

# MISSOURI SURVEYOR

A Quarterly Publication of the  
Missouri Society of Professional Surveyors

Jefferson City, Missouri

June 2025



LOUIS

MAP

of the location of the

**CITY LIMITS**

ESTABLISHED BY THE CITY CHARTER OF 1876,  
from Stone No 1 to Stone No 27 inclusive,  
IN ACCORDANCE WITH A RE-SURVEY MADE BY  
**THOMAS FEATHERSON**

UNDER THE DIRECTION OF THE STREET COMMISSIONER  
DURING  
THE YEARS 1878 AND 1879.



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Scale: 200 feet to the inch.

*All dimensions represented on this map with  
an "r" attached are derived from record.*

## CALENDAR OF EVENTS

**2025**

**July 11, 2025**

Zoom Call, Board Meeting  
MSPS Office, Jefferson City, MO

**August 11-13, 2025**

Review Course, Missouri S & T  
Rolla, MO

**October 2-4, 2025**

68th Annual Meeting and Convention  
Stoney Creek Conference Center,  
Independence, MO

**December 5, 2025**

Zoom Call, Board Meeting  
MSPS Office, Jefferson City, MO

**April 30 - May 1, 2026**

48th Annual Spring Workshop  
Lodge of Four Seasons, Lake Ozark, MO

**October 1-3, 2026**

69th Annual Meeting and Convention  
Oasis Hotel, Springfield, MO

**Front Cover:** MAP of the loca-  
tion of the city limits established by  
the City Charter of 1876.

*(Full article on page 19)*

Chris Ferguson, Editor  
Austin DeSain, Editor



### Notes from Editor Ferguson's Desk

*Chris Ferguson, Vice-President, Editor*

Here's hoping everyone is having a busy and productive (and profitable!) Spring. Last winter was certainly one for the books, with much of the best boundary and topo surveying season lost under the snow and ice.

Meanwhile, Austin and I have been learning the ropes and hope to continue putting out the same high-quality newsletter that Editor Emeritus Don Martin and the late John Holleck so diligently produced for many years. With that in mind, we've added some features to this edition we hope you find both informative and entertaining.

One of the questions I had as a new member in MARLS (for those who remember MSPS that far back) was just exactly what all did they do between Annual Meetings and Spring Workshops? If any of you have similar thoughts, maybe some of that will be answered in the feature labeled "Local News."

We also wanted to highlight what our Lobbyist, Lynne Schlosser does on the Society's behalf along with celebrating having two Professional Land Surveyors in the State Legislature. It's been a while since we've had more than one among us working at the Capitol. Both Representatives Mark Nolte and Don Mayhew find time to introduce new bills related to land surveying along with their busy statehouse schedules.

All that and much more is contained here, and I hope all of you find it worthwhile reading and perhaps even consider sending in items of interest yourselves! It doesn't have to be a long-winded article (that is of course welcome too), just a picture and caption of something unique you find while out on the jobsite could be in the next *Missouri Surveyor*! 🇲🇴

*Chris*



### Notes from Editor DeSain's Desk

*B. Austin DeSain, P.L.S., Director, Editor*

It has been another busy quarter surveyors, with the backlog of work from the first quarter continuing to pile up as the rain and snow have pushed schedules into weekends and long days. How can you be busy if the crew isn't working (The office PLS usually hears from people who don't know the business)? Well, believe it or not surveyors do more than walk through the woods and enjoy the natural scenery all the time. At the time of this newsletter, the projects are starting to see some sunlight for more than a few days in a row. Soon we'll be into full, hot summer days.

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# THE MISSOURI SURVEYOR

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## President's Message

**Chuck Quinby, PLS**



Just as National Surveyors Week began, my wife and I returned to Gwanak-gu, South Korea to visit family. Gwanak-gu is a district in Seoul and has a population of around 500,000 and covers an area of 29.57 square kilometers (11.42 square miles). In comparison St. Louis has a population of roughly 301,578 in an area of 61.74 square miles. This bustling urban district is renowned for its vibrant academic atmosphere, thanks to the presence of Seoul National University. The university attracts students from all

over the country and the world, adding a dynamic and youthful energy to the area. Additionally, Gwanak-gu is known for its beautiful natural landscapes, including the scenic Gwanaksan Mountain, which offers residents and visitors alike a respite from the fast-paced city life with its numerous hiking trails and stunning views.

Imagine surveying in this city. Vehicle traffic isn't the only thing you need to worry about. Foot traffic is a major problem also. Cars, trucks, delivery scooters and people are everywhere. In the streets, alleys and even on the sidewalks. A single station set-up requires three crew members to guard the instrument and another to protect the man at the rod and keep the line of site open for the shot.

I witnessed a scanning crew on the sidewalk near the edge of a busy street. There were three crew members dressed in level 3 safety vests, high visibility hats and what looked like wing walker flashlights in hand to protect the instrument from anything that would bump it or take it out (people, vehicles or whatever). Their set-ups were close together to ensure overlap and fill in voids after extracting people, vehicles and other obstacles from the scan.

I've worked in downtown St. Louis by myself many times. Topo and scanning with no problem whatsoever. Sometimes 300 to 400 feet from the instrument without worry about interference from the public. I was more worried about my surroundings (head on swivel) than someone disturbing the instrument.

I wanted to learn about the education needed to become a professional surveyor, so my wife and I walked to Seoul National University (a short 4-miles up and down the mountains). We found our way to the engineering registration office at the top of the second mountain, I discovered the Civil Engineering program includes a Surveying Course. It's unclear if the course is required or elective, depending on whether you pursue engineering or surveying licensure. The course description suggests it covers extensive material for a 16-week class. Below is the course description.

457.002

3-2-2 Surveying and Practice

This course introduces the basic theories of surveying, reference point surveying, detailed surveying, and applied surveying, and introduces the basic

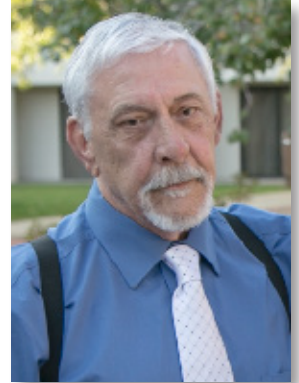
*(continued on page 5)*

# Little Deer Who Runs Swift and Sure Footed Through the Forest

by Mark Wiley, PLS 2437

Born of Scotch Irish descent on June 25, 1962, young Master Wiley was good at taking a story and spinning a good yarn. Life was an adventure for him and nothing would hold him back from having a good time and enjoying the ride. Sadly, David heard the words “Well done my good and faithful servant” on April 7<sup>th</sup>, 2025.

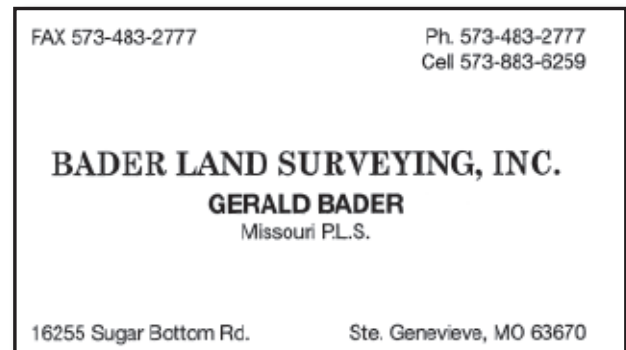
David, like many of his generation, grew up wanting to do one thing with his life and had life circumstances change his trajectory, sending him into the Surveying Profession. If there was one thing David was good at it was getting up when life knocked him down. In this way you could consider him a phoenix rising from the ashes repeatedly because the person who learns how to get up after being knocked down the fastest wins in the game of life.



It is this memory that I will hold on to the tightest, as in his youth at about age 12 or 13 he was (like me) brought to the field to learn the craft of surveying. While I was commended to stand in the back holding a plumb over that point whenever somebody hollered in my direction David was free to wander up and down the line, being the fourth person on the crew. The trick for him was paying attention to the small stobs left when a tree is cut off. He was forever tripping and stumbling over them. Roger Beckerman “Duke” was always chiding him over his careless walking, stumbling, falling, and then getting right back up. You are no “Little Deer Running Swift and Sure Footed in the Forest” he said, David liked the idea of Little Deer but never seemed to catch the sarcasm of Duke’s statements, until he was asked to return to the truck (at that time the family sedan) and retrieve a folder or some other thing we thought we needed. David with a “you bet” comment spun on his heel and began to take off at a dead run, sadly his turn did not point him back down the line but right into a brush pile, which we had to help extract him from. With this move he solidified his nickname in my mind.

To his credit and in my mind, David became a good surveyor, he always put the location of the line above the interest of the parties and did not set markers based on anything but the evidence. He tirelessly tried to follow the standards and practices that we the Surveying Profession have established. While this is a tribute to his work it is not the love and passion of his life. That Spot is held by his Wife Keena, his three children and five grandchildren. To them he was devoted and to them he gave his heart.

David is gone too soon and had so much he wanted to give. While he was my phoenix always rising up from whatever life had thrown at him there is no ignoring the call of the Lord. May he be at peace. 🇺🇸





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## Notes from Editor DeSain's Desk *(continued)*

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Speaking of the natural scenery, it is one major reason why I love my profession. We've included a reflection on that in "Ballad of a Surveyor". The ballad has made its way through other survey publications, and online posts through the years but is becoming timeless. Even in the earliest glimmer of Missouri in written records, the nature is accounted for as this month's newsletter brings you pages from the chapter "Exploring the Wilderness," from the book *The Genesis of Missouri From Wilderness Outpost to Statehood*, by William E. Foley.

Chris and I have been collaborating on relevant issues affecting surveyors, past newsletter features and useful material for our readers. We had a submission from a private researcher who's helped a surveyor in a tricky fishing road case. Ongoing efforts by the St. Louis Chapter to find stones nearly one and a half centuries old around town. An email to another professional who I had a conversation with at our state organization's 67<sup>th</sup> Annual Meeting, Tim DeVaney, PLS, resulted in action photos from surveyors at McClure. A thoughtful article about considerations for the upcoming datum shift by Gavin Schrock, PLS, will have you preparing for your plan of attack and probably studying his considerations more than once.

This edition is brought to you by co-editing efforts and great contributors, and once again I hope you enjoy it! 🇺🇸

*Austin*

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## President's Message *(continued)*

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theories of aerial photography, remote sensing, and mapping. In fiducial point surveying, students learn the theory and application of distance surveying, level surveying, and angular surveying, and cover traverse surveying, triangulation, and elevation level surveying. In detailed surveying, students learn plane surveying, market surveying, topographic surveying, route surveying, and area and volume calculation. Applied surveying is to learn the contents of applied surveying and construction surveying in the field of agricultural civil engineering. In practice, each method of plane surveying is applied in practice in the field, and the purpose is to cultivate field application skills.

