



## The PLSS: The Rest of the Story (Part 2)

By Rick Norejko, CMS, TEAM Consulting, LLC

This two-part series focuses on the history of the Public Land Survey System (PLSS) and the land ownership philosophy of Founding Fathers Jefferson, Washington, Franklin, and Hamilton. See part 1 in the January 2018 issue.

Thomas Jefferson sat at a desk in a boardinghouse in Annapolis Maryland in early March 1784 with a quill pen on his right side and a stack of parchment paper to his left. With self-determination and purpose Jefferson began writing the congressional legislation that would be called the Land Ordinance of 1785. Unbeknownst to him at the time is the fact that his handwriting would be on two of the three most historical documents in American history, known as the "Trinity of Revolutionary testaments." The Trinity is more commonly recognized as the Declaration of Independence, the first United States Land Ordinance (1785), and the United States Constitution.

More than likely, Jefferson couldn't help contemplating the fact that his two previous attempts regarding the disbursement of public lands in the western part of Virginia had been rejected by the Virginia legislature. Maybe the collective colonies and the Continental Congress would accept his rectangular land ownership idea.

### Jefferson's Proposal

To prevent speculators from acquiring the best land, as settlers had done in the original colonies for

more than 150 years, Jefferson ruled out the metes-and-bonds survey legal description system with its irregular shapes, gaps and its cumbersome process of patenting wilderness lands. He had spent the better half of eight years as an attorney litigating property disputes utilizing the metes-and-bounds land description method in western Virginia.

Instead, Jefferson proposed that the territory be surveyed before occupation and divided into simple squares aligned with each other so that no land would be left vacant. These simple squares were to be called "hundreds" and their sides were to run due east and west and due north and south. That's one of the compelling reasons to establish the rectangular system of survey in the United States—to enable simple, rectangular computations by ordinary surveyors. That was one of his ideas for creating it in the first place: to keep the conveyance of land simple, fair and equitable. He wrote:

The Western Territory shall be divided into Hundreds of ten geographical miles square, each mile containing 6086 feet and four tenths of a foot, by lines to be run and marked due north and south, and others crossing

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
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61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Jefferson proposed that territory be surveyed and divided into simple squares known as "hundreds."

these at right angles ... these hundreds shall be subdivided into lots of one-mile square each, or 850 acres and four tenths of an acre, by marked lines.

**Note:** A geographical mile equals one minute of arc at the Earth's equator. Also, "it [the Western country] shall be divided into hundreds," is an ancient English term for a subordinate division of a shire, known to Americans as a county.

These hundreds would begin at one of the state's right-angle corners, measure 10 geographical miles

*continued on next page*

along the two perpendicular borderlines, and then project the first set of dividing lines inward, north-south and east-west, continuing the process until the whole state (or at least that part of it thus ceded by the Indian tribes) had been divided into 10-mile-square "hundreds."

Jefferson also described how this gridding of the land would outline state boundaries:

...by parallels of latitude, so that each State shall comprehend from north to south two degrees north of latitude, beginning to count from the completion of forty-five degrees north of the equator; and by meridians of longitude, one of which shall pass through the western cape of the mouth of the Great Kanawha (Kanawha): but the territory eastward of this last meridian, between the Ohio, Lake Erie and Pennsylvania, shall be one State whatsoever may be its comprehension of latitude. That which may lie beyond the completion of the 45th degree between the said meridians, shall make part of the State adjoining it on the south; and that part of the Ohio, which is between the same meridians coinciding nearly with the parallel as a boundary line.

In addition, Jefferson, drawing upon his command of Greek, Latin and his interest in Native American languages, proposed names for the several subdivisions of this territory: Sylvania, Michigania, Cheronesus, Assenisippis, Metropotamia, Illinoisia, Saratoga, Washington, Polypotamia, and Pelipsia. These names have an antique ring to them, possibly to lend a bit of credibility to the then still precarious business of colonial westward expansion.

Sylvania would have covered much of present-day Minnesota,



Jefferson proposed names for the subdivisions of the newly acquired government land north and west of the Ohio River.

