

The Tarheel SURVEYOR

SPRING 2015 | No. 15.1

DOCTRINE OF MERGER
(or) When an Easement of Record
Doesn't Exist

GROWING AT A MEASURED PACE
A Look at our 51st Annual Conference
& Trade Show

BONUS!
Tons of
Conference
2015 Pictures
Included!

**NCSS EDUCATION
FOUNDATION**

New Year,
New Leadership

**RIGHT OF WAY
ACQUISITION
POLICIES**

for New Department
of Transportation
System Roads

**FLYING HIGH
WITH UAS**

FEATURE:

UAS: The Next Quantum Leap in
Surveying Technology (pg. 16)

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The Tarheel SURVEYOR

spring
2015

IN THIS ISSUE...

- 2 >Who We Are
 - >Chapter Meetings
- 3 >NCSS Local Chapters
- 4 >Director's Notes
- 7 >Letter from the President
 - >Schedule at a Glance
- 9 >New Year, New Leadership
- 10 >Welcoming New Students
 - >NSPS Memorandum of Understanding
- 12 >The Fire
- 14 >View From the Capital
- 16 >FEATURE ARTICLE:
**UAS: The Next Quantum Leap in
Surveying Technology**
- 20 >Growing at a Measured Pace
- 24 >Right of Way Acquisition Policies for
New Department of Transportation
System Roads
- 26 >Doctrine of Merger (or) When an
Easement of Record Doesn't Exist
- 29 >Problem Corner
 - >Tarheel Surprises
- 30 >Member Profile: Timothy Bowes
- 31 >CAD Corner

ABOUT NCSS:

- >Founded January 31, 1939
- >Second oldest professional
surveying organization in the
United States
- >Only professional surveying
organization in NC
- >Affiliated with the National
Society of Professional
Surveyors and, therefore, all
Professional Members are also
accounted as members of
NSPS as of July 1, 2013

OUR MISSION:

"A society of professional
surveyors and their associates
dedicated to enhancing
professionalism, improving
legislative awareness and
promoting the profession of
surveying."

*On the Cover: Chip Berniard of Trimble launches the UX5
at a UAS Demonstration at Lake Wheeler in January.*

WHO WE ARE

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Norman G. Ribelin
ribelin@bellsouth.net

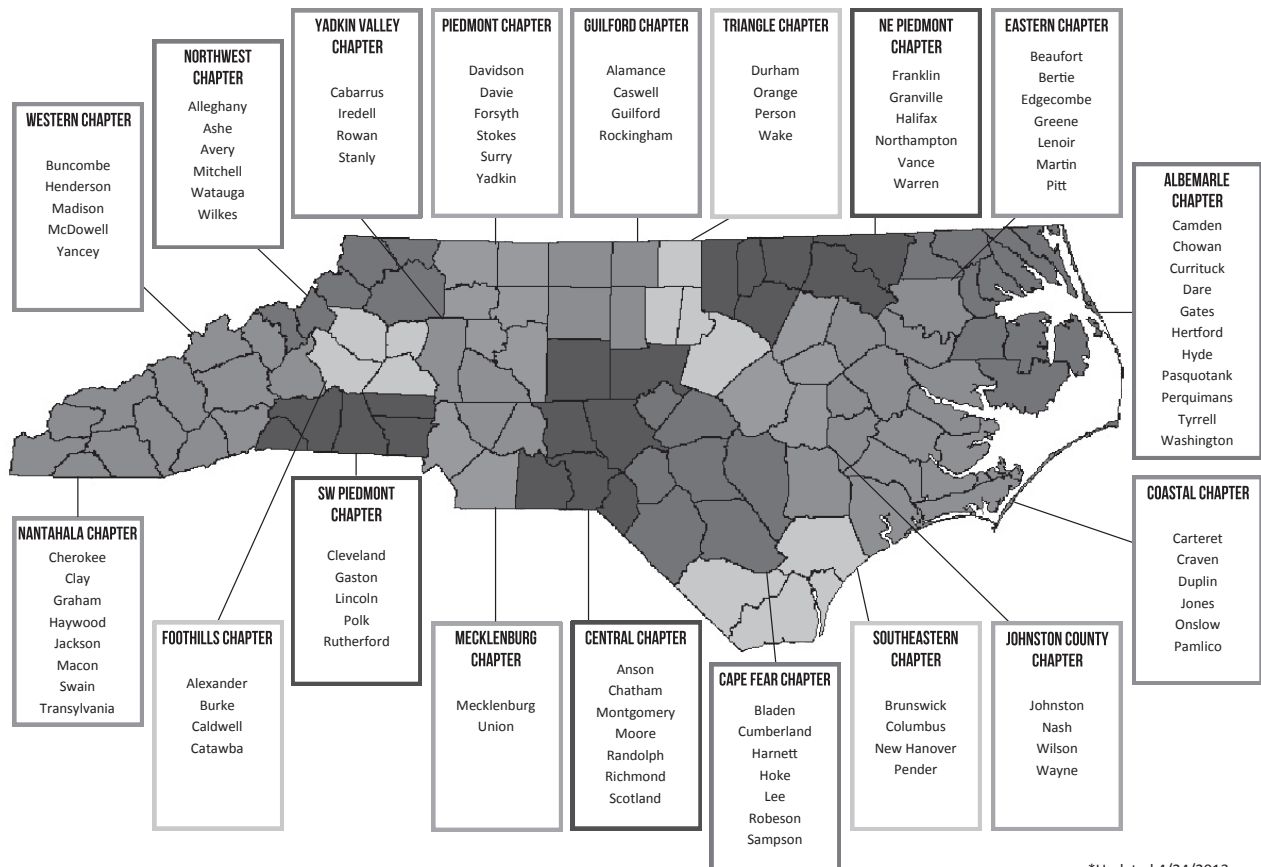
MARKETING & MEMBERSHIP DEVELOPMENT

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CHAPTER MEETINGS

CHAPTER	DATE & TIME	LOCATION
Albemarle	3rd Tuesday 6:30 pm	Cypress Creek Grill, Elizabeth City
Cape Fear	Last Thursday 6:30 pm	Various Locations, Fayetteville
Central	Last Monday 7:00 pm	Various Locations, Asheboro/Southern Pines
Coastal	Last Monday 6:30 pm	Texas Steakhouse, Morehead City
Eastern	2nd Monday 6:30 pm	Parker's BBQ, Greenville
Foothills	2nd Tuesday, 7:00 pm	Timberwoods, Morganton
Guilford	2nd Tuesday 6:00 pm	The Porterhouse Grill, Greensboro
Johnston County	2nd Tuesday 6:00 pm	Holt Lake BBQ, Smithfield
Mecklenburg	1st Monday 6:00 pm *no meeting Jul-Aug	Dilworth Grille, Charlotte
Nantahala	3rd Tuesday 6:30 pm *no meeting Jun-Aug	Bogarts, Sylva
NE Piedmont	Last Tuesday 7:00 pm	Various Locations, Louisburg
Northwest	3rd Tuesday 6:00 pm	Sagebrush Steakhouse, Boone
Piedmont	4th Tuesday 6:00 pm	Oscar's Grill & Tavern, Winston-Salem
Southeastern	Last Wednesday 7:00 pm	Carolina BBQ, Wilmington
SW Piedmont	2nd Thursday 6:30 pm	Ryan's Steakhosue, Forest City
Triangle	3rd Tuesday 6:30 pm	Casa Carbone, Raleigh
Western	2nd Tuesday 6:30 pm	Cornerstone Restaurant, Asheville
Yadkin Valley	2nd Wednesday 6:30 pm	Ryan's Steakhouse, Salisbury

NCSS Local Chapter Areas



*Updated 4/24/2013

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DIRECTOR'S NOTES



Most people love having a community. Wolves have packs, colleges have alumni, Christians have denominations and politicians have parties. It seems as though every individual can find some group with like-minded purpose. Some communities are coveted, like the Mensa Society where one's ACT score must be 29 or higher to belong. And then there is the less coveted Al-Anon where a current generation tries to cope with having parents and grandparents who are addicts. As the economy continues to slowly rebound and our society gains momentum, I am beginning to witness firsthand the statewide community that the North Carolina Society of Surveyors (NCSS) knits together. The green thread of NCSS connects all those who know or care about the surveying profession.

The community of NCSS will continue to grow stronger as our purpose becomes clearer. Our mission statement says that we are "A society of professional surveyors and their associates dedicated to enhancing professionalism, improving legislative awareness and promoting the profession of surveying."



