

HOOSIER SURVEYOR



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Roger Woodfill (front), Lawrenceburg, and Sue and Jeff French (second row, from left), Versailles, were among those getting a look in December at a Bilby Steel Tower in Louisiana. Others pictured are Raymond Impastato (next to Jeff French), Louisiana; (third row, from left) Gerald Fussell, Ralph Gipson and Brian Yuhasz, all from Louisiana; and (back row) Milton Denny, Alabama, Shane Granier and Lance Fontenot of Louisiana, Craig Woodfill (Roger's son, who lives in Fisher, Indiana) and James Vidrine, Louisiana.

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HOOSIER SURVEYOR

VOLUME 38 NUMBER 1 SUMMER 2011

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EDITORS NOTE

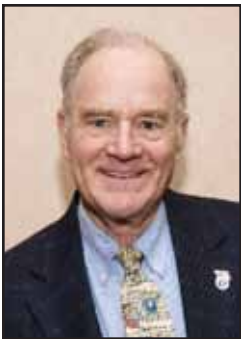
Deadlines for copy for various planned issues of the Hoosier Surveyor are as follows: Winter - December 31; Spring - March 31; Summer - June 30; Fall - September 30.

The Hoosier Surveyor is published quarterly by the Indiana Society of Professional Land Surveyors to inform land surveyors and related professions, government officials, educational institutions, libraries, contractors, suppliers and associated businesses and industries about land surveying affairs.

Articles and columns appearing in this publication do not necessarily reflect the viewpoints of ISPLS or the Hoosier Surveyor staff, but are published as a service to its members, the general public and for the betterment of the surveying profession. No responsibility is assumed for errors, misquotes or deletions as to its contents.

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Tidbits from the President

by Charles M. “Chuck” Coyle, Jr., P.L.S., Columbus, Indiana



Greetings ISPLS Members,

It appears that we have reached ‘Dog-days’ of summer...very hot and humid... and oh so typical of mid-summers in Indiana. I hope that this note finds you all well, and that your work load has increased to overflowing.

I am now about half way through my term as ISPLS President. Six months from now I will be turning over the reins of the Society to President-Elect, Gary Kent. Gary and I have had the opportunity to work together these past 6-months, and I have been extremely pleased at the common ground that Gary and I share, so I am confident that as we move into 2012 our Society will continue on a similar path that we have ventured on in 2011.

But for the present... here is a rundown of some of the things that have been going on over the past couple of months:

* ISPLS is currently in the midst of our membership renewal period. Memberships expire on June 30 of each year, and this applies to all classes of membership. It makes NO difference when during the membership year that you renewed your membership, it still expired on June 30th. I encourage each of you to renew your membership as soon as possible.

* Perhaps one of the greatest accomplishments of the year for our profession is the final passage and signing into law by Governor Mitch Daniels of the ISPLS-sponsored, SB 374, Right of Entry bill. I know that there are mixed reactions to finally having a definitive law, but at the very least there is a law that will back up most any need that a surveyor has to enter upon private property. I suspect that very few of you have had any difficulty obtaining permission to enter upon private property in the past, so chances are you will continue to operate similarly as you have. I would encourage each of you to review the law and make provisions for you and/or your company to comply with the proper procedures. You may view the law at the following link: <http://www.in.gov/legislative/ic/code/title25/ar21.5/ch9.html>

* The June 25th Board of Director’s meeting was held at the Technology Building on the campus of Vincennes University. I chose to hold the meeting there for two (2) reasons: 1) So that the BOD could have an on-site observation of the facilities and conditions as we conducted our annual V.U. Review; and 2) To view the university Multi-Media facilities. The BOD is considering ways to present Distance Learning and On-line Seminars by examining these already established facilities and exploring how we might utilize these same facilities for our own purposes. I’m sure there will be more to report on this topic in the near future.

* One of the other accomplishments of the June 25th BOD meeting was the passage and adoption of the 2011-2012 ISPLS Annual Budget. I am pleased to report that the Planning and Finance Committee presented a budget that cut expenses by nearly 2.2%. While that is not a huge amount, any time you can find the means to save on expenses is good. My thanks to the Committee and the entire Board for making this happen.

* In my last report I mentioned that one of the most important things that the BOD is working on currently is a “Re-Defining of the Practice of Land Surveying and Unlicensed Practice”. Obviously ISPLS cannot dictate what that definition should be. However, our Society can influence the actions of our Legislature in regards to needed changes in the definition and the licensing laws. The Past President’s Council is taking the lead on this.

* Along these same lines is a discussion of the four year degree requirement for licensure. An Ad-Hoc Committee to study this issue includes members from both academia and the private sector. Both ISPLS members and non-members and members of the Registration Board are on the committee. The committee has received many good comments, both pro and con on the subject.

* You will note in this issue of the Hoosier Surveyor, a letter that was recently received regarding the status of ACSM/NSPS and in association with AAGS and GLIS. This letter addresses some of the larger scheme of things our own BOD is considering in regard to the “Re-Defining of the Practice of Land Surveying”.

As I bring this update to a close, I wanted to share a personal note as well. I was disappointed not to be present at the June 25th BOD meeting in Vincennes. This was a meeting that I was very much looking forward to because of the on-site campus visit, and because of next year’s budget that I had helped to champion. As I shared with the Board and as I share with you all herein, there were only a few things that would have kept me from that meeting... one of these things occurred: My youngest child, my only daughter, my baby girl, was to be induced beginning on Friday evening in Tallahassee, Florida, June 24th. She was to deliver her very first child, a baby girl. So my wife and I traveled to Tallahassee on Friday, and were there as our daughter checked into the hospital on Friday evening. On Saturday morning, in the maternity waiting room I sat with my laptop, and cell phone and engaged with the Board meeting as it was conducted in Vincennes with Vice President, Don West presiding. At 2:49 P.M. that same afternoon my daughter gave birth to our eighth grandchild, fourth granddaughter. Addison Maureen Casey weighed in at 8 lb-6 oz., 19-3/4” long. And all is well.

