



# THE NEVADA TRAVERSE

Journal of the Professional Land Surveyors of Nevada

Institutional Affiliate National Society of Professional Surveyors • Member Western Federation of Professional Surveyors

Vol. 44, No.1 • March 2017



**The Power of Ideas  
France's Geodesic  
Mission to Peru  
1735-1744, Part II...Page 6**



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# The Nevada Traverse

This publication is issued quarterly by the **Nevada Association of Land Surveyors (NALS)** and is published as a service to the Land Surveying profession of the state of Nevada. *The Nevada Traverse* is an open forum for all Surveyors, with an editorial policy predicated on the objective of NALS and Bylaws, Article II, which reads:

"The purpose of the association shall be to promote the common good and welfare of its members in their activities in the profession of Land Surveying; to promote the common good and welfare of the public in terms of professional land surveying activities; to promote and maintain the highest possible standards of professional ethics and practice; to promote public awareness and trust in Professional Land Surveyors and their work.

This organization, in its activities and in its membership, shall be non-partisan, non-sectarian, and non-discriminatory."

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# The Editor's Corner



by Carl C. de Baca, PLS

**T**his issue, prepared in the depths of winter, has a melancholy tinge to it and for that I must apologize. It's been a cold, wet, gray winter making it hard to avoid Seasonally Affective Disorder. Let me get this out the way before moving on to brighter things. It seems an inordinate amount of death has visited the surveying world in the past year. The Nevada surveying community saw the passing of Gil Patterson, Jerry Tippin, Barry Hickerson, Laura Weatherston and Mark Chilton and we just got word that we have lost longtime NALS member Bart Dalton. Additionally, two NALS members, Jim Rackley and Greg Bigby lost their fathers in 2016. And at the time of this writing, early January, 2017, news has come out that one of the victims of the Fort Lauderdale airport shooting on January 6, Michael Oehme was a surveyor and business owner from Omaha, Nebraska. His wife Kari was a shooting victim as well, though she is expected to make a full recovery. We may not have known him, but he was one of us. Our prayers go out to the widow and may all those we lost rest in peace.

In this issue we continue to follow the exploits of the hardy

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eighteenth century French scientist/surveyors who traveled to Peru in Part 2 of Paul Pace's "The Power of Ideas". We also take another look at the on-going dust up between the Bureau of Land Management and the State of Alaska Department of Natural Resources regarding public land surveying methods. The issue has reached a new low and impacts could be felt in all PLSS states, including ol' Battle Born.

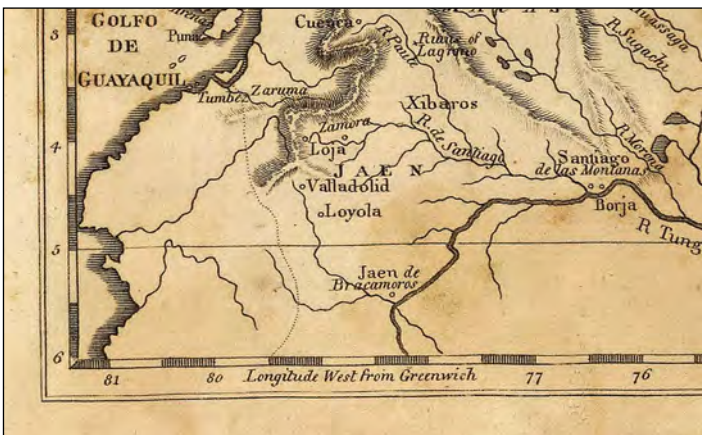
It's time to start talking about the new NGS datum, coming in 2022. This is a whole new animal and signifies the death of state plane, as we know it (good riddance). There are numerous issues for NALS to sort out and come to grips with, including understanding the mechanics, changing portions of the Nevada Revised Statutes and Nevada Administrative Code, working with local agencies across the state to help with the adoption of the new datum and boilerplate methods for conversion from old datums. The brief article herein is just an introduction and a request that interested parties please volunteer to help the Advanced Technology and Legislative committees achieve these goals.

We introduce a new feature to the pages of the Nevada Traverse with this issue: the Flash Poll. It represents a chance to hear from the Surveyor on the street. Hope you like it and please, offer feedback on future polling questions. ☒

## About the Cover...



Upper photo description: A GPS base station sits on the side of Stormy peak in the Snake Range at 8000 feet above sea level. Camera is looking southwest toward the Rubies which are 40 miles distant.



Detail from an 1812 map showing Quito and the double cordilleras ranging south.

# Electronic BLM Manual The Manual of Surveying Instructions 2009

**Currently available on the BLM website:**

[http://www.blm.gov/pgdata/content/wo/en/prog/more/cadastralsurvey/2009\\_edition.html](http://www.blm.gov/pgdata/content/wo/en/prog/more/cadastralsurvey/2009_edition.html)

## NALS Historic Committee Search

The Historic Committee is searching for pictures and narratives on past presidents and prominent contributive members. The presidents are known, but a list of contributive members needs to be developed. This year we hope to collect an overview of recollections, contributions and photos for both categories for future use. Respondents need not worry that two or more reply; information and photos received will be compiled by the committee.

Please respond to:

**NalsHistory@GMail.com**

**Thank you!**



# The President's Message

by Alan Dill, PLS



As we begin 2017 there are many things to be thankful for. If we look back to 2009, and remember what had become of our economy, our profession, and our membership, one can easily feel great about where we stand now. Not only has the economy let us get back to work, but many of those who suffered during those times are back in the game. Let's strive to continue our new growth, sustain a growing membership (220 +) and continue to improve this organization. I am honored to serve as President this year, and work with all of you in keeping the momentum going and keeping the Association strong.

We would like to Thank Carl C. de Baca for his energetic, passionate, and dedicated leadership over the past year, and the rest of the Board for their many contributions. I also want to personally thank Jerry Juarez for his willingness to switch roles this year so he can come back next year and make a fine president. Many of the decisions made over the past year have and will make a lasting difference for the organization. The decision to engage Association Management, create a new NALS Education Foundation, continued strong support of the Great Basin Degree Program, and a strong Conference Committee are just a few. We are as stable as we can expect financially and as mentioned above, we are growing again!

We strongly encourage every member to continue helping to get their peers involved and become members once again. Although we have grown, there are still too many resident Professional Land Surveyors in this state that are not members. The cost of membership is well worth the benefits, and those of us who have been involved for many years know the value of getting to know those peers, and what it does for your career. Those that think it's not worth the cost are simply losing out.

The conference will be held at the Silver Legacy in Reno April 1st-4<sup>th</sup>, and we are going solo this year. Please do all you can to attend and join us at this great event. When we do it on our own we need great attendance. If you haven't been to one of the conferences at the Silver Legacy in the past you simply missed out. The ones I have attended were fun and well worth the cost and trip. The conference committee has once again built a great program for us, so don't miss it.

One of Carl's ideas and interests is the Professional Practice Committee (PPC). We did have some discussion about this concept, but further discussions are needed to educate ourselves

as to what the role of this committee would be and how it would function. As Carl has mentioned in the past other western states have successfully created these committees. I believe that there could be a benefit to creating this committee, but it needs to be discussed at the chapter level, and further in general before we move forward. One concern I have is the close-knit surveying community we have and its small size. Other states that have such a committee have a much larger base and much more to oversee. They simply would have more to professional practice issues that could use mitigation and peer involvement.

As all of you know technological advancements are drastically changing the way we work and how we build our teams. Not only is it changing how we work, but how we think, plan, and approach a project. One of the most drastic impacts of these changes is how we introduce new people to the profession. This remains one of the biggest challenges we face, It has been the dominant discussion over all the years I have been involved in this association. The four-year degree requirement was pushed for all the right reasons, but has proved to be a challenge when it comes to getting new Professionals into the ranks. It is essential that we continue to support the Great Basin Program and get new applicants in the system. We also need a non-professional path and training system for those who are not seeking professional licensure. The CST Program was one of the pathways, but we need other options, and or local solution. We have open chairs for our Advanced Technology Committee, and Continuing Education Committee. Should anyone be interested in helping with either committee please let us know. There is obviously plenty of need for a continued emphasis on attracting new people and adapting to this ever-changing profession.

In closing I would like to thank all of the existing members for their continued support and involvement. I do believe the Land Surveying Profession has a future and will remain an important and vital part of the engineering and development industry. There are challenges as we so well know, but that is why we as Professionals must continue to be involved, adapt, and help develop the future of this fine profession. ☺



# NEVADA ASSOCIATION OF LAND SURVEYORS

## Meet the Board



### **NALS President Alan Dill PLS 7808**

Alan was licensed in 1988, and is currently in his twenty-ninth year of Professional Practice. Alan is currently in his fourteenth year as the Survey Manager at Stanley Consultants Inc. in the Las Vegas Office. He is a past President of the Southern Chapter, and current President of the Nevada

Association of Land Surveyors. Alan has been active in the association in a variety of roles over the past ten years, and has been a member of the association for over thirty years.



### **NALS President-Elect Jerry Juarez PLS 12140**

Jerry is in his 36<sup>th</sup> year of experience and 21<sup>st</sup> year as a professional beginning his career in Las Vegas with the Bureau of Reclamation. After 5 years in public service he continued his career in the private world. In 1993, an opportunity to manage multiple crews at one of

the largest multi-disciplined engineering firms in Las Vegas presented itself which was a turning point in his career. He was licensed in 1996 and continued his career as Survey Manager leaving his home town of Las Vegas in 2003 and moved to Reno. Jerry became involved with NALS while in Las Vegas serving as director, treasurer and secretary of the Southern Chapter and later, in 2008, served as President of the Lahontan Chapter. By far his proudest achievement is starting the NSPS Trig-Star program in Nevada in 2004 and continues to serve as the Nevada Chair and in 2012 was appointed NSPS Chair.



### **NALS Secretary Halana Salazar PLS 19042**

Halana has served on the Lahontan Chapter Board as Treasurer, Secretary, President Elect, President and most recently as Chapter Representative to the State Board. She recently retired in 2015 as Manager, R/W Engineering for NDOT and is now working part time for

Jacobs Engineering. Halana became licensed in 2007.



### **NALS Treasurer Doug Wood PLS 16809**

Douglas Wood started drawing maps as a title inspector while attending Occidental College in Southern California. After moving to the Las Vegas valley in 1989, Wood attended survey classes at the College of Southern Nevada (then Clark County

Community College) and the following year began working in the survey department of G.C. Wallace, Inc. Over the next decade, he specialized in determining property boundaries, researching and writing legal descriptions, ALTAs and AUTOCAD mapping. Wood became a licensed Nevada Land Surveyor in December 2004, and he has been an active member of the Nevada Association of Land Surveyors (NALS) since that time. In 2012, he joined the Board of the Southern Nevada Chapter of NALS as a Director and remained on the SNALS Board until 2016, when he served as President after having held three of the four officer positions. Doug is currently the Director of Mapping at Diamondback Land Surveying.



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Fill in your information and submit.

Help your NALS Board  
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## *Thank You!*



# The Power of Ideas France's Geodesic Mission to Peru 1735-1744, Part II

By: Paul S. Pace, PLS

In Part I we saw that the French sought to put to rest the debate over the shape of the Earth. They proposed a survey expedition to the Equator for the purpose of measuring a meridional arc. Comparing this survey with earlier ones done in France should solve the issue.

