

February 2019

SIDE SHOTS

Professional Land Surveyors of Colorado

Volume 50, Issue 1

WHERE IS NORTH?

- From astro. Observations
- Star \pm acc. Instrument
- Solar \pm 1 minute of arc

Astronomic North



- With magnetic compass
- \pm 1 degree
- Varies annually
- Varies with magnetic storms (solar activity)

- Calculated for Mercator
projections from Lat/Long

GRID (Coord) NORTH

UTM
NAD27
NAD83
Mapping Angle
(convergence)
Mercator
Northing
Easting

- Calculated for Lambert
projections from Lat/Long

MAG. NORTH
GRID (Coord) NORTH

UTM
NAD27
NAD83
(convergence)
angle
Declination
Lambert
Northing
Easting

see page 10

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MEMBER—WESTERN FEDERATION OF
PROFESSIONAL SURVEYORS

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SIDE SHOTS

FEBRUARY JOURNAL 2019

VOLUME 50

NUMBER 1

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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,
July 1 and October 1. All material received after the current deadline will appear
in the next issue of Side Shots.**

We would like to invite anyone who is interested to advertise in Side Shots.

*Do you have something you want to sell, trade or buy? Why not use Side Shots for your
next ad? We can also reproduce business cards for advertising. Ad space reservation must be arranged
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(Deadlines: January 1, April 1, July 1 and October 1).*

Current Advertising Rates:

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One-Half Page - Member \$115.00; Non-member \$150.00

Full Page - Member \$225.00; Non-member \$300.00

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MEMBER- WESTERN FEDERATION OF PROFESSIONAL SURVEYORS

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Dear Fellow Members of PLSC:

Happy Winter to all our members! Having a burst of cold weather in early January reminds us that the cooler temperatures and snowfall are with us once again in Colorado.

This is my last President's letter and it is presented with sincere thanks to the membership for electing me to this position for the past four years. It has truly been an honor, privilege and humbling experience to represent an organization that supports and enhances the profession of land surveying in Colorado. I would like to thank the many people without whom our organization would not exist. They include the current and prior boards of directors, our Executive Director, Becky Roland, the six chapters and their respective BOD's and of course the membership who we serve. A special thanks to the many volunteers both within and outside our industry who have contributed in various ways, from participation in outreach events, career days, and to the annual conference.



The PLSC has been successful over the past four years in several areas including:

- Establishment of an endowment for a Land Surveying program at Colorado Mesa University/Western Colorado Community College.
- Successful annual conferences resulting in sufficient PLSC operating funds.
- Development of and filling the position of Colorado Geomatics Coordinator.
- Continued PLS/LSIT refresher courses with average attendance of 20-25 students and expanding to real time remote access for attendees in 2019.
- Lobby day at the national level in conjunction with NSPS.
- Capitol Hill Day in Denver to introduce the surveying profession to our state legislators.
- Continued communication and coordination with the DORA AES Board on surveying related issues and presentations.
- Funding for the refurbishing of the 6th Principal Meridian monument.
- Funding support for the Google Earth Monument Records search program.
- Coffee with Colorado State legislators.
- Participation in NSPS, Western Federation of Professional Surveyors and NGS (GPS on benchmarks, state plane coordinates) events.
- Outreach to guidance counselors throughout the state.
- Career Day presentations for Colorado middle and high school students.
- Website revision, creation of PLSC Facebook and Twitter accounts.

continued on page 4

- Continued funding/coordination of Trig Star competition for high school students.

FROM THE EDITOR



Depending on the timing of deliveries by the US Postal Service's bulk mail system, you may be receiving this magazine just before, during, or after the Surveyor's Summit, which runs from February 6th through the 8th at the Arvada Center. The course information appears again in

this issue; you can register on line at the last minute, or even just show up to register on site. If you have never attended before, I would encourage you to try it. In addition to the course offerings, the opportunity to converse with other professional surveyors is very satisfying and worthwhile.

The annual refresher courses featured on page 10 are underway, but anyone interested in preparing for the exam can still enroll on line for the remaining courses. Tom Sylvester has provided another update on the new surveying program at Western Colorado Community College.

Gaby Neunzert has contributed a wonderful article on the age-old question of just where "North" actually is, and examines and explains astronomic north, geodetic north, grid north, magnetic north, previously determined north, and assumed north. Thank you, Gaby!

Earl Henderson has produced an excellent article on the Standards of Practice statute, just after the Bureau of Reclamation cadastral surveys letter. There is an in-memoriam for Don Hansen, PLS, known for his CDOT career and Central Chapter participation. Todd Beers provided an update from the Western Federation of Professional Surveyors with the always interesting state reports, and I have included an update on NSPS activities and benefits. And this issue concludes with minutes from the November 12, 2018 meeting of the PLSC Board, and the Chapter News.

I would like to express my gratitude to Todd Beers for his enthusiastic service to the PLSC as President, and extend a welcome to Steve Parker. I hope to see (or have seen) some of you at the Summit.

JB Guyton, Editor

President's letter *continued*

- Engaged lobbyists for assistance in the submittal and process of legislation in Colorado and the monitoring of potential legislation of interest to the land surveying profession.
- Legislation related to surveying for County Surveyor (passed) and continuing education (defeated in 2018, re-submitting in 2019) among other items.
- Outreach events such as GPS Day, boy & girl scout events, control network at Pleasant Valley Scout Camp, GIS in the Rockies, and the IRWA/PLSC golf outing.
- Quarterly editions of our newsletter, Side Shots.
- Creation of virtual sand boxes for use at outreach events.
- Colorado Land Surveying statute books (Paul Bacus).

To summarize, we as a professional society have accomplished a lot and I am very proud to be a member of our organization. Through these efforts, Colorado is becoming known on a national level as a "go to" State for achieving/fulfilling items of interest to the profession. Thank you again for the opportunity to represent our society.

Sincerely,
Todd Beers, PLS
PLSC President

Treasurer's Report December 31, 2018

Investments	\$238,324.89
Checking	\$14,061.21
Savings	\$100,701.14
Total Assets	\$353,087.24

Rocky Mountain Surveyors Summit

February 6-8, 2019 ~ ArvadaCenter

PLSC is pleased to announce Byron E. Johnson, PLS as our Headline Speaker



Byron is an Army veteran from 1975-1979, a graduate in Civil engineering and Surveying from Texas State Technical College with over 40 years experience in land surveying to include Metes & Bounds and PLSS states, boundary control and research of lands both private and public, GPS control surveys and aerial mapping. He is licensed in Arizona, Idaho, Nevada, Washington, former Certified Federal Surveyor (CFed) and a former certified BLM training instructor. He has worked privately and maintained his own surveying business from 1995 to 2010 specializing in GPS surveys, land description issues, retracement of historical and/or contract surveys. He has worked at and/or with local city and county governments. He was formerly employed federally with the Forest Service (2007) and the Bureau of Land Management (2007-2010 on contract, 2010-2015 FTE) in Reno, Nevada. He has instructed at the college level as an adjunct instructor for surveying courses since 1993, founded the 2 year surveying program at the Southern Nevada Community College (1998), Las Vegas, NV (program terminated in 2007 due to economy), instructed at the University of Nevada Las Vegas (1998-2002) and University of Nevada Reno (2005-2008) and currently instruct the "Land Description", "GIS for Surveyors" and the "Public Land Survey System" courses for Great Basin College, Elko, NV (since 2008) via the internet nationwide from his home office.