Michigan's Upper Peninsula and some of northern Wisconsin. Michigania would have incorporated most of Wisconsin, but nothing of Michigan. Most of Michigan's Lower Peninsula would have been the state of Cheronesus, which is simply the Greek word for "peninsula." The northern part of modern-day Illinois would have been the state of Assenisippia, after the Assenisipi River, also known as the Rock River. In between Assenisippia and Pennsylvania would be the state of Metropotamia, a



Rick Norejko

★★★★★  
Brad Eldridge, MAI, CAE, recently taught two workshops in Washington state, *Big Box* and *Senior Housing*. Ratings for both courses ranged from good to excellent.

name referring to the many rivers originating there. The states of Illinoisia, Saratoga and Washington would have incorporated large parts of Illinois, Indiana and Ohio, respectively. Polypotamia ("Land of Many Rivers") and Pelipsia would have covered the western and eastern parts of Kentucky. (This portion is partially outside the Northwest Territory, as it is bounded to the south by the Ohio River, Kentucky's northern border).

Sitting back in his chair, Jefferson pondered what his subcommittee would say about his manuscript involving the newly acquired government land north and west of the Ohio River. That committee consisted of colonial legislators Hugh Williamson of North Carolina, David Howell of Rhode Island, Elbridge Gerry of Massachusetts, and Jacob Reed of South Carolina. Jefferson could not know how much his fellow committee members and the Congress as a whole would change his draft of the land ordinance regarding the Ohio territory.

What happens next will be the subject of "The History of the Public Land Surveying System," which Rick will present at the IAAO Conference at 9:30 a.m. Tuesday, Sept. 25, 2018. Make plans now to attend! ❖

**Rick Norejko, CMS**, has over 40 years of experience in all aspects of cadastral mapping. He is a nationally recognized keynote speaker, lecturer and teacher in the field of cadastral mapping. To set up classes, contact Rick at [richardnorejko@bellsouth.net](mailto:richardnorejko@bellsouth.net) or Fred Chmura, AAS, at [fchmura@teamconsulting.cc](mailto:fchmura@teamconsulting.cc)



## Travel Squad

TEAM associates continue to serve in teaching, consulting and speaking capacities. In the second quarter of 2018, we have been in Arkansas, Indiana, Kansas, Louisiana, Missouri, Mississippi, Montana, Nevada, North Carolina, Tennessee, Texas, Virginia and Washington. If you are looking for a workshop, series of workshops or professional assistance for your location, please visit our website at <http://www.teamconsulting.cc/>.

## Major Big Box Decision

A recent tax appeal case in Pottawatomie County, Kan., has been gathering not only statewide attention but also some nationwide interest. The case was on a big box store where the property owner based their appraisal on the “dark store theory.” The Kansas State Board of Tax Appeals (BOTA) in a decision issued in April of this year upheld the county’s appraised value for the tax year 2017 which was based on its current use as functioning occupied store.

The 2017 case was filed by Menard, Inc., located in Manhattan, Kan. The county valued the property at \$11,689,600 using the cost approach value. Commercial properties in Pottawatomie County are valued under a contract with TEAM Consulting. The project manager for the project is Marion Johnson, CAE. The county also developed an income approach value on the subject which was \$11,395,300.

For the BOTA hearing the county also hired an independent appraisal of the subject property. Timothy Keller, MAI, of Lawrence, Kan., appraised the property using a cost approach, sales comparison approach and an income approach. After reconciling all three approaches to value, Keller estimated the value of the subject property to be \$11,950,000 for the tax year 2017.

The State Board of Tax Appeals in their ruling stated that “the county has accurately identified the characteristics of the subject property and its components using the cost approach. Based on the evidence presented at the hearing, duly weighing such evidence, the board determines that the appraised value of the subject for the tax year 2017 is \$11,689,600.”

The board also found that the county valuation was supported by the actual construction costs for subject property. The subject prop-



erty was constructed in 2010 with additions in 2016 and 2017 at a cost over \$16,500,000.