## Sailing For the New World

In May of 1735, the Academy members set sail aboard two French ships, intending to rendezvous with the Spaniards at Cartagena, on the north coast of modern day Columbia. The Spanish officers arrived on time, but the French were delayed in Saint Domingue, today's Haiti, for three months. Bouguer hired a personal servant, while Godin, who had a reputation as a ladies' man, wasted little time involving himself with a prostitute. He lavished expensive gifts on the woman and provided for her upkeep. Those expenses he took from the expedition's operating funds, an accusation he later denied. He ordered Morainville to paint her portrait and purchased for her a diamond worth 3000 *livres*, or about \$27,000 today. That extravagance was the last straw and caused a serious rift between Godin and the others.<sup>1</sup>

Moreover, Godin was proving ineffectual as a leader. Everyone chafed under his management, including Verguin, an experienced surveyor and cartographer for the French Navy. He found Godin's behavior increasingly insufferable and said so. Despite the clash of personalities, they continued to make observations for latitude and longitude, magnetics, etc. Completing their observations, they once again got under way. After making a difficult crossing of the Isthmus of Panama, they boarded a Spanish merchantman bound for Peru.

Putting in on the Peruvian coast, the expedition broke up, with teams working inland via different routes to Quito, administrative center for Spain's Viceroyalty of Peru. Bouguer and La Condamine remained behind to construct a plane table map of the area's coastline. At Cape Lorenzo, which they mistakenly believed to be the westernmost point of the continent, they observed a lunar eclipse for longitude. The two men also made careful studies of atmospheric refraction, knowledge which would be useful to them later.<sup>2</sup> They determined where the Equator crossed the coastline, inscribed a large boulder to mark the place, and made for Quito.

The entire expedition was reassembled in Quito by summer of 1736, just over a year after leaving France. At that time Quito was still in Spain's Viceroyalty of Peru. Figure 4. Once there, they found themselves behind schedule, caught up in some ugly local politics and short on cash. One thing they did not lack for, however, was hubris. They saw themselves as enlightened, better educated and more cultured than the locals. Some of them were particularly ungracious about it. There would be deadly



Figure 4. Detail from an 1812 map showing Quito and the double cordilleras ranging south.  
David Rumsey Map Collection<sup>3</sup>

consequences as a result. Fortunately for the expedition, La Condamine brought along letters of credit, making sums of his personal fortune available until more funds could be sent from France. The project inched forward. Bouguer assumed tacit leadership of the expedition, as Godin was clearly incapable of continuing in that role.

Settling in at Quito, they began astronomical observations for latitude and longitude. They surveyed the city and Morainville constructed a map. In June, Verguin and his young assistant Jacques Viruier-Couplet, set out to find a location for the initial triangulation baseline. After a two-month reconnaissance, they found it on the plains of Yarurqui, about twelve miles north of Quito, and very near the Equator. There was an 800-foot difference in elevation between the end points, but it was the flattest place they could find.

Indigenous locals were hired on as porters and laborers. Under the relentless equatorial sun, they cleared the baseline and set posts on the line. The expedition seemed to be moving in the right direction, but in September, Viruier-Couplet contracted an undiagnosed illness. Despite Jussieu's best efforts, he died two days later. They soldiered on, observing for longitude the same night they held young Viruier-Couplet's funeral.

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In October of 1736 they went to the field to measure the baseline. Bouguer and Louis Godin agreed to divide into two measuring teams, each equipped with three 20-foot long wooden measuring rods, their ends protected from wear by copper sleeves. These rods were painted in different colors and were laid down in the same sequence throughout the measurement. The rods were also checked daily against a standard, the iron bar La Condamine brought from France, which they christened the *Toise du Perou*. The baseline's termini were marked with large millstones. The teams measured the baseline from opposite ends, 20 feet at a time. The total length came to 7.9 miles, with a difference between the two parties' lengths of 0.25 foot.

The site for a second baseline was selected at the south end of the proposed chain of triangles, at Tarqui, near the town of Cuenca. All parties agreed to the location. This baseline would eventually be measured in the same fashion as the northern one. The actual measurement was put off until the triangulation was completed and the baseline could be used as a final check on their work.

With the northern baseline complete, siting the triangulation stations was next. Bouguer began a reconnaissance north of Quito, while Verguin went south along the towering, parallel cordilleras, to set out instrument marks and prepare campsites. After returning to Quito, the teams compiled the layout and strength of figures for the chain of triangles. The hard work was now at hand.

### Setbacks

In November of 1736, La Condamine received a letter from France bearing disappointing news. The Academy decided to mount another expedition, this time to Lapland, near the Arctic Circle. Measuring a meridional arc in this remote, northern region would provide a larger contrast with the results from Peru. An expedition to Lapland would be in and out before the Peruvian expedition could even complete their triangulation work. Their thunder would be stolen.

The expedition to Lapland was launched in May of 1736. Pierre Maupertuis, member of the Academy of Sciences, noted French mathematician, man of letters and former cavalry officer, led the expedition. With him went Alexis Claude Clairaut, another mathematician of standing, the cartographer Charles Étienne Louis Camus and the scientist Anders Celsius, of thermometer fame. They put to sea at Dunkirk, France and made for Tornio, in northern Finland.

All through the preliminary work in Peru, the massive volcanoes loomed in the distance. Now the teams would have to scale the peaks, taking their extremely heavy instruments, and all other necessities, with them. The rift between the members of the expedition persisted. Bouguer and La Condamine formed one team, content to leave Godin and the Spaniards to form another. This icy and counterproductive situation would cloud the work for years. The relationships were so strained that they found separate living quarters in town and resorted to writing letters to one another to communicate.

Angular measurement was done with the quadrants. These instruments ranged in radii from 21 inches to 36 inches and were fitted with telescopes. The instruments were reported to have an angular precision of 20".<sup>4</sup> They were mounted on heavy cast iron stands, with the larger quadrants weighing as much as 300 pounds. The teams built targets of wood, guyed with

ropes, covered with canvas and whitewashed with lime. These were large enough to be seen through their instruments' modest telescopes at 30 miles or more.

The first triangle in the chain started with occupations of Pichincha and Pambamarca volcanoes, which both had clear lines of sight to the base line at Yarurqui. Pichincha is 15,695 feet above sea level and remains an active volcano to this day. Pambamarca is an extinct volcano whose summit reaches 13,500 feet.

Ascending Pichincha, Bouguer and his team trudged the last mile to the summit through the permanent snow and ice fields. Upon arriving they found a small hut prepared the year before by the advance team. They set to work building sights and making meteorological observations. It was cold, very cold at night. And it was cloudy. So cloudy, in fact, that despite remaining on the peak for most of September 1736, Bouguer and his companions could not record a single angle. The baseline and all the other stations were obscured with clouds or fog. They had no way of knowing that they were in the Intertropical Convergence Zone, a region of a more or less permanent band of clouds, frequent thunderstorms and heavy precipitation that circles the Earth at the Equator.

After 23 consecutive days of low clouds and fog, Bouguer and his company called it quits and returned to Quito, as did Juan and Godin's team on Pambamarca. Enduring harsh conditions, the teams also were suffering from something far more insidious, something they had no idea existed: altitude sickness or high altitude pulmonary and cerebral edema. Attempting to work in diminished oxygen and low barometric pressures, the men dealt with swelling brains, nausea and vomiting, confusion, bleeding gums and lethargy that was at the edge of life threatening.

The indigenous workers they hired to assist them did not suffer like the Europeans. While acclimatized to the altitude, they nevertheless descended to a lower elevation each evening, while the Europeans remained encamped at the triangulation stations. They also chewed coca leaves, or drank *mate*, the tea made from coca leaves, which alleviated some of the symptoms of edema. The French mission was so abstruse to them as to be pointless. Eventually, tired of fighting the cold and the strange ways of the Europeans, they deserted the project. Ascending above 14,000 feet, the surveying teams had climbed higher than any European had, on any mountain, anywhere. Still more summits awaited them.

After several days of rest in Quito, the men reconsidered their plan. They now realized the summits were too cloud-bound to be occupied. Instead they would attempt to site new stations a little lower on the volcano's slopes, still high enough to take sights on the distant stations but below the cloud cover. Bouguer lowered his mark on Pambamarca to an elevation of 13,500 feet and again attempted to cut angles to the baseline and Pichincha. For two months they waited in the cold for the clouds to clear away and again were denied. Adding to the frustration was the frequent disappearance of the backsights, blown down in high winds or removed by local indigenous people, happy to find rope and a little wood in the treeless highlands. By November of 1736, all the teams were back in Quito, frustrated and empty-handed.

In early 1737 they set out again, nearly two years on and not a single angle turned. By now they had packed up the steep sides of Pambamarca and repaired or replaced the sight seven times. Eventually, the exasperated

CONTINUED ON PAGE 14 ►

# Bearing Trees In The Sky Update

## Bearing Trees in the Sky – Follow up one year later

Last year we ran an article entitled “Bearing Trees in the Sky”. It discussed a controversial memorandum from the BLM’s Chief Cadastral Surveyor to the State of Alaska’s Chief Cadastral Surveyor. The BLM was proposing to essentially stop setting monuments on new surveys in Alaska in favor of establishing and publishing geographic coordinates for corner positions. For reasons that should appear obvious to any surveyor who works with boundaries and understands the position that monuments occupy in the hierarchy of land adjudication, Alaska, NSPS, WFPS and NALS all expressed opposition to this proposal.



This magazine predicted that if this battle was not won on the ground in Alaska, that non-monumented BLM Original Surveys, “may someday rear [their] head in a township near you.”

Well, that someday is here. Outgoing BLM Director Neil Kornze has announced that in Alaska and “nationwide” they are going to start performing original surveys in such a fashion as to all but eliminate normal monumentation by implementing their Direct Point Position Survey or DPPS, whereby geographic coordinates take the place of monuments, and take on greater importance than platted bearings and distances. Following is a letter from December 2016 from the Director of the BLM (since resigned) to the Governor of Alaska outlining the new method and noting that they will be rolling it out across the nation. Also contained is a press release from the Alaska Department of Natural Resources opposing the new BLM plan. Readers are encouraged to review the documents and form their own opinions as to what this all means to us in Nevada, where 30 percent of the state is still unsurveyed.

⊗



United States Department of the Interior  
BUREAU OF LAND MANAGEMENT  
Washington, D.C. 20240  
<http://www.blm.gov>



DEC 19 2016

The Honorable Bill Walker  
Governor of Alaska  
Juneau, Alaska 99811-0001

Dear Governor Walker:

Nearly two years ago, when we met in Juneau to discuss the significant opportunities that exist for modernizing land survey methods in Alaska, I was encouraged by your strong interest in working with me on this important issue. However, despite many discussions between our teams since then, a common path forward still eludes us. I am disappointed that we could not find a way to make this important innovation together. Modernizing the land survey system means that Alaska will receive patent to the lands that it is due in half the time, at half the cost to the American taxpayer, and that the State will receive much higher-quality data. This is the kind of smart innovation that the American people want and deserve.

It would be fiscally irresponsible for the Bureau of Land Management (BLM) to continue with the inefficient and expensive survey method currently in use. Therefore, the BLM is withdrawing from the 1973 and 2012 Memoranda of Understanding (MOU) with the State of Alaska.

As the Federal government’s “real-estate agent,” the BLM was tasked with the responsibility of conveying more than 100 million acres of land to the state, pursuant to the Alaska Statehood Act. In the time since statehood was achieved in 1959, the BLM has surveyed and transferred 65 million of those acres. Finishing this job using traditional survey methods could take more than 20 years and, at \$6 million per year, could cost \$120 million or more. Our modern survey method, however, will allow the BLM to complete the remaining State land surveys in 10 years or less and reduce the cost by more than half.

As we have discussed on a number of occasions, the commitments made in the 1973 MOU have outlived their usefulness. That agreement requires the BLM to fly survey teams out to the field for weeks at a time, to haul gear and cut lines in the Alaskan bush, dig holes in the frozen tundra, and physically mark survey positions using a brass cap every two miles around each township that we survey. After all that work, the precise location of many of the monuments changes significantly due to seasonal freeze and thaw, fire, or other natural causes, or the monuments may be lost altogether due to destruction by animals or theft by humans. Maintenance and repair of the monuments falls to the State and future landowners, and the ongoing costs can be substantial for years to come. Lost and displaced survey markers also cause increased costs and time delays for the State when the land is resurveyed for subdivision.