SCHEDULE

WEDNESDAY, FEBRUARY 6

7:00AM Registration Opens

7:30AM-9:30AM
Land Descriptions—Byron Johnson

9:30AM-9:45AM Break

9:45AM-11:45AM
Land Descriptions—Byron Johnson

11:45AM-1:00PM Lunch

1:00PM-3:00PM
Master Track: *Ethics*—Wendy Lathrop
Professional Track: Symposium: *City and County of Denver/Online Survey Services*
Technical Track: *ALTA Surveys*—Jay Kay Seymour 3:00PM-3:30PM Break

3:30PM-5:30PM
Master Track: *Ethics*—Wendy Lathrop
Professional Track: *New Utility Law*—Corey Biddle and Mary Keith
Technical Track: *ALTA Surveys*—Jay Kay Seymour

5:30PM-7:00PM Exhibitor Social

7:00PM-9:00PM PLSC Chapter Summit

THURSDAY, FEBRUARY 7

7:00AM Registration Opens

7:30AM-9:30AM
Master Track: *Boundary Control*—Byron Johnson
Professional Track: *Floodplain*—Wendy Lathrop
Technical Track: *Legal Mines: How to Successfully Navigate 2019's Perilous Waters*—Justin Vaughn

9:30AM-9:45AM Break

9:45AM-11:45AM
Master Track: *Boundary Control*—Byron Johnson
Professional Track: *Floodplain*—Wendy Lathrop
Technical Track: *Legal Mines: How to Successfully Navigate 2019's Perilous Waters*—Justin Vaughn

11:45AM-1:00PM Lunch

1:00PM-3:00PM
Master Track: *Subdivisional Section*—Byron Johnson
Professional Track: *Real Property Descriptions*—Wendy Lathrop
Technical Track: *NGS Initiatives*—Pam Fromhertz and NGS Colorado Coordinator Group

THURSDAY, FEBRUARY 7 continued

3:00PM-3:30PM Break

3:30PM-5:30PM
Master Track: *Subdivisional Section*—Byron Johnson
Professional Track: *Real Property Descriptions*—Wendy Lathrop
Technical Track: *NGS Initiatives*—Pam Fromhertz and NGS Colorado Coordinator Group

FRIDAY, FEBRUARY 8

7:00AM Registration Opens

7:30AM-9:30AM
Master Track: *Fractional and Parentheticals (CFedS)*—Byron Johnson
Professional Track: *Trimble TBC-Interactive Presentation*—Boris Skoplijak
Technical Track: *CST Exam Prep/Sample Exam*

9:30AM-9:45AM Break

9:45AM-11:45AM
Master Track: *Fractional and Parentheticals (CFedS)*—Byron Johnson
Professional Track: *Trimble TBC-Interactive Presentation*—Boris Skoplijak
Technical Track: *CST Exam*

11:45AM-1:00PM Lunch

1:00PM-3:00PM
Master Track: *Fractional and Parentheticals (CFedS)*—Byron Johnson
Professional Track: *Trimble TBC-Interactive Presentation*—Boris Skoplijak
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Professional Track: *Trimble TBC-Interactive Presentation*—Boris Skoplijak
Technical Track: *CST Exam*

	Cost (same as 2018):		
	1-Day	2-Days	3-Days
PLSC MEMBER:	\$200	\$375	\$550
NON-MEMBER:	\$300	\$475	\$650
STUDENT:	\$ 75	\$125	\$200
EXHIBITORS (PLSC Sustaining Members Only)			\$400

PLSC Voting Member Dues are only \$150/year and include NSPS membership.

There are many sponsorship opportunities available, in addition to exhibiting. Contact us for more information (plsc@plsc.net) or go to www.plsc.net for complete Summit information and to sign up online.

Save money when you register by January 15, 2019. Catered breakfasts & lunches will be provided on all days. Online registration is available at the PLSC web site (www.plsc.net).

Silent Auction/Exhibits:

We will be holding a silent auction during the conference. If your equipment room is cluttered up by equipment you are no longer using, please consider donating an item or two to the PLSC silent auction.

In keeping with our traditional practice, our Sustaining Members have been invited to display their latest products and services. Exhibits will be in the Arvada Center entrance hall adjacent to the classrooms. Please visit their displays and show our appreciation for their continued support.

Hotel:

The Doubletree Hotel at 8773 Yates Dr., Westminster, CO, will once again be our host hotel. There will be a shuttle bus to and from the conference hotel each day. Pick up and drop off times will be announced prior to and at the conference. For reservations, call 303-427-4000 and mention PLSC for discounted rates.



Here are just some of the reasons you should attend the 2019 Rocky Mountain Surveyors Summit:

- National and Local Speakers all in one place
- The latest products and services in the industry, with experts onsite to answer all of your questions
- Networking time with your colleagues and PLSC leadership

**UP TO 24 HOURS
of continuing education
and
2 CfedS continuing
education credits**

Land Surveying and Geomatics Degree Program at Western Colorado Community College, a subdivision of Colorado Mesa University, Grand Junction, Colorado

2019 Rocky Mountain Summit – See You There!

By Thomas W. Sylvester, P. E. and P. L. S.

At the end of this fall semester's classes in Boundary Law and Writing Legal Descriptions, I had one student who commented that it appears that after completing those two courses, we were only starting to scratch the surface of what boundary law is all about and wanted to know where to get additional information.

My response to him and the rest of the class is summarized below:

"I agree wholeheartedly that we are just getting started. I found for me, boundary law is a slow, evolutionary learning process that sometimes works against my "logical" brain. So, any exposure you can get is helpful.

My suggestions are:

1. Subscribe to two or three surveying magazines such as POB, American Surveyor, Professional Surveyor, Side Shots, and the like (most are free). Each typically carries at least one article per issue dealing with boundary law.
2. Jeff Lucas, an attorney and a Professional Land Surveyor, has a monthly "Lucas Letter" discussing various boundary law cases. It is a subscription letter, but I've found it very worthwhile. He also gives excellent seminar presentations if you find yourself with the opportunity to attend. His link for his company is www.lucasandcompany.com.
3. Attend as many seminars as you can. Try to get to at least one per year. Often there are various presenters ranging from the technical side to the legal side and everything else for which a surveyor may be interested. Even after all of these years, I still walk away from every seminar with some new insight.
4. Carry on legal discussions with your peers, colleagues, supervisors and participate in surveyor forums. However, when you do get new opinions, try to find a source for their opinions if they differ from yours. Surveyors are full of opinions, but sometimes they learned from someone

else through a mentoring process and sometimes those opinions are in error."

To that list, I would add joining the Professional Land Surveyors of Colorado and become active in a regional chapter.

However, this article is primarily addressing No. 3 above. **Attend as many seminars as you can!**

The Rocky Mountain Summit is coming up this February 6 – 8, 2019 at the Arvada Center for the Arts & Humanities. (Note the venue is apropos in that the profession of land surveying and geomatics is often referred to as the science and art of surveying). This is an excellent three-day seminar with Technical Tracks, Professional Tracks, and Master Tracks.

If you can make it to the Summit, please do so. Ask your supervisors if they will help defray the cost. If you can only make it to part of the seminar, every little bit helps.

For those of you in supervisory positions, or upper management and owners of surveying companies, reach out to your employees and encourage as many of them to attend as possible. And offer to pay their way, even including paying them their wages as they attend. Your investment in the time and expense of furthering their education will pay back huge dividends as time moves on. Your AutoCAD and research techs will gain further insight on what we surveyors do and why. The field techs will learn new techniques, gain greater understanding of boundary law, and become more involved with the profession. Your party chiefs will add to their repertoire of knowledge. Your supervisors will increase their knowledge and gain confidence with



their charges becoming better trained. With all of their increased knowledge, your company will make better decisions, make fewer mistakes, and increase the productivity of your output.

This in no way diminishes your responsibility as "Person in responsible charge". However, using an analogy from my navy days, I like to equate the PLS reviewing and signing the plat to the Captain of a ship at sea. The captain is in responsible charge at all times. However, he has to eat and sleep sometimes. And with hundreds if not thousands of sailors on each ship, the Captain cannot do all of the tasks. However, if the ship goes aground, collides with another ship or often in war, the ship is sunk by enemy fire, who is going to lose his command and/or get court martialed? The Captain! How can he live with that stress of knowing that if anything goes wrong, he is responsible? He accomplishes his peace of mind by training, training, and more training, and practice, practice, and more practice. Then when he has to attend to some other duties or eat, or sleep, he has the confidence that his junior officers and the crew know what they are doing and will do it well. And he has trained his subordinates that if anything unusual comes up, that he is notified immediately.

As the PLS in charge, we cannot always be out there with the crew on every measurement, look at every piece of evidence found, or even know if there may be additional evidence out there that wasn't found because the field crew didn't know what to look for. But with continued emphasis on training, and practice, and continuing education for the crews and office techs, and discussions with the crews and office techs, etc., etc., we can rest much easier knowing that we have competent, capable people striving their best to ensure the final product is a proper, professional job well done.

I will be attending this 2019 Rocky Mountain Summit. I have several students whom I have not met face to face yet. If you can make it, please look me up. If possible, I'd love to try to have lunch together with as many of you as I can. We will have three days to meet that end. I also plan on having a booth for the WCCC Land Surveying and Geomatics program manned during breaks. Any current or past student, interested future students, or supervisors interested in the program, please stop by to visit. I'd love to meet you and talk about our program.

So, get yourself to the seminar and get your staff to the seminar! See you there.