Christy & Gary Thompson at our Vendor Appreciation Dinner

We have enhanced professionalism by offering certifications such as Certified Floodplain Surveyor which helps surveyors "navigate the waters" of FEMA. This April, we will offer a computer-based course for OPUS Project Managers, which will allow you to be registered nationally to use the OPUS network. The biennial Otis A. Jones Institute is an educational avenue where surveyors can take coursework along three tracks, graduating after 81 hours of professional development. And our February Conference is another opportunity for surveyors to gain wisdom and insight.

The second leg of our mission statement deals with improving legislative awareness. Our current Standards of Practice committee is working to rewrite the Control Corner section of NCGS 47-30 and NCGS 39-32 to remove antiquated language that hinders surveyors. We have actively lobbied for NC Geodetic Survey to remain under the umbrella of the Department of Public Safety so

the specific information that they provide will continue to be readily available to surveyors. We are also continuing to watch and participate in the development of legislation for UAS/Drones as this will have a significant impact on the surveying industry in the future. Finally, our PAC Committee has become active again over the course of 2014, which allows us to support legislators who understand and have a vision for the important work of NC Surveyors.

The final leg of our mission statement has charged the Society members with promoting the profession of surveying. Our continued relationship with realtors educates the public on the value of home loan surveys. Our newest affiliation with the North Carolina Chamber of Commerce Transportation Coalition allows us to stay focused on the public interests. Our continued support of surveying education programs such as Trig-Star, North Carolina A&T University, and the Education Foundation Scholarship Fund are all ways NCSS strives to promote the profession.

What is the result of all this good work? Our membership numerically increased during 2014, which we are very excited about. Equally important, we have seen an increase in participation from those who have been licensed for less than 5 years. Eight brand new licensees attended the Conference and Trade Show recently held at Great Wolf Lodge in Concord. Enough young families attended that we had over 80 children registered in our hotel block. As I attend receptions and meetings in the political arena, we are beginning to be recognized as an organization that is active and purposeful.



Christy receiving the prestigious President's Award from Marion Sandlin

In June, Morgan and I ran into some trouble with a front tire as we were traveling for NCSS. We were on I-40 in the middle of nowhere around dusk. Facing the possibility of us having to change a tire on the side of the road - in heels - I told her not to worry because, wherever we broke down, we knew a surveyor nearby that could help us. Now that is the practical side of a strong hard-working community of which I am proud to belong.

Christy C. Davis

Christy C. Davis, Executive Director

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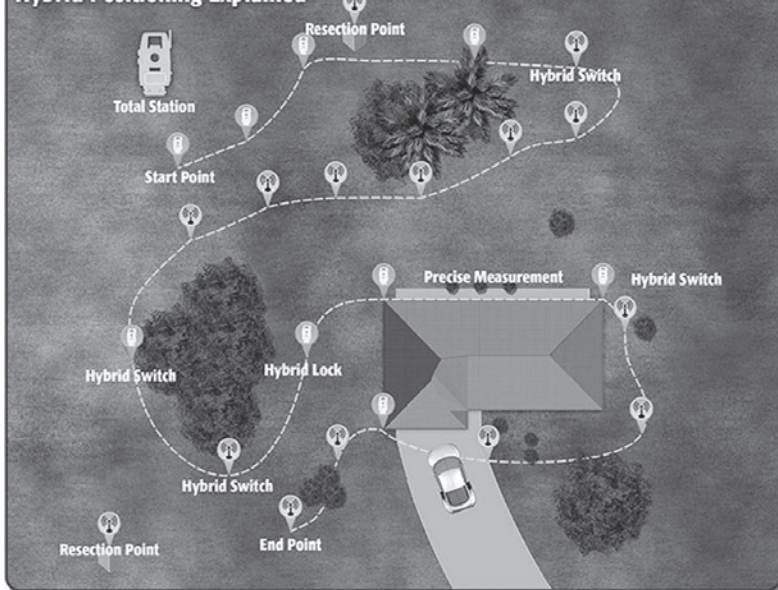
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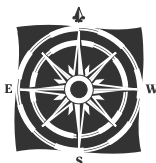
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LETTER FROM THE PRESIDENT



Bobby receives the President's gavel from Marion Sandlin

Greetings,

I hope my letter finds all of you doing well and looking forward to spring after a late, cold blast of winter. I'm excited about the new year and look forward to all that it has to offer. For me, the year started in Concord at the Great Wolf Lodge. It was an honor for me to step up and continue the leadership that the past presidents have worked so hard to establish for the Society and to maintain the standards which all of you as members deserve.

The 2015 Conference and Trade Show was "Awesome-tastic" and a huge success! I tried to find just one word to describe it but, as you can see, I struggled and I had to come up with what some people call a "Bob-ism." The numbers exceeded all our expectations! With that being said, I tip my hat to the Conference Committee for all their time and effort and to our great Director and staff for all of their hard work in making sure everything went as planned.

The Executive Committee has been very busy this spring compiling an aggressive educational package, including a PowerPoint presentation prepared by David Tuttle, counsel for the North Carolina Board of Examiners for Engineers and Surveyors for future concerns that may arise regarding the Mini-Brooks Act, as discussed during the Fall Board of Directors meeting.

"Growing at a Measured Pace," which was this year's Conference theme, also defines my projects schedule thus far. I hope all of you continue to grow this year at a pace that is beneficial to you both individually and as a member of the Society as a whole.

Don't forget to mark your calendars for Friday May 15, 2015 and Saturday May 16, 2015. Friday will be the Annual NCSS Golf Tournament, held this year at the very nice Wildwood Green Golf Club. It's just a short drive from the NCSS office. Saturday will be the Spring Board of Directors meeting in Wake Forest. So, everyone come out and enjoy a great day of fellowship on the golf course followed by a very informative BOD meeting on Saturday. I look forward to seeing everyone there!

Regards,

Bobby H. Burns, PLS
NCSS President 2015-2016



Bobby and his wife, Wanda, before the Presidential Banquet



Bobby and some of his Nantahala Chapter friends, "The Sylva Mafia"



Schedule at a GLANCE

APRIL 17, 2015

Carlson Software

Instructor:

Jennifer DiBona

8:00am-5:00pm, 8 PDHs

Deep River Event Center

Greensboro, NC

APRIL 23-24, 2015

OPUS Projects Manager's Training

Instructor:

Scott Lokken

1:00pm-5:00pm, April 23

8:00am-5:00pm, April 24

9-12 PDHs

College of the Albemarle

Elizabeth City, NC

MAY 1, 2015

Boundary Retracement and Ethics

Instructor:

Dr. Jerry Nave

8:00am-5:00pm, 8 PDHs

A-B Tech Enka Campus

Candler, NC

MAY 15, 2015

Annual Golf Tournament

Wildwood Green Golf Club

Raleigh, NC

MAY 16, 2015

Spring Board of Directors Meeting

NCSS Office

Wake Forest, NC

JUNE 5, 2015

Laser Scanning and CFS Update

Instructors:

Frank Mundy and John Gerber

8:00am-5:00pm, 8 PDHs

NCSS Office

Wake Forest, NC



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New Year, New Leadership

by James E. Davis, PLS

The NCSS Education Foundation begins a new year with three new board members and a new slate of officers. New board members are Charles Morgan, Larry Greene (regular members), and Lora Younts (public member).

The new officers are: Jim Davis, President; Doug Suttles, Vice President; John Furmage, Treasurer; and Charles Morgan, Secretary. The returning board members are Gale Brown, Frank Mundy and Chris Witherspoon.

The NCSS Education Foundation continues to work for the membership to increase the opportunities for higher education in surveying in North Carolina. We are wrapping up a very successful raffle season, which resulted in approximately \$13,000 in revenue for the Foundation. The winners of the reverse cash raffle are as follows: 1st Ticket Out, Eastern Chapter (\$500); next to last ticket out, Chris Witherspoon (\$500); Grand Prize, Foothills Chapter (\$2000). Thanks to the Eastern Chapter and the Foothills Chapter for donating their winnings back to the Foundation. The Foundation would also like to recognize the NCSS chapters that made contributions to the raffles, including the Central Chapter, the Southeastern Chapter, the Eastern Chapter, and the Southwest Chapter. The Foundation would also like to recognize those who made contributions to the silent auction. The Foundation has made a commitment to award up to \$5000 in scholarships and to contribute up to \$4000 to the endowment this year. Thanks for your continued support in helping to achieve these goals. As of December 31, 2014, you have helped grow the endowment to \$215,000. In addition, since 2006 you have helped the Foundation contribute \$87,700 for scholarships and recruitment (\$78,000 scholarship/recruitment, \$9,700 Trig Star).

The Foundation started a new program this year to help increase the enrollment in the Geomatics Program at NC A&T. The program awards a \$500 incentive grant for students newly enrolled in the Geomatics program. The criteria for the award are: 1) The student must be a first time applicant to NC A&T, 2) Geomatics must be the student's specified major, 3) The student must register for a minimum of 5 credit hours through on-campus or distance learning, 4) The student must take at least one course specific to the Geomatics area. This type of grant has become a typical offering in other engineering

programs in the state and is required to attract students. The first grants were awarded this past fall.