Land surveying in South Korea is regulated, requiring a national certification exam by the Human Resources Development Service. Surveyors work for various sectors, similar to those in the United States. Licensing requires a 4-year degree in civil or geospatial/geomatics engineering before taking the exam. A stand-alone surveying degree is not available. There was much more I noticed that pertained to surveying as I walked around the city, but with no one to explain to me just what I was looking at it would just be speculation. I'll do a little research and put together an article for the future. Overall, the time off was greatly needed. I hope all of you can find some time this year to unwind and relax. Until next time stay safe out there. 🇺🇸

*Chuck Quinby*

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# The Genesis of Missouri From Wilderness Outpost to Statehood, by William E. Foley

## Introduction and Selection for Missouri Surveyor

by B. Austin DeSain, PLS

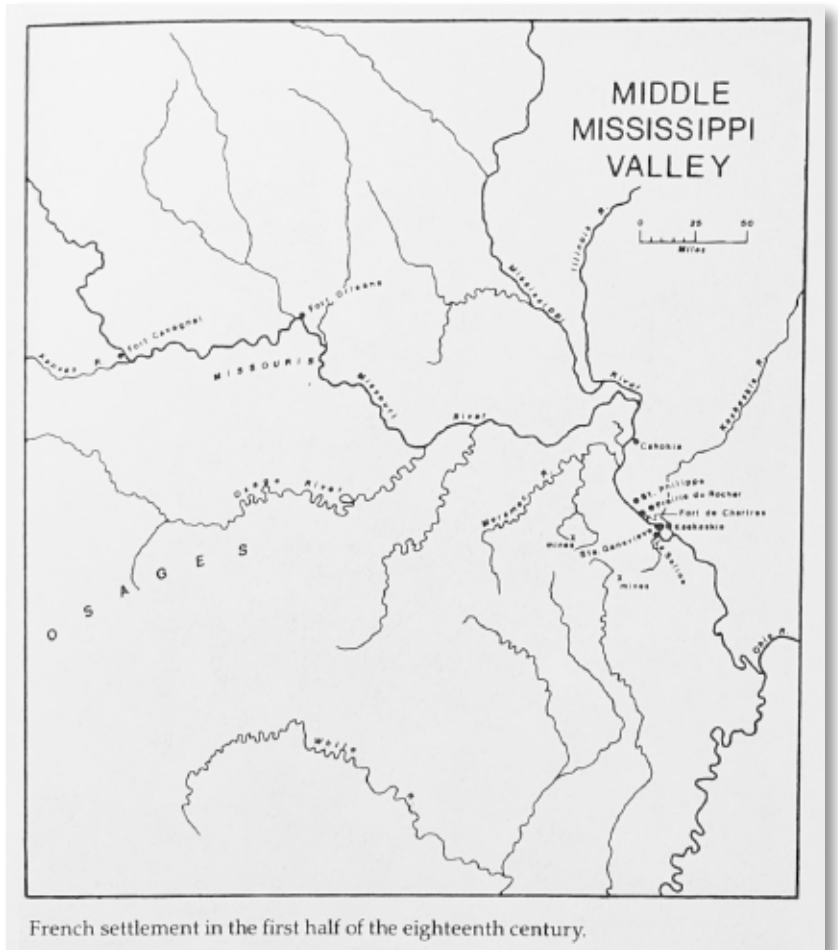
I heard a few years back that one of the newest National Historic Parks was in Ste. Genevieve, MO, so naturally it landed on my list of places to visit. I had been to Ste. Genevieve years ago, and it was an interesting little town. From the perspective of a land surveyor who is well into my career though, many things have different meanings now. Although I'd always appreciated history greatly, and exploring places that I'd not yet been to or perhaps did not have the time to visit all of the parts that I'd intended, there is an internal characteristic that changes in land surveyors. I think that this characteristic affects the surveyors who work in the field and in the office alike, and it has to do with the work that we do. The surveyor becomes close to the history of the land, and the situations around that history as part of our practice. Echoed through the Rules of the Department of Agriculture, the surveyor should become very knowledgeable of the property being surveyed (2 CSR 90-60.030 to name one), and the Revised Statutes of Missouri, Chapter 327.272 specifically, mentions a term "real property rights", a "recordable interest in real estate as it affects the location of land boundary lines". It's through the daily practice of our profession that we become more refined in our decision making related to these situations, but in doing that we become knowledgeable about the land and some history of it.

In each situation, we attempt to learn the history of the land. Naturally, the land surveyor carries a great respect for the stewards of the history related to the land.

The dedication ceremony for Ste. Genevieve National Park took place November 2<sup>nd</sup>, 2020 at the Jean Baptiste Valle House, making it the 422<sup>nd</sup> in the U.S. I visited in June of 2024. The park consists of multiple sites on the east side of town, each historic with signs and information posted. The Green Tavern is the oldest building, dating back to 1790. Many modern National Parks are set up this way, more like historic districts. It's an interesting twist on the individual sites like most of the park system includes from previous years.

After touring around, I visited with the Ranger in the NHP Visitor Center with a few questions and light discussion about the layout and boundaries of the town in the old days, and how the boundaries were set. I mentioned one situation that the St. Louis Chapter of MSPS had learned about 30 minutes west near Farmington, which had to do with the first appointed surveyor-

*(continued on next page)*





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## The Genesis of Missouri *(continued)*

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general of Spanish Upper Louisiana Antoine Soulard (1795-1804). Soulard kept a “Registre d’Arpentage”, of his records. William Russell, his successor in 1804 by Thomas Jefferson’s appointment as issues with validity of land claims began to arise. The first Board of Land Commissioners reviewed the properties in question from 1805 to 1812 (*Papers of Original Claimants 1777-1851*), resulting in both decisions and indecisions. A second board was formed in 1832 and met until 1835 to re-review the first board’s rejected claims, the undecided claims and more (*Papers of Original Claimants 1785-1857*), all possible by a series of long titled laws.

The messy history of Spanish, French and American claims in Missouri didn’t seem to unsettle or spook the Ranger there in the Visitor Center at all. In fact, the ranger who followed intently along pointed out that despite the messy American situations unfolding in Missouri, the Ste. Genevieve area remained certain of their claims due largely in part to the Valle family. The arrival of Frenchman Francois Valle as the “civil leader” in 1749 during Spanish rule started a fifty plus year legacy, with his son Jean-Baptiste Valle serving as the last Spanish commandant of Ste. Genevieve before the Louisiana purchase. The conversation was very memorable. I asked if there was a book to take with me. She’d sized me up a little bit by our conversation. This book was her recommendation above the others, *The Genesis of Missouri From Wilderness Outpost to Statehood*.

The Missouri Surveyor newsletter will run a limited series of excerpts from the book *The Genesis of Missouri From Wilderness Outpost to Statehood*, by William E. Foley. The book is published by University of Missouri Press, and the excerpts for this series have been permitted. Mr. Foley does an exceptional job in his often day to day accounts of the history of Missouri, as far as written accounts can be recounted. Each page is full of citations, with a thirty seven page Notes section full of references, followed by twelve pages of Works Cited and another twelve page Index of places, figures and terms. This book is extremely informative, and cited well and I hope the readers of the Missouri Surveyor enjoy this limited run series of excerpts from it.

### Chapter 1. Exploring the Wilderness, Pages 8 through 13.

Their contacts with the Indians through trade and through marriage made them a connecting link between the two cultures, but many of the earliest *coureurs de bois* remain nameless wanderers who left no written accounts of their activities. Occasionally, however, as in the Case of Etienne Véniard de Bourgmont, the first white man known to have explored the Missouri basin systematically, the records are more complete. At the age of nineteen, the well-born Frenchman, who seems to have been prone to youthful excess, fled to North America to avoid punishment for poaching on monastic lands. Following his arrival in Canada, Bourgmont enlisted as an ordinary soldier, rose to the rank of ensign and eventually found himself in charge of the besieged French outpost at Detroit. When the young commandant was accused of official misconduct in 1706, he deserted his post and headed for the wilds, where he joined his mixed-blood mistress, Madame Elizabeth Techenet, and lived the life of a *coureur de bois*. 27

Bourgmont and the other early French explorers encountered two Indian tribes residing within Missouri’s present limits: the Missouri and the Osage. Father Marquette located both nations on his map, and most subsequent accounts also took note of their presence. The Missouri Indians welcomed the French sojourners to their principal village, which was nestled in a range of low broken hills overlooking the Missouri River in northern Saline County. A semisedentary people



A Kaskaskia brave. Engraving from *A Journey in North America*, by Georges-Victor Collot (Paris, 1826).  
Courtesy State Historical Society of Missouri.

who had reached that area sometime before 1673, the Missouris were a part of the Chiwere Sioux linguistic group, along with the Ioways, Otos, and Winnebagos. They combined hunting and fishing with gardening and gathering and inhabited their permanent villages only during the spring planting and fall harvesting seasons. For most of the remainder of the year they pursued deer, buffalo, elk, and other wild game. 28

In 1712 the Missouris traveled to Detroit to assist the French in defending that outpost against a Fox attack. During that campaign, they encountered Bourgmont, who became a friend and confidant. According to legend, the French adventurer, who had long since parted company with Madame Techenet, took a fancy to the daughter of a Missouri chieftain. Bourgmont's subsequent actions lend a ring of truth to the story. He left the Great Lakes region, went south, and made the Missouri village his base camp. In 1714, a Missouri woman there bore him a son who came to be known as the "Petit Missouri." The preceding year, the wanderlust *coureur de bois* had traveled through Illinois and lower Louisiana, living a "scandalous and criminal life" according to the Jesuit fathers at Kaskaskia. In response to complaints that he was causing trouble among the Indians, the French authorities ordered him arrested, but the directive was never carried out. It seems likely that while in lower Louisiana, Bourgmont struck a deal with Cadillac, his crafty former superior at Detroit. In return for a pardon, Bourgmont apparently volunteered to assist the French in collecting information about the unfamiliar Missouri country. 29

Whatever the circumstances, Bourgmont was back at the Missouri village in 1714 arranging for an expedition upriver. He traveled up the Missouri at least as far as the mouth of the Platte in eastern Nebraska, and he may have continued as far as the Arikara country in South Dakota. His "Exact Description of Louisiana," a report containing his observations on the region and companion geographical log of the lower reaches of the Missouri titled simply "Route to Ascend the Missouri" were both based on that 1714 voyage and provide the earliest detailed information about the river and its people. Bourgmont's precise activities after that trip are unclear, but he seems to have served the French as an intelligence agent and a roving ambassador among the Indian tribes. In 1718, Bienville recommended that the king bestow on him the coveted Cross of St. Louis in recognition of his service to France. Such was the state of affairs in the North American wilds that it was possible to go from deserter to knighthood within the space of a few short years. 30

In May 1719 the peripatetic Bourgmont joined France's Gulf force during its successful assault on the Spanish post at Pensacola. The following September he escorted a delegation of chieftains from the Illinois Country to Mobile, where all but one fell victim to disease. Bourgmont delayed his planned return to France long enough to accompany the sole surviving chief to his village and to distribute gifts atoning for the deaths of the other tribal leaders. Having made the necessary amends with his Indian friends, he sailed to France, taking along his mixed-blood Missouri son. Bourgmont had left France under a cloud in 1698, but twenty-two years later he returned triumphantly to the applause of the directors of the Company of the Indies, who saluted his discoveries, his work among the Indians, and his military feats. His timing could not have been better. Rapt French audiences caught up in the speculative mania of financier John Law's scheme for developing the Mississippi valley hung on Bourgmont's every word as he related tales of his experiences in the wilderness. The dashing soldier also had the good fortune to marry a wealthy young French widow. 31

Missouri's other resident Indian tribe in the early eighteenth century, the Osages, played a much more important role than the Missouris in the subsequent history of the region. The Osages, who along with the Qnapaws Kansas, Omahas, and Poncas were members of the Dheghian Sioux language family, had migrated from east of the Mississippi at an



Osage warriors. Drawing from *Illustrations of the Manners, Customs, and Conditions of the North American Indians*, by George Catlin (London, 1851). Courtesy State Historical Society of Missouri.

(continued on page 11)



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## The Genesis of Missouri *(continued)*

unknown date, either while fleeing from Iroquoise attacks or while searching for better hunting grounds. Whatever the reason for the Osage migration, the early French traders found them occupying villages adjacent to the Osage River in Vernon County and on the north bank of the Missouri River near the Missouri Indian village in Saline County. 32

The striking physical appearance of the Osage warriors -- tall and muscular, with heads shaved and faces painted -- marked them as a tribe to be reckoned with. Indeed the Osages quickly took advantage of their access to firearms and other European trade goods to dominate the region between the Missouri and Arkansas rivers from the Ozark highlands onto the Great Plains. Hunting was the central feature of Osage life, but despite the tribe's preoccupation with the chase, the women cultivated crops and gathered edible wild plants to supplement and vary their diet. Such diversification afforded them a degree of security against undue deprivation in times when drought or some other natural disaster threatened one of their traditional food sources.

