

May 2021

SIDE SHOTS

Professional Land Surveyors of Colorado

Volume 52, Issue 2



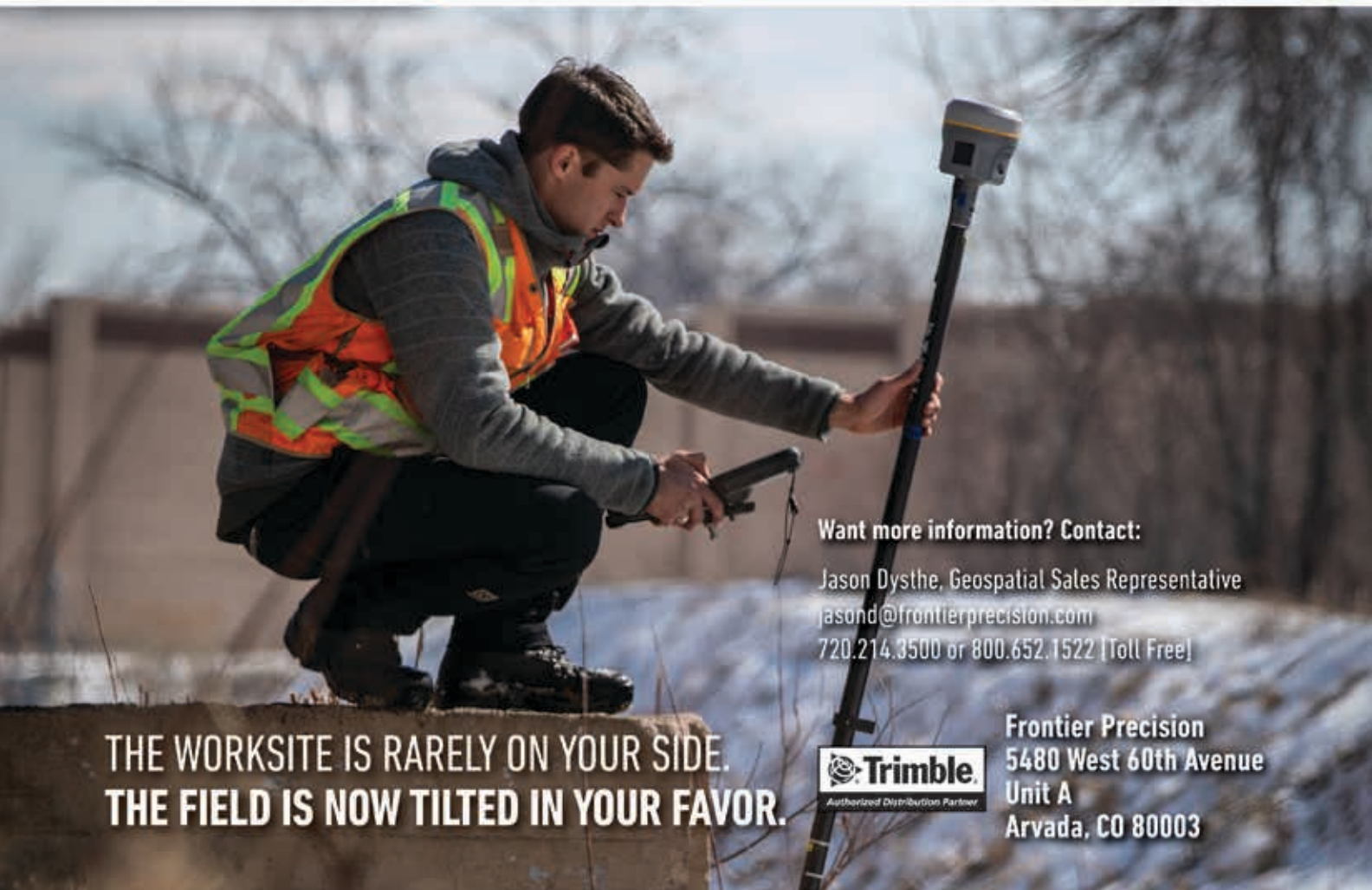
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SIDE SHOTS

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*Side Shots is the official publication of the Professional Land Surveyors of Colorado, Inc.
and is published quarterly for the betterment of the surveying profession.*

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**Deadlines for editorials, articles, pictures and advertising are January 1, April 1,
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To commemorate JB's commitment to excellence and his selfless efforts to see the profession benefited and advanced, I ask each of you to do two things; slow down and be thankful for the blessings you have as a result of the profession, and ask yourself, "What can I do to emulate the excellence that JB exemplified?"

As we all are struggling to keep up with the tremendous workload and continual technological advancements of our profession, let's not forget that we do what we do because of our desire to see our professionalism benefit our clients and our communities. Of course, all this altruism does yield us a living but I suspect we do not stay in this profession just for the money. We could apply our technical abilities elsewhere but choose not to so that we can have the fulfillment of impacting others by sharing the knowledge we have obtained along this journey we call surveying.

Isn't that what *Side Shots* is all about? Aren't we all just telling a story on every single plat we prepare and sign? Aren't we constantly looking for the next young person into whom we can invest our time and energy to mentor up in this profession we love? This is what I think of when I contemplate all that JB has done for the profession over the years.

It is my sincerest hope that we all will take a moment to reflect on why JB did what he did and how we might emulate that behavior in our own lives and businesses. It will not happen by accident but only by the intentional, consistent effort to put others before ourselves for the betterment of the whole.

Thanks,

Ralph Pettit, PLS
PLSC President



FROM THE EDITOR

In this issue of *Side Shots* we turn the page to a new era. When we look back on our lives we will remember life before the pandemic and life after the pandemic. The same can be said for the PLSC and more specifically *Side Shots*. We will remember what it was like when JB Guyton was here, and what it's like now that he has left us. So we press on, re-organize and remember how it was done by those who came before us.

This issue is packed with not only the celebration and commemoration of a great surveyor, but with a recap of the 2021 Rocky Mountain Surveyors Summit, update from our excellent lobbyists, Under the Gold Dome, articles from our NSPS regional advisor Brian Shaw, and a poem from Dean Glorso. Also you will see a letter to the editor by Warren Ward and a surveyor's outreach letter from Todd Beers.

Our typical inclusions such as updates to the new Colorado Land Surveying Refresher Course, BLM Cadastral Letter, WFPS Report, PLSC Board of Directors Minutes, PLSC Treasurer's Report, and chapter president's newsletters are full of up to date gems to keep you informed. However, if you would like to see additional information

published on behalf of Colorado Surveyors, please contact me, and the *Side Shots* committee will take your requests into consideration.

A special thanks to our sustaining members, the vendors who purchase commercial ad space in *Side Shots*, and particularly Chris J. Power who did such a great job in pulling together all the components of this publication and contributing so much for 14+ years.

We welcome new president Ralph Pettit to the PLSC and wish him all the best in his new role as our leader of this professional association. I know we are in great hands and in great shape looking forward.

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TO THE EDITOR

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To the Editor,

As many of us know, there is a practice by some in this State to justify the setting of multiple monuments (pincushions, button-pushing, pin gardens, etc.), by stating on their land survey plat some form of the following reason:

"Board Rule x, y, z, and the Bureau of Land Management Manual, require us to set multiple monuments". "The found monuments are not accepted".

