

MISSOURI SURVEYOR

A Quarterly Publication of the
Missouri Society of Professional Surveyors

Jefferson City, Missouri

June 2020



What's in this issue...

Re-emergence? Not in Missouri.....	4
Missouri Board Waiver of PDU Contact Hours.....	8
MSPS Scholarship Recipient Brayden Brincks.....	10
NGS News & Events.....	12
Silas Bent: Principa; Deputy Surveyor, Part Two ...	14
Illinois Surveyor & Mapping Technician Training...	18
Father and Son Surveyours, Greg and Nick Bowers	20
NSPS News & Events.....	32
Dennis Amsinger; Missouri Proclamation	35

CALENDAR OF EVENTS

2020

June 26, 2020

Education Workshop by Dick Elgin
Stoney Creek Hotel,
Independence, MO

August 5, 2020

Board Meeting
Lodge of Four Seasons,
Lake Ozark, MO

August 6-7, 2020

42nd Annual Spring Workshop
Lodge of Four Seasons,
Lake Ozark, MO

August 12-14, 2020

Review Course
Jefferson City, MO 65101

October 22-24, 2020

63rd Annual Meeting and Convention
Oasis Hotel and Convention Center,
Springfield, MO

December 5, 2020

Board Meeting
MSPS Office, Jefferson City, MO

Front: "The Corps of Engineers required easement locations for the rebuild of a breached levee along the Mississippi River near Ste. Genevieve. Gerald Bader was hired to do the job, utilizing USCE control points. With Ol' Man River rising, Bader navigates and probes his way to station SG01 under 44" of water."

Back: "Early summer rains send a stream over a low-water crossing. North Moreau Creek in Moniteau County."

Donald R. Martin, Editor



Notes from the Editor's Desk

Donald R. Martin



Greetings all and welcome to the June 2017 *Missouri Surveyor*. In this edition we proudly present more of that good ol' MSPS member-written, home-grown content! That's right. With exceptions made for the ever-important reports from the National Geodetic Survey and news releases from the National Society of Professional Surveyors, all of our features come from within the ranks of our Association. It makes Ol' pard Tripod, the three-legged ground hog tip his instrument man's backwards cap in tribute. Salute! Now, a pithy preview of the papers, pages and profiles populating the printed parables placed among the paid, promotional plugs for products our

perusers may purchase.

We kick things off as is our custom with a *President's Message* from Susanne Daniel. Our Prez has been busy recently with keeping the Board in-line and riding herd on legislative travails. Then we have a master work from our master scholar, Dick Elgin. He offers guidance in the unique riparian circumstance of tracts once lost due to erosion seemingly returned to existence by a river's reversal of direction. It is *Re-emergence? Not in Missouri*. In this piece, he steps readers through examples, legal citations and concepts in an understandable manner while even giving surveyors a battle-cry when confronting such cases – "Once riparian, always riparian." After that we bring a few critical announcements from the *Registration Board*. Hint; it wouldn't be 2020 without something about COVID19. Check that one out. Then comes the happy announcement of our Pirrie Memorial recipient in *Brayden Brincks of Rosendale is the MSPS Scholarship Recipient*. This is an impressive young man with a bright future ahead of him...in surveying!

Hopefully readers have been paying attention to the treasure of historic information that has graced our pages from Steve Weible. Steve has become a dependable presence within the pages of *Missouri Surveyor* known for bringing history alive. His tales from the surveying past in pre-statehood Missouri have in the past year included *Upper Louisiana in Transition*, *Claims to Land and the First Board of Commissioners* and *Antoine Soulard: Surveyor General for Upper Louisiana*. Now comes the second part of his report from our December 2019 edition, *Silas Bent: Principal Deputy Surveyor*. Weible leads readers on a journey back of more than 200 years to a time when surveyors filled project expectations with too little pay and too little time. It's is good things have improved in 200 years! What? Then we offer an article about a contemporary challenge for the surveying profession in finding our next generation. The MSPS Board recently looked across the Mississippi River to see an idea coming out of Illinois. It is introduced in *The Illinois Surveyor & Mapping Technician Training Program*. Next is the story of a surveyor and his son...or wait, it's a story about a surveyor and his father...hmm, it's kind of both. Find out for yourself in *Missouri Surveyor Profile: Father and Son Surveyors, Greg and Nick Bowers*. Finally, we keep caught up with surveying's big-picture in *NGS News & Events* along with *NSPS News & Views*.

With that, 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

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President's Message

Susanne Daniel



Wow, what a turn of events! I hope that we have all stayed healthy during this Corona Virus quarantine. Fortunately, most of us have been able to continue working but it is alarming how many businesses were not able to implement “work from home” measures and may not recover. I have gained an appreciation of my right to work and I will not take it for granted again.

Our legislators were able to return to work before the scheduled end of the session but there was just too much to do and very little time. Our bill to rename headquarters of the Land Survey Program “The Robert E. Myers Building” and our education bill became two measures in a Professional Registration omnibus bill. This omnibus bill, SB673, was introduced as a five page bill to permit licensing reciprocity for spouses of members of the military. That original bill was perfected and passed through to the House Committee on “Professional Registration and Licensing” prior to spring break. After the shutdown, SB673 gained the weight of more than two dozen amendments pertaining to professional registration. Representative Ross attached our education bill using Representative Korman’s 2016 bill with our revisions.

Committee and board members were given regular updates, but with such a short session bills were changing quickly and our version of SB673 still contained the 2016 text but without the changes. The bill summary didn’t match the bill text. This discrepancy caught the attention of several members and a flurry of emails and phone calls ensued. It appeared that candidates would be allowed to take the LSIT with 9 hours of surveying courses, and the LS exam with as little as one year of experience. Thankfully, Rep. Ross took time from his hectic final week to clarify. The first of our amendments added Bart’s language to the bill, the second corrected the 2016 language to reflect our 20 hours of coursework and return the experience to the pre-2006 level.

For years, MSPS had been trying to increase our education requirements in order to improve our pass rate on both the LSIT and the LS exams but our bills were being blocked. The chairman of the Professional Registration Committee was a proponent of using the “least restrictive type of occupational regulation in order to protect the public without imposing unreasonable burdens on the practitioner”. Rep. Korman’s bill was an attempt to finesse an education increase in by offering a short term compromise. We couldn’t relax the requirements until the education increase phased in.

In 2017, the atmosphere of the legislature was not favorable for introducing new licensing requirements. The consensus of the registration board and the legislative committee was that introducing new legislation could expose our current regulations to reduction or elimination. Our education bill was placed on a hold until conditions improved. The 2020 legislative session was our best opportunity, there just wasn’t enough time to pass the omnibus package.

The renaming of the Land Survey Building remains a priority but it will have to be taken up again next time around. The confusion with our bill made it clear that we are not in agreement how much experience is needed. The current requirement of four years has been a deterrent for those looking at surveying as a profession. The question for us to decide is whether the four years of experience is excessive and how can we draw quality candidates into our profession? 🇺🇸

Re-emergence? Not in Missouri

by Dr. Richard Elgin, PLS, PE

Re-emergence occurs when an entire tract is completely lost to erosion by an advancing river, the river occupying or sweeping through the tract, it being erased, title to the tract being completely extinguished. Subsequently, due to reversal in direction, the retreating river restores all or part of the area of the former parcel by accretion. Does the title to the “reemerged” land revert to the original owner of the tract, or, following the usual rules of accretion, does it accrete and inure to the benefit of the owner of what was a nonriparian, remote owner, now made riparian by the river’s movement?

If lands are completely washed away, the river advancing, sweeping through, reaching an adjoining, nonriparian owner, making it riparian, then reversing course, retreating, do the accretions belong to that owner, the eroded lands and title extinguished forever? If yes, then the saying is “once riparian, always riparian.”

The “Re-emergence” advocates would say that with the river’s retreat, the remote adjoining owner can only accrete as far as his former boundary line. After that as the lands of the former owner reappear, that person regains title. The remote owner is *ager limitatus*, his fields are limited, he cannot become, and then stay riparian. This theory also inherits a nightmare of title and practicality issues. If the title “reemerges,” the owner at the time of the loss regains title to the accreted lands within the boundaries of his former tract. What if the Re-emergence occurs after that person is deceased? Heirs and assigns? Who keeps track of these former owners and notifies them? Surprise, you’ve got land! To the nonriparian who became riparian: Don’t get used to the water, you may go back to being nonriparian. What if the area of the “lost tract,” now “made” by accretion, is then cut off by an avulsion. Does the lost tract revert to the original owner? Who keeps track of these river movements and title by Re-emergence possibilities? Who maps them? Can those original tract boundaries (or parts of them) be accurately located years later? Title and survey nightmares!

Fortunately Missouri does not subscribe to the Re-emergence theory. “Once riparian, always riparian” is the rule in our state and our courts have said so. Other states have embraced all or part of the Re-emergence theory.

In *Widdecombe v. Chiles*, 73 S.W. 444 (Mo. 1903), Chiles owned the aliquot south half of a section that was not riparian. Widdecombe, to the north, owned an 8.68-acre sliver, being a fractional part of the north half of the section, and being between the aliquot south half (Chiles) and the Missouri River. The river gradually moved southerly and completely “washed away all of the 8.68 acres...and a considerable part of the south half...the river [then] ceased encroaching, and began to gradually rebuild where it had washed away...[until] it had not only rebuilt where it had washed away, but had added more than 200 acres, which would have been in the north half of the section had it existed when the government survey was made in 1826.” Plaintiff Widdecombe claimed title to the “reemerged” 8.68 acres and the substantial accretions thereto. Said the court:

...the accretions belong to the man who owns the land against which the deposits were made, and that they do not belong to the man who owns land against which such deposits were not made, although they cover a space where his land was before the river washed it away.

Widdecombe’s title had been erased forever. Accretions formed “over” his lands belonged to Chiles.

Younts v. Crockett, 385 S.W.2d 928 (Ark. 1965) is an Arkansas case but the principle is the same, no Re-emergence. Crockett’s title was apparently very nearly extinguished by erosion. As platted, Crockett’s Lot 1 was a long narrow lot that extended from the west bank of the Arkansas River westerly to Younts’ Lot 5 on the west. Younts contended that the river had gradually moved westward to such an extent that Lot 1 had completely been eroded away. Younts further contended that the river had then moved back to the east, “so that the parcel now in dispute was recreated as an accretion to Lot 5.” The court said:

The question is essentially one of fact, the parties being substantially in agreement about the controlling rules of law. If the gradual westward movement of the river’s channel finally submerged Lot 1, so that

it was wholly engulfed by the shifting bed of the river, Lot 1 went out of existence. In that event the tract now in dispute would have reemerged as an accretion to Lot 5....On the other hand, if the westerly boundary of Lot 1 was submerged only by temporary overflows that did not last long enough to establish a new highwater mark as that term is defined in our cases, Lot 1 was not destroyed....As plaintiffs the appellants had the burden of proving that the channel of the river, as distinguished from its temporary overflow, crept so far westward that the boundary between the two lots was wholly submerged....this burden of proof was not sustained.