In 2013, I asked the BLM’s survey team in Alaska to take a hard look at our program. I wanted to know if there was a more efficient, more accurate, and safer way for us to complete this critical work. The result of that evaluation is the Direct Point Position Survey (DPPS) that uses an advanced form of the Global Positioning System (GPS). This modern survey method uses GPS coordinates to replace most, but not all, of the physical monuments that would normally be placed by human survey teams. This approach significantly reduces the required number of monuments in the ground and thereby cuts field time and costs tremendously.

Even with fewer physical monuments in the ground, the BLM will be providing the State with a survey record that is of higher quality, more dependable, and easier to use. After an official DPPS survey is completed for an area selected by the State, the BLM will provide an official survey record, or plat, that contains far more detailed information than what traditional surveys can provide. The DPPS survey plat will show not only where physical monuments were placed on the exterior part of the area selected, but it will also provide precise GPS coordinates for every corner within subdivisions of the area—every corner in each 36-square-mile township as well as every corner in each one-square-mile section. Having GPS coordinates for all these corners will enable the State of Alaska to conduct future surveys more efficiently. Additionally, the precise geographic information eliminates the need for and the cost associated with finding, maintaining, and replacing physical monuments that often go missing in Alaska.

I was encouraged last July when Department of Natural Resources Commissioner Andy Mack and BLM-Alaska State Director Bud Cribley signed the “Agreement on Process to Adopt Direct Point Position Survey,” committing our agencies to a number of action items related to adopting the new survey method. As part of that agreement, we engaged a professional review of the survey method by the National Society of Professional Surveyors (NSPS) and the National Geodetic Survey (NGS). We were pleased that the analyses from both independent organizations showed no significant technical issues with the DPPS process.

At the same time that discussions were taking place between our technical survey teams, members of my staff and the BLM leadership team in Alaska met with your staff and members of the Department of Natural Resources team in an effort to negotiate a new MOU to serve as the baseline for a Federal-State partnership to bring cadastral survey into the 21st century. This group developed the enclosed draft agreement—completed on November 23—that takes into account the State’s desire for further dialogue with the BLM technical experts as well as additional field testing; it provides an opportunity for the State to update its statutes and regulations before full implementation; and it addresses professional training and other minor implementation concerns raised by the NSPS and NGS reports. I believe this document provides a thoughtful and balanced approach to implementation of a modern survey method in Alaska and I remain interested in signing this new MOU with you.

In the meantime, the BLM will be moving forward with implementing the DPPS both in Alaska and nationwide. It is my sincere hope that the State of Alaska will one day join the BLM as a partner in implementing this improved survey method, whether it is under my time of service or under a future Administration. This cost-effective and high-quality survey method will allow the BLM to more quickly convey the remaining State lands out of Federal ownership and fulfill the promise of the Alaska Statehood Act. And it will fulfill our duty to the American taxpayer to modernize government service, find efficiencies, and achieve better results with significant cost savings.

With such significant benefits available to both the State and the BLM, this is an opportunity that we simply cannot pass up.

Sincerely,

Neil Kornze  
Director



# Why NALS Should Oppose...

Why NALS should oppose the DPPS policy outlined in the letter from BLM Director Kornze to the Governor of Alaska

*One Nevada surveyor's opinion.*

Some 86% of Nevada is comprised of Public Lands and of that 60.8 million acres, according to the BLM's own website, an estimated 30% (18.2 million acres) has never been surveyed by the BLM or its predecessor, the General Land Office. Nevada therefore has a huge stake in any policy that the BLM adopts with respect to how new surveys will be completed and monumented. (Although let's face it, much of the Silver State is likely to remain unsurveyed until the sun has shrunk to nothing more than a warm rock.)

Nevada is sparsely populated and even more sparsely fitted with the kind of GPS control and continuously operating base stations needed to accommodate real-time coordinate establishment. But that is hardly the main reason why DPPS is a bad idea.

Datums change and continents drift. Nevada's rough and beautiful terrain is largely the result of a thinning, spreading crust pushing up wrinkles that we call mountain ranges. True, this takes place over millions of years, but movement continues

to occur nonetheless and it can be tracked over time measured on a human scale. A coordinate is a poor substitute for a monument when it represents a different point on the earth as time goes by.

When establishing his policy of "bring[ing] cadastral survey into the 21<sup>st</sup> century", outgoing BLM Director Neil Kornze apparently did not read or read but did not comprehend the following passage taken from his own agency's bible, the 2009 *BLM Manual of Surveying Instructions*:

4-2. The law provides that the corners marked during the process of an original survey shall forever remain fixed in position, even disregarding technical errors that may have passed undetected before acceptance of the survey. ***The courts attach major importance to evidence relating to the original position of the corner, such evidence being given far greater weight than the record relating to bearings and lengths of lines. The corner monument and its accessories constitute direct evidence of the position of the corner... The legal importance of the corner makes mandatory the workmanlike construction of lasting monuments skillfully related to natural objects or improvements so that the greatest practicable permanence is secured.***

News Flash Neil: a coordinate is not "direct evidence of the position of the corner" no matter how badly you want it to be so. And if selected cadastral staff supported this idea, as Kornze's letter asserted, they must have bent linear reasoning into a Mobius strip to do it.

Now the sad truth of all this is that the government wants to spend less money on surveys than it has traditionally spent. It's that simple. The DPPS is a scheme to cut costs, masquerading as a high-tech advancement in cadastral survey methods. Let's hope that most of BLM cadastral staff are not drinking the Kornze Koolaid, and let's also hope that the new director, when appointed, has at least a rudimentary ability to understand and appreciate the importance of physical monumentation with respect to our nation's 250 plus years of accumulated boundary case law.

But just in case, let's remind them. Provide your contact information and submit your comments to: [director@blm.gov](mailto:director@blm.gov).

-Carl C.de Baca January 2017 ☺

## BLM Announces Kornze Resignation

WASHINGTON, D.C. — The Bureau of Land Management on Friday announced two key leadership positions, including a replacement for Director Neil Kornze.

BLM veteran Kristin Bail will serve as the agency's acting director upon completion of Kornze's tenure, and Jody L. Hudson has been selected as the assistant director for Human Capital Management.

Kornze is stepping down on Jan. 20 with the transition to the new administration, and Hudson succeeds Carole Carter-Pfisterer, who retired from the BLM last month.

Kornze, who was raised in Elko, was nominated in 2013 by President Obama to be director of the agency. He had been the BLM's principal deputy director and previously served as a senior policy adviser to U.S. Sen. Harry Reid. ☺

-excerpted from the *Elko Daily Free Press*

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### State opposes BLM use of unproven technology for state land entitlement

(Anchorage, AK) – A decision issued today by the federal Bureau of Land Management to terminate a critical agreement with the State of Alaska and abandon the proven method for surveying the State of Alaska's land entitlement reneges on promises made in the Alaska Statehood Act, according to Natural Resources Commissioner Andy Mack.

The BLM and the Department of Natural Resources have worked together for 53 years under a memorandum of understanding that guides the transfer of federal lands to the State of Alaska under the statehood act. Recently the BLM pressured the State to agree to adopt satellite-based technology and abandon the placement of physical monuments to identify land ownership. Unfortunately, BLM cannot demonstrate that this technology works.

DNR agrees with BLM that this new technology has potential and is committed to testing and potentially adopting it in the future. However, the technology has technical problems and is not ready to be deployed. Given those technical issues, there is no evidence to back up BLM's assertions that this technology will cut the time and cost of land transfers, or increase the quality of land surveys.

"We will work with our Congressional delegation and the incoming administration on a resolution to the survey method that works for all parties," Mack said.

The State is concerned that implementing this technology before it is fully tested or developed will delay surveys required under the statehood act and ultimately transfer the cost of conducting legally-defensible surveys from the federal government to Alaska citizens.

DNR participated in one field test of the satellite-based technology with BLM this year and has agreed to further tests next summer. A recent independent review conducted by the National Society of Professional Surveyors indicated that the technology still needs more work, and reinforced the State's concerns that it is not ready to be implemented.

"We are disappointed that the BLM has chosen to unilaterally deploy this technology before it is ready," Mack said.

Mack noted that BLM land that is transferred to the State does not have to be surveyed before it can be used by the state for economic development activities. The single largest obstacle to speedy fulfillment of Alaska's land entitlement is the outdated federal land withdrawals preventing Alaska from exploring and prioritizing some of the most valuable land in the state, Mack said.

"Until those obsolete withdrawals are lifted, Alaska is simply hamstrung in our efforts to get our full land entitlement. And all the new survey technology in the world won't help us there," Mack said.

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# FLASH POLL

*What's the Word on the Street? Find out with the new Traverse Flash Poll!*

## WHAT DOES THE TERM 'MATERIAL DISCREPANCY' MEAN TO YOU?

**Respondent 1:** Material discrepancy means to me, most often, a difference between a plan location and an actual measured location that is, in my professional opinion, too great to accept as being within acceptable tolerance. My personal litmus test is "could I defend this in court?"

**Respondent 2:** I consider material discrepancy to be ambiguity within a document; 2 or more documents that contradict each other; or monuments on the ground that do not match the recorded document.

**Respondent 3:** For position of a monument, it's like Justice Potter Stewart's definition of pornography, "I know it when I see it." I guess that means case-by-case analysis. When you're talking about a tenth of a foot or less in measurements, calling another surveyor out seems presumptuous. Also I believe 'material discrepancy' can apply to the character of a monument. The map says capped 5/8" rebar but I find a 3/4" iron pipe with no tag. That's a discrepancy that I'm going to have to consider.

**Respondent 4:** What Material Discrepancy mean to me is when I'm following the footsteps of previous surveyors and finding that they don't agree with each other by a tenth or two. I just want to laugh and think what are we doing, building a Swiss watch? It just makes me think oh I can measure better than you because I have the latest and greatest bells and whistles of a new piece of equipment.

**Respondent 5:** A difference in the character, (rebar, pipe, scribe, capped, tagged) of a monument placed as an original or retraced monument. // A difference between a record deed call or platted line and the measurements between original monuments. This is subject to the individual surveyor, which is a discussion for a different time. // If you find or set something that is not shown in the public record.

**Respondent 6:** Material Discrepancy has many different parts as I see it. The one that come to mind first to me is the physical characteristics of the actual monument. I believe that the monument found in the field should match what is purported to have been set by the surveyor. For Instance, the type of material, its size and the land surveyors registration number are all key components in your analysis of whether the monument can be classified as original. All too often in the last few years I have run a cross monuments set in the field that do not match the character of the original surveyor and have nothing filed that can explain how their position was determined. I am ashamed to say that my mentoring had led me to do this on more than one occasion. I have since seen the error in my ways. I ask you this question, How is another surveyor supposed to confidently rely on this monument? Material discrepancy also commonly seen in the bearing and distance of measured lines. What your tolerances are seems to vary from surveyor to surveyor.

*One of the responses to this poll was so comprehensive that it justified its own separate place in the magazine, along with the lifting of the veil of anonymity. I refer of course, to the excellent editorial on Material Discrepancy by Dan Church, found elsewhere in this issue. -Ed ☒*

# NV-BPELS Meet and Greet

NALS in conjunction with NvSPE held two Meet and Greet Events with the Nevada Board of Professional Engineers and Land Surveyors (NV-BPELS) in the Fall of 2016. The first was held at Sierra Gold on Jones in Las Vegas on September 7. The second event was held November 9<sup>th</sup> at Silver Legacy in downtown Reno.

