Means; Budget.

A bachelor's of science in Civil Engineering graduate of Missouri Science & Technology University, this native of Crocker still resides there with his wife, Deanna. They have four adult children and eight grandchildren.



Senator Mike Bernskoetter, a Republican, serves the 6th Senatorial District of Missouri encompassing all or parts of Cole, Gasconade, Maries, Miller, Moniteau, Morgan, and Osage counties. He is from Jefferson City.

Before being elected to the Missouri Senate in 2018, Sen. Bernskoetter served as the representative for the 59th District in the Missouri House of Representatives for eight years. He and his wife Jeannette own and operate a pest control business in central Missouri, serving customers for more than three decades. The Senator serves his faith as a lector, Eucharistic and hospitality minister at Immaculate Conception Parish in Jefferson City.

Senator Bernskoetter and Jeanette have four children and are the proud grandparents of seven.



Monnie Sears: Surveyor of the Year

Surveyor of the Year; the oldest award granted by MSPS to a member that gives freely of their time and efforts to our association and toward the betterment of the surveying profession. Criteria for this honor calls for knowledge, integrity and competency as qualifications. This year, the MSPS member who met these measures is...

Some things just *add up*. Our honoree understands the truth and simplicity of such a statement because as a “math kid”, he would like when things *add up*. “Math kid”, a starting point for so many who eventually find their way into surveying. That is how it was for this surveyor. Indeed, as a high school student, so proficient was he in his study of mathematics, the teacher had to order advanced level text books not available in their small Kansas school. Nor in the small towns of southwest Missouri; other locales where his hard-working parents moved to when following the best paying jobs they could find.

When his time came to join the workforce, our future surveyor prepared himself by undertaking the study of another common surveyor starting point – drafting. A two-year vocational education offered entry into the role of draftsman for a steel foundry. This began a decade of moving places and careers as his own skills aligning to drafting competed with his more lucrative successes in retail management. But then as the 1980’s came to a close, he returned to drafting in the form of making plats for a surveyor just across the border in Grove, Oklahoma. Knowing talent when he saw it, that Oklahoma surveyor coached and mentored this protégé, coaxing him along all the way to licensure.

His career fate was set; surveying was to be his worldly calling. He and a partner opened their own firm in Grove, operating for a couple of years. Then it was a long stretch with a respected firm of consulting engineers and surveyors in Rogers, Arkansas. And just as the new century began, our honoree joined what became his permanent surveying home, Allgeier Martin & Associates of Joplin. All the while in following this worldly calling, our surveyor was committed to his higher calling of faith and his devotion to Christ. Saved as a young man, his career journeys paled in comparison to his spiritual ones. Always serving as a Sunday School teacher, his faith guided him to obtaining a theology degree. He continues his service to this day as a leader and

(continued on next page)

News from the MSPS Annual Meeting *(continued)*

teacher in the congregation of Zion World Ministries in Anderson, Missouri. And while this faithful servant surveys our world making measurements on the globe, he has transcended this world through traveling around our globe on religious missions to Africa. There he journeys into the rural villages where good, strong, working people welcome him to live among them, eat as they do, and pray with them and teach Bible doctrine. Much in the same way he humbly goes about his surveys in our Missouri: traveling to our countryside, simply provisioned, but doing what is important.


It's all start to *add up*, isn't it? Well don't forget his service to our profession and this association. We recognize him for contributions towards the development of what is one of the best local chapters MSPS has ever had – the Southwest. He has been an officer within that organization, working to give those uniquely close-knit surveyors a forum in their remote corner of the state. At the state level, he has been an active, engaged, astute member of the MSPS Board of Directors. He more than fulfilled his charge of bringing leadership to the issues and challenges of our organization. He casts his votes after careful, informed consideration of the matter, then cautiously monitored actions taken by the society. Yes, he has been a fine Director on the MSPS Board.

As acclaimed and accomplished as our recipient may be, all of his journeys have been with the support of his wife of 40 years whom he dearly loves, Joanna. Both are happy and proud to be one another's best friend. And there is the pride and joy, his daughters Sunesis and Jessica and four grandchildren. So, as we tally the sum...the math kid, the guy that worked on Chevelles, the son of good parents, the lucky husband and father, the devoted servant of his Lord is one and the same with the surveyor that does his work well, is an important member of his firm, has helped found and lead a chapter, and most recently has been a magnificent Director, stewarding our goals of enhancing the qualifications to be a surveyor. It does *add up*! He has done the work, performed the service, and met the measure. A surveyor licensed in multiple jurisdictions and certified as a Federal Surveyor and a Flood Plain Manager, he is Missouri PLS #2422, and he is our Surveyor of the Year – Monnie Sears.



President Brad McCloud congratulates MSPS Surveyor of the Year Monnie Sears as Awards Committee Chair Earl Graham looks on.

(continued on page 14)



Missouri Society of Professional Surveyors

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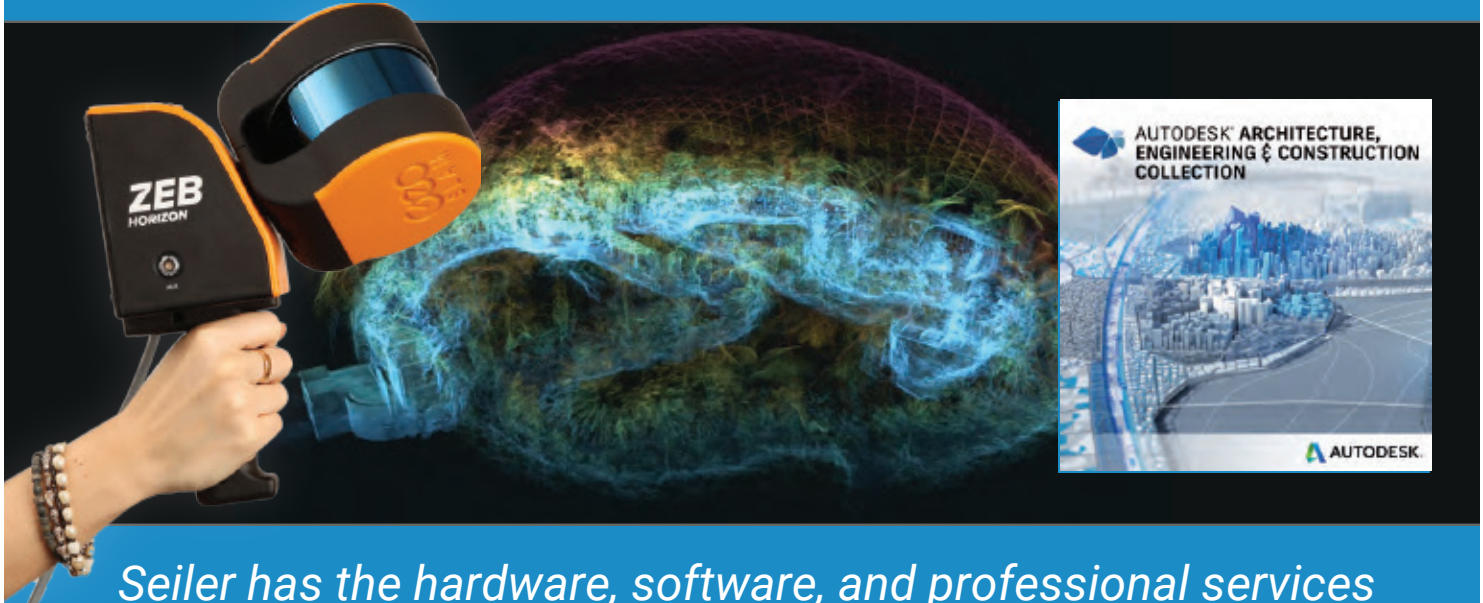
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News from the MSPS Annual Meeting *(continued)*

Ron Heimbaugh Honored with the Robert E. Myers Service Award

The Robert E. Myers Service Award. A recognition so significant, we named it after one of our Missouri surveying immortals. It honors a whole career, and is reserved for those with "...more than 10 years of exemplary service and dedication to the surveying profession and in particular to the Society." This year's designee has met those marks with distinction.

"Hard Work U." That is the nickname of the College of the Ozarks. So named because all students exchange their labor to pay for tuition. Hard working people doing the tasks and chores needed to sustain the very institution which will in turn educate them. It is a fantastic idea, and for students, it is *hard work*. Hard work; a defining characteristic of our 2022 Myers Service Award recipient who happens to be a College of the Ozarks alumnus.

Our honoree learned *hard work* from parents knowing it well themselves. A father in construction, a mother at a sewing factory, they brought up their kids in the country, just outside of Rolla. In the country, and in the church. A devoted Christian, it is this faith which serves as moral and ethical guides for this surveyor. He has since gone on to bring up his own family the same way.