This is almost a textbook example of a tract being completely eroded away, the tract erased, title extinguished, then the river retreating and the tract being “covered” as an accretion to a formerly nonriparian tract. Here, the burden to show that the boundary between the state and Younts had been formed on Younts’ Lot 5 was not met. Crockett’s Lot 1 had not been extinguished.

Here’s an example to keep in mind: Say the meandering Missouri River has advanced well into tracts by erosion (perhaps thousands of feet), then retreated forming accretions. Those accretions are to and benefit the “last” upland owners touched or invaded by the river (perhaps formerly not riparian). The accretions, perhaps covering what could be vast areas, would be apportioned among the benefitted owners, the distribution and shape controlled by apportionment legal principles. Keep in mind that upon these vast areas, some extension or “reconstruction” of the USPLSS from adjoining uplands would not be the correct solution. Upon these accretions the USPLSS does not reappear.

With every accretion comes the question as to how the accreted lands should be apportioned among the riparian owners to whom the lands accrued. Are the accretions apportioned by a ratio of the “old” and “new” shorelines? By acreage? By extending upland boundary lines? With respect to the direction of the stream’s thread? These are good questions...to be answered in a future article.

Snippets

...although a tract of land may not originally have bordered on a river, being cut off therefrom by an intervening tract, yet if such intervening tract is washed away until the remoter tract borders on the river, the latter then becomes a riparian, and is entitled to the riparian right of accretions....

Crandall v. Allen
24 S.W.172 (Mo. 1893)

The only way that plaintiff could have regained what land he had lost by its being washed away, and its situs submerged by the waters of the river, was by gradual and imperceptible accretion, beginning at his line, at the water’s edge. In this way, he would become the owner, and entitled to the possession, of all land accreted to his original tract, or that portion of it when had not been washed away.

Cox v. Arnold
31 S.W.592 (Mo. 1895)

All original lines submerged by a navigable stream cease to exist, and thereafter the relationship of all riparian lands and the river must be determined from the then conditions (both as to the actual then riparian lands and the river frontage) and not from previous conditions or previous relationship of the riparian lands and the river....Although a particular tract of land may not be riparian, or have riparian rights, when acquired by the owner, yet if afterward the intervening land is cut away by the river (navigable stream), and the remoter tract thus becomes riparian, and later the river recedes, and accretions are added to this remote tract, such accretions belong to the remoter tract. And this is true, although the accretions may pass over the line and

(continued on next page)

Reemergence? Not in Missouri (continued)

the spot where the original riparian tract existed. In other words, accretions belong to the land in front of which it forms, and such is the law, although the then riparian tract was at a past date one not bordering the river bank.

Doebbeling v. Hall
274 S.W.1049 (Mo. 1925)

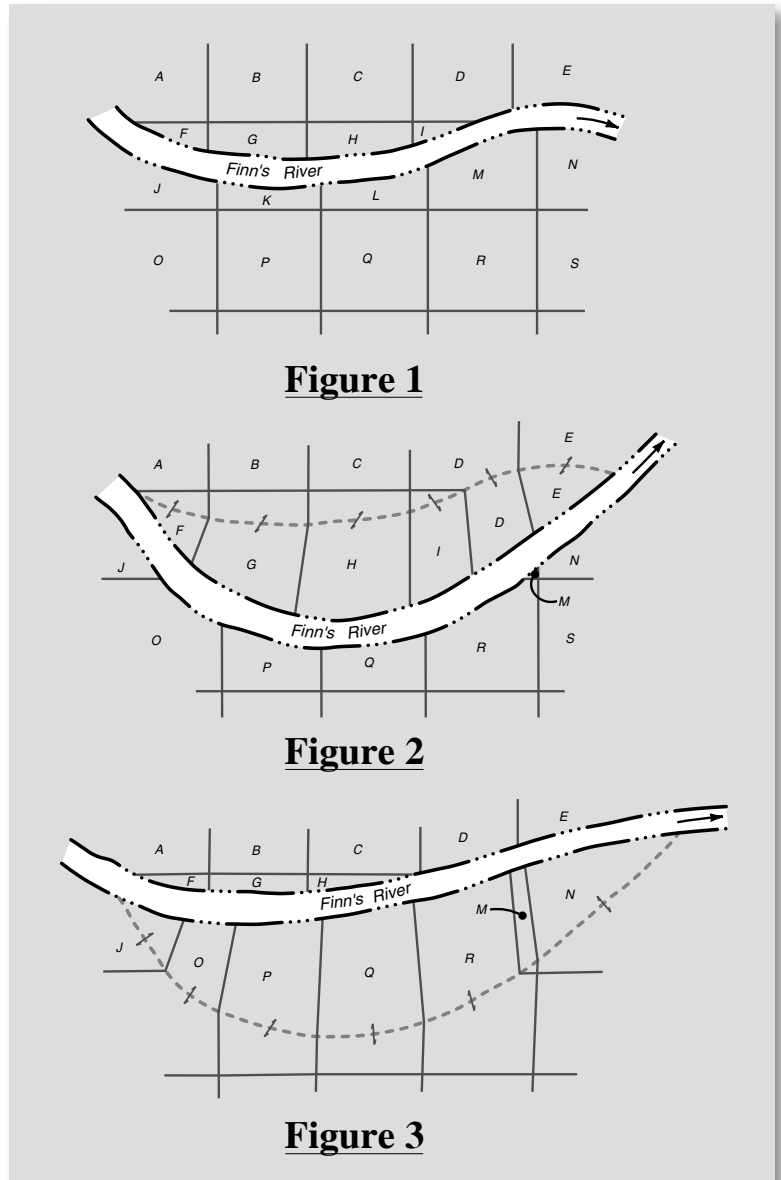
The Figures

The accompanying three figures illustrate the legal principles of erosion, accretion and Re-emergence. The figures illustrate Finn's River being navigable, the riparian boundary between the State of Missouri and the upland owners being the ordinary low water line.

Figure 1 shows the situation at the creation of the tracts. This could be at GLO, the tract letters representing sections.

In Figure 2, by erosion and accretion Finn's River has advanced southerly. Lands have accreted to Tracts F through I and D and E. In this example, the accretions have been apportioned by Proportionate Shoreline Method. Title to Tracts K and L (and nearly M) has been extinguished. Tracts O through R have become riparian. Figure represents the furthest southerly advance of Finn's River.

In Figure 3, by erosion and accretion Finn's River has retreated northerly. Lands have accreted to Tracts J and O through R, M and N. Title to Tracts K and L does not "reappear." On north side of the river, Tract I is extinguished and Tract C become riparian.



Dick Elgin is a surveying practitioner, author, researcher and educator. He wrote The U.S. Public Land Survey System for Missouri. This article is from a section in his forthcoming book on Missouri riparian boundaries. Semiretired, he works for Archer-Elgin Engineering, Surveying and Architecture in Rolla. 🇺🇸



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Important Message from the Missouri Board

Missouri DCI sent this bulletin at 05/05/2020 09:21 AM CDT

Please be advised that, due to the Covid-19 Pandemic, the Missouri Board has decided to issue a one-time waiver of the “contact” hour requirement for all Professional Land Surveyors licensed in Missouri. However, since there are many opportunities to obtain PDUs via online courses, all Missouri licensed PLSs will still be required to obtain a total of 20 PDUs before their next renewal. This waiver applies to the December 31, 2020 and December 31, 2021 renewal periods.

If you have any questions, please contact the Board office at (573)-751-0047 or moapeplspla@pr.pm.gov.



Coronavirus Updates

The Board is monitoring state and national developments on COVID-19. Licensees should monitor the Board's website for important updates (<https://pr.mo.gov/general-covid-19.asp>):

Beginning Monday, March 23, 2020, as a result of health and safety concerns due to the COVID-19 virus, the Division of Professional Registration and its boards, commissions, committees and offices will not accept walk-in visitors for all licensure matters. Please contact the Division of Professional Registration or your professional board office for instructions and information about all licensure matters.

Due to the COVID-19 pandemic currently affecting our State, the processing of U.S. Postal Service, FedEx, UPS, and all other forms/methods of mail service received by the Division of Professional Registration and its boards, commissions, committees and office, will be delayed for a period of two weeks. Timely mailing of any items will be based upon the postmarked date on the piece of mail. Correspondence through telephone and email will continue to be available. For the email address or telephone number of the board, commission, committee or office you wish to contact, please go to www.pr.mo.gov. While the boards, commissions, committees and offices will be able to renew and issue licenses, they will not issue a paper license at this time. You may verify your licensure status at www.pr.mo.gov. We appreciate your patience during this interim period.

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Brayden Brincks of Rosendale is the MSPS Scholarship Recipient

The Robert V. Pirrie Memorial Scholarship Awarded for 2020

by Donald Martin, PLS

The MSPS Scholarship Committee has proudly reported Brayden Brincks of Rosendale has been awarded the 2020 Robert V. Pirrie Memorial Scholarship. This year's selection was made easy for the committee due to the outstanding qualifications of young Mr. Brincks. Not only does Brayden desire a career in surveying and engineering, he is uniquely aware of the profession. In a letter which accompanies his scholarship application, he described what he characterized as critical services that surveyors provide such as location of property boundaries, data acquisition for GIS and infrastructure construction. Referring to surveyors as "...highly skilled professionals..." Brayden demonstrated an understanding of the academic needs and demands a surveying hopeful must overcome. He specifically addressed his intention to one day attain a surveying license and apply his skills and abilities to "... projects the state demands."

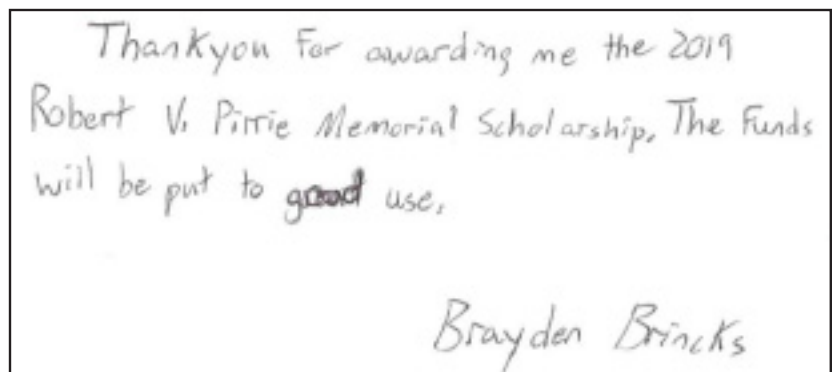
Glowingly endorsed by North Andrew High School Head Football Coach Dwayne Williams in a letter of recommendation, it was made clear this young man is the kind of candidate needed within the ranks of our profession. Described as possessing an "...unbelievable work ethic..." and being of the "highest character", the coach cites his *first-to-arrive, last-to-leave* presence in all of his undertakings. He is hardworking, respectful and reliable – and I'll leave it at that before you start flooding this young man with job offers!



Brayden Brincks has been accepted by Michigan Technological University, home to an ABET accredited program in Surveying Engineering. It is in this program that our scholar will work through a curriculum which will begin building the foundation of his surveying career. His studies will be augmented with critical *field experience* attained through summer internships with surveying firms.