In fact, there is no Board Rule or Bureau of Land Management command that requires, much less justifies, the setting of multiple monuments.

The setting of multiple monuments, without cause, with an accompanying plat note stating that the State Board REQUIRES this practice, is usually a blatant lack of respect for the profession of land surveying as well as a total disregard for the meaning of all State Board rules.

The setting of multiple monuments causes the exact opposite effect to the public - chaos, confusion, feuds, unnecessary legal action

and cost to landowners – than what the public expects from surveyors – order, harmony, and professional perpetuation of established legal property rights (as established by the surveying profession).

This practice continues by a small number of surveyors and we seem to be helpless to put a stop to it. Does anyone out there, especially in PLSC, have any ideas on how to put a stop to this destructive practice?

Sincerely
W ward – LS, OK, CO



John B. Guyton

1946-2021

Pat and JB

By Pat Guyton

I was obsessed with hiking the Fourteeners. Many of these were solo journeys with a full pack for overnight. I felt peaceful and quite content to be alone. On July 4, 1989, I was camping below the summit on Mt. Yale. The following weekend, Harvard was next. Scouting for a place to pitch the tent for the night I reached the campground with a few early arrivals preparing for the night. Tent neighbors make friends and as a group we set out to summit. One man had a very friendly German Shepard named Albert. Albert meandered over to my tent and proceeded with a friendly canine investigation. He was the companion of an unusual gentleman named JB.

JB was curious about people and he introduced himself. He was fun and smart. We soon exchanged enough information to know that his business partner at Flatirons, Inc was dating a gal who had done Pilates with me. JB made an artful overture that if I ever needed a hiking partner, he was available. The rest is history. We were married on the winter solstice in 1991.

JB was prepared to enlighten me about surveying. His previous experience taught him that most people were ignorant of the history and the importance of this profession. I think he was surprised when I recounted that my uncle was a graduate of a Naval Military Academy and along with flight training he was also a surveyor. My second cousin was one of the surveyors of the original site of Disney World outside of Orlando. As a child, I went out with my uncle and his chains. Later I went with JB a few times as his "crew".



JB at Longs Peak

JB loved history and he would say that surveying was an ancient and noble profession. Then he would proceed to regale with a history lecture. He was a brilliant raconteur. His article of Summit of the Rockies was an example of how he entwined business and history. Often when driving to another Fourteener, he would point out some landmark where he had surveyed including a summer in South Park. Or he would tell me about some spot in Denver or Boulder where he had done some work.

JB was a business and history major at CSU. His plans were to return to his family business in Chicago. The family enterprise did not prevail and

the company was sold and his future as planned was gone. Needing a summer job a friend recommended that he should try job at a local survey firm. JB was a student radical of the 60's. He was a free spirit with long red hair, extremely athletic and independent. His father introduced him to Rocky Mountain National Park when he was a boy and they climbed Twin Sisters. JB described pulling himself up the cable route on Long's Peak in penny loafers. Thus began his outdoor adventures with McKinley in Alaska and in Peru.

JB revered his father and said that no one had a better Dad than he did. His father would often minister at summer camp. Often the sermon was from



Corinthians 13: *When I was a child, I spoke as a child, I understood as a child, I thought as a child: but when I became a man, I put away childish things.*" It was time for JB to set his compass toward the future.

JB began his survey career working in the field at Robinson Engineering. Due to his determination and singular personality he understood that he was not an ideal employee, he had to be the boss. He soon discovered that he was very ignorant about the science and business of surveying. Assiduous in his need to achieve, he returned to school to learn math and later went to the Colorado School of Mines where he met Dexter Brinker. No one at the company knew that he was applying his time, energy and money to earn his license. JB would grimace about the enforced suffering of many cups of coffee needed to stay alert for class after working a full day in the field. He took his PLSC exam and passed the first time. He continued to collect licenses in neighboring states.

When I met JB, he had just purchased half ownership of Flatirons Surveying. His financial advisor told him that this company was not a good investment. JB

obviously did not agree. I witnessed him write the check to complete the transfer of sole ownership. He accumulated all of his assets through hard work and delayed gratification. He was in the office seven days a week. There were tough times. He would sometimes write payroll from his personal checking. During the financial collapse, we managed to crawl out of the recession by using our retirement and through the loyalty of the employees who stood by the company.

As he matured in the business, his greatest joy was teaching and giving back to the profession. He was thrived on the pursuit of service to his community. JB loved expert witness work. We would sit at the dinner table and he would review a case, revise upon waking in the middle of the night and tell me while he showered how he had solved the problem. Sometimes, he would ask me to edit documents, the *Side Shots* and witness reports. Then he would ask me if I had read the material and ask for my opinion. I did learn a lot although my contribution was mainly grammatical. I was privileged to attend several sessions of lobby day in Washington DC with him. I met many of his colleagues and my friend, Becky Roland during

this trips. The gentlemen and Becky allowed me to sneak into the House and Senate where I would play the secretary.

It was our last trip to DC in 2019 and he was not feeling well. JB lived such a fit lifestyle. His doctors would tell him that the only improvements he could make were to limit his stress and take more vacation time. That was in the future plans. However, when we came home his pain had increased to the point that he wanted to go to the emergency room. That was when we received the news of his terminal diagnosis.

JB would say to you now that life is precious and ephemeral. He would tell you that man can never know when it is the last words of kindness uttered, a hug from a friend or a kiss from a loved one. He considered his employees at Flatirons as family and wished for their success as individuals and as a group. He cherished his colleagues in the profession. JB passed peacefully at home with Heather and me by his side. It was my greatest honor and privilege to assist him through his illness. He was brave, courageous and determined to the last. It was a joy to share a life with the perfect partner.

JB Guyton's Impact

I will never forget the first time I met JB. I had arrived to participate in a PLSC conference, and was standing in the hallway when someone I knew introduced us. It only took a short conversation for me to realize that I was talking with someone whose intelligence was totally "out of my league". What I learned as we became good friends is that JB is also an amazing human being whose love for his profession, and for people in general, is extraordinary. That combination manifested itself through the interest JB exhibited in his support of the annual NSPS Student Competition. During one of his first activities as a judge, JB was able to utilize his knowledge of Spanish, and dedication to fairness, to insure that the participating team from Puerto Rico was able to convey its message to the other judges. I am honored and proud to have been considered as a friend by JB. His light will always shine in my remembrances of dear friends.

Curt Sumner, LS (Va)
Executive Director
National Society of Professional Surveyor

I met JB on a chairlift in Winter Park. On the ride up, I expressed a desire to move to Colorado from NC to continue my career in land surveying. He told me to look up his company and hired me on the spot essentially. I worked for JB at Flatirons Surveying for 2 years. He and I had a working relationship through the PLSC for years after that. JB showed me and my fellow surveyors the importance of volunteering. His legacy editing Sideshots and his decades of surveying across Colorado is a lasting one. I will be retracing his work for the rest of my career.