The Las Vegas event, which saw attendance of over 50 professional engineers and land surveyors, was hosted by NvSPE and drinks and hors d'Oeuvres were served. The Reno event was hosted by NALS and saw attendance of 30 plus professionals. A cash bar and salads/prime rib were served. Both events allowed attendees to sit in an informal environment and chat with the board members while enjoying the food and beverages.



NV-BPELS chair Chris Roper addresses audience at Las Vegas event

Patty Mamola, the newly installed BPELS Executive Director emceed the proceeding and chair Christopher Roper P.E. spoke in both locations as did Surveyor members Robert LaRiviere and Michael Kidd. Attendees were introduced to new Board Compliance officer Ryan Mulvany who described some coming changes in the random auditing of continuing education reporting.

Both events were very worthwhile and worked toward fostering a closer relationship between the two host organizations and the Board. Thanks go to Dr. David James of NVSPE, BPELS Executive Director Patty Mamola and our own NALS Central Office for putting this all together. -Ed. ☒







## Program Statement

The Land Surveying and Geomatics program is committed to addressing the diverse and constantly changing needs of students throughout Nevada and in other locales who are preparing for a geomatics career by improving teaching methods, techniques, and content for delivering high quality educational experiences and achieving student success.

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### Great Basin College

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# DATUM 2022: NALS Needs you!

Ahhh, The new NGS Datum. 2022 Seems like a long way off but given the amount of work to do between now and when it becomes the national datum, NALS, like other state organizations across the country, needs to get busy. Doing what, you might ask. This is a change to horizontal coordinates and to the vertical datum throughout the country. A look at the illustrations at the NGS Website <https://www.ngs.noaa.gov/datums/newdatums/WhatToExpect.shtml> indicate that our elevations will be dropping by something less than a meter. This will have impacts in FEMA mapping and flood certifications.

NALS, through its Advanced Technology Committee, will need to develop a complete understanding of the ramifications of implementation and then in conjunction with the Legislative Committee will need to evaluate needed changes to Nevada Revised Statutes (327 and 625 and more...) and develop language

to introduce as legislation. That could be a long process and if we wait any longer, we might not meet the goal of being ready when NGS rolls this datum out.

What else needs to be done? Local coordinate systems including Low Distortion Projections already in use will certainly be impacted if not made outright obsolete. The time to start having discussions with local agencies is now, while we have time to work out strategies for conversion to the new datum.

Here is a link to the Frequently Asked Questions page of the NGS new datum website: <https://www.ngs.noaa.gov/datums/newdatums/FAQNewDatums.shtml>

NALS encourages you to get involved. The two committees cited above will need guidance and assistance throughout the process and liaisons between these committees and local agencies will be critically important. Now is the time for the chapters to start discussing this and developing a strategy. Don't put your head in the sand!



## FOOD FOR THOUGHT

*Excerpted from the 1885 Nevada Surveyor General's Report to the United States Surveyor General's office.*

### 370 REPORT OF COMMISSIONER OF GENERAL LAND OFFICE.

#### CONCLUSION.

Nevada is not by any means a "played-out mining-camp," as some of the great New York dailies endeavor to make it appear. She is rich in all the precious minerals, has cattle upon a thousand hills, and sheep with fleece as white as snow. The climate is perfectly lovely and cannot be excelled, and as the seasons come and go they are regretted and welcomed. Ten thousand children bless the public schools and good society is enjoyed by all adults. The cost of maintaining a state government, including all expenditures for public charities and public schools, does not exceed \$250,000 per annum, and if the actual property of the state was assessed at anywhere near its cash value the rate of state taxation would not be 20 cents on each \$100. The people of Nevada are hardy and brave. They ask no sympathy from their neighbors. They will carve their own way to prosperity and aid and assist others as they pursue their journey.

Very respectfully, your obedient servant, ●

C. C. POWNING,  
*United States Surveyor-General for Nevada.*

Hon. WM. A. J. SPARKS,  
*Commissioner General Land Office, Washington, D. C.*





# New Datums Are Coming!

## NOAA is Replacing NAD 83 and NAVD 88.

NOAA's National Geodetic Survey (NGS) will be replacing the datums of the National Spatial Reference System (NSRS) in year 2022, including **the North American Datum of 1983 (NAD 83) and the North American Vertical Datum of 1988 (NAVD 88)**. NGS will provide the tools to easily transform between the new and old datums. Read the NGS Ten-Year Plan and visit the **New Datums Web page** on our site to learn more.

## Benefits

The new reference frames (geometric and geopotential) will rely primarily on **Global Navigation Satellite Systems (GNSS)**, such as the Global Positioning System (GPS), as well as on a gravimetric geoid model resulting from NGS' **Gravity for the Redefinition of the American Vertical Datum (GRAV-D)** Project.

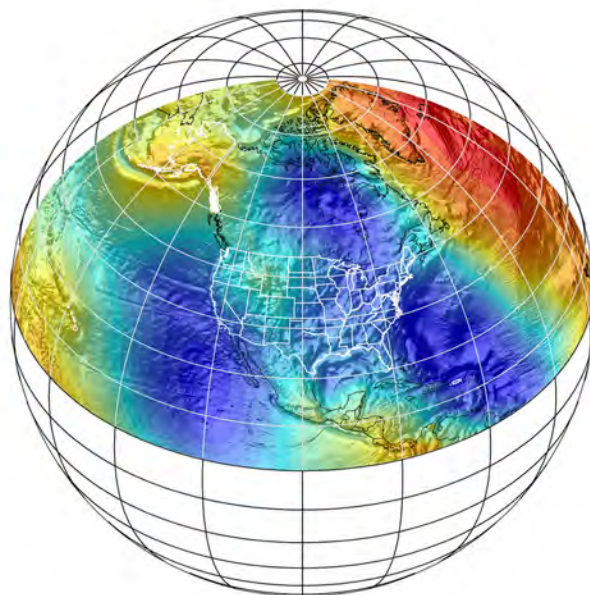
The target accuracy of differential orthometric heights (heights relative to sea level) in the geopotential reference frame will be 2 centimeters over any distance, where possible.

## What You Can Expect

The magnitude of change with the new datums will vary depending on the datum you are using and your geographic location. The new geometric datum will change latitude, longitude, and ellipsoid height between 1 and 2 meters. In the conterminous United States (CONUS), the new vertical datum will change heights on average 50 centimeters, with approximately a 1-meter tilt towards the Pacific Northwest.

## How You Can Prepare

- Learn if **legislation** or other formal documents referencing NAD 83 and NAVD 88 need to be changed in your state.
- **Transform existing data** to the latest NSRS datums and realizations; i.e. NAD 83 (2011), GEOID12B, and NAVD 88.
- **Obtain precise ellipsoidal heights** on NAVD 88 bench marks, and visit the GPS on Bench Marks Web page to learn more.
- Require and provide **complete metadata** on all mapping contracts. See our website at **geodesy.noaa.gov** for more details.



*The new datums will extend across CONUS and U.S. territories. The geometric datum replacing NAD 83 will be consistent with geocentric global reference frames defining latitude and longitude. The geopotential datum replacing NAVD 88 will be based on a gravimetric geoid model, enhanced by data from NGS' Gravity for the Redefinition of the American Vertical Datum (GRAV-D) Project.*

# New Datums

Godin hit upon an idea: they could use their tents as sights, as the locals seemed to understand that the tents were not to be disturbed, while they regarded the sights as fair game. The plan worked and together with lowering the marks, they soon closed their first two triangles. Three months later they had completed four more triangles. In the process they scaled lofty Cotopaxi, the second highest peak in the area and at 19,347 feet, one of the world's tallest active volcanoes. They set their instrument mark at 14,485 feet.

While the teams waited on the mountains for a break in the perpetual clouds, they suffered from the intense cold, made worse by fierce winds. Their journals are filled with descriptions of the wretched conditions they were all enduring: miserable rations, swollen feet, chapped and broken lips and racked by symptoms of mind-numbing altitude sickness. Bouguer, for his part, tried to occupy himself during the delays by working on his theories regarding the design of sea-going vessels, birthing the new science of naval architecture.

The expedition's medicos were busy elsewhere. Their services were sorely needed in the understaffed hospitals of Quito. The expedition had encountered the cinchona tree on the initial pack into Quito. Jussieu, the team's physician and botanist, together with the young surgeon Seniergues and the draftsman Morainville, continued to study the tree's properties, begun earlier by the ever-curious La Condamine. The Peruvian Indians, who introduced it to Jesuit missionaries in 1620, had long before known the uses of the cinchona tree. The tree's powdered bark was the source for quinine, known then as now, as a treatment for malaria. La Condamine had also seen the Indians tapping other trees for their unusual sap, which they fashioned into long burning torches and unbreakable bottles. La Condamine sent a sample of the rubber to France for further study.

After a frustrating season in the field, trudging up the steep slopes into the frozen hell awaiting them at altitude, enduring the cold and edema, the teams returned to Quito at the end of 1737. They had made progress, but only with great sacrifice. Much more daunting work lay ahead of them. Yet despite all this, they were no closer to resolving their personality issues. Still, Juan and Ulloa managed to keep the grumpy Frenchmen working more or less together and toward their common goal. For their part, the Spaniards maintained frequent contact with their superiors, appraising them on their progress. They also advised them of the appalling treatment of the indigenous peoples by their colonial overlords.

In the summer of 1738 both teams left Quito and made their way to the 15,720-foot Corazón volcano. Packing up the steep slopes, they reached their mark at 14,150 feet and began joint observations. Bouguer turned angles from the station on Corazón for a month before wrapping up. He then crossed the wide valley and hauled the gear up the much easier slopes of Papayurco, reaching the mark at 11,670 feet. With the parties now separated, they began leap-frogging their way south through the network, Bouguer's party on one side of the cordilleras and Godin's on the other. Advance teams hauled the tents and camp gear ahead of the observing teams.

In August of 1737, the team that went to Lapland completed their survey and returned triumphantly to Paris. Without the data from Peru, but using previous triangulation results in France, they could state with some certainty that the Earth was indeed oblate, as Hooke and Newton predicted. Aided by

a platoon of soldiers from the Swedish Army, they completed the triangulation in just three months. However, on the return voyage they were beset by a storm that threatened their boat. The pilot deliberately ran the boat aground to prevent it from sinking. It took a week to repair the boat, but no lives were lost and they returned to France in good order.

Trumping the hapless Peruvian expedition, Maupertuis quickly published the results of the team's survey in his book, *La Figure de la Terra*, in 1738. His English language edition of "The Figure of the Earth" was printed in London the following year. Figure 5.