With hardworking role models and the strength of faith, our surveyor spent much of his youth as an accomplished athlete. Favoring baseball and wrestling, it was as a grappler his *hard work* paid off. An all-state wrestler in high school, he was offered athletic scholarships. Not being sure of his work and education goals, he chose to attend East Central College as an intermediary step. This was followed by a transfer to the College of the Ozarks where his assignment in the student work program was construction. More *hard work*. While a physical laborer around the campus, our honoree discovered an academic match to his keen eye for details – it was drafting. Completion of his studies in 1990 came with a Bachelor of Science in Industrial Technology.

This future surveyor then began plying his trade of drafting as a CAD technician for engineering and surveying firms in the Rolla vicinity. There was Missouri Engineering Company, Integrity Engineering Inc., and Archer-Elgin; it was with these firms his interest in surveying was found. This was accompanied by more education through surveying courses at Missouri S & T. The reward for all of this *hard work*? A license as a PLS in 2004. A recognized and respected practitioner, this surveyor soon took an opportunity where he became an impactful presence for good and for quality in our profession as a whole. He joined the Missouri Land Survey Program in 2008.

Starting there as a Project Surveyor, fellow surveyors relied on him being a master of the *cadastre*. It was a role in which there is a lot of peer scrutiny, requiring attention to detail. As a bit of a perfectionist, detail and proper procedure were hallmarks of this surveyor's service. He continued the Land Survey Program legacy of being the best, being the experts. This successful tenure of performing in-house cadastral and geodetic surveys led to a promotion in 2013; our honoree was then the program's Field Surveys Section Chief. He was coordinating Co-op programs whereby county surveyors



Ron Heimbaugh (l) is congratulated by MSPS President Brad McCloud after being presented the Robert E. Myers Award.

and other private surveyors are contracted. It was oversight of programs which are critically important throughout all of the surveying profession in Missouri. It was going from mastery of, to stewardship over our great resource, the USPLSS.

In 2017, our honoree took on more *hard work*. He was appointed the Missouri State Surveyor, in full oversight of all Land Survey Program activities. While the program he inherited was in great shape thanks to his predecessors, there were new and important challenges. It was the beginning of an era of fundamental changes to our surveying framework – it was time to modernize the National Spatial Reference System. With that task came many others required for the modernization process. The list includes the GPS on Bench Marks program and the complete rethinking of our coordinate systems for SPCS2022. This surveyor was called upon to lead Missouri’s participation in these national efforts. More than capable, he has served these missions well and represented the interests of our state and PLS’s effectively. We are proud of what he achieved, and thankful for his leadership during these transitions.

Standing beside our recipient throughout all of this *hard work* has been a wonderful and loving family. Foremost is his wife, Debbie. They met in college, so she has been “there” the whole time, helping to make the man. Three daughters have added their support to our hero; Lindsey, Megan and Taylor. They continued the legacy of athletics in this happy clan that now includes three grandchildren as well. Yes, family and faith have sustained our honoree.

So, for his leadership as a Director on the MSPS Board, service as Missouri’s fourth State Land Surveyor, guidance in the efforts for National Spatial Reference System modernization, expertise in the development of the new Low Distortion Projections, and all of his *hard work* on our behalf, we recognize Missouri PLS #2004001332. Our 2022 Robert E. Myers Service Award recipient is Ron Heimbaugh. 🇺🇸



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October 14, 2022

Missouri Society of Professional Surveyors
President Ray Riggs
722 East Capitol Avenue
Jefferson City, Missouri 65101

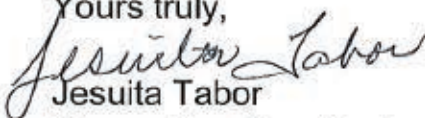
Dear Mr. Riggs,

The Missouri Council of the Blind held our Convention at the Sheraton Westport Chalet on October 6-9, 2022. We were unaware when we planned this convention that your organization would hold a convention at the same time.

We wanted to reach out to you and your members and express our sincere appreciation to those who were so kind to help our members.

The members at our convention as the name implies are blind and/or low vision and were on the receiving end of some of the kindest members of your organization. Your members offered support, understanding and personal interest in our members. We had staff and volunteers to assist but often your members were seen assisting our members to the dining rooms and conference rooms. Your members did these kind gestures without being asked and always with a smile.

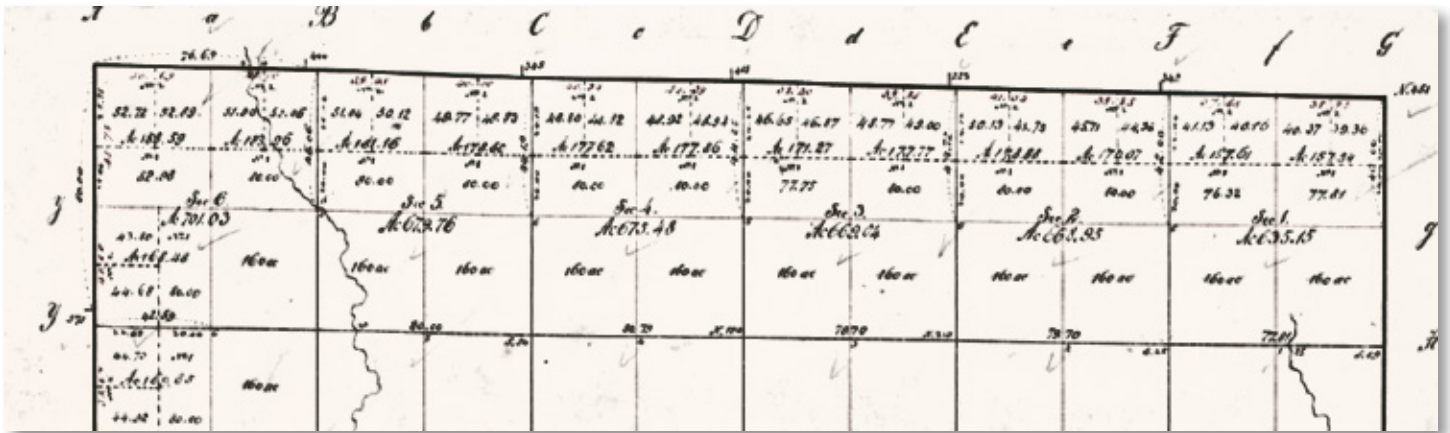
We are so grateful for your members and appreciate the respect that they showered us with. Please express our gratitude to your members.

Yours truly,

Jesuita Tabor
Convention Coordinator
The Missouri Council of the Blind

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“Changes in RSMo Chapter 60”

by Dr. Richard L. Elgin, PS, PE



Following a Special Session of the Missouri Legislature, on October 6 Governor Parson signed into law several statute changes, including one that affects RSMo Chapter 60 “*County Surveyor and Land Surveys.*” The legislation was sponsored by Representative Don Mayhew (R-Crocker) who is a Professional Surveyor and Professional Engineer. Its purpose is to clarify some aspects of reestablishing lost corners on township exteriors and to better define how the quarter corners in the fractional sections south of the township line and east of the range line (the “blank” quarter corners) are to be established.

This link: <https://www.house.mo.gov/billtracking/bills223/hlrbillspdf/5969H.03T.pdf> will take you to the Chapter 60 (and many other) statute changes. The words in brackets with a line through them are now deleted and those in bold are now added. These revisions were effective January 2, 2023.

The revised Chapter 60 statute and its Change/Comment follow:

60.301.(1)

Adds Center of Section as a corner of the USPLSS. Now one must file a Corner Registration Form with the Land Survey Program as “centers” are found, refurbished or set.

60.301.(5)

Corrects the definition of an Obliterated Corner.

60.301.(7b)

Deletes the described, archaic procedure to double proportion a lost corner position.

60.315.(5)

Deletes redundant statements concerning reestablishment of lost corners on the exterior lines of townships and replaces them with one statement that simplifies, says and means the same thing: Lost corners on township exteriors (except for township corners common to four townships), be they standard or closing corners, “shall be reestablished by single proportionate measurement on the line connecting the next nearest existent standard or closing corner on opposite sides of the lost corner.” This does not change what the previous

(continued on next page)

“Changes in RSMo Chapter 60” (continued)

statute said (since 1999) but describes the reestablishment method more directly. NOTE: RSMo 60.315.(5) conflicts with the BLM’s reestablishment method, because Missouri “weighs” the standard and closing corners as being equal. However, the BLM’s method is meant for Standard Parallels and Guide Meridians, not the case in Missouri (and Arkansas) where *every* township exterior has a set of “double corners,” they being both standard and closing corners.

60.345

Clarifies the procedure for establishing the “blank” quarter corners, being the quarter-section corners of sections south of the township line and east of the range line. These quarter corners were not set by the GLO. The statute specifies today’s best practice for establishing these quarter corners. Step 1: Single proportion the position between the two closing corners for the subject section (those corners having first been identified or reestablished). Step 2: If necessary, offset from that position in a cardinal direction to the true line as defined by the next nearest adjacent corners on opposite sides of the quarter corner to be established. If there are no intervening standard corners between the section’s closing corners used in Step 1, the position computed in that step is the quarter-section corner’s position for the establishment.