Once again you can see it’s been a very busy past couple of months. Thank you for allowing me to serve as your President this year, and for your support of ISPLS ! If you have comments that you’d like to share, please do so... I’d enjoy hearing from you.

God bless us everyone !
Chuck

ISPLS BOARD OF DIRECTORS MEETING HIGHLIGHTS

by Dianne Bennett, Executive Director

April 16, 2011

The ISPLS Board of Directors met on Saturday, April 16, 2011 at ISPLS headquarters. President Coyle called the meeting to order at 9:03 a.m. The minutes and treasurer's report were reviewed and approved.

The Executive session minutes were reviewed and approved.

Staff Activity Report - A written report was submitted for board review. The report is stated under individual topics listed below.

Communications - Hoosier Surveyor - Articles for the spring issue need to be in by April 1st. The committee met on April 4th at headquarters.

Membership - A motion was made and passed to accept the recommendation of the committee of new members.

Manuals - A motion was made and passed to purchase 3 boxes of the 2009 BLM Manual from the PLSS Foundation.

ISPLS Foundation - An update was given on recent activities.

Professional Development - Convention - The 2012 planning report was given and the budget and program for the 2012 convention was reviewed.

The income/expense report was given for the 2011 convention.

LS/SIT Review - A written report was submitted for review. There was a total of ten registrants for the LS review.

Scholarship - A written report was reviewed. A motion was made to accept the committee recommendations for scholarship recipients for the John McEntyre and Peggy Archer scholarship.

Government Affairs - Board of Registration - LSA #09-612 was discussed by BOD.

The BOR is also starting a discussion relating to a "mandatory four year degree" requirement.

Legislation - An update of SB 374 Right-of-Entry was presented.

Internal Affairs - Past President's Council - A review of the "2011 Council Charges" was presented for BOD discussion.

Old Business - ISPLS Foundation - A motion was made and passed to accept the Foundation members and officers as presented.

Chapters - Chapter filing requirements was sent to all ISPLS chapters.

Website - There will be an Affiniscape Web and member management webinar.

Office Equipment - A report was given for pricing of new computer hardware/software.

Office Furniture - A report was given for new furniture pricing.

ISPLS Apparel - A report on the "Lands Ends Business Outfitter" was given.

Employee handbook & job description markup will be reviewed at the May BOD meeting.

A motion was made and passed to allocate \$25,000 from investments assets for the purchase of Affiniscape Web and Membership Management service, computers/software, conference room TV, conference room furniture, apparel logo setup fee and Fat Head Wall Logos.

Announcements: Next BOD meeting will be Saturday, May 21st, 2011 at the ISPLS headquarters.

May 21, 2011

The ISPLS Board of Directors met on Saturday, May 21, 2011 at ISPLS headquarters. President Coyle called the meeting to order at 9:15 a.m. The minutes and treasurer's report were reviewed and approved.

Reviewed the Wallington Asset Management quarterly report.

Staff Activity Report - A written report was submitted for board review. The report is stated under individual topics listed below.

ISPLS Foundation - A report on recent activity was discussed.

Communications - Hoosier Surveyor Spring issue is now on line.

Trig Star a written report was reviewed listing the state winner.

Professional Development - Education - Convention - A motion was made and passed to establish a checking account for \$500 and have the ISPLS President and chairperson of the ISPLS Convention committee as signatories. Gaming issues were discussed.

Wabash Valley Chapter Seminar - A motion was made and passed to approve the seminar as approved by the Education Committee.

Southwest Chapter Seminar - The chapter wishes to sponsor a seminar on November 4th. There has been no written request received, therefore the board will wait for a written request before taking action.

Scholarships - A motion was made and passed to accept the committee recommendations.

Government Affairs - BOR - Next meeting is July 8th.

SB 374 Right of Entry was passed and signed by the Governor.

Internal Affairs - Past Presidents Council - Gary Kent will work with the Council on the BOR "mandatory four year degree".

Finance and Planning - The preliminary budget items was reviewed.

Old Business - Office computers are in and waiting to be setup.

Employee handbook & job description is being worked on.

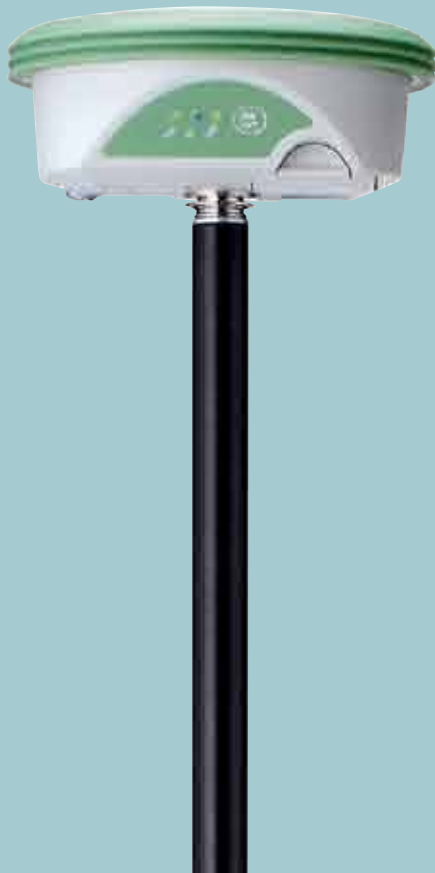
New Business - Terry Ford, Coliance Risk Advisors gave a presentation with questions and answers.

