

The **UCLS** Newsletter

Volume 5 Issue 5

Where is it?

June 2019



If you live in Utah, you know and appreciate its unpredictable weather - particularly in the Spring. We watch television, listen to the radio, and/or check the online weather forecast to determine what we can do, when we can do it, and how we should dress to do what we do. This month's "where is it" contest is the location of the first U.S. Government weather station in Utah. The first UCLS member that correctly identifies the location of this monument is eligible for a free lunch at their next chapter meeting. Answers may be emailed to Susan at srmerrill@ucls.org. The earliest date and time of response will determine the winner.

In this issue: Because it has been awhile since the last newsletter, we have packed much into this edition. In this edition, we updated the leadership page of the UCLS

Board and committee chairs. Please contact a member of the Board or the applicable committee chair if you have a question or suggestion.

The surveyor representative on the Utah Board of Professional Engineers and Land Surveyors shares valuable advice about being professionally involved. The history and evolution of the National Cadastral Record is explained, specifically how did we get to here.

On a sad note, we lost two lifetime UCLS members. Bob Jones and Ted Madden recently passed away and we offer condolences to their family and friends for they will be missed.

We are excited about the upcoming Surveyor's Historical Society activities and strongly encourage you to participate in the planned proceedings. Additionally, this edition offers suggestions on how to select a work boot and NSPS shares a flyer on when one should hire a surveyor.

We invite you to share charismatic photos of yourself and/or a coworker, panoramic images of Utah's scenic wonders, or pictures of survey related tools and equipment. Additionally, we need interesting and unique descriptions or survey related stories to share with our membership. Remember, if you do not participate you have no right to complain. Please let us know your thoughts, recommendations, suggestions, or complaints.

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"There is no growth in the comfort zone. There is no comfort in the growth zone."

-Anonymous

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Contributions are encouraged. Articles, Advertisements, Pictures, and Comments may be submitted to UCLS at ucls@ucls.org or uclsforesights@ucls.org

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When I joined the Utah Board of Professional Engineers and Surveyors in 2012, I pictured myself working to regulate the professions of engineering and surveying. But serving on the board and volunteering with NCEES have given me another way to give back to my profession: outreach. Promoting the professions of engineering and surveying to children and their parents gives me the opportunity to help inspire the next generation of professional engineers and surveyors. I recently participated in Discover Engineering Family Day at the National Building Museum in Washington, D.C. Family Day is part of the Discover Engineers Week 2019 celebrations, held February 17-23. Although Family Day primarily focuses on engineering, NCEES promotes surveying as well at this annual event. This is my third year representing NCEES at Family Day, and I had the opportunity to show off NCEES' latest outreach activity: the Augmented Reality (AR) Sandbox.

The AR Sandbox demonstrates applications of surveying in an engaging and interactive way. Users shape sand to create 3D landscapes, and the colored topographic map projected onto the sandbox updates in real time to reflect the changes. A swipe of the hand builds mountains, carves valleys, or send a virtual rainstorm, allowing users to see the flow of water on the landscape. It's an entertaining activity for all ages, so it's perfect for introducing surveying to children and their parents.

It was fascinating to watch the children learn about the technology that surveyors use to map the earth. My favorite part, however, was interacting with the adults who thought they brought their children to learn but ended up putting their hands into the sand and learning, too.

NCEES also sponsored an engineering-related activity. For this activity, called Flinker, was partnered with volunteers from the Society of American Military Engineers Northern Virginia Post. Children designed flinkers-objects that neither float nor sink, but flink-in water.

While it was great to see children design and test their flinkers, what was particularly exciting was watching them make adjustments based on what they learned from the previous round and then try again. They kept going, making small changes based on the last results-future P.E.s at work. They used creativity and tenacity to design inventive and effective flinkers.

My EWeek volunteer efforts included serving as a judge for the Future City finals in Washington, D.C., as well. Future City challenges middle-school teams, with help from teachers and engineering mentors, to design a city 150 years in the futures. I served as a judge for the Best Land Surveying Practices special award. NCEES has offered this award at the Future City finals since 2004 and regional competitions since 2013 to help students learn how surveying is critical to our communities now and in the future.

Congratulations to the Warwick Middle School team from the Central Pennsylvania Region. This team-with its city of the future, Toyama-won the 2019 Best Land Surveying Practices award at the finals on February 19. They then went on to take the top honor of the day-the Future City grand prize.

The winning team said that winning the Best Land Surveying Practices special award had been three years in the making. Team members had engaged with local professional to talk about the role that surveying would have on their future city model. From resolving boundary disputes to making precise measurements, they were well versed in all aspects of surveying. Celebrations like Discover Engineers Week give us an opportunity to focus on outreach. But we don't have to wait for a particular week. DiscoverE.org, the DiscoverE website, has hands-on engineering activities and tips for being an effective outreach volunteer, and the National Society of Professional Surveyors website, nsps.us.com, has ideas and resources for surveying outreach. Volunteering for EWeek has allowed me to serve the engineering and surveying professions in a unique way. I encourage you to get involved in public outreach with your board or local community.



Scott Bishop

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April 2019 issue.



Robert Jones

1926-2019

Robert Jones of Sandy, Utah, passed away on January 13, 2019, surrounded by his family. Bob was born on Feb. 28, 1926 in Provo, Utah, and is survived by his wife, Elaine. Bob was the consummate professional engineer and land surveyor with a career spanning over 60 years. Bob graduated from Park City High School and was the son of Byron Jones, the school's long-time band director. Bob supervised most of the land development projects in Park City starting in the 1960s. A viewing will be held at 10:00 a.m. Saturday, January 19, at the Hillcrest 5th LDS Ward, 860 East 9085 South, Sandy, Utah. Service follows at 11:00 a.m. For more information see www.AFCFuneralHome.com

Therman Edward "Ted" Madden

1949-2019



Thurman Edward "Ted" Madden, 70, passed away January 16, 2019 at his home in Venice. He was born January 2, 1949 in La Puente, California to Charles Benjamin and Merna Besella Thurman Madden. He married Paula Ann Nelson in Los Angeles in 1969 (later divorced). He married Colleen Utley on September 9, 1983 in Provo. They were sealed in the Jordan River Temple.

Ted grew up in Southern California. He served a mission in Austin, Texas before starting a family and attending BYU. He remained in Utah for the rest of his life, raising his children in Sevier and Utah Counties, where he worked as a land surveyor and civil engineer. He ran his own business for a number of years and spent the last 20 years of his career at UDOT in Richfield, retiring just a few weeks before his passing.

He was known for his gentleness, affection, integrity, selflessness, humor, and intelligence, and for his love of nature and wilderness. He had passions for bird watching, nature photography, astronomy, and the writings of Hugh Nibley. He enjoyed backpacking and camping in the mountains and deserts of the West. He collected cameras, optics, maps, writing utensils, and gadgets of all types. He adored, and was adored by, his large family.

He is survived by his wife, Colleen, of Venice; children: Scott (Wendy) Parsons, Monroe; Mike (Sarah) Parsons, Gunnison; Amy (Karry) Gladden, Illinois; David (Kristy) Madden, Sausalito, California; Paul (Michelle) Madden, Lehi; Jennie (Richard) Stoker, Richfield; Michael Madden, Phoenix, Arizona; Matthew (CarrieAnn) Madden, Sandy; Daniel Rioja, Venice; Lindy Madden (Faian) Loso, Richfield; 40 grandchildren; 13 great-grandchildren; siblings: Charles (Vicky) Madden, Merna Ann Talbot, Susan Madden. He is preceded in death by his parents; son, David Rioja and daughter-in-law Michelle Rioja; and sisters Slvia Madden and Joan Carlen.