Like other Indian tribes, the Osages learned to exploit the seasonal diversity of their environment. For extended periods, all but the oldest residents and a few disabled or infirm individuals left their quasi-permanent villages to participate in hunting expeditions. The first of the three principal Osage hunts began in about February or March, when they searched the nearby Ozark woods and streams for bear and beaver, whose winter coats were then at their finest. In March they returned to their villages so the women could prepare the fields with their wooden-handled stone hoes for planting corn, squash, pumpkins, and beans. They sowed the corn, which was their chief crop, intermingled with the other plants to create a dense ground cover that simultaneously helped hold moisture in the soil and retard weed growth. 33

After completing the spring planting sometime in May, the Osages abandoned their villages and headed for the plains to the west in search of deer, buffalo, and elk. Prior to the time they acquired horses and firearms, the Osages hunted on foot with bows and arrows. They employed various methods including driving the herds into confined or restricted areas, setting fire to the prairie grasses to flush the quarry out, or stampeding the game animals off a cliff or riverbank. Deer was the most popular meat, probably because it was the easiest animal to bring down. The fresh meat that could not be consumed was smoked and dried for future use. The animal tallow and bone marrow were also preserved and saved, and the skins and hides were dressed and tanned. In late July the entire entourage again returned to their villages for the fall harvest. 34

The Osages located their villages on a prairie or in an open clearing not far from a river. The bottomlands were fertile and more easily cultivated with hand tools than the tough prairie sod. When the French first arrived, the Osage villages probably were arranged in an organized camp circle with each clan occupying its proper place according to rank and function they constructed their rectangular lodges, which were sometimes as much as one hundred feet long, by bending young saplings over a ridgepost to form the roof arch. Woven mats, bark, and animal skins provided the exterior covering for the framework. These dark, smoke-filled long houses accommodated ten or fifteen family members and relatives. During the coldest winter weather and during the spring, summer, and fall hunts, the Osages lived in temporary camps and occupied small and easily transported wigwams covered with rush mats and animal skins. 35

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## The Genesis of Missouri *(continued)*

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The men took advantage of the annual fall respite to recuperate from the strenuous exertions of the summer hunt. Their irregular work habits permitted them the luxury of this time for resting, planning, and regaling fellow tribesmen with stories of hunting prowess and military feats. It was not a similar time of leisure for the Osage women, whose waking hours were occupied harvesting and preserving crops, gathering nuts, persimmons, and pawpaws, weaving rush mats, making the family clothing and bedding and looking after children. In addition to their agricultural and domestic chores, Osage women also had the task of dressing and tanning the animal skins and hides. Their skills as expert skin dressers became especially important to the tribe following the opening of the fur trade with the Europeans. In recognition of their essential contributions to tribal life, Osage women were allowed to participate in the tribe's religious rituals. 36

In late September or early October, when the fall produce had been harvested and safely stored, the tribe set out on the year's final major hunt. It lasted until November or December, depending on weather conditions and the availability of game. During the coldest months the Osages left the prairies and moved to sheltered, wooded areas where deer, small game, and firewood could be more easily obtained. The advent of the late winter hunt in February or March marked the beginning of yet another annual cycle.

The complex Osage clan structure consisted of twenty-four clans organized into two grand divisions or moieties—the *Tsi-zhu* and the *Hon-ga*. The *Tsi-zhu* division was composed of nine clans and represented sky and peace, while the *Hon-ga* division with its fifteen clans symbolized earth and war. Believing that the world depended upon both earth and sky for its existence, the Osages concluded that their tribe's survival required the unity of its two great divisions. The tribe's political structure was equally complicated. In every village two chieftains, each representing one of the two moieties governed in association with an influential council, sometimes known as the Little Old Men, that was composed of representatives from each of the clans. Within this intricate structure of limited and shared political power, an Osage leader's authority was carefully circumscribed. 37

Contact with the invading Europeans brought profound changes to Missouri's Indian Peoples. The newcomers and their powerful weapons, contact with the invading Europeans brought profound changes to unfamiliar animals, attractive trade goods, potent alcoholic beverages, new markets for Indian products, and devastating diseases unleashed a combination of forces destined to affect the Indian way of life for generations to come. The introduction of horses and firearms was particularly momentous. By the time French traders reached their villages, the Missouris and Osages had already acquired horses -- or "mystery dogs," as the Osages called them -- from tribes in contact with Spanish settlements to the southwest. The two tribes were probably furnished with their first guns by early French traders.

From the outset, relations were good between the French and the Missouri and Osage tribes. Eager to claim them as allies and trading partners the French saw that they were supplied with firearms and trade goods in exchange for skins, furs, Indian slaves, and occasionally horses. It was a mutually profitable arrangement, but not without costs. Osage raids against Indian nations to the west for the purpose of securing horses and slaves for trading and Osage encroachment on the hunting grounds of neighboring tribes for the purpose of gaining access to new sources of furs intensified intertribal warfare and violence. Emboldened by the success of their more aggressive policies, the Osages capitalized upon their numbers, favorable location, and access to weapons and trade goods to establish themselves as the dominant force on the prairies west and south of their Missouri River villages. 38

The shift from a subsistence economy geared only to providing essential tribal needs to a market economy capable of securing weapons, ammunition, textiles, metal tools, jewelry, and assorted adornments brought other changes in Osage life as well. The Osages had always been hunters, but their new commercialism resulted in an even greater tribal preoccupation with the chase. They extended the length of their hunting seasons, moved into ever more distant territories, and divided themselves into smaller hunting parties. All of those changes increased their vulnerability to attack. Over time the continued presence of foreign

*(continued on page 14)*



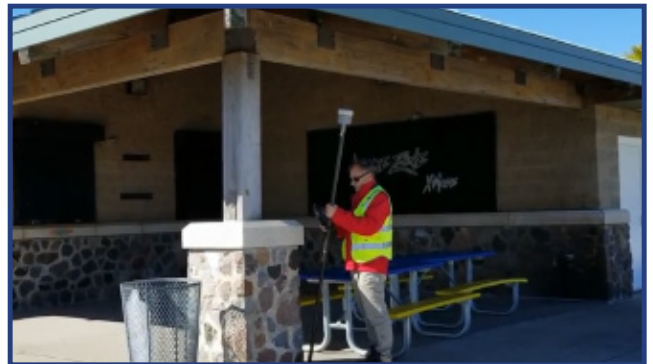
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## The Genesis of Missouri *(continued)*

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traders in the Osage villages and the growing tribal dependence on the white man's merchandise began to erode traditional Indian cultural patterns and institutions. The emphasis on hunting even altered marriage practices as Osage men began taking additional wives to handle the extra chores of cleaning and preparing the animal hides and skins. At the same time, young warriors whose hunting and raiding skills brought them wealth and prestige occasionally defied tribal elders and challenged the traditional political structure that denied them the influence they considered appropriate to their status. In one regard the Osages were especially fortunate: they escaped the worst ravages of smallpox, typhus, measles, and other diseases carried to the Americas by the Europeans. Those diseases decimated many other tribes, including the neighboring Missouris. 39

Although *coureurs de bois* ascended the Missouri River to trade with the Indians and an occasional expedition set out in search of treasure-laden mines, French interest in Louisiana was waning. As if the province's problems were not serious enough, in 1710 the French minister of marine, the Comte de Pontchartrain, made the incompetent Lamothe Cadillac governor of Louisiana. The scheming founder of Detroit had been universally disliked in Canada, and his transfer to Louisiana was a classic example of bureaucratic ineptitude. Following his appointment to the Louisiana post Cadillac returned to France to promote the development of the sparsely settled region he had been assigned to administer. Because it was a financial drain on the royal treasury, court officials were eager to interest private investors in the undertaking. 40

At Cadillac's urging, Antoine Crozat, a wealthy merchant and financier, agreed in 1712 to underwrite the cost of French activity in the province Crozat received a fifteen-year monopoly on Louisiana's trade and mining activities in return for his financial support. Crozat's grant, which did not extend to Upper Louisiana, specifically excluded the fur trade. The French entrepreneur regarded the Louisiana venture as a speculative business enterprise. Encouraged by Cadillac's exaggerated assurances, he expected to turn a handsome profit by exploiting the region's mineral resources and opening trade with the Spaniards in Mexico. 41

Governor Cadillac returned to Louisiana in 1713 determined to make the project succeed. In response to Crozat's plea for the French government's assistance in establishing an outpost at the mouth of the Ohio River, which was aimed to counter English activity in the region, Canadian officials dispatched a small party of troops under the command of Claude-Charles Dutisné. When they found no one at the site of the proposed establishment, the soldiers from Canada proceeded to Cadillac's headquarters at Mobile. Before reaching the mouth of the Ohio, they had stopped briefly at Kaskaskia, where they were given ore samples containing silver, supposedly obtained from nearby mines. After Dutisné showed the samples to Cadillac, the avaricious governor hastily set out to find the mines, dreaming no doubt of discovering riches equal to those the Spanish conquistadores had found in Mexico and Peru. Keeping his intentions secret, the governor departed in February 1715 without bothering to inform his immediate subordinate, Bienville, of his intended destination. In Kaskaskia, Cadillac's party had hopes dashed by learning that Dutisné's minerals had actually come from Mexico and had been given to him as a joke by the fun-loving Canadian *coureurs de bois* at that post. Whether Dutisné had been a willing accomplice or an innocent dupe in the affair remains unknown, but those involved had correctly gauged the governor's response. 42

**References for Introduction:** Missouri State Archives Finding Aid 951.1

**Credit for this selection of pages from *The Genesis of Missouri From Wilderness Outpost to Statehood* is thanks to The University of Missouri Press, Columbia, Missouri 65211**

### **Author's Notes Cited from this selection:**

27. Frank Norall, *Bourgmont: Explorer of the Missouri, 1698-1725*, 4-13. This carefully researched new study stands as the definitive work on Bourgmont and his activities.

28. An excellent account of the Missouri Indians is Robert T. Bray, "The Missouri Indian Tribe in Archaeology and History." A brief summary of Missouri life and culture is also found in Carl H. Chapman and Eleanor F. Chapman, *Indians and Archaeology of Missouri*, 99-106.

29. Norall, *Bourgmont*, 15-24. See also Marcel Giraud, "Etienne Vieniard De Bourgmont's 'Exact Description of Louisiana,'" and Robert T. Bray, "Bourgmont's Fort d'Orleans and the Missouri Indians."

30. Norall, *Bourgmont*, 24-28. Guillaume Delisle used Bourgmont's data to draw the first accurate map of the lower Missouri. Complete



translation of both the “Exact Description” and the “Route to Ascend the Missouri” can be found in *ibid.*; 99-123.

31. *Ibid.*, 28-30, 168n; Commission of Bourgmont as Captain of Infantry in Company of Indies, 26 July 1720, photostatic copy in *Sieur de Bourgmont Papers*, Missouri Historical Society.

32. The most thorough and complete historical assessment of the Osages is Rollings, “Prairie Hegemony.” A good brief summary can be found in Chapman and Chapman, *Indians and Archaeology of Missouri*, 106-17. Din and Nasatir’s *Imperial Osages* provides a comprehensive account of Spanish-Osage diplomacy.

33. Rollings, “Prairie Hegemony,” 39, 177-79.

34. *Ibid.*, 174-76.

35. *Ibid.* 31-35.

36. *Ibid.*, 57, 181; Chapman and Chapman, *Indians and Archaeology of Missouri*, 110-14.

37. Rollings, “Prairie Hegemony,” 47-51, 83-87, 109-12. When Dutisné visited the Osage village in 1719, he observed that the chief’s powers were “not very absolute.” See Mildred Mott Wedel, “Claude-Charles Dutisné: A Review of History of 1719 Journeys,” part 1, p. 15.

38. Rollings, “Prairie Hegemony,” 10-16.

39. *Ibid.*, 105-7, 202-3, 220-21.