WESTERN COLORADO COMMUNITY COLLEGE

A Division of Colorado Mesa University

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WCCC OFFERS TWO PROGRAMS:

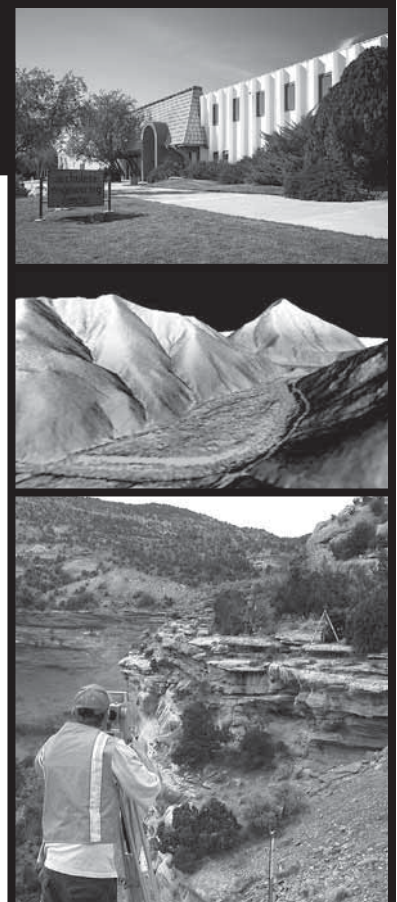
- **Associates in Applied Science Degree in Land Surveying and Geomatics** for those without prior college coursework. This program is designed to be completed within two years.
- **Post-baccalaureate Technical Certificate** for those with a minimum of a Bachelor of Science or Bachelor of Arts degree who need the required surveying curriculum to meet the education requirements to sit for the PLS exams. The Technical Certificate program is designed to be completed in one year.



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

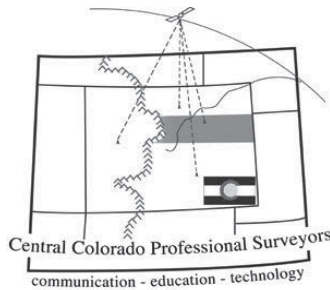


Contact WCCC Students Services at 970.255.2600 for admissions, registration and financial aid information.



2019 Colorado Land Surveying Refresher Course

New: Now Offered Online and in Classroom



The Professional Land Surveyors of Colorado is offering a comprehensive Land Surveying Refresher Course beginning January 9, 2019. This course offers a review and self-study plan for those taking the National Council of Examiners for Engineering and Surveying (NCEES)

Fundamentals of Surveying (FS) and Principles and Practice of Surveying (PS)

examinations. The course is designed to aid candidates in developing and expanding exam-taking proficiencies. The Wednesday evening classes will be 3 hours in length, starting promptly at 6:00 PM. Look for information about the online class at <http://www.plsc.net/>

Fundamentals of Surveying

<u>Session</u>	<u>Date</u>	<u>Topic</u>	<u>Instructor</u>
1	Wed., Jan. 9	Overview of NCEES FS and PS Examination	Alan Blair
2	Wed., Jan. 16	Survey Computations I	Lynn Patten
3	Wed., Jan. 23	Survey Computations II	Dr. Jan Van Sickle
4	Wed., Jan. 30	GIS, State Plane, Geodesy, Photogrammetry	Dr. Jan Van Sickle
	Wed., Feb. 6	Rocky Mountain Surveyors Summit, Arvada Center	
5	Wed., Feb. 13	Legal Terms and Definitions	John B. Guyton

Principles and Practice of Surveying and Colorado Specific

6	Wed., Feb. 20	Public Land Survey System	Randy Bloom
7	Wed., Feb. 27	Colorado Survey Law I	Roger Nelson
8	Wed., Mar. 6	Colorado Survey Law II	Roger Nelson
9	Wed., Mar. 13	Boundary Law/Ethics/PS Topics	Alan Blair
10	Wed. Mar. 20	Mock PS and FS Examinations	Lynn Patten

Registration, Fee, Location

The fee for the entire course is \$425 or \$75 per individual class. Registration is open beginning November 1, 2018. See <http://www.plsc.net/> for registration and online information. Classes will be held in one of the conference rooms at the Jefferson County Courts and Administration Building (Taj Mahal), 100 Jefferson County Parkway, Golden, CO. Online classes will be broadcast each night, and recordings will be available 1-2 weeks after each class. If attending in person, use the parking lot and main door on the east side of the building. Signage will lead you to the classroom. For questions, contact Becky Roland, Executive Director, PLSC, 303-551-3266, broland@plsc.net. Visit the NCEES site at <http://ncees.org/exams/> to learn more about the FS and PS examinations.

UNDERGROUND UTILITY LOCATING



Diversified Underground is a Denver Based DBE-certified Company providing Subsurface Utility Engineering (SUE), Utility Locating, Hydro Vacuum Excavation throughout Colorado and the surrounding states.



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E-mail: gmapworks@gmail.com

Where is North?

by Gaby Neunzert, PLS

Surveying, like its partner navigation, fundamentally uses direction and distance and maybe a point of beginning. Direction is a rather abstract concept in that it requires an initial reference or sighting and in turn the term "north" is rather unique in that it always requires a specific modifier, such as due north, etc. Especially since the integration of GPS into surveying, very careful attention has to be paid to the initial reference for direction, i.e. where is NORTH?

In perfect hindsight, clearly stating the "basis of bearing data" in the project, documentation may be the most valuable surveying information of all since it frequently is nearly impossible to reconstruct, especially when only shown graphically.

"The term 'true' north has been subject to many interpretations and **should be discouraged**."
(Definitions of Surveying and Associated terms, ACSM).

Here in Colorado, the basis of bearing for a Land Survey Plat is: "how bearings, if used, were determined", CRS 38-51-106-c. This is followed by rules 6.8 to 6.8.3.3 of the Colorado AES Board of Licensure (Architects, Professional Engineers and Professional Land Surveyors), delineating the composition and methods used for the determination of the bearing.

Shown graphically below, and then followed by some explanations, are the references to north from best to worst:

Astronomic north
Geodetic north
Grid north
Magnetic north
Previously determined north
Assumed north

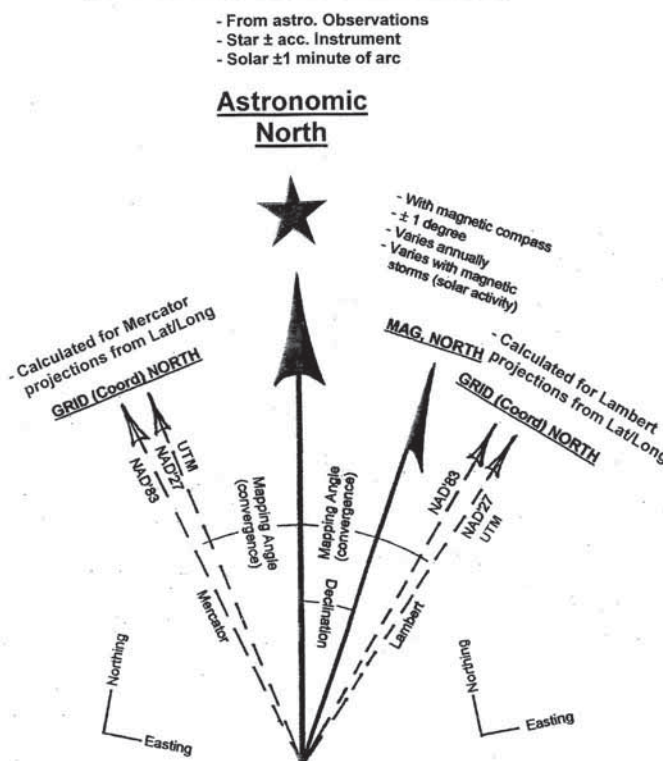
Astronomic north – the only "fixed and permanent" alignment of a meridian with respect to the earth's axis of rotation, determined by physical astronomical observations. North is determined by preferably a star (accuracy to 1/100 second of arc possible) or a solar observation (realistically accuracy to nearest min. of arc, regardless of instrument). Without any doubts, many valid thousands solar observations were made with Burt Solar Compass and transits by government surveyors for the initial survey of the American west and Canadian prairie provinces. This task was then followed by many more solar shots for the subdivision of the land into farming lots. Later there were probably millions of solars incorporated in valid private property surveys across the entire continent.

Geodetic north – the meridian passing through the pole of the reference ellipsoid determined by the mathematical approximation of the earth's shape. Varies with selection of ellipsoid. Astronomic and geodetic north physically differ by the deflection of the vertical. This correction is calculated by the "Laplace equation".

Grid north – the angle between the local grid and astronomic north. A variable dependent upon the type of projection used and geographical position of the surveying station.