Funeral services will be held on Tuesday, January 22, 2019 at 12:00 Noon in the Venice Ward Chapel. Friends may call for viewing at the Magleby Mortuary in Richfield on Monday evening from 6 to 8 or on Tuesday at the church in Venice from 10:30 to 11:30 a.m. Burial will be in the Venice Cemetery. Funeral Directors: Magleby Mortuary, Richfield, Salina and Manti. Online guest book www.maglebymortuary.com



With
Deepest
Sympathy...

The officers, staff and members of the Utah Council of Land Surveyors express sincere condolences and warmest wishes to the family and friends of Bob and Ted.

How We Got from Stone to the Cloud - History of the National Cadastral Records

By Dennis H. Klein

There is archeological evidence that cadastral (property ownership) mapping came into being upon humans deciding to settle in one place and become food producers instead of nomadic hunter gatherers, moving about for food. In Ancient Egypt, paintings in tombs depict registration of land to provide proof of ownership. The fundamental principles that applied to those ancient methods of maintaining public records about land, its use, and ownership still apply today.

From its earliest inception, all records in a Cadaster eternally had to face the following three challenges - 1) Accuracy 2) Completeness and 3) Accessibility by all. This is a problem solution story about surmounting all the technical and cultural hurdles over the many years so all those parcel boundaries can appear on you computer scree. This history ends with the next step, a game-changing breakthrough in 'CONVENIENCE' that will enable the National Parcel Layer to better benefit government, commerce and private citizen more than ever before.

CADASTRAL MAP ENTITLED 'LONDON ACTUALLY SURVEYED' CIRCA 1589



Who Said What?

This history of the Cadastre is according to a National Parcel Layer Content Server Provider (NPLCSP) twenty years in practice, 40 years in GIS. In addition to best efforts to accurately mirror information and recommendations in the public records, some findings and conclusions are drawn from this NPLCSP's proprietary National Parcel Layer metadata database of the digital parcel map operations for every county in the USA, including completeness, terms of use and data fee. Also referenced are NPLCSP notes taken when attending 22 National Geospatial Advisory Committee (NGAC) meetings from 2011 to 2016. Long time acquainted with NGAC's very open, congenial and useful collaboration, this NPLCSP made regular Open Time contributions to this discourse.

Back to History

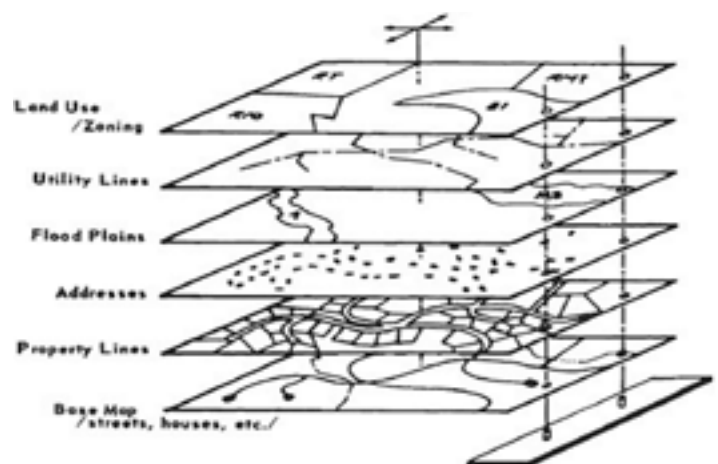
At first a Cadaster was recordation of Papyrus of markers substantial enough to survive annual flooding. Not much changed in Roman times

where it became quite popular among predatory emperors' as a tool for larger and easier taxation. Ancient (and not so ancient) practice referenced both markers and natural features that do not necessarily survive, leaving Accuracy to conjecture. Following a complete collapse of Cadastral use with the fall of Rome, it slowly reemerged in Europe to serve two missions, one to Collect Tax and the other to Define Ownership. Hence, 'Multipurpose Cadaster'. In the run-up to the industrial age, may new innovations were adopted to improve accuracy and accountability included the sextant, transit, telescope and Cartesian space.

By mid-20th century, the advent of the computer age changed everything. Textural parcel records went digital in the 50s and geospatial parcel maps by/for counties started with Computer Aided Drafting and Design (CADD), expediting plat map drafting and updating. The digital plats were soon stitched together into digital countrywide geographic information systems able to join tax roll attributes to topologically actuated parcel boundary polygons. The price tag was high at first. Seven figures were not uncommon since only main-frame and work stations computers were able to do the job. In the early '80s, drawing a line on a screen started at \$160,000 for work stations. In 1984, Southern California Edison expanded the storage of its CADD system to 19 GB. That and servers to manage a system wide database cost just a mere \$2.6M. In less than 10 years, the PC revolution caused the per GIS seat price (all hardware/software) to plummet to \$7K, unleashing a storm of digitizing. By 2000 over 1,200 counties were maintaining, to different degrees of completeness, modern digital parcel map databases, some open, and some not, to public access.

Land Information System

By the early seventies, mounting pressure to develop with nature, instead of against it, caused the Multipurpose Cadastre to become a popular base map layer in an emerging 'Land Information Systems' revolution. Driven by Ian McHarg's game-changing book, *Design with Nature*, the other 'Factor Maps' included soils, land use, slope, hazard, amenities, services, etc. No computerized GIS yet? Not even Automated Mapping? Like the one shown below, San Mateo County Planning Department did a manual version by mounting two prongs on the short end of a 6'X4' light table and building a pin-registered Land Information System of 15 pen-and-ink drafted-on-mylar 'factor maps'. Parcel boundaries, rescaled from D sheets, as rescaled from plat maps, was one of the layers. Subarea derivative maps from this master map drove eight planning programs, all approved 5-0 supervisorial votes. In 1978,



How We Got from Stone to the Cloud - History of the National Cadastral Records continued...

Association Bay Area Governments (ABAG) used the Coastal Zone portion of this Land Information System to create BASIS, Bay Area Spatial Information System, a very early environmental baseline of a major region. Being a raster system, BASIS was too early to include vector polygons yet.

Conceptual Pin Registered Land Information System

The highly affordable technology platform available today has in large part resolved the first two 3A challenges: Accuracy and Completeness. Thousands of counties are posting daily updates of complete cadasters of every parcel in their county as well as the tax roll attributes that go with it.

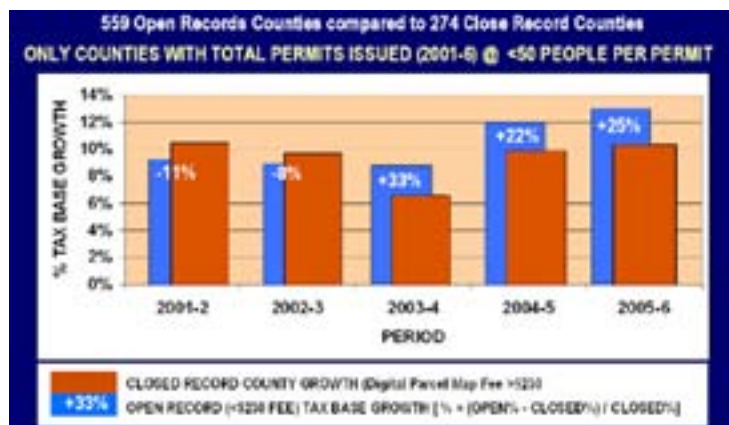
Elusive Accessibility

For thousands of years, to observe the record required a trip to the record since it could not come to the observer. As for leaving with a copy, the cough-loud-as-you-tear-the-page-out-of-the-book method is dramatized by Jack Nicholson in the movie Chinatown. Copy machines just increased industry's appetite for ever more instant access to parcel records rather than a trip to the country seat, the only option before the fax machine. That the Internet enables instant online access by anyone to any parcel record, one would think that the Accessibility is Solved! Technically yes. Culturally, not so fast. Yes. It is a public record and MUST be shared at the cost of reproduction. However, since the real cost at the time for sharing a paper record was typically around a dollar per record, many counties opted to apply legacy rates to all the parcel in the digital parcel map and use the high data fees to run the Assessor's Office. That tech was so new, assessors (and their consultants) hid behind the Public Records Act somehow not applying to digital parcel boundaries.