The taxpayer asserted that the subject property should be valued at \$6,500,000. The taxpayer presented an independent appraisal of the property. The appraiser presented only one approach to value, the sales comparison approach. The appraisal was based on the “dark store theory,” which is based on the assumption that the property should be valued based as if it is vacant and available for sale to a future hypothetical user rather than its current use as a functioning occupied store. The board noted that the taxpayer’s appraiser primarily used comparable sales from outside of Kansas and did not adjust the sales for differences such as location.

BOTA in their decision stated: “The taxpayer argued that users of big box stores primarily build their buildings to suit and do not renovate existing buildings. The taxpayer further indicated that if these buildings are sold to a scarce supply of secondary users who are not typically national credit tenants, the sale prices so reflect the credit worthiness of the tenant.”

Pottawatomie County Appraiser Lois Schlegal, RMA, when commenting on the favorable ruling, noted that if this theory gains traction, it could have a dramatic impact on the valuations of taxing districts and consequently on property tax revenues. She does not think this battle with the big box properties in her county is over. “They will be back,” she said. ♦



### **We are still good.**

Maybe we just need a reminder periodically about how good this country still is. Thanks to Ruel Williamson for this great photo of the U.S. Capitol.



# TEAM Members Participating at the 2018 IAAO Annual Conference

**Fred Chmura, AAS**

*The Modernization of IAAO's Governing Documents*

Date: September 24, 2018, 1:30 PM

**Session Description:** The 2018 Governance Committee was given the task of reviewing and updating the governing documents in accordance with the Vision 2020 plan. At their recommendation, IAAO's Executive Board is proposing changes to our Articles of Incorporation, Constitution, and Bylaws. The governing documents should: "Say it once, say it clearly, and say it in the right place." This Town Hall session will provide an explanation of what changes are proposed, why they are necessary, and answers to questions from members regarding the proposals in preparation for the November ballot questions.

ing the gap between ideas set forth in the paper and the execution of methodologies discussed. Use of visual aids and specific examples will provide assessors a solid basis for valuing these properties.

**Brad Eldridge, MAI, CAE**

*Now That's A Good Story*

Date: September 25, 2018, 9:30 AM

**Session Description:** Storytelling in the classroom and during presentations can be a meaningful way to illustrate concepts to attendees. This session will explain how to turn real life experiences into good stories and contribute to the classroom and presentation experience. This presentation continues the work of IAAO's Education Committee to provide continuing education for its instructors at conferences. All are welcome to come hear our story!

**Ken Voss, MAI, AI-GRS, SRA, CAE**

*Implementing a Big-Box Methodology*

Date: September 25, 2018, 2:00 PM

**Session Description:** The session will show assessors how to put information from the IAAO big-box position paper to practical use by bridg-



**2018 IAAO Annual Conference**

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## The challenges of valuing hotels and motels

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- Analysis of available sales similar to the jurisdiction
- Development of a protest template for consistency during protests
- Final report outlining the process that can be used for the defense of values

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## AAS Success!

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Congratulations to the following appraisal professionals for obtaining their AAS designation by using TEAM's AAS Case Study Review material.



**Rick A. Medina, AAS**, Director of Administrative Services for the El Paso (Texas) Central Appraisal District, has earned the Assessment Administration Specialist designation.

He has served the profession for 31 years, with 28 of those years in this office. Mr. Medina holds a Bachelor of Science degree in civil engineering technology from Colorado State University Pueblo, formerly the University of Southern Colorado. He is a Registered Professional Appraiser (RPA) with the Texas Department of Licensing and Regulation and a Certified Tax Administrator (CTA) with the Texas Association of Assessing Officers.



**James E. Thompson, Jr., AAS**, Director of Appraisal Services for the El Paso (Texas) Central Appraisal District, has earned the Assessment Administration Specialist designation.

He has served the El Paso office for 24 years, with five of those years in this position. Mr. Thompson holds a Bachelor of Science degree from Texas A&M University. He is a Registered Professional Appraiser in Texas and is a member of the Institute of Certified Tax Administrators under the Texas Association of Assessing Officers.

## Always Amazing

*By Rick Stuart, CAE, CDEI*

Our own Keith Cunningham, PhD, never fails to surprise me. I met Keith about 15 years ago, and he explained to me at that time how LIDAR worked and the detail that



Keith Cunningham

Learn more about [Keith's workshops for TEAM](#).

could be obtained by its use. His work with LIDAR, even in those comparatively early days, included its application for automated change detection of differences in property measurements. This work was later

published in two articles in the International Journal of Property Tax Assessment & Administration.