Brayden is the son of Shanna and Dennis Brincks of Andrew County. A model student, young Brincks ranked *First* in his class while being a straight "A" student throughout all of his high school semesters! As an accomplished scholar, he was Captain of his high school's Academic Team. Also, as Captain of his football team he was All Conference on the grid iron and a State Qualifier in Track & Field. Between his high achieving activities, he participated in the Future Farmers of America and performed community service including two out-of-state mission trips.

Missouri Surveyor joins with our Scholarship Committee in congratulating Brayden Brincks as our 2020 Scholarship recipient. 🇺🇸





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NGS News & Events

NGS Launches New Survey Mark Recovery Page

Friday May 1, 2020

NGS has launched a new online form that allows for the submission of survey mark recoveries. A survey mark is any permanent mark or disk placed in the ground or attached to a permanent structure with known latitude, longitude, or height information. To maintain updated records on the more than 800,000 survey marks set around the United States and its territories, NGS encourages the public to submit current survey mark recovery information. The new survey mark recovery form is mobile friendly and takes advantage of smartphone features such as GPS and cameras. This new form will help users contribute more high-quality data to the NGS spatial reference database.

https://geodesy.noaa.gov/cgi-bin/mark_recovery_form.prl

Mark Recovery Form

Life Version:

Find marks near me

Marker ID

PID:

Designation:

Stamping:

Latitude:

Longitude:

Country:

State:

County:

(continued on page 28)



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Silas Bent: Principal Deputy Surveyor

Part Two

by Steven E. Weible, PLS, April 2020

Author's note: This article is a continuation of "Silas Bent: Principal Deputy Surveyor - Part One" (Missouri Surveyor, December 2019).

Silas Bent, having been appointed Principal Deputy Surveyor for the Territory of Louisiana, reported for duty at St. Louis on September 17, 1806 only to find himself in the difficult position of being compensated on the basis of orders for survey from a Board of Commissioners that had ceased to function. He had made several appeals to Jared Mansfield, Surveyor General of the United States, but after several months on the job without orders for survey or compensation, he was beginning to feel some desperation at not being able to provide for his family.

Relief finally came by way of a provision in the Act of March 3, 1807, chapter 36, *An Act respecting claims to land in the territories of Orleans and Louisiana* (U. S. Statutes at Large, Vol. 2, pg 440). Section nine of the act provided for an annual compensation of five hundred dollars in addition to the fees previously established. The annual compensation was effective from the time the principal deputy entered into the duties of the office.

Section seven of the act also provided that any claim to land that was approved by the board of commissioners that had not previously been surveyed was to be surveyed under the direction of the principal deputy surveyor at the expense of the claimants. The board of commissioners was also authorized to direct the principal deputy surveyor to re-survey any tract at the expense of the United States. General and particular plats were to be prepared and sent to the proper register or recorder and the Secretary of the Treasury.

A relieved Silas Bent wrote to Jared Mansfield on June 1, 1807, thanking him for his intervention and requesting more particular information and instructions as to how the surveys were to be conducted (*Territorial Papers*, Vol. 14, pg 127). Mansfield responded on July 20, 1807 with the following specifications (*Territorial Papers*, Vol. 14, pg 137):

1st I think that it would be well that Our General Instructions for marking of lines Be Observed by the Surveyors of private, tracts, particularly that they be blazed well, & a sufficient Number of Sight trees be taken; also that bearing trees be taken for the Corners, & that the Course & distance from the last Corner, in the Order of the surveying, be marked on one or more of the bearing trees, or some other tree near the Corner, instead of the Number of section Lot &c. as in the public Surveys.

2d The Field notes, & two plats of each survey, together with the Description of bearing trees quality of Land; &c. should be returned to Your office. The Contents of the tract ought to be calculated by the tables of Latitude & Defraction.

3— By General Plats, I understand a map of the Country embracing the Claims. The Use of this is to know how they lie in respect to One Another, & thereby to form a judgment of the intermediate Vacant Lands; I know no way while the Country Generally is not surveyed, whereby this can be done correctly. The Water Courses however & the Natural Marks must be your guide, as well as the estimated distances of One place from Another. The Common map of the Country will Also assist you.

4th Ritenhouse's Compass, or one which will enable the Surveyor to give the Courses According to the true Meridian should be used in private as well as the public surveys. All Courses should be put down according to the true Meridian, & the variation of the Compass, ought to be noted on the plat of each survey, as well as the average Variation in the General Plat.

Calvin Adams Portage des Sioux

Portage	Meaning	Tree	Inch diameter	Course	Angle	Inch distance	Portage
A	Black	11	Corner	-			D
B	"	9	4748	20			A
C	H Locust fork	14	"	"			B
D	Elm	6	4668	25			C
	"	5	4788	6			"
	"	14	4602	710			"
	"	9	4578	711			"

The Corn paid accepted to the true Meridian and the Chain to the Standard in the Office of the Surveyor General after ascertaining the point where Portage des Sioux was I commenced the survey as follows - July 1

July 29th 1807 began at a black Oak 11 inches d^r on the bank of the Mississippi and from which another Black Oak 9 inches d^r bears N 74 E 20

corn distance links down the bank bore & marked an ancient tree for B & C
 1398 200 on the bank across a curve in the bank of the Mississippi
 1668 469 on the bank to a forked honey locust each fork about 14 inches diameter marked for the SE corner of Calvin Adams claim some timber about this corner
 1308 300 to a small Pine 4 chains across
 7-20 to a black Oak 30 inches diameter in the trees - marked with 2
 30-... men low with Prairie - line set marked square - said he believed one of his lines would crop - and the second half mile to higher ground a kind of bank or ridge bounding the line to even handsome dry Prairie to another rise here set square said he believed another line of his would crop - set sure high and rich Prairie to rounded land a Prairie in line 10
 115-30 to a blackberry 24 inches d^r in line
 116-20 set Post a SW corner from which an Elm 6 inches d^r bears N 64 E 25 links another Elm 5 inches d^r by W. 6 links to an Elm in the line 10-10 to an Elm 14
 1248 set Post at the corner from which an Elm 14 inches d^r 1602 710 links another to face of a cornfield ¹¹⁶⁻²⁰ through town field 2802 to the large Calvin
 116-40 own low set Prairie to place of beginning

Silas Bent
S. Surveyor

Survey by Silas Bent, dated July 29, 1807, of a tract of land claimed by Calvin Adams at Portage des Sioux. This survey was made pursuant to an order of the Board of Commissioners, dated July 13, 1807. (Courtesy of the Missouri State Land Survey)

(continued on next page)

Silas Bent: Principal Deputy Surveyor *(continued)*

Meanwhile, Frederick Bates was appointed Recorder of Land Titles in place of James L. Donaldson and the Board of Commissioners reconvened as a Board of Revision. By May 1807 they had begun receiving testimony in support of land claims (Marshall, Vol. 1, pg 134). They would continue to receive testimony without rendering any decisions until the time for receiving evidence had expired. On December 8, 1808 they began examining the evidence and making decisions. Claims that were confirmed by the Board, but which had not yet been surveyed, were not issued a certificate until a survey could be completed (*Territorial Papers*, Vol. 14, pg 366).

Silas Bent reported to Jared Mansfield in letters, dated May 24, 1810 and July 30, 1810, that when the orders for survey began to come, the Commissioners of the Board of Revision expected the surveys to be executed immediately, giving a due date that did not allow enough time to perform the work or to make arrangements with a deputy. In addition, the tracts ordered to be surveyed were not grouped by locality, but were scattered across the territory. In cases where the claimants were responsible for payment, the claimants often refused to pay and some prevented the execution of the surveys by force. The Commissioners, nonetheless, insisted that the work be done as ordered and expressed the belief that payment should be pursued through the courts. Mr. Bent was also perplexed by orders for surveys in which the quantity of land to be confirmed was less than the quantity claimed. He was, apparently, expected to use his discretion in defining the tract to satisfy the quantity to be confirmed. Older claims were not to be disturbed, but many of the old lines had never actually been run and marked in the field. There existed no map or drawing indicating the position of any one claim relative to another, so that it often took more time to figure out where and how the tract was to be surveyed than the time it took to do the actual survey (*Territorial Papers*, Vol. 14, pg 405, 408, 423).

Mr. Bent had previously observed in a letter to Jared Mansfield, dated December 21, 1806, that the surveys in the former province of Upper Louisiana had “*been executed in the most careless manner, seldom more than half the lines run at all and where they are no corner established or bound defined – no field Notes taken and the courses all laid down 7° variant from what they were run ... and from the extraordinary forms & situations of the private Claims it will be very difficult ever to bring the surveys into any regularity*” (*Territorial Papers*, Vol. 14, pg 51).

Mr. Bent reported to Jared Mansfield in a letter, dated November 12, 1810, that he had tried to recruit deputies to assist with the surveys, but few were interested when prompt payment and a profit could not be assured. He also observed that it appeared the Commissioners of the Board of Revision had changed their approach and were now issuing certificates of confirmation without a survey. The confirmation certificates, however, noted that a survey was required before a patent could issue. It was almost certain then that there would be pressure from the claimants to have their claims surveyed so that they could get their patents (*Territorial Papers*, Vol. 14, pg 423).

Frederick Bates noted in an update to Secretary of the Treasury Albert Gallatin, dated June 20, 1811, that the Board of Revision had examined and approved “*many hundred confirmations and grants which include Orders of survey.*” The Board had been holding the orders so that they could deliver them all together to the principal deputy surveyor (Marshall, Vol. 2 pg 180). In a letter dated, September 5, 1811, Silas Bent reported to Jared Mansfield that the Commissioners of the Board of Revision had suspended requests for surveys as a result of the failure of Congress to provide compensation for the continuing work of the Board (*Territorial Papers*, Vol. 14, pg 470). Mr. Bent later noted in a letter to Mansfield, dated January 30, 1812, that he had made repeated requests to the Board of Revision for the orders of survey that had been made, but not yet delivered, so that he could execute the surveys in a more efficient manner and not have to repeatedly travel to the same area to survey individual tracts. His requests were denied, however, until October 1811, when the Clerk of the Board of Revision delivered “*6 or 8 hundred*” of the confirmation certificates with orders for a survey (*Territorial Papers*, Vol. 14, pg 515).



Plat of survey of 1390 Arpents 3 perches made for Auguste Chouteau by James Mackay on May 29, 1803. Text is French. (Courtesy of the Missouri State Archives, Missouri Digital Heritage)

(continued on next page)

The Illinois Surveyor & Mapping Technician Training Program

by Donald Martin, PLS

It is not news that the prevailing topic of concern within the surveying community is the recruitment of the next generation of surveyors. Indeed, countless articles and conference presentations speak to this matter. But action is news, and Illinois has some news. The Illinois Professional Land Surveyor Association (IPLSA), Workforce Development Task Force has announce the creation of an apprenticeship program for technicians, the *Surveyor and Mapping Technician Training Program*.

Rolled out at the IPLSA Annual Conference of 2020, the Workforce Development Task Force presented a panel discussion which was enthusiastically received by the rank-and-file present. The Task Force has been led by the Illinois NSPS Governor Tim Murphy who has summed up the matter as, “Illinois is facing the same challenge as other states; not enough technicians coming into the business.” Identified as a contributing problem is the lack of training and training time available for entry-level technicians. The efficiency rewards of surveying technologies have left most firms deploying one and two person crews, leaving little time for the time honored “OJT” (on-the-job training) with new crew members starting off by shadowing experienced mentors while serving as extra “hands” for basic tasks.