By 2,000, Los Angeles County was charging \$90,000, Santa Clara \$160,000 and Orange \$360,000. In 2005, a response to a citizen's petition to the California Attorney General whether these fees violated public record law was Opinion No. 04-1105: October 3, 2005, that ruled a digital parcel record IS a public record and must be shared at the cost of reproduction. Los Angeles County immediately went to \$3, but it took two expensive lawsuits to get the others to go open records by court rulings based largely on Attorney General's Opinion 04-1005.

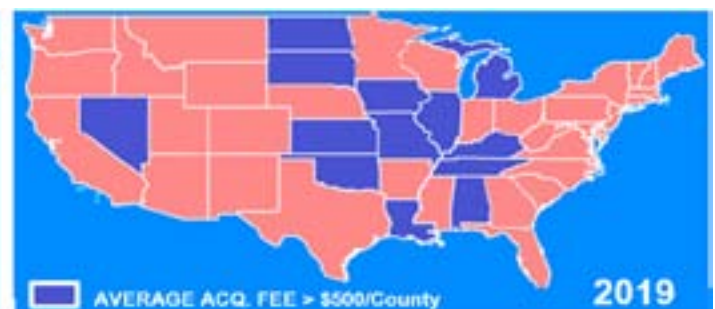
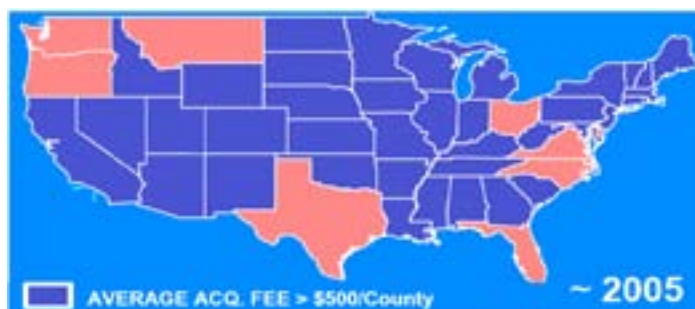
High fees that persisted elsewhere spawned a cottage industry of top cadastral GIS consultants, who, in addition to providing advanced tech services, promoted a self-serving policy combination of urging broad use of digital parcel maps in conjunction with staunch defense of closed records. The resulting high cash flows assured sustainability of this practice at the expense of everyone else. The no fee vs. high fee controversy came to a head when a request by the International Association of Assessor Officials (IAAO) resulted in the publication of IAAO Magazine article, "Broad Use of Digital Parcel Mapping and Tax Base Growth." This study compared the growth rate of the total assessed value of all parcels in a county (tax base) in open records counties (charging <\$200) to closed record counties charging more. Trend analysis, and subsequently regression analysis, provided clear evidence that open record counties' tax base grew ~24% faster during the study period than closed record counties.

TAX BASE GROWTH OPEN RECORDS COMPARED TO CLOSED RECORD COUNTIES

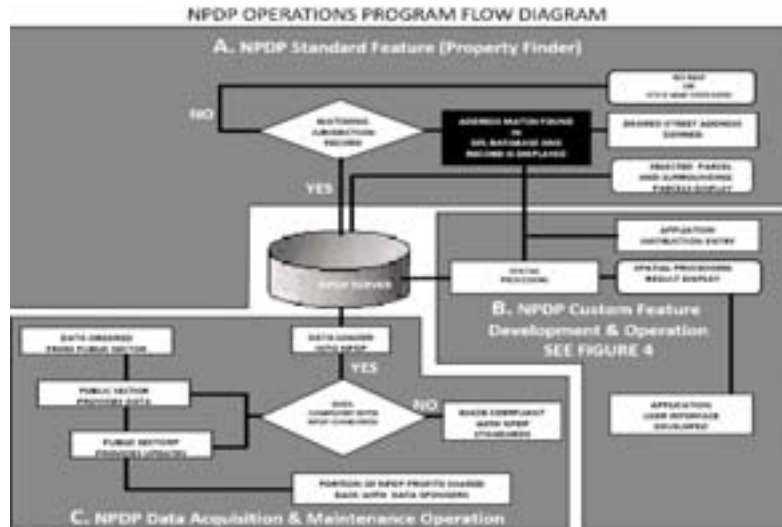


Quite controversial when published, this report eventually made its way into the Federal Geospatial Data Committee (FGDC) Bibliography for the Parcel Summit held at USGS Reston Offices in October 2016. Over the years, this IAAO report arguably contributed to the change in data prices shown below. Open records, particularly free (over 1,000 counties in 2019) also rewards GIS managers who have over the years discovered that, like a poker game, the pot is so much larger when 1000s are at the table making investment decisions because the data is free vs. the usual 5 or so at the table when the price is prohibitive to all others. Open record shops find a budget time the business community is actively on their side, insisting at budget hearings on more funding for ever higher excellence (and pay raises) easily funded by the additional money in the community generated from increased

development fees and accelerated tax base spawned by transparency.



OPEN VS. CLOSED RECORD DIGITAL PARCEL MAP STATES OVER TIME

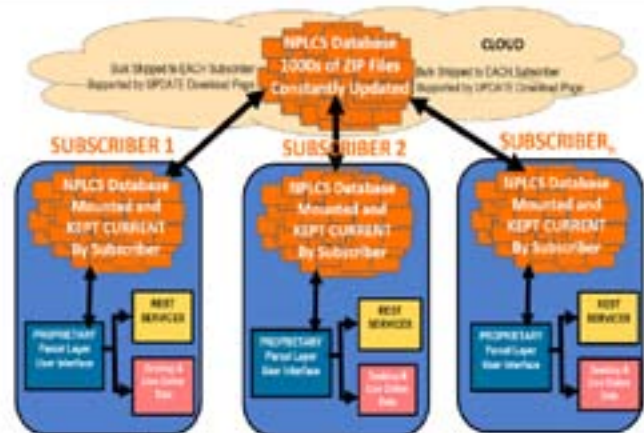


With the advent of the cloud, multiple private sector NPLCSPs have emerged, some of which source parcel map content direct from the counties. The rest are resellers. Private sector mapping services are mixed with 3rd Party Tax Roll attribute data, typically more complete than data direct from the assessor's office. Deployment ranges from bulk data dumps direct to an enterprise to build their own online parcel GIS and/or REST systems and keep it current. REST (Representation State Transfer) offers geospatial information as pictorial displays of parcel boundaries for draping over legacy operations.

At the other extreme, subscriber accesses a SINGLE 'actionable' digital parcel map database online as though the content were on the Subscriber's server. It has not been until recently that geotech has had the capacity to deliver such power. As seen below, the advantage of one live database serving all is that the mounting and main-

Conclusion

Market interest is better enabling the authoritative data sponsors to create and keep current ever more accurate and complete cadastral databases will never stop being better. As for federal efforts to form a National Parcel Data Repository, even if it takes DECADES, this NPLCSP recommends best way to expedite universal capability of all NSDI Cadastral participants is to eternally preclude ANY 3rd Party content being in the mix. The next epoch in deployment is now in place enabling broad delivery of live, fully actionable geospatial parcel content on instant request, ever increasing the broader range of beneficial services the National Cadaster can bring to government, commerce, and private citizens everywhere.





When do I need a Land Surveyor?

When you purchase a home: A home is usually the biggest investment of your life, and only a Professional Land Surveyor can determine the boundaries of the property and make sure you are getting all the land you believe you will own. By having your property surveyed before you buy, you will know where all the property lines are, what you are buying, and whether any natural or man-made features near the property lines are on that property.