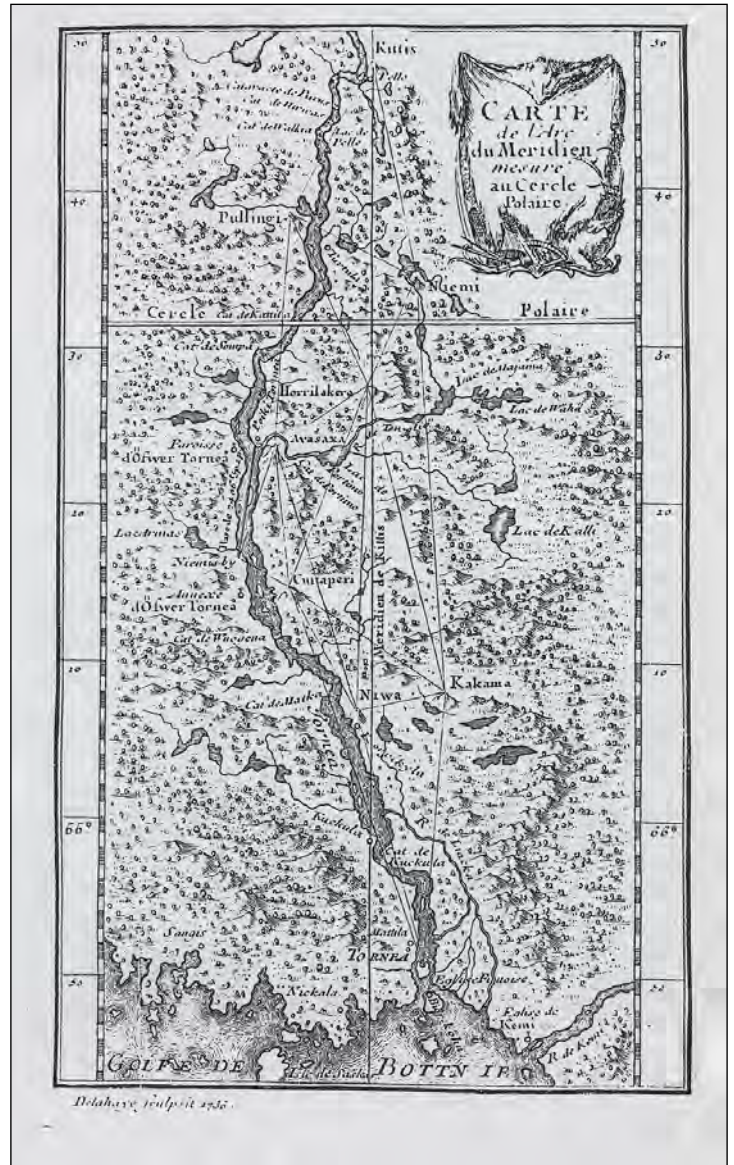


Figure 5. Maupertuis' 1736 map of the triangulation scheme in Lapland.

In September of 1738, La Condamine learned of the Lapland expedition's return to France. The northern mission had surveyed only fifty-seven miles of arc, just under a degree of latitude, far shorter than the two hundred plus miles of survey underway in Peru.

Word of Maupertuis' triumphant return from Lapland was grim news for Bouguer. For years he believed that Pierre Maupertuis



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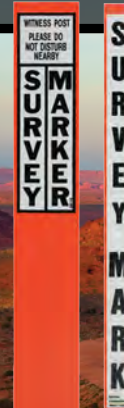


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# BOWLING

**TOURNAMENT**

**APRIL 1, 2017 - - NATIONAL BOWLING STADIUM - - RENO, NV**

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PHONE \_\_\_\_\_ EMAIL \_\_\_\_\_

TEAM NAME: \_\_\_\_\_

NAMES OF OTHER BOWLERS IN YOUR TEAM:

2ND NAME \_\_\_\_\_

3RD NAME \_\_\_\_\_

4TH NAME \_\_\_\_\_

5TH NAME \_\_\_\_\_

## TRANSPORTATION

The bowling tournament will be held at the National Bowling Stadium which is across the street from the Silver Legacy. Please meet at 6:00 PM near valet to walk with group to bowling alley.

## REGISTRATION

- Team Registration (5 people) - \$199
  - 2 games of bowling & shoe rentals for 5 people
  - Dinner & Prizes
- Individual Bowler - \$45
  - 2 games of bowling & shoe rental
  - Dinner & Prizes
- Sponsor a Student Bowler - \$45
  - 2 games of bowling & shoe rental for 1 student
  - Dinner & Prizes
- Gutterball Tickets - \$5 each
  - Roll a gutterball for an opponent of your choice
  - Support surveying education
- Raffle Tickets – \$5 for 10 tickets

## PAYMENT INFORMATION:

Total Enclosed \$ \_\_\_\_\_

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# NALS Board of Directors Meeting

Friday, January 13<sup>th</sup>, 2017 • Offices of Manhard Consulting, Reno, NV

## MINUTES

**Nevada Association of Land Surveyors Board of Director Meeting** was held on January 13, 2017 at the offices of Manhard Consulting in Reno, Nevada.

### CALL TO ORDER

The meeting was called to order by President Carl CdeBaca at 9:20 AM.

### PLEDGE OF ALLEGIANCE

President Carl CdeBaca led the Board in the Pledge of Allegiance.

### ROLL CALL

Carl CdeBaca, 2016 President  
Alan Dill, 2017 President  
Jerry Juarez, President-Elect  
Doug Wood, Treasurer (present via telephone conference)  
Jason Fackrell, Director, Southern Nevada Chapter  
Jeff Miller, Director, Southern Nevada Chapter  
Justin Moore, Director, Lahontan Chapter  
Greg Phillips, Director, Lahontan Chapter

### Absent:

Halana Salazar, Secretary  
Mark Boge, Director, Great Basin Chapter

### Guests:

Matt Gingerich, Past President & WFPS Delegate  
Crissy Willson, NALS Executive Office

### INSTALLATION OF OFFICERS

Outgoing President Carl CdeBaca installed the 2017 Officers and passed the gavel to President Alan Dill. Alan thanked Carl for his service.

### APPROVAL OF MINUTES

**MOVED** by Carl CdeBaca and **SECONDED** to approve the minutes of the October 2016 minutes. **MOTION CARRIED.**

### PRESIDENT'S REPORT

Report included in agenda.

President Alan Dill discussed his plan for the year including continuing to grow membership and revitalize committees. Alan made the following committee appointments:

- Advanced Education - Carl CdeBaca
- Advance Technology - Kevin Almeter, Ryan Martina
- Bylaws Committee - Carl CdeBaca
- Communications - Jason Fackrell
- Conference/Continuing Education - Nancy Almanzan
- Ethics - Dave Crook
- Legislative Committee - Carl CdeBaca
- Membership Committee - Alan Dill
- Publications - Carl CdeBaca, Editor

Outreach - Jerry Juarez

Nominating Committee - Chapter Presidents

NSPS Director - Paul Burn

WFPS - Matt Gingerich, Nancy Almanzan

The Board of Directors confirmed the following four Principal Directors to the Education Foundation.

Carl CdeBaca

Alan Dill

Jason Fackrell

Jerry Juarez

**MOVED** by Jerry Juarez and **SECONDED** to approve President Alan Dill's committee and Board Education Foundation appointments. **MOTION CARRIED.**

### TREASURER'S REPORT

Financial statements included in the agenda.

**MOVED** by Carl CdeBaca and **SECONDED** to accept the financial statements as included in the agenda. **MOTION CARRIED.**

**MOVED** by Jerry Juarez and **SECONDED** to authorize Alan Dill, Doug Wood, Dorothy Calegari, and Christina Willson as signors on the association bank accounts. **MOTION CARRIED.**

### LAHONTAN CHAPTER

Report included in agenda.

Justin Moore and Greg Phillips reported on upcoming meetings of the Lahontan Chapter.

### WFPS REPORT

Report included in agenda.

Matt Gingerich reminded the Board that it is time to start looking for teachers to participate in the Teaching with Spatial Technology (TwiST) program. The TwiST program is a great way to introduce teachers to the land surveying profession as a potential career path for their students.

In addition, WFPS will be offering state associations the opportunity for profit sharing on webinars. If you have a webinar topic or speaker recommendation, please contact the WFPS Executive Office. Carl CdeBaca suggested a webinar on the 2022 Datum.

### EXECUTIVE OFFICE REPORT

Crissy Willson reported NALS realized a 30% increase in membership in 2016. A list of all licensees has been obtained and a membership drive will be conducted.

The new NALS website has been completed and is in final

CONTINUED ON NEXT PAGE ►





testing. Upon launch of the site an email notice will be sent to the membership. The new site will provide better functionality and enhanced features.

At the October Board of Directors meeting, the Board authorized a NALS logo store to be developed. The purpose was to provide members an opportunity to buy logo items without having to purchase and store inventory. Crissy Willson reported the store has been developed and it offers items such as jackets, polo shirts, t-shirts, hats, coffee mugs, and more.

Crissy distributed the 2017 "Who's Who" which lists the contact information for the NALS Board of Directors and the Chapter Officers. (Attached) If you have any changes to the Who's Who please forward to the Executive Office.

**DELEGATION OF DUTIES**

Delegation of duties for Treasurer and Secretary were included in the agenda.

**MOVED** by Doug Wood and **SECONDED** to delegate duties of Treasurer as outlined in agenda to the Executive Director. **MOTION CARRIED.**

**MOVED** by Jerry Juarez and **SECONDED** to delegate duties of Secretary as outlined in agenda to the Executive Director, pending approval of Halana Salazar. **MOTION CARRIED**

**BYLAWS**

Bylaws Chair Carl CdeBaca will be working with the Executive Office to redraft the NALS bylaws. Carl reported there are several items that need to be updated such as NSPS membership and the bylaws need to be reorganized. Draft bylaws will be sent to the Board for review/modification. Once approved by the Board the bylaws will be sent to the voting membership.

**CONFERENCE**

Crissy Willson reported that the NALS Conference program was close to being finalized. Featured speakers will include Dennis Moulard and Joe Paiva. Crissy reported neither of the featured speakers are available for the Saturday workshop and requested the Board provide suggestions. The Board suggested a workshop on CAD be held as the Saturday workshop. Crissy Willson and Carl CdeBaca to contact CADMasters.

**NALS Conference**

April 1-4, 2017  
Silver Legacy  
Reno, NV

**AWARDS**

A surveymonkey will be sent to the Chapter Presidents for nominating and voting on 2016 awards. It was noted that life memberships were not given for several years and there is more than one member that should be recognized with life membership.

**MOVED** by Carl CdeBaca and **SECONDED** to suspend the award guidelines so that each chapter may nominate one life member from their Chapter area. **MOTION CARRIED.**

**MOVED** by Justin Moore and **SECONDED** to grant life membership to Paul Pace from the Lahontan Chapter. **MOTION CARRIED.**

**MOVED** by Carl CdeBaca and **SECONDED** to grant life membership to Bill Nisbet from the Great Basin Chapter. **MOTION CARRIED.**

**ADVANCED EDUCATION**

Report distributed. (Attached)

Professor Byron Calkins provided a detailed report on the status of the Great Basin College survey program. The program, completely online, continues to grow.

Carl CdeBaca discussed the need for a second professor which will also allow the program to receive ABET accreditation. The Education Foundation will discuss possible endowments to facilitate a second professor.

**LEGISLATIVE COMMITTEE**

The Board discussed the budget and the contract amount for lobbyist Nina Laxalt. Although NALS is pleased with the services provided by Nina, NALS does not have the budget for a contract lobbyist. The Board discussed alternatives such as a bill tracking service.

Crissy Willson to draft letter to Nina Laxalt and research bill tracking services.

**GREAT BASIN CHAPTER**

Report included in agenda.

Chris Konakis is working with Professor Byron Calkins and GBC students on setting a monument at the geographic center of Nevada.

**SOUTHERN CHAPTER**

Report distributed after the meeting. (Attached)

Jason Fackrell reported on the SNALS Holiday Party which had a good turnout and raised funds for scholarships.

SNALS will continue to meet the third Thursday of the month. A picnic will be held at the end of April and a golf tournament in Mesquite is being planned for October 20th.

**NEXT MEETING**

President Alan Dill reported that the next meeting will be held in conjunction with the NALS Conference.

**ADJOURNMENT**

President Alan Dill adjourned the meeting at approximately 3:00 PM. ⊗

★ MARK YOUR CALENDAR!