40. Eccles, *Canadian Frontier*, 136, 142, and *France in America*, 158-61; Giraud, *A History of Louisiana, Vol. 1: The Reign of Louis XIV, 1698-1715*, 249-50.

41. Eccles, *France in America*, 161-63; Giraud, *History of Louisiana*, 1:250-55; and Natalia M. Belting, *Kaskaskia Under the French Regime*, 16.

42. Wedel, “Claude-Charles Dutisné,” part 1, pp. 7-9; John E. Rothensteiner, “Earliest History of Mine La Motte,” 199-202. 🇺🇸

## Ballad of A Land Surveyor

When I am asked by others, “What do you do for a living?”

“How do you earn your pay?”

I smile and say, “I’m a Land Surveyor

And I wouldn’t have it any other way.”

For you see, while others work in offices

Trying to beat the bottom line,

I stand out with Mother Nature

With the breezes and warm sunshine.

And when I go home in the evening,

My little son crawls up on my knee

“What was work like today, Daddy?”

Tell me, “What did you see?”

I say, “I saw the dew dry with the morning dawn

And a mother doe standing with her yearling fawn.”

“I saw a red-tailed hawk fly high against the clear blue sky

Ever watching for a field mouse with his hungry eye.”

Then, my little son’s eyes light up,

They shine a clear, bright blue.

He hugs my neck and whispers,

“I want to be just like you.”

I hug him back and don’t try to hide my father’s pride.

I say, “I would be proud, little man, for you to work by my side.”

But when you take the Surveyor’s Road, the one traveled by Lewis and Clark,

You set out on a path of adventure and hard work—it’s not all a walk in the park.

Yes, you feel the warm breezes of spring, and the chill of the early fall,

The cold, raw mornings of winter, when the temperature doesn’t rise at all.

And the hot, humid days of summer, when it’s 100 degrees in the shade,

When you’ll think—if only I wasn’t a Surveyor I think I would have it made.

You’ll wade through the ditches and water, fall on your face in the mud,

Fight the briars and things that sting, searching for your Hub.

Sometimes you’ll deal with Nature, her storms and other Acts of God,

While all the time you keep searching for your corner, that 5/8” iron rod.

But then one day, you’ll crest a rise, and see a panoramic view

Of cloudless skies where eagles fly, and a mountain lake of crystal blue.

Yet, when you pause and wonder about this gift that God has given you,

Remember, you’re a Surveyor, and there’s nothing you’d rather do.

We gather every work day, with all our tools of the trade,

Our tapes, our rod, our flagging, and our freshly sharpened blade.

We have done this through the ages, mapped the World, distance and line.

We were there to build the pyramids, in the Pharaohs time.

We map it all on any scale, no matter how small or grand,

From Columbus’ New World, to the smallest parcel of land.

And when someday we go to the stars, to expand the human race,

A Surveyor will be there waiting, ready to mark the place.

And when at last, my job is done, and I’m laid to my eternal rest,

I hope they place a marker with my “Final Point,” there upon my chest.

I hope I’m not forgotten, that I’m thought of from time to time.

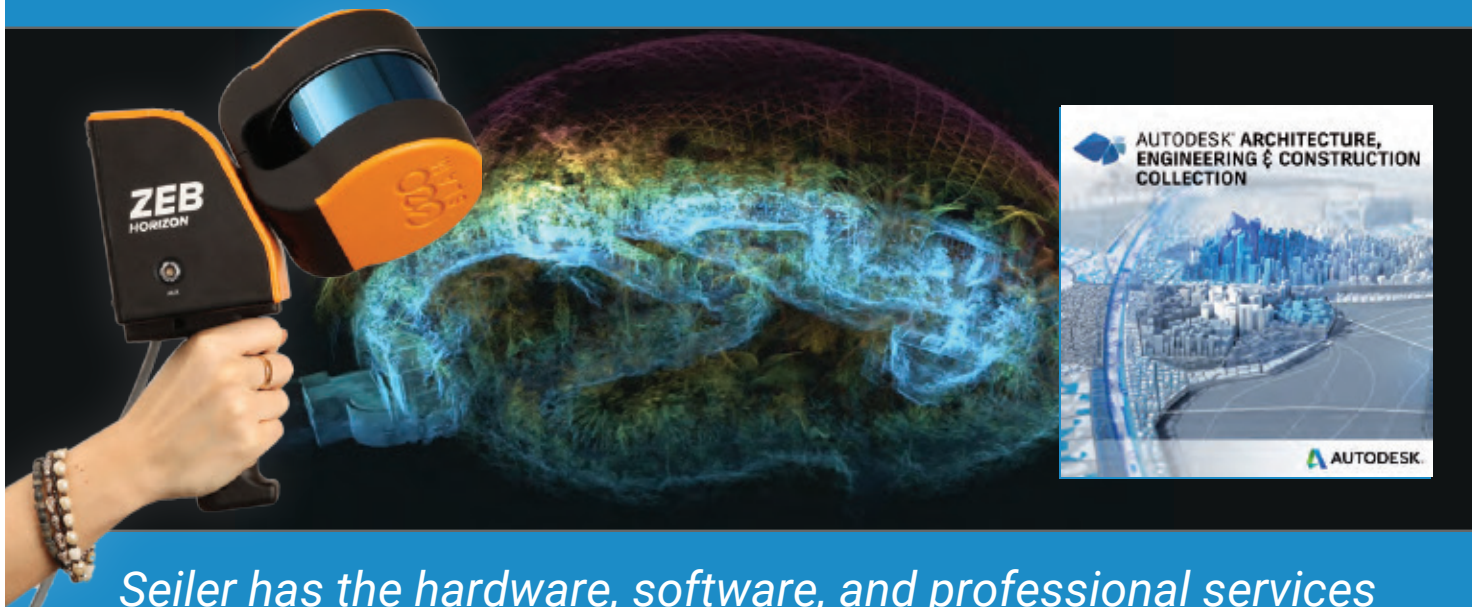
I’ll always be there with you, brothers, somewhere “cutting line.”

About the Author: Chris Springfield wrote this in 2006 while an Instrument-man employed by WORTECH Land Surveyor, Inc. in Beaumont, Texas.





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## MAP of the location of the City Limits Established by the City Charter of 1876.

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MSPS STL is Undergoing an Effort to Compile Data on the St. Louis City/County Boundary according to the “Map of the location of the CITY LIMITS Established by the City Charter of 1876”, from Stone No. 1 to Stone No. 175, in accordance with a Survey made by Julius Pitzman, County Surveyor of St. Louis County and also in accordance with a Re-Survey made by Thomas Featherson, under the direction of the Street Commissioner during the years 1878 and 1879.



*Unverified Stone #75 in backyard on Blendon Place, submitted by property owner.*



*Feather Marks near former Stone # 96, according to field plat by Myers Keller Byers*

A web page titled “StL City Stones” has been launched for the purposes of collecting the coordinates of originally set stone monuments for the boundary of St. Louis City and County according to the above survey. Entities including St. Louis County Construction Division – Survey Section, MODOT, private companies and even a property owner or two have started to submit data about visited stones to the chapter. The results of which are shown on the page. The site includes photographs of the stones, and a submission form.

*(continued on next page)*



## MAP of the location of the City Limits Established by the City Charter of 1876. *(continued)*

As this effort continues, the hope is to recover enough original stones in a modern coordinate system so that the rest of the stones can be mapped and even visited. St. Louis City may have an interest in the data for use with the current GIS system once verified.



*Unverified Stone # 76, located by Clayton Engineering, Hari Anderson*



*City Stone # 174, located by MODOT Stephen Jantosik & Matt Schultheiss*

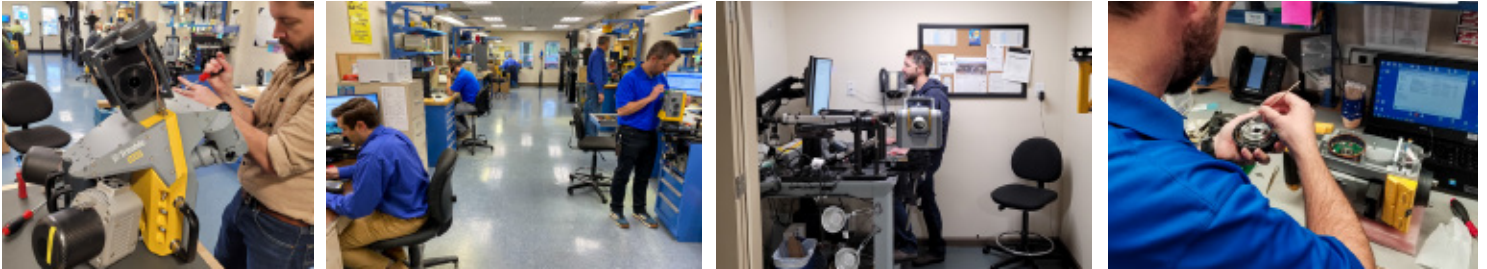
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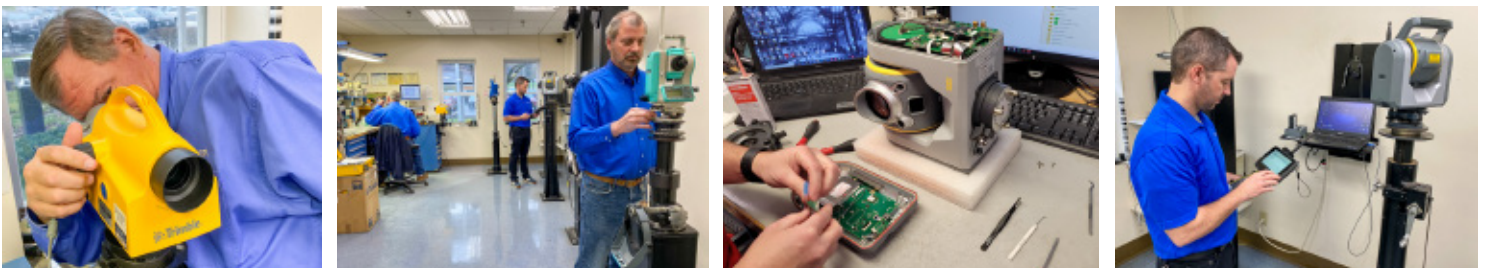
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# Are You Ready for the Datum Shift

by Gavin Schrock, PLS

Are you ready to navigate the new datum? What are your plans for preparing your crews for the changes ahead? What are the resources, tools, workflow approaches, and how has the State of Missouri prepared?

Tentatively planned for some time in the first half of 2026, the new National Spatial Reference System (shorthand: “datum”), designed by the U.S. National Geodetic Survey will be implemented. There will be a new “datum”, new transformation tools, and new state plane projections. In some cases, states like Missouri have designed low distortion projections (LDP), and some states are switching official foot units from the (deprecated) US Survey Foot to the International Foot.

Add all of the facets of this shift together, and it is a lot to unpack for field and office users. This includes surveying, geomatics, construction, civil engineering, infrastructure mapping, GIS, utilities, asset mapping, and more.

Few will be able to ignore this change completely. It is a significant change and one of the biggest geodetic developments in the nation’s history. The reference will be much closer to global geodetic reference elements, and depending on where you work, differences can be several feet.

The geodetic infrastructure side of these changes is relatively straightforward. Some resources will provide dual values for end users to transition. In other cases, there will be tools to help you navigate between the datums. Many real-time GNSS networks have developed plans to provide a transition period of dual corrections. For some passive marks, dual values will be published (initially and/or for a transition [period]).

- What are your plans so far for the datum shift?
- Do you plan on creating instructions for your field/office software on how to choose/change/update references?
- Do you plan on creating how-to guides for how to move/transform/migrate legacy datasets to the new reference frame?
- Do you plan on offering training for your crews?

There are great educational materials about the new datum, through the NGS, states, localities, and professional associations, with some vendors also stepping up. Unless the current uncertainty in Washington D.C. scuttles, or delays the shift, now is the time to start planning.