These Chapter 60 changes should be helpful to the Missouri Professional Surveyor. They add clarity to the legal principles of reestablishing and establishing corners along our township exteriors.

In the book “*The U.S. Public Land Survey System for Missouri*” by Dr. Richard L. Elgin, PS, PE, Chapter 6 has several example problems that illustrate the procedures for computing the positions for reestablishing and establishing corner of the USPLSS. These statute changes do not affect those problems, nor their solutions and answers shown. 🇺🇸



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Thoughts on Professional Practice and Education

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

Article 7: License Forum Shopping

This is the seventh article I have prepared in the series offering thoughts on professional practice and education. In this article, I wish to discuss forum shopping for licensing, experience, and testing timing. To better understand forum shopping, some background on testing will help understand the purpose and reasons for forum shopping.

What is meant by forum shopping? I am referring to the ability of an applicant to choose among all the states to find the easiest route, in their circumstances, to obtain professional licensing.

I have been surveying for fifty years and been licensed to practice surveying in six different states. When I tested for many of my licenses, I had to show up within the state on a certain day, at a certain location, to take an exam only offered once or twice a year. Given the pre-application time and time after the exam that was required to grade, review, and receive the results, it was not unusual to wait a year between a desire or need to obtain a license in a state and eventual receipt of the license (assuming the pre-requisite experience and education was already attained, and the required testing was passed).

NCEES¹ has considerably reduced the cycle time and wait time for the fundamentals of surveying (FS) exam and the professional surveyor's (PS) exam. I would venture the opinion that any delays are now centered upon waiting for the availability of a seat at a testing center rather than NCEES or the state licensing board to perform their actions. NCEES exams may be taken in hundreds of testing sites across the nation. By way of example, a student in Ohio that plans to visit grandparents in Florida, over Christmas break, with enough lead time to reserve an empty seat at a Florida testing center, can take the NCEES exam in Florida during their visit.

The Covid pandemic has forced many states to offer state specific exams through testing centers on an as-need basis. Previously, states only offered state specific exams once or twice a year on a specific date at a specific location.

Many states have had to adjust for Covid to avoid large gatherings or to quell unrest from applicants that expect state specific exams to be conducted with the same ease in scheduling and promptness experienced with NCEES testing.

The ease of professional testing has allowed for those desiring a surveying license to go forum shopping. What is meant by forum shopping? I am referring to the ability of an applicant to choose among all the states to find the easiest route, in their circumstances, to obtain professional licensing.

I wish to make it clear that a person intending to provide surveying services in a particular state, must have a surveying license for that state. The person must deal exclusively with the licensing board in that state. However, not all aspiring licensees need to be licensed in a particular state to fill their employment requirements or their professional objectives. For example, many individuals employed by the United States Government simply need to be licensed as a surveyor in any state to qualify for higher pay or positions. It does not matter what state the federally employed surveyor has their license. The licensed status of faculty members is not necessarily governed by the state where the university is located. The status of employees in large firms where they do not stamp and seal documents is assured by licensing in any state, not necessarily the state they reside or work in.

In some cases, an individual working in a firm may desire 'professional status' yet they cannot meet the requirements for a survey license in their state of residency. Perhaps they don't have a surveying degree, or the correct degree, or experience required in that state. Nevertheless, these individuals can seek to obtain licensing in another state where they do meet the requirements. For example, a GIS specialist working in a state not requiring a license for GIS services can nevertheless enhance their credibility and reputation by becoming a licensed surveyor in a state that does require a surveyor license for GIS services and will count experience performing GIS services.

(continued on next page)

Thoughts on Professional Practice and Education *(continued)*

Perhaps the most common forum shopping is conducted by the unlicensed person that is embarking on their professional career and desires to take the fundamentals of surveying (FS) exam. In terms of taking their fundamentals of surveying exam, this individual can begin the process in any state regardless of their state of residency. A person can start their professional licensing by choosing a state that charges the least for an application or has the least restrictions on the initial or subsequent process for renewal. One state may allow both NCEES' exams be taken without any restrictions versus the state of residence that may require numerous pre-conditions before an exam can be taken. I am unaware of any state that will not accept the NCEES fundamental of surveying exam results obtained by a person through another state.

There are numerous factors that may impact forum shopping. Licensing requirement is a major factor. States vary according to academic requirements, years of experience, or acceptable experience. Another major factor is timeliness of licensing steps. For example, some states allow both exams (FS and PS) be taken at or near graduation. Some states require four years with an appropriate degree, other states require only two years with an appropriate degree. Cost is another factor. Renewing a survey license in one state is \$50 while another state demands \$300. The last factor worth mentioning is continuing education. Some states don't require continuing education. Other states have minimal or no continuing education requirements.

In summary, given the ease of taking exams. Unless an individual must be licensed in a particular state to provide services, many individuals will shop for the best licensing deals among the various states.

¹ NCEES stands for the National Council of Examiners for Engineering and Surveying

Article 8: State Specific Exams

This is the eighth article I have prepared in the series offering thoughts on professional practice and education. In this article, I wish to discuss state specific exams.

Most states require the applicant for licensure in the state pass an exam on surveying topics the state board of

licensure believes is important for surveying practice in the state. Even surveyors applying by reciprocity or comity that have already passed

NCEES exams must take and pass the state specific exam to be licensed.

I have had or hold surveying licenses in six different states. In all but one state, I had to take a state specific exam. I have also aided in the preparation and grading of state specific exams. Based on my experiences, I have opinions on state specific exams that I will share with the reader. Without question, I am going to stir up some controversy. Take heart for those that disagree with me. I have absolutely no influence other than these words to change any policies. Furthermore, to date, my words have had no influence in modifying a licensing board's policy. I will also add that I have never shown a proficiency to predict the future. If a reader does not agree with me, fear not. My arguments will likely not persuade members of licensing boards. Go to bed believing you will prevail, despite my arguments, and sleep in peace.

We will start with the premise that I believe to be true, that there is law in one state affecting surveyors or surveying practice that is unique to that state. It follows that a surveyor should know that law before practicing or offering services in that state. The relevant question I ask is whether a state specific exam is the method to assure the surveyor knows state specific law.

There are seven deficiencies I have observed with state specific exams.

First, contents of some state specific exams are not state specific. Some licensing boards test knowledge that is common to all or many states. In one state specific exam, I was tasked with calculating coordinates and calculating the area of a parcel. Testing for this knowledge is done on the national exams.

Second, many exams ask questions that are state specific but are not required for competent

The relevant question I ask is whether a state specific exam is the method to assure the surveyor knows state specific law.

practice within the state. For example, one state specific exam question I had to answer asked for the penalties imposed for certain infractions by a surveyor. I would suggest that a surveyor could perform services required in the state competently for their entire professional career in that state without knowing what the penalties are for certain infractions in surveying practice. Such knowledge, when necessary, can be addressed and found if and when the surveyor faces discipline. This is akin to asking drivers on their driving exam what the dollar fine is for speeding.

Third, it is not reasonable to test on topics that ordinarily require the surveyor investigate the law as a matter of course during practice. For an example of this deficiency, I saw a question requiring a surveyor to know, on a state specific test, what are the number of hours of continuing education allowed for writing an article. The surveyor can find this information when and if they decide to write an article. What is appropriate is to ensure the surveyor knows continuing education is required for renewing a license.

Fourth, testing should only focus on common and widespread knowledge to practice in that state. A state should not test on knowledge that most competent surveyors in the state do not know or need to know. I have seen a state specific exam composed of questions that the vast majority of competent surveyors currently practicing in the state would not be able to answer. If the knowledge is not necessary for current surveyors to competently practice, why is the knowledge necessary for new surveyors? These are 'gotcha' questions that have no place on a state specific exam. I would go so far as to claim the exam would not survive legal scrutiny if challenged by a test taker.

Fifth, testing should only test on knowledge necessary for practice not knowledge useful for practice. Let me give an example what I mean by necessary versus useful knowledge. An example of useful knowledge would be the time period comprising the statute of limitation for the state. This is not necessary knowledge

to practice surveying. The surveyor should not and cannot offer legal advice. Therefore, the surveyor cannot tell a landowner if adverse possession or prescription has occurred or not. It follows, while the surveyor may find the statute of limitations useful knowledge to know, knowing what the statute of limitation is for the state is not necessary knowledge for surveying practice.

Sixth, testing should be confined to fingertip knowledge versus lookup knowledge. Fingertip knowledge is knowledge that the surveyor must know without reminder when offering services. For example, fingertip knowledge would be the knowledge that a written contract is required for surveying services or there are mandatory standards that the surveyor must adhere to when providing typical surveying services. Lookup knowledge is what procedure is required to comply with a right of entry law. Using a non-survey related example, fingertip knowledge is the knowledge that a person must periodically renew car registration. Lookup knowledge is what procedure or paperwork is required to renew car registration.