# NALS ANNUAL CONFERENCE & EXPO

# NALS 2017

April 1-4, 2017

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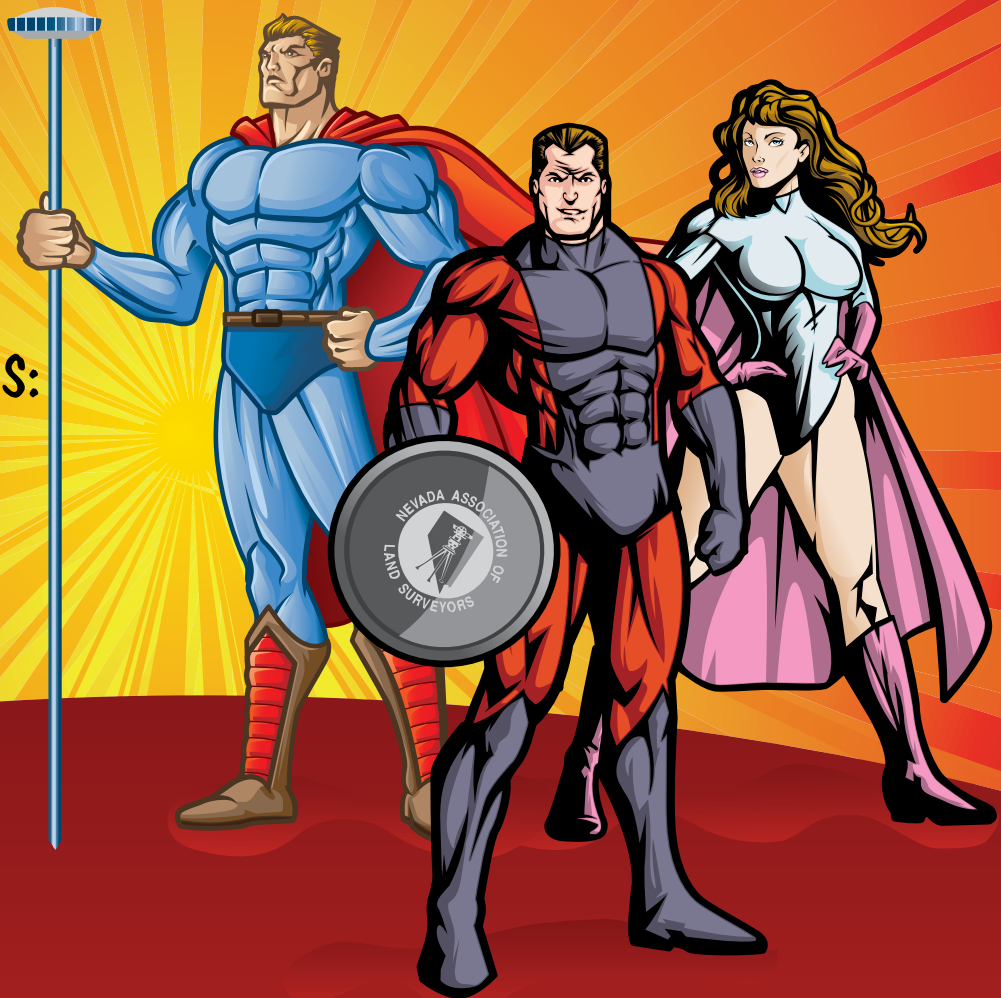
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PLS #

SPOUSE (if attending - See Spouse Registration Below)

## MEMBER REGISTRATION

	BEFORE March 1	AFTER March 1	AMOUNT
PreConference Workshop <small>PreConference Workshop: Saturday (all day) and Sunday (morning)</small>	\$185	\$235	\$ _____
Conference Only <small>Conference Only Registration: Sunday (afternoon) thru Tuesday Includes Monday &amp; Tuesday Luncheons, IceBreaker Reception &amp; Scholarship Auction. Does not include PreConference Workshop on Saturday (all day) and Sunday (morning).</small>	\$275	\$325	\$ _____
Conference & Workshop <small>Full Conference Registration: Saturday thru Tuesday Includes all preconference workshop and conference registration.</small>	\$425	\$475	\$ _____
Conference One Day <small>Select Day: <input type="checkbox"/> Sunday <input type="checkbox"/> Monday <input type="checkbox"/> Tuesday Includes event(s) for day (Sunday/Monday Luncheon, IceBreaker Reception &amp; Scholarship Auction.)</small>	\$155	\$205	\$ _____

## NON-MEMBER REGISTRATION

	BEFORE March 1	AFTER March 1	AMOUNT
PreConference Workshop <small>PreConference Workshop: Saturday (all day) and Sunday (morning)</small>	\$235	\$285	\$ _____
Conference Only <small>Conference Only Registration: Sunday (afternoon) thru Tuesday Includes Monday &amp; Tuesday Luncheons, IceBreaker Reception &amp; Scholarship Auction. Does not include PreConference Workshop on Saturday (all day) and Sunday (morning).</small>	\$325	\$375	\$ _____
Conference & Workshop <small>Full Conference Registration: Saturday thru Tuesday Includes all preconference workshop and conference registration.</small>	\$475	\$525	\$ _____
Conference One Day <small>Select Day: <input type="checkbox"/> Sunday <input type="checkbox"/> Monday <input type="checkbox"/> Tuesday Includes event(s) for day (Monday/Tuesday Luncheon, IceBreaker Reception &amp; Scholarship Auction.)</small>	\$205	\$255	\$ _____

## OTHER REGISTRATION

Spouse Registration <small>Includes entrance to Exhibit Hall, Icebreaker Reception, Monday Lunch, Tuesday Lunch and Scholarship Auction</small>	\$180	\$ _____
Full-time Student Registration <small>Must attach current student ID. Includes Conference Registration (Sunday thru Tuesday), Monday &amp; Tuesday Luncheons, IceBreaker Reception &amp; Scholarship Auction. Does not include preconference workshop.</small>	\$180	\$ _____

## OPTIONAL ACTIVITIES

	AMOUNT
Extra Monday Lunch Ticket _____ @ \$46	\$ _____
Extra Tuesday Lunch Ticket _____ @ \$46	\$ _____
Extra Sunday Icebreaker Ticket _____ @ \$46	\$ _____
Extra Monday Auction/Dinner Ticket _____ @ \$46	\$ _____
Continuing Education Certificate	\$25 \$ _____
Student Assistance Donation ( <i>Suggested Donation \$15</i> )	\$ _____

## PAYMENT INFORMATION

Total Enclosed \$ \_\_\_\_\_

Check Enclosed (Checks payable to NALS Conference)

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**APRIL 1-4, 2017 – SILVER LEGACY, RENO, NV**

## Laurie Nelson Weatherston Rest in Peace



Members of the South Lake and Carson Valley communities lost a dear friend in October 10, 2016 to an unexpected complication of surgery. Laurie, age 64, passed quietly October 10<sup>th</sup> at U. C. Davis Medical Center with her husband Scott at her side.

Laurie was born and raised in the Los Angeles area. After successfully battling cancer in her early twenties she completed her studies at Sonoma State earning her BA in Psychology in 1976.

Her interests in running, hiking, skiing, snowshoeing led her to Lake Tahoe in the early 1980s, where she met her future husband Scott Weatherston, and her soon to be stepson Sean. Scott and Laurie celebrated their 27<sup>th</sup> wedding anniversary on September 17, 2016.

Laurie's career began in 1984 working for Turner & Associates, Inc. – Stateline, NV. This was followed by Lumos & Associates, Inc – Carson City and R.O. Anderson Engineering, Inc. - Minden. She became a licensed Professional Land Surveyor, (Nevada), January, 2002. In 2006 she started Weatherston Surveying, LLC, and worked for herself, a dream fulfilled.

Laurie loved her mountains, often venturing out solo to hike, run and snow shoe in the upper Kingsbury area. She trekked the mountain sides of Virginia City and Kingston to plot out properties for her clients. She would happily share photos of wild horses, goats and fowl she spotted while there to her friends. She was also an avid San Francisco Giants fan, played the piano, acoustic guitar, and flute.

Her love of the out of doors led her to being an active and valuable member of the Douglas County Sheriff's Search and Rescue (DCSAR) team for 12 years. Along with responding to persons in need she also managed the first aid program for DCSAR and took the lead in providing first aid teams for the many bicycle and running events at Lake Tahoe. Never turning down an assignment, she met the challenges with enthusiasm, in spite of her small stature, all of 95 lbs and 4'11" height. Her close friends often called her "pea-nut".

Laurie leaves behind her loving husband Scott, sister Kathy Nelson, step-son Sean Weatherston and step-mother Marilyn Nelson. Laurie is preceded in death by her parents Don Nelson and Barbara Eiler, part of a landmark entertainment family headed by her uncle and aunt, Ozzie and Harriet Nelson, and her step-father Martin Sperzel. She leaves behind numerous cousins, friends and her beloved cats, Persia, Wolfie and Yoda.

A memorial and celebration of life for Laurie was held on December 10<sup>th</sup>, 2016 at 2pm at the Edgewood Tahoe Resort in Stateline, Nevada. ☉

## Mark Chilton Rest in Peace



Mark Chilton PLS/PE, of Elko passed away on Nov. 9, 2016 at age 89.

As you no doubt recall, the Traverse profiled Mark earlier in the year, and noted his long service in engineering and surveying in northern Nevada and his generous donation to the Great Basin College, Engineering & Surveying Scholarship Fund.

Mark Chilton was born in St. Joseph, Missouri in 1927. He entered the

U.S. Army Air Corps in 1944 and served in the Air Corps for 3 years, stationed in the Philippines as a photo lab technician and aerial photographer. He enrolled at Colorado University in Boulder, Colorado under the G.I. Bill. In 1959 Chilton joined a civil engineering and land surveying consulting firm in Elko, owned by William Settlemeyer PE/LS No. 11. Eventually, he bought the firm from Settlemeyer and rechristened it Chilton Engineering. Chilton specialized in Civil Engineering services and Land Surveying in Northeastern Nevada and was elected as the Elko County Engineer for three terms, and served many small communities in Northern Nevada over the years as either County or City Engineer. Chilton Engineering grew from a two-employee business, one being Mrs. Chilton as secretary, to a firm with more than a hundred employees with offices located in Elko, Reno and Las Vegas, Nevada and Lake Havasu, Arizona.

Under Chilton's direction the firm had many notable accomplishments including the \$45 million Railroad Relocation Project in Elko commonly known locally as Project Lifesaver and the negotiations for funding, and supervision of the design and construction of a \$20 million Southfork Recreation Reservoir in Elko County. Chilton retired in the early 2000's and the firm was acquired by Farr West Engineering in 2012.

Chilton served as the Nevada State President of the National Society of Professional Engineers and served on two boards of the Desert Research Institute of the University of Nevada System. He was a founder and co-donor of land for the campus of the Great Basin College in Elko, and served on its Foundation Board. In 2015, to encourage and support the Civil Engineering and Land Surveying professions, Mark donated the sum of \$100,000 to GBC for engineering and surveying scholarships to be awarded to qualified and eligible applicants. To continue Mark's dedication & service to his adored community of Elko, please consider a donation in his name to Great Basin College, Engineering & Surveying scholarship fund. ☉



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# Lahontan Chapter Report

by Greg Phillips, PLS, President

Wrapping up the last quarter of 2016 the Lahontan Chapter had a good end to the year. We have a 2017 board in place with a couple of fresh faces that I am very excited about. We are looking forward to their input for the coming year. I want to thank the members for allowing me to serve on the board and look forward to continuing my service as the Chapter Representative as well as on special committees.