When a lender requires a property to have flood insurance: The elevation of the nearest floodplain in relation to your property can be determined by the Land Surveyor. Having your property analyzed by a Land Surveyor can be the difference in a homeowner paying for expensive flood insurance or completing a FEMA Elevation Certificate to confirm your property is in the clear.

When you install a fence, do landscaping, or make other improvements to your property: By having a survey done first, you can plan your project and make sure it is within the boundaries of your land. Fences that encroach onto a neighbor's property have the potential to turn good neighbors into bad neighbors.

When you build an addition to your home, a new garage, or other structures: When a homeowner builds an addition or new building, the Land Surveyor can locate all the features of the property that help determine the building setback and the size of addition or new structure allowed.

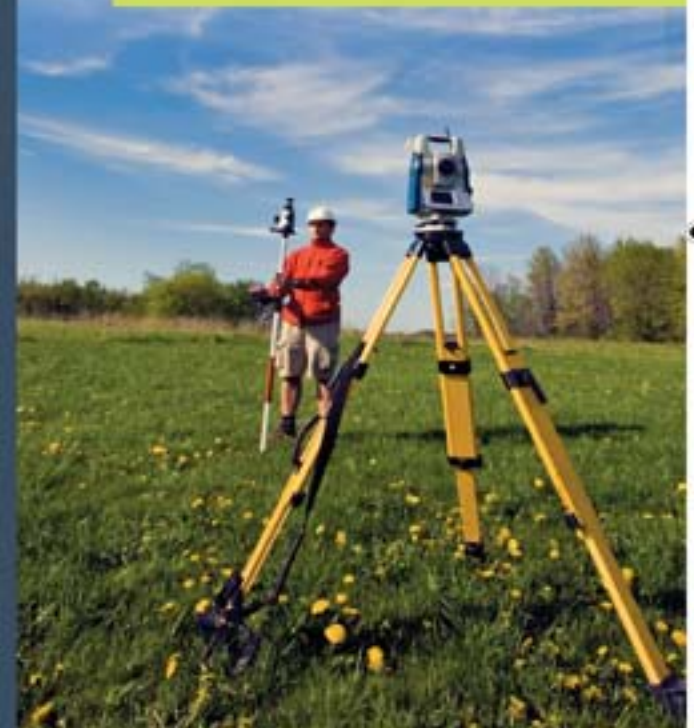
When in need of a professional service, you should know exactly what you are getting. A Professional Land Surveyor will take the time to understand your survey needs.

Surveyors who are members of their local, state, and national professional organizations are showing that they are concerned with changes in laws and technology. They are given the most opportunity for continuing education and changes affecting the land surveying profession. Always consider using a member of your local or state professional land surveying organization.

*This information is supplied by the
National Society of Professional
Surveyors (NSPS) and distributed by:*

A Homeowner's Guide to Boundary Surveys

Should You Hire a Land Surveyor?



*Protecting your investment with the
services of a licensed Land Surveyor.*

Professional Land Surveyors are the only people trained and licensed to make property line determinations.

Many people assume telephone poles, fences, or cracks in the sidewalk are the property corners when in reality they most likely are not.

Dividing one land parcel into two or more parcels can be a lengthy process, and every municipality has its own guidelines, size requirements and process for dividing land.

Contact a local Professional Land Surveyor to help you through what process is needed and what time constraints you may have. The process could be lengthy even for something as simple as wanting to split off one small piece of the farm for your child to build on.

What should I expect from my Surveyor?

- Your Land Surveyor and crew should treat you and your neighbors with respect.
- Your Land Surveyor should be licensed in the state of your project site.
- You should receive a map showing the results of the work that was performed.
- All the boundaries of your property should be clearly marked.



How does a survey work?

- 1** Your Surveyor will most likely start the work on your survey before you see them at the site. They first must do any necessary research to determine your parcel and the adjoining parcels to verify that there are no overlaps or gaps in the properties. This will help them set up information for the field work to be conducted on the project.
- 2** Next the Surveyor will do the field survey, and if all goes well, they may set any missing corner irons or other mark – such as drill holes, a disk, a concrete monument – on their first trip out. If things are not exactly where they are expecting, they may have to return to the office and do some calculations before returning to set any missing corners.
- 3** The Land Surveyor's last step is drawing the final map and presenting it to you.

! With road construction, development, and earth working activities occurring over time, property corners may be disturbed or removed, making the job of the Surveyor more difficult, time consuming, and costly for the homeowner.

How do I hire a Surveyor?

- ✓ Ask for references from family and friends
- ✓ Check with local and state Professional Land Surveyors organizations; many of them have a public list of their members.
- ✓ Ask at the office of your local municipality. Many have lists of Professional Land Surveyors that work in their area.
- ✓ When you call a Land Surveyor, it will expedite the process to have information on your property ready, including any previous surveys, tax bill information, owner's name, and the address of the property.
- ✓ The Land Surveyor needs to know the purpose for the survey before any work is begun. If you want special features shown on the final map, you should discuss this with the Land Surveyor. If you are in a dispute with a neighbor over the location of a property line, the Land Surveyor will be aware that they may need to take a little time to talk with a neighbor to explain what is being done as part of the survey. In many states, Surveyors do not have a "right of entry" and may need the time to introduce themselves to neighbors. And, some "right of entry" laws may require that the Surveyor send letters to neighbors and law enforcement agencies ahead of time.
- ✓ If you want a map drawn of all the features of your property, make the Land Surveyor aware of that before he or she goes into the field. In many areas, it may not be required to show buildings and improvements as part of a basic survey.

Steel-toe or composite-toe work shoes: Which should you choose?

By: Noel E. Dugenia (MultiBriefs)

Steel-toe work shoes are more or less the industry standard when it comes to foot protection. These help prevent injuries to the toes in the event a heavy object falls on or rolls over them.

In fact, the Canadian Centre for Occupational Health and Safety requires employers to ensure their workers are equipped with foot protection equipment if there is a risk of injury to the feet during the course of performing a task. Steel-toe safety shoes fall under this category.

Steel-toe shoes have been around since about the early 20th century, but composite-toe work boots have appeared on the market recently as an alternative. As far as safety shoes go, composite-toe foot protection has proved to be an ideal alternative due to the properties inherent to the material. However, both steel and composite have their advantages and disadvantages.

One advantage composite-toe work boots have over their steel counterpart is weight. Composite material is lighter than steel. Consequently, composite-toe boots are lighter than their steel-toe cousins, sometimes up to 30 percent lighter.

This makes composite-toe protective footwear ideal for workers who have to do a lot of walking, such as postal or delivery workers. Also, composite material doesn't set-off metal detectors, so for workers who have to pass through metal detectors several times a day, work shoes with composite toes can potentially save time.

Another advantage composite material has over steel is in heat and cold conduction. Obviously, steel is a better conductor of both heat and cold. This makes steel-toe boots more susceptible to the cold compared to those of composite toes. In fact, composite material is actually a good insulator. Individuals who have to work outdoors in extremely cold weather may want to consider composite-toe work boots.

At this point, you may be thinking steel-toe work boots are the inferior product. However, steel-toe work boots also have a couple of advantages over their composite-toe upstarts. One such advantage is in protection against sharp objects.

Steel can resist punctures and cutting better than composite material - at least the composite material used for work boots. As such, when working around bladed machines, steel-toe work boots will protect your feet better in the event that a blade should come loose and fall on your toes.

Cost is another area where steel-toe shoes have the advantage over composite-toe ones. Composite-toe work shoes are generally more expensive than steel-toe ones. This makes steel-toe safety shoes the more practical choice.

It has to be mentioned that there is a well-known urban legend stating that the toe cap of a steel-toe work boot can shear off a person's toes if a heavy enough object falls on it. This makes a good argument for the use of composite-toe work boots since composite material is not exactly known for its cutting properties.