Tom Warner, Walker & Associates gave a presentation with questions and answers.

Board room furniture - It was suggested this furniture be offered to the membership.

Announcements - Next BOD meeting June 25th at Vincennes University.

Next BOD meeting is August 6th at headquarters.



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ACSM Realignment Update

Dear Fellow Professionals,

At the past ACSM Congress meeting on July 13, 2011, the representatives to the Congress approved the following motion:

It is moved that in the interests of leading toward a viable single organization, the ACSM Congress be disbanded and the dissolution of ACSM begin and in conjunction with the process, ACSM turn over all operation, control, assets and liabilities to NSPS.

And furthermore,

That the NSPS immediately proceed with a realignment into a unified organization made up of individual members with equitable representation that encompasses the broader definition of surveying to include professional surveyors, geodesists and other geospatial professionals; that the realigned organization adopt the following mission statement: "The mission of the organization shall be to represent and advance the sciences and disciplines of surveying, geodesy, cartography, and related fields through education and communication, in furtherance of public good."; that the realigned organization adopt a structure similar to that of NSPS; that the realigned organization take immediate action(s) to reduce administrative costs; that the realigned organization immediately develop a plan to attract new members in all of the disciplines of surveying, geodesy, cartography and related fields, and develop a marketing strategy.

In response to this motion, the Presidents of the three Member Organizations are prepared to work diligently to create this new "unified organization". Already the process has begun to appoint members from all MO's to a new Strategic Planning Committee to conduct a Financial Operational Analysis of the organization, including review and recommendation of Membership Categories and Rates. Shortly, we will charge committees to review and recommend member benefits, and develop a marketing plan for our "new" organization.

There are going to be unknown challenges in creating this new organization, but with each other's trust and determination we can succeed and create an organization that will reach out to all members of what is called the "geospatial" community: Licensed and non-licensed, boundary surveyors and construction surveyors, geodetic surveyors and mapping surveyors, GIS specialists and photogrammetrists, machine control and LiDAR specialists, cartographers and drafters, and any other related disciplines.

We ask your support and continued involvement in making this an organization that will grow and represent all of us in the future.

Sincerely,

William R. Coleman
President – NSPS

Curtis L. Smith
President – AAGS

Coleen M. Johnson
President - GLIS

SURVEYOR'S AFFIDAVIT FOR CONCORD GREEN SUBDIVISION

The undersigned, C. Thomas Harris, L.S., being duly sworn upon this oath, states as follows:

1. I am a Registered Land Surveyor in the State of Indiana under registration number 12298, and my practice is conducted from an office at 2559 Hamstrom Road, Portage, Indiana.
2. That the plat of Concord Green was recorded April 23, 2001 in the Recorder's Office of Porter County, Indiana, in Plat File 40-B-2, as Document No. 2001-010196.
3. That an absolutely horrible error, unforgivable in its very nature, and likely to destroy the harmony of the free world as we know it, has been discovered by those wonderfully understanding administrators (policemen) of the Portage Planning Department, to wit: Lot 1 in said subdivision bears the street address of "5358 Lexington Avenue". This lot is within a zoning area which allows for the construction of duplexes. Therefore, the plat must be amended to read "5358-5360 Lexington Avenue". Great shame has befallen me that I failed to recognize this breach, and may my house be cursed forever for suggesting that they simply write the new number on their copy of the plat.
4. Awful as it may seem, the same disaster befell Lot 2 in said subdivision. It now reads "5366 Lexington Avenue", but it must read "5366-5368 Lexington Avenue".
5. I submit this document with great trepidation, and the supplication of the unrighteous.

C. Thomas Harris, L.S.
Indiana Reg. No. 12298
September 20, 2001

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Acquiescence

by

Knud E. Hermansen¹ and Robert A. Liimakka²

Acquiescence, similar to the doctrines of estoppel and practical location, is an equitable doctrine that will fix the location of a common boundary in a location that may differ from the location where a surveyor would place the common boundary based on the rules of construction.

The doctrine of acquiescence is known in some jurisdiction as a consentable boundary. Some states have equated it to a boundary by implied agreement. The motivation for a court recognizing a boundary different from the record is to let boundaries that appear to have been settled to be settled. A person that sleeps on their rights should not be allowed to demand with passion what they have for so long ignored with indifference.

The doctrine of acquiescence generally requires three conditions exist. First, the record boundary must be vague or unknown. The purpose for this element is to prevent persons from usurping the legal requirement that parties alter the location of their record boundaries by written instrument. By requiring the boundaries be vague or unknown, the legal fiction is created that the parties-in-interest have not altered the location of their deed boundaries. Rather, the parties-in-interest have fixed a definite location for the boundaries described in their respective deeds. This fiction survives even though a surveyor would place the boundary with some confidence in a different location than where the boundary location has been historically recognized.

A second condition requires one party act by fixing the boundary in a location by definite monumentation or occupation that appears

and is accepted as marking the boundary. The boundary so fixed by the one party cannot be based on fraud or deceit. In other words, the party in placing the monuments or barriers must have reasonably believed the objects are placed on the common boundary.

The third condition requires that the non-acting party recognize the barriers or monuments as marking the boundary. Recognition is sufficient if the individual does not contest the location.

The fourth and final condition is that the three conditions exist for some length of time that a reasonable person would have been expected to object or act had they disagreed. A long length of time is not crucial if the location of the record boundary is otherwise vague or difficult to locate and the location of the monuments or barrier is reasonable to the location of the record boundary.