The Foundation recently posted an interview on the [beasurveyor.com](http://www.beasurveyor.com/pick-a-surveying-path/geodesy-geodetic-surveyor) website with David Doyle, Retired Chief Geodetic Surveyor, National Geodetic Survey in which he discusses the upcoming changes to the National Spatial Reference System and the importance of education for surveyors. Watch it at: <http://www.beasurveyor.com/pick-a-surveying-path/geodesy-geodetic-surveyor>. Over the next year, the Foundation will work to add to this video library to highlight other areas of surveying and to demonstrate how higher education can help grow and preserve the profession. If you have any ideas for the Foundation to consider or would like to attend a meeting, please let me know or contact one of the other board members.



Jim Davis
Education Foundation President

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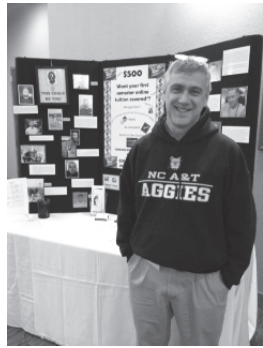
Welcoming New Students

by Peggy Fersner, PE

Thanks to everyone that stopped by our booth at the 2015 NCSS Convention in Concord in February. I must say that I have been at this event since 2004, when we were just initiating the changes in the legislation to modify the degree and experience requirements, and this was the most “traffic” and interest that we have seen to date. Some of the men (where are you, ladies?) were looking just to get licensed, while the others had either passed the first exam or were PLS’s already. The overarching reason for a four-year degree was corporate advancement and the ability to become licensed in other states requiring a four-year degree. What we are hearing from our students and the ones that are exploring this option is they all want to be what we are calling a “value-added” employee. Their role

in the company will not be limited by only having licensure in one state. They will be able to expand their licensure into other states as well, and hence maintain their value to the company.

As I reported last fall, the majority of our students are now online, or known as “distance learners.” So who are these students that are now in the program? Let me introduce you to a few. Most of you may



Peter Brennan with the NC A&T booth at the Conference in Concord

know Peter Brennan, a licensed PLS and the City Surveyor for Wilmington, NC. He lists three reasons for enrolling in the program: 1) to strengthen his skills and be better prepared for emerging technologies, 2) to complete the four-year degree which is one of his long term goals, and 3) to stay ahead of the registration requirements. Peter is a great asset to the program and an excellent A&T supporter!

We have two brothers which is a first for us - Jefferson and Adam Canoy. Adam started last fall and Jefferson started this spring.

Adam previously worked for Great Lakes Dredge and Dock as a field engineer and later as an Assistant PE where he performed daily topographic and hydrographic surveys. He now



Adam Canoy entered in the fall of 2014

works for Phillips and Jordan, Inc. out of the Raleigh office as an Estimator. He is pursuing the degree to have the ability to become licensed in North Carolina as well as the surrounding states. Hopefully, it will assist him in future advancements as well as acting as a safety net.

There seems to be a theme of water in the brothers’ work experience. Jefferson Canoy lives in Wilmington and has an undergraduate degree from UNCW in History. Like so many of you, he landed in the engineering and survey/hydrography fields when looking for employment after college and now “cannot imagine doing anything else.” Like his brother, he is seeking the Geomatics degree so he can become a licensed surveyor in multiple states along the east coast.



Adam's brother, Jefferson, followed shortly and entered this spring semester

We do have some other GREAT news to share, but I am going to make you all wait until the next issue to share that piece of information. See you then!



Peggy Fersner is the Geomatics Coordinator at NC A&T State University in Greensboro. She has been on staff since 1993, teaching surveying, GIS, and hydrology courses. She has earned both her BS and MS in Civil Engineering.

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NSPS Memorandum of Understanding

In 2012, NCSS agreed to partner with the National Society of Professional Surveyors (NSPS) to foster membership on both the state and national levels. As a result, your membership with NCSS now includes dual membership with NSPS. Read the MOU on our website at www.ncsurveyors.com/about_ncss/governing_documents/nsps

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The Fire

by Leland Strother, PLS

As most of you know, my wife and I suffered the loss of our home on November 15, 2014. Does this article have anything to do with land surveying? Absolutely not. However, it does involve an unknown number of land surveyors. Many thanks to everyone that has called, offered to help, and shown us generosity during this time! To say that we have been blessed these last few months is putting it mildly. How can a fire that totally destroys your home be a blessing? Let me tell you the whole story.

It all began as we were grilling steaks on my back deck that was only about two feet above the ground. The steaks did flare up a little more than normal, but nothing alarming. After they were removed, I let the grill and accumulated grease burn off, turned off the grill and the gas line to the grill. We had removed the small tank and hooked the grill to the larger tank that was also used for our gas logs. I took the meat into the house. My wife, Judy, asked if I was finished outside and looked to confirm that I had turned off the gas supply line. Neither of us saw or noticed anything out of the ordinary. We enjoyed our meal in the front room of our house while watching a football game. I watched the game while Judy worked on her computer.

About an hour after we ate, the internet connection failed and, almost at the same time, a message appeared on the TV screen that my satellite connection was lost. We both heard what sounded like someone walking in the room between where we were and the back of the house (and deck). My initial thought was that someone was breaking in and had cut the phone and TV cable. I immediately got up to investigate, but seeing no one in the house, I went out the back door and found the corner of our deck ablaze and fire lapping into the eaves of the house. Judy ran onto the front porch and made two phone calls: first to 911, and second to a relative about a half mile away. By the time she placed the calls, smoke was already coming from under the eaves at the front of the house. Meanwhile, I attempted to extinguish the flames with a garden hose and actually thought I was making progress, not knowing at the time that the fire had already ignited the roof structure.

The local volunteer fire department, from which I recently



An interior view of the house after the fire.

retired, is only about 1.5 miles from the house and members were there in record time. Shortly thereafter, three other mutual aid departments were on the scene. Over the years, I have been a member of three of the four fire departments that responded to our fire. I began as a volunteer firefighter with the Crestline Fire Department when Judy and I were first married. I moved my membership to the North Raeford Department when Judy and I bought our house near there in 1981. We then bought our current home in 1991 within the Pine Hill FD area, so I naturally joined them. The fourth group of responders was the West Hoke FD where I have many friends.



Leland drives the corner stake for his new home with the help of his granddaughters.

The fire departments did a remarkable job extinguishing the flames and working the fire. Because the fire had burned the entire length of the attic, we knew the ceiling was going to have to come down to completely extinguish the flames to prevent rekindling. We came up with a plan to move the furniture to the middle of the rooms, cover it with tarps, tear down the ceiling, soak it well and all would be good. About this time, someone came up with the idea that, since we had so much help, we try to remove as much furniture as possible from the house. That was a brilliant plan; three crews started grabbing furniture, pictures off the walls, electronics and anything that was not nailed down and sent it out doors and windows. Within about two hours, we were able to remove about 80% of our furniture, including pictures, some clothes and boxes of photos.

Blessing One

After the chaos of the fire, I started to realize how many blessings we experienced. The first blessing was the remarkable calm exhibited by Judy during all of this. On one exit from the house, I was literally in tears knowing the damage and potential loss that we suffered. As I came out, I put my arms around Judy and told her that I was sorry about our home (I am a firefighter, I am supposed to prevent things like this from happening), she hugged me and said, "everything is going to be alright, we'll be fine, God is in control." From that moment on, that "peace that passes all understanding" has carried us.

Blessing Two

Now I am sure you are wondering how we had the time to do so much work. Remember the two phone calls? The second call started a network of friends, family, church family and neighbors who were notified. In a very short period of time, our yard was literally full of people wanting to help. The word even got out that we needed trailers to put furniture on from our house. Four large trailers appeared on one of my many exits from the house.

Blessing Three

Our friends, family and neighbors loaded the trailers with our belongings and took them to various covered locations within the community, including the small storage building behind our house.

Blessing Four

The construction of the house was a large contributing factor to the salvage of our possessions and our safety. The house, when originally built in the late 1960s, had ceiling cable heat as the main source of heating the home. Ceiling cable consists of two layers of drywall with a network of wires between the layers creating a "sheetrock electric blanket". This heating system had been replaced by a heat pump prior to us purchasing the home, but the sheetrock and wire were still in place. This drywall electric blanket acted as a fire break, keeping the heat and smoke confined to the roof structure during the attack and salvage and overhaul phases of the fire.