Convergence angle, also called mapping angle, is the angle between the central meridian and the local meridian in the plane of the mapping projection. A variable, varying in an east-west direction, is dependent upon the location of the station in the zone and projection used. For example: in a Lambert

WHERE IS NORTH ?



conic projection zone in Colorado, the mapping angle can vary from +3° to 0° to -3° as the position of the station changes in an east-west direction.

Magnetic north is a variable and is the direction of the north seeking end of a magnetic needle only pointing to astronomic north along the line of 0° declination. Declination, is the difference between the magnetic and astronomic direction. Magnetic north is a time and event variable, subject to unpredictable geomagnetic storms with annual, daily and hourly somewhat predictable changes. It is also affected by magnetic ground and manmade anomalies. It is even influenced by a magnetized belt buckle or steel buttons in the surveyor's garments. Magnetic north is realistically accurate to nearest several degrees only.

It is highly recommended that all magnetic data be updated with a modern astronomical or a GPS observation.

Previously determined north – north of record determined previously by unknown methods. Without additional data the accuracy can only be an educated guess; when in doubt, perform an astronomic or GPS resurvey.

Assumed north – often employed in local surveying or construction projects. North is very seldom shown on construction drawings.

Listed below is a listing of some concepts, in no specific order:

Convergence (mapping) angle: Mathematically the convergence (mapping) angle of any plane projection is a function of latitude and longitude (as determined either astronomically or with GPS), as well as the specific ellipsoid and projection used.

Forward and reverse (back) direction: Historically, both in the field and in the coordinate plane the earth was assumed to be flat and the forward direction (azimuth or bearing) of a horizontal straight line has been assumed to be the same as in the reverse direction. With a Total Station, the length of the line has to be limited to 1 mile, with GPS the line should be no more than a ½ mile before the curvature of the earth becomes measurable and the forward direction differs from the reverse.

Bearing: horizontal direction reckoned in 90° quadrants from north or south to the east or west. Cardinal directions are referred to as: due east, due south, etc. May be any type of north without alignment reference to a meridian.

Azimuth: in American usage a horizontal angle right from north to the line. Historically reckoned from south, with

modern (aviation) starting from north. May be any type of north without alignment reference to a meridian.

GPS calculations: It is not always appreciated that GPS provides the user specified plane coordinates of a single point “only”. Data from both ends of the line are needed to calculate its direction and distance.

In the reduction of GPS data, the GRS '80 ellipsoid is first automatically used to calculate a mathematical Lat/Long for the position of the receiver. Next, for the calculations of the plane coordinates and the mapping angle, the user has to make several critical choices to select the ellipsoid and projections involved. A change in any one of these parameters can change the results appreciably. Further, without documentation the entire number sequence is unrecoverable. Starting with the calculated Lat/Long of the station, the major steps are:

- a) Selection of ellipsoid – there are many choices: Clarke 1866 (NAD'27), WGS'80 (NAD'83), GRS'80, Gauss-Krueger, Int'l, etc.
- b) Projection – conformal Mercator, Lambert, UTM, special cases.
- c) Units – The basic unit of all calculations is the metre, English units are only displayed.
- d) It should be noted that having GPS plane coordinates for both endpoints of a line affords NO MATHEMATICAL check for the quality of the data.

ACAD: A vector based drafting program. The actual precision of the ACAD data base is 14 Sig. Fig. used for all coordinates and calculations, regardless what is displayed. A careful record should be kept between external data entered with but few Sig. Figs., and data generated internally to an unrealistic number of Sig. Figs.

References:

ACSM, 2005; Definitions of surveying and associated terms, ACSM Gaithersburg, MD, 20879.

Colorado Land Surveying Laws, 2011, Northern Chapter of PLSC, Inc.

Colorado AES Board of Licensure (Architects, Professional Engineers and Professional Land Surveyors); www.Colorado.gov/pacific/dora/AES_Laws Ghilani, Charles D. and Wolf, Paul R., 2008, Elementary Surveying; Prentice Hall, Upper Saddle River, NJ, 07458.

Man Arrested as Land Surveyor Imposter, Fraud

*From the Colorado Fifth Judicial District Attorney's Office
December 3, 2018*

LEADVILLE, COLO. – Alex Hagan, 30, was arrested Nov. 29, 2018, on charges of: Offering False Instrument/Recording (F5); Forgery (F5); Forgery Device (F6); Criminal Impersonation (F6); Theft of \$750-\$2,000 (M1); and, Surveyor-Unauthorized Practice (M2). The arrest warrant states that Defendant Hagan although not a licensed land surveyor was operating a bandit land survey business in Lake County. In order to complete this scheme, Hagan was using an official seal, surveyor license number, and fraudulently completing documents such as "Improvement Location Certificates" with another, legitimate surveyor's identity. That licensed surveyor had not done any work in the State since 2014, but Hagan was now using his name to do the illegal surveys.

Hagan operated a website at platengineering.com to entice unsuspecting customers to use his services. Land surveying is a regulated profession because of the expertise required to determine and preserve lawful land boundaries. Land surveyors are specially trained and tested in principles of mathematics and measurement methods.

"Real estate transactions of which many occur daily in our District depend upon competent and licensed professionals to confirm the integrity of the parcel

changing hands. While many of us see this time of year as a season of giving, we also know that for the unscrupulous, it can be a season of taking," said Bruce Brown, 5th Judicial District Attorney. "It's important for parties to real estate contracts to research all vendors before hiring them," he added.

Consumers are advised to check out the CO Department of Regulatory Agencies (DORA) and their 'Take 5 to Get Wise' program, <https://www.colorado.gov/take5dora> where you can send in a complaint regarding businesses, research a contractor's license credentials, etc. Also, check out the JD5's "Tips For Consumers" page, at <http://www.da5.us/answers-and-info/tips-for-consumers/>.

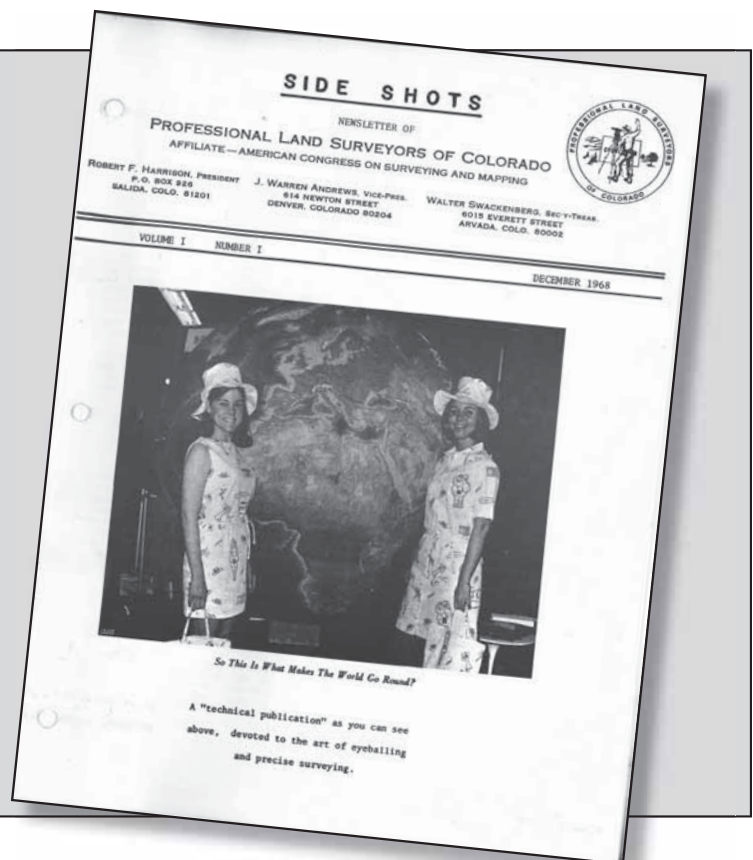
Anyone who does surveyor work without the required license is not entitled to collect a fee.

If convicted of these charges, Defendant Hagan faces a maximum sentence of three years in the Department of Corrections. The 5th Judicial District Attorney's Office will continue their investigation into this case, and other consumer fraud cases around the District.

ALL PERSONS MENTIONED ARE PRESUMED INNOCENT UNTIL THE CONTRARY IS PROVEN IN A COURT OF LAW.

Source: <http://www.da5.us/2018/12/man-arrested-as-land-surveyor-imposter-fraud/>

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December 21, 2018

Mr. John B. Guyton, Editor
Side Shots
3825 Iris Ave.
Boulder, Colorado 80301

Dear Mr. Guyton:

This letter informs you of official BLM cadastral surveys in Colorado that have been accepted from July 5, 2018, through October 17, 2018, officially filed, and are now available in the Public Room, Bureau of Land Management, Colorado State Office, 2850 Youngfield Street, Lakewood, Colorado 80215. The surveys will also be available at <http://www.glorerecords.blm.gov>.