You've probably seen reports of his projects in the TEAM newsletter, as well as in Fair & Equitable (F&E). Keith's research into how satellites could be used in audit and assurance of the market for carbon taxation were among his projects drawing widespread attention. You may also recall his articles and GIS/CAMA presentation on the topic of drones for 3D property imaging. Most recently was an F&E article on privacy law and drones.

Keith's work in GIS is beyond impressive, with one of the first

federal government projects using drones to sample airborne ash from volcanic eruptions. It's not hard to imagine this being applicable now in Hawaii, where the world has watched what hot lava can do to cars and homes. Unseen to the mainstream media is what volcanic ash will do to aircraft, so Keith's work against this hidden threat may prove indispensable.

The latest news from Keith's LinkedIn profile: architect of big data discovery, machine learning, and cognitive ontologies for the next generation of signal processing systems with the Joint Electronic Attack Compatibility Office of the US Navy Air Warfare Center Weapons Division. That's a lot of words to describe important work done behind closed doors. As a newly minted Southern Californian, Keith will no doubt become an expert whale watcher as well as GIS guru and data architect for our American military advancement. Whatever he does next, we'll be on the lookout...and prepared to be amazed, as always.

You go, Keith! ❖

### ***Need a speaker or presenter?***

Maybe Keith is what you are looking for. You can contact him at [kwc@mobile-map.com](mailto:kwc@mobile-map.com).



**Hosea E. Wilson III, AAS**, Assistant County Assessor for Dare County, North Carolina, recently earned the Assessment Administration Specialist designation. He has worked

in the appraisal profession for 12 years, with two of those years in this

office. Mr. Wilson holds a Bachelor of Arts degree from the University of North Carolina at Chapel Hill. He is a State-Certified General Real Estate Appraiser with the North Carolina Appraisal Board, a North Carolina Real Estate Broker with the North Carolina Real Estate Commission, and a Certified County Assessor with the North Carolina Department of Revenue. ❖

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### Video Answers Common Questions About Appraisals

As an appraiser or assessor, you spend countless hours answering questions and fielding appraisal appeals from taxpayers. With each question, it's undeniable that there is widespread confusion about the appraisal process. Often taxpayers are unclear on exactly how appraisers determine a property's worth. This confusion can lead to unnecessary misunderstandings.

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A custom-branded animation that explains this process in terms that are easy for anyone to understand. The video can

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Our goal is to help communicate the appraiser's role in determining fair property values. Our video breaks down each part of this process to clear up any misunderstandings that may exist around property appraisals. Appraisers and property owners alike will appreciate the easy-to-understand information.

### Save Time: Yours & Property Owners'

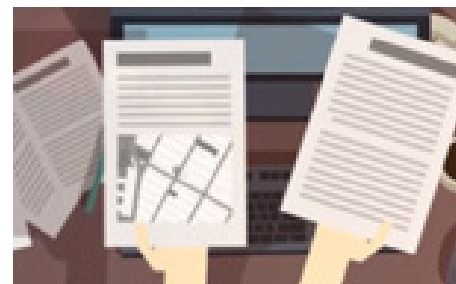
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Preview the Appraiser video or the Assessor video below.



Click on the image above to preview the appraiser video



Click on the image above to preview the assessor video

## Interesting Buildings

*By Rick Stuart, CAE, CDEI*

Over the years, I have collected a large number of "interesting building" photos. If you have picture(s) of building that have piqued your interest, email them to me and I will add to the file and the newsletter. Send to [Rstuart17@cox.net](mailto:Rstuart17@cox.net)



ESPN Studios, Orlando, Fla.  
*Submitted by Ruel Williamson*



"House Attack," Museum Moderner Kunst (MUMOK), Vienna, Austria



Ski Dubai at the Mall of the Emirates, Dubai, UAE  
*Submitted by Ruel Williamson*



Infinity Tower, Dubai Marina  
*Submitted by Ruel Williamson*