However, this legend has long been debunked. In fact, if a heavy enough object falls on your toes, it doesn't matter what type of work boot you are wearing. You will most probably lose your toes.

The bottom line is both steel-toe and composite-toe shoes can effectively protect workers' toes from injuries resulting from falling heavy objects. Both have to pass government safety standards before they can be classified as safety shoes.

While there are certain working conditions where composite-toe work boots are more ideal to use, steel-toe work boots can still be considered the industry standard when it comes to safety work shoes.



Where Did These 10 Weird Idioms Come From?

By: Austin Jesse Mitchell

Many idioms in English are so familiar to native speakers that we don't stop to think about how strange they are. Why do we say "fly off the handle" to describe someone getting angry? How exactly is taking the spotlight "stealing someone's thunder"? And what's up with "close but no cigar"?

The Idioms of Our Lives

Idioms are often the hardest thing for a new language-learner to get used to. They often trace back to culturally specific or historically unique experiences that outsiders - and sometimes even modern native speakers - would never have access to. Here's the explanation behind 10 of the most popular English idioms.

Fly off the Handle

This comes from the days before mass manufacturing. Poorly built axe heads would occasionally soar off their handles, leading to dangerous and unpredictable results.

Steal Someone's Thunder

This idiom comes from the early 1700s, when an English playwright named John Dennis used a device to imitate the sound of thunder for one of his plays. The play was a flop, but other playwrights started using the device for their own plays to greater success - much to Dennis's chagrin.

Close But No Cigar

This popular idiom comes from 19th - century carnival games, which originally handed out cigars to winners. Obviously, carnivals used to be far more adult - oriented than they are today.

Bite the Bullet

This one's not pretty: it comes from battlefield medics who were often short on anesthesia, would ask their patient to bite down on a bullet to distract themselves from the pain.

Under the Weather

Feeling a little under the weather? While modern speakers use this to refer to any kind of illness, the sailors from whence it came meant it for seasickness. The original phrase was "under the weather bow," referring to the side of the ship that took the brunt of bad weather. When storms made for choppy water, sailors would head below deck to brace themselves and try to stave off seasickness.

Ride Shotgun

English speakers use this to mean sitting in the passenger seat of a car. The phrase dates back to the early 1900s in the Wild when the person sitting beside the driver in a coach would often carry a shotgun for protection.

Barking Up the Wrong Tree

In the early 1800s, dogs were commonly used for hunting. When a dog would identify prey that had run up a tree, the dog would bark at it furiously. When the prey jumped to a different tree, the dog would be left at the base of the original tree, confused, barking up at nothing.

Mad as a Hatter

If you guessed that this came from "Alice in Wonderland," you'll have to look further back in history than that. Hat makers in the 17th century commonly used mercury to cure the felt. Mercury is obviously toxic, and its health effects showed up in these tradesmen in the form of behavioral quirks that made them appear "mad," or crazy.

Jump on the Bandwagon

The origin of this one is weirdly specific: it dates back to the 1848 U.S. Presidential election when a famed circus owner supported the campaign of Whig Party candidate Zachary Taylor by inviting him on his bandwagon - a horse - drawn carriage carrying a live orchestra - during a parade to advertise his message and meet potential voters. Other members of Taylor's party realized what a good idea this was, and clamored to join him on the bandwagon during future parades.

Keeping Up with the Joneses

This idiom about competing with your peers via material goods also has its origin in a specific person: wealthy 1850s socialite Elizabeth Schermerhorn Jones. She commissioned a grand 24-room mansion said to be fancy enough to prompt a building boom, where her wealthy neighbors built their own mansions to compete with her.

Some Idioms Are Older Than Dirt

The English language, in the non-medieval form as we know it today, is a very young language. Yet it contains a large number of idioms borrowed from other cultures, including ancient ones. One of the oldest idioms in English comes from Hammurabi's Code of Laws, dating to around 1750 B.C.: "An eye for an eye a tooth for a tooth." While that sounds like a harsh decree, its meaning in context refers more to avoiding unreasonable punishment - you can't punish someone for taking an eye by taking more than their eye, for example.

Where Did These 10 Weird Idioms Come From continued....

Similarly, a large number of Hebrew idioms originating in the Old Testament have made their way through the ages, such as describing fertile land (or just about any good thing) as “flowing with milk and honey.” Generally speaking, the longer two cultures have had contact with one another, the more likely they are to share idioms.

Every Language Has Its Own

English isn't the only language that has its share of strange and colorful idioms. It's the same in other languages, too. In German, to say you're not seeing what everyone else can see, you'd say “Tomaten auf den Augen haben,” or literally “you have tomatoes on your eyes.” In France, the phrase “se regarder en chiens de faience” literally translates as “to look at each other like earthenware dogs” - essentially, to look at each other with distrust. The Croatian version of “what goes around comes around” is “doce maca na vratanca,” or “the pussy cat will come to the tiny door,” and the Polish version of “were you born yesterday?” is “z choinki sie uraslas?” or “did you fall from a Christmas tree?” Tamil, a language spoken in some of India and Sri Lanka, has several water - themed idioms, including “to pour water over someone's head,” or break off a relationship, and “show water to someone,” or be someone's nemesis.

Stirring Spring

- The first day of spring is called the vernal equinox. The term Vernal is Latin for “spring” and equinox is Latin for “equal night.”
- The fall and spring equinox are the only times during the year when the sun rises due east and sets due west.
- On the first day of spring, a person at the North Pole would see the sun skimming across the horizon, beginning six months of uninterrupted daylight. A person at the South Pole would see the sun skimming across the horizon, signaling the start of six months of darkness.
- One long-term study found that, at least in the Colorado Rocky Mountain region, spring begins, on average, about three weeks earlier than it did in the 1970s.
- The first spring flowers are typically lilacs, irises, lilies, tulips, daffodils, and dandelions.
- At Chichen Itza, Mexico, the Mayan celebrate the first day of spring with “The Return of the Sun Serpent.” On the evening of the spring equinox, the setting sun creates a triangular shadow on the El Castillo pyramid that looks like a descending snake, or the feather serpent god Kukulcan.
- While some people prefer not to feed birds in spring and summer, during the spring migration, a feeder might be a useful source of food traveling birds.
- For the Japanese, the opening of the cherry blossom, Japan's national flower, in March or April signals the start of spring.
- According to Greek myth, the return of spring coincides with the return of Persephone, the daughter of Demeter, who is the goddess of plants and fertility.
- In the Southern Hemisphere, springtime lasts from August until November.
- During the spring, birds are more vocal as they sing to attract mates and warn away rivals.
- The word “season” is from the Latin sationem meaning “sowing” or “seed time.”
- Children actually grow faster in the spring than during other times of the year.
- The early Egyptians built the Great Sphinx so that it points directly toward the rising sun on the spring equinox.



The Race to Put Thousands of Miles of English Walking Paths Back on the Map

By: Noor Al-Samarrai

THE HEATHERY HEATHS, MUDDY MOORS, and chalky downs of England are criss-crossed by tens of thousands of miles of public walking paths. Tramping along these lightly beaten paths over field and uncultivated land is integral to the fabric of English society - and protected by a 2000 law that established the “right to roam” freely over the countryside and along ancient roads, even when the land is in private hands. But although 140,000 miles of paths are already established as public “rights of way,” there are many thousands more that could be accessible to the public “rights of way,” there are many thousands more that could be accessible to the public, but haven’t yet been added to official maps. Though many of these paths have been used for centuries, if they aren’t documented by an impending deadline, the right to walk them could be lost.

“They became rights of way because ordinary people used those routes over hundreds and hundreds of years,” says Jack Cornish, who manages the “Don’t Lose Your Way” campaign for the Ramblers, a U.K. charity that is currently on a mission to record these byways. The practice of roaming freely has led to many clashes over the years, usually with landowners, so the government has determined that every historic byway and thoroughfare must be mapped by 2026, or private land rights will take precedence over traditional mobility.