The accepted surveys are listed below by township, range, meridian, group number, type, approval date and number of plats.

<u>Township</u>	<u>Range</u>	<u>Meridian</u>	<u>Group No.</u>	<u>Type</u>	<u>Approved</u>	<u>Plats</u>
T. 14 S.	R. 99 W.	Sixth	1670	Plat & Notes	07/05/18	1
T. 2 S.	R. 73 W.	Sixth	1682	Plat Only	07/09/18	4
T. 41 N.	R. 2 E.	NMPM	1674	Plat Only	07/23/18	2
T. 4 S.	R. 72 W.	Sixth	1681	Plat Only	08/09/18	2
T. 13 S.	R. 74 W.	Sixth	1677	Plat & Notes	09/05/18	1
T. 46 N.	R. 6 E.	NMPM	1687	Plat Only	09/12/18	3
T. 47 N.	R. 11 E.	NMPM	1500	Plat Only	10/17/18	3

As other surveys are completed, I will advise you of their acceptance. You may circulate this letter among the membership of the Professional Land Surveyors of Colorado.

Sincerely yours,

Randy Bloom
Chief Cadastral Surveyor for Colorado

Rule of the Month: CRS 12-25-208(1)(b) Standards of Practice

By Earl Henderson, PLS

I have been hearing stories recently that make me realize that the Standards of Practice issue needs to be revisited. The statute, CRS 12-15-208(1)(b), describes one of the Grounds for Discipline the AES Board can use when taking action against a Professional Land Surveyor and reads, "Failing to meet the generally accepted standards of the practice of land surveying through act or omission;". It bears repeating that the Standards of Practice is NOT a geographic determination. In other words, just because most of the PLS's in the local area are completing their surveys in a particular way doesn't make it the standards of practice. After all, the statute reads, "...the standards of practice of land surveying..." and not "...the standards of practice of the local land surveyors...". We are held to the standards of the profession, which I am told, is unfortunately a much higher bar than the standards in some geographic areas of the state. The best definition I have ever heard for the standards of practice is, "What a reasonably prudent surveyor would do under like or similar circumstances." But of premium import is that we should be holding ourselves and our colleagues to a standard that will instill in our clients and other professions the respect that we all think we deserve.

Here are three real life examples that I've experienced recently that have led me to believe that this issue needs attention.

A PLS contracts to complete an ILC and does so on an 8½"x 14" legal sized form. On this ILC the PLS depicts property corner monuments both found and set by the PLS. Regardless of if other PLS's in the local area are setting property corner monumentation during the completion of ILC's or not, and regardless of if the real estate agent, title examiner, loan officer, purchaser and/or seller want monuments set at the property corners but for the document to still be titled as an ILC, this PLS is not complying with the standards of practice.

There are at least two statutes which are being directly violated in this situation. The first is CRS 38-51-108(1) which describes an ILC as being based on the PLS's "...general knowledge of land boundaries...". If the PLS has developed enough knowledge to set property corner monuments, then their knowledge is not general in nature but specific in nature and an ILC is no longer applicable. The second are CRS 38-51-102(13) & (12). I've listed them in opposite order because that is how the logic flows. (13) defines a Monumented Land Survey

as one in which "...monuments are either found or set... to mark the boundaries of a specified parcel of land." So clearly if monuments are set during a survey, that survey must be defined as a Monumented Land Survey and (12) defines a Land Survey Plat as a plat depicting a Monumented Land Survey. An ILC does not depict a Monumented Land Survey based on CRS 38-51-108(2) (a)(I) so clearly these statutes are also being violated.

The lessons here are at least threefold. The first is as described and simply that if property corner monuments are set the survey is defined as a Monumented Land Survey and must be documented by a Land Survey Plat, not an ILC. The second is a bit more hidden. Even if a PLS documents their survey on legal sized paper and titles it an ILC doesn't mean that it will be interpreted or in any way limited to that definition. The Board and the courts will define the survey based on the statutes and definitions regardless of what the title is at the top of the page. So don't ever think that just because you've titled a document an ILC that you're forever protected by the definition of an ILC. If it smells like it, it probably is it. The third is also a bit more hidden. Don't let other professionals, surveyors, clients or others, pressure you into doing work that is against the standards of practice. Let the other PLS's get into trouble with the Board and the courts. That will leave more work for you in the long run. And don't let other non-surveying professionals working on the project pressure you into substandard work either. You will establish their respect by educating them on the standards of practice and maintaining your standards regardless of the other substandard but geographically local PLS's. More work, more profitable work and more interesting work will come your way via word of mouth when you've established locally that you have higher standards for your work than all the cheap substandard work put together.

But the first example is clear cut. What's right is obvious and what's wrong is obvious. The statutes that apply are written and clear. So let's try another that isn't as direct.

A Land Survey Plat is being completed on a metes and bounds tract of land and there's a property corner location that needs to be re-established. A particular line of the subject property is described (and this is NOT a quote from a description) as proceeding on a northerly bearing to a point on the south boundary of an adjoining parcel. Thence on an easterly bearing along the south boundary of that adjoining parcel. This is a very

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common situation and a principle that can be applied to many, many situations. The PLS needs to determine a location on a line at which the corner of their subject property lies. What's surprising is how often a PLS will magically determine (usually from geometry) where that location lies without ever determining, or even trying to determine, the two ends of the line on which the corner lies. How is it possible to set a monument on a line for which the two ends of the line are unknown? Now, to be fair, there are instances when both ends of the line in question are not monumented. But in those cases even more effort needs to be exerted to determine the location of that line, not less effort. And if you find yourself in this situation, where a corner needs to be determined on a line that is itself difficult to determine, consider writing a surveyor's narrative to describe the situation and the means used to resolve it so that your fellow PLS's, the Board and the judge will be aware that the standards of practice of the profession were met, the cheap and easy shortcut was not used, and havoc in the neighborhood among the landowners was avoided. The principle is simple, but the execution seems to be difficult for some. If you need to establish a point on a line, you first need to establish the line at both ends or provide a reasonably prudent explanation of how you couldn't, not how you didn't want to, or how your client didn't expect the extra charges, or how that would put your survey over budget. I can assure you that the Board and the courts are interested in the results, not the costs to get the results.

One final example, a PLS is completing a Land Survey Plat with the use of a title report. And note this can be an ALTA/NSPS Land Title Survey if you'd like but not necessarily. CRS 38-51-106(1)(i) requires a written property description so the PLS copies the description from the title report and indicates as much on the face of the plat, "Property Description from Title Report No...". Hopefully you already know that this does not meet the standards of practice, but many don't because it's done quite often. One issue with such a note is that the description from the title report is NOT a description of real property. It is a description of what the title company is going to insure. Our duty as professionals is to survey real property which is property described in a deed. The title company can insure whatever property they choose to describe. What they choose to insure may or may not coincide with the described property in the Instrument of Record. The title company may be excluding portions of

the property and including other properties. Their typist may have tried to copy the description precisely from a deed description of real property, but made inadvertent errors or omissions (happens all the time). But our responsibility as professionals is to survey the property which is described in a deed, preferably the Instrument of Record. And by doing so we are providing a valuable service to our clients in that if there are differences between the property as described/surveyed and the title company's description, our clients will be fully aware and hopefully fully insured in title when closing comes.

CRS 38-51-106(1)(i) requires us to show a written property description on the face of the plat. And Board Rule 6.5.2 requires us to "...conduct...research activities...to properly define the property boundaries relative to the instrument of record...". It does NOT say "relative to the description found in a title report". Board Rule 6.5.2 does allow us to obtain the instrument of record from a title commitment, but one way or the other we are required to obtain the instrument of record and survey the property relative to the instrument of record. So clearly, if you continue to include a note that you obtained the description of the property from the title commitment, then what you are indicating to your fellow professionals, the Board and the courts is that you did not obtain the instrument of record or survey the property relative to the instrument of record. And that falls below the bar we label as the standards of practice.

Above all else, I hope what you've culled from this article is that the standards of practice is not a minimal level at which any PLS should want to practice or that will elevate our profession in the eyes of our clients, fellow professional land surveyors, or other professions. The standards of practice is the minimum at which a PLS can complete their work at minimally acceptable levels. It's the low bar. That's not where I want to practice. I want to practice at a level at which I can be proud of my accomplishments, at which I can charge a price comparable to my abilities, and at which my work will raise the bar among my fellow professional land surveyors. As that happens, our profession will be raised in the eyes of others. Please feel free to join us. There's a lot of room above that bar.