Blessing Five

Our camper and generator was a blessing we'd never expected to need in such a situation. We moved into our camper around 3:00 am that morning and hooked up the portable generator I bought several years ago to use for dry camping. This generator had not been started in over a year. My son and I put fresh gas in the tank, pulled the choke and began to take bets on how many attempts it would take to start. We were optimistic and settled on two pulls of the starter rope. Again God was with us. On the first pull my Generac 4000XL roared to life and we had lights. After two trips to Raeford to get enough gas for the generator to last overnight (not realizing it was already 5:00 am), we finally crashed. The generator continued to provide power to us for about 4 days when we were able to get a temporary service pole set for future construction. The camper is still serving as a comfortable home while we watch the construction of our new house.

Blessing Six through Infinity

There are so many events and people that we have been blessed with that I started calling them our "it just so happened" moments. These moments made this experience a time to stop and be truly thankful for what we have. Here are just a few of the "it just so happened" events:

It just so happened that my temporary electric service was taken care of by my neighbor across the street, owner of Sandhills Electric Solutions who also helped remove contents from the house and received a minor burn in the process. He is also the electrician for our new house.

It just so happened that an insurance company referral and high school classmate were the same person: Josh Smith, partner with PHC Restoration, who dropped what he was doing after receiving my call and met with us to begin the cleaning and restoration of salvaged contents.

It just so happened that Tommy Strickland, a longtime client and friend with whom I have had many lengthy discussions of some of the "not so great" construction we have seen over the years, is now my builder and doing an outstanding job.

It just so happened that my son, Graham, a PE with the Town of New Bern, NC, had made a couple calls and found a solution to our septic tank issue. *It also just so happened* he was coming back home for a wedding the next day and brought home the pump that *just so happened* to be in stock with a dealer near his home in Morehead City.

It just so happened that Eddie Garner, a fellow firefighter, client and septic tank contractor, was available to install said grinder pump to connect our camper to our existing septic tank. I don't think I need to elaborate how important that was!



Leland's new house in progress. It is set for completion in late May to early June 2015.

It just so happened that Bill Dawson, another longtime client and owner of a local sandpit and LCID landfill, allowed demolished materials to be placed in his landfill at no charge. He also provided fill dirt for construction at no cost.

It just so happened that A1 Land Clearing and Landscaping, yet another longtime client, was able to obtain the contract from our insurance company to demolish the old house.

It just so happened I had the winning ticket from the NCSS PAC raffle for a TV that will replace the one damaged in the fire.

The list continues to build as the rebuilding process continues. I can easily see that the resources provided for us during our time of need have been a direct result of relationships that have been forged with clients and other contacts during the years that I have been a Land Surveyor.

One last "it just so happened"...

It just so happened that I passed my PLS (RLS) in 1981 and was given a one year membership to the North Carolina Society of Surveyors. The friendships that I have made with my fellow professionals over the last 34 years as a member of this organization has made me a very wealthy individual, not monetarily, but wealthy beyond measure. The chapters of NCSS shared their limited resources with us, which was beyond what we could imagine.

One more time to all of my fellow professionals and NCSS members from all over this state: your generosity and support have been well beyond what we ever would expect or deserve. I am honored to be a part of this profession and proud to call you my friends.

May God bless each of you as He has so richly blessed us.

Thank you,

Leland and Judy Strother

Leland received a check at the Cape Fear Chapter Christmas Party, graciously donated by NCSS members across the state.



View from the Capital

by Kerri Burke, McGuire Woods Consulting

Budget Plans at Forefront of Legislative Activity Governor McCrory has unveiled his budget blueprint for the state's 2015-2016 fiscal year spending plan, and now legislators are focused on drafting their own spending plans. The Governor's \$21.5 billion budget blueprint includes:

General State Spending: Slightly less than \$1 billion increase over the current year's state spending. Of the new spending, 76% will be spending on education and Medicaid.

Medicaid: \$1.1 million in expansion funds into developing an "Accountable Care Organization" model of Medicaid that would rely on in-state doctors, hospitals and other health care providers.

Education: Salary increases for state-funded teachers and administrators per salary scale and provides for enrollment growth.

State Employees: No across-the board pay raise for state employees, but raises for "hard-to-fill and hard-to-retain" positions. Institutes a performance-management system for state employees.

Economic Development: \$99 million into "NC Competes" plan, which is an expansion of incentives used to lure large manufacturers; \$10 million into film grant program; and extension of state's historic preservation tax credit.

Community Colleges: Tuition increase by \$4 a credit hour for both in-state and out-of-state students.

Transportation: Requests a \$1.2 to \$1.4 billion transportation bond and privatizes the state motor fleet.

Military & Veteran Affairs: Creates a new state agency, Department of Military and Veterans Affairs.

UNC: 2% spending cut. Limits the amount of state money the University of North Carolina system schools can spend on fundraising to \$1 million.

Courts: Increases state court spending by \$6 million, with \$10 million additionally in 2016-17.

The House and Senate will present a compromised plan to the Governor before the budget takes effect on July 1.

Senate Leaders Plan Sales Tax Shifting Proposal

Senate leaders are working on a plan that would shift millions in sales tax revenue from urban and coastal counties to rural areas across the state. Senator Harry Brown (R-Jacksonville) has indicated that he will be filing legislation that would change how the state distributes a portion of the sales tax collected from purchases of clothing, building materials and other goods. Current law provides a formula based on where the sale occurs as to where the tax collections are distributed. The Senate's plan would likely change the formula, emphasizing instead a distribution of

the sales tax based on where people live and population. According to projections by legislative staff, under a per-capita plan, rural counties such as Greene, Caswell and Jones, would see sales tax revenue more than double. On the flip side, urban counties would see a decrease such as Mecklenburg County and its towns and cities losing \$35 million, a 16% decrease and Wake County and its town losing \$18 million, a 13% decrease.

Gas Tax Proposal Heads to Conference Committee

The Senate and House have passed different versions of the transportation funding reform package, *Senate Bill 20-IRC Update/Motor Fuel Tax Changes*. The proposal would cut the state's gas tax and add a new minimum rate that would keep it from decreasing. The gas tax would be reduced from the current 37.5 cents per gallon to 35 cents in the Senate proposal and to 36 cents in the House proposal, which would be the new minimum rates. Another difference between the House and Senate deals with mandatory Department of Transportation staff cuts, with the Senate mandating cuts and the House not including such a mandate. Given the changes made in the House, a conference committee has been formed where leaders in the House and Senate will work out differences and develop a negotiated package that will have to pass both the House and Senate.

Related to the larger transportation funding reform talks, Rep. Charles Jeter (R-Huntersville) unveiled a proposal that would replace the state's gas tax with vehicle registration fees. *House Bill 203-Phaseout of Fuel Tax* would call for an annual fee of \$201 for drivers, which was determined by dividing the amount raised by the current tax with the number of vehicles registered. Rep Jeter has said that revenue for transportation would rise as more cars are registered. Rep John Torbett (R-Gastonia) who Chairs two House Transportation committees has indicated he will be introducing additional proposals that would reconfigure fuel taxes and registration fees.

House Pushes Eminent Domain Again

The first part of the substantial piece of legislation filed this session was *House Bill 3-Eminent Domain*, sponsored by Rep. Chuck McGrady (R-Henderson). The measure would curtail eminent domain powers by saying the state could forcibly take land only for a public use, not a public purpose, outlawing where private property was being condemned and sold to private developers. Governments would still be able to take land for schools, roads and other public purposes. The proposal, if passed, would place an eminent domain constitutional amendment on the May 3, 2016 primary election ballot.



Kerri Burke is Vice President in the State Government Relations group for McGuire Woods Consulting in Raleigh, NC. She received a BS in Political Science from Old Dominion University, and attended the Indiana University School of Law. She has served as communications director for the NC Chamber, and has worked as a registered lobbyist and legislative intern.

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UAS: The Next Quantum Leap in Surveying Technology

*Darshan Divakaran, NGAT Program Fellow
Kyle Snyder, NGAT Director*

*NextGen Air Transportation Program (NGAT) in the
Institute for Transportation Research & Education (ITRE)
North Carolina State University*

Since the early days of mankind, humans have been awed by the concept of flight. Now the latest aviation technology grabbing public attention is UAS or, in common parlance, drones. The Federal Aviation Administration (FAA) has adopted the acronym UAS (Unmanned Aircraft System) for these complex systems to include the human operator, sensors, ground stations and other elements besides the actual air vehicles. Although UAS technologies have been around for a while, the technology has not yet been widely used in commercial applications, especially surveying and remote sensing. But now because of low-cost practical UAS solutions, micro-GPS devices, lightweight high-resolution digital cameras and advances in close-range aerial photography, land surveying using unmanned aircraft is quickly becoming feasible.