Kayce D. W. Keane, PL
Boulder Land Consultants
First Recipient of JB Guyton
Lifetime Achievement Award

It would be an understatement to say, I will miss my friend John Guyton (JB). I knew JB for over 20 years but only in the past few years, did I have the opportunity to get to know him. Those who knew JB, understood that he was a highly educated, a history fanatic and a passionate contributor to the land surveying profession. Forever the educator and mentor, whenever we had conversations, I would make a mental note to myself to look up a word or two that JB had stated. He loved to use unconventional words to convey his thoughts, and even through this minor way, he was educating me as he loved to do with anyone who would venture a discussion with him. JB, the dedicated professional, spent decades as editor of the Colorado surveying society quarterly magazine SideShots, participated in many activities in the surveying arena, represented the surveying community on numerous agency boards and spoke on a variety of topics at conferences. Never looking for thanks or appreciation, he just wanted to give of himself to the community. Over the last two years JB had to transform his life due to his illness. Fortunately for me, I had the opportunity to visit with JB at his home a couple of months prior to his passing. During the visit it was great to hear about his compassion for others and his desire to have the children of elder parents engage with their parents, to let them know they matter in this world and they are needed. JB always made me and others feel welcome, respected and appreciated. Treating others in this way has become increasingly rare in this world. I shall miss seeing JB, hearing his stories and engaging in thoughtful conversation. Godspeed my friend, rest in peace.

Todd Beers
PLSC Past President and NSPS and
WFPS Representative

JB Guyton was my first surveying mentor. We first met in 1980 when I was fresh out of the Brinker School of Surveying and Mapping. He took me under his wing and we shared a lot together. We worked together for 6 years. I climbed my first 14er (Longs Peak) with JB in 1981. I went on to climb 35 others. Though we shared a great deal within the surveying profession over the years, my fondest memory of JB is the birth of my daughter. Lorraine's water broke a week early. We were supposed to have a co-ed baby shower that day, but wound up in the hospital for an 18-hour labor. JB came to visit in the hospital...while Lorraine was in labor. It was a little awkward, but it gave he and I a laugh over the years when we remembered that story. JB would always give me time when I needed survey legal advice, or info for a job change or just sharing survey info or discussing politics. In the early years, we would do free lance survey jobs together. Our careers intertwined over the years through advisory boards, conferences, PLSC and just the profession. I know that if Flatirons had been in Denver that I would have worked for him. Whenever I would tell Lorraine, "that I taked to JB today" or "I saw JB at the conference", she didn't have to ask "JB who?". That's all I ever addressed him as.

Bill Hesselbach
Retired



John Bruce (JB) Guyton was a successful professional land surveyor and a giant in the profession. He had decades of land surveying experience, was a successful business owner (Flatirons Surveying), edited our professional publication, Sideshots, provided expert testimony in many legal cases and was a mentor to many, including me.

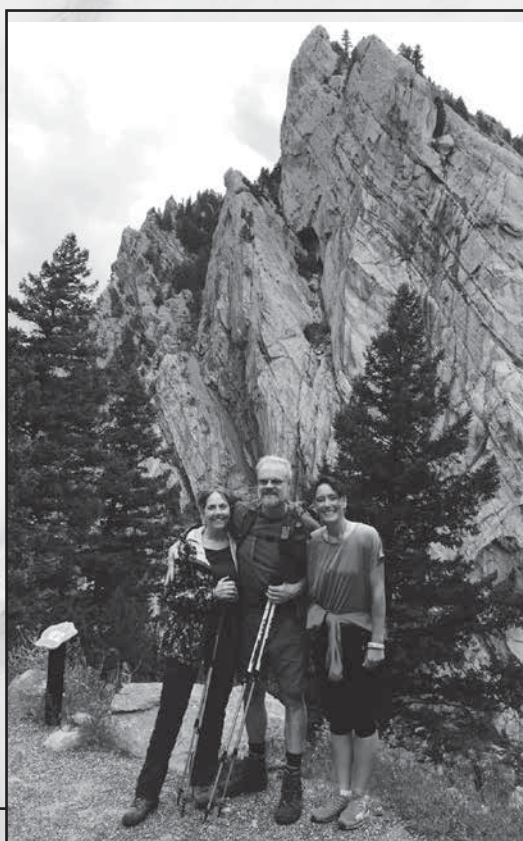
I met JB in the mid-1980s as a recent Civil Engineering graduate from CU-Boulder. JB helped launch my professional land surveyor career. Not only did he share his excitement and passion for this field; he also shared his love of the outdoors, skiing, hiking and travelling with me. JB was not shy about sharing his deep thoughts about life. These conversations would bring up many life questions for me. I appreciate him pushing me to deeper introspection. He was my compadre.

JB and I would have long conversations about family, politics, travel, philosophy and current events. Often when JB would talk about his exploits in South America while mountaineering, he would often break into speaking Spanish which would result in hearty laughter from both of us.

On the slopes, JB had these gargantuan boards (skis) and would attack the slopes with a zest that would leave me breathless. Keeping up with him was a challenge!

What I want people to know about JB, is that he was a gentle, empathetic soul. He was a good listener and a true family man. My compadre is now on his forever adventure, yet he leaves a void in my heart. Rest in Peace, my friend. ¡Vaya con Dios!

Jeff Jones
Retired



There are aspects of JB's life that I think were very important to making him the person he was. He was an explorer. When I first met him, he was diving all over the world. One of my favorite photos in his office was one of him diving with a whale shark. It was an amazing photo that spoke volumes to who he was. He was also a mentor to so many people in the profession. The main reason I wanted to work with JB was that we shared the philosophy that if you give people the opportunity to work in their own areas of strength, encourage them, and allow them to grow into whatever suits their strengths, they will be happy and advance more quickly than in a strict work environment. Many Flatirons employees went on to start their own businesses based on the knowledge they gained working with JB. His enthusiasm for the profession was unbounded. Another unique perspective to his personality was his knowledge of survey history. He constantly astounded others with his knowledge of history and this in itself gave him an in depth understanding of surveying. There is so much more that I could share, but in conclusion, I lost one of the best friends I have ever had and will miss him every day.

Ed Bristow, PLS
President and General Counsel of
Flatirons, Inc.

JB started out for me as an archival for business. However, during the recession when I hit bottom, he turned into a valuable ally. JB helped me up, dusted me off and I will always be grateful to him for caring and helping me to continue in the profession.

Karen Meckel, PLS

JB encouraged me to expand my skills to become a professional surveyor. He sent me to my first survey class, the PLS Refresher course in Golden. I loved it and it changed the course of my career. JB also gave me my first book on surveying – the 3rd edition of Curtis Brown's Boundary Control and Legal Principles. After I read it he let me disagree with him on boundary decisions as long as I could back up my reasoning. One day the weather was so bad no one came in to work except for me and JB. I was a hand drafter, and JB was the new owner of the company I worked for. We got a call from KBCO (the local Boulder radio station) in desperate need for a certified elevation on their broadcast antenna. We looked up the closest benchmark and packed the equipment into his personal truck along with his beloved dog, Albert. We hiked to the top of a peak to set up on the benchmark and then needed to get the target to the top of the radio tower. Hiking to the benchmark was an almost futile exercise. Each step was mid-thigh in light powdery snow. We came to a ravine where the snow was too deep for me to reach the ground and JB demonstrated a mountaineering technique and "swam" through the snow. He encouraged me to do the same. I got horizontal and was propelling myself through the snow when Albert decided to use me as a bridge and walked across the deep snow on my back!