Happy New Year everyone.

In Memoriam – Donald Hansen, PLS

Don was born in Lake Forest, Illinois, June 8, 1948. He was a second child, with one brother and four sisters. He began surveying in 1967 after graduating from high school, and a brief stint at Colorado School of Mines. In 1969 he was drafted into the Army and served in Vietnam. When he returned, he continued surveying until 1985, when the economy created hard times in Colorado, and he surveyed in Minnesota and Illinois. In 1993, Don came back to Colorado and worked for JR Engineering in the Colorado Springs area until 1999, when he started with CDOT that October. In 2003 he served as Director in the Central Chapter of the PLSC. He was also instrumental in the placement of the Mile High Marker on the Capitol steps, a project that no other city can lay a claim to. He also did most of the work to establish the CORS station CTMC in Golden.

Don loved spending time with his family and friends. He liked reading and was fond of science fiction. He was obsessed with pruning trees. He always carried pruning shears and a saw in his truck. He was always the first to help someone out whether it was jumping a car, fixing a flat tire, or helping someone move.



Don was a 40-year member of the American Legion (affiliated with Denver Post 185). Memorials may be made to:
The American Legion's Veteran's Assistance Fund
American Legion
7465 E First Ave, Denver, CO 80230

Don was always the first to help a fellow surveyor with a survey problem. He liked having lively discussions about the legal aspects of surveying with his fellow surveyors. He very much enjoyed the PLSC and the comradery with his peers that the organization provided at the annual and monthly meetings.

He appreciated history, especially as it related to surveying. He enjoyed maps of all kinds and took a particular interest in the old railroad valuation maps. Above all, Don was proud to be a land surveyor. He will be missed and his diligence towards his work has always been willing to go the extra mile for any task given. A complete obituary will be available at www.allstatescremation.com. The family invites you to post your articles and memories there.

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WFPS Board of Directors Meeting Highlights

The Western Federation of Professional Surveyors (WFPS) held a Board of Directors meeting on October 13, 2018 in Honolulu, Hawaii.

HIGHLIGHTS FROM THE 13 WESTERN STATES

ALASKA – The 2019 Conference will be held February 16, 2019 in Anchorage, Alaska. Alaska will be hosting the WFPS meeting during the conference. WFPS will be providing speakers for the ASPLS Conference.

ARIZONA – Current membership is approximately 800. Conference will be held May 9-11, 2019 at the Hilton Scottsdale Resort and Villas in Scottsdale, AZ. APLS is working with the APLS Foundation to provide financial assistance to the Survey 101 program at Glendale Community College. The Arizona Board of Technical Registration has received APLS's request to consider continuing education for licensure renewal and updating the Minimum Standards for Boundary Surveys. APLS is monitoring the deregulation considerations and a recent proposal to streamline the reciprocity process.

CALIFORNIA – The CLSA-NALS Conference will be held March 23-26, 2019 at the Silver Legacy Hotel in Reno, NV.

COLORADO – Current membership is approximately 368. The Conference will be held February 6-8, 2019 at the Arvada Center. PLSC made a generous donation of \$1000 to WFPS. PLSC also donated to the restoration of the 6th Principal Meridian initial point monument. PLSC volunteers have established a Survey Degree Program in Colorado through Western Colorado Community College and Colorado Mesa University and on-line classes have been offered. PLSC is actively participating in QBS meetings in Colorado. PLSC is actively participating in outreach activities including hosting a booth with a virtual sandbox at the guidance counselor conference.

HAWAII – Current membership is approximately 104. The Conference is tentatively scheduled for March 21-22, 2019. HLSA continues to work on addressing land surveying and title issues that rose from the 2012 legislation that facilitated the process for registered lands in Hawaii's Land Court to de-register from that system. They have met with representatives from the state capitol and have secured a lobbyist to help with the process.

MONTANA – The Conference will be held February 19-22, 2019 in Billings, MT. The economy has been very good in Montana and survey work has been on the upswing. MARLS is preparing for the 2019 Montana Legislative Session.

NEVADA – Current membership is approximately 260. The CLSA-NALS Conference will be held March 23-26, 2019 at the Silver Legacy in Reno, Nevada. The NALS Education Foundation has completed guidelines and applications for four \$2500 scholarships: Great Basin Scholarship, Rita Lumos Scholarship, Bill Cuddy Memorial Scholarship and NALS Hispanic/Latino Scholarship. The NALS Legislative Committee has prepared draft legislation for the 2022 Datum. NALS donated \$2000 to the WFPS Scholarship & Relief Fund through the NSPS Foundation.

NEW MEXICO – The Governor of New Mexico recently signed an Executive Order deregulating several occupational professions. The order includes a paragraph that exempts the land surveying profession however, NMPS, the New Mexico Board of Registration and other states are closely monitoring the effects of the order.

OREGON – Current membership is approximately 493. PLSO has formed a Qualification Based Selection (QBS) Work Group to assist the Engineers (ACEC) and Architects (AIA). PLSO Outreach committee has created a ridealong, internship and mentorship program. The program has been very successful as all slots were filled for the 2nd year in a row. The PLSO rebranding effort has been completed.

UTAH – Current membership is approximately 400. The Conference will be held February 20-22, 2019 in St. George, Utah. UCLS is currently working with the Surveyors Historical Society to bring the 2019 Survey Rendezvous to Utah. The Standards and Ethics Committee is looking into the possibility of developing a system where subdivision monuments are not set in the center of roads, but rather in other locations that are easily occupied. UCLS is monitoring a bill in the legislature regarding Boundary Line Agreements and Boundary Line Adjustments.

WASHINGTON – Current membership is approximately 838. The Conference will be held February 27 – March 1, 2019 at the Tulalip Resort. LSAW has reached out to Idaho regarding a potential joint conference with WFPS and Idaho in 2020 in Spokane, WA. Washington has new topographic mapping requirements that took effect August 31, 2018. LSAW will be resubmitting a Survey Monumentation Preservation Bill in 2019 to the Washington Legislature.

WYOMING – PLSW is working on a destruction of monuments bill that will be presented at the 2019 Wyoming Legislative Session. The University of Wyoming has a Minor in Land Surveying as well as a Land Surveying Certificate Program. PLSW is working

with the Board of Registration and the university on an outreach program to elementary through high school students. PLSW will be working with schools in November on the "Adopt a Surveyor" program.

WFPS FOUNDATION

The WFPS Disaster Relief and Scholarship fund has been established through the NSPS Education Foundation. Donations are now being accepted. The criteria and application information is attached and can be found on the WFPS website. Urgent assistance is needed for land surveyors that have been affected by the California wildfires.

Donations can be made mailed to WFPS: 526 South E Street, Santa Rosa, CA 95404.

WFPS AREAS OF FOCUS

Providing Resources to Benefit State Associations

WFPS is dedicated to providing resources to state associations. Following are a few of the resources that are available:

1. Speakers Bureau

2. Article Bank for Association Magazines
3. STEM Outreach Flyer

Serving as a Regional Voice

WFPS has adopted a resolution to support Quality Based Selection (QBS). The resolution is attached for your use. Should your state need a letter of support from WestFed regarding a QBS issue please contact the WestFed Office at admin@wfps.org.

About WFPS - PowerPoint

Get to know WFPS and how we serve the 13 western state surveying association. Visit the WFPS website, click "About WFPS" and download the WFPS PowerPoint.

About WFPS

The Western Federation of Professional Surveyors (WFPS) was formed in 1979. The Board of Directors includes two delegates from each of the 13 western states. WFPS serves as a regional voice for Land Surveyors and meets quarterly to discuss practice issues affecting western state surveyors. For more information about WFPS and the state associations, visit WFPS.org

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NSPS Report

By JB Guyton, Colorado NSPS Director

An NSPS Board of Directors meeting was held on October 19th and 20th, 2018 in College Park, Maryland. In addition to my representation of Colorado at the board meeting, I also attended the Western States Directors Council, and a meeting of the UAS (Unmanned Aerial Systems) Committee, where I serve as Co-Chair, to discuss rule making and possible NSPS certification.

Motions that were passed include having the NSPS promote the Certified Surveyor Technician (CST) exam to state departments of transportation, hosting a FIG (International Federation of Surveyors) meeting in the United States in the future, and approving the dues increase for NSPS membership, primarily due to the lower than expected enrollment numbers nationally. There was much discussion of how the NSPS staff is working to minimize expenses and balance the budget. One example is how dues NSPS paid to FIG were previously based on the number of individual members in the NSPS. It will be revised to base dues

on the number of state societies with which NSPS has membership agreements, thus decreasing the FIG dues considerably. At the NSPS Western States Directors meeting, the Council voted unanimously to move all administrative Certified Federal Surveyor (CFedS) functions from NSPS to another organization, such as the Western Federation of Professional Surveyors (WFPS).