In the near future, UAS are poised to be the preferred platform for aerial photography and remote sensing of small areas. There are two types of small UAS available that are suitable for surveying work. The first is a fixed wing aircraft design; these are compact and lightweight flying machines generally weighing less than 55lbs, often less than 10 lbs. Commercial UAS products are available today that include aircraft, sensors, and software to provide terrain modelling and mapping for capturing topographic surveys. The second aircraft design is a rotary propulsion system that enables vertical takeoff, landing, and hovering. Unlike the fixed wing models, multi-copters are able to fly in every direction, horizontally and vertically, as well

as hover in a fixed position with precise altitude. With the ability to carry a wide range of cameras, rotary-design UAS can maneuver into positions and locations that would either be very difficult, or even dangerous to do using conventional manned aircraft. UAS are capable of flying close to buildings and properties to obtain detailed images for inspections and surveys. They can fly in conditions where a minimum of ground disturbance is required. UAS offer multiple options for launching including a manual toss, catapult, or vertical take-off. This capability means UAS can operate in many environments and conditions never before open to manned aircraft; even rough terrain does not restrict use. They are also able to collect data from the air to use in conjunction with ground based data acquisition. Surveyors can now use UAS to collect topographic data over roof tops, sky lights, power lines, pipelines, bridges, rail tracks, etc. Using a UAS can vastly reduce the time spent collecting accurate data by acquiring raster data in the form of geo-referenced digital aerial images, digital elevation or surface models with resolutions as sharp as 1.5 cm (0.6") per pixel. Thus millions of data points can be collected in one short flight.

LiDAR technology, photogrammetry and other sensors continue to revolutionize the surveying and mapping industries. The world is now talking about how UAS could be the game changing technology for these industries by putting the capabilities in more people's hands. LiDAR mapping is a three-dimensional mapping system which is very useful for engineers, planners, mapping technicians, GIS professionals, and surveyors. LiDAR stands for Light Detection and Ranging. Point cloud three-dimensional

Opposite Page: Kyle Snyder stands with the Trimble UX5 at a UAS demonstration at Lake Wheeler in January.

modeling is becoming very accurate, relatively fast, and increasingly cost-effective. LiDAR mapping is used for topographic surveys and related applications. In the past, airborne and ground-based LiDAR were used for this task. The disadvantage of both airborne and ground LiDAR was the time taken to order the survey, obtain the data, and covering the area for which the survey was needed. These challenges are solved by using a UAS to obtain the data. UAS LiDAR mapping uses lasers to accurately measure the range from the sensor to points on an object or on the ground. Using multiple lasers at high speed allows a large amount of data to be collected very quickly. The combination of UAS and LiDAR will see fundamental changes in the way much of surveying is done in the very near future.

UAS products targeted at commercial and civilian consumers are becoming more robust and accessible. \$3,500 today buys a small UAS with a 4K camera that will fly for 20 minutes with minimal control inputs necessary. However, commercial use is currently restricted in the United States. UAS operate in the National Airspace System (NAS), which starts at ground level extending to space. UAS are facing many challenges for broad market adaptation. These challenges include maintaining the safety integrity of the NAS, protecting privacy rights, and homeland security concerns. The FAA manages these challenges by limiting UAS operations to public agencies and commercial users that are granted exemptions or special certificates on a case-by-case basis. In February 2015, the FAA released its long-awaited proposed rule for governing small commercial UAS, setting a potential

UAS operators will need a UAS operator's license issued by the FAA, not a traditional pilot license. In addition to the UAS operator license, the FAA proposed that operators would have to pass a TSA background check and a written knowledge test, which must be renewed every two years. The FAA proposal also addresses optional use of a visual observer, aircraft registration and marking, and



Chip Berniard of Trimble launches the UX5 for onlookers, including Kyle Snyder and our Executive Director, Christy Davis, and President-Elect, Chad Howard.

operational limits. The agency estimates that it would cost approximately \$300 to become certified, including fees and preparation costs. The FAA's decision to float a less stringent proposal is welcomed by industry proponents. For many businesses, the proposal demonstrates a path to getting their aircraft into the sky and providing value through enhanced aerial surveying services. It may take two or more years for the new rules to be fully implemented. Public comment is encouraged through April 24, 2015.



The Trimble UX5 in action.

vision for remotely controlled aircraft to share the national airspace with passenger planes. The FAA proposal would allow UAS weighing up to 55 pounds to fly within sight of their remote operators during daylight hours, as long as they stay below 500 feet in the air and fly at speeds less than 100 mph. Also according to the new proposed rule,

In North Carolina, the NextGen Air Transportation (NGAT) program under the auspices of the Institute of Transport Research & Education (ITRE) at North Carolina State University is fulfilling the leadership role in the state's UAS integration efforts. NGAT is currently working on statewide integration of UAS for NCDOT research, state agency operations, and commercial opportunities through 15 Certificates of Airworthiness (COA) granted by the FAA for limited public UAS operations at six locations in the state. NGAT is available to all state agencies and local government entities to assist with obtaining COAs, including aircraft selection and airspace analysis, or evaluation services to support operational integration for a variety of missions. NGAT also acts as the UAS research, test, and development point of contact for vendors looking for entry into North Carolina. The NGAT Program has developed a set of resources including equipment, flight locations, and staff specifically for researching and testing the safe integration of UAS into the National Airspace System using the management and policy

structures required by federal and North Carolina law. Utilizing the NC State consortium structure for industry memberships and services, NGAT is collaborating with industry partners like Precision Hawk and Trimble for testing and evaluating UAS capabilities. The Trimble UX5 UAS is one of several aircraft in the NGAT fleet from industry members that is used for research and evaluation. NGAT is also collaborating with multiple state agencies, including NCDOT, NC Emergency Management, and NC Department of Environment and Natural Resources to assess the products and logistics needs for broad UAS integration. Based on progress to date, UAS technology is unquestionably a part of North Carolina's surveying future. NGAT is working closely with NCDOT and other state leadership to make sure North Carolina is a frontrunner in UAS adoption by opening safe places to fly airworthy-aircraft with defined operating procedures.

Once UAS are cleared for commercial use by the FAA, surveyors and engineers will have the ability to deploy low-cost survey-grade solutions that will fly over a site and collect vast amounts of topographic data including photography or other remote-sensing data. With such a huge increase in the amount of topographic data being collected, this will mean an increase in office time spent processing, analyzing and utilizing this data. However, the

increased post-collection time spent on geospatial analysis is cancelled out many times over by the huge time-savings UAS are expected to produce during the actual collection process. Large survey jobs that once took weeks could potentially be completed in just a few days, and a week's worth of traditional data collection may be accomplished in just one day. Also, the less time spent on the ground means staff safety is improved by minimizing risk to surveying teams when measuring accident prone sites such as mines, unstable slopes, and transport routes. Take-off and landing locations that are out of harm's way are chosen to let the UAS do the field surveying without ever putting a person in the air.



Darshan Divakaran is a NGAT Program Fellow with the Institute for Transportation Research & Education (ITRE) and a graduate student with the Center for Geospatial Analytics (CGA) at North Carolina State University. He currently supports flight operations for statewide integration of unmanned aircraft for research, state agency operations, and commercial opportunities in North Carolina. Darshan graduated cum laude with a BS in Professional Aeronautics from Embry-Riddle Aeronautical University and is certified as a commercial pilot by the FAA.

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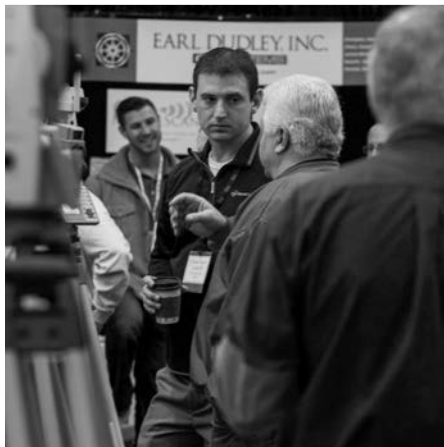
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Growing at a Measured Pace

A Look at Our 51st Annual Conference & Trade Show

by Morgan Creager, NCSS Office Staff

The NCSS Conference has seen many changes over the years, evolving and growing as both our members and our market have grown and changed, but nonetheless creating many memories. You may remember the Ladies Auxiliary and their Silent Auctions. You may remember some of the past entertainment, such as the Country Bumpkins Clogging Group in 1986. You may look back fondly on the initiation of highly-respected Presidents like Otis A. Jones and Larry W. Akers. Or your favorite memories may have been made at the ever-admired Grove Park Inn in Asheville, NC. These names and locations may not be familiar to everyone. For the newer faces, this year's format followed what has become a new tradition over the last three years, and the staff of NCSS hopes that these new memories will also be ones that you treasure.