The following situation may give rise to a boundary by acquiescence:

Bill and Jane live next to each other in an old subdivision. Bill does his best to locate the common boundary he shares with Jane in order to build a rock wall. He makes measurements and sets stakes, eventually building the rock wall along a line between the stakes. Jane watches Bill make the measurements to locate the boundary and observes Bill constructing the wall. For many years thereafter, Jane and Bill respect the wall as marking the common boundary. Twelve years later, Jane needs a survey of her property in order to build a garage. In performing the survey for Jane, the surveyor gathers considerable site and record information. Most of

...continued Page 19

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Bilby Tower in Louisiana has Indiana roots

By Mike Davis, Indianapolis, IN

A link to Hoosier and surveying history maintains a solitary presence on swampy island in Louisiana and someday may be a center of attraction in Osgood, Indiana, the hometown of its designer, Jasper Sherman Bilby.

The structure, a 64-foot Bilby Steel Tower for Triangulation, was located in a wildlife preserve by members of the Surveyors Historical Society, who visited the site in December 2010 and are working on a plan to dismantle the tower and relocate it in Ripley County in southeast Indiana.

Bilby, who was born in 1864 on a farm near Rushville, began working in 1884 for the U.S. Coast and Geodetic Survey as a laborer and carpenter, building wooden triangulation control towers that were used to accurately extend the national survey network.

The towers were used to elevate an observer and provide a clear line-of-sight from a stable instrument to a signal lamp or object at a distant point. A new tower had to be built over each survey marker, however, and the cost of wood and the labor used in erecting the tower were significant.

In 1900, Bilby was promoted to signalman in charge of building signals and doing reconnaissance, and in the winter of 1926 he designed and supervised the construction of a money-saving improvement. It was “a galvanized steel tower that could repeatedly be erected, taken down, and moved by truck to a new station,” as he explained in a 1929 Coast and Geodetic Survey publication describing its use.

Each tower consisted of an independent inner and outer structure. The outer structure supported an observer and a tent protecting him and his instrument from the sun and wind. The inner frame provided stable support for the instrument.

“Three essential requirements have to be satisfied to make the steel tower a success,” he wrote in the 1929 publication. “First, the tower must have great rigidity and stability against vibration and twist in azimuth; second, the tower must be so constructed that it can be readily erected and taken down; third, the total weight of a completed tower should preferably be light enough that a single moderate sized truck can transport it from station to station.”

Standard heights for the towers, which were estimated to have saved the government more than \$3 million just from 1927 to 1932 alone, were 24, 37, 50, 64, 77, 90 and 116 feet. The Coast and Geodetic Survey used them until 1984.

A winch drum mounted on a rear wheel of the transport truck was used to raise framework as the tower was erected. An electric winch lifted survey equipment.

Bilby retired in 1937, closing a 53-year career, and died in 1949.

Lawrenceburg resident Roger Woodfill, PLS, administrator of the Surveyors Historical Society, said the Louisiana tower was erected and last used in 1972 and the National Geodetic Survey had given the society its rights to the structure.

Ripley County Surveyor Jeff French, PLS, who also was part of the group visiting the site in December, said the island — whose surface is 2 feet above sea level — has subsided over the years and is under water in the summertime.

Meeting federal safety standards in dismantling the tower is one of the challenges the society faces, French said. Also, special shallow-draft barges will be needed to move the frame from the island to the mainland.

The Reynolds Foundation, a not-for-profit organization in Osgood, has offered financial support for the project.

To learn more about the Bilby towers and triangulation, check the following publications:

National Oceanic and Atmospheric Administration, “Bilby Towers,” <http://celebrating200years.noaa.gov/magazine/bilby/welcome.html>.

Bilby Steel Tower for Triangulation, by Jasper S. Bilby. U.S. Department of Commerce, Coast and Geodetic Survey, Special Publication 158 (Washington, DC: Government Printing Office, 1929), http://docs.lib.noaa.gov/rescue/cgs_specpubs/QB275U-35no1581929.pdf.

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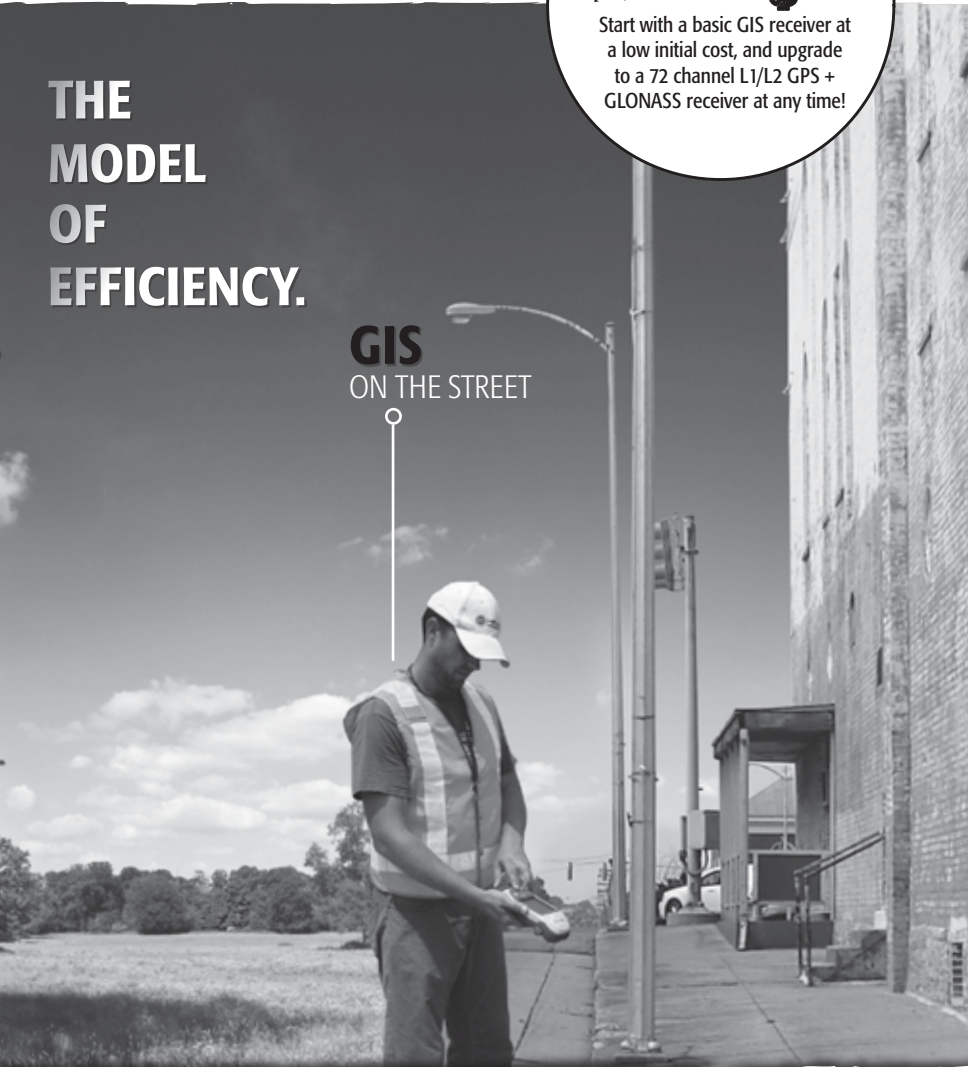
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Height Modernization Project Focuses on Hamilton County