The need for technician training was highlighted at the Conference by polling of IPLSA members. Despite the presumed proliferation of one-man crews, members reported that 80% of them employ technicians. Fully 70% of members said they like to hire trained technicians, and 70% went on to proclaim they would hire trained technicians if they were available!

Another voice expressing the need for such a program has been Education Committee Chair Bill Fleming. Fleming and other IPLSA members have been very active in student outreach efforts to familiarize young people and educators about the career opportunities to be found in surveying. In so doing, he has identified school counselors as vital points of contact. Through counselors and their group, the Illinois School Counselor Association, IPLSA members have become established as reliable, informative and popular career fair participants. Bill reports that time and again, “students and parents ask if we have an apprenticeship program.” He believes having this program will be a recruiting tool.

The Program

The Surveyor and Mapping Technician Training Program is recognized by the US Department of Labor and complies to their standards. The *Program* provides apprentices with opportunities to obtain surveying knowledge and progressively advancing skills. For apprentices, the *Program* includes a work component and an educational component culminating in recognition as a qualified technician. For employers, the *Program* offers an actively working member of your team receiving relevant training which will qualify your business for tax credits.

Successful completion of the *Program* by an apprentice will take two years. Completion will bring with it further opportunities for career enhancements. Program completion will qualify apprentices to enroll for examination as a Certified Surveying Technician (CST) as administered by NSPS. Should the apprentice later choose to pursue the goal of becoming a Professional Land Surveyor, portions



Parkland College surveying skills lab.

of the *Program's* training may be converted to qualifying college credit applicable to the education requirements needed for licensure.

Compliant participation in the *Program* by an employer comes with an allowable tax credit for education/training expenses associated with qualifying apprentices. Employers may receive a credit of up to \$3,000 per apprentice against their income tax. Additional credit of up to \$1,500 for is available for apprentices and employers located in underserved areas.

Parkland College, Training Partner

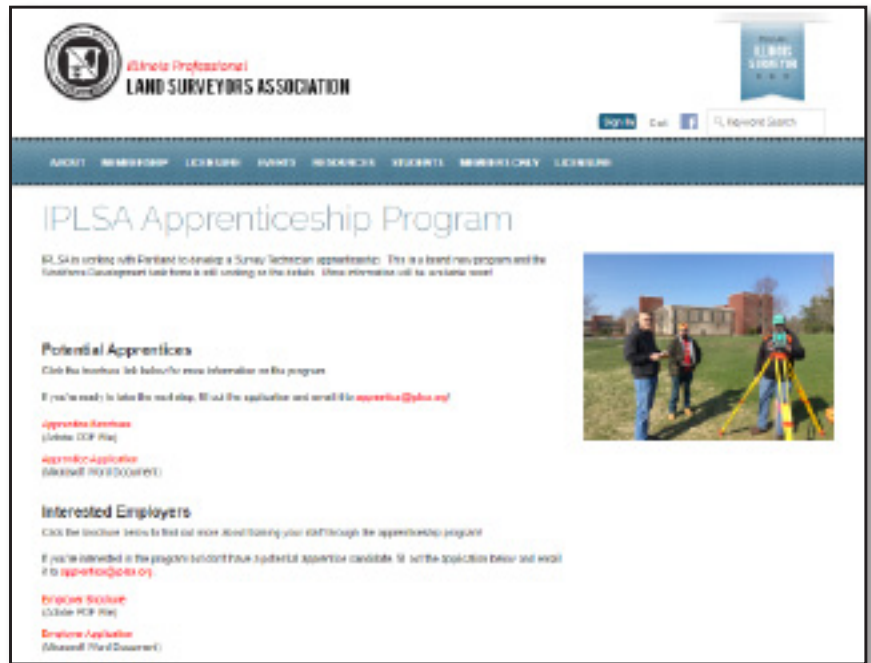
The two-year term of employment comes with required 144 hours per year of related instruction. The Department of Labor requires that this instruction be provided by a private provider of such training programs, an entity carrying out existing registered programs, or an institution of higher education providing a program that leads to an industry-recognized postsecondary credential or degree. In the case of the *Surveyor and Mapping Technician Training Program* it is the latter; Parkland College of Champaign.

Parkland is an incredibly well-suited partner for the *Program*. Acclaimed for the quality surveying education it offers, it is home of the renowned *Weekend Land Surveying Program* where students earn 24 credits in just 24 months by remote means of watching lectures and completing lessons online while receiving hands-on instruction one weekend per month on campus.

In December, 2019 the Parkland College Board of Trustees approved the school's new Land Surveying Technician certificate. The Land Surveying Technician certificate is a four-semester, part-time program designed for students currently employed in the surveying industry and accepted for entry into the apprenticeship *Program*. Available to apprentices in the *Program* will also be a one week "bootcamp". The bootcamp is something of a crash course providing entry grade lessons in instrument and equipment care and operation.

How to Participate

IPLSA is the first stop for those interested in the *Program* whether they hope to be an apprentice or a sponsoring employer. IPLSA has a new page at https://iplsa.org/IPLSA/Student/IPLSA_Apprenticeship_Program.aspx. There, you can find a direct contact email address for the *Program* (apprentice@iplsa.org).



Those interested in becoming an apprentice need to be aware that:

- This is a two-year program
- They will be working for an employer
- Both parties will be subject to a written, binding agreement
- Training lessons and lectures will be conducted online
- There will be 13 weekend labs requiring presence at the Parkland College campus

Employers considerations include:

- Employment of the apprentice at \$15/hour
- Payment of the apprentice's tuition of \$3000/program
- Commitment to a written, binding agreement
- Participation qualifies employers for up to \$3000/year in tax credits

All interested parties can find *Program* brochures on the IPLSA website. Your next step is to simply fill out an application and become part of the *Program*.

Programs such as this have positive social and economic impacts in Illinois. The *Program* benefits workers by improving their skills and growing their incomes. It also benefits employers by closing the skills gap by providing trained, productive workers. This *Program* also benefits the public by ensuring high-quality workers growing the spatial infrastructure of the state of Illinois. 🇺🇸

Originally appeared in the Illinois Surveyor, Spring 2020.

Missouri Surveyor Profile: Father and Son Surveyors, Greg and Nick Bowers

by Donald Martin, PLS

The Missouri surveying community has its fair share of *legacy surveyors*; those who have taken up the trade as a son or daughter of a fellow surveyor. Not uncommon in the world of America's small businesses, lineage often serves as a sustaining force for trade and commercial services in our land. And if small businesses are the backbone of this country, it is family businesses which are the backbone of small businesses. Well, such a legacy came alive when a *Missouri Surveyor* reader suggested a feature about MSPS member Greg Bowers. You see, to tell the "story" of Greg Bowers is to journey across generations...it is a tale of surveyors and sons.

Greg Bowers

Vice President & Regional Manager
Anderson Engineering, Inc., Joplin



Focus of surveying practice

As with most any firm undertaking the practices of surveying and engineering services, Greg Bowers and his team at Anderson Engineering are ready to address a broad range of client needs. They can meet most any surveying need clients may bring to them. But while managing the surveying activities for four of his firm's offices (Joplin and Springfield, Missouri; Rogersville, Arkansas; and Destin, Florida), Greg does recognize that most of their works serve commercial development, residential subdivisions and capitol improvements to public infrastructure. Thus, they do a lot of ALTA surveys, construction layout, block and lot marking, and full roadway/street design from boundary to topo to engineering of transportation corridors. They are vibrant participants in their local communities and economies.

Finding surveying as a career field

Greg's journey to being surveyor did not start out with his seeking a career field. The son of Jerrell Bowers, a land surveyor from Harrisonville, surveying was the family business. It was a part of their way of living. Like so many sons and daughters of surveyors, Greg started out as a part-time helper to dad. But uniquely, this younger Bower

never imagined a future as a surveyor himself! Envisioning a possible career in education, and being academically inclined towards studies not generally associated with technical endeavors, the younger Bowers went to Central Missouri University and graduated with a degree in English. Supporting himself through college by working in a cabinet maker's shop he was introduced to CAD. Still joining his father in surveying between semesters, Greg turned his CAD skills to the family's business and a match was found. A match Greg thought would be temporary.

As time passed, CAD-for-surveying engaged Bowers and his career had begun. This chronology of starting in the drafting and researching for projects may be a career progression opposite of most practitioners, but it was a perfect fit for Greg. He could apply his academic skills in research and analysis and connect a project's full scope into the succinct expression of their compiled works, the plat. A career was found, but more than that, a *legacy* was continued.

Most memorable survey

While surveyors often recall a project or projects that greatly impacted their career, for Greg's "most memorable" it wasn't a particular survey, it was a period of time. Having gone on to buy his father's business, Greg became the owner of Bowers Survey Company in Harrisonville. The firm flourished while serving the outer reaches of the Kansas City metropolitan area and the open spaces of rural western Missouri. Then 2008 happened. The economic forces of the *Great Recession* meant layoffs for most of his staff. His regrouping which followed found Bowers not guiding others in the services which "feed-the-monster" of small business continuity; it found him doing it all. From client contact, to research, to field work, he and the remaining core of the firm did it all. The days of being a bigger operation, on bigger projects, deriving bigger revenues were over. But introspectively, Greg found this very time to be one he recalls in which he was happily "most in control, and most comfortable." He poignantly looks on this most memorable time in surveying as when he made the least money in his work, but found the most enjoyment in his work.

(continued on after Spring Workshop)

Missouri ^{of} Society Professional Surveyors

SPRING WORKSHOP

August 6-7, 2020

LODGE OF THE FOUR SEASONS
LAKE OZARK, MO

"Land Survey Best Practices"

Topics Include

Succession Planning
Boundary Adjustments
Ethics
Business Practices
Insurance (E&O, Health, Equipment, Liability)
USPLS Lost Corners
Deed Lines
CPR Class
Taxes/Retirement