Now, people are delving into archives and poring over old maps in search of footpaths, and submitting them to local councils for review so they can be added to official national Ordnance Survey maps. But not any old track through the heather will do. Paths can be added by virtue of current use, showing evidence, for example, that people have commonly used a route without meeting resistance over the past 20 years. Or a private landowner can concede a public right of way on their own land. Most commonly, a path can be made a public right of way by history—some variation of all the collected customs by which, across centuries, walkers have asserted their rights to get from here to there. One of the most curious of these historical precedents is known as the “corpse road.”

THE DEAD DON’T WALK OR talk, but they do have a history of laying down paths in England. Corpse roads - also called coffin routes, bier ways, lychways, burial roads, or church ways - were traditionally formed when the living passed a dead body over fields, moors, burns (little trickling streams), fells, and fens as the remains were transported from home, where people usually died, to their final resting places in a church’s burial grounds. Sometimes these routes were long. For centuries, only at particular “mother churches” was the ground properly consecrated for burial.

“The heyday for corpse roads was probably early medieval times,” says Alan Cleaver, who researched these old routes extensively with his partner Lesley Park for their book *The Corpse Roads of Cumbria*. (Not until the 18th century had most local churches successfully petitioned for the right to bury the dead on their own.) In those days, “you could sing hymns and worship in your little local church, but if you wanted to get married or have a funeral you would have to go to the mother church,” he adds. Getting to one could require a journey as long as 10 miles, and take days of trekking through all kinds of inclement weather and uneven terrain with a dead body on the back of a slow horse, wrapped in a shroud.

“They became rights of way because ordinary people used those routes over hundreds of years.”

While caring a body so far was an inconvenience for the living, that burden was thought of as a kind of gift, a final tour for the dead. Those bearing the body understood the journey was “this person’s last farewell,” says Cleaver. “We’ll go through this village and that village, and let them pay their last respects.” By common law, the paths a corpse traveled to its final rest became public footpaths, a kind of spiritual paving in which a folk tradition carried real functional weight. A description of one decision about the path by which to carry a body to church, related in 1906 by Henry Penfold, a member of the Cumberland and Westmorland Antiquarian and Archeological Society, illustrates the lasting impact of such a choice:

“A death took place in 1905 at the hamlet of Crooked Holme, only some six minutes’ walk from the Old Church. Between the two places there is a public right-of-way for foot passengers and also an occupation [private] road between farms. When the funeral day came it was decided to go round by the Longtown road, as it was deemed that taking the short cut would create a public-right-of-way for driving purposes.”

At Crooked Holme, a longer, more arduous route on a public road was chosen over a shortcut to prevent the private road from being made public - from the simple act of being used while bearing a corpse. The funeral party’s caution was well warranted. “The Irton footpath case” was a landmark case in 1899 that dragged on for four years and definitively enshrined the custom of public corpse roads into legal precedent.

Thomas Brocklebank, owner of Irton Hall in England’s verdant lake district, sealed off a preexisting footpath that went right past his manor windows, to the chagrin of local resident John Thompson, who argued that he had the right to walk that way, windows be damned. It was a corpse road, Thompson argued, already used for centuries, and was evidenced both in local accounts and on an 1860 Ordnance Survey map. So the presiding judge declared it an official public thoroughfare. “The path had been used as a right for as long back as living memory extended,” the judge, a Justice Joyce, wrote in his decision, and so those rights should continue. It was a class issue, too, giving tenants rights that landowners had to respect, whether they liked it or not.

There was, however, a loophole - a private path could be made available to a funeral procession and remain private if the bereaved paid a token fee to acknowledge the owner’s rights. In a March 1938 edition of the *Somerset County Herald*, one Isabel Wyatt related that if a “toll, usually paid either in pins or pennies, [was levied] on the funeral procession: it was then believed that though the corpse

The Race to Put Thousands of Miles of English Walking Paths Back on the Map continued...

was carried over the path, it did not become a right-of-way." The fight to make and keep footpaths accessible has been continued by the modern Ramblers organization, who emerged out of the activism of radical walkers movements of the late 19th century and 1930s. They campaigned for the Countryside and Rights of Way Act of 2000, which secured public access to open spaces and allowed members of the public to submit paths for inclusion on official maps. Evidence for the public use of these paths can be drawn from pretty far back; historical time in the United Kingdom begins in 1160 - precedent set from then on can be employed to define policy today. The only catch? A ticking clock. All these missing trails must be recorded, and established as historic, by 2026, the government decided, which might not be long enough; an estimated 10,000 miles of pathways are still undocumented. The Ramblers guess there are at least twice as many. A glut of applications for recognizing paths - more than 5,000 - are waiting to be processed by local governments, and some claims have already been sitting in bureaucratic purgatory for a decade.

In the United Kingdom, there is more at stake than a walk in the park. Dozens of walking clubs and path preservation societies fought - sometimes bitterly - for the right they have now.

In 1932, hundreds of walkers staged a watershed mass trespass at Kinder Scout, the highest hill in England's Peak District, resulting in scuffles and arrests. In 1999, landlord Nicholas Van Hoogstrated (who had hired thugs to stab, shoot, and firebomb business rivals) blocked a public right of way on his East Sussex estate with a wall of refrigerators and barbed wire, and described Ramblers as "the scum of the earth" and "a bunch of disenfranchised perverts."

"The 2000 act was a bit of a compromise at the time," says Cornish. "The land owning lobby was saying, 'But we want a cutoff point for when you can add these historic rights of way to the map.'"

So the Ramblers and others must establish the historic record of these half-forgotten rights of way. Forgotten pathways such as old corpse roads are fair additions, and the documentation to establish them can be composed of verbal descriptions as well as cartography. One citizen submitted an account of a footpath on the south coast of England culled from Virginia Woolf's diaries for consideration. The path led from her home, Monk's House, to a hut called Muggery Pope.

And Cleaver recently submitted a description of an old corpse road for review. Although he couldn't walk it himself - it's on private land - he visited on a bleak March day to get a feel for the landscape it traverses. Through hails and frigid winds, he could see the lay of the land matched the old corpse road description, another provided by Henry Penfold. In northwestern England, near Hadrian's Wall and the Scottish border, the path leads from Ellery Cleugh - an old hamlet that no longer graces any present-day map - to the old mother church in Bewcastle. This part of England "is about as remote as you can get," says Cleaver. There are rough footpaths tracking across the moorland, through villages and farms. Cleaver didn't see a soul except for a lone farmer working despite the winter weather.

"To me they're as important as big cathedrals or castles."

Penfold's description lays out a series of names and waymarkers - limekilns, farmhouses, fields, streams, and junctions. "This is taken down verbatim," he said in a 1906 speech to other members of his antiquarian society, "and is a good example of an ancient corpse-road - a road which was only a corpse-road, over which no other right-of-way save burials existed, and which through being a corpse-road became a public footpath."

If Cleaver's petition is approved, the path may not see much more traffic, but it will be a right-of-way in perpetuity - a map carved into the landscape, inscribed by the passage of feet.

"A lot of [the paths] are quite mundane in a lot of ways, I suppose, but they show how ordinary people went to work, or walked to the shops, or to the pub for a night out," Cornish says. "All these rights of way are a part of history - they show how people have moved around, how people have walked in history. To me they're as important as big cathedrals or castles."





SURVEYORS HISTORICAL SOCIETY AND UTAH COUNCIL OF LAND SURVEYORS

PRESENT

2019 SHS RENDEZVOUS in Salt Lake City, Utah
September 18-21, 2019

"Surveys and Surveyors of Utah Territory"

We are excited to announce the Surveyor's Historical Society (SHS) is having its ANNUAL RENDEZVOUS for 2019 in Salt Lake City. This conference will commemorate some of the significant surveying events in Utah Territory.