By Joseph K. Mullins, P.L.S.
Survey Manager, Hamilton County Surveyor's Office

Height Modernization is an initiative to create an accurate height (elevation) reference system for Indiana to support surveyors, engineers, emergency managers, scientists, farmers, and natural resource managers.

The initiative uses satellite technology in conjunction with traditional leveling, gravity, and modern remote sensing information to improve the accuracy of static and real-time global positioning system (GPS) elevations. Both the public and private user communities will save money by replacing labor-intensive and high-cost survey leveling with high-accuracy real-time GPS to support economic development, infrastructure projects, transportation and navigation, flood/natural disaster mapping, surface/ground water mapping, and precision farming applications.

We have been working on a Height Mod project for Hamilton County for about two years with the plan to use Hamilton County as a pilot project that would show other counties and cities how to do a regional Height Mod project following the procedures laid out by National Geodetic Survey (NGS) in National Oceanic and Atmospheric Administration technical memorandum NOS NGS-58 and 59.

There were two reasons Hamilton County made a good area to do a pilot project. First was monument recovery. For the past 30 years the Hamilton County Surveyor's Office has maintained a database of geodetic control monuments in Hamilton County. More than 200 monuments are now on record. These would include monuments from NGS, U.S. Coast and Geodetic Survey, Indiana Department of Transportation, Indiana Department of Natural Resources – Division of Water, Hamilton-Southeastern Utilities, Indianapolis Mapping and Geographic Infrastructure System (IMA-GIS) and Indiana American Water, along with Hamilton County Geodetic Control monuments.

We had not visited these monuments since 2004, so in the summer of 2010 we started a recovery project where each monument was located, pictures were taken, a new data sheet was made, and the coordinates were derived by GPS and conventional survey methods. This project was finished in the spring of 2011, validating height on existing control monuments and providing the accurate reference frame to which the Height Mod survey would be tied.

The other reason Hamilton County made a good area to do a pilot project was the INDOT Continuously Operating Reference Stations Network and its inclusion in the National CORS Network. Before the INDOT CORS Network was established, Hamilton County did not have a good control network and we would have to create a new Primary Base Network following the NGS guidelines. This would mean five-hour sessions for three days.

With the INDOT CORS Network becoming part of the National CORS Network, Hamilton County now has seven National CORS Network Stations surrounding it. They range from 7.0 kilometers to 30.6 km (average 16.4 km) from the county. This eliminated the need for a new Primary Network and now all we had to do were two 45-minute sessions over two days.

The Hamilton County Height Mod plan consists of eight receivers with six setups per day over two days on 35 monuments. We also have a Temporary CORS Station in the center of the county that will aid in determining the ellipsoid heights for the project. This base is permanently fixed on the Hamilton County Government and Judicial Center and is part of Seiler Instruments Virtual Reference Stations network. This project proposal was submitted to NGS at the end of April and was approved May 11.

Once the field work is finished and the post processing is completed, the data will be processed and adjusted, and submitted to NGS for approval and inclusion in the NGS database.

All monuments which do not have published horizontal positions or leveled orthometric heights will now have a published First Order horizontal and a two-centimeter vertical value.

Our plan is to present the Hamilton County Height Mod project as a pilot project to the County Surveyor's Association of Indiana and at next January's ISPLS Conference.

Our goal is that other county, city and regional organizations will use this pilot and proceed with Height Mod projects of their own.

...continued Page 13



Benchmark J 209 is on the west side of Ind. 19, just south of 216th Street. (Photo by Bob Wilkinson).