Thursday, August 6, 2020

- 7:00 am REGISTRATION and BREAKFAST BUFFET (included)
- 8:00 – 9:45 am **Description to Measurements; Measurements to Descriptions**
What is the purpose of a description? We will start there. What are the court's expectations when it comes to a description provided by a surveyor? How should surveyors determine if a description has "sufficiency?" How do they follow in the previous surveyors' footsteps? How do **you** leave adequate footsteps behind? We will discuss the pros and cons of adjusting field data before using them in your descriptions. If you do adjust, how should you adjust? Arbitrarily adjust? Use some rule like Compass, Transit or Least Squares? To do this properly we'll talk about what the process of adjusting is supposed to do. We'll also talk about how to 'adjust' the descriptions (when there's a flaw) to convert them to measurements. After all, a big part of a surveyor's job is to lay out the description on the ground.
Joseph V.R. Paiva, CEO, GeoLearn
- 9:45 – 10:15 am BREAK with EXHIBITORS
- 10:15 – 12 noon **Unusual But Common Surveyors' Errors and Blunders**
Best practices for land surveying on property boundaries also means having good skills at evaluating the way your equipment works, which by the way is also useful in other types of surveying. How well should your measurements compare to what a description calls for? What are you actually checking on a description when you do the survey? Does it matter that the specification for your equipment are better than the specifications of the original survey equipment? What if your equipment's specifications are worse? What if you don't know the relative capabilities of the equipment? Does it matter? We'll discuss some common errors in thinking about these matters and blunders that are sometimes made by making faulty assumptions. Remember an error is systematic or random. But a blunder is an outright MISTAKE!
Joseph V.R. Paiva, CEO, GeoLearn
- 12:00 – 1:00 pm LUNCH with EXHIBITORS (included)
- 1:00 – 2:30 pm **Business Entity and Employee Programs**
Should the new or veteran land surveyor operate as a Proprietorship, Partnership, Limited Partnership, General Corporation, S-Corporation or Limited Liability Company? What business set up is the least expensive and easiest to manage? Which entity offers the best tax opportunities? How can the owner of the business be in full control and allow the employees to be a part of the business without causing legal problems? Which entity is best to create an employee program that provides present benefits and future retirement benefits such as SEP IRA, ESOP (Employee Stock Option Plan)? Should the entity require a written employment agreement with an employee to secure a covenant not to compete?
Eric C. Harris, Harris & Harris, P.C.
- 2:30 – 3:00 pm BREAK with EXHIBITS
- 3:00 – 4:00 pm **Business Entity and Employee Programs continued**
- 4:00 – 5:30 pm **Succession Planning, Taxes, Retirement and More**
What does it look like for your family and business if you die? What does it look like if you want to retire? Do you have a successor in mind for your business? Do you know how much your business is worth? If you've answered I don't know to these questions, then you are not alone. Most business owners do not have an exit strategy or a succession plan and, in fact, do not know where to begin in creating one. As a business owner, it's easy to find yourself working in the business and not on your business. It's time to start finding an answer to these questions and proactively preparing for your future. When the time comes to leave your business, voluntarily or otherwise you want to receive the maximum amount of money in order to accomplish your personal, financial, income and estate planning goals. Succession planning can help you get there.
Terry Staley, CPA, CExP, MBA, Partner, MarksNelson LLC
- 5:30 pm RECEPTION WITH EXHIBITORS (complimentary beer, wine and hors' d'oeuvres)

Friday, August 7, 2020

- 7:00 am REGISTRATION and BREAKFAST BUFFET (included)
- 8:00 – 9:00 am **Ethics**
This session will focus on the concept of ethics in professional practice from a local, state, national, and international perspective and whether or not there is an effect way to enforce them.
Curtis W. “Curt” Sumner, NSPS Executive Director
- 9:00 – 10:00 am **Professional Liability, General Liability, Excess Liability...Oh My! What Does All of This Insurance Mean and Why Do I Need it?**
Getting your head around all of the ins and outs regarding insurance should be simple, right? With the countless different offerings from numerous carriers out there, how do you select the right program from the right broker? How do I know if I have the right coverage or the right carrier? What limits should I have? Which types of insurance are appropriate for my business? What about using personal cars for work? How about our drone usage? Every business is faced with questions about which coverage is appropriate, but especially when the business provides a specialty, professional service. In this presentation, Bob will be covering all this and more!
Bob Graves, Graves Insurance Co.
- 10:00 - 10:30 am BREAK with EXHIBITORS
- 10:30 – 11:30 am **GLO Field Notes**
This session will focus on ancillary notes, tree species, creek calls and line trees.
Ray L. Riggs, PLS, Florabama Geospatial Solutions
- 11:30 – 12:30 pm **Analysis and Interpretation of GLO Plats**
A look into GLO plats and other maps as they lead us to the location of original evidence. Learn to analyze physical feature calls, analyze random fallings, Analyze topography, single proportion vs. double proportion related to search positions and Did the GLO surveyor stub and not close?
Ralph L. Riggs, PLS, CFedS, President, Florabama Geospatial Solutions
- 12:30 – 1:00 pm LUNCH (included)
- 1:00 – 2:00 pm **Fractional and Anomalous Sections**
This session will focus on what constitutes a fractional section, what constitutes an anomalous section, proper methods for section subdivision by statute and following the plat.
Robert S. Shotts, PLA, PLS, CFedS, CFM, Robert S. Shotts, Inc.
- 2:00 – 2:15 pm BREAK
- 2:15 – 4:45 pm **CPR Class**
The Johnson County Ambulance District is offering a CPR and basic first aid awareness course that will focus on identifying immediate life threats and the quick response needed to save lives. The course will focus on recognition and community response including CPR, first aid, and AED use.
Ashlee Hollis, NREMT Paramedic, Education Coordinator, Johnson County Ambulance District

Registration

Name _____ RLS# _____

Firm _____

Address _____

City, State _____ Zip _____

Phone _____ Email _____

Registration Information

Registration fee is \$250 for MSPS Members and \$400 for Non-Members. A special rate of \$150 is available for non-licensed technicians (Associate Members of MSPS).

Registration fee plus 2020 Associate Membership is \$185. **Deadline for meeting registration is July 27, 2020.**

After this date, a 10% processing fee will be added to registration fees. The fee includes instructional materials, refreshment breaks, lunch on both days, cocktail reception and two breakfasts. To register, complete the registration form and mail it with payment to MSPS, 722 E. Capitol Avenue, Jefferson City, MO 65101.

Location and Lodging

The Lodge of Four Seasons, 315 Four Seasons Drive, Lake Ozark is the location for the Spring Workshop. A block of rooms has been reserved at the Lodge at a rate of \$126.00 for single or double occupancy. **Deadline for hotel reservation is July 16, 2020.** Make your reservation by calling the Lodge of Four Seasons at 888-265-5500 or with the **Group Direct Booking Link - No login/Attendee Code needed: <https://reservations.travelclick.com/17336?groupID=2811259>**

Continuing Education Credits

This course has been approved for 15 PDUs (7.5 each day) with the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors and Landscape Architects.

REGISTRATION FEES

MSPS Member (\$250)

Non-Member (\$400)

Technician (\$150)

Golf per person (\$85)

(Friday or Saturday option is available for \$125 per day for members, please indicate which day)

Golf Tournament

The MSPS PAC Fundraiser Golf Tournament will be held on Wednesday, August 5, 2020 at 1:00 pm at The Cove Golf Course and is \$85 per person. Two mulligans per person are included and prizes are given for first, second and third teams. Additionally there are prizes for long drive, closest to the pin and longest putt!

Cancellation Policy

MSPS reserves the right to cancel the program and return all fees in the event of insufficient registration. A participant may cancel a registration up to two weeks before the course date and receive a refund less a \$25 processing fee. **NO REFUNDS AFTER JULY 27, 2020.**

PAYMENT OPTIONS

Credit Card (Visa, MasterCard, Discover, American Express)

Check

Invoice my Firm

Credit Card # _____ Exp. Date _____

CVV Code _____ Amount Enclosed \$ _____

MSPS, 722 E. Capitol Avenue, Jefferson City, MO 65101

573-635-9446 ~ Fax: 573-635-7823 ~ msps@missourisurveyor.org ~ www.missourisurveyor.org

Return your registration form to MSPS before July 27, 2020

Significant influencers

Little in life is achieved without the guidance of others. For some it was a teacher, maybe a minister, possibly a parent. Most all surveyors have certain mentors whose steady hand and reasoned approach led them through their learning. For this son of a surveyor he of course marveled at the mastery of his father. He stood as a model surveyor for the younger Bowers, but there was also his father's good friend and family neighbor, Mr. Ray Frogge. Ray Frogge had his own career in surveying, and he was one given to reflection and serious understanding of that which must be done to execute a good job. He was also one of those good surveying hands who could reduce complexities into a simple, memorable *dictum*. There is one in particular that Greg Bowers remembers to this day and calls upon it in his own practice. As Ray would say it, "the worst decision by a man in the field, is better than the best decision by a man in the office."

Beyond surveying, Greg also benefited from the loving presence of his mother. A lady he describes as "...one of the hardest working people I have ever known", she gave even more than a mother's love. This surveyor found in this great woman the wonderful life lesson of accepting and caring without judgement. And this beloved mother's maternal integrity goes even further as she has been Greg's reliable and good counsel in all things, be *they* business or be *they* life.

Where to find future surveyors

Like all of those in this profession, Bowers is concerned with the aging of surveyors and the seemingly troublesome ability to bring new people into the trade. His thoughts on the matter may be less focused on "who" will be the next *gen*, but what we need in the next *gen*.

Bowers feels there is a place and need for people possessed of intellectual leanings aligned to liberal arts and other fields. As he learned from his own background as an English major in college and later earning a Masters of Business Administration, there are skills derived from other sources which would serve surveying well. Those learned in formal methods of research, analysis, interpretation and process have grounding in core traits for surveying. And an appreciation of applied history, the understanding of change over time with the mindfulness to not process the past in the terms of today. A guidance he reflects on regarding the importance of history and an assurance to work with quality is his own simple *mantra* of "someone will review my plats in 100 years and I want them to say 'I can count on this guy's stuff'".

Better than thinking about the issue of finding future surveyors, Greg upped the *ante* and provided one! His son, Nick Bowers is currently engaged as a surveying technician while obtaining the college credits required for licensure. As Greg did with Jerrell, Nick joined his father in the field as a youngster, and took to it like a natural. Greg describes himself as enjoying and being interested in surveying, but he sees his son as reflecting the grandfather more than the father. He proudly states Nick enjoys surveying, and he "is similar to my dad...he's intuitive [to surveying]".

Nick Bowers

Party Chief
Anderson Engineering, Inc.,
Harrisonville

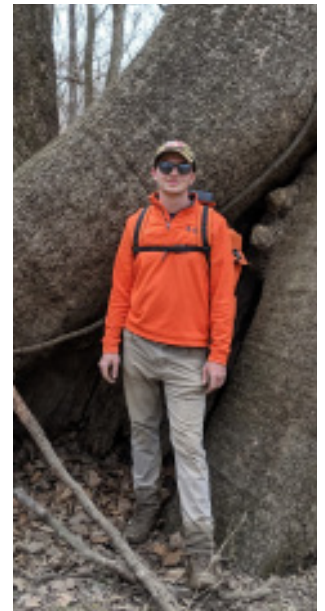
Focus of surveying practice

Nick Bowers actively works within multiple surveying disciplines on a variety of projects. Construction staking for property development and public works, ALTA's, right-of-way and topo's for highways, and best of all, rural property boundaries. Indeed, it is the main surveying function of property boundary surveys

which sparks Nick's interests and drives his desire to build a career in the field of his father and grandfather. The best part of his practice is found in being outdoors, and walking in the proverbial footprints of the GLO and preceding surveyors. It is augmented by the interesting research of historic documents, field books, GLO notes and township plats, old deeds and aerial photographs he pulls together and connects to locations on the land. Yes, it is an active surveying practice but more than that, it is an alignment of personal proclivities into professional pursuits.

What he likes about surveying

Nick is a self-described "outdoors kid" naturally drawn to wandering through field and forest. In surveying, he has found a way to both work and follow a passion. This is a surveyor definitely drawn to the field work. Beyond the field work, it is the application of history into a contemporary



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Father and Son Surveyors, Greg and Nick Bowers *(continued)*

undertaking. Young Mr. Bowers describes this as “getting in the mindset...placing myself in their world.” He time travels when delving into the records of the past and retracing the lines and corners of surveying predecessors. So effective are these journeys into the past that Nick identifies the methods, the ways of these ancients – even becoming accustomed to the particular original surveyors handwriting. It is the lure of the outdoors and the lure of the past which he likes about surveying.