## 2017 Officers:

### President

Justin Moore, P.L.S.  
justin@odysseyreno.com

### President Elect

Doug Larson, P.L.S.  
dlarson@nvenergy.com

### Secretary

Todd Enke, P.L.S.  
tenke@lumosinc.com

### Treasurer

John Gomez, P.L.S.  
johnngomez@qdconstruction.com

### Chapter Representative

Greg Phillips, P.L.S.  
gphillips@lumosinc.com

### Director

Kevin Almeter, P.L.S.  
kalmeter@woodrogers.com

### Director

Dan Church, P.L.S.  
sierrasurveying@sbcglobal.net

### Director

David Crook, P.L.S.  
dcrook@tristateld.com

## Past Activity

**October Meeting:** October 12, at the Twisted Fork in Reno. Pat Tami, P.L.S., the President Elect for the NCEES was our guest speaker. This was a well-attended meeting and Pat led a very engaged discussion on the future of the NCEES.

**Fall Workshop:** November 4<sup>th</sup>, at the AGC Building in Reno. Gary Kent gave an 8 hour workshop on the 2016 ALTA/NSPS Land Title Survey updates. There were approximately 35 attendees and Gary did a great job as always. Thank you to Gary and the all the volunteers who made this a huge success.

**November Meeting:** November 9<sup>th</sup>, at the Silver Legacy in Reno. This Meet & Greet with the NV-BPELS and their new Executive Director, Patty Mamola, P.E. was an introduction to some of the new board members and employees. We as a Chapter are looking forward to closer correspondence with our State Board in 2017.

**Holiday Party:** December 1, at Pinocchio's in Reno. Halana

Salazar coordinated a fun evening of food and entertainment. The local magician, Justin Impossible, put on a comedy and magic show after dinner. The members that attended donated \$350 and the Chapter added \$650 for a total donation of \$1000 to the Food Bank of Northern Nevada.

## Future Activity

**January Meeting:** January 12, at the Twisted Fork. Our NALS State President, Alan Dill, will be swearing in the new officers and give a "State of the State address."

**February Meeting:** February 8, at the Twisted Fork. Speaker will be Nick Johnson, NDOT Project Manager. Nick will be speaking about the Lake Tahoe Shared Use Path currently under construction from Incline Village to Sand Harbor.

**March Meeting:** March 8, at the Twisted Fork. Paul Pace will be giving a presentation on the history of the boundary survey between the United States and Mexico border.⊗

# Great Basin Chapter Report

by Christopher S. Konakis, PLS, WRS, President

## PAST ACTIVITIES

**October Meeting:** October 17, 2016 at the Gold Dust West Casino, Elko, NV; 5 members present. **November Meeting:** November 14, 2016 at the Gold Dust West Casino, Elko, NV; 5 members and 1 guest present.

**December Meeting:** December 16, 2016 at the Star Hotel in Elko, NV; Great Basin Chapter 1<sup>st</sup> Annual Christmas Party.

## PLANNED ACTIVITIES

**Time and dates for 2017 meetings to be determined by incoming chapter president after officer elections commence on January 8<sup>th</sup>, 2017.**

## FUTURE ACTIVITIES

**Summer 2017:** The Great Basin Chapter plans on monumenting the geographical center of Nevada in a joint activity with Great Basin College. Currently the activity is still in the planning stage but the chapter may request some resources from the state this upcoming year.⊗

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# Southern Nevada Chapter Report

by Jason Fackrell, Chapter President

Quarterly report for October -December of 2016

1. October General Membership Meeting had the Public entities had our best turn out 50 member attended.
2. November General Membership Meeting had mapping contest Russ Wonders won free room at out Christmas Party
3. December Christmas Party was held at the Sun Coast had in attendance 78 members and wives. Gave away lots of great prizes and gifts. We swear in our new board. Jason Fackrell President, Jeff Miller President Elect, Gene Sawyer Secretary, Russ Wonders Treasure, directors are Nichols Ariotti, Russ Jamison, Dustin Crowther, Russ Hyatt, Randy Mrowicki.

## Upcoming activities

1. Our General Membership meetings will be at Arizona Charlie's on the third Thursday of the months held

A. January Meeting Speaker Josh Greer speaking on Solutions is building customized solutions designed to automate field collection and processing, freeing companies from being held hostage by their data.

- B. February Meeting Speaker Mike Grill
- C. March Meeting Speaker

2. Survey picnic end of April first of May

3. This year golf tournament is in October in Mesquite October 20th and 21st. We are going to have a pool party, the night before and golf on Saturday. ☺

---

## The Power of Ideas... continued from page 12

news for Bouguer. For years he believed that Pierre Maupertuis had deliberately undermined him professionally, and now his completing this quick, second mission felt like yet another affront. The fact that the Lapland expedition's effort ultimately paled in comparison to theirs was slim consolation. ☹

## End of Part II

---

### (Endnotes)

1 New York, *Measure of the Earth, The Enlightenment Expedition That Reshaped the World*, Larrie D. Ferriero, 2011, page 67

2 Bouguer sent his refraction observations to Paris, where they were published as "On Astronomical Refractions in the Torrid Zone in 1739.

3 A map attributed to Arrowsmith and Lewis, published by Thomas & Andrews, Boston, in 1812 at 1:8,800,000. From the David Rumsey Map Collection and Cartography Associates.

4 New York, *Measure of the Earth, The Enlightenment Expedition That Reshaped the World*, Larrie D. Ferriero, 2011.

# Bart Dalton Rest in Peace



Bartlett C. Dalton, 59, passed away peacefully at home on February 8, 2017 due to complications stemming from his seven year battle with Multiple Myeloma, a blood cancer. He was surrounded by his wife, children, and loved ones.

Bart was born in Cedar City, Utah on November 22, 1957 to Fred and Claire Dalton. He was the third of four children. He had two older brothers Michael and Russell, and a younger sister

Cara, whom he loved to pick on. He spent the early part of his youth in Parowan, UT before moving to Washington, UT. He graduated from Dixie High School in 1976. He loved playing sports, cruising the boulevard with his friends, and working on cars. Bart married the love of his life, Patricia Hobbs on May 20, 1978 and sealed for time and all eternity in the St. George Utah LDS temple on November 22, 1985.

Bart was a highly regarded land surveyor licensed in both Nevada and Utah. He worked in the private sector for a number of years, but ended his career as the City Surveyor for North Las Vegas. He loved his job and was dedicated to it until he was forced by illness to take a medical retirement in 2014. He was a longtime member of the Nevada Association of Land Surveyors and served NALS as a past president of the Southern chapter.

He was an active member of the Church of Jesus Christ of Latter Day Saints and held many callings. His favorite was being a leader in the Young Men's at the time his sons were in the program. He also enjoyed being a leader in the Boy Scouts and taking the young men and his sons on campouts and hikes as their father and leader.

His greatest accomplishment was his family. He loved spending time with his wife and children, and was always there to support every milestone and success. He is preceded in death by his infant son Brandon and his father Fred. He is survived by his loving wife Patty, his daughter Amanda (Ryan) Stewart, his sons Joshua and Mathew, his mother Claire, and his pride and joy, his grandson Holden.

Funeral Services under the direction of La Poloma Funeral Home were held on Friday, February 17, 2017 at the LDS Chapel in North Las Vegas, NV.

*A very sad day. Bart was one of the best. A fine person first and a great member of our Survey community. He will be missed by all who knew him. I will never forget the day he told us in one of our board meetings of his cancer diagnosis. A very emotional and touching moment. Not only was he battling his own cancer but at the same time his wife of 30 plus years was diagnosed with terminal illness at the same time. My thoughts and prayers go out to his children and family. Life sure isn't fair sometimes.*  
-Alan Dill

CONTINUED ON PAGE 32 ►

# Material Discrepancy

by Dan Church, PLS

Editor's Note (to Dan):

*If you go to a corner expecting to find a 5/8" rebar and find an untagged iron pipe there instead, that is a material discrepancy, period. If it fits, and there isn't evidence to the contrary, then certainly you are free to accept it, even though it has no pedigree – how was it set, when, by whom? I see it very black and white that a material discrepancy, even one that revolves around monuments of unknown origin, triggers the need to file a record of survey. I would tag that untagged pipe, show it on my map as found and accepted (and tagged) and I have now given that pipe some sort of pedigree, beyond what it had before.*

So the question is: Does a difference in monument character from the called-for description imply a material discrepancy? This untagged iron pipe in the example is of a different "material" than the 5/8" rebar that was expected and the fact that it does not match the description given on the map is a "discrepancy", but this does not rise to the legal standard of "Material Discrepancy".

Material Evidence, That quality of evidence which tends to influence the trier of fact because of its logical connection with the issue. Evidence which has an effective influence or bearing on question in issue is "material".

Material Evidence is evidence which is material to question in controversy, and which must necessarily enter into the consideration of the controversy, and is determinative of the case.

## Blacks Law Dictionary

Things being different is not the standard for material discrepancy. These differences must rise to the level of being "... determinative of the case". Finding a monument of a different description does not in and of itself change the outcome of the survey. It must be "... evidence which tends to influence the trier".

Here's another definition of Discrepancy from The Electric Law Library.

## DISCREPANCY

A difference between one thing and another, between one writing and another; a variance.

Discrepancies are material and immaterial. A discrepancy is material when there is such a difference between a thing alleged and a thing offered in evidence, as to show they are not substantially the same; e.g., when the plaintiff in his declaration for a malicious arrest averred, that 'the plaintiff, in that action, did not prosecute his said suit, but therein made default,' and

the record was that he obtained a rule to discontinue. An immaterial discrepancy is one which does not materially affect the cause; e.g., where a declaration stated that a deed bore date in a certain year of our Lord, and the deed was simply dated 'March 30, 1701.'

"An immaterial discrepancy is one which does not materially affect the cause..." so it must rise to the standard of affecting the cause.

In the example, you claim that finding a corner that is not marked by the type of monument that is expected is a "material discrepancy".

So let's think about this scenario. The first thing that comes to mind is, what is the nature of the monument? It is "original and controlling" or is it simply monumenting a retracement of a prior survey?

A Nevada Boundary Line Adjustment is a fitting example. I say Nevada BLA rather than a California LLA, because a California LLA does have an "original" line, but it does not have "original" monuments, because the LLA is a "paper" line. A surveyor can monument the resulting line and file a Record of Survey but the Record of Survey is not a part of the transaction. Therefore any monuments set are a retracement of the LLA and NOT original to the actions of the property owners. There are no owner's certificates on the map agreeing to the adjusted line.

In Nevada, we by statute NRS 278.5693, 2 (a) (2) have to monument the adjusted boundary line, which is "original" and the monuments set by the survey creating the adjusted line are "controlling", when they are: (1) called for (2) identifiable and (3) undisturbed.

So back to our scenario, if the found monument that does not match the physical description given on the recorded map or deed is a point on the "original" line, the differing character of the monument is clear and convincing evidence that someone has "retraced" that line and reset the missing monument. Now this monument is evidence of a "retracement" survey and no longer controlling.

Typically if the monument, that does not match the physical description, is on the exterior boundary it is neither "original" or "controlling" it is just that person's "retracement" of the boundary of that parent parcel.

For the monument to exercise such control so as to be "... determinative of the case" it would generally need to be an "original" monument that when properly identified and is deemed "controlling".

Your complaint is with retracement surveyors not filing a map giving public notice that they have set corners replacing "original" corners with their own monuments and not filing a map. Their monuments are by the very circumstances of their existence neither "original" or "controlling" and therefore not "determinative of the case" and therefore are not a "material discrepancy". ⊗



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# Astoria, John Jacob Astor and Thomas Jefferson's Lost Pacific Empire

Reviewed by John Thatcher

Copyright © 2014 by Peter Stark  
304 pp.; \$27.99

*Astoria* is not a book about Surveying. Rather, it is the largely forgotten account of Astor's attempt to create a global trading empire by financing and sending two expeditions – one by sea and one by land – to the west coast of scarcely-explored North America. The Pacific hub of Astor's trading empire was to be a post established at the mouth of the Columbia River: Astoria. Astor launched the two expeditions in 1808, two years after the conclusion of the Lewis and Clark Expedition. Both expeditions met with disaster, in different ways. The book closely follows both expeditions as they make their ways toward their inevitable tragic ends. Their demise was just as much, if not more, the result of arrogance, xenophobia (not to mention native hostility created two years earlier by Meriwether Lewis), bad judgment and bad luck as it was the difficulties inherent in nineteenth century exploration.