My duties as NSPS Director during the rest of the year include the role of the CST Statewide Coordinator, providing several interested technicians with information on the testing procedure, working with other local volunteers on an annual TrigStar student competition, working with Tom Sylvester and the WCCC survey program to inform them of NSPS sponsored scholarships, and publishing materials in *Side Shots* about semi-annual meeting minutes and activities, issues like the dues increase, final point markers and educational resources.

continued on next page

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Our contributions to the NSPS in the form of annual dues include more than just their administrative costs, such as:

- Government Affairs program which includes addressing Federal level issues on Capitol Hill and working with State Societies on state issues as requested; Opportunity to participate in annual "Day on the Hill" in DC;
- Access to Disaster Relief Funds, distributed in conjunction with the NSPS Foundation;
- Opportunity to directly interact with NSPS leaders during State Conferences, and during NSPS semi-annual meetings;
- Weekly "NSPS News & Views" e-newsletter, keeping members current on surveying issues;
- Weekly Radio Show- NSPS Radio Hour, addressing current issues related to the profession;
- ABET Accreditation – NSPS is Lead Organization for review of Surveying related programs for accreditation or renewed accreditation;
- ALTA/NSPS Standards (American Land Title Association)- Joint Committee to review standards for updates/revisions;
- Affiliation with FIG (International Federation of Surveyors) as the recognized US representative;
- CST Certification – provides credentials for surveying technicians;
- HYDRO Certification – Partner with Hydrographic Society of America;
- Workforce Development Committee interacting with state programs;
- Opportunity to provide input to External Affairs Committees in working with multiple organizations on matters affecting the surveying profession;

• NSPS Assistance for outreach and interaction opportunities with the public, students, and those early in their surveying career through:

- ▶ National Trig-Star Competition
- ▶ Coordination of Scholarship Process for multiple student awards
- ▶ Annual Student Competition
- ▶ American School Counselor Association state/national conferences participation
- ▶ Future of Surveying Task Force – NSPS is the Lead society among +/- 15 orgs.
- ▶ NSPS Young Surveyors Network – interaction opportunities
- ▶ Materials/Guidance for administering the Boy Scouts Merit Badge
- ▶ Get Kids into Survey posters; NSPS is the US Distributor

• Promotional materials for use by members and state societies, such as brochures:

Professional Surveying, Not Your Average Career
Should You Hire a Land Surveyor?

Professional Surveying, A Career Without Boundaries
CST: Future-proof your surveying career

• Specialty Websites/webpages, such as:

BeASurveyor.com

CSTNSPS.com and learnCST.com

Colleges and Universities: nsps.us.com/page/coll_univ

nsps.us.com/page/FloodplainSurveyor

careercenter.nsps.us.com

PLSC Board Meeting Minutes

November 12, 2018

1. Call to Order – Beers

Name	Position	Chapter	Attending?
Todd Beers	President	Central	x
Steve Parker	Vice President	Southern	x
Alan Blair	Secretary/Treasurer	Central	
Becky Roland	Executive Director	n/a	x
Paul Bacus	Director	Northern	x
Teresa Smithson	Director	Central/Western	
Eric Carson	Director	Central	x
Brian Dennis	Director	Southern	x
Leif Joy	Director	NW	x
Ralph Pettit	Director	Central	x
Paul DeGraff	Director	Central	
Tom Sylvester	Director	Western	x
Parker Newby	Ex-Officio	Southwest	
Roger Nelson	Non-Voting	Past President and WFPS Delegate	x
J.B. Guyton	Non-Voting	NSPS Delegate	x
Guests:			
Pam Fromhertz		NOAA/NGS	x
Heather Lassner			x
Don Hulsey			x
Shaun Lee			x

2. Determination of Quorum (6 voting) – confirmed

3. Any changes to the Agenda?

- Added Chapter Budgets
- Added 2019 Budget
- Added Metro State Survey Program

4. Approval of Minutes from previous Meeting

MOTION: To approve the August 2018 Minutes as presented. Approved unanimously

5. Reviewed Action Items from Previous Meetings

6. Financial Items – Beers/Blair/Roland

- 2018 Financials
 - Becky Roland will Review the 2018 Estimate and confirm line items that are most successful financially.
- Merrill Lynch Funds and NSPS Foundation
 - Becky Roland to get more information from NSPS Foundation on rate of return vs. Key Bank

MOTION: To post transfer from Merrill Lynch to Key Bank savings account. Approved unanimously

- \$50,000 reimbursement to Operation Fund from Scholarship Fund

MOTION: To approve a transfer of \$50,000 from Scholarship to Operations to reimburse the account for the 2018 Endowment payment. Approved unanimously

- NSPS Dues Increase and PLSC Membership Dues
 - Will be \$50 starting calendar year 2020
- Pricing for plaque on Capitol Steps
 - Estimate is about \$3500 for a plaque.
 - Paul Bacus will look into permits, etc.
- NSPS Map Plat Competition
 - Roger Nelson, Ralph Pettit (chair) and Eric Carson volunteered to be on a review committee for submissions.

MOTION: To approve submittal of up to 2 entries and PLSC pay the submission fees. Approved unanimously

- Consider entries at the Summit for review/judging.
- Chapter Budgets
 - Northern and Southern Chapters will send their budgets this week.
 - Central expects their budget to be completed soon.
- The 2019 PLSC Budget will be sent in early December and approval via email by 12/15.

7. Colorado Coordinator Activities

- Pam Fromhertz submitted a written report to the Board.

8. NGS Update

- Pam Fromhertz submitted a written report to the Board.

9. WSPS Resolution on Digital Signature – Beers

- The New Mexico Statutes override the Governor's Order regarding professional licensing to practice surveying in the State.

10. WCCC Requests/Update

- Three students and three classes a year ago. Eight classes and 17 students now.
- Tom Sylvester still needs a company to help in Pueblo with equipment/company sponsorship (suggest Russ Clark). Tom would like to develop a list of participants in each Chapter for students to contact as needed for lab work.
- Becky Roland will send a draft letter to Tom Sylvester promoting the Endowment and requesting support. This letter will be sent with renewals.

- d. It was noted that investing with NSPS Foundation will allow donations to be tax deductible.

MOTION: To invest \$20,000 with NSPS Foundation for 501c3 tax deduction benefits to donors.

Approved unanimously

11. Elections

- a. Steve Parker for President, Don Hulsey for Vice President/President-Elect, Eric White for Secretary/Treasurer
- b. 4 Directors – Shaun Lee, Paul Bacus, Eric Carson, and Ralph Pettit agreed to serve if elected. Steve Parker will follow up with Paul DeGraff.
- c. Candidate names should be sent to Leif Joy and Becky Roland by November 30. Becky Roland will send one more call for nominations.

12. GIS in the Rockies Pre-Conference Workshop payments – \$700

MOTION: To send the payment for pre-conference workshop instructors to PLSC and discuss payments to instructors at the next Board meeting.

Approved unanimously

13. Metro Survey Program

- a. Several PLSC members will be in attendance and report back to the Board.
- b. The Board consensus is that financial support of a program is not an option. PLSC should maintain their financial focus on WCCC's program.

14. NSPS YPN – No additional report

15. QBS Update – No report

16. Reports

- a. Scholarship
 - i. Need Chapters to promote availability of scholarships.
- b. Membership Committee – No additional report
- c. Executive Director
 - i. The NSPS State Executive Directors will be sending a formal request to NSPS to define Curt Sumner's role as Executive Director and ask that consideration for association management experience be given to his replacement when he retires.

d. Rocky Mountain Surveyors Summit

- i. Still need speaker liaisons for two presentations.
- ii. Call with the Planning Committee tomorrow.

e. Lobbyist/Legislative Committee

- i. January 4 start of legislative session
- ii. State Plane Coordinates language will need to be developed for updates to the Statutes/Regulations.

f. Education Committee – no report

g. Ethics and Fair Practices Committee – no report

h. Trig Star Report

- i. No report – start promoting next month

i. GIS in the Rockies

- i. Meeting tomorrow

j. NSPS Delegate's Report – No additional report

k. WSPS Delegates' Report

- i. CFedS – NSPS does not want to manage the program – JB will contact Curt Sumner for consideration of WSPS administering the program.