Laine Landau, PLS
Lamp Rynearson

I was blessed to spend time with JB during the NSPS Congressional Visits each year. We would walk endless times, back and forth to between the buildings, for meetings in the various legislators' offices. He would share his impressions about the meetings, PLSC, surveying, the human race... basically everything possible. A few years ago, his wife, Pat, joined him on the trips. Our friendship quickly grew, and I was always so happy to spend time with them. Conversations were intellectual, sometimes emotional, and always filled with pearls of wisdom. JB was always so excited and proud to meet students at the event and share his encouragement. He was very proud to be a surveyor, and the profession meant so much to him. I will miss his smile and his endless knowledge of history. He was truly a student throughout his life.

Becky Roland
PLSC Executive Director

2021 Rocky Mountain Surveyors Summit

2021 Rocky Mountain Surveyors Summit looked a bit different. We hosted 18 webinar presentations and had a socially distant in-person presentation.

Thank you to the over 150 attendees online and 60 people who attended in person. Also, thank you to our sponsors:

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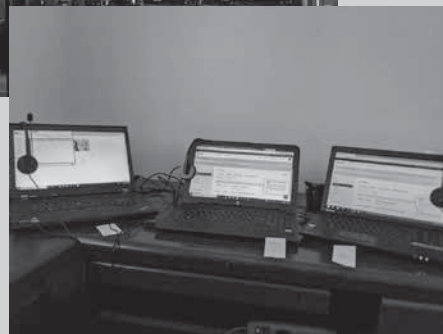
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2021 Rocky Mountain Surveyors Summit



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Surveyors Summit
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Congratulations to the 2021 PLSC Awardees

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NSRS Modernization

By Brian Shaw, NGS Rocky Mountain Regional Advisor

Background

NOAA's National Geodetic Survey (NGS) has been planning to modernize the National Spatial Reference System (NSRS) since 2007. The NSRS is a consistent coordinate system that defines latitude, longitude, height, scale, gravity, orientation, and shoreline for the United States and its territories. The NSRS includes such things as datums, geoid models, gravity models, survey data, transformation tools and more. Modernizing the NSRS will be composed of many things but the primary updates will be replacing the North American Datum of 1983 (NAD 83), the North American Vertical Datum of 1988 (NAVD 88) and the State Plane Coordinate System of 1983 (SPCS83).

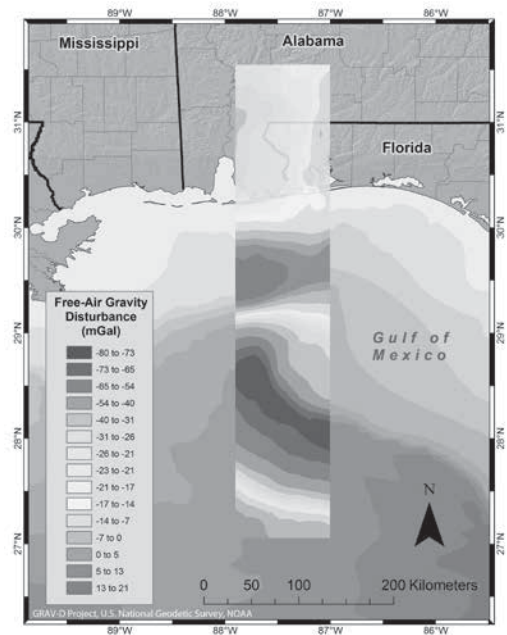
Datums and reference frames are an essential component for spatial data, serving as the foundation for aligning geospatial data from disparate sources. When performing analysis with geospatial data, using a consistent datum or reference frame assures that different datasets are correctly referenced to one another helping assure that any decisions made from this analysis are accurate. Similar to how the concrete foundation helps keep the frame of a house in place, datums and reference frames help to keep geospatial data properly aligned.

Since the introduction of NAD 83 and NAVD 88 science and technology have progressed at a rate never before seen which continues to accelerate with each passing year. With this progression our understanding of Positioning, Navigation and Timing (PNT) have greatly improved making it possible to collect geospatial data to a precision and accuracy never before done. Thanks to this technology we can see how the tectonic plates are moving in different ways relative to each other, as well as see land changing vertically and horizontally due to various factors like ground fluid withdrawal or glacial isostatic adjustment. With these advancements we are able to track changes in our environment to a level that requires an improved NSRS that can provide a framework for these measurements.

One of the main components to the NSRS Modernization is collecting new gravity data for the entire United States to be used to create the North American-Pacific Geopotential Datum of 2022 (NAPGD2022) which will replace NAVD 88. In 2007 the Gravity for the Redefinition of the American Vertical Datum (GRAV-D) project was first created. NGS had the ambitious goal to collect airborne gravity measurements across the vast majority of the US lands to help develop a geoid model with differential accuracies of 1 cm across any distance. NGS was unsure how much time would be needed to

collect the data for the Aleutian Islands, Hawaii and the Pacific territories, but original estimates (since updated) were at least 11 years.

The first GRAV-D survey was conducted out of Montgomery, Alabama in early 2008 and would fly out over the Gulf of Mexico continental shelf, known as block CS01. I had the honor to be one of two gravimeter operators on this maiden survey which provided me an amazing experience. We performed flights at three different altitudes as well as varying speeds to identify the optimal spacing, speed and altitude that the data should be collected. Over the next 5-10 years the process was streamlined, collecting data across the US, and updated planning indicated that the data collection would be complete by the end of 2022. Unfortunately due to various factors NGS realized that this would not be possible and in June of 2020 we officially delayed the rollout of NSRS Modernization.



Map of GRAV-D block CS01¹

NSRS Modernization Delay Message

Here is part of the official NSRS delay message²:

Since 2017, operational, workforce, and other issues have arisen and compounded, causing NGS to recently re-evaluate whether a successful roll-out by 2022 is possible. The most significant impacts have been in workforce hiring and retention, and in meeting GRAV-D data collection milestones, which underpin

the NSRS modernization efforts.

NGS is currently conducting a comprehensive analysis of ongoing projects, programs, and resources required to complete NSRS modernization and will continue to provide regular updates on our progress. To get the latest news on NSRS modernization and track our progress, subscribe to NGS News³ or visit our “New Datums” web pages⁴.

Working in the Modernized NSRS

In this section I would like to highlight some of the key components and concepts of working in the Modernized NSRS. For more details please reference the NOAA Technical Report, Blueprint for 2022, Part 3: Working in the Modernized NSRS⁵ which has recently been updated from the original publication. On March 11, 2021 there was a webinar on this document which was recorded and available here⁶.

Today in Colorado/Wyoming/Montana we work in NAD 83 (2011) and NAVD 88 but this will be changing with NSRS modernization. In the future NAD 83 (2011) will be replaced by four plate fixed Terrestrial Reference Frames (TRFs) of which the North American Terrestrial Reference Frame of 2022 (NATRF2022) will be the most likely candidate for use in this region. NATRF2022 and the other three TRFs will be mathematically defined relative to the International Terrestrial Reference Frame of 2020 (ITRF2020). In fact, all geometric NGS products and services will operate in ITRF2020, and only after computations are complete will NATRF2022 (et al) coordinates be available. NAVD 88 will be replaced by NAPGD2022 which will include GEOID2022, GRAV2022 and more.