Finding a surveying career, finding mentors

Nick Bowers is the third generation of his family engaged in the practice of surveying. Spending summers as a helper in the family business, he early on knew he had found a calling. A teenage Nick processed the experience as being “paid to walk in the woods.” Walking along behind his father, who had done the same in turn with his father, this young man is in the profound position of not only walking in the figurative footsteps of preceding surveyors, he has walked in the literal footsteps of surveyors before him as he once tried to keep up with father and grandfather.

Along the way, Nick also found guidance from a senior coworker, Mr. Ron Blacksmith. Like Ray Frogge was to Greg Bowers, Ron Blacksmith was to Nick. He was a well-versed, steady hand in surveying. What Nick fondly refers to as an “old school surveyor.” And what great lessons in surveying and life did he impart to younger Bowers? “He thickened my skin!”

Most memorable project

It is the memorable projects from which surveyors “take” the most. These are the ones which offer lessons, reinforce the surveyor’s connection to the profession, and make lasting impressions. So it is for Nick; he recalls two in particular –

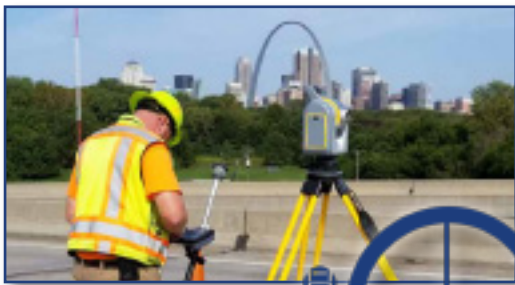
The first is in the category of lasting impressions. In northern Vernon County, very near the midway point between Joplin and Kansas City is the Four Points Conservation Area. A very large expanse of wetlands and bottomland forests, there are property lines coursing through marshes and along waterfowl pools. Anticipating this as his favorite kind of survey, a rural boundary, Nick’s enthusiasm was temped once he hit the ground and began surveying in swamps. This was no longer his simple and joyful being “paid to walk in the woods.” It was tough, and it toughened him...yet it

did not deter him. He was still to be a surveyor; it left an impression.

The other? Well, with elements of family *legacy* wrapped up in fundamental principles of monumenting corners to bounds and following in the steps of those who’ve surveyed before, this one reinforced Nick’s connection to the profession. In his hometown of Harrisonville, the town where his family had operated a surveying practice across a span of six decades. A 19 year-old Bowers went to retrace the multitude of boundaries surrounding a nearby community lake. There were many changes in boundary courses, and the rocky terrain was challenging to marking and monumenting. But the project was made easy by the good works of a previous surveyor; it was one of those times he was following in the footsteps of a master practitioner. It was quality work. As he enclosed the project’s bounds, having made that most tactile of historical journeys by finding and touching the old rock piles and pins of the original surveyor, young Nick completed one of his earliest projects. It had been one of the earliest projects of the original surveyor as well, a then young Jerrell Bowers, Nick’s grandfather.

A surveyor with a Shakespearian tale

Learning the story of this *legacy* surveyor cannot be complete without its own drama of competition, conflict and coming together. It is a story worthy of comparison to that of the Capulets and Montagues of old Verona. The setting? *Two households, both alike in dignity, In fair Harrisonville, where we lay our scene.* In Nick’s case, the households were those of the Bowers Surveying Company and their local competitor in business, REO Engineering and its owner, Roy Obermiller. You see, Mr. Obermiller offered surveying services too. Not necessarily a problem, just a natural bit of being territorial always cast its shadow upon the two households. Again, not necessarily a problem...until one day at the local high school. On that day, our future surveyor met and became smitten with the *Juliet* to his *Romeo*. Yes, that lousy son of a Bowers fell for, then one day married the dear daughter of the dastardly Obermiller. And after a few years of side-glances and angry scowls from his father-in-law, Nick has put old animosities to rest while offering his own solution to the shortage of future surveyors. Yes, young Mr. and Mrs. Bowers have melded the two mighty surveying households of fair Harrisonville with their own little boy. A continuation of generations and another *legacy surveyor*. 🇺🇸



SEILER

GEOSPATIAL
www.seilergeo.com

Providing high accuracy products, superior training, and support since 1945

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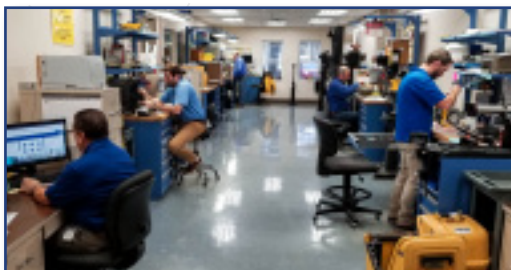
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Silas Bent: Principal Deputy Surveyor *(continued)*

As if Mr. Bent was not hindered enough in the prosecution of his duties, he and his deputies were subjected to unnecessary difficulties in trying to execute the orders given them. Some orders for survey specified that the survey was to be made “*conformable to the concession,*” which was written in the French or Spanish language. Neither a copy of the concession nor a translation of the text was provided, however. Other orders for survey called for a bound, such as a road or an older claim, but no information regarding the location of that specified bound was provided. Other orders of survey were limited by a condition that couldn’t be determined until after the survey was performed and some tracts could not even be located for lack of sufficient information from the Board of Revision. When Mr. Bent or his deputies requested more specific direction from the Board as to how a tract was to be surveyed, the Commissioners refused to provide further direction, stating that their orders were as complete as they were required to be. Requests made to the Board, the Recorder of Land Titles, the Clerk of the Board or the translator for translated copies of needed information from records within their possession were all denied. They did not consider themselves obligated to provide copies or translations, since no provision existed for their compensation. In some instances, the claimants, at their own expense, were able to provide the needed copies or translations so that the survey could be completed (*Territorial Papers*, Vol. 14, pg 508, 514, 515).

Once the Board of Revision had completed its work in January 1812 and submitted the transcripts and reports, it appears that no more surveys were attempted as a result of the lack of access to the appropriate information. Secretary Gallatin notified Frederick Bates, the recorder of land titles, on April 18, 1812 that he would not issue any more patents for approved land claims until the surveys were completed. Without the surveys, the tracts could not be definitively located, so Mr. Gallatin wanted the principal deputy surveyor to survey all of the tracts, connecting them relative to one another (*Territorial Papers*, Vol. 14, pg 546).

Congress addressed the quandary of the principal deputy surveyor in his need for access to information by inserting an appropriate provision in the Act of June 13, 1812, chapter 99, *An Act making further provision for settling the claims to land in the territory of Missouri* (U. S. Statutes at Large, Vol. 2, pg 748)(the Territory of Louisiana had been renamed the Territory of Missouri by the Act of June 4, 1812, chapter 95, U. S. Statutes at Large, Vol. 2, pg 743). Section six of the act directed the recorder of land titles to provide the principal deputy surveyor free access to the records in his office and copies or extracts of anything relating to land claims that the surveyor may need to complete the work required of him. The recorder of land titles was allowed twenty-five cents for the description of each tract provided to the principal deputy surveyor.

Section three of this act approved several classes of claims that were determined by the Board of Revision to have merit, but which had not satisfied the strict requirements of the previous legislation. Section five of the act specified that these new confirmations were to be surveyed along with those claims already approved by the Board of Revision that had not yet been surveyed. Also authorized to be surveyed were a sufficient number of townships so as to encompass all of the private claims. Upon completion of the surveys, a “general and connected plat” was to be prepared, showing the relative position of all of the tracts directed to be surveyed.

The amount of survey work for which the principal deputy surveyor was now responsible continued to grow with the passage of the Act of March 3, 1813, chapter 44, *An Act allowing further time for delivering the evidence in support of claims to land in the territory of Missouri, and for regulating the donation grants therein* (U. S. Statutes at Large, Vol. 2, pg 812). Section five of the act directed the principal deputy surveyor to survey or cause to be surveyed a tract of 640 acres for each claim that had been confirmed on the basis of settlement right for a quantity less than 640 acres. In cases where competing claims did not permit a full 640 acres to each claimant, the principal deputy surveyor was to determine an equitable division of the land.



Survey by Silas Bent or one of his deputies, dated November 29, 1809, of the tract of land claimed by Auguste Chouteau. This survey was made pursuant to an order of the Board of Commissioners, dated October 26, 1809. The claim was approved by the Board of Commissioners on June 7, 1810 for 1031 acres, based on this survey. (Courtesy of the Missouri State Land Survey)

(continued on next page)

Silas Bent: Principal Deputy Surveyor *(continued)*

If the task had been daunting before, it had now become quite monumental for Silas Bent. The problem remained that there was, as yet, no framework in the Territory of Missouri to which the surveys could be referenced. The Spanish had conceded lands without a plan, allowing the petitioner to choose where his tract was to be located and how it was oriented. The result was a hodgepodge of disconnected clusters of tracts of land scattered over an extensive area. The only sensible solution would be to survey the public lands at the same time as the confirmed private claims. The Act of June 13, 1812, chapter 99, authorized townships to be surveyed, but how and where should these commence? There were many details that needed to be decided and it would take a considerable amount of time to accomplish all that had been ordered (*Territorial Papers*, Vol. 14, pg 681).

In addition to his duties as principal deputy surveyor, Silas Bent had taken on other responsibilities that would now make it difficult for him to participate directly in the surveys to be performed. He had been appointed 1st Justice of the Courts of Quarter Sessions and Common Pleas for the district of St. Louis on June 14, 1807 (Marshall, Vol. 1, pg 321) and was reappointed on September 2, 1811 (Marshall, Vol. 2, pg 193). On January 5, 1811 he was appointed Auditor of territorial accounts for the Territory of Louisiana (Marshall, Vol. 2, pg 190) and, apparently, also served as a District Auditor. On February 18, 1813 he was appointed a Judge of the Superior Court of the Territory of Missouri by the President of the United. 🇺🇸

States, James Madison (*Territorial Papers*, Vol. 14, pg 626, 631).

In November 1813 Silas Bent gladly relinquished the burden of Principal Deputy Surveyor to his successor, William Rector (*Territorial Papers*, Vol. 14, pg 707, 709).