Seventh, testing should focus on critical knowledge for common services, not unusual services that few surveyors provide. For example, if a state has survey standards for laying out solar envelopes and less than one percent of the surveyors in the state will ever attempt to lay out a solar envelope, questions on solar envelope standards are not appropriate. Knowledge of unusual services would be akin to a person seeking a driver's license in order to drive their Ford 150 pickup being asked on their driver's exam how many hours a commercial truck driver is allowed to drive before resting.

I would offer the opinion that if a licensing board eliminated from their state specific exams the deficiencies I have noted, the licensing board would substantially reduce the contents of the exam or even eliminate the state specific exam altogether - perhaps go with an on-line study course and test.

(continued on next page)

Thoughts on Professional Practice and Education *(continued)*

I will focus the remainder of this article discussing the future of state specific exams by suggesting three options. One option is to eliminate state specific exams. The second option is to offer alternatives to examination. The third option is to modify the testing procedures of a state specific exam to be more flexible and in line with NCEES testing.

Eliminating a state specific exam may be appropriate where there are few topics left after filtering them as previously noted or for licensing in cases of comity. In cases of comity, if a surveyor has practiced in one state for a long period of time without fault or discipline, experience and logic suggest the surveyor will practice competently in another state when licensed.

Alternatives to testing for state specific knowledge would require surveyors watch a video explaining state specific law or be sent a fact sheet on state specific law a surveyor should be aware of. Another option is to require attendance at a seminar or viewing videos where speakers explain state specific law.

The final option is to modify the state specific testing procedure. Provide references for the test questions that an applicant can study and allow on-line testing at test centers that can be taken by applicants anywhere and during any reasonable day and time.

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

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Missouri's Katy Trail Goes to Court

by Steven E. Weible, PLS



The Katy Trail Turkey Creek Bridge in Callaway County, across the Missouri River from Jefferson City.

THE NATIONAL TRAILS SYSTEM ACT OF 1968

After World War II, America's population was growing and disposable incomes were on the rise, leading to a greater demand for outdoor recreational opportunities. The idea of a national system of trails began to find its way into Federal legislative efforts as early as 1945. By the 1960s the demand for walking, hiking and bicycling trails had surpassed available opportunities (*Trails for America*).

President Lyndon B. Johnson expressed his support for a national system of trails to the U.S. House of Representatives in his February 8, 1965 message on "Natural Beauty." He called for a balance of recreational trail opportunities in both urban and rural areas and noted that full use should be made of rights-of-way and other public paths. He directed the

(continued on next page)

Missouri's Katy Trail Goes to Court *(continued)*

Secretary of the Interior to work with his colleagues in the Federal government as well as State and local leaders to recommend a cooperative program to encourage a national system of trails (Congressional Record, February 8, 1965, pg 2087). The Secretary of the Interior began working on this directive by requesting a study from which appropriate legislation could be drafted.

This nationwide trail study was conducted by the Bureau of Outdoor Recreation within the U.S. Department of the Interior and resulted in the 1966 publication entitled, "Trails for America" (GPO). The study examined existing and potential opportunities for national scenic trails, park and forest trails and metropolitan area trails. It also recognized that public utility rights-of-way for electric, telephone, telegraph and natural gas transmission lines and abandoned railroad corridors and even canal banks provided special opportunities for trail development. It further stated that "*all Federal agencies having jurisdiction over the allocation and use of such rights-of-way should cooperate fully in the development of trails*" and "*State agencies having similar jurisdiction also should encourage and support development.*"

The findings and recommendations of this study led to the introduction of legislation in 1966. Eventually the proposal found its final form in the National Trails System Act of 1968 (Public Law 90-543; 82 Stat 919; 16 U.S.C. 1241 *et seq*). This Act established a national system of recreation trails, scenic trails and connecting trails and created the standards and methods by which additional trails could be added to the system. National recreation trails were intended to provide a variety of outdoor recreation uses reasonably accessible to urban areas. National scenic trails were intended to be extended trails, providing enjoyment of nationally significant scenic, historic, natural or cultural outdoor areas. The Appalachian Trail and the Pacific Crest Trail were designated as the first national scenic trails. Connecting trails were intended to provide additional points of public access to or connections between national recreation trails or national scenic trails.

Section 8 of the Act directed the Secretary of the Interior, the Secretary of Agriculture and the Secretary of Housing and Urban Development to encourage State and local agencies, private interests and nonprofit organizations to establish trails in parks, forests and urban areas.

Section 9(b) of the Act acknowledged the potential for trails along roadways, utility rights-of-way and similar properties. Federal agencies having jurisdiction over use, abandonment or disposition of these were directed to cooperate with the Secretary of the Interior and the Secretary of Agriculture to ensure that suitable properties were made available for trail use.

THE RAILROAD REVITALIZATION AND REGULATORY REFORM ACT OF 1976

Railroads had developed rapidly in the 1800s to satisfy the need to move passengers and freight over long distances as the nation developed and expanded. As time passed, however, railroads began to lose market share to other forms of transportation. By the 1970s railroad activity had declined significantly and needed reform if it was to continue as a viable means of transportation. As part of this reform the Railroad Revitalization and Regulatory Reform Act of 1976 (Public Law 94-210; 90 Stat 31; 45 U.S.C. 801 *et seq*) was passed "*to provide the means to rehabilitate and maintain the physical facilities, improve the operations and structure, and restore the financial stability of the railway system of the United States, and to promote the revitalization of such railway system, so that this mode of transportation will remain viable in the private sector of the economy and will be able to provide energy-efficient, ecologically compatible transportation services with greater efficiency, effectiveness, and economy.*"

Railroads had been declining rapidly and there was concern that these abandoned rail corridors would be lost and no longer available should rail service be needed again in the future. Therefore, Section 809 of this Act called for a study to evaluate the potential for conversion of railroad rights-of-way to alternate uses where rail service had been discontinued

or was likely to be discontinued. The concept of a rail bank was to be evaluated as a means to assure the availability of rights-of-way for future railroad use, particularly in areas where fossil fuel natural resources or agricultural production were located. Interim uses for these rights-of-way were also to be considered. State and local governmental entities were to be encouraged to develop recreational and conservation uses of abandoned railroad rights-of-way.

Section 809(c) amended the Interstate Commerce Act (49 U.S.C.) to require the Interstate Commerce Commission to make a further finding in cases of abandonment to determine suitability of the right-of-way for other public purposes, such as roads or highways, other forms of mass transportation, conservation, energy production or transmission, or recreation. If the property was determined to be suitable for other public purposes, disposal of the property was not to be permitted until it had first been offered for acquisition for public purposes.

AMENDMENT OF THE NATIONAL TRAILS SYSTEM ACT

Over time it became apparent that these past legislative efforts had not been successful in establishing a process by which inactive railroad corridors could be used for trail purposes. Once a railroad corridor had been abandoned, it may not be recoverable for trail use. An amendment, therefore, was needed to ensure that potential interim trail use was considered prior to abandonment of the right-of-way. In addition, some provision was needed to protect the railroad from liability during the period of interim use (House Report No. 28, 98th Congress, 1st session, 1983).

Consequently, Section 8 of the National Trails System Act (16 U.S.C. 1247) was amended in 1983 (Public Law 98-11, Section 208; 97 Stat 42). The new Section 8(d) reiterated as national policy the desire to preserve established railroad rights-of-way and to protect rail transportation corridors for future reactivation of rail service. State and local agencies and private organizations were encouraged to establish trails in existing, inactive corridors as an interim use. The interim use would not be treated as an abandonment of the right-of-way, since the right-of-way must remain available for a return to active rail service.

To relieve the railroad company of liability during the interim use, the interim use sponsor, whether a State, political subdivision or qualified private organization, had to agree to (1) assume full responsibility for the management of the right-of-way; (2) assume any legal liability; and (3) pay any and all taxes that may be levied or assessed against the right-of-way. The Interstate Commerce Commission would impose appropriate terms and conditions as a requirement of any transfer or conveyance for interim use and would not permit the right-of-way to be abandoned.

This section was further amended in 1995, when the Interstate Commerce Commission was abolished and replaced with the Surface Transportation Board (Public Law 104-88; 109 Stat 803; 16 U.S.C. 1247(d)).

THE KATY TRAIL IN MISSOURI

The Missouri-Kansas-Texas Railroad Company (MKT) operated a railroad line that traversed the State of Missouri. Right-of-way south of the Missouri River had been acquired in the 1860s and 1870s, while the section of right-of-way from the Missouri River crossing in Howard County to Machens in Saint Charles County had been acquired in the 1880s and 1890s. Much of this latter part of the route followed the bank of the Missouri River and was subject to frequent damage from flooding. In 1986 the company decided it was no longer feasible to continue operation in this area and filed an application in September with the Interstate Commerce Commission to abandon about 200 miles of right-of-way from Sedalia to Machens.