Shift happens... plan ahead and make this as painless as possible...

## The Big Shift

Why a shift? In many ways, it is a logical progression as the National Spatial Reference Framework (NSRS) has evolved to improve over time. Legacy NSRS iterations were geodetically “loose”, as the resources and data to define them were coarse, compared to the present day. For example, NAD27 (1927-1986) had a network accuracy of 10 meters (across the



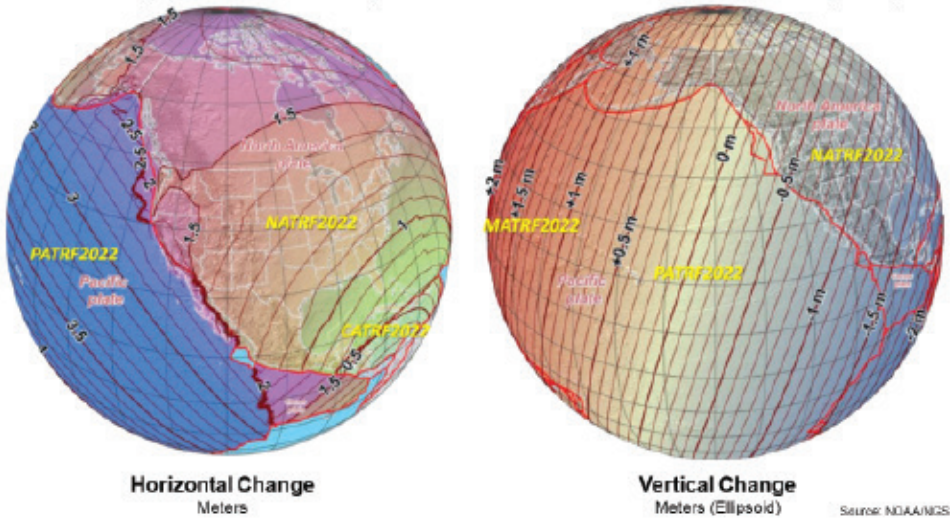
entire country), and NAD83 (1986-1990) was 1 meter, by the time of the HARN and FBN iterations (1990-2007) this improved to 0.1 meter, and since then, 0.01 meters.

The other factor is a closer alignment to global reference frames. NAD and ITRF (International Terrestrial Reference Frame) are both based on identical GRS80 ellipsoids; however, they are offset by about 2 meters at the earth's center, which brings differences at different places on the surface of 0.5-4 meters. These improvements were made possible through the application of GPS/GNSS observations and improved gravity measurements. At the time NAD was implemented by the NGS, it was felt that the offset ellipsoid would better fit the North American Plate. The North American Terrestrial Reference Framework NATRF2022 will essentially coincide with ITRF2020.

The vertical component of the new framework is called the North American-Pacific Geopotential Datum of 2022 (NAPGD2022). It is a purely gravity-based datum, created using terrestrial, airborne, and satellite gravity data, with geoid-difference models refined with terrestrial observations (e.g. GPS-on-Benchmarks). In an interesting turn of events, in many cases, new NAPGD2022 values will look a lot like NGVD29 values.

While it is undeniable that shifts of up to several feet will be the source of no small amount of potential consternation, ripping off the band-aid of NAD all at once may not be as painful as it might seem. This is because new state plane projections and low distortion projections will be directly constrained to the new framework.

NAD83 (2011 / PA11 / MA11) → NATRF / MATRF / CATRF / PATRF (2022)



MO SPCS2022 Preliminary Zone Configuration



Zone Code	Zone Name	Zone Abb.	Zone Code	Zone Name	Zone Abb.
290001	Missouri	MO	291015	Missouri, Branson	MO_BRAN
1003	Kansas City	KANC	291016	Missouri, Marshfield	MO_MRFD
291001	Missouri, Cape Girardeau	MO_CGAP	291017	Missouri, Rolla	MO_ROLL
291002	Missouri, Kennett	MO_KNET	291018	Missouri, Columbia	MO_CCOL
291003	Missouri, Kennett	MO_KNET	291019	Missouri, Hannibal	MO_HANN
291004	Missouri, Paducah	MO_PADU	291020	Missouri, Hannibal	MO_HANN
291005	Missouri, Paducah	MO_PADU	291021	Missouri, Hannibal	MO_HANN
291006	Missouri, Paducah	MO_PADU	291022	Missouri, Hannibal	MO_HANN
291007	Missouri, Paducah	MO_PADU	291023	Missouri, Hannibal	MO_HANN
291008	Missouri, Paducah	MO_PADU	291024	Missouri, Hannibal	MO_HANN
291009	Missouri, Paducah	MO_PADU	291025	Missouri, Hannibal	MO_HANN
291010	Missouri, Paducah	MO_PADU	291026	Missouri, Hannibal	MO_HANN
291011	Missouri, Paducah	MO_PADU	291027	Missouri, Hannibal	MO_HANN
291012	Missouri, Paducah	MO_PADU	291028	Missouri, Hannibal	MO_HANN
291013	Missouri, Paducah	MO_PADU	291029	Missouri, Hannibal	MO_HANN
291014	Missouri, Paducah	MO_PADU	291030	Missouri, Hannibal	MO_HANN

1 Note: 290001 is the Statewide Zone for Missouri  
 2 Note: 1003 is a special use zone that creates the state line



Missouri Department of Agriculture  
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(continued on next page)



# Are You Ready for the Datum Shift (continued)

## Missouri and the Shift

Missouri is relatively well positioned (no pun intended) for the shift. The legacy NAD plane projections will still be there (but no longer supported by the NGS), and the new NARTF-based projections. The new projections will not include the 3 legacy zones. Instead, there will be a single statewide projection (welcomed by many in the GIS community, where higher distortion may be more acceptable), and 31 new low-distortion projections (LDP). The LDP definitions were designed by the Missouri Department of Agriculture (S.B. 138 §§ 60.410, 60.411), reviewed and published by the NGS, and are being propagated by geospatial vendors into field/office software projection libraries.

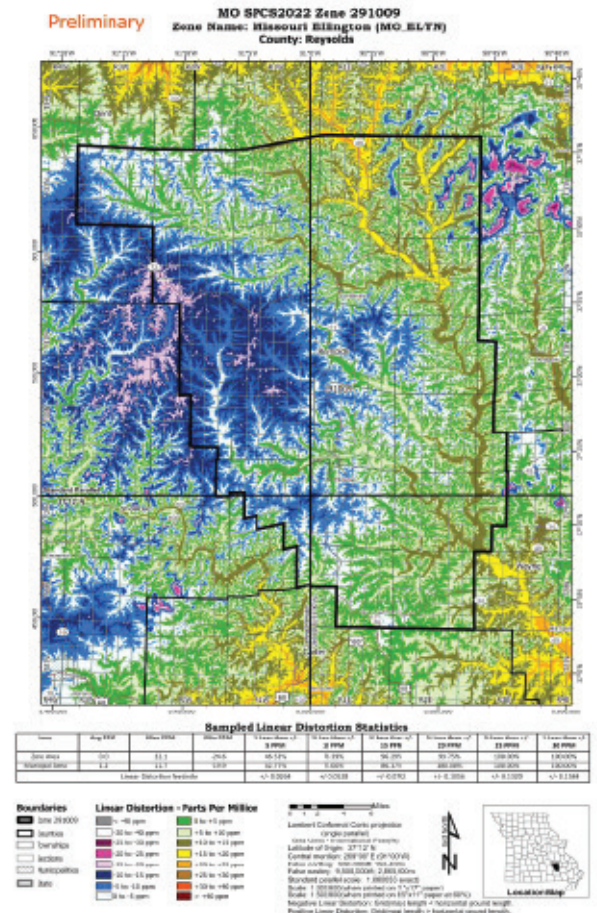
Here's a great presentation on the new LDPs for Missouri: [https://missourisurveyor.org/images/1185/document/2021-spcs-2022-ho1\\_613.pdf](https://missourisurveyor.org/images/1185/document/2021-spcs-2022-ho1_613.pdf)

Note that while an official foot unit was not explicitly prescribed across all entities and agencies in Missouri, projections for the new datum will reference the International Foot: Per the deprecation of the U.S. Survey foot: [www.federalregister.gov/documents/2020/10/05/2020-21902/deprecation-of-the-united-states-us-survey-foot](http://www.federalregister.gov/documents/2020/10/05/2020-21902/deprecation-of-the-united-states-us-survey-foot)) and S.B. 138, 2023.

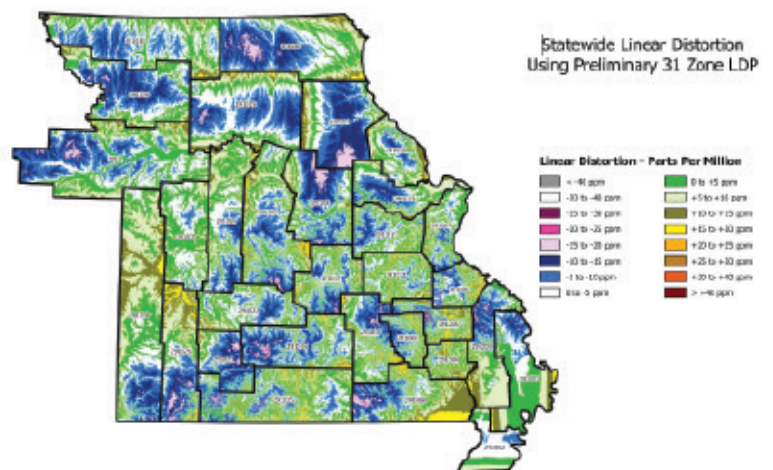
The MoDOT real-time GNSS network (RTN) is exploring options for providing corrections in both NAD83-2011 and NATRF2022 for a transition period of perhaps a year. Plans have not been finalized at this time, but preliminary planning is underway. Even if there were only NATRF2022 corrections available, workflows that could include calibration/localization and time-dependent transformation tools (e.g. NGS NCAT) would help users deal with legacy projects.

Passive control could be another matter; in some ways it has always been that way. For example, many NGS marks have values based on measurements performed many decades ago, and updates to newer datums have often been computed/transformed. This can also be true for some state and local marks.

Updates and dual-value publication approaches will vary, mostly driven by limited resources. For example, the huge database of NGS datasheets may not provide NATRF values for all marks. Most will only retain the NAD83 values, meaning that users may need to reobserve or use transformation tools like NGS NCAT. While there has not been a firm confirmation or timeline, marks that have been NGS Bluebooked may be published with new values. This is the same situation for NGS



Example Missouri LDP – Source: MDA



Missouri LDP Distortion Distribution – Source MDA



CORS datasheets and position/velocity reports; there may or may not be dual values published after the shift. One suggestion is to keep copies of pre-and-post shift reports.

Marks published by the state (e.g. as you might find in the state web portal: <https://mogov.maps.arcgis.com/apps/webappviewer/index.html?id=850e136b78e745fe8bc64ddc96fb383a>) are not necessarily going to show new or dual values (strategies and resources are being evaluated). There are efforts underway with local counties to Bluebook as many as is practical (within limited resources) so that they might be candidates for NGS updates moving forward.

## National Spatial Reference System (NSRS) Improvements Over Time

NETWORK	TIME SPAN	NETWORK ACCURACY	LOCAL ACCURACY	SHIFT
NAD 27	1927-1986	10 meters	(1:100,000)	10-200 m
NAD83(86)	1986-1990	1 meter	(1:100,000)	0.3-1.0 m
NAD83(199x)* "HARN", "FBN"	1990-2007	0.1 meter	(1:1 million) (1:10 million)	0.05 m
NAD83(NSRS2007)	2007-2011	0.01-meter	0.01-meter	0.03 m
NAD83(NSRS2011)	2011	0.01-meter	0.01-meter	0.01 m

When the shift goes live, NGS OPUS reports will show the new values. There are no confirmed plans or timelines for dual values on OPUS reports. However, NGS the transformation tool (NCAT) will provide a mechanism to achieve this.