The Great Wolf Lodge in Concord created a perfect setting for our 51st Annual Conference and Trade Show, held February 5-7. The location made it a great year for younger surveyors who could bring their families, encouraged that their wives and children had activities to keep them busy while they were in class or at the Trade Show. We also welcomed many new licensees. It was refreshing to see so many new faces integrated with the faithful members of NCSS. This truly was a "dream come true" from Past-President Marion Sandlin's presidential acceptance speech in 2014, as he encouraged our Society to foster mentoring relationships with the younger generation and encourage them towards membership and involvement with the Society.



This year's theme was "Growing at a Measured Pace," and the Conference lived up to its theme. We wanted to focus on how to appropriately view the future of the surveying profession. As the economy has been turning around, we

want to maintain a steady growth in hopes of leading to a fruitful future. On Thursday, our keynote speakers focused on these themes and how to apply them to a surveying business. Jeffrey T. O'Briant, Esq., PE, PLS began the day discussing "Growth Principles and Strategies," describing



how to set up a business for long-term success, how to adapt to changes in the surveying industry and in the employee workforce, how to train and relate to the younger generation, and other topics. He ended his session with a panel of successful surveying businessmen and women, taking questions from the audience. Our afternoon speaker was Jerry D. Taylor, Esq., PLS, Associate Professor and program coordinator in the Surveying and Mapping Science Program at East Tennessee State University (ETSU). Taylor focused on "Litigation Alternatives for Surveyors," discussing how to resolve conflict and avoid legal frustrations. Thursday's lunch also contributed to the theme, as we again heard from the North Carolina Board of Examiners for Engineers and Surveyors. This year, David Evans, Mike Benton and Andrew Zoutewelle represented NCBEES in addressing updates to the profession and where we are headed in 2015.

We shook things up for Thursday's Vendor Appreciation Dinner, reserving a private room at Dave & Buster's for

dinner, as well as the entire bowling alley for our party's enjoyment. It was a huge success! Many surveyors brought their families, and it created a lively environment as young and old alike enjoyed dinner, prizes, and fun. We also



recognized long-time supporter Bobby Craven of Transit & Level Clinic by inducting him as an Honorary Member of NCSS and providing giant sheet cakes to celebrate. The bowling brought everyone out of their comfort zones and allowed us to connect in a way that hasn't been offered before. Who knew a dinner could be so much fun!

Friday morning began on the Trade Show floor, with outgoing President Marion Sandlin kicking off the day and thanking our vendors. The floor was bustling with vendors and business deals. Sprinkled throughout the day, we held our concurrent sessions. This year's 1-hour sessions focused on technological advancements and training, including "Laser Scanning and BIM" with Frank Mundy of Stewart, "Civil 3D" with Dan Bonenfant and "New Advancements in Terrestrial Photogrammetry" with David Bowers, both of Duncan-Parnell. Our Plat Luncheon was very exciting, as we introduced many new faces in the winning line-up. We were happy to award "Best Overall" to Jason Fleming of Taylor Wiseman & Taylor, sponsored by President-Elect Chad Howard. We also held our General Membership Meeting, where we discussed the happenings in the greater body of NCSS and recognized representatives from NSPS.

Friday evening was a treat as we celebrated our Presidential Awards Banquet. We were honored to have Representative Jason Saine as our guest speaker. He discussed upcoming legislative actions that may affect our profession and how surveyors should respond. J. Chris Witherspoon (Spoon) recognized several members of the NCSS Education Foundation who have been great contributors to that committee. He also announced the Foothills Chapter of

NCSS as the winner of the reverse raffle, whose members are graciously donating the money back to the Education Foundation. Then outgoing President Marion Sandlin gave his presidential awards and thanked the members of NCSS for their support and hard work in 2014. Sandlin then passed the gavel to incoming President Bob Burns of Cullowhee, NC and Past-President William Coleman (1992) inducted our 2015 Board of Directors. We concluded the evening with relaxation and fellowship, as Mrs. Judy Strother entertained us with her beautiful vocal performance. She sang classics like "Crazy" by Patsy Cline and even performed a duet with her husband, Vice President Leland Strother. Central Chapter President Jerry Callicutt danced the night away with his lovely bride.

Saturday morning concluded our Conference with the Winter Board of Directors meeting. Discussion was very productive. We had several observers who contributed to discussion. Be sure to attend your local chapter meeting to stay up-to-date on what NCSS plans to accomplish in 2015.

Looking back, there were many memorable moments at this year's Conference and Trade Show. But the Conference



- and the surveying profession's growth - would be nothing without you. Take what you learned this year and apply it to your career. Encourage other surveyors and aspiring PLS's to come alongside you. Together, let's continue to "Grow at a Measured Pace" for many years to come.

Photos courtesy of Kelly Knowles Photography

Morgan Creager works in the NCSS office with Marketing and Membership Development and has been with NCSS since the fall of 2012. She graduated from Meredith College in 2012 with a BS in Interior Design and minors in studio art and public history. She is eager to assist you however she can. You can email her at mcreager@ncssurveyors.com



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Right of Way Acquisition Policies for New Department of Transportation System Roads

by Thomas W. Morgan, PLS

While all Department of Transportation (DOT) maintained roads are part of the state system, there are differences in acquisition policies depending on the road type designation. Since the creation of the State Highway Commission in 1921, laws and procedures for the acquisition of right of way have varied. The following is an attempt to explain the procedures used today.

If a road has a secondary road designation, the right of way is generally acquired by agreement between DOT and the owners or by an offer of dedication. Because a secondary road is accepted into the system by request of the joiners, DOT does not purchase the right of way. In certain situations where DOT is requested by less than 100% of the joiners to have the road adopted into the state system, private funding must be arranged before DOT will condemn the property of those not in agreement. The agreements for secondary roads are recorded in the Register of Deeds Office in said county, and are also maintained in the Department of Transportation Division Right of Way Office. Those parcels that are acquired by condemnation will have a copy of the final judgment filed in the Register of Deeds. The fee for the underlying property in a secondary road right of way is generally in the name of the granting owner or his successors in title.

If a highway is designated as a Transportation Improvement Project (TIP), the permanent right of way is generally acquired in fee. Once a Transportation Improvement Project is approved for the purchase of property, DOT files a right of way plan with the Register of Deeds in accordance with NC GS 136-19.4. In some situations there may be what is called "advance acquisition." This can occur prior to the filing of the right of way plan map. After the plan is filed, negotiations between DOT and the owners of the impacted parcels begin. If an agreement is reached, either during advance acquisition or after the filing of the right of way plan, a deed for the transfer is filed in the Register of Deeds office in the county or counties where the land lies.

If negotiations fail, DOT may institute a civil action in the superior court of any county in which the land is located. The filing of the complaint and the declaration of taking, along with a deposit of the sum of money estimated by DOT as just compensation, is required in order for the title of the land or such other interest specified in the complaint and declaration of taking to vest in DOT (136-103). At the time of filing the complaint, the declaration of taking and the deposit of estimated compensation, DOT shall record a **memorandum of action** with the Register of Deeds in all counties in which the land involved therein is located. Upon the amending of any complaint or the declaration of taking affecting the property taken, the DOT shall record a **supplemental memorandum of action** (NC GS 136-104).

The land owner may file an answer to the complaint only praying for a determination of just compensation. Within 90 days of receipt of the answer, DOT shall file in the cause, a plat of the land taken and such additional area as may be necessary to properly determine damages. However, DOT shall not be required to file a map or plat in less than six months from the date of filing the complaint (NC GS 136-106).

The land owner shall have 12 months from the date of service to file an answer. Failure to answer within said time shall constitute an admission that the amount deposited is just compensation and shall be a waiver of any further proceedings to determine just compensation. In such an event, the judge shall enter **final judgment** on the amount deposited and order the disbursement of money deposited to the owner (NC GS 136-107).

After the filing of the plat, the judge, upon motion and 10 days notice by either the Department of Transportation or the owner, shall, either in or out of term, hear and determine any and all issues raised by the pleadings other than the issue of damages, including, but not limited to, if controverted, questions of necessary and proper parties, title to the land, interest taken, and area taken (NC GS 136-108).

Final judgments entered in actions instituted under the provisions of this Article shall contain a description of the property affected, together with a description of the property and estate of interest acquired by the Department of Transportation and a copy of said **judgment** shall be certified to the register of deeds in the county in which the land or any part thereof lies and be recorded among the land records of said county (NC GS 136-116).

Research and Mapping Guidance for TIP Projects:

Once DOT has filed the Right of Way Plans in the office

of the Register of Deeds, the surveyor may review the new right of way accordingly using these plans as the best available evidence. A digital computer aided drafting file should be available from DOT at the time of the plan filing. Please note that older TIP files may not be available in CAD form. Right of Way plans may not reflect changes made during negotiations or construction.