(continued on next page)



Missouri's Katy Trail Goes to Court (*continued*)

Trail proponents in Missouri recognized a golden opportunity to utilize the amended National Trails System Act to develop a long distance trail crossing the state. With financial backing from Edward D. "Ted" Jones Junior of Edward Jones financial services, the State of Missouri through the Department of Natural Resources submitted a request to the Interstate Commerce Commission (ICC) in October 1986 for a Certificate of Interim Trail Use to develop a recreational trail on the Missouri-Kansas-Texas Railroad right-of-way. The ICC approved the request and granted the Certificate of Interim Trail Use in April 1987 (ICC docket No. AB-102 (Sub-No. 13)). The interim trail use was subject to the conditions of the National Trails System Act as amended in 1983, preserving the right-of-way and forestalling abandonment.

Missouri-Kansas-Texas Railroad Company and the Missouri Department of Natural Resources then entered into an Interim Trail Use Agreement in June 1987. As salvage operations were completed in the succeeding months, conveyances of the right-of-way were executed for each county that was crossed. Construction of the trail followed shortly thereafter.

OPPOSITION AND COURT CHALLENGE

Trail enthusiasts were ecstatic, but landowners adjoining the MKT right-of-way were not so enthused. In fact, they were shocked and outraged. "You're stealing my land! You're stealing my land!," they cried. Then the lawyers saw a golden opportunity and the litigation began.

These landowners argued that the right-of-way had been an easement acquired for railroad purposes only and for no other purpose. Once the railroad ceased to operate, they believed that by state law the right-of-way should revert to the present owners. In December 1986, one hundred and forty-four (144) individuals owning property along the right-of-way joined together in filing an action in state court to quiet title to the right-of-way. State court, however, was not the proper venue to challenge federal law, so the case was moved to the United States District Court of Missouri, Eastern District.

The first named plaintiffs for the case were Maurice and Dolores Glosemeyer. Defendants named in the case were the Missouri-Kansas-Texas Railroad Company (MKT), the Missouri Department of Natural Resources and its director, Frederick A. Brunner (*Glosemeyer v. Missouri-Kansas-Texas R.R.*, 685 F. Supp. 1108 (E. D. Mo. 1988)). There were many more parties interested in the outcome of this case, however, so the Court allowed these additional parties to intervene as defendants, including the United States of America, the Conservation Federation of Missouri, the National Wildlife Federation, the Rails to Trails Conservancy, the Lewis and Clark Nature Trail Foundation, the Sierra Club, the Paralyzed Veterans of America, BICYCLE USA, the Lewis and Clark Heritage Foundation, the American Hiking Society, the Katy Missouri River Trail Association and the American Rivers Conservation Council. The Court also allowed the American Farm Bureau Federation and the Missouri Farm Bureau Federation to file briefs in support of the plaintiffs as "friends of the court."

The plaintiffs challenged 16 U.S.C. Section 1247(d), the Interstate Commerce Commission's regulations applying the provisions of that section and the ICC's order applying the section and its regulations to the MKT right-of-way. They claimed that Section 1247(d) constituted (1) an invalid exercise of the commerce clause power under Article I, Section 8 of the United States Constitution; (2) an impermissible impairment of the obligation of contracts under Article I, Section 10 of the United States Constitution; (3) a violation of due process under the fifth and fourteenth amendments of the United States Constitution; (4) a taking of property without just compensation under the fifth amendment of the United States Constitution; and (5) a violation of various Missouri constitutional and statutory provisions. The plaintiffs, therefore, wanted the Court to declare Section 1247(d) and the ICC's regulations and order unconstitutional. Then they wanted the Court to quiet title in each plaintiff for his respective interests in the MKT right-of-way. The Interest Groups that had been allowed to intervene as defendants filed a counterclaim, requesting that the Court declare Section 1247(d) and the ICC's regulations and order constitutional.

In its decision, dated May 10, 1988, the District Court determined that it had jurisdiction to consider plaintiffs' challenge to Section 1247(d), but that any challenge to the ICC's regulations and order were the exclusive jurisdiction of the federal circuit court of appeals.

The District Court determined that plaintiffs' assertion that Congress exceeded its power under the commerce clause by enacting Section 1247(d) was without merit.



The Katy Trail Hart Creek Bridge in southern Boone County at Hartsburg.

The District Court further determined that plaintiffs' claim of an impermissible impairment of the obligation of contracts under Article I, Section 10 of the United States Constitution was also without merit, since the section cited pertained to state legislation and not federal legislation.

As to the plaintiffs' claim of a due process violation under the fifth amendment of the United States Constitution, the District Court recognized that an analysis was appropriate, but that the plaintiffs failed to demonstrate that Congress had acted in an arbitrary and irrational way when it enacted Section 1247(d).

(continued on page 29)



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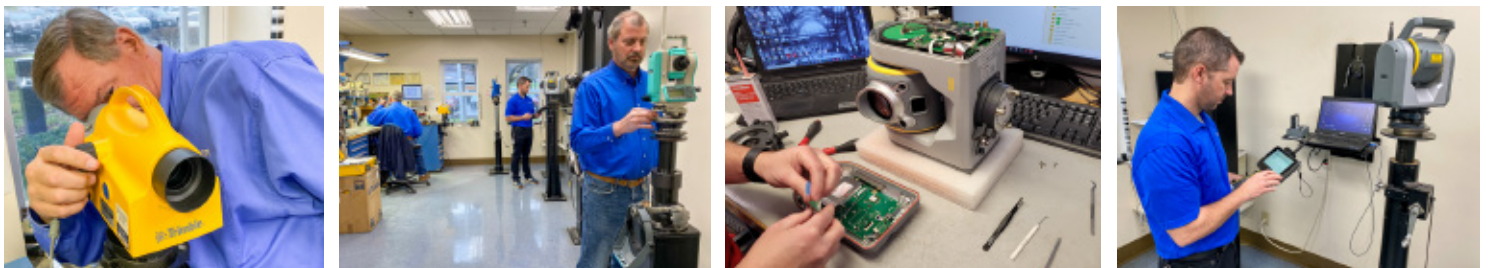
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Missouri's Katy Trail Goes to Court *(continued)*

The plaintiffs' claim that their reversionary rights to the property had been impaired by a temporary regulatory taking without just compensation was rejected by the Court, since a suit for compensation through the United States Court of Claims was available to them under the Tucker Act (28 U.S.C. Section 1491). The Court did not address the question of whether or not a taking had occurred.

The District Court further rejected plaintiffs' argument that Section 1247(d) violated numerous state constitutional and statutory provisions, as well as, state common law, since the state laws cited were preempted by federal law.

In conclusion, the District Court rendered judgment in favor of the defendants and against the plaintiffs and further declared 16 U.S.C. Section 1247(d) constitutional.

Plaintiffs promptly appealed to the United States Court of Appeals, Eighth Circuit (*Glosemeyer v. Missouri-Kansas-Texas Railroad*, 879 F. 2d 316 (1989)). The Court of Appeals heard the arguments and considered the analyses of the District Court. In its decision, dated July 5, 1989, the Court of Appeals recognized the opinion of the District Court as being well-reasoned. It, therefore, affirmed the decision of the District Court. Like the District Court, the Court of Appeals did not address the question of whether or not a taking had occurred, since the pertinent question was whether or not compensation could be obtained. As the District Court had stated, a suit for compensation was available to the plaintiffs through the United States Court of Claims under the Tucker Act.

A similar case from Vermont also challenged the validity of the "rails-to-trails" provision of the amended National Trails System Act and took the argument to the United States Supreme Court (*Preseault v. Interstate Commerce Commission*, U. S. Reports, Vol. 494, pg 1, 1990). The Supreme Court decision for that case, dated February 21, 1990, stated that "*the statute is a valid exercise of congressional power under the Commerce Clause*" and that "*even if the rails-to-trails statute gives rise to a taking, compensation is available to petitioners under the Tucker Act.*" In its analysis, the Supreme Court referenced the decision of the District Court in *Glosemeyer v. Missouri-Kansas-Texas R. R. Co.*, 685 F. Supp. 1108, 1120-1121 (ED Mo. 1988).

Having thus far failed to find satisfaction, Maurice and Dolores Glosemeyer enlisted the counsel of Mountain States Legal Foundation and took their claim to the United States Court of Federal Claims to argue for a taking without just compensation against the United States of America (Action No. 93-126L). The Court of Claims examined the primary question as to whether or not the preservation of rail corridors for future reactivation by allowing an interim use constituted a railroad purpose under Missouri law. In its opinion, filed January 14, 2000, the Court determined that it did not. The easements for railroad purposes would have been extinguished under Missouri law had they not been preempted by federal law. As a result, the Court decided that the imposition of an interim use constitutes the taking of a new easement for which compensation is required.