Today we understand that all tectonic plates are moving in different ways relative to each other and to help model this plate movement NGS will develop Euler Pole Parameters (EPPs) for each of the four tectonic plates upon which some 99% of U.S. states and territories are located -- Caribbean, Mariana, North American, and Pacific. When the modernized NSRS is released all the TRFs will be identical to ITRF2020 at epoch 2020.00. The EPPs will be used to convert between NATRF2022 (et al) and ITRF2020 at any other epoch besides 2020.00. There will also be another model currently called the Intra-frame velocity model of 2022 (IFVM2022, the name might change) that will be a 3D model of mark motion through time (using surface motion as a proxy) used to account for residual motion within each frame to estimate coordinate changes

through time. Figure 2 shows the North American plate Euler pole as well as the velocities of continuously operating reference stations (CORSS) on the Caribbean, North American and Pacific Plates.

In the future the primary way to access the NSRS will be through GNSS observations that are processed relative to the NOAA CORS network (NCN) and/or the IGS network. Most surveys will have GNSS involved, for example when performing leveling there will be procedures to assure that some marks have GNSS observations used to constrain the leveling survey to those coordinates/heights (some exceptions will exist, but using GNSS will be the most accurate, preferred way to ensure leveling-derived orthometric heights are up to date).

New types of coordinates on geodetic control will be coming with the modernized NSRS and these new coordinates will be called reference epoch coordinates (**RECs**), survey epoch coordinates (**SECs**), online positioning user service (OPUS) coordinates and reported coordinates. RECs will be coordinates computed by NGS using data submitted to NGS and processed by NGS an adjustment project to estimate the coordinates at a specific reference epoch. Reference epochs will be determined by NGS and are currently planned every five or ten years, starting at epoch 2020.00. **SECs** will be coordinates computed by NGS using submitted data, but estimated at (or near) the date of the actual data collection, called the “survey epoch”. Each survey epoch will be the center of an “adjustment window”, inside of which all data collected in that window will be part of the SEC adjustment project. Currently the

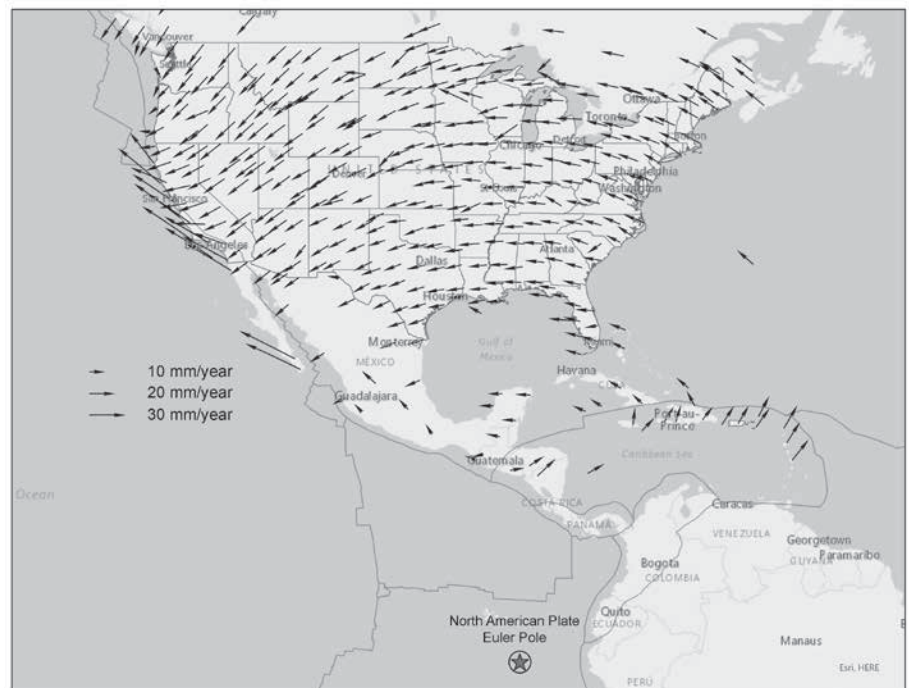


Figure 2: Vectors of horizontal velocity at select CORS and the North American plate Euler pole.

time of an adjustment window has not been determined but the leading candidate for GNSS surveys is four weeks, and one year for leveling surveys. RECs and SECs will be computed by NGS and once adjusted these coordinates on passive control will be considered “part of the NSRS”, similar to how datasheet coordinates are used as geodetic control today.

OPUS coordinates will be any coordinates that are provided from using OPUS. Any coordinates computed using “OPUS recommendations” will be considered “tied to the NSRS”. These coordinates will be observations from GNSS, leveling, total stations and more that are processed using the future OPUS 6.0 nicknamed “OPUS for Everything”. One other set of coordinates will be called **reported coordinates** and these will be any coordinates reported to NGS without the data necessary to replicate or evaluate them. These coordinates will also include any coordinates that are transformed between datums. A final type of coordinate--actually a coordinate function through time--will be active coordinates (ACs), but these will only be available at active control stations, such as CORSS.

The best way for users to determine coordinates in the modernized NSRS will be:

1. Resurvey: return to the field and collect new observations at geodetic control of interest.
2. Readjust: adjust existing observations in the

modernized NSRS using OPUS

3. Transform: Use transformation software to transform finished products in the old NSRS to the new NSRS.

These three methods go from the most expensive and accurate way of determining coordinates in the modernized NSRS to the least expensive and least accurate. Each organization will need to determine accuracy requirement needs for their geospatial data. Note that any data submitted to NGS today through bluebooking or OPUS Share will be included when the RECs and SECs are adjusted so if you submit your data to NGS today then readjustment results will be available when the modernized NSRS is released. You can learn more about the GPS on benchmarks campaign⁷ as well as learn about how to share your observations with OPUS⁸.

¹ https://geodesy.noaa.gov/GRAV-D/data_cs01.shtml

² <https://geodesy.noaa.gov/datums/newdatums/delayed-release.shtml>

³ <https://geodesy.noaa.gov/INFO/subscribe.shtml>

⁴ <https://geodesy.noaa.gov/datums/newdatums/index.shtml>

⁵ https://geodesy.noaa.gov/PUBS_LIB/NOAA_TR_NOS_NGS_0067.pdf

⁶ https://geodesy.noaa.gov/web/science_edu/webinar_series/working-in-modernized-nsrs.shtml

⁷ <https://geodesy.noaa.gov/GPSonBM/>

⁸ <https://geodesy.noaa.gov/OPUS/about.jsp#sharing>



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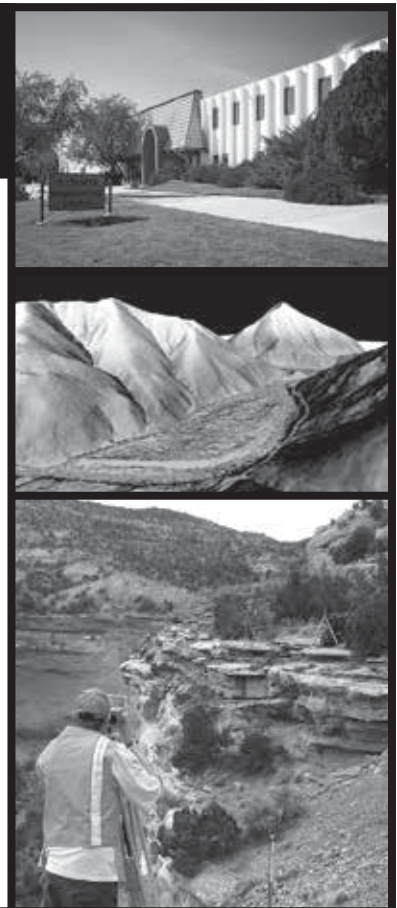
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Learn more at coloradomesa.edu/wccc/programs/land-surveying-geomatics



Contact WCCC Students Services at 970.255.2600 for admissions, registration and financial aid information.