In using right of way plans, the surveyor must be aware of what DOT is providing. While the coordinates look like NC Grid coordinates, only a single coordinate is in fact on NC Grid. That coordinate will be indicated on the plan. All other coordinates on the plan are tied to that coordinate using grid bearings and ground distance. Ground distance differs from grid distance by the combined scale factor published on the plan. When doing a boundary survey associated with a highway project, a mistake of assuming the project coordinates are on grid could introduce significant horizontal error.

The Right of Way Plan will remain the best available evidence until a document of title is filed in the office of the Register of Deeds transferring title to DOT. This muniment or document of title will either be a deed or a final (consent) judgment.

Statistics indicate that 80% of the affected tracts will be resolved by negotiated settlement resulting in a deed and no court action taken. These deeds will conform to the Right

of Way Plan as filed if no construction changes have taken place. Of the remaining parcels, approximately 18% of the total parcels affected will file a complaint on compensation grounds. These types of complaints generally result in no changes to the right of way plans as filed. Only about 2% of the parcels affected will file a complaint that may result in a change in the proposed right of way boundary.

The surveyor should compare the deed or Final Consent Agreement filed in the Register of Deeds against the best available evidence of the plan, make any changes necessary and reference the document of title. All of the information needed will probably not be found in the Register of Deeds. The complaint file in the office of Clerk of Superior Court should also be consulted.

The period of time between the original filing of the Right of Way Plan and the Final Consent Agreement may be several years. Therefore, it is advisable to include the date and source of the information used in the preparation of a survey map.



Tom Morgan graduated from NC State University in 1971 with a BA in Geology, and received his PLS in 1978. He started Brunswick Surveying in Holden Beach, NC in 1979, which he sold to Withers & Ravenel, Engineers, Surveyors & Planners in 2006. He has been the Land Records Manager for the NC Secretary of State since January 2008.



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Doctrine of Merger (or) When an Easement of Record Doesn't Exist

by Kristopher M. Kline, PLS, GSI

At the outset, it would appear that the doctrine of merger falls completely within the province of the legal profession, but the land surveyor can glean valuable lessons – and avoid some professional blunders – from an understanding of the various issues relating to this principle. An early North Carolina ruling sums up this concept in a very succinct manner. In **Patrick v. Jefferson: 176 N.C. 660; 97 S.E. 657 (1918)**, the court observes: “A merger, technical or ideal, takes place when the owner of one of the estates, dominant or servient, acquires the other, because an owner of land cannot have an easement in his own estate in fee, for the plain and obvious reason that in having the *jus disponendi* -- the full and unlimited right and power to make any and every possible use of the land--all subordinate and inferior derivative rights are necessarily merged and lost in the higher right.” To paraphrase, you can’t have an easement over yourself to yourself. This basic premise is widely recognized throughout the country and is considered an obvious principle by many jurisdictions.

Although many surveyors are involved with the mapping of proposed parcels and associated easements that may be necessary for the reasonable enjoyment of those parcels, we must also keep in mind that the order in which new tracts and their associated easements are created may be critical.

One common application of this doctrine will (in certain circumstances) prevent an owner of a single parcel of land from creating an easement over one portion of the tract to serve another portion of the same tract preparatory to a proposed subdivision. While an easement may be created simultaneously with (or subsequent to) the creation of a new tract that would otherwise be landlocked, it is a common mistake to attempt to grant an easement to a portion of an existing tract before that segment has been legally separated from the parent parcel. In such circumstances, the court will often rule that the easement is void from its inception. This concept is clearly illustrated in **Tower Development v. Zell: 120 N.C. App. 136; 461 S.E.2d 17 (1995)**: “Moreover, as the equitable owner of the land, Stone had the real and beneficial use of both tracts. Because an easement is the right to use the land of another...

it would be inconsistent to grant Stone an easement in this land, despite bare legal title resting in different trustees. Therefore, we hold creation of the driveway easements through express grant failed *ab initio*.” It should be noted that this principle will not apply to easements crossing the merged tracts and serving other parcels that are owned by different individuals or corporations. Nor does it come into play where statutory dedication is made to the state for a public road.

Of equal significance to the surveyor is the possibility that an apparently legitimate easement described in a recorded deed may cease to exist if the dominant and servient estates are later brought under single ownership. This problem arises only in certain circumstances and is not a foregone conclusion. For example, this principle will not operate when true “unity of title” does not occur. A recent Massachusetts court succinctly describes the relevant parameters. In **Busalacchi v. McCabe: 71 Mass. App. Ct. 493; 883 N.E.2d 966 (2008)** the court notes: “... this unity of title only occurs when two ownership interests are coextensive...By coextensive, we mean that the type of ownership interest being united must be the same; a fee simple absolute interest, for example, cannot be merged with an interest in joint ownership to extinguish an easement.” The doctrine of merger would not operate where one tract is sold to an individual as trustee for an estate, while the other is deeded to the individual alone. Likewise, a situation where one tract is deeded to a corporation (of which the individual is the sole owner) while the other tract is deeded to the individual in private capacity would not trigger the operation of the doctrine of merger. These limitations are spelled out in **Heritage v. Powers: 49 N.C. App. 656; 272 S.E.2d 399 (1980)**.

In a more recent N.C. decision, **Tower Development v. Zell: 120 N.C. App. 136; 461 S.E.2d 17 (1995)** illustrates both the potential problems associated with the doctrine of merger and the exceptions that may keep it from operating. Considering the outcome of a previous N.C. decision, this court noted: “In Powers a tract of land benefitted by an access easement was conveyed to the owner of the servient estate...Ordinarily the doctrine of merger would apply and extinguish the easement; however, the conveyance of the dominant estate was subject to a pre-existing deed of trust. This Court held that the estate of the trustee was an intermediate, determinable estate that defeated application of the doctrine of merger.” In addition to the complications introduced with deeds of trust, this opinion is also careful to point out the “mortgage exception”. In this example, the dominant estate was under a mortgage when it was purchased by the owners of the servient estate. As a result, the court ruled that the interests of the mortgagee must

be protected; therefore, there was no true unity of title between the tracts.

While the surveyor should not be called upon to determine whether ownership of dominant and servient tracts constitute a true unity of title, we may become involved in situations where our understanding of this concept (and some additional research) may be of some benefit to our clients. Without a clear picture of the sequence of relevant land transfers and the dates of conveyance, the client and attorney will not have sufficient information to determine an appropriate course of action.

Another common misunderstanding arises when an existing easement between a dominant and servient estate is extinguished through the doctrine of merger, and the dominant estate is then re-conveyed at some later date. Courts across the nation recognize that the easement does not automatically re-emerge upon the latter conveyance. A reference to “all existing easements” will not revive an extinguished right. In fact, an entirely new easement must be created by some legitimate process and appropriate words of creation must be included.

The Pennsylvania ruling **Witman v. Stichter: 299 Pa. 484; 149 A. 725 (1930)** reinforces this point: “Where, as set forth in Washburn’s *Easements & Servitudes*, page 684, there is a union of an absolute title to and possession of the dominant and servient estates in the same person, it operates to extinguish any such easement absolutely and forever, for the single reason that no man can have an easement in his own land; and, of course, ceases to be any longer appurtenant and can only be made so again by express grant; the two estates merge and the easement is ended.” [emphasis mine] There is of course no stricture against creating a new easement with the same location and characteristics as existed prior to the merger. The surveyor can document the location of the proposed easement, but it is not created until the landowners transfer the title.

The Virginia opinion **Piedmont Environmental Council v. Malawer: 80 Va. Cir. 116 (2010)** illustrates a recently recognized corollary to the doctrine of merger. In this example, an individual purchased property subject to a “negative easement in gross” that was intended to “protect scenic, natural, agriculture and open space values” of the area. The Piedmont Environmental Council (P.E.C.) was named as the grantor and as one of the grantees in the deed of easement. The plaintiff claimed that the easement was void due to the doctrine of merger, as this principle generally does not allow “a holder of a fee simple interest and an easement to be one and the same”.

In this instance, the court ruling upheld the existence of the easement for a number of reasons. While one named grantor and grantee were in fact the same organization, other entities were named in the deed of easement that resulted in a lack of true unity of title for the parcel in question. More critically for the state of Virginia, a recently enacted Virginia statute *Code Ann. § 10.1-1009* specifically authorizes the creation of easement of this type – superseding the existing common law.

While this statute itself only applies within the Commonwealth of Virginia, the more general principles protecting conservation easements appear to be legitimate on a larger scale. However, it should be noted that only a few relevant decisions on this specific point exist nationwide. At the time of writing, the author was unable to find relevant common law in North Carolina.