While the Glosemeyers eventually prevailed in their claim for compensation, it should not be presumed that all landowners adjoining railroad rights-of-way that have been converted to an interim use are eligible for compensation. These rights-of-way were acquired in many parcels, some as easements, some in fee simple and some by condemnation. Each document of conveyance must be examined on its own merits in its historical context to determine the nature of the property interest acquired by the railroad. This will then determine whether or not an adjoining landowner has any basis for a takings claim. 🇺🇸

O. Dan Lashley Scholarship to Katie Jones

On September 21, 2022, Mark Twain National Forest Survey Technician Katelyn (Katie) Jones was awarded the O. Dan Lashley Memorial Scholarship from the Missouri Society of Professional Surveyors (MSPS). Present for the ceremony were former State Land Surveyor and Registration Board Member Mike Flowers, Ms. Jones, MTNF Public Affairs Officer Cody Norris, and Forest Boundary & Title Manager Chris Ferguson. The scholarship is intended for a non-traditional student taking necessary college credits to obtain qualifications for licensure as a Professional Land Surveyor in Missouri. This award is Katie's second survey-related scholarship won to-date.



Mike Flowers presenting the O. Dan Lashley Scholarship to Katie Jones (photo by Cody Norris)

The award is presented in memory of Orvis Daniel Lashley, PLS, a longtime surveyor with the Missouri Land Survey Program and past MSPS President. Dan was recognized statewide for his skill and knowledge of General Land Office survey retracement, his commitment to preserving the history of early surveyors, and being an ardent proponent of education for future surveyors. He was also a friend to all who had the pleasure of knowing him.

Many remember Dan taking over the role of “the Old Surveyor” from Norman Brown following Norman’s retirement, sharing spellbinding accounts of pioneer days measuring the frontier. Dan established the scholarship to celebrate his retirement after 32 years with the DNR Land Survey Program, and it was subsequently continued as a memorial scholarship after his untimely passing in March of 2008.

Katie will soon be taking her initial test to begin the path to licensure as a PLS. Since being on the Mark Twain, it’s certain she’ll become an excellent surveyor and a credit to Dan’s legacy. Be sure to congratulate Katie if you see her out surveying the Forest! 🌲

Best State Society Newsletter

National Society of Professional Surveys 2022 MSPS Excellence in Journalism Award

Missouri Society of Professional Surveyors *Missouri Surveyor* December 2021 Edition

Publisher, Sandy Boeckman

Editor, Donald Martin

“While I was honored to get the news of this recognition for MSPS and our newsletter, I was particularly proud that this award was bestowed for our 2021 December Edition. Representative of the content found in most issues of Missouri Surveyor, this issue marked the beginning of a new editorial focus. A deliberate effort was made to have our newsletter feature news geared specifically towards our primary audience – our member readers. This recognition affirms that focus. Also, the December 2021 issue was one in which MSPS members generously shared their time and effort by writing most of the content. That is the true strength of our newsletter; the MSPS members making it their forum. Those contributors should be recognized as the sources of success for Missouri Surveyor. Thank you each for helping to make Missouri Surveyor an award winner!”

- Donald Martin

Bob Anderson, Cover Photo

Brad McCloud, President’s Message

Larry Bollinger, Tee Off at 1:00 PM

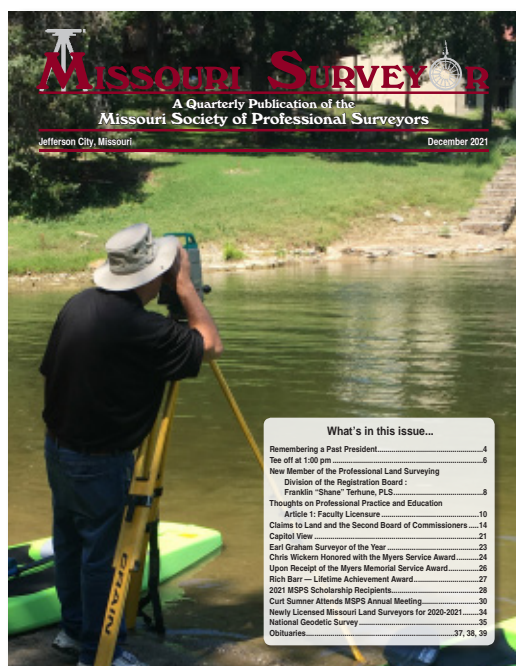
Steven E. Weible, Claims to Land and the Second Board of Commissioners

Sandy Boeckman/Abi Padgett, Thank You to the Exhibitors & Speakers

Chris Wickern, Upon Receipt of the Myers Memorial Service Award

Troy Hayes, Rich Barr — Lifetime Achievement Award

Donald Martin, Articles & Features 🇺🇸



Center of Population Monument Dedicated in Hartville

by Scott Faenger, PLS & Christopher B. Ferguson, PLS, CFedS, CFM



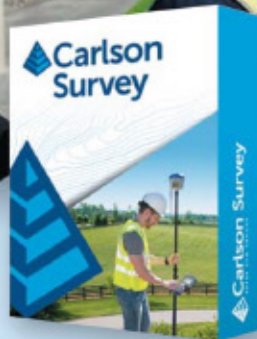
Missouri Department of Agriculture Land Survey Program staff worked together with officials from the Mark Twain National Forest and the Missouri Department of Transportation to assist the National Geodetic Survey with installation of the 2020 Census Center of Population Monument in the Hartville City Park on Sept. 21, 2022. Hartville is the Wright County seat.

The Center of Population location is determined by assuming all citizens who responded to the census weigh exactly the same and are distributed on a flat map of the United States. The point where the map would balance is the theoretical “center of population” (COP).

(continued on page 34)

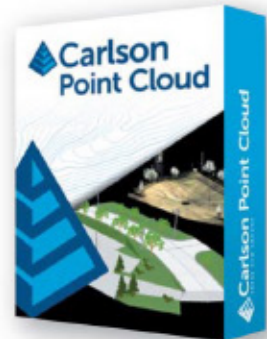
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Center of Population Monument Dedicated in Hartville *(continued)*

The COP has been calculated since the first government census in 1790, and every 10 years following. This marks the fifth time the COP has landed in Missouri, and has moved south and west across the state since 1980. The 2010 COP was in Plato, Missouri, in Texas County.

Because the exact position falls in a remote area, a commemorative monument is placed in the nearest town, which then holds the honor for the next 10 years. The monuments have become increasingly more substantial each Census, with the last two being 2 foot by 2 foot solid granite with a stainless steel cap marking the center, set several feet in the ground and encased in concrete. They are also usable reference points with precise latitude and longitude available through the NGS website.

If you want to make a day of visiting the Centers of Population in Missouri, the list of previous locations are as follows:

	<u>LAT.</u>	<u>LONG.</u>
2020 Census – Hartville, Wright County	N. 37°14'38.262"	E. 92°30'23.532"
2010 Census – Plato, Texas County	N. 37°30'12.082"	E. 92°13'23.996"
2000 Census – Edgar Springs, Phelps County	N. 37°42'32.040"	E. 91°53'03.253"
1990 Census – Steelville, Crawford County	N. 37°58'27.086"	E. 91°20'14.951"
1980 Census – Desoto, Jefferson County	N. 38°08'13.188"	E. 90°34'26.461"

Photos: Courtesy of Missouri Department of Agriculture



NGS Regional Geodetic Advisor Brian Ward (far left) joins surveyors from the Missouri Department of Agriculture Land Survey Program at the Center of Population monument; (l to r after Ward) Ron Heimbaugh, Jason Beasley, Scott Faenger, Justin Bowers, Jess Moss, Jamie Elliott.



Missouri Department of Agriculture Land Survey Program team members (l to r) Amy Forsythe, Scott Faenger, Jacque Walters and Jess Moss. 🇺🇸

“Riparian Boundaries for Missouri”

SECOND EDITION

Dr. Richard Elgin, PS, PE

SECOND EDITION ~ NOW AVAILABLE!!

The First Edition of “*Riparian Boundaries for Missouri*” is sold out. It was a hardbound edition and sold by MSPS and the Land Survey Program. The Second Edition is now available. It is identical to the first edition, however it is softbound and available through MSPS and now Amazon. “*Riparian Boundaries for Missouri*” is a complete synthesis of Missouri riparian and littoral boundaries. Much of the book is applicable to inland nontidal waters nationwide, but much is specific to Missouri. (Some aspects of riparian boundaries can be very state-specific.) The Chapters are: 1. Introduction and Some Preliminaries. 2. Definitions and Description of Selected Terms. 3. Title Aspects. 4. Surveying the Riparian Tract. 5. Missouri State and County Boundaries That are Riparian. The book has 308 pages, 12 figures, 26 tables, 2 appendices, an Annotated Bibliography and 9 example riparian boundary survey examples. Written by Dr. Richard Elgin, PS, PE who is uniquely qualified to write this book. Dick is a surveying practitioner, researcher, educator, author, and collector of early American surveying instruments. Semi-retired, he’s spent the last four years writing this much-needed book about our state’s riparian and littoral boundaries.