ANNOUNCEMENTS FROM FIG

FIG General Assembly 2021

SAVE THE DATES: 20 and 25 June 2021 for the virtual FIG General Assembly 2021. Four sessions are being planned:

- **Session 1:** General Assembly agenda items - Presidents report, Financial report, FIG Foundation, General agenda items such as membership updates, honorary members. Incl discussions and questions
- **Session 2:** Election - Get to know your candidates - ask questions to the candidates for FIG Vice Presidents, Commission Chairs and Working Week destination 2025
- **Session 3:** Announcement of the winners of the election and FIG Governance - Task Force on Governance report and findings, response from Council and general discussion with delegates

- **Session 4:** The work of FIG - delegates are encouraged to comment, ask questions, and discuss with FIG Commissions, Networks, Task Force and Permanent Institutions on their work

Members of FIG will receive more detailed information incl. the agenda for the General Assembly and how to vote.

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Public Outreach for Professional Land Surveyors

For those who may not realize, the Professional Land Surveyors of Colorado (PLSC) has, as one of the it's missions, to perform outreach to educate the public in the profession of land surveying. As such, the PLSC has a public outreach committee, chaired by Brian Dennis, the PLSC Vice President and longtime contributor to the PLSC.

Over the past decades, the PLSC and members of the surveying profession, have given unselfishly of their time to promote the profession in a variety of ways including GPS day, GIS -In-The-Rockies, Geocaching competition, boy & girl scout events (including surveying merit badge), establishment of control networks at the Pleasant Valley scout camp in Elbert County, Colorado, hosting business visitation days to introduce students to surveying and engineering industries, hosting booths at guidance counselor conferences, to name a few. Typically, surveyors may be directly contacted by an elementary, middle, high school or college to participate in a career day by providing information on land surveying by way of in person visits, visual aids (posters, brochures) and in recent days, zoom meetings or webinars. A lot of the time, the PLSC is not be aware these school events have been requested or performed by individuals. We wish you to know that your efforts are much appreciated and deserving of a big thank you!

We also want to mention that there are materials and budgets set aside from the National Society of Professional Surveyors (NSPS) and the Western Federation of Professional Surveyors (WestFed) to assist in the development and execution of outreach activities. Items that are available include "kids in surveying" posters, notepads, stickers, brochures on "What is a Land Surveyor", education related material on how to become a land surveyor, PowerPoint presentations geared toward all levels of schools (elementary, middle, high school, college), scholarships at the state and national level, etc. The NSPS has provided information regarding the construction and use of a "virtual sandbox" that can be used to display topographic contours within a sandbox by moving the sand around to form hills & valleys. A rain storm can be introduced to demonstrate how the water flows downhill based on the contours or at a constant contour interval for a pond. Several PLSC chapters have constructed a sandbox for use at outreach events.

Trig Star is another event that has been spearheaded by NSPS and coordinated by PLSC members providing a trigonometric completion for high school students. Typically a high school math teacher reaches out to the PLSC or a parent of a student to inquire about the Trig Star program. The PLSC purchases the testing materials and coordinates the event with the high schools. This is a nationwide competition and on numerous occasions, a Colorado student has won the event. Prize money is awarded and the PLSC has provided participation gift cards for the students.

Over this past year land surveyors and PLSC members have participated in multiple events that included Adams County middle school students joining in a zoom presentation on the surveying profession, Arapahoe County construction management class on what a typical day may include for a land surveyor. For both of these events PowerPoint presentations were developed to inform the public of the wide variety of tasks, challenges and technology used in our industry. Multiple short videos were also prepared for use during presentations. In years past, the PLSC has also set up booths at the state wide meeting of guidance counselors and industry career days as well as sponsored "breakfast with Colorado legislators" and capitol hill day at the Colorado Capital building. On a yearly basis, the NSPS promotes/coordinates, and the PLSC acquires a proclamation from the Colorado Governor for "National Surveyors Week" (this year March 21-26, 2021) that celebrates the surveying profession and engages the public.

The PLSC provides materials to interested groups or individuals to use in their preparation for outreach events. If you are aware of a potential outreach event, please contact the PLSC at the website PLSC.net.

The PLSC thanks all the people who fly under the radar and everyone who actively participates in public outreach events. Please know you are not alone and we are here to assist!

Respectfully submitted,

Todd Beers, PLS
Past PLSC President
Colorado NSPS Director
Colorado WestFed Director



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Under the Gold Dome

By Steve Balcerovich & Kathy Oatis

PLSC Contract Lobby Team

By mid-April, the 2021 regular session of the Colorado General Assembly will be one-half complete, with sine die coming no later than June 12. This year the session's end will be about a month later than normal, because the Legislature took a month break from January 16 to February 16 due to COVID-19. This is the second consecutive year that the Colorado Legislature has taken a recess only to reconvene at a later date; something unprecedented in Colorado's history.

The focus at the 2021 Legislature has been on the pandemic; the state budget; stimulus programs; program renewals and expansions; and a large number of bills designed to reduce or remove the powers of the Governor and his administration in disaster emergency situations. The Democrat majority control of the House, Senate, and the Governor's office make the passage of such legislation to curb gubernatorial powers unlikely.

The debate between the parties to limit the exercise of administrative authority is rooted in the Governor's response to the Covid 19 pandemic, while avoiding his responses to other emergency situations such as wildfire and the drought. More than anything, these efforts, often sponsored by the minority party, seem designed to admonish the Governor and his possible over reach during these past twelve months. So far, all such efforts have been defeated in their first Committee assignment.

In addition, it should be noted that the unexpected, late March incident at a Boulder grocery store will produce a number of bills related to the regulation of firearms.

Although there has been over 500 bills introduced, there have been no bills this session that are directed solely at the land surveyor industry. In the interim, we had heard that some counties were trying to eliminate the election of county surveyors and replace the elected officeholder with an appointed position made by the county commissioners. So far, we have successfully kept the idea from gaining serious legislative interest.

There are a few bills worth mentioning that elected surveyors and the private surveyor community should be made aware. These bills are listed below in more detail:

HB21-1065, Nonsubstantive emails and open meetings law.

The bill clarifies that electronic mails between elected officials, that does not relate to the merits or substance of pending legislation, does not constitute a meeting under Colorado Open Meetings Law.

HB21-1261, Residential Land Property Tax Classification.

Under current law, "residential land" is defined to include contiguous parcels of land under common ownership, provided that at least one of the parcels includes a residential improvement, such as a house, garage, or shed, and that the other parcels are used as a unit in conjunction with the residential improvement. The legislation clarifies that a land parcel is residential, only if it contains a related improvement, such as a driveway, that is essential to the use of a residential improvement on a contiguous parcel. To qualify, the parcel must have identical ownership to the parcel containing the residential improvement, not merely an owner in common.

HB21-1110, Electronic filing of documents with governmental entities.

As introduced, the bill required state and county governments to have an electronic filing process for all documents that each entity requires or allows to be filed. We expressed PSLC's concerns to the Bill sponsor, who is now recommending a legislative interim committee to study this issue.