17. Chapter Reports

a. Southern

- i. October 18 RMURIS Career Day
- ii. Voting next week for officers.
- iii. Holiday Party in December.

b. Central

- i. Reviewed meetings
- ii. Reaching out to RR Museum

c. Northern

- i. Planning a social

d. Shaun Lee asked for Chapter meeting information to post on PLSC's Facebook page.

e. NW ¼

- i. Leif Joy thanked all the veterans on the call for their service.

f. Western

- i. Tom Sylvester will report to the Chapter on this meeting next week.
- ii. County Surveyor election is ongoing.

g. Southwestern – No report

18. Next Meeting Date and Location

- a. January 7 at 4:30PM – conference call

19. Adjourned

CHAPTER NEWS

CCPS

Happy New Year to all our members. I hope everyone had a safe and enjoyable holiday season.

CCPS held a fall happy hour at C.B & Potts in Highlands Ranch. A good number of members and guests showed up to catch up with friends and colleagues over some drinks and food. CCPS would like to express its thanks to all our vendors who graciously sponsored the event.

With the calendar turning to 2019, the CCPS will be holding our 2019 elections in January. If you are interested in participating, please reach out to one of the board members or send an email to colocentralsurveyors@gmail.com.

CCPS held its October General Membership meeting at the Table Mountain Inn located in Golden. Ken Goff, President of Underground Consulting Solutions gave a presentation about the recent changes to the specifications and regulations and how they affect the surveying profession. Thank you, Ken.

Our next general meeting on January 24th will be at Table Mountain in Golden. Our guest for the evening will be Stephane Gilmore. Stephanie is the Curator of Collections at the Colorado Railroad Museum here in Golden, Colorado. Stephanie is going to give a presentation about the railroad's program and how they can assist the surveyor. It should be an interesting presentation – hope to see you there.

The CCPS is continuing work on our “sandbox” for supporting the exposure of land surveying to our next generation of kids. We hope to have it completed soon.

The 9th Annual PLSC Surveyor Summit is upcoming in February. We hope to see you there.

Shawn Clarke, PLSC
CCPS President

NC-PLSC

Our November meeting was presented by Heidi Crue from Land Title Guarantee Company. Heidi gave a very informative presentation about proper title commitments and what is important for the surveyor to pay special attention to within the title commitment.

For our January meeting we will be hosting Ken Goff with UCS. Ken will be presenting the new utility location laws and how they affect surveyors.

The Northern Chapter ended 2018 with a bang! We had a great turnout for our end of the year Holiday Party at



Northern Chapter holiday party

the Colorado Eagles hockey game in Loveland. Many of our returning members brought with them guests in the surveying industry that we hope to see at future meetings. Judging by the rosy cheeks, jolly smiles, and booming laughter, I would say the end of the year party got the Northern Chapter in the Christmas spirit and ready to start the new year.

Tony Fendick, PLSC
President, NC_PLSC

NW 1/4 PLSC

Fall is officially behind us in NW Colorado, both on the calendar and on the thermometer. And the New Year is upon us, 2019, and what does it portend? We already know a few things in the economy and climate that will affect us in the near future

The winter is off to a decent start, generally statewide snowpacks are slightly above average except for the southern part of the state, but it appears to be catching up. We're sitting about 109% of average in the Yampa and White drainages, which is important for so many reasons. We've been digging for property corners in NW Colorado for well over a month now. BTK did take the annual honor in Routt County, having set a corner in 16" of snow on December 30th. The last property corner of the year was set in this part of the State! We appreciate stupidity up here.... By the 31st, the daytime high was in the teens, nighttime lows below zero and the New Year arrived.

The ski area is putting in a new gondola this summer (2019) and this is an important investment by the new ownership group. A series of private jets were parked on Taxiway B at Yampa Valley Regional Airport, and although not approaching the number seen at Aspen, Vail, or Telluride, this is an important barometer of the upper end wealth arriving in the Valley. These people do buy houses and real estate, which impact surveying positively.

CHAPTER NEWS

2019 will be a good year for surveying in NW Colorado, based on momentum from last year, public investment in infrastructure, and still low interest rates. The stock market jitters of this past fall are of concern and everyone is watching that. If we could figure out why it is doing that, we wouldn't be surveying!

This state still doesn't have a continuing education requirement. While doing my mandatory CEU's for licenses in neighboring states, that fact continues to amaze me. We need to get serious about that!

The NW1/4 will be meeting again shortly. As soon as it warms up. Happy New Year!

Brian T. Kelly, PLS
Vice President, NW ¼

SC-PLSC

Happy New Year to everyone! Our Board of Directors Meeting for October was held in Pueblo at the Gold Dust Saloon. We tried to put a game plan together to start the ball rolling on electronic submittals for plats, monument records, etc.

First, we need to get the fabric out of the legislature. Looks like we have our work cut out for us on this issue. The topic was also brought up about trying to save the current land survey hard copy documents in all the counties in Colorado.

These needed documents are being tossed in the dumpsters all over Colorado as you are reading this article. Maybe we could get the County Surveyors involved in this task?

We also manned a booth in October for Career Day at The Rocky Mountain Chapter of the "Urban and Regional Information Systems Association" (RM-URISA). We talked to many GIS professionals from a wide age group and expertise about the surveying industry and how the 2 fields relate to each other.

Our November Members Meeting was held at the Double Tree by Hilton in Colorado Springs. Thanks to Joe Alessi, we now have a new meeting place that serves great food!

We talked about the Senate Bill 18-167 and how it will affect our industry after the first of the year. The food was awesome and Spencer Barron, owner of "Barron Land" picked up the tab for drinks and deserts afterwards.

A meeting was organized in November at the Denver Railroad Museum. We met with the Records

Preservation Coordinator about volunteering to get all the current railroad documents scanned that are stored in the basement.

Afterwards we were given a tour of the entire museum property. The trains that were being restored were amazing to see.

In December the Christmas party was held at The Miramont Castle in Manitou Springs. Lots of great food was prepared by the staff at the Castle, and afterwards the white elephant gift exchange brought many laughs.

If you would like to attend one of our monthly meetings check out the schedule on our website, www.scpls.net.

Don R. Hulsey, PLS
President, Southern Chapter

SWC - PLSC

An impromptu SW Chapter meeting at the Irish Embassy Pub in October resulted in ten Chapter members showing up! Lively discussion on a number of local and regional survey related issues followed. Some of the more salient topics included an update on the new CORS station that has been installed in Cortez. Dave Seiler with CDOT let everyone know that it is in the final stages of user testing and the station is up and running on the Mesa County RTVRN site. Check it out. This will be a great asset for the survey community in the four corners region. Many thanks go out to Dave and his efforts in getting this station up and running.

County Surveyor Steve McCormack gave everyone an update on the records retention that the La Plata County Clerk and Records office is doing. We are fortunate to have a clerk's office that understands the importance of keeping original documents and plats. Thank you, Steve, for keeping up the communication with them!

Daryl Crites has been doing some on-going La Plata county boundary research and monument recovery work. He gave a summary of his findings which sparked some entertaining storytelling and the buying of another round of beer. The idea for a chapter camp out and county line monument search was discussed and met with much enthusiasm, so stay tuned for details as spring approaches.

We will be having our first chapter meeting of 2019 on January 15th at 5:30 PM at the Durango Rec Center, 2700 Main Ave. The meeting will be in the Windom room. Our speaker will be Mike Boeckman, PLS, retired BLM Cadastral Surveyor. Mike will be presenting an

CHAPTER NEWS

updated discussion on “A Historical Perspective of a Bona Fide Right.” This will be a very informative presentation that includes local survey history and exciting legal concepts!

Parker S. Newby P.L.S.
President, SW Chapter PLSC

WCLS

The November meeting was held at Main Street Bagels from 7-8am on Wednesday, November 14th with 5 members in attendance. CDOT surveyor Jon Kobylarz discussed the department’s recent use of a drone on data acquisition projects. CDOT has also been actively participating in the NGS benchmark program.

Western Colorado Community College professor Tom Sylvester gave us an update on the surveying program.

There are 4 on-campus classes and 4 online courses per semester. These courses are switched each semester to offer all classes as both on-campus and as distance learning. Tom also reminded us that if anyone is seeking interns to please contact him for availability; he can be reached at (970) 255-7386 office or (970) 640-2590 cell or at tomsylvester@merrittls.com.

The November election saw Scott Thompson winning in a landslide victory.

WCLS is pleased to announce Richard J. Norejko as our seminar speaker. Information can be found at <http://www.ricknorejko.com>.

Alec Thomas, PLS
President, WCLS



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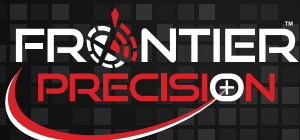
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