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“Riparian Boundaries for Missouri”

SECOND EDITION

Dr. Richard Elgin, PS, PE

Riparian Boundaries for Missouri is a manual that covers all aspects of riparian and littoral boundaries in Missouri. Much of the book is applicable to inland nontidal riparian and littoral waters, but it is written specifically for Missouri. (Some aspects of riparian boundaries can be very state-specific.) A complete synthesis on the subject, it is written for the Missouri Professional Surveyor, the student in a college-level course studying boundary control legal principles, and for the licensed Professional Surveyor in another state who seeks licensure in Missouri by comity. The book’s focus is the boundary surveyor, but it has also been written to be helpful to others in Missouri with an interest in riparian and littoral lands: Landowners, mappers, GIS professionals, title attorneys, real estate agents, state and federal agencies dealing with our state’s waters will find the manual useful.

Chapter 1 describes how riparian boundaries differ in many ways from their upland brethren...they move. How does one survey and then write a boundary description for a tract that changes shape as its riparian boundary moves? (There’s a way.) The term “Navigability” that means different things to different people in different contexts is discussed and clarified. **Chapter 2** defines and describes the terms used in riparian and littoral boundaries. Some of these terms have different meanings in *lex aquae* compared to a strict scientific setting. One needs to define the terms used to state the legal principles of riparian boundary location. **Chapter 3** describes the title aspects of riparian boundaries. How is title affected by river movements such as accretion, avulsion, erosion, re-emergence and reliction? What are the effects on title of artificial improvements that change a stream’s course? All these aspects (and more) are discussed in this chapter. **Chapter 4** provides recommendations for surveying the riparian tract. How does one construe a riparian tract that describes the lands as being “north of the river?” Where is the tract’s southerly boundary? How does one survey the thread or thalweg or ordinary low (or high) water line? Recommendations are also given (as well as examples) for preparing a boundary description of a riparian tract. All plats of survey of riparian or littoral tracts need surveyor’s notes that describe what the survey shows relative to the water boundary. Such example notes are provided in the manual. **Chapter 5** discusses the Missouri state boundaries that are riparian. Missouri has a river boundary with seven other states on four rivers. Each of these is unique and are discussed. The chapter also discusses Missouri’s county boundaries that are riparian and littoral. Appendix A gives Missouri statutes that apply to riparian/littoral issues. Appendix B is a set of test questions applicable to the manual’s subject. Included is an Annotated Bibliography on inland nontidal riparian and littoral writings. The manual is indexed.

About the Author

The book’s author is Dr. Richard L. Elgin, PS, PE. Dick is ideally suited to write this manual, being that rare Professional Surveyor with a PhD in Surveying (University of Arkansas, 1982); an entire professional career in surveying and mapping (raised in the business, then owner and president of a surveying-only firm in Rolla, MO for 22 years); a surveying educator (on the faculty an Missouri S&T for 33 years as both an Assistant Professor then Adjunct Professor); coauthor of “Legal Principles of Boundary Location for Arkansas” the “Sokkia Ephemeris” and “The U.S. Public Land Survey for Arkansas;” author of “The U.S. Public Land Survey System for Missouri” and “Riparian Boundaries for Arkansas” and “Shoulda Played the Flute...An Army Helicopter Pilot’s Year in Vietnam.” Dick has served on the Missouri Board for Architects, Professional Engineers, Professional Surveyors and Professional Landscape Architects. He is a Past President of MSPS, active in the Missouri S&T Alumni Association, active in Vietnam Veteran affairs, and is a member of both S&T’s and the University of Arkansas’ Academy of Civil Engineers. He rides a Moots bicycle and drives a perfectly restored 1976 Alfa Romeo GT 1600 Junior.

Celebrating the 50th Anniversary of the Brooks Act

by John Palatiello

On this day, October 27, in 1972, President Nixon signed into law legislation providing for qualifications based selection (QBS) of architecture, engineering, (A&E) and related services, including surveying and mapping. It was 50 years ago today the Brooks Act became law.

At the time of its enactment, the Brooks Act was a radical departure from the norm of lowest bid in Federal procurement. It set a precedent that enabled qualitative factors to become commonplace in various contemporary acquisition procedures. In other words, A&E was for past performance and best value before it was cool.

Enacted by Public Law 92-582, the Brooks Act was named for its author, then-Representative Jack Brooks (D-TX). Although agencies had used qualifications as an evaluation and selection factor, followed by negotiation of a fee that is “fair and reasonable to the government” for A&E services for more than a century, the legislation was necessary to codify the practice.



John Palatiello

“Ask 10 A&E firms to bid on the design of a particular facility and many agencies will take the easy way out and select the low bidder. Under such circumstances, we may end up with a technically capable architect or engineer, but one who, for lack of experience or because of a desire to stay within his bid reduces the time spent on field surveys or in the preparation of detailed drawings, or in providing inspection services. As a result, the government may have saved itself a half of one percent to the cost of construction, operation or maintenance,” said Senator Jennings Randolph (D-WV) on the Senate floor during the 1972 debate on the legislation that became the Brooks Act.

The “qualifications based selection” or “QBS” process is codified for Federal agencies in title 40 of the United States Code, section 1101 and implemented in the Federal Acquisition Regulation (FAR) at 48 CFR 36.6. Passed on a bipartisan basis and supported by lawmakers in both parties over the ensuing 50 years, the process is also recommended by the American Bar Association in its Model Procurement Code for State and Local Government, and has subsequently been adopted by almost every state in a “mini-Brooks Act”.

The law emphasizes an investment in quality and competence in A&E services, so the integrity of buildings, facilities and other government activities dependent on designs, drawings, surveys, and other related services could be relied upon during construction, operation, and maintenance over the life of such structures and program activities.

The law requires an agency’s public announcement of its requirements for professional A/E-related services, interested firms compete by submitting their qualifications, usually on a standard government form, SF 330, the agency evaluates the firms’ submittals and selects a short list of most qualified firms for an interview. Based on evaluations of the firms’ qualifications, experience, past performance and other factors, the agency determines which firm is the most qualified to meet the government’s requirements. The government prepares an independent estimate of the anticipated cost, and a negotiation is held between the government and the selected firm to arrive at a price that is fair and reasonable to the government. In the process, the government holds the cards. If a fair price cannot be negotiated, the government is free to terminate the negotiation and begin discussions with the second ranked firm.

It is rare that the United States suffers from faulty buildings. When such failures do occur, such as the 1978 implosion of the roof of the Hartford Civic Center or the 1981 collapse of the Hyatt Regency Kansas City skywalk, Congress investigated these incidents and issued a report on “Structural Failures in Public Facilities” in 1984. It found, “procurement practices that lead to or promote the selection of architects and engineers on a low bid basis should be changed to require prequalification of bidders with greater consideration given to prior related experience and past performance.” The chairman of the subcommittee conducting the study and publishing the report was then Rep. Al Gore, Jr. (D-TN). As President,

Ronald Reagan said at a ceremony recognizing design excellence in Federal buildings said, “Good design doesn’t cost money. Good design saves money, and you know how that warms my heart.”

When earthquakes, hurricanes, and other calamities impact foreign countries, the destruction to buildings too often results in tragic loss of life. In America, such instances are rare, due to strong building codes and excellence in A/E services employed through the QBS process. Non-construction related services also benefit from the emphasis on quality. A recent drowning in Loudoun County, Virginia was attributed to inaccurate and incomplete mapping use by the local 911 emergency response system. The Commonwealth of Virginia does not use its state QBS law for this mapping program.

The Brooks Act, licensing of design professionals, and strong building codes contribute to the fact that hurricanes and other natural disasters, while tragic, do not result in the property damage and loss of life in the United States that is experienced in most other countries.

When the landmark Competition in Contracting Act was enacted in 1984 in response to the scandals related to over-priced coffee pots and toilet seats bought by the Pentagon, Congress defined the QBS process as a competitive procedure in Federal law. During consideration of the original Brooks Act in 1972, Senator Edward Gurney (R-FL) explained “any Federal procurement officer ... will tell you that competition based on professional-technical qualifications is every bit as hot and demanding as competition based on price, perhaps more so.”

The famous showman, P.T. Barnum, is well known for saying, “There’s a sucker born every minute.” What is less known is that Barnum also observed, “The smartest way of deriving the greatest profit in the long run is to give people as much as possible for their money.” To the nineteenth century British author John Ruskin is attributed the observation, “It’s unwise to pay too much, but it’s worse to pay too little. When you pay too much, you lose a little money — that is all. When you pay too little, you sometimes lose everything, because the thing you bought was incapable of doing the thing it was bought to do. The common law of business balance prohibits paying a little and getting a lot — it can’t be done. If you deal with the lowest bidder, it is well to add something for the risk you run, and if you do that you will have enough to pay for something better.”