*A transformed legacy reference may be inheriting inconsistencies and low accuracy of the original reference frame. Fresh observations in the new datum may be worth the effort - Source: NGS*

The uncertainties about dual (legacy/new) published values aside; the shift may provide a prime opportunity to update geodetic references and reduce inconsistencies and lower accuracies inherent to some legacy references. After all, as the NGS is fond of pointing out: the only survey control reference that can't be bulldozed, be handicapped by legacy, low network precision, or drift out of tolerance (e.g. due to plate velocities), is the center of the earth, and the new datum is earth-centered-earth-fixed (ECEF).

### Transition Considerations

It's not as if the slate needs to be completely wiped clean and you have to start over from scratch. But in some instances, it might be worth it. It depends on your project requirements and accuracy expectations.

Many surveying activities are more concerned with relative accuracy than global. For small projects, absolute accuracy considerations may be moot, as relative precisions are tight and consistent. However, for say, statewide or other broad area applications, you have an opportunity to clean up legacy issues. Consider your requirements.

Applying transformations (e.g. NCAT and HTDP) to values of a legacy published mark may be simply transforming values that inherit a lower network accuracy. It may be advisable to perform some fresh observations (in the new datum) on control marks (or a subset of control marks).

In the present day, we have a geodetic tool that is not limited to geodetic surveyors (if handled right). GNSS (under optimal conditions) can deliver results that match the high accuracy of the reference framework. This can be in the range of centimeters (network accuracy) and even tighter relative accuracy (i.e. between points in a small project area). And, if LDPs are applied, with minimal projection distortion.

*(continued on next page)*

# Are You Ready for the Datum Shift *(continued)*

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## Transition Approaches

To switch or not to switch... In looking at how datum shifts were handled by users in recent times (e.g. Australia's GDA2020 shift) several approaches emerge.

1. No change; stick with the legacy projections and references. You may be required to work in a legacy datum. Or, if your work is more concerned with relative accuracy within a small project area, this may be an attractive option. However, if you are using GNSS via the RTN (when it is broadcasting corrections constrained to the new datum) you can apply approach 4 or 5.
2. Start all new projects on the new datum.
3. Keep existing projects on the old datum. The same approach as 1, except only for the life of the project.
4. Localize/calibrate to legacy values (field). There are standard calibration/localization routines in surveying field software (e.g. you observe a point or points, enter the desired published legacy value(s) you want to constrain to, and the software adjusts all subsequent positions relative to the old/legacy reference.
5. Use transformation tools (office). You use the transformation tools (e.g. NCAT, HTDP) on control marks, or subsets of control marks, and then translate/rotate the rest of the data in the office software.

Another important step is to contact your field/office software vendors. What are their plans for supporting users during the transition? Most of the major vendors (and many of the smaller ones) have been working with the NGS to make sure the new datum and transformation definitions are added to their software libraries. It is hoped that the vendors will prepare "how to" materials, specific to their implementations of the new references.

Other recommended steps for end users include identifying or establishing some check-in points. There may be some control marks near your office, or in your service area, or you can put one or more marks in say, your office parking lot. These can serve as check-in points, but also a way to make sure you are getting the right values before you leave for the field (as well as making sure your gear is working). You can perform observations on the old datum and keep a copy of the results. Then, re-observe after the shift, giving you an idea of expected differences, and a way to test calibration/localization approaches. 🟢

*Gavin Schrock, PLS is a practicing surveyor and operator of the Washington State Reference Network (Cooperative RTN).*





# Southwest Chapter

**MSPS  
18<sup>th</sup> Annual  
Workshop  
(8 PDUs)**



## **2025 NSPS President**

**Davey Edwards**

(PhD, PLS, LSLs, CFeds)

**Presenting**

**“Surveying the Red River”**

**&**

**“How to Prepare for an Original Boundary  
Survey (Emphasis on PLSS)”**

**August 21<sup>st</sup>, 2025**

**(Registration begins at 7:30 am, Meeting from 8am – 5pm)**

**Christ’s Community United Methodist Church**

**2700 East 44<sup>th</sup> Street, Joplin, Missouri 64804**

**Online registration/Payment: [swmsps-workshop.weebly.com](http://swmsps-workshop.weebly.com)**

**PLS - \$125 Associates/Students - \$60 (BBQ lunch included)**

**For mail in registration forms, please email**

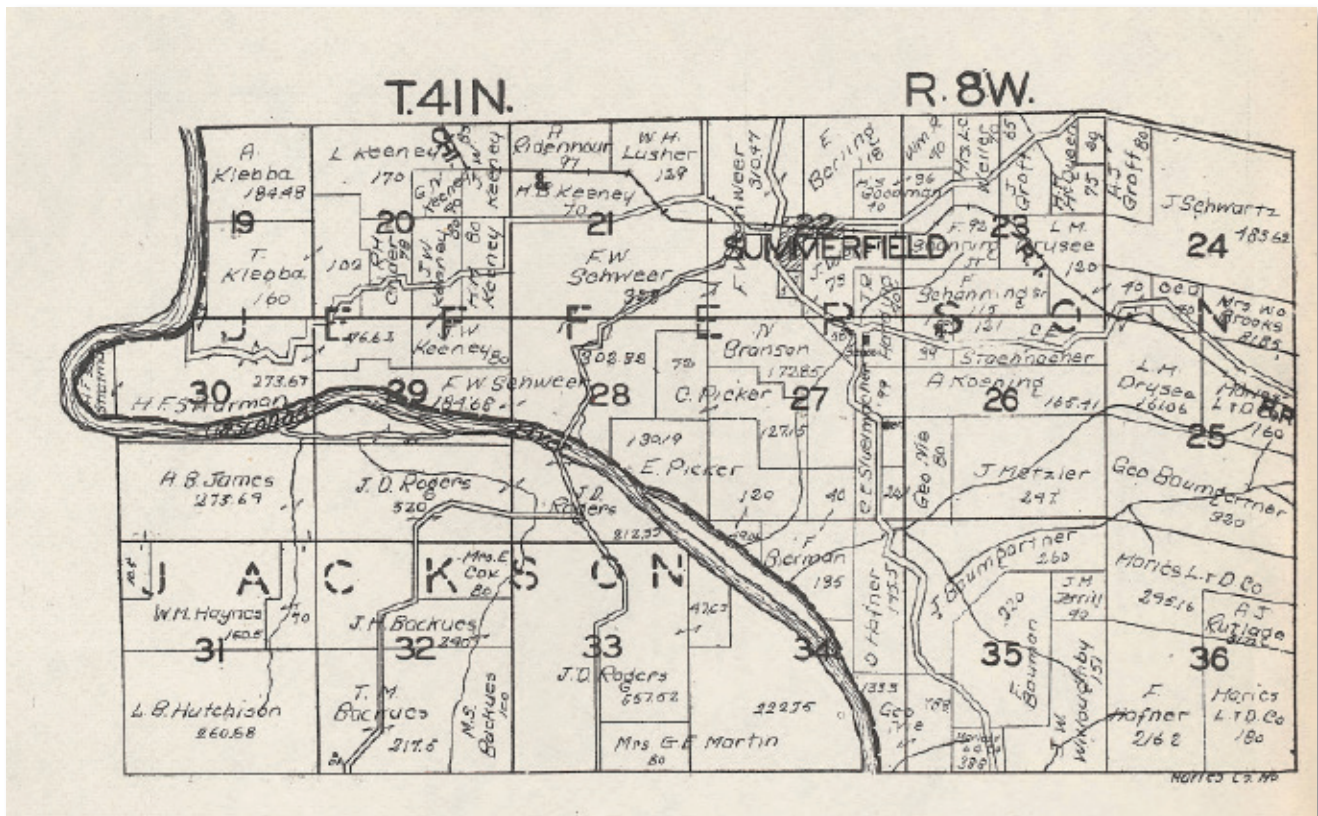
**Chapter Treasurer, Sarah Lovelady at [sarah.lovelady@amce.com](mailto:sarah.lovelady@amce.com)**



*by Patrick Kleithemes, Kleithemes Research LLC*

The access took its name from the Fish Hollow Fishing and Hunting Club which had a 99-year lease on the property that ended in 2021. The landowner put a gate across the road at the beginning of his property thinking the road was an easement that went along with the lease which has now ended. However, despite the landowners' efforts, people found a way through it and continued to use the route as it was before. The landowner sued the county to close the access in October 2023. I learned about the lawsuit from the local newspaper. I contacted both parties and told them to be careful because there could be a public right of way on the road. Neither party seemed to care much about my warning. The county said they were receiving tax revenue from the land, and the landowner's attorney said the claim for public use was too old.

I took it upon myself to look for the document. I looked at the 1930 plat book of Maries county and the road was not shown, so I knew it would have to be a later date than that. I then looked at the local records inventory list of Maries County clerks' office on the website of the Missouri Secretary of State to see if there was any sort of road conveyances that they would have had. The list included 3 books that were on microfilm. I then went to the archives research room to look at the microfilm and sure enough, I did find it. I found all the right of way deeds to the whole county road leading to the main Highway at the time. I did make known to the Maries County Commission that the document was there in the clerk's office and the landowner's attorney. In return the landowner's attorney paid me for my research services to find the document, although it put an end to his suit and his client's request to make the road private.



About a year passed by and I saw in the newspaper that Maries County had won the case, and that the newly appointed County Surveyor was to survey and make a description of the road. Having prior experience with this situation, I wanted to make sure that everyone had the information. I called the surveyor up and told him that the right of way was already conveyed by document. He didn't know about the document, so I sent it to him. He took it to the recorder of deeds office, and they hunted everywhere for the book but were unsuccessful in their findings. After another conversation with the surveyor, I told him about the microfilm from Maries County at the state archives. As our conversation grew more detailed, I let him know that in my opinion, it was likely in one of three places: 1. In some closet in storage, 2. In the clerk's office somewhere, 3. At the historical society. Another reality could be that it was destroyed after it was digitized to microfilm.

A few phone calls later, I was able to confirm that the original books were at the historical society. During a regular meeting, I brought this to the attention of the Maries County Commission, the Recorder of Deeds and the Commission's attorney. They could not understand why the original books were at the Historical society. I let them know that it was common practice in some counties after the records were microfilm digitized due to the need for space saving in the government buildings. I also explained that the document was not recorded with the Recorder of Deeds office because when a lot of these county roads came about in the 1800 and early 1900s it was the clerk of the county court (now called Commission) who was responsible for maintaining these conveyances and petitions of roads.

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## CONVEYANCE OF RIGHT OF WAY

THIS INDENTURE, Made on the 13<sup>th</sup> day of April A. D. One Thousand Nine Hundred and Thirty Six by and between Ed Pickens and wife

of the County of Maries and State of Missouri part ies of the first part, and the County of Maries in the State of Missouri, party of the second part,

WITNESSETH: That the said part ies of the first part, in consideration of the sum of One and 00/100 DOLLARS, to them in hand paid by the said party of the second part, the receipt of which is hereby acknowledged, do by these presents REMISE, RELEASE AND FOREVER QUITCLAIM unto the said party of the second part, the following described Land, lying, being and situate in the County of Maries and State of Missouri, to wit:

A 30 foot Right of Way - across part of NW<sup>1</sup> of SW<sup>4</sup> of Section - 27 - T 46 North of Range (6) West of the 5<sup>th</sup> P. M.  
Beginning at a pt on the N side of said sectional sub-division which point is about 174 ft. from the place of NW<sup>1</sup> corner of said Section (27) thence S 15<sup>3</sup>/<sub>4</sub> W - 503' Thence S - 65<sup>3</sup>/<sub>4</sub> W - 60'  
Here enter the S.E. fractional Quarter of 28 - 41 - S. (N. H. R.) and run as follows:  
S - 65<sup>3</sup>/<sub>4</sub> W - 305'; Thence S - 75<sup>1</sup>/<sub>2</sub> W - 335'; Thence S 73 W - 211'; Thence S - 42<sup>3</sup>/<sub>4</sub> W - 258'; Thence S - 45<sup>5</sup>/<sub>8</sub> W - 176'; Thence S 37 W - 137'; Thence S - 20 W - 142'; Thence S - 23<sup>1</sup>/<sub>2</sub> W - 131'; Thence S - 24<sup>1</sup>/<sub>2</sub> W - 134'; Thence S 36 W - 263'; and terminating at the Gasconade River in the S.E. fractional Quarter (N. H. R.) of Section - 28 - 41 - N. R. 8 W  
Mag - 14 = 6° - 00' to East

(continued on next page)

## Fish Hollow *(continued)*


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The Commission was posed with the decision to admit the document into the case as evidence, or not, since the case was still pending the survey of the road. The Commission voted Yes, to go ahead and submit it into evidence at which point I was asked if I would be willing to testify on the how, where, and why's about the document itself. A couple of months went by and ironically, I was sitting as a vendor at a Missouri Bar conference when I received an email for a subpoena to show up in court over this case. I did not actually have to testify but the judge did order the document as evidence which prevented any appeal by the landowner.