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Height Mod Pictures
...continued from Page 11



Collecting data on July 22 at a benchmark on a bridge over Sand Creek on Prairie Baptist Road are (from left) Zach Haselhorst and Steve Fesmire of the Hamilton County Surveyor's Office and Craig Williams of Seiler Instrument Co. (Photo by Austin Haselhorst)

(Pictured right) Summer employee Zach Haselhorst (left) and survey technician Steve Fesmire of the Hamilton County Surveyor's Office record data July 22 at a benchmark the corner of 126th Street and Ind. 37 in Noblesville. (Photo by Austin Haselhorst)



Ryan Swingley of USI Consultants prepares to collect data on July 22 at benchmark G 12 at a bridge over Cool Creek, east of Westfield on Ind. 32. (Photo by Mike Davis)



Volunteers helping with the height modernization project include (from left) Ryan Lee, Steve Fesmire, Jason Coyle, Matt Quillen, Joe Mullins, Ryan Swingley, Bob Wilkinson, Perry Cloyd, Justin Cloyd and Henry Aldridge. Not pictured are Eric Banschbach, Abby Campbell, Austin Haselhorst, Zach Haselhorst, Don Mohid, Sean O'Grady, Kerry Quillen, Mark Shambaugh and Craig Williams. (Photo by Don West)



Ryan Lee of Stoepelwerth and Associates waits in a shady spot while data is collected July 22 at a benchmark in Eagle Cemetery off Little Eagle Creek Avenue. (Photo by Jason Coyle)



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Update: LightSquared Interference with GPS

July 2011

Federal Communications Commission (FCC) actions earlier this year set in motion a series of events and developments, including:

- * Growing, widespread and outspoken opposition to the plans of LightSquared to deploy 40,000 high-powered transmitters in spectrum adjacent to L-band-powered Global Positioning System (GPS) signals in satellite frequency bands reserved for decades for use by GPS, a valued national utility.

- * Serious concerns about the disastrous effects LightSquared's plans could have on GPS have been continually raised by key U.S. government officials along with members of the GPS community. Now a very large number of organizations, companies and individuals have come together under the umbrella of Coalition to Save Our GPS, with more than 100,000 companies and millions of employees represented either independently or through their trade organizations.

- * A five month technical study that found conclusively that LightSquared's plan would cause widespread harmful interference to hundreds of millions of GPS receivers.

- * A vitally important FCC public comment period, which ends July 30, 2011, that provides the public with the opportunity to weigh in on the value of GPS in their everyday lives and the harm that LightSquared's plans would cause to their use of GPS.

Both the content and volume of the comments should play an important role in how the FCC decides to rule, and the Coalition has accordingly redoubled efforts to both add new members and help educate the public about the opportunity to voice their opinions to the FCC.

Background

The January 2011 conditional waiver by the FCC's International Bureau (FCCIB) would allow the dramatic expansion of terrestrial use of the mobile satellite spectrum (MSS) immediately adjacent to the frequency band used by GPS receivers - utilizing extremely high-powered ground-based transmissions that subsequent tests have conclusively proven cause severe interference to hundreds of millions of GPS receivers.

The conditional waiver was granted to LightSquared, a company controlled by a New York-based hedge fund. If LightSquared is allowed to proceed with its plans, low-power satellite-based GPS signals would receive massive interference from land-based high-power transmissions from LightSquared's planned network of 40,000 stations.

The consequence of disruption to GPS signals are far reaching: LightSquared's facilities could create tens of thousands of "dead spots" - each miles in diameter - throughout the U.S. The Coalition and others have made it clear that the LightSquared system must not be deployed until all concerns about interference have been addressed, conclusively guaranteeing that GPS is fully protected from all interference.

LightSquared plans to transmit radio signals that would be one billion or more times more powerful than the signals that GPS receives - causing severe interference impacting hundreds

of millions of GPS users. This includes receivers used by U.S. federal agencies, state and local governments, first responders, airlines, civil engineering, construction and surveying, agriculture, other industries, and everyday consumers in their cars and on hand-held devices.

- * Solar panels are the lone source of power for GPS Satellites, and the satellites send signals using about the same power that it takes to power a refrigerator light bulb. That signal then travels 12,000 miles and is extremely faint by the time it is received on earth by a GPS receiver.

- * LightSquared's planned ground transmissions are more than one billion times more powerful (in the live interference test, power differentials up to 800 billion times were observed), "drowning out" the faint GPS signals in the immediately adjacent frequency band.

- * LightSquared's planned use of these high-powered terrestrial networks in the frequency immediately adjacent to the GPS frequency is unproven, unprecedented and fundamentally incompatible with existing GPS uses.

The FCC International Bureau's process leading up to the waiver and subsequent testing was troublesome. The usual FCC process is to conduct extensive testing followed by approvals. For LightSquared, the process was to approve first, then test. The unusual fast-track procedure also did not allow Commissioners the opportunity to vote on the matter; instead, it was handled at the International Bureau level. The January 2011 waiver to LightSquared through these unorthodox procedures allows it to use its satellite spectrum for high-powered ground-based broadband transmissions if the company can demonstrate that harmful interference could be avoided.

- * Issues of interference should have been addressed before the waiver was granted.

- * The waiver was granted in just two months. Even with such a short window, the U.S. GPS Industry Council, the National Telecommunications and Information Administration (NTIA) - along with some federal departments, state and local governments, public safety authorities, and GPS commercial users - all voiced strong objection to LightSquared's plans.

- * The problem arose because LightSquared bought the spectrum right next door to GPS cheaply, hoping to change the rules and make the spectrum more valuable. The FCC's process has been driven by a private, speculative New York hedge fund, rather than sound spectrum planning.

GPS Technology and Its Economic Impact

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...continued Page 17



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Significant interference with GPS would endanger the use of GPS in many critically important sectors, including Homeland Security; public safety; consumer applications such as cell phones and navigation devices; aviation; commercial surface transportation; agriculture; forestry; engineering and construction; surveying, mapping and land management; utilities; natural resources; disaster management; and scientific research.

* The federal government has invested \$35 billion in the GPS satellite constellation alone and many more billions in critical systems that use GPS. Business and consumers have also spent billions on GPS-based technologies and devices.