By 1808, Astor was already a very wealthy businessman living in Manhattan. Arriving nearly penniless in New York shortly after the Revolutionary War, he went on to make his fortune in the fur trade and in New York real estate. But he had a bigger ambition – a global trade empire. The excellent quality of furs from the wilds of North America were highly coveted by the well-to-do in Europe, but also in China. And certain products from China were equally coveted in Europe and America. Astor commissioned his expeditions, and controlled and communicated with them as much as was possible, without ever leaving Manhattan.

The cast of characters in the sailing expedition includes:

- Captain Jonathan Thorn – a naval hero hired by Astor to captain the *Tonquin* around Cape Horn, to the West Coast, and ultimately to China. Thorn was a by-the-book, strict disciplinarian, unyielding, bellicose and dismissive of “savages,”
- Duncan McDougall – a Scottish fur trader recruited from the North West Company, tapped to be second in command at the post to be established on the West Coast,

- David Stuart and his nephew Robert Stuart – fur traders and shareholders in Astor's enterprise,
- Gabriel Franchère – a French Canadian clerk who kept a journal of the voyage.

The cast of characters in the overland expedition includes:

- Wilson Price Hunt – a mild mannered businessman tapped by Astor to lead the overland party and be the head of the West Coast hub,
- Donald Mackenzie – Scottish fur trader who was experienced in exploration and who had defected from the North West Company,
- Pierre and Marie Dorion – Pierre was the son of Lewis & Clark's interpreter Old Dorion. He was half-Sioux and the party's interpreter. Marie was an Iowa Native woman who was incredibly resilient to the party's hardships, bringing along two children to boot.
- Ramsay Crooks – Scottish fur trader from Canada who joined the overland party in St. Louis.

This book is so well written that I didn't want to put it down. Thus, it qualifies for the cliché “page turner”. Even though I was forewarned of the impending disaster of both parties and the entire enterprise, the path to that disaster as told by Stark is a compelling read and historically significant. I noted above that is not a book about Surveying. But lo and behold, our old friend David Thompson makes an appearance in *Astoria* toward the end.

About the author: Peter Stark lives in Montana and is a correspondent for *Outside*, has contributed articles to *Smithsonian* and *The New Yorker*, and other publications, and has been nominated for a National Magazine Award. He has written several books about explorations – one of which should be of interest to our community: *The Last Empty Spaces: A Past and Present Journey Through the Blank Spots on the American Map*.

I was interested to learn that after John Jacob Astor retired, he commissioned Washington Irving to write an account of the expeditions. The resulting book, published in 1836, was titled *Astoria, or Anecdotes of an Enterprise Beyond the Rocky Mountains*.





# Out of Adjustment From the Wild West Chronicles

## Newsflash 2095...

Flocks of ravenous man-eating sage grouse, averaging 100kg each, are terrorizing the now-vacant western lands. Another flying station-wagon load of hapless travelers was caught unawares and devoured in the valley that used to contain Winnemucca. Why they ever landed and left their car in the first place is a mystery that is likely to remain unsolved. Investigators won't go near the site and at this time surmise that someone in the back needed a "potty break". They should have gone, before they left home.

## Background

Once the BLM completed their plan of completely evacuating the rural countryside and relocating all people to walled-in cities, the grouse proliferated. Feeling no evolutionary pressure to remain relatively quick and elusive, the species rapidly grew into flightless behemoths. Years of un-fought range fires created a feed shortage, to which the monstrous birds adapted by becoming predatory. Soon the very range management specialists, biologists and eco-warriors who had championed the grouse had become their prey. Skeletons in remnants of green and tan khaki can be spotted throughout the Great Basin.

## Recent Developments

BLM (big Birds Love Meat) spokesman Colonel S. Anders indicated recently that, "the agency cannot afford the loss of anymore surveyors and is conceding that the only way to get any cadastral work done is by taking advantage of the IDPPS\*, which keeps the survey personnel out of harm's way. Beak-related injuries and deaths have decimated Cadastral Survey. We have to approach these surveys differently."

Recently the birds, increasingly referred to as veloci-chickens, have been seen wandering around the perimeter of some of the few inhabited areas left in the west, plucking unlucky victims from the outskirts of towns from Truckee to Denver. Reno is virtually under siege. Boise is losing an estimated 3 to 4 children every week. No one has been heard from in Cheyenne or Medford in weeks. Because the grouse are federally protected, they can't be shot, even in self-defense. It is said that nothing short of a 45 long Colt hollow point will slow them down anyway.

The mayor of Salt Lake City was quoted yesterday, "If you see a 200 pound sage grouse peering at you over the low walls that ring the city, for Heaven's sake, seek shelter immediately. And try not to let them smell the fear."

On a related note, there is no independent verification yet that a 100 pound Devils Hole Pupfish was seen breaching in the waters of the Death Valley spring. An eyewitness said, "I don't know if it was a Pupfish, or what, but something sure drug poor Zeke down into that there hole, and he ain't never come up since."

Considering a career in range management? Take our advice and think again.

\*IDPPS: Indirect Point Positioning Survey. This is a system where a blindfolded Gibbon (at least a GS13 in rank) throws a dart at a map to determine cadastral positions. No monuments are set as a result of the dart-toss. ☒

# Tri-State Corner Remonumentation

Over the past year or so, surveyors from Utah, Arizona and Nevada have developed a strategy, raised funds and finally gotten together to re-monument the corner common to our three states. This joint effort of NALS, AZPLS and UCLS, together with the BLM did all the research, the field work, fundraising to get the new granite monument, and formed a work party to set the new monument. Following are a few photos to give you an idea of the level of effort these great guys put into this task. To see more, visit this site: <https://www.flickr.com/photos/blmutah/sets/72157672626330643>

Dan Webb of the Utah BLM put together a brief summary of the work:

*On Friday January 27, 2017, 18 participants from the BLM, Washington County Utah, Utah Council of Land Surveyors, Nevada Association of Land Surveyors, and W.W. Clyde Corp., gathered for a second time. The work this day focused on removing the 1901 State corner and setting the foundation for the new State corner. As the photos show, 1901 GLO Surveyor Carpenter "repositioned and repurposed" the 1870 GLO Surveyor James corner. Carpenter moved it to its current location, inverted and remarked the James monument as the new true position. The 1901 Carpenter corner will be displayed in the Washington County Administrative Offices in St. George, Utah. And 'ribbon cutting' ceremonies are being scheduled in conjunction with the UCLS Conference, the morning of Saturday, February 25, 2017*

**Daniel W. Webb, BLM, Utah State Office  
Chief Cadastral Surveyor, Utah  
dwebb@blm.gov**



Tri-State work party at the beginning.



New monument 2017 – Note button at INTX



# Closing Corner

## BLM to Seek Mining Ban Comments in Elko

Taken from ELKO DAILY FREE PRESS, 2/11/17



ELKO – Elko will be the location of one of eight “open houses” planned this month by the Bureau of Land Management to gather input on its plan to withdraw approximately 10 million acres of public land from mining claims over the next 20 years.

The Elko event is scheduled from 5-7 p.m. Feb. 23 at the convention center. Another Nevada meeting is slated two days earlier in Sparks, while the open houses in other states run from Feb. 13-24.

The proposal follows an initial two-year moratorium on new mining claims.

“This is the next step in a process that started in September 2015 with the successful efforts of the BLM and its state and federal partners to prevent the Greater Sage-Grouse from being listed under the Endangered Species Act,” stated the federal agency.

The draft Environmental Impact Statement analyzes five alternatives, ranging from no action to the withdrawal of approximately 10 million acres of federal locatable minerals in certain areas that the agency says are crucial to the greater sage grouse in six states: Idaho, Montana, Nevada, Oregon, Utah and Wyoming.

“Neither the segregation, nor any subsequent withdrawal, would prohibit ongoing or future mining exploration or extraction operations on valid pre-existing claims,” stated the BLM.

To develop the proposal and its alternatives, the BLM held public meetings in 2015 in the six states to gather information and comments. The BLM also incorporated a mineral resource assessment prepared by the U.S. Geological Survey to help develop a reasonably foreseeable development scenario for the draft EIS.

The proposal was published in the Federal Register on Dec. 30, 2016, and carries a 90-day public comment period that will end March 30, 2017.

*The Traverse saw this coming and addressed it in “Saga of the Sage Grouse”, published in Volume 43, No. 1 January 2016. The “Nevada and Northeastern California Greater Sage-Grouse Approved Management Plan” outlines the removal of “anthropogenic” impacts (that’s you and me) from large chunks of public land in Nevada. Similar plans are being implemented in at least five other western states.*

*There’s old adage about cooking a lobster by putting him in a pot full of water then starting the fire and turning up the heat. The water gradually gets warmer and by the time he realizes*

*he’s in trouble, he’s just about cooked. Well, the bunny-hugging bureaucrats, (or in this case bird-hugging...) at the BLM are using a similar tactic with respect to separating us from our public lands. Step one: two year moratorium on new mining claims over 10 million acres of Nevada. Step two: withdrawal of the land from mining activity of any kind for 20 years.*

*Step three: expand the restriction from mining activity to all motorized activity except on pre-determined routes. Step four: make it permanent. Step five: find another species to warrant another 10 million acres. Repeat ad infinitum.*

Meanwhile...



U.S. Sen. Dean Heller, R-Nev., recently teamed up with Western colleagues to introduce the Greater Sage-Grouse Protection and Recovery Act of 2017, legislation allowing states to implement their own specific conservation and management plans to protect greater sage-grouse populations and their habitats. This legislation, sponsored by Senator Jim Risch, R-Idaho, was also supported by U.S. Senators Mike Crapo, R-Idaho; Orrin Hatch, R-Utah; Mike Lee, R-Utah; and Steve Daines, R-Mont.

“The current heavy-handed sage-grouse plans needlessly impose restrictions on millions acres of land in Nevada alone, threatening our western way of life while doing little to improve habitat. Our legislation allows western states the flexibility to choose the proper methods to improve the sage-grouse population while keeping Nevada’s economic stability and community needs in mind,” said Heller.

Stay tuned.

-CRC ⊗

**Bart Dalton Rest in Peace...** continued from page 27

*As a personal remembrance, I’d like to offer this: Of many memories, one that sticks out in my mind-*

*Back in 1994, when I had first begun working in the Las Vegas valley, commuting weekly from California, I went to CNLV to search out the City Surveyor, to introduce myself, etc. All I knew was that his name was Larry. At City Hall I learned that the Survey Dept. was over on Brooks Street, a good drive away from there. A man had overheard my questions at the information booth, and as I was going back to the parking lot to figure out where Brooks Street was, he had come outside at the same time. He called me, and introduced himself as Bart Dalton. I believe he worked then at my eventual employer, G.C. Wallace, but he spent 30 minutes enlightening me about surveying in the area, who to see, what to do....he advised me on the best approach to meet the CNLV Surveyor; he told me about NALS and SNALS, and told me to learn the name “Bill Cuddy”! I hadn’t asked him for a thing, he just offered all this, and he became the first friend I made in my move to Nevada. I remember thinking as I eventually drove away (with his good directions to Brooks Avenue!) that he was such a good man. After I was here for a while, I realized I had befriended a gem of a human being. In the more than 20 years since, I never had reason to think anything other than that about Bart- a fine human being! I will miss him.*

-Paul Burn

⊗



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The Nevada Association of Land Surveyors

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