HB21-1110, Colorado laws for persons with disabilities especially related to web content.

This legislation strengthens state discrimination laws for individuals with disabilities and provides additional responsibility for the Colorado Office of Information Technology (OIT). OIT is to support state and local

government agencies, by helping them develop and implement their web accessibility plans by 7-1-2024.

HB21-1225, Electronic recording technology board.

The bill continues the electronic recording technology board statutorily created in 2016. One of the new legislative changes is to allow the board to approve grants to counties to establish, maintain, improve, or replace their electronic filing systems. These systems are used to receive, store, manage, and provide online access to public documents that are maintained by the county clerk and recorder and are not related to real property. This legislation is initiated by the Colorado County Clerks Association.

HB21-164, Uniform easement relocation act.

If enacted, this legislation would have created the Uniform Easement Relocation Act, which would have setup procedures to relocate easements, excluding

public utility easements, conservation easements, and negative easements. This legislation was drafted by the Uniform Law Commission, which recommends legislative ideas to the Colorado Commission on Uniform State Laws. Due to significant opposition from the Farm Bureau and the water community, the legislation was defeated in its first Senate committee.

Conclusion:

As the session moves forward with increasing speed, we can expect several more hundred bills to be introduced in the final half of this session. As always, we are here to protect and promote the interests of the surveyor community.



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PLSC Board of Directors

Meeting Minutes

March 9, 2021 • 4:30 pm

1. Call to Order: Pettit

Name	Position	Chapter	Attending?
Ralph Pettit	President	Central	x
Brian Dennis	Vice President	Southern	
Shaun Lee	Secretary/Treasurer	Central	
Becky Roland	Executive Director	n/a	x
Heather Lassner	Director	Northern/TrigStar	x
Eric Carson	Director	Central	
Brian Bowker	Director	Western	x
Ian Cortez	Director	Central	
Todd Johnston	Director	Southwestern	x
Eric White	Director	Southern	x
Tom Sylvester	Director	Western	x
Scott Thompson	Director	Western, Legislative Co-Chair	x
Steve Parker	Ex-Officio	Southern/NSPS	x
Parker Newby	Non-Voting	Southwest	
Todd Beers	Non-Voting	NSPS/WFPS Delegate	x
Guests:			
John Hunter		Geo-Coordinator	x
Peggy Streicher		GIS in the Rockies	x
Robert Boehm		Central Chapter	
David Berglund		Northern Chapter	x
Willie Whelen		NW ¼ Chapter	
Brian Shaw		NOAA/NGS	x
James Combs		YSN	
AJ Summers		Northwest 1/4	x

2. Determination of Quorum (6 voting) Pettit

- confirmed

3. Any changes to the Agenda? Pettit

- none

4. Approve February Minutes TJ/BB: Pettit

MOTION: To approve the February 2021 Minutes as presented. (Johnston/Bowker)

Approved unanimously

5. Financial Items: Pettit /Roland

- Reviewed financials as of February 2021
 - Majority of income in for year (dues/Summit)

6. Side Shots deadline March 31: Pettit

- Need to establish Editorial Committee – Parker to Chair
- Next issue will be a Memorial issue for JB Guyton
- Additional content/Usual articles expected
- Send content to Roland and Parker
- Hunter has an article to submit (for August issue)

7. Summit Update: Roland

- Reviewed numbers
- Need a Chair/Co-chairs for 2022

8. Project Updates

- Colorado Railroad Museum Project
 - Hulsey/Boehm
 - no report – Pettit to contact Boehm on status/assistance
- Adams County: Lassner
 - no update
- Sawyer Garston Collection: Parker
 - closed due to COVID – opening soon

9. Reports

- WCCC Update/Scholarship Committee: Sylvester
 - Bombacini Application Approval – Committee recommends awarding

MOTION: To approve awarding \$1,500 scholarship to Bombacini. (Sylvester/Bowker)

Approved unanimously

- Roland will prepare letter for Pettit signature and check to mail
 - 32-33 students currently with 8-9 graduating in May
 - Approaching end of endowment so need to consider next steps and start conversation with WCCC/CMU – Sylvester will work with Pettit in between BOD meetings
- GIS in the Rockies: Streicher
 - Virtual again this year
 - Need speakers – Streicher to send info on call for abstracts/presentations to Roland
 - End of September is the conference
 - Brian Shaw volunteered to assist
 - Colorado Coordinator Activities: Hunter
 - Submitting input for Colorado end of next week to NGS
 - Presented virtually at Summit
 - Looking at 2024/2025 release date
 - NGS Update: Shaw
 - GPS on Benchmarks deadline is end of year
 - NGS Homepage updated – more mobile-friendly
 - Updating Blueprint documents
 - Webinar this Thursday on Blueprint 3 documents
 - Next month will have use cases
 - May 4-5 Geospatial Summit
 - GVX first version has been released

- vii. Submitted an article for next issue of Side Shots
 - viii. Blueprint 2
https://geodesy.noaa.gov/library/pdfs/NOAA_TR_NOS_NGS_0064.pdf
 - ix. Blueprint 3
https://geodesy.noaa.gov/library/pdfs/NOAA_TR_NOS_NGS_0067.pdf
 - e. Executive Director: Roland
 - i. no additional report
 - f. Lobbyist/Legislative Committee: Thompson/Pettit
 - i. Bill on moving easements was killed in Committee
 - ii. Still have questions on the electronic recording bill
 - iii. If we want to have a sponsor for any new legislation, we need to decide now
 - iv. Need Co-chair to replace Pettit
 - g. Membership Committee: Carson
 - i. Reviewed status of renewals
 - h. Outreach Committee: Dennis
 - i. Education Committee: Roland
 - i. Need a BOD Member to Chair
 - j. Trig Star Committee: Lassner
 - i. No requests received for offering at the schools
 - ii. Will start reaching out for next year around end of summer
 - k. CST Committee: Parker
 - i. Exams in CS two weeks ago and again in May
 - ii. One in Denver - TBD
 - l. NSPS Delegate Report: Beers
 - i. Beers will be PLSC Delegate for voting
 - ii. Parker will be additional participant for PLSC
 - iii. Meeting in April (virtual)
 - 1. Any Board Member is welcome to participate in Committee Meetings – Todd will forward dates/details
 - m. WFPS Delegates' Report: Beers/Nelson
 - i. Met in February
 - ii. Will be offering a refresher course – not state specific
 - iii. Spring should be the next multi-state meeting
 - n. NSPS YSN: Combs
 - i. Had a virtual meeting scheduled during the Summit – Becky to reach out to Combs on results
 - o. QBS Update: White
 - i. Quiet since October Meeting – Eric will reach out to see status of group
 - p. Colorado County Surveyors: Joy
 - i. No report
- 10. Chapter Reports
 - a. Southern: Parker
 - i. No new report
 - ii. Directors are carrying terms forward due to COVID
 - b. Central: Boehm
 - i. Becky will follow up with Robert on elections/notification to candidates
 - c. Northern: Berglund
 - i. Next meeting in April
 - d. NW ¼: Summer
 - i. No report
 - e. Western: Bowker
 - i. Next meeting tomorrow (virtual)
 - ii. Future meetings will be in-person and virtual
 - f. Southwestern: Johnston
 - i. Meeting next Tuesday (in-person and virtual)
 - ii. Officer meeting tomorrow night
 - iii. Participation is down during virtual presentations
 - 11. Next Meeting Date and Location
 - a. Next BOD Meeting - April 14 at 4:30PM
 - i. Move to 2nd Wednesday
 - b. BOD business work group – Outreach (schedule in March/April)
 - c. BOD Orientation – March 20
 - 12. Adjourn (Lassner/Thompson)