In summary, this relates back to my article last year in the June edition of Missouri Surveyor, a lot of people aren't aware that these right away documents and conveyances existed in the clerk's office. Even if they did, the clerks may not know where they actually are.

If you have questions concerning rights-of-way or document research, you can call Patrick Kliethermes, Kliethermes Research LLC, at 573-694-9475 or contact by email at [kliethermesresearch@gmail.com](mailto:kliethermesresearch@gmail.com)


Editor DeSain's Note: The Maries County Advocate (local newspaper that Patrick referenced) had an article, "Commission agree to reopen evidence in Fish Hollow lawsuit", by Colin Ward, on March 20, 2024, discussing more details of the case and findings. The article highlights the evidence provided by Kliethermes to the surveyor during the time of the county road survey for what would become Maries Road 306. Kliethermes was brought to discuss his findings and how they came about to the Maries County Commission and the Prosecuting Attorney. The avenue he pursued was to first look into the area at the Missouri State Archives at the James C. Kirkpatrick State Information Center in Jefferson City, "I knew the timeframe because in the 1930 plat book, (the road) is not there.", however a deed was found on microfilm. The article mentions that during the 1990s, a state program helped local governments digitize their records onto microfilm at the state archives. This digitized version came from the Historical Society of Maries County (HSMC) research room in the courthouse basement.

This is an example of a document that did not go away, and became critical to the decision of the lawsuit. An independent researcher who was familiar with the pathway through the records was able to assist all parties by providing clear evidence. 

## Robert E. Myers Building Update

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1/31/25 – State Land Surveyor Scott Faenger, former State Surveyor Mike Flowers, the author, along with Land Survey Program Staff and members of Department of Natural Resources Division of Geology met via Zoom recently. The topic was to discuss the pending dedication of the building at 1251 Gale Drive in Rolla to be named the "Robert E. "Bob" Myers Building". This has been suggested in proposed legislation at the state level, and regardless of the outcome of on the resolution, the dedication is approved to go ahead in honor of Missouri's first State Land Surveyor who accomplished so much to establish one of the leading programs in the nation.

To further pay tribute to Mr. Myers' memory, the MSPS purchased a bronze plaque noting his distinguished career and tireless dedication to the land surveying profession. The ceremony will likely be held before this article is printed and delivered; however, a full report will be in a future issue of this newsletter along with a picture of the plaque mounted in a place of honor to memorialize one of the legends of Missouri Land Surveyors. 



# MSPS Mock Trial – Spring Workshop May 2<sup>nd</sup>, 2025

## Lodge of the Four Seasons, Lake Ozark, MO



Judge Stanley D. Schnaare, JD, of The Schnaare Law Firm shown pictured with “Plaintiff” Jon Wyatt (aka Mark Wiley, PLS) and “Insurance Company Attorney” Bianca L. Eden, JD. In the second photo, AAA Surveying (aka Chris Ferguson, PLS) and “Plaintiff’s Attorney” Justin Cardwell, JD, Roberts Wooten & Zimmer, LLC.

The Mock Trial consisted of those pictured vs. “Defendant” T.J. Samuels (aka Ray Riggs, PLS) and B-Quick Surveying (aka Bob Anderson, PLS). 🇺🇸

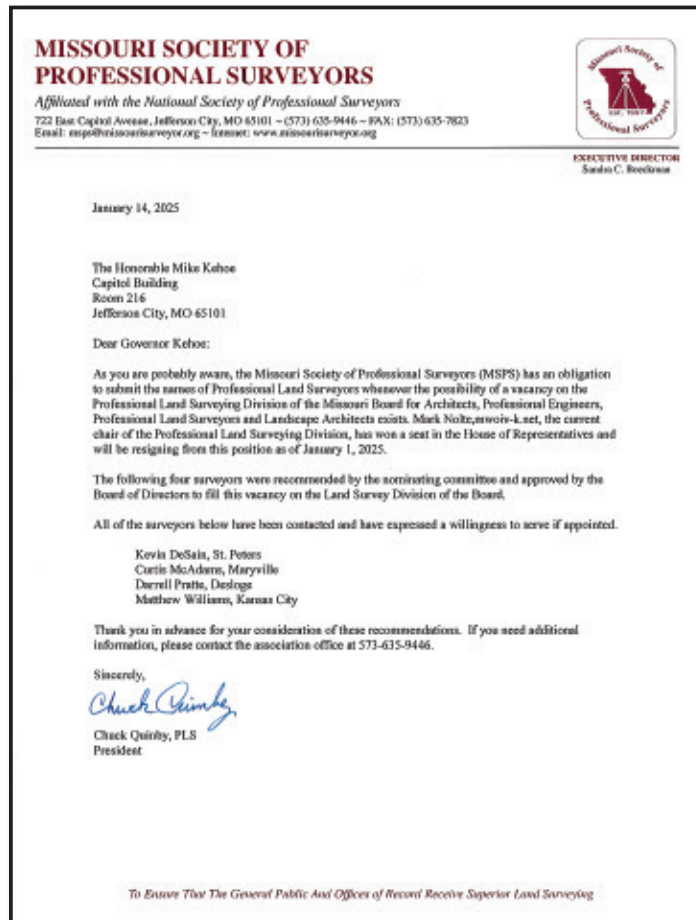


# Your Society at Work

MSPS Works with APEPLSPLA Board & Governor Kehoe to make recommendations.

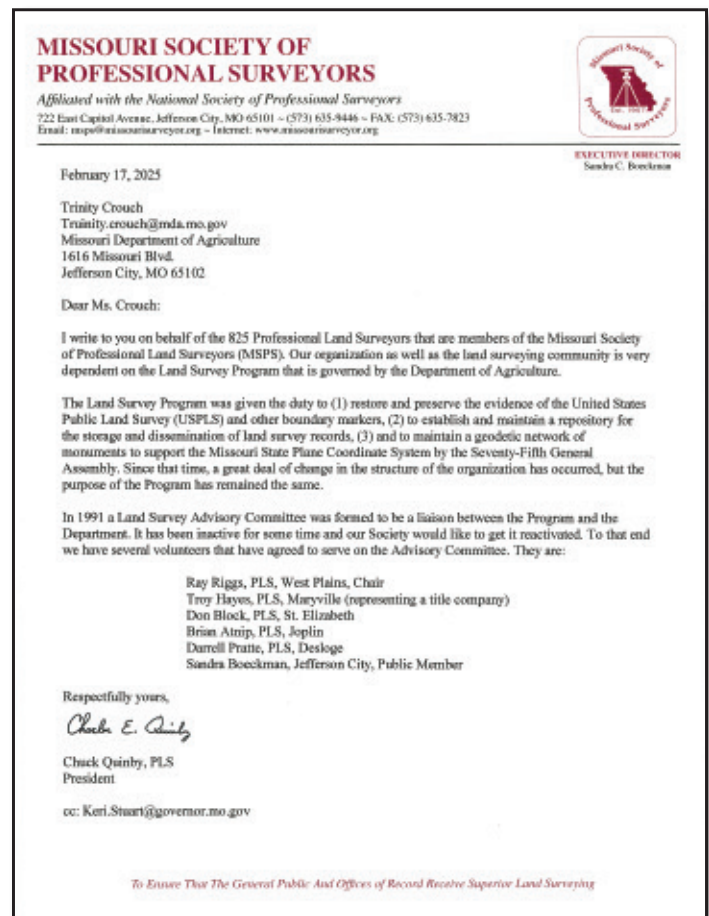
Vacancies are occurring at the APEPLSPLA Board as past Chairman Mark Nolte (R) moves into his freshman term as State Representative for District 51 (Lafayette and Saline Counties). Board Member Jerrod Hogan is also looking to depart later this year.

In response, MSPS solicited interested surveyors and refined the list to the nominees shown on this letter to Governor Kehoe:



MSPS Makes Recommendations for the Land Survey Advisory Committee

In a related event, the long-dormant Land Survey Advisory Committee, which works to inform and advise MO Department of Agriculture on matters related to its subordinate Land Survey Program. Nominees were selected similar to the APEPLSPLA Board and are shown here:





10/29/24 – MSPS Lobbyist Lynne Schlosser reported that interior designers want “stamp and seal” authority by joining the APEPLSPLA Board (HB 2158 last legislative session). Generally, the MSPS Directors and Legislative Committee are neutral to this draft legislation, but architects are rather adamantly opposed.



1/30/25 – Representative Nolte filed a bill proposing a revision to Ch. 59.310 RSMo (the Recorders’ Statute) to standardize fees for filing a survey, whether it be boundary, easement, subdivision, condo, etc. for record and for obtaining copies of same from the courthouse. No substantial opposition was forwarded from the Directors nor the Legislative Committee. According to Rep. Nolte “the Recorders are on Board.” A synopsis from the state website is shown for HB 1125:

HB 1125 -- DOCUMENTS PRESENTED FOR RECORDING

SPONSOR: Nolte

This bill modifies the fee schedule for recording a boundary survey, easement, subdivision plat, condominium plat, or other drawing depicting the division of land prepared by a professional land surveyor.

The bill also modifies the fee schedule for copying a drawing of the above-mentioned divisions of land.

The fees are described by the size of the drawing and are provided in the bill.

Rep. Nolte has been busy and introduced another bill regarding GIS. More particularly, this legislation proposes to minimize or eliminate costs to the user as seen in the summary of HB 1182 below:

HB 1182 -- GEOGRAPHICAL INFORMATION SYSTEMS

SPONSOR: Nolte

Currently, municipalities and counties are prohibited from allocating the costs of the creation, maintenance, use, and distribution of a geographical information system (GIS) to nonusers of the system. GIS programs are funded by fees for services provided by the GIS.

This bill prohibits a municipality from charging a fee for access to a GIS or any of its platforms or databases, and allows a municipality or county to allocate the costs of a GIS to nonusers.