CLASSES ALL DAY THURSDAY AND FRIDAY MORNING:

- "WILLIAM EIMBECK & THE SURVEY OF THE 39TH PARALLEL BY THE U. S. COAST SURVEY" by Skip Theberge, Chief historian for the USC&GS (retired) with material by
- "STANSBURY'S 1849 EXPEDITION TO THE GREAT SALT LAKE" by John Stahl
- "SPANISH EXPLORATION OF THE OLD SPANISH TRAIL" by Jeremiah R Cunningham, Utah State University
- "THE LIFE AND EXPLORATIONS OF JOHN WESLEY POWELL" by Michael Stewart
- "THEODORE JUDAH AND THE CENTRAL PACIFIC RAILROAD" by Bart Crattie, Lookout Mtn, Georgia
- "HISTORY OF THE SALT LAKE MERIDIAN" by Daniel Webb, BLM Utah Office; Chief Cadastral Surveyor
- "ORSON PRATT, SURVEYOR AND ASTRONOMER FOR THE EARLY LDS CHURCH" by Spencer McCutcheon
- "SURVEYS AND SURVEY METHODS OF THE U.S. TOPOGRAPHICAL ENGINEERS IN UTAH TERRITORY" by Don Erickson, US Topo's, Colorado
- "THE FOUR CORNERS MONUMENT" by William Stone
- "RECOVERY AND MONUMENTATION OF THE SOUTHWEST CORNER OF UTAH" by Andy Hubbard

ACCOMMODATIONS are at the DOUBLE TREE HILTON SALT LAKE AIRPORT
@ \$109.00 a night.

THURSDAY SPOUSE/GUEST TOUR: 5 hour bus tour of Park City, Utah,
historic mining town and site of the 2002 Winter Olympics

FRIDAY AFTERNOON TOUR: 3.5 hour Deluxe City Bus Tour: <https://www.saltlakecitytours.org/salt-lake-city-tour>

OPTIONAL SATURDAY TOUR: 5 hour bus tour of
ANTELOPE ISLAND

SURVEYORS HISTORICAL SOCIETY 2019 RENDEZVOUS COMMITTEE:

Denny DeMeyer, Blaine, Washington: SHS #219: denny@nwsurvey.com

Andy Hubbard, Salt Lake City, Utah: Andyh@greatbasineng.com

Bart Crattie, Lookout Mountain, Georgia: SHS #767: bart@nilesurvey.com

Bill Weikel, Missoula, Montana, SHS #828: brweikel@bigsky.net

FOR MORE INFORMATION PLEASE EMAIL: info@surveyorshistoricalsociety.com





2019 SHS SALT LAKE CITY RENDEZVOUS

Surveyors Historical Society & Utah Council of Land Surveyors

September 18-21, 2019, Doubletree by Hilton Salt Lake City Airport

FINAL ?? PROGRAM (04/30/2019)

WEDNESDAY, SEPTEMBER 18, 2019:

- 8:00 am – Noon: **BOARD OF DIRECTORS RETREAT** (Board Members Only); ARCHES ROOM.
- Noon – 1:00 pm: **LUNCH**. (on our own).
- 1:00 pm – 4:30 pm: **BOARD OF DIRECTORS MEETING** (Open to All): ARCHES ROOM.
- 5:00 pm – 9:00 pm: **REGISTRATION**; SALT CREEK BALLROOM OR LAKE PATIO OUTSIDE
- 4:30 pm – 6:30 pm: **"WELCOME WEARY TRAVELERS MEET AND GREET" RECEPTION**; SALT CREEK BALLROOM or if nice, LAKE PATIO OUTSIDE
- 6:30 pm – 7:00 pm: **ORIENTATION**; SALT CREEK BALLROOM OR LAKE PATIO OUTSIDE
- 7:00 pm – 8:00/8:30 pm: **ANNUAL GENERAL MEMBERSHIP MEETING**; SALT CREEK BALLROOM

THURSDAY: SEPTEMBER 19, 2019:

- 7:00 am - on: **REGISTRATION**; FOYER TO BRYCE & SNOW ROOMS.
- 7:00 am – 8:00 am: **Breakfast**; on your own
- 8:00 am – 8:30 am: **WELCOME**; BRYCE & SNOW ROOMS
- **8:30 am – 9:15 am: CLASSES; BRYCE & SNOW ROOMS**
 - *"William Eimbeck & the Survey of the 39th Parallel by the U. S. Coast Survey" by Skip Theberge, Chief historian for the USC&GS (retired)*
- **9:15 am – 10:00 am: CLASSES; BRYCE & SNOW ROOMS**
 - *CONTINUED: "William Eimbeck & the Survey of the 39th Parallel by the U. S. Coast Survey"*
- 10:00 am – 10:15 am: **BREAK**; FOYER
- **10:15 am – 11:15 am: CLASSES; BRYCE & SNOW ROOMS**
 - *"Stansbury's 1849 Expedition to the Great Salt Lake" by John Stahl*
- **11:20 am – NOON: CLASSES; BRYCE & SNOW ROOMS**
 - *TBD*
- **NOON – 1:15 pm: LUNCH; BRYCE & SNOW ROOMS**
 - *Possible Luncheon Speaker*
- **1:15 pm – 2:15 pm: CLASSES; BRYCE & SNOW ROOMS**
 - *"Spanish Exploration of the Old Spanish Trail" by Jeremiah R Cunningham, Utah State University*
- **2:15 am – 3:00 pm: CLASSES; BRYCE & SNOW ROOMS**
 - *"The Life and Explorations of John Wesley Powell" by Michael Stewart*

Golden Spike Chapter Report

It has been a little slow in the chapter as far as meetings, but we did have a fair amount of participation with Candidates for the Chapter Representative and Chapter Secretary positions.

Matt Murdock is the New Chapter Secretary and Von Hill is our Chapter Representative. Congratulations and I look forward to working with you over the next year.

Von Hill was also awarded the Lifetime Achievement Award at the Conference, for his service to the UCLS and the Surveying Profession throughout his long career. As he retires to spend less time in the office, we wish him the best and are happy he chose to continue his years of service to the UCLS as Chapter Representative.

May 10th is the 150th Anniversary of the setting of the Golden Spike and the completion of the transcontinental railroad. I hope you have a chance to participate there are events throughout the weekend. For more information see <http://spike150.org> and <https://www.nps.gov/gosp/planyourvisit/2019-150th-anniversary-of-the-completion-of-the-transcontinental-railroad.htm>

In April we held our first meeting of the year, with a presentation by Devron Anderson on the new State Laws concerning Monuments S.B. 104, Amends Sections 17-23-14, & 17-23-15, of the Utah Code to allow Counties to require a permit, collect fees, and levy fines for the disturbance of monuments or failure to get a permit or to show a government monument on a set of plans. Weber County has a permit process and will begin enforcement of its permitting process once the new law goes into effect April 19, 2019.

Your Chapter leadership is working on topics for our upcoming meetings and we welcome any input you might have.

One final note, Brad Mortensen and I had the privilege of presenting the TRIG-Star program to Morgan High School, Clearfield High School and Syracuse High School this year. It was a great experience to get in front of 300 plus students and teachers, to promote a STEM subject and the surveying profession. I hope you will all consider this next year at a school near you. More to come in the fall when it gets closer.

Until next time...

Andy Hubbard

Golden Spike Chapter President

Interesting Utah Weather Facts

Cold and Frost

Most years, the Salt Lake area enjoys 179 days without freezing temperatures. In 2016, Salt Lake went 242 days - March 19 to Nov. 17 - without any frost. The shortest freeze-free period of 124 days in is 1954, when the last freeze of spring came on May 28 and the first fall freeze was Sept. 30.

Lightning and avalanches

These weather-related events kill Utahns virtually every year. Utah ranks 11th nationally in lightning deaths, with 22 fatalities since 1990, according to the National Lightning Safety Institute.