Treasurer's Report

				3/31/21
			Income	
			Scholarship	120.00
			Silent Auction	0.00
			Summit Income	50,725.00
			Publication (books)	0.00
			Refresher Course Income	4,050.00
			Refresher DVD	300.00
			GIS in the Rockies	0.00
			Membership Dues	
			NSPS Dues	8,950.00
			Membership Dues	
			Voting	27,750.00
			Associate	6,375.00
			Sustaining	3,680.00
			Student	240.00
			Retired	360.00
			Membership Dues Subtotal	38,405.00
			Total Membership Dues	47,355.00
			Miscellaneous	0.00
			Side Shots Ads	1,100.00
			Total Income	112,600.00
			Expense	
			BOD/Chapter Summit Meetings	59.49
			Side Shots	0.00
			Awards	440.75
			Scholarship	1,500.00
			TwIST	0.00
			Endowment	0.00
			Other	0.00
			PLSC	1,500.00
			CFedS	0.00
			Chapter/Matching	0.00
			Trigstar	0.00
			Refresher Course	
			Speaker honorariums/planning	0.00
			Online Course Development	0.00
			Copies/Printing	348.36
			DVD Sales	75.55
			Supplies, Bus	0.00
			Storage	713.00
			Special Projects	
			???	0.00
			Merchandise	0.00
			Publication (books)	0.00
			Outreach	
			High School/Middle School	0.00
			Scouting	0.00
			Legislative	0.00
			Trigstar	0.00
			6PM Plaque Renovation	

	Tax prep	0.00
	Web Site	651.98
	Online Meeting accounts	
	Web Site - Don Lambert	0.00
	Lobbyist	3,750.00
	Travel, Bus	0.00
	BOD Travel	0.00
	WFPS Travel	0.00
	NSPS State Directors	0.00

			NSPS Travel	0.00
			Credit card/Bank Expense	3,105.90
			Insurance	655.00
			Miscellaneous, Bus	261.13
			Phoenix AMC	8,986.25
			Postage	7.75
			Membership Packets	
			Books	0.00
			Decals	0.00
			Postage	0.00
			Dues	
			NSPS Dues	9,050.00
			Chapter Disbursements	0.00
			RMSS Chapter Distribution	
			NCPLSC	0.00
			SCPLSC	0.00
			CCPS	0.00
			RMSS Meeting Expense	
			Promotion	625.88
			Supplies	23.74
			Copies/Printing	0.00
			Attendee Food/Beverage	7,986.76
			Speaker Travel/Expense	26.52
			PLSC Meeting Expense - Other	34,865.38
			Total PLSC Meeting Expense	43,528.28
			Total Expense	73,133.44
			Net Income	39,466.56

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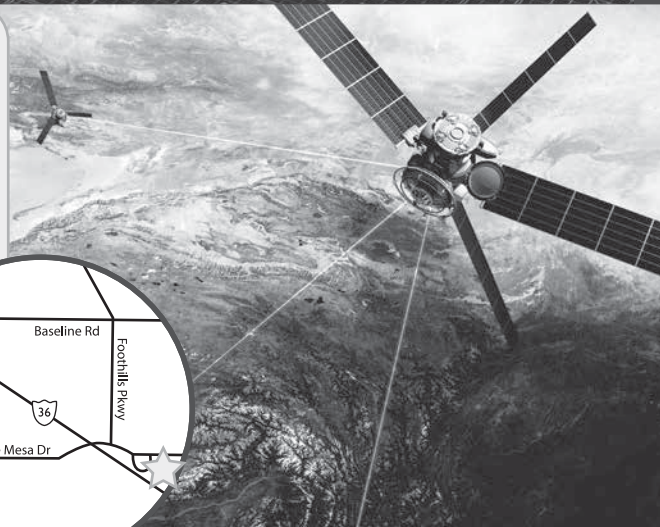
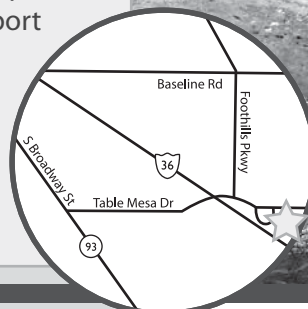
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PLSC - NORTHERN CHAPTER

In January we completed elections for new officer and director positions for the Northern Chapter in addition to a few amendments to our bylaws. Bylaw amendments included a vote allowing for electronic voting and our annual meeting was revised from September to January to align with the beginning of the fiscal year. We also approved our 2021 budget.

For our meeting in February, we had the opportunity to listen to an informative presentation from the Weld County Planning Department about upcoming changes to their Recorded Exemption process. The presentation was recorded, and we hope to share it with the full membership of PLSC in the near future.

The Northern Chapter chose not to have a March meeting in lieu of the Rocky Mountain Surveyor's Summit.

We are looking forward to our upcoming April Chapter meeting which will include a presentation on Subsurface Utility Engineering (ASCE 38-02/Senate Bill 18-167), the associated requirements and their relevance to us as Land Surveyors. This is an important change to the law which has affected how we collect information on utilities now and in the future.

The prospect of a return to in-person meetings, gatherings and other interactions is something that is on the horizon. As we all begin discussions on the parameters of a return to normalcy, please remember to respect others and keep yourself, family, coworkers, clients and the general public safe and healthy.

Respectfully,
Dave Berglund
President
PLSC Northern Chapter

PLSC - SOUTHWEST CHAPTER

The SWC held an in-person/virtual meeting on March 16, 2021 at the Holiday Inn in Durango. We had a great turnout and the virtual technology even worked without issue! We all practiced social distancing and wore masks. We did not have a topic presenter at this meeting and focused on going over old/new Chapter business.

Some highlights to this meeting were:

Treasurer's Report: Account balance \$11, 286.05.

La Plata County Surveyor's Report: Discussed vertical datum of FEMA maps within the County. Updated ALTA standards have come out. Discussed the State laws on the use of electronic signatures and seals.

State PLSC Report: PLSC looking for volunteers from the Chapter to be a part of the Side Shots Editorial Board, Rocky Mountain Summit Committee and Legislative Committee.

We discussed mentoring high school students in land surveying and how to reach out and generate interest from those students. We also discussed donating to a college scholarship fund and possibility donating a laptop to a college survey program.

Justin Bonnell, PLS was nominated and elected SWC Treasurer. Congratulations Justin! We know you will do a great job!

We discussed the NGS *GPS on Benchmarks* program and how the observations will be used to update the new vertical datum and those observations will directly affect our area. There was quite a bit of interest in having a "field day" on a weekend where volunteers from the Chapter would go out and observe benchmarks, then meet up for pizza and drinks afterward.

Our next meeting is scheduled for June 15th, 2021. However, there was discussion that we replace our regular June meeting with the *GPS on Benchmarks* "field day" mentioned above. Nothing has been set in stone and we are working on the logistics. I will keep everyone informed on the progress of that endeavor.

Everyone stay safe and healthy!

Todd C. Johnston, PLS
President - SW Chapter PLSC

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