* The U.S. is the world's leader in satellite navigation technology, and our GPS infrastructure is the envy of the world. Russia, China, and the European Union are all building competitive systems that could supersede a hobbled U.S. system.

* The U.S. government agencies and businesses that use or make GPS-based systems and devices employ millions of people.

A recent economic study shows that more than 3.3 million U.S. jobs in agriculture and related industries rely heavily on GPS technology and the disruption posed by Light-Squared's plans threatens direct economic costs of up to \$96 billion to U.S. commercial GPS users and manufacturers.

* The study by Dr. Nam D. Pham of the Washington, D.C.-based NDP Consulting Group warns of "serious economic repercussions for the U.S. economy" if LightSquared's plans proceed and points out that the \$96 billion economic figure represents the equivalent of 0.7 percent of the U.S. economy.

* The \$96 billion figure is the total of up to \$87.2 billion in costs to commercial GPS users and up to \$8.8 billion in costs to commercial GPS manufacturers.

* The study states that the commercial adoption of GPS continues to grow at a high rate. It is expected to create \$122.4 billion in annual benefits and grow to directly affect more than 5.8 million jobs in the downstream commercial GPS-intensive industries.

The study makes clear that its analysis is confined to the economic benefits of GPS technology to commercial GPS users and GPS manufacturers, mainly high precision GPS users, and the economic costs of GPS signal degradation to only those sectors. The report therefore does not capture the considerable additional benefits and costs to consumer users of GPS, other non-commercial users, and military users.

Referring to LightSquared's plans, the economic report states, "The commercial stakes are high. The downstream industries that rely on professional and high precision GPS technology for their own business operations would face serious disruption to their operations should interference occur, and U.S. leadership and innovation would suffer."

The GPS industry worked in a committed fashion with LightSquared, FCC, NTIA and other interested parties in the FCC's TWG process, culminating in the June 30, 2011 release of the TWG final report.

1. The FCC should stop wasting time and effort attempting to allow incompatible use of the MSS band L-Band.
2. Given the critical nature of GPS interference, this matter should be dealt with at the commissioner level and not at the staff level as is currently the case.
3. The tests have shown conclusively that LightSquared's planned deployment is totally incompatible with GPS, LightSquared has an other spectrum available to it, and that it is time it switched to that other spectrum.
4. If LightSquared wishes to pursue other plans that were not fully tested as part of the TWG process, testing should be conducted by neutral, third parties with full industry participation at LightSquared's expense using the parameters at which LightSquared will actually operate. However, only if those tests conclusively demonstrate that there is no interference to GPS reception can LightSquared be permitted to proceed.

Tri-State Surveyor's Advisory Board Gives back to Local Students

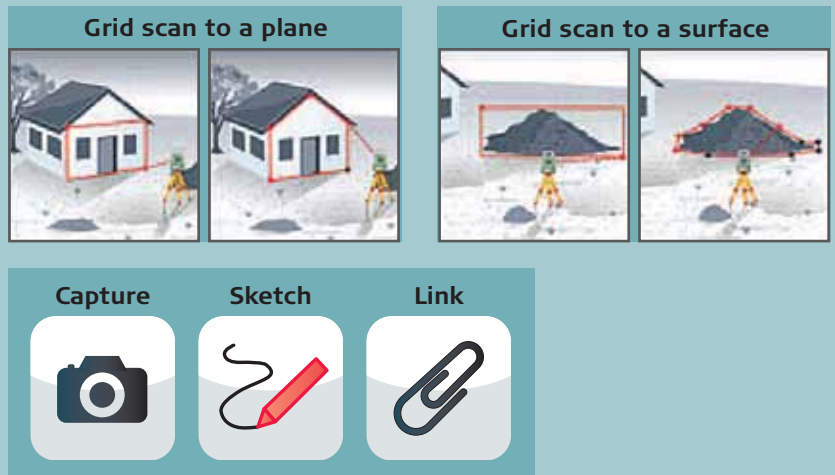
July 13, 2011 Cincinnati, OH – The Cincinnati Scholarship Foundation (CSF) has announced the addition of a new fund. The Tri-State Surveyor's Advisory Board (TSAB) is offering this scholarship to potential and current students enrolled at Cincinnati State Technical and Community College or Northern Kentucky University majoring in surveying. The award amount will vary from year-to-year.

Four organizations have joined together to create the fund: the Cincinnati and Southwest Chapters of Professional Land Surveyors of Ohio (PLSO), the Northern Kentucky Chapter of Kentucky Association of Professional Surveyors (KAPS), and the Greenville Treaty Chapter of Indiana Society of Professional Land Surveyors (ISPLS). These groups make up the Tri-State Surveyor's Advisory Board. The goal of the scholarship award is to encourage more students to study surveying and to support those that are already in school majoring in surveying. The scholarship is awarded on a periodic basis and will be used to alleviate tuition expenses.

Scholarship requirements include being a potential or current full or part time student at Cincinnati State Technical and Community College in a surveying major or in the bachelor degree program focused on surveying at Northern Kentucky University. The applicant must have good grades and complete a CSF college application found on their website, www.CincinnatiScholarshipFoundation.org. A faculty member who works within the surveying department at either of the above colleges must send a letter of recommendation.

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the original monuments have disappeared. The surveyor prorates the distances between found monuments that are located several hundred feet away with the following results shown in a diagram.

In the above situation, the court would be reluctant to adopt the boundary established by prorated distances over the location of the stone wall that has been accepted as the boundary for some length of time. The wall is located within reason to the record boundary. It has been accepted as the boundary for over 12 years. The upheaval and disruption in the neighborhood that would result with adopting lines that differ from the long standing occupation flies in the face of equity.