SOURCES

Marshall, Thomas Maitland, *The Life and Papers of Frederick Bates*, Missouri Historical Society, 1926

American State Papers: Public Lands (ASP:PL)

The Territorial Papers of the United States, compiled by Clarence Edwin Carter, 1948

U. S. Statutes at Large

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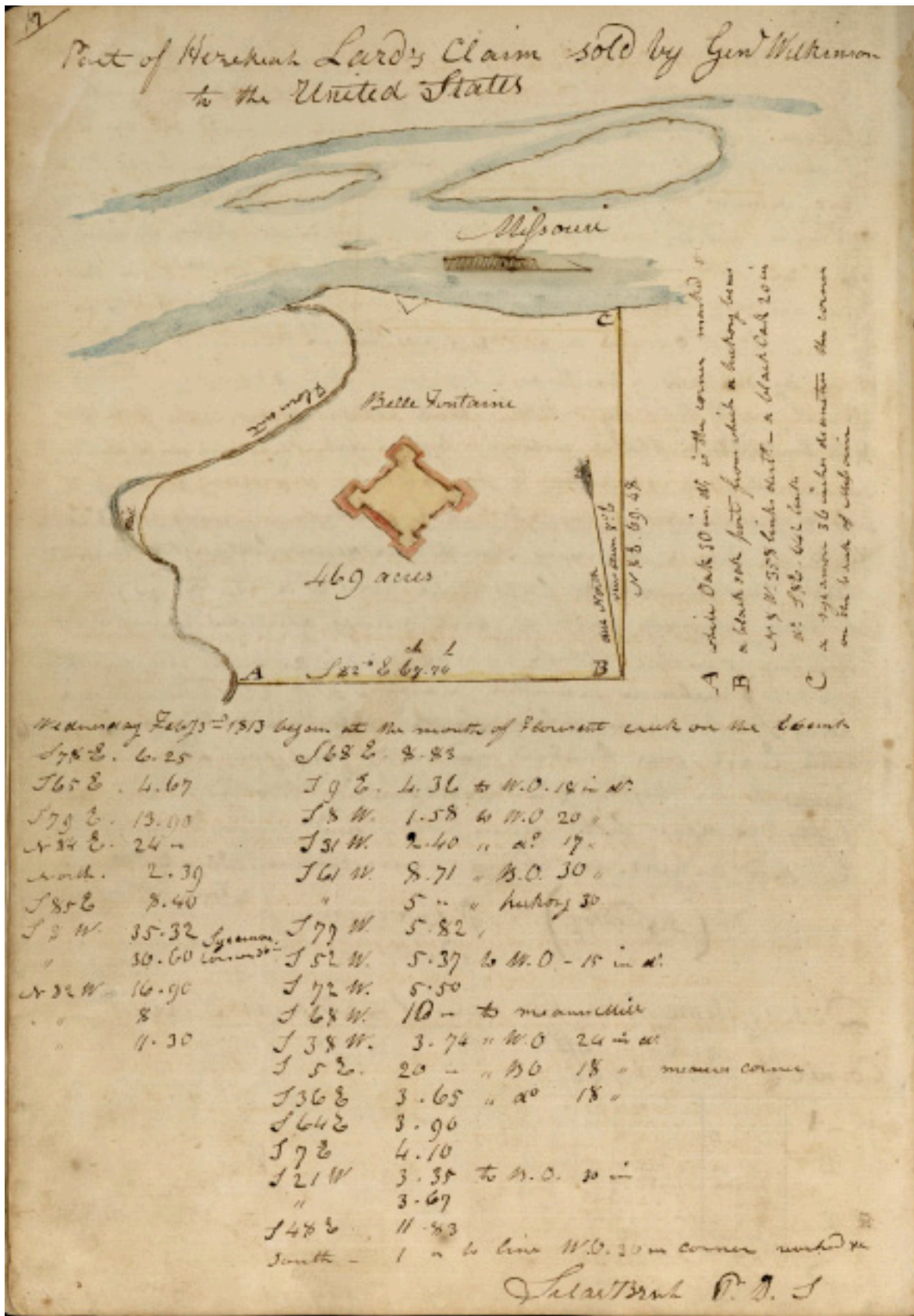
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Survey by Silas Bent, dated February 3, 1813, of Fort Belle Fontaine, the location of the U.S. military encampment. (Courtesy of the Missouri State Land Survey)

NGS News & Events *(continued)*

NGS Imagery Used in National Geographic Educational Resources

Friday April 17, 2020



NGS's emergency response imagery, collected after Hurricane Michael, is being used in educational resources for National Geographic. NGS collected the imagery for a variety of uses, including recovery strategies, search-and-rescue efforts, damage assessments, and hazard identifications. In the National Geographic course, students use pre- and post-hurricane imagery to compare the damage done by the hurricane in Mexico Beach, Florida. The STEM-based course is designed for students in grades 6 through 12.

NGS Participates in White House Interagency Working Group

Friday, March 6, 2020

NGS Chief Geodesist Dan Roman, PhD, represented the Department of Commerce and NOAA in an **Interagency Working Group (IWG)** organized by the National Science and Technology Council. This IWG was created in response to Executive Order 13905 (Strengthening National Resilience Through Responsible Use of Positioning, Navigation, and Timing Services); it focuses on improving the resilience of position, navigation, and timing services. NGS maintains the Continuously Operating Reference Station Network, which relies inherently on Global Navigation Satellite Systems (GNSS) services. Any disruption or manipulation of GNSS has the potential to adversely affect the national and economic security of the United States. The IWG will coordinate a national plan and leverage ongoing initiatives to research, develop, and test positioning, navigation, and timing services that are independent of the GNSS.



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 **Presidential Document**

Strengthening National Resilience Through Responsible Use of Positioning, Navigation, and Timing Services

NGS Marks 40 Years of Crowdsourced Data Collection

Friday, February 28, 2020

NGS is celebrating 40 years as a pioneer in the field of crowdsourced data collection. In 1980, NGS published the first NGS Bluebook, establishing procedures for the public to send geodetic survey data to NGS for quality assurance inspection and analysis. Today, all it takes is a smartphone to submit updates to NGS records with new photos and upgraded directions, maps, and mark descriptions. As part of a 21st-century approach to crowdsourcing, a more user-friendly, streamlined, and efficient data ingestion program, called the Online Positioning User Service, provides access to NGS's robust analysis and review workflows. In addition, the **GPS on Bench Marks program** uses online maps and progress dashboards to facilitate gathering and applying geodetic data for the benefit of the nation.

NOAA Joins Positioning, Navigation, and Timing Executive Committee

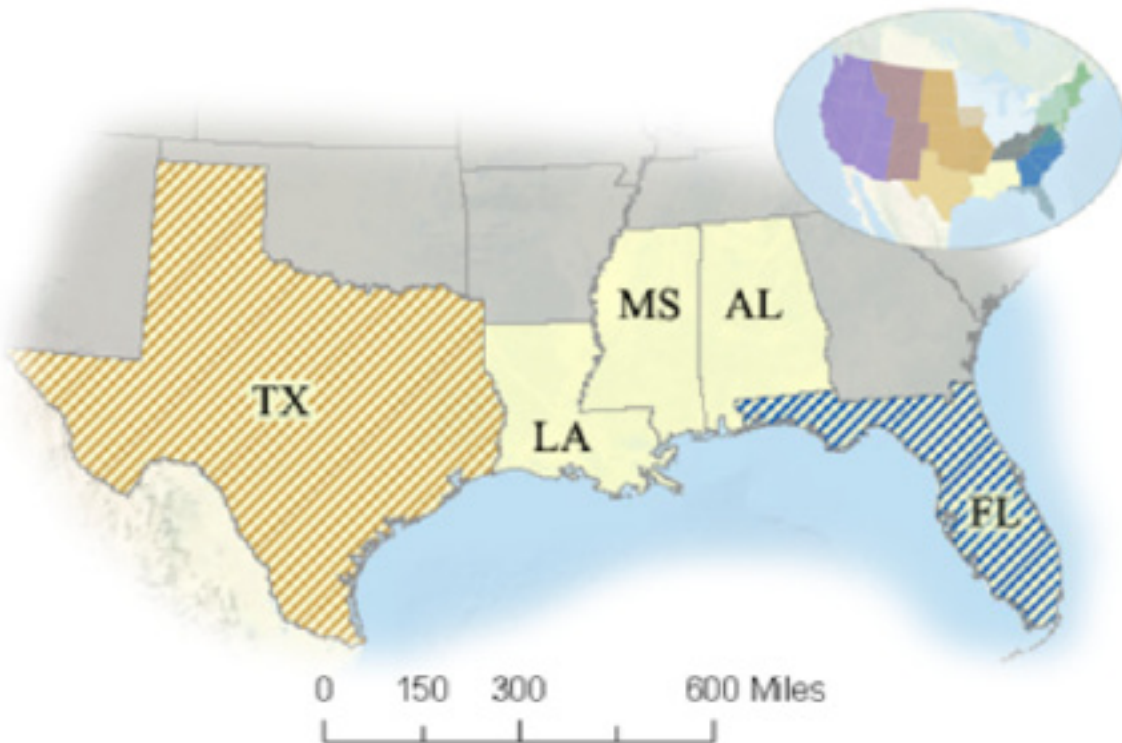
Friday, February 21, 2020

NGS Acting Director Brad Kearse and Chief Geodesist Dan Roman briefed Deputy NOAA Administrator RDML Tim Gallaudet and NOS Acting Assistant Administrator Nicole LeBoeuf on NOS Positioning, Navigation, and Timing (PNT) activities. A **presidential executive order** on PNT was issued that day, and this presentation covered salient talking points for improving the resilience of positioning and navigation for users offshore and throughout the United States. As a result of this increased awareness, RDML Gallaudet will be joining the Space-Based PNT National Executive Committee, and will serve as the primary lead for NOAA. This improved coordination will further enhance NOAA's PNT activities.

NGS Meets with Gulf Coast Grant Partners

Friday, February 14, 2020

At the end of January, NGS senior leadership met with grant partners in the Gulf Coast to discuss national priorities for geodetic research and the NGS vision for growing the community of practice in geodesy. Grantees participating in the meeting included the University of Southern Mississippi, Louisiana State University, Texas A&M University-Corpus Christi, University of Florida, and the Alabama Department of Transportation. NGS took this opportunity to discuss geodetic and remote sensing research interests for the Nation and the Gulf of Mexico. The partners presented on their own cutting-edge applications of geodesy and demonstrated a crowd-sourced application for envisioning Gulf-coast geographic data. The exchange of ideas resulted in more than a dozen new opportunities for future research and plans to engage more youth and the public-at-large in the field of geographic positioning.



(continued on next page)

NGS News & Events *(continued)*

NGS Updates Positioning Coordinates after Puerto Rico Earthquake

Friday, February 7, 2020

NGS monitors a national network of Continuously Operating Reference Stations (CORS) that ultimately feeds into the International Terrestrial Reference Frame, which provides coordinates for the world's navigation systems. After an earthquake in Puerto Rico in early January 2020, NGS noticed a shift in the position of several CORS. Station PRGY, the station closest to the earthquake, had moved about 5.6 centimeters northwest. NGS was able to quickly update the positions of the Puerto Rico reference stations most affected by the earthquake and make the information available online for users to access more accurate data.

NGS Completes Site Survey to Improve Precise Reference Frame

Friday, January 31, 2020

NGS field staff conducted a geodetic local site survey at the National Radio Astronomy Observatory, which is located below the Mauna Kea volcano in Hawaii. The site is particularly important to the **International Earth Rotation and Reference System Service (IERS)** both because of its remote location in the Pacific Ocean and because of the two space geodesy systems at the site - a Very Long Baseline Array antenna station and a Continuously Operating Reference Station that receives data from the Global Navigation Satellite System. IERS uses data from local site surveys, along with satellite observations, to improve the International Terrestrial Reference Frame, which provides the coordinates for the world's navigation systems. 🇺🇸



Aerial view of Mauna Kea. Richard Wainscoat/Gemini Observatory/AURA/NSF



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NEWS & VIEWS

National Society of Professional Surveyors

NSPS Officers Installed During Annual NSPS General Membership Virtual (GoToWebinar) Meeting NSPS, April 22, 2020

NSPS Officers began their 2020 terms in an installation ceremony during the annual NSPS General Membership meeting on April 17, 2020. The President, President-Elect, and Past President serve one-year terms. The Secretary and Treasurer will serve the second year of a two-year term. The installation was conducted by NSPS Executive Director Curt Sumner.