The Brooks Act saves money. There is no evidence that selecting architects, engineers, surveyors, or mapping professionals on the basis of qualifications, competence, experience, and past performance results in higher costs. Indeed, given that such services amount to less than 1/10th of 1 percent of the total life cycle cost of a structure or facility, but affect the operation and maintenance costs over the life of the facility, the research and data shows the investment in quality in design-related services saves money and human lives. A study conducted jointly by the University of Colorado and Georgia Institute of Technology drew from a database of approximately 200 public and private construction projects in 23 states, including transportation, water, commercial and industrial projects, ranging in size from relatively small projects to those costing hundreds of millions dollars. Its authors compared various procurement methods, including QBS, best value, and low-bid, with such factors as total project cost, projected life-cycle cost, construction schedule, and project quality outcome. Results showed that using QBS to procure the design component of a construction project “consistently meant lower overall construction costs, reduced change orders, better project results and more highly satisfied owners than in other procurement methods”.

The Brooks Act is a law that has worked for 50 years. It contributes to the public health, safety, and welfare, as well as is part of what makes the United States the envy of the world. 🇺🇸

John Palatiello is Administrator of the Council on Federal Procurement of Architectural & Engineering Services (COFPAES), a coalition of leading professional societies and trade associations in the design field and an association executive serving several organizations in the architecture, engineering, surveying, mapping, and geospatial community.



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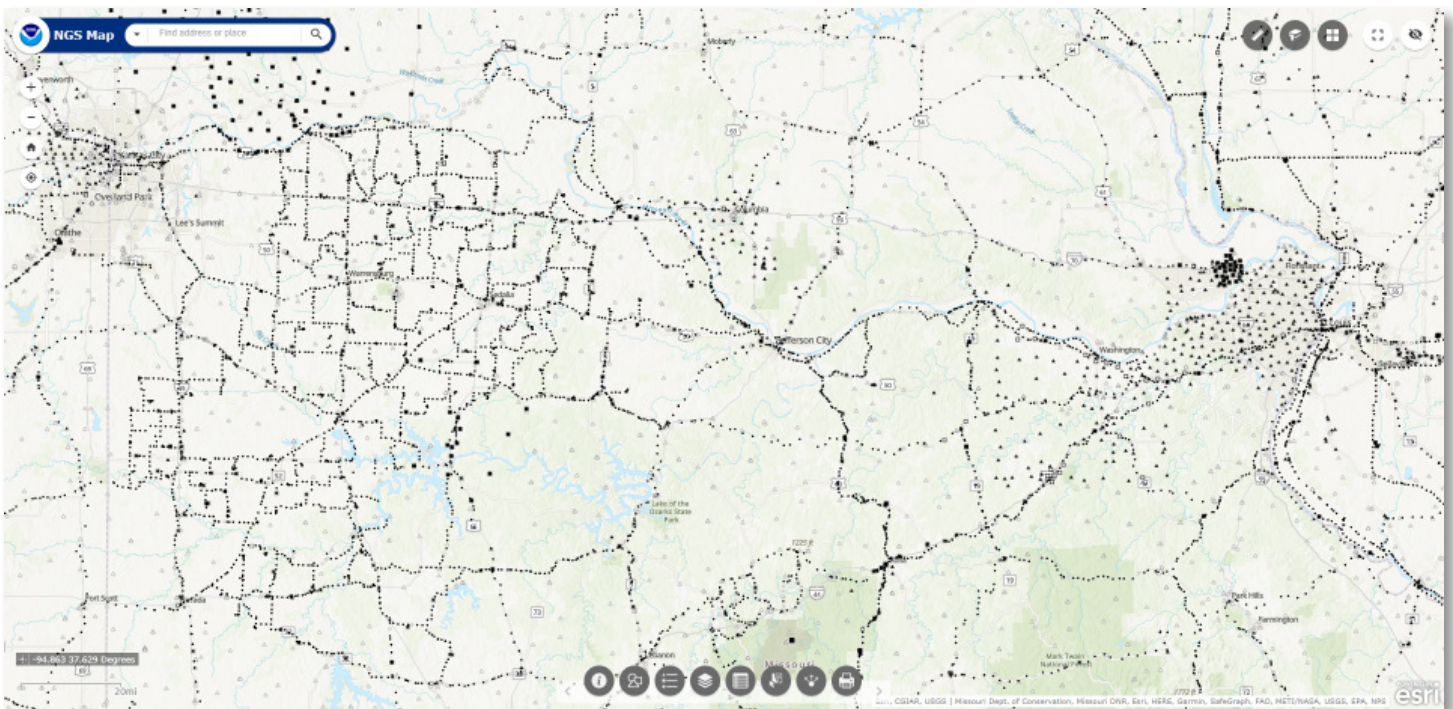
National Geodetic Survey

Positioning America for the Future

NGS Web Map Released for Public Use

October 28, 2022

The **NGS Web Map**, a free web map application, is now available to the public. The map allows users to explore multiple NGS data sets, including NGS Datasheets, Online Positioning User Service Shared Solutions, and the NOAA Continuously Operating References Stations Network. The application allows users to plot these data sets, view associated attributes, and filter data sets by their attributes. The application also includes features such as a search tool, a measure tool, multiple base maps, and a tool to select and export data. To learn more about the application or to view tutorials, visit the NGS Web Map landing page.



Screen capture of NGS Web Map covering central Missouri. Access this application at - https://geodesy.noaa.gov/datasheets/ngs_map/



NGS Participates in Surveying and Geomatics Conference

October 21, 2022

NGS made significant contributions to the **Utility Engineering & Surveying Institute's Surveying & Geomatics 2022** Conference in Lawrenceburg, Indiana. The five NGS attendees participated in the conference by providing a workshop and nine technical presentations, participating in two panel discussions, and giving an acceptance speech after receiving an award. Two NGS staff members were panelists on a discussion of the recently

(continued on page 42)

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NGS News & Events *(continued)*

published American Society of Civil Engineers manual of practice, “Surveying and Geomatics Engineering: Principles, Technologies, and Applications,” to which they both contributed as editors and authors. An NGS geodesist also received the American Society of Civil Engineers Surveying & Mapping Award for his work on the State Plane Coordinate System of 2022 and eliminating the U.S. survey foot.

NGS Collects Emergency Response Imagery for Hurricane Ian

October 14, 2022

From September 29 to October 3, NGS collected aerial images in the **aftermath of Hurricane Ian**. The crew flew more than 16,322 square kilometers during 54.6 hours and collected 13,172 images. Imagery was collected in specific areas identified by NOAA and assigned by the Federal Emergency Management Agency in coordination with impacted states and other federal agencies. NOAA’s aerial imagery aids safe navigation and captures damage to coastal areas caused by a storm. Aerial imagery is a crucial tool to determine the extent of damage inflicted by flooding, and to compare baseline coastal areas to assess damage to major ports and waterways, coastlines, critical infrastructure, and coastal communities. NGS delivers the imagery through this website that supports the general public needs as well as advanced applications. This imagery provides a cost-effective way to better understand the damage sustained to both property and the environment.

NGS Participates in International Surveyors Conference

October 7, 2022

Three NGS staff members participated in multiple events surrounding the **International Federation of Surveyors (FIG)** Congress on September 10–15 in Warsaw, Poland. NGS staff directly supported the Reference Frames in Practice (RFIP) group and the Young Surveyors Network (YSN) pre-event meetings as well as five other conference sessions during the week. The events also brought awareness of U.S. activities to modernize the National Spatial Reference System to the forefront of discussions—stimulating other nations to explore implementing the Global Geodetic Reference Frame.



For more about the FIG 2022 Congress - <https://www.fig.net/fig2022/>

NOAA and the Census Bureau Mark 2020 Center of Population

September 23, 2022

NGS and the Census Bureau dedicated a commemorative survey mark designating Hartville, Missouri, as the **2020 center of population**.

The center of population is where an imaginary, flat, weightless, and rigid map of the United States would balance perfectly if all residents were of equal weight. This place represents the average location of where people in the United States live. Based on the 2020 census data, Hartville, Missouri, is the town closest to that point.



“The 2020 center of population commemorative mark is a tribute to Hartville, the surveying community, and the science of geodesy,” said NGS Director Juliana Blackwell. “The commemorative mark represents the latest stop on the center of population trail, and its exact location and coordinates will be added into the National Spatial Reference System for use by surveyors, geocachers, and geospatial enthusiasts for decades to come.” 🇺🇸

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“How” you may ask? By sharing photos, stories and news with Missouri Surveyor! It is really that simple. Just as this edition’s cover features Missouri surveyors you and your work may be featured as well. All content is welcome! For the cover, high quality images in landscape format at an aspect-ratio comparable to 17”x11” work best; stories and articles merely need to be in Microsoft Word.



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