It is reasonable for a surveyor to adopt an occupation line as the boundary where the record boundary location is vague, difficult to fix, or a reasonable location of the record boundary is on or near the occupation line. Justice Cooley remarked on this very situation in the late 19th century using these words.

“Occupation, especially if long continued, often affords very satisfactory evidence of the original boundary when no other is attainable; and the surveyor should inquire when it originated, how, and why the lines were then located as they were, and whether a claim of title has always accompanied the possession, and give all the facts due force as evidence. Unfortunately, it is known that surveyors sometimes, in supposed obedience to the state statute, disregard all evidences of occupation and claim of title, and plunge whole neighborhoods into quarrels and litigation by assuming to establish corners at points with which the previous occupation cannot harmonize. It is often the case when one or more corners are found to be extinct, all parties concerned have acquiesced in lines which were traced by the guidance of some other corner or landmark, which may or may not have been trustworthy; but to bring these lines into discredit when the people concerned do not question them not only breeds trouble in the neighborhood, but it must often subject the surveyor himself to annoyance and perhaps discredit, since in a legal controversy the law as well as common sense must declare that a supposed boundary long acquiesced in is better evidence of where the real line should be than any survey made after the original monuments have disappeared.” Thomas M. Cooley, Chief Justice, Supreme Court of Michigan, 1864-1885 in *The Judicial Functions Of Surveyors*

Where the surveyor is convinced the location established for the record boundary is different from the markers or barriers acquiesced to by neighbors, the surveyor should report both locations to the client. In reporting both locations, the surveyor would be wise to inform the client that the acquiesced boundary may in fact be determined to be the ownership boundary based on the doctrine of acquiescence.

The surveyor may want to consider wording such as the following in a letter or report to the client when accepting monuments or barriers by the doctrine of acquiescence:

“I have established your common boundary to coincide with a stone wall that exists between you and your neighbor. While the stone wall does not coincide with the measurements that were proportioned between existing monuments found beyond your common boundary, it is my opinion that the small difference between the

measurements prorated and the measurements made to the wall is insufficient to overcome the equity that courts often find compelling when recognizing occupation lines that were allowed to exist for some time. The courts are often persuaded to leave things settled when it was believed by the parties to have been settled some time ago. You are, of course, at liberty to reject my opinion and advocate that your boundary be the prorated line. Your neighbor may do so as well. In each case, I will be willing to explain both the proration method I used and my belief that the stone wall is ultimately the monument to the common boundary.”

Where the surveyor has come to the conclusion that the location of the record boundary is different from monuments or boundaries that were believed to be the boundary, the following example may be used to illustrate the surveyor’s opinion as communicated to the client:

“I have determined the common boundary to be a line fixed between two monuments. The line was established by dividing the excess distance measured between the two nearby monuments in proportion to the distances shown on the original subdivision plan between the two monuments. It is not unusual to discover that the actual distance measuring in the field is different from the distance shown on the plan, especially given the age of the original survey. The current surveying technology and education of the surveyor far exceed those of the earlier surveyors. “

“My opinion places the common boundary in a location different from the wall that exists near this boundary. Although the method I have used to reestablish the common boundary was established by the court as a rule of construction, I feel compelled to warn you that the same court will often adopt occupation lines such as the wall to be the ownership boundary contrary to the record measurements. While I am confident in the methods I have employed in fixing your boundary I would be foolish to predetermine where a court would place the boundary if asked to choose between the boundary I have established and the existing stone wall. I believe you would be wise to consult with legal counsel before taking any action in regard to moving the wall or asking the neighbor to do so.”

Acquiescence is similar to the equitable doctrine of practical location. The major difference is that practical location requires the parties-in-interest all participate, while acquiescence requires only one party act while the other parties-in-interest acquiesce to the acts of the one party.

¹ *Knud is a professor in the Surveying Engineering Technology program at the University of Maine. He is also a consultant on boundary disputes, alternate dispute resolution, land development, real property law, and access law.*

² *Rob is a professor in the Surveying Engineering Program at Michigan Technological University. He is a professional surveyor and holds a MS in Spatial Information Science and Engineering from the University of Maine, Orono and is currently working on a doctorate in civil engineering.*

CALENDAR

September 17, 2011

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November 5, 2011

ISPLS BOD meeting, headquarters, Indianapolis

December 10, 2011

ISPLS BOD meeting, headquarters, Indianapolis

January 18-20, 2012

ISPLS Annual Convention,
Indianapolis Marriott East Hotel, Indianapolis.

Advisory Board

...continued from Page 17

Also included in the application must be an essay answering *how and why they are interested in surveying and what their goals and mission would be in the profession.*

Ned Hertenberg, Cincinnati Scholarship Foundation president said, "The TSAB was looking for a way to encourage and support the study of surveying as well as develop a mentoring relationship with the student selected for the award. We were pleased to help them reach their objective by managing a multi-step selection process."

All scholarship applications and other materials must be submitted by November 1, 2011 to CSF. The CSF will compile all of the applications and make their recommendation on the first TSAB Scholarship recipient. The final decision will be made by the TSAB Advisory Board Scholarship Committee, which consists of a member from each of the Cincinnati, Southwest, Northern Kentucky and Greenville Treaty Chapters. Community members can support the fund by registering for the Second Annual TSAB Golf Outing to be held at Glenview Golf Course on August 6, 2011. To attend the golf outing or to become a sponsor, please contact Steve Cahill atscahill@abercrombie-associates.com

The Cincinnati Scholarship Foundation has helped match thousands of students with scholarships to support them financially in becoming professionals. The CSF can help anyone start a scholarship and find potential recipients. For more information about this scholarship or starting a scholarship fund, log on to www.CincinnatiScholarshipFoundation.org.

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