National Society of Professional Surveyors
Press Release

NSPS is proud to announce the 2020-21 Officers

During the April 17, 2020 NSPS Annual General Membership meeting (held via a virtual meeting platform) NSPS Executive Director Curtis Sumner installed officers for their respective terms.

			
Mark Sargent President	Tim Burch President Elect	Amanda Allred Vice President	Lisa Van Horn Past President

Treasurer, Robert Miller and Secretary, Craig Amey will serve the final year of their 2-year term.

		
Robert Miller Treasurer		Craig Amey Secretary

(continued on page 34)

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NSPS News & Views (continued)

Awards Presented During NSPS Board of Directors Virtual (GoToMeeting) Session NSPS, April 22, 2020

During the 2020 Spring NSPS Board of Directors meeting Presidential Citations and recognition awards were presented as follows:

- Presidential Citations** – Debra Byrd, Rich Vannozzi, and the leadership team of the NSPS Young Surveyors Network
- Ricky Brooks – Dedicated Service to CST**
5 consecutive years of **service as NSPS Director** – Henry Kuehlem (TX)
- Key Director** - Fall 2019 (as voted on by fellow Directors) – Bart Crattie (TN)
- Lisa Van Horn for her **dedicated service to NSPS as President** 2019-2020

NSPS Foundation Announces 2020 Scholarship Winners NSPS, April 22, 2020

Thank you to all the donors of scholarships issued through the NSPS Foundation. Without your support it would not be possible to provide assistance to a number of deserving students. Donors include: American Association of Geodetic Surveying; National Society of Professional Surveyors; New Jersey Society of Professional Land Surveyors; West Virginia Society of Professional Surveyors; Geographic and Land Information Society; Berntsen International Inc.; Schonstedt Instrument Company; Public Land Survey System Foundation; Loving Foundation; and various other funds set up through the NSPS Foundation. 🇺🇸

NSPS FOUNDATION ANNOUNCES THE 2020 SCHOLARSHIP WINNERS

NISPLS SCHOLARSHIP James Groves Pittsburg State University	 NETTE DRACUP SCHOLARSHIP AND GLIS SCHOLARSHIP Ashish Pandey Nichols State	NSPS SCHOLARSHIP Taylor Rife Oregon Institute of Technology
SLOVAC SCHOLARSHIP Jennifer Toranzo University of Maine	NSPS BOARD OF DIRECTORS SCHOLARSHIP Mario Sarno Ferris State University	LOVING SCHOLARSHIP Trevise Hidyfield Ferris State University
CONGRATULATIONS TO ALL OF THE SCHOLARSHIP WINNERS 2020 Scholarship information will be posted on the NSPS website in the Fall 2020		 DUFF 4-YEAR SCHOLARSHIP Kirk Reichling Idaho State University

NSPS FOUNDATION ANNOUNCES THE 2020 SCHOLARSHIP WINNERS

AGS GRADUATE FELLOWSHIP Jensen DeGrade Texas A & M University	 WALTER ROBILLARD SCHOLARSHIP Jeddiah Lewis Ferris State University	AGS DRACUP SCHOLARSHIP Alberto Lemos California State University - Fresno
WVSIS SCHOLARSHIP Kaden Stoffer Fairmont State University	BERNTSEN SCHOLARSHIP Zachary Habelch Northeast WI Technical College	NETTE DRACUP SCHOLARSHIP Aydin Pader Ferris State University
SCHONSTEDT SCHOLARSHIP Jesse McDevitt University of Maine	 BERNTSEN INTERNATIONAL SCHOLARSHIP Sarah Walker Great Basin College	

Surveyors Have Their Own Kind of Immortality

by Karen Craigo, *Marshfield Mail*, May 27, 2020

That's what Don Mayhew, Missouri Representative for District 121, told a gathering Friday in rural Marshfield.

The occasion was a retirement celebration for Webster County Surveyor Dennis Amsinger. Mayhew, a surveyor himself, clearly regards surveying as a higher calling, and he saluted Amsinger with a reminder of this fact.

"Whenever our surveys are used, they're known by our name, and that goes on forever," he said.



Dennis Amsinger (second from left) and his family hosted Representatives Rob Ross and Don Mayhew as friends and colleagues gathered in honor of the Missouri House of Representatives proclamation recognizing the career and celebrating the retirement of Mr. Amsinger.

Mayhew was one of three surveyors in the Missouri House of Representatives to sign a proclamation in honor of Amsinger's 43-year career. One of the other House surveyors, Robert Ross of District 142, was present for Friday's celebration, held at Amsinger's home. Rocky Miller of District 124 was not present.

The proclamation was presented by Representative John Black of Amsinger's home District 137. Hannah Kelly, of Webster County's other district, 141, was also on hand.

Surveying is a proud profession. America's most famous surveyor was our first president, George Washington, but other noteworthy names include Daniel Boone, Thomas Jefferson, Henry David Thoreau, Abraham Lincoln, William Clark and Meriwether Lewis.

Amsinger is in good company. With his name on 43 years' worth of surveys, he's also in permanent company. In investigating a piece of property in the U.S., it's possible to pull up hundreds of years' worth of surveys, and today we rely on markers first set generations ago. Amsinger's surveys are every bit as historic.



Dennis Amsinger, Missouri LS# 2077, Webster County Surveyor and proprietor of Amsinger Surveying, Inc.

(continued on next page)

Surveyors Have Their Own Kind of Immortality *(continued)*

“We have our own kind of immortality. No other county official has that,” Mayhew said. “Though we might be able to follow in Dennis’ footsteps, we’ll never be able to fill them.”

Amsinger’s friends and family members listened to Mayhew’s words from the house’s deck and yard, and they applauded as Amsinger was presented with his framed proclamation with his dog curled at his feet.

Amsinger is in ill health, and it was clear that the gathering meant a lot to him. “It’s been an honor to work with every one of you guys over the years,” he told his professional associates, including county leaders and others. “I appreciate what everyone’s done. ... It’s been a great time, and I’ve enjoyed every bit of it.”

Amsinger told the assembled guests that he loved them all, and in one voice they answered: “Love you, too.”

Paul Ipock, presiding member of the Webster County Commission, spoke up to say that Amsinger was always on hand and always ready to serve.

“I don’t know how many times I said, ‘Dennis, we need help. We kind of needed it yesterday. The day before would be even better,’” Ipock remembered. “It was done by the end of the day.”

John Fogelsong of D.D. Hamilton Title Co. spoke up, too, to remark on Amsinger’s professionalism. “Whenever you have a Dennis Amsinger survey, everything fits like pieces of a puzzle,” he said. “Those stakes will always be found, and those surveys will always fit together perfectly.”

It was high praise from someone in a good position to know.

Amsinger reflected that everything we do is our choice, and he has loved all of his choices. “I can walk across probably every one of those properties and tell you just about all the names, just because I’ve had the honor of doing all of this surveying,” he reflected.

When one sits back and calculates how many steps Amsinger must have taken in his 43 years of surveying work, the math feels astonishing. It’s easy to picture him tromping up and down hills and through marshes and pastures to get the measurement or place the mark.

And we can picture him, too, climbing that last and highest hill, flag in hand, heading toward immortality. 🇺🇸

Printed with approval of The Marshfield Mail.



Missouri Society of Professional Surveyors

Surveyor's Review Course

August 12-14, 2020
Best Western Capital Inn, Jefferson City

PROGRAM

Wednesday, August 12 ~ 1:00 - 6:00 pm

Surveying Math (*Bring your NCEES-approved calculator*)

- Calculator Use & Basic algebra
- Trigonometry and Geometry
- Traverse Calculations and Coordinate Geometry
- Surveying Math Applications

Thursday, August 13 ~ 8:00 am - 5:30 pm

Surveying Fundamentals

- Errors Analysis & State Plane Coordinates
- Route Surveys, GPS & GIS
- Exam Preparation, Legal Principles & Definitions

Friday, August 14 ~ 8:00 am - 3:30 pm

Missouri Practice

- Missouri Standards & Board Rules
- Missouri GLO System, Resurveys on Missouri's GLO system (RSMO Chapter 60)
- Other Missouri Statutes, Riparian Boundaries

This course is appropriate for those who will be taking any part of the surveying licensing exams, or for those already licensed and wish to review surveying topics and receive PDUs.

INSTRUCTORS

Dr. Dick Elgin, PLS, PE, works for Archer-Elgin Surveying and Engineering, LLC (Rolla). He authored "The U.S. Public Land Survey System for Missouri." **Mike Flowers**, PLS, is the former Missouri State Land Surveyor. He is a former member of the Missouri Board of Architects, Professional Engineers, Professional Surveyors and Landscape Architects. **Dr. Joseph Paiva**, PLS, is a geomatics and business development expert and a former university educator, who is now CEO and Principal of GeoLearn (www.geo-learn.com), an online education company specializing in courses for professionals and technicians in the geospatial industry. All are well known surveying professionals. Joe Paiva helped found the Review Course and for years all three have previously taught parts of it.

This course has been approved for continuing education credits from the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors and Landscape Architects for the following hours:

Wednesday — 5.0 PDUs

Thursday — 8.5 PDUs

Friday — 6.5 PDUs

Note: If you are currently licensed in Missouri, all 6.5 PDU's on Friday are applicable for the 2 hour PDU requirement for license renewal per 20 CSR 2030-8.020 (Missouri Standards and Statutes).

COURSE FEE SCHEDULE

(Please check appropriate boxes)

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<input type="checkbox"/> All Three Days	\$900	\$1,000
<input type="checkbox"/> Wednesday Only	\$250	\$250
<input type="checkbox"/> Thursday Only	\$500	\$500
<input type="checkbox"/> Friday Only	\$450	\$450

Missouri Society of
Professional Surveyors

Surveyor's Review Course

August 12-14, 2020
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LOCATION AND LODGING

A block of rooms has been reserved at the Best Western Capital Inn in Jefferson City, Missouri, at a rate of \$101.69 plus applicable taxes excluding blackout dates for single king or double queen occupancy which includes a Full Hot Breakfast each morning. **Deadline for reservation is July 25, 2020.** Make your reservation by calling 573-635-4175 and refer to "MSPS rate" when reserving your room.

CANCELLATION POLICY

MSPS reserve the right to cancel the program and return all fees in the event of insufficient registration. A participant may cancel a registration up to two weeks before the course date and receive a full refund. **NO REFUNDS will be given after August 1, 2020.**

Review Course Registration

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Total Amount: \$ _____

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Phone: 573-635-9446 ~ Fax: 573-635-7823 ~ Email: mmps@missourisurveyor.org

Registration Deadline: August 1, 2020

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