The unfortunate truth is that the surveyor making inquiries regarding the status of private easements between adjoining lots that have come under single ownership may receive completely different opinions from county attorneys, county planners, and GIS personnel. Ultimately, the status of an easement contained entirely within the boundaries of a single proprietor and not serving other tracts may remain unclear until the court rules upon its validity.

In situations where the doctrine of merger brings into question the legitimacy of an easement, it is the responsibility of the surveyor to clearly denote the source of the easement on the face of the map. In addition, the surveyor should bring all relevant information to the attention of the attorney involved in the project. Where a dispute exists, it would be prudent to avoid unequivocal statements regarding the rights of various landowners to use a given easement. Thorough research of documents pertinent to the tracts in question will reveal some of the answers and may (just possibly) keep the surveyor’s reputation intact.

Note: neither the author nor publisher of this article intend it to be considered a source of legal advice. The law can change over time and differs in various jurisdictions. The best source of legal counsel is an attorney admitted to the Bar in your state.



Kris Kline lives in Alexander, NC. Kline’s first book “*Rooted in Stone: the Development of Adverse Possession in 20 Eastern States and the District of Columbia*” includes more information on prescriptive easements and is currently for sale by the author. For more information, go to www.2Point.net.



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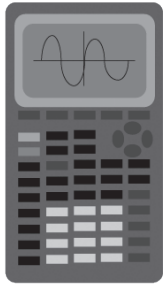
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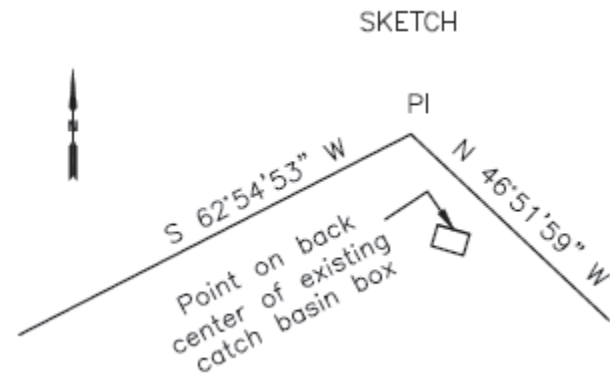
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PROBLEM CORNER

by John Furmage, PLS



For this problem, you must compute a curve to pass through a fixed point.

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Given: Units given are in feet, use arc definition to solve.

Coordinates of the fixed point (back center of catch basin box) are = 5539.716/5694.948

Coordinates at PI of the curve are = 5548.357/5691.064

Bearing of the tangent line coming to the PI is N 46°51'59" W

Bearing of tangent line leaving the PI is S 62°54'53" W

Find: Radius _____, Tangent distance _____.



Tarheel Surprises

Interesting Finds in NC

Recently, Alex Rankin of CESI shared this image and the following description:

I've been driving by Oakwood Cemetery on the way to Raleigh for years and never realized that Aunt Bee was buried within sight of Hwy 64 until recently...

There are so many things to explore. What have you discovered recently? Share it with us!
info@ncsurveyors.com

MEMBER PROFILE

Timothy Bowes



Principal/Owner at BBM Associates, Inc. in Raleigh, NC

Childhood Ambition

To be a farmer or engineer

Most Recent Purchase

With 2 kids in college, it is hard to purchase anything extra. But Cabela's is opening in mid-April near my house, so that will probably change.

First Job

The tobacco field. From elementary school till graduating from college.

Favorite Movies

There are way too many good Westerns to pick just one. *Lonesome Dove*, *To Kill a Mockingbird*, and the always favorite holiday classic *A Christmas Story* rank right up there with the Westerns.

Favorite Surveying Equipment

The Schonstedt - a big upgrade on the dip needle and it produces that sweet sound when recovering corners and other survey points long-buried by time and construction.

Areas of Service within NCSS

Currently, I am an active member of the Triangle Chapter and serve on the Legislative Committee. In the past, I served as the Triangle Chapter President (1997-98), was a member of the NCSS Education and Conference Committees, helped with judging for Plat Contest, instructed at the Institute and other events, and worked with NC Board of Realtors

Sub Committee to get surveying back in the minds of realtors.

I grew up in the Roxboro, Person County area and graduated from then Person Senior High School in 1981. In grade school, my close friends' families had farms so I started working with them in the summers in the tobacco fields. It was hard work, but it instilled the work ethic I carry today. In high school, I was given the opportunity to farm with my friend and his family to earn more money than just hourly wages as a hired hand. This also gave me experience in how a business operates. As anyone knows who has been in farming, cash flow is hard to come by until crops come in. So I was also able to get a job part-time with a local survey company, Hall-Hamlet Associates, during this time. That was my first exposure to surveying. I mostly cut line and conducted typical rodman duties. The crew I mostly worked with did farm surveys and occasionally a topo. We had a transit and chain. I really enjoyed it as much as farming.

After high school, I went to NC State in the Agricultural Institute. I graduated in 1984 with a double major in Field Crops Technology and Equipment Technology. I still worked on my friend's farm during that time, and surveyed whenever time allowed to put me through school. Upon graduation, the agriculture business was in a recession and, since I did not have any land of my own, and no significant cash, continuing to farm was not a good option. So I chose the next best high paying profession: surveying.

I answered an ad for Moore Gardner & Associates where I went to work first as a rodman, then eventually made Instrument Operator and trained to run a crew. I worked on Bald Head Island for 2 years around a few power plants and large housing developments. I also enrolled at Wake Technical College in what was then the Survey Certificate Program, which held classes at night when I could attend or was in town. Black and Veatch bought Moore Gardner

and they closed the survey operation in Raleigh. I found employment with a new startup in Raleigh, FT Green & Associates (now Green Engineering). I worked for the next 7 years in whatever position was needed to help build the business until crews and staff could be hired. I finished Wake Tech's Certificate Program during this time and obtained my survey license in 1991. The Raleigh office of FT Green & Associates closed in 1992, so I found employment with DSA Design Group (now Stantec) for the next 7 years. I gained a great deal of experience in transportation projects, multi-discipline projects, and the opportunity to work all over North Carolina.

In June of 1999, I became one of the founding principals of BBM Associates, Inc., where I still am employed today. Being a small business owner is in itself a challenge, but surviving through the last economic downturn was an experience all in itself. It solidified my core belief that this is a business and not an expensive hobby. I truly believe that "Professional service merits professional fees" and surveyors should take every opportunity to educate clients and the public regarding what it means to be a Professional Land Surveyor.

Aside from work, I have my wife Betty of 25 years and 2 children whom we are very proud of. I say children, but at 21 and 18, they are very much young adults. I am very blessed to have a wife that has put up with out-of-town travels, working week-ends and holidays, little or no vacations with the family and the roller coaster finances of a small business. Faith and family are my cornerstones and it helps to have such a supportive partner and friends. My hobbies are hunting and fishing - when I get the chance - and NC State athletics. I also like grilling and cooking. My whole family is very active in our church, and we enjoy community service and mission opportunities. I can think of no other profession now that I would have been happy in and have the experiences with as many people and projects as I have had in the past 30 years.

Carlson Software Tip of the Day...

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Corner

Wiped Out Property Corner Symbols

Problem:

Problem: Lines or polylines of a boundary show up inside your open property corner symbols. See image 1 for an example:

The additional problem is that, if you trim the lines inside the symbols to make it look cleaner, you're actually modifying the length of property lines so the distances from corner-to-corner are no longer accurate.

Here's an alternative: You can download a modified set of Carlson's point symbols that include a "wipeout" entity that hides the lines behind/underneath the open symbols instead of trimming them and changing the length of the lines. Using the new set of symbols, the same property lines and symbols look like those in image 2 (notice that the distances of linework are unchanged):

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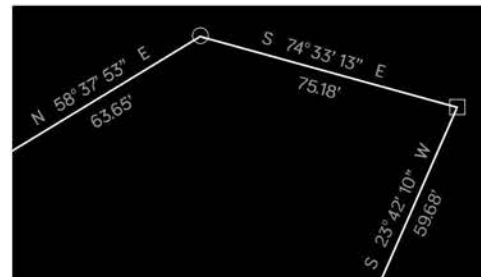


Image 1

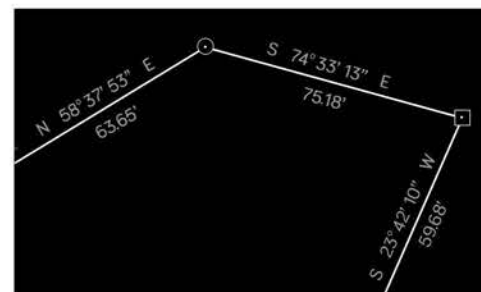


Image 2

That CAD Girl

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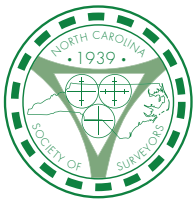
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