Avalanches are more treacherous, causing 116 deaths since 1951, or nearly two fatalities a year, according to data from Statista.com.

Greatest Snow on Earth

The average annual snowfall in Utah varies greatly depending on the locale. Salt Lake usually gets 56 inches a year, for example, while Ogden typically receives just 18 inches. Brighton gets more than 400 inches. St. George averages less than 2 inches per season, and Moab averages slightly more than 6 inches.

The highest annual snowfall total in Salt Lake was 1951-1952, when more than 117 inches fell. In the 1933-1934 winter, snowfall in the city was just 14.3 inches.

LAND SURVEYING AND GIS:

It's time to embrace this partnership

Published May 25, 2017

By Tim Hoffer, Underground Services, Inc. Softdig

Binary thinking is one of the quickest ways to underperform in a three dimensional world. That there ever was a dichotomy between land surveying, or creating precision measurements of a landscape, and GIS, enabling modern applications to make optimized use of those measurements, is unfortunate. GIS pros call surveyors stodgy, while surveyors look at GIS as unscientific. Supposing that the worst of these stereotypes were true. Wouldn't this naturally cause one to think of a collaborative effort as the way to shore up weaknesses in both philosophies?

The truth is that GIS is as accurate as it has to be to fulfill its core competency – systems integration. Land surveying is as innovative as it needs to be to fulfill its core competency – canvassing. In order to optimize the positive aspects of both disciplines, we first need to understand where the problems come from.

THE WAR OF MISUNDERSTANDING BETWEEN LAND SURVEYING AND GIS

Because land surveyors and GIS professionals are both assessing the same basic asset – land – professionals from either side may consider the way assessments are made on the “opposing” side to be pointless or inefficient. However, the purpose for which a surveyor and a GIS man would be taking stock of a parcel are completely different. For instance, a homeowner who is looking to precisely locate the boundary line around a property cannot call either a surveyor or a GIS guy. That homeowner would need to call a land surveyor specifically. A reputable GIS professional would be quite upfront that assessing land for the purposes of taxation or boundary location are beyond the scope of his jurisdiction or competence.

However, if a landowner is looking to create a suitability analysis for a construction project, the surveyor would have to take a backseat. The GIS specialist is the person to call for this type of assessment, although the surveyor may be looking at a very similar dataset.

Consider a huge rock sitting in the middle of an acre of land. Both the surveyor and the GIS specialist will be able to tell you it is there. However, only the surveyor can tell you if the rock is completely within the boundaries of your land parcel, and only the GIS guy would be able to assess the tools it might take to remove the rock to put a house there.

Surveyors may automatically assume that anyone calling himself a “geographic information systems” professional should have the same capacity as the surveyor. GIS pros may assume the same thing. The truth is that both disciplines are far too complex for either to master the other without specialized training. This will only become more true as technology improves and becomes more demanding of its human monitors.

A VARYING SCOPE OF PRECISION

Both GIS professionals and land surveyors become incredibly precise, but at two completely different times and for different purposes.

The land surveyor may not be as precise when measuring the horizontal coordinate of a topographic feature. However, the surveyor is incredibly precise when placing this feature in relation to other features. The GIS professional perceives location as the single most important aspect of every topographic feature that it measures, and its relative position is less important.

MATCHING TECHNOLOGIES

According to some GIS-survey hybrid professionals, GIS tech has yet to catch up with the amount of data that a surveyor can generate. The original purpose of GIS was for natural resource management, and hardware development companies are only beginning to see returns from investing into other applications. The scale of data that surveyors currently create is also better served in a database, a cultural shift that GIS pros have yet to fully implement.

At the same time, 3D tools, HD imagery, terrestrial scanning and lidar are, at times, giving surveyors more than they can handle. Surveyors should not overlook the fact that they are perhaps expecting GIS tech to expand at a rate faster than surveyors themselves have been able to cultivate. For instance, GIS is making CAD obsolete on some projects requiring full scale system management of assets – a shift that many surveyors are less than willing to acknowledge, much less implement.

LAND SURVEYING AND GIS – TWO COMPLEMENTARY DISCIPLINES

Surveying and GIS are fraternal twins growing up beside each other, play fighting in the sandbox to the greater end of improving the strength of both. When both of these brothers grow beyond their training stage and realize they better serve each other in cooperative tandem, we can expect to see some incredible strides forward in environmental surveying. Hybrid technologies are already being established that foreshadow this stage of technology.

The markets that can fully employ HQ survey data are increasing – legal land surveys are no longer the only application of elite surveying efforts. Volumetric modeling, 3D visualization, architecture measurement and precision farming are relatively new disciplines that will require the cooperation of surveyors and GIS professionals to get to the money. Governments have also begun to require hybrid tech efforts to complete huge projects, including the European initiatives SESAR and ERTMS and America's Gen Air Traffic Control and Positive Train Control.

LAND SURVEYING AND GIS: It's time to embrace this partnership continued...

New economies are driving new technologies. Open standards, such as those advocated by the Open Geospatial Consortium and Open GIS, are being used more often to generate a higher degree of interoperability between systems and less time spent porting applications. GIS technology is quickly applying itself to niche surveying techniques, most notably lidar.

GIS is the already preferred philosophy/technology for managing data culled from modern surveying tech – mobile mapping, lidar and laser scanning. As these tools become more precise, surveyors will have no choice but to rely on the only technology with the scale and power to handle them.

In short, leaders in the surveying and GIS industries are all beginning to recognize the opportunities that come with cooperation. For those professionals on both sides who are looking to expand their horizons, it is time to embrace this partnership.

Effective 5/14/2019**57-1-45 Boundary line agreements.**

- (1) If properly executed and acknowledged as required under this chapter, and when recorded in the office of the recorder of the county in which the property is located, an agreement between adjoining property owners of land that designates the boundary line between the adjoining properties acts as a quitclaim deed to convey all of each party's right, title, interest, and estate in property outside the agreed boundary line that had been the subject of the boundary line agreement or dispute that led to the boundary line agreement.
- (2) Adjoining property owners executing a boundary line agreement described in Subsection (1) shall:
 - (a) ensure that the agreement includes:
 - (i) a legal description of the agreed upon boundary line;
 - (ii) the name and signature of each grantor that is party to the agreement;
 - (iii) a sufficient acknowledgment for each grantor's signature;
 - (iv) the address of each grantee for assessment purposes;
 - (v) the parcel or lot each grantor owns before the boundary line is changed;
 - (vi) a statement citing the file number of a record of a survey map, as defined in Sections 10-9a-103 and 17-27a-103, that the parties prepare and file, in accordance with Section 17-23-17, in conjunction with the boundary line agreement; and
 - (vii) the date of the agreement if the date is not included in the acknowledgment in a form substantially similar to a quitclaim deed as described in Section 57-1-13; and
 - (b) prepare an amended plat in accordance with Title 10, Chapter 9a, Part 6, Subdivisions, or Title 17, Chapter 27a, Part 6, Subdivisions.
- (3) A boundary line agreement described in Subsection (1) that complies with Subsection (2) presumptively:
 - (a) has no detrimental effect on any easement on the property that is recorded before the date on which the agreement is executed unless the owner of the property benefitting from the easement specifically modifies the easement within the boundary line agreement or a separate recorded easement modification or relinquishment document; and
 - (b) relocates the parties' common boundary line for an exchange of consideration.
- (4) Notwithstanding Title 10, Chapter 9a, Part 6, Subdivisions, Title 17, Chapter 27a, Part 6, Subdivisions, or the local entity's ordinances or policies, a boundary line agreement is not subject to:
 - (a) any public notice, public hearing, or preliminary platting requirement;
 - (b) the local entity's planning commission review or recommendation; or
 - (c) an engineering review or approval of the local entity.

Amended by Chapter 384, 2019 General Session