*(continued on next page)*

## Your Society at Work *(continued)*



2/7/25 – Representative Don Mayhew (R), District 124 (Pulaski and Miller Counties), introduced legislation requiring surveys to be filed in 60 days and gives surveyors the option to file those plats with the Land Survey Repository. A synopsis is shown for HB 1078:

### HB 1078 -- RECORDING OF LAND SURVEYS

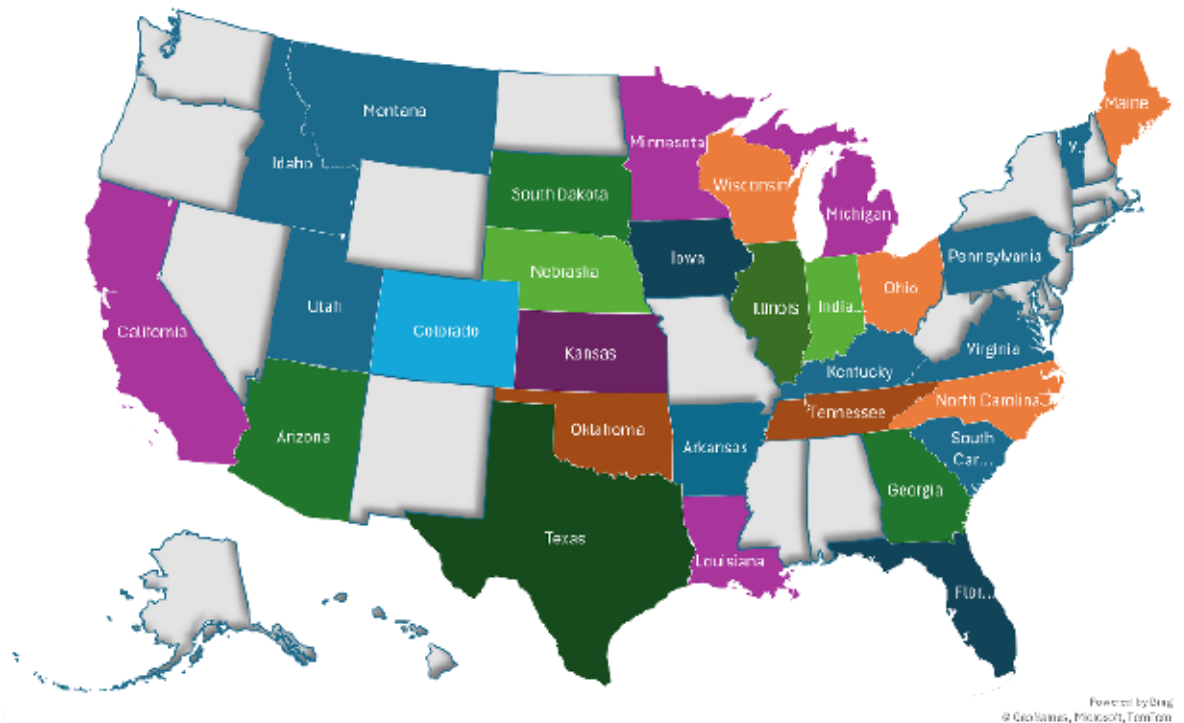
SPONSOR: Mayhew

Currently, a surveyor must file certain land surveys with county recorders of deeds within 60 days after the survey is certified. This bill allows a surveyor to file the survey results with the Department of Agriculture's Land Survey Program instead. However, a survey filed with the Land Survey Program cannot be evidence in any court unless the survey result was also filed with the recorder and properly certified.

This bill is similar to HB 2854 (2024).

2/17/25 - As a follow up to a request in the February 12<sup>th</sup> MSPS Board of Directors meeting, Shane Terhune, Chairman of the Land Surveying Division (APEPLSPLA ) reported that there are 825 active PLS licensees with 302 of those belonging to out of state registrants. The highest percentage of those are from Illinois, Arkansas, and Kansas. Sixty-six non-resident PLS's are from non-bordering states across the Union.

2024 MO PLS License Residence States Other Than MO





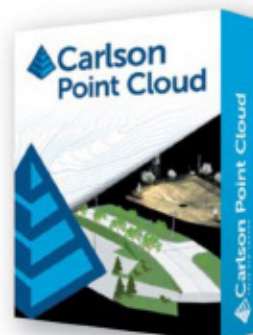
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# McClure Surveyors at work in Missouri

*Photos courtesy of Timothy Devaney, March 28, 2025*



*Isabelle McGuire (Engineer), Tim Devaney (PLS), Jeffery Dierker (Survey Crew Chief), and Dustin Wright (Survey Crew Chief – in the background) - Bridge replacement project on Old Highway 40 over Salt Creek and Katy Trail.*



*Jackson Craft (Survey Crew Chief) and Leon Weems (Survey Crew Chief), taken from the perspective of the iron pipe.*



*Crew Chief Jeffery Dierker at an elementary school project Columbia, MO*



## First Quarter Corner Highlights – *Submit Your Corner with Photo for Our Next Issue*

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**Standard Corner to Sections 24 and 25, T25N, R18W**  
January 22, 2025 Ava Ranger District -Douglas County, MO: U.S. Forest Service Surveyors Chris Ferguson and Katie Jones pose with 15x9x4 Flintstone originally set by GLO Deputy D.S. Evans in 1843. Stumphole matches from both accessory trees were found and an old wire fence running north-south was found 6.5 feet west. Stone was replaced with a standard USFS permanent monument and laid on north side of rock collar around the pipe. New witness trees were taken and a white fiberglass post with Survey Marker decal was set south 2.0 feet. Photo by USFS Surveyor Terry Throesch.



**Quarter Corner to Sections 5 and 6, T50N, R24W**  
March 23, 2025: Found 1 1/4" iron pipe as set at midpoint by Lafayette County Surveyor Mark B. Layne August 28-29, 1934, for the Quarter Corner. Original corner was a post in a raised mound in prairie set February 1, 1818 by GLO Deputy Charles McPherson. North-south fence lies 1.7 feet west. Photo by Chris Ferguson.

# MGA's Fall 2025 Courses

Following a successful response to a pre-course announcement during Technician's Day at the MSPS Spring Workshop on May 1, Midwest Geospatial Academy is proud to announce that our inaugural FS Exam Prep course (SUR121) is now underway. We'll share more about how it went in the next issue of *Missouri Surveyor*.



Our Fall 2025 semester runs from August 25 through December 5. We will offer the following courses:

- **SUR201 – Surveying I**
- **SUR301 – Land Records: Researching and Using**
- **SUR302 – Elements of Surveying Practice**

If you are new to MGA, you can apply for admission at any time. Once admitted, we will review your prior coursework to determine eligibility and help you register for the appropriate classes. If you were enrolled in Spring 2025, you should already have access to register for your next course.

In special cases, students may be permitted to take a course concurrently with its prerequisite. If you believe you qualify, please email us at [info@geospatialacademy.us](mailto:info@geospatialacademy.us). If approved, a waiver will be required.

**SUR201 Students:** You can choose to complete your lab projects during four scheduled Saturdays in Washington, MO, or you may work remotely under the guidance of a professional land surveyor mentor. If choosing the remote option, you must request and submit a Remote Mentor Agreement signed by you and your mentor for instructor approval.

## Faculty for Fall 2025:

- **Surveying I (SUR201):** Mike Oetterer – [mike@geospatialacademy.us](mailto:mike@geospatialacademy.us)
- **Land Records (SUR301) and Elements of Surveying Practice (SUR302):** Joe Paiva – [joe@geospatialacademy.us](mailto:joe@geospatialacademy.us)

**Questions?** Please contact us at [info@geospatialacademy.us](mailto:info@geospatialacademy.us). We strongly encourage reaching out at least a week before classes begin. If you need to submit transcripts for transfer credit evaluation, please allow 2–3 weeks for processing. We appreciate your consideration in giving us sufficient time to assist you.

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## MGA Is Now Eligible to Receive Tax-Deductible Donations

*Help Build the Future of Surveying in Missouri*

We're proud to announce that the **Midwest Geospatial Academy (MGA)** has been officially recognized by the IRS as a **tax-exempt public charity** under Section 501(c)(3). This means all contributions to MGA are now **fully tax-deductible**.

As a Missouri nonprofit public benefit corporation, MGA was created to support those working toward professional licensure in land surveying. While we are able to cover basic operational costs, we rely on your generosity to fund critical initiatives that go beyond day-to-day expenses.

## Your Support Makes a Measurable Difference

When you give to MGA, you're investing in:

- **Certification and Accreditation:** Supporting the process of government approvals, compliance reporting, and academic accreditation.
- **Hands-On Learning:** Equipping our labs with the tools and supplies needed for high-quality, field-relevant education.
- **Instructor Resources:** Providing materials and training support to ensure a top-notch educational experience.
- **Security and Stability:** Covering insurance for the school, faculty, and equipment.
- **Operational Support:** Funding essential costs like office personnel, rent, and technology.
- **Course Expansion:** Creating new curriculum and promoting course acceptance at Missouri's two- and four-year colleges.
- **Regional Collaboration:** Building partnerships with licensing boards in neighboring states to expand our program's reach.

## Ways to Give

Visit our **Donations Page** ([geospatialacademy.us/donations](https://geospatialacademy.us/donations)) to make a one-time gift using a credit or debit card.

For recurring donations or to give via ACH (bank transfer), please contact us at [info@geospatialacademy.us](mailto:info@geospatialacademy.us).

You may also write to us at:

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Consider including MGA in your **wills, bequests, or planned giving**. Every contribution—large or small—helps build the next generation of surveyors.

## Thank You

Your support empowers aspiring professionals in Missouri and beyond to gain the education and credentials they need to succeed. **Thank you for investing in the future of the surveying profession.** 🇺🇸

# Inaugural MSPS Technician's Day – May 1, 2025

Surveyors at various stages on the path to licensure gathered for the first-ever **MSPS Technician's Day**, an event organized by the Young Surveyors group of the Missouri Society of Professional Surveyors. The event drew an impressive turnout of **55 technician participants**.

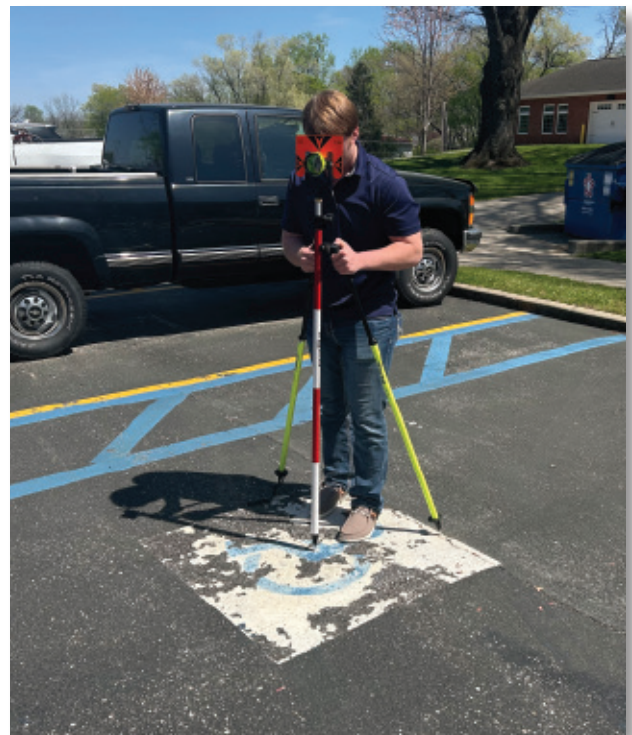
The program featured well-received presentations, including:

- **Chris Sparks**, a retired math teacher, who delivered both an introductory and advanced session on surveying-related mathematics.
- **Francis Duncan, PLS**, who gave a detailed presentation on Missouri USPLSS topics, with a focus on the reestablishment of lost corners.
- **Tim Devaney, PLS**, who offered valuable insight on preparing for and taking the FS, PS, and Missouri State-Specific licensing exams.
- **Joe Paiva** filled in with brief talks on center of section calculations by hand, and the importance of understanding technical terminology—our “terms of art”—and how such knowledge plays a crucial role in both exam success and professional practice.

A snapshot of the participants showed:

- About one-third had not yet attempted any licensing exams.
- The remainder were evenly split among those preparing to retake the FS exam and those planning to take (or retake) the PS and Missouri State-Specific exams.
- Roughly 20% of attendees had less than one year of surveying experience.
- The rest were evenly divided between those with 1–5 years and those with over 5 years of experience.

The energy, focus, and engagement shown by attendees was remarkable and reflects a strong future for Missouri's surveying profession. **Stay tuned for future Technician's Day events as we continue supporting the journey toward professional licensure.** 🇲🇴







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