From the President
by Kevin Wood, LS

Merry Christmas! The holiday season must be in full swing because I have a schedule full of leave requests in the coming weeks. It is a huge time for everyone. This year everyone is trying to find some sort of normalcy in the holiday. It may not be travel or huge gatherings, but the small things will be treasured. Some of you may be volunteering over the holidays. This season allows us to concentrate on those that are less fortunate than us.

I have found these times to volunteer also allow for some contact with the outside world.

With that in mind, I am inviting you to carry that spirit throughout the year. Volunteer when the numbers are down but the need is still in place. The VAS is full of great people who volunteer their time to help make this association grow toward the future. Some volunteer on committees and others spends their time staying connected at each event sponsored by the Association. This level of participation is copied at the chapter level as well. I want to thank all of you who volunteer your time and efforts toward this group and others. I know the time you take away from work and family is valuable.

The VAS is constantly talking about trying to bring in new members and finding ways to make the association attractive to young surveyors. The best way to bring people into any organization is to make them want to be there. The group needs to concentrate on positive vibes. This is our volunteer efforts turning into marketing. Those that are outside looking in will want to see more as they notice your efforts and how much you value the groups you volunteer with. So, do not take the time you spend lightly. It is going toward improving our VAS and making a future for young surveyors. The year 2020 is almost over and 2021 will begin the trek back to normal. So, spend a few more hours in the volunteer effort. It is a gift you give to others but will eventually receive back in triplicate.

Kevin Wood, VAS President (72nd), 2020-2021

Editor's Column
by Chris Jensen, LS

Happy Holidays to all of you from the ODS staff!

I hope everyone has a joyous and safe holiday season. I’m sure everyone has someone or something to be thankful for this year, and please take the time to
appreciate the people or things that do bring you happiness. Although it may be cliché, for me I appreciate family and friends. I also appreciate my co-workers, maybe even a little more this year as we’ve had to adapt to so many changes.

As we wind down the year, I want to give a big thanks to all of you who have contributed to the ODS this year. Your contributions are greatly appreciated! I would also like to invite anyone who has an article, picture, or idea to please submit them to ODS. This is a great way to inform or entertain (heck, maybe even both) your fellow surveyors and even get a little publicity for you or your firm.

A big thanks to Khea Adams of the VAS staff for keeping us on track and doing a fantastic job putting this all together.

Take care and be safe.

Chris Jensen, LS, is VAS Second Vice President and Editor of ODS

Need Continuing Education Credits? Check Out the VAS Convention Webinar Archive

In 2020, in the midst of the COVID pandemic, the Virginia Association of Surveyors (VAS) replaced in-person continuing education seminars with virtual webinars. The Annual Convention was converted from on-site events to remote, distance learning.

This has enabled VAS to create an archive of continuing education classes. This archive consists of recordings of webinars originally presented live. For those who were unable to attend the original, live presentation of any class, the archive of sessions is available for purchase.

These archived webinars meet the requirements for continuing education credit established by the APELSCIDLA licensing board.

Please avail yourself of these continuing education opportunities. Select and purchase the sessions that are of interest to you and meet your professional and business requirements. You will be provided a link to the purchased webinar, as well as "quiz questions" that the licensing board requires for archived continuing education.

Young Surveyors Network - Social Meet Up
Virginia Clean Economy Act Will Lead to New Solar Development
-solar projects require extensive design services-
by L. Preston Bryant, Jr.

The 2020 General Assembly passed the Virginia Clean Economy Act, which will transform the state’s energy landscape. Fossil fuel-based power generation will be phased out, and renewable
energy – especially solar – will replace it.

This means tens of thousands of acres of utility-scale solar facilities will be developed across Virginia, especially in rural areas where open-space land is more plentiful.

The VCEA charts a course to make Virginia’s electric grid 100% carbon-free by 2050. Over the next 30 years, today’s coal-, petroleum-, and natural gas-based electricity will be replaced by solar, wind, and hydropower generation facilities as well as by emissions-free nuclear plants. Indeed, the new law sets dates by which Dominion Energy and Appalachian Power must close certain fossil-fuel and biomass power plants. Some will be closed by 2024, others by 2028 or 2045.

As carbon-based power generation stations are phased out, renewable energy facilities will be ramped up. For example, in 2021, Dominion will be producing at least 14% renewable energy; APCo will be at 6%. By 2030, Dominion will produce up to 41% renewable energy; APCo must be at 30%. And by 2045, Dominion will generate 100% of its power from non-emitting sources; APCo will be fully emissions-free by 2050.

Solar power will be the principal renewable energy in Virginia. The VCEA calls for 16,100 MW of renewable energy to be created by 2035 – which is eight times Virginia’s current nuclear generation – with 75% of that being developed beginning 2025. Offshore and onshore wind will be part of the mix, too.

Utility-scale solar requires intensive land use. Such large scale solar typically requires 7-10 acres of land per one MW of installed capacity. A 100 MW solar development – an average-size facility – may take up 1,000 acres or more. Therefore, 16,100 MW of solar to be developed across Virginia will require up to 160,000 acres of land.

And with 75% of the required megawatts to be developed by 2025, some 120,000 acres will be developed over the next five years.

Solar facilities require extensive designs. Typical services include civil engineering, site planning, surveying (boundary, construction, as-builts), geotechnical investigation, cultural resources analyses, and sometimes landscape design.

L. Preston Bryant, Jr. is a senior vice president at McGuireWoods Consulting and the registered lobbyist for VAS. He previously represented the City of Lynchburg and Amherst County in the Virginia House of Delegates for 10 years, was Secretary of Natural Resources in the cabinet of Governor Timothy M. Kaine, and was a partner at Hurt & Proffitt, Inc., a Lynchburg-based civil engineering, surveying, and planning firm.

Member Comment Sought on the VAS Strategic Plan

The VAS Board of Directors has an update to the association’s strategic plan under review. Led by the Long Range Planning Committee, chaired by Immediate Past President Gary Faulhaber, the review is intended to update the goals, objectives, priorities, and major activities that will guide VAS in the coming years. The original plan was drafted, circulated among the membership, and adopted by the Board of Directors in 2016. A 4-year review cycle is typical for strategic plans.

Click here to see the 2016 plan and click here to see the draft update. To submit comments on the update, please contact Gary Faulhaber.
For the month of December 2020 through January 2021, you will receive a 25% discount on all advertisement rates. Purchase your ads today!! If you are interested in taking advantage of the advertising discount please contact khea@vasurveyors.org

More than 400 members of the surveying profession in Virginia read The Old Dominion Newsletter. Advertising in the magazine is a great way to reach that audience! Our online publication allows us to link your ad to your website.

Below are the listed advertising rates before the 25% discount.

Advertising Rate for ODS

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Advertising Rates for VAS Website

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- Submission Deadlines: The first day of the month of the issue(s) selected
- Preferred Formats: Ads may be provided in black/white or color; please send a layout-ready copy (compatible electronic files include .eps or .pdf files with all fonts and graphics embedded). All ads must be digital. Please send ads...
Members Sought for Virginia Redistricting Commission

The Virginia Redistricting Commission, which draws the boundaries of Virginia’s Congressional and state legislative districts, is seeking citizen members. Virginia voters recently created the Commission in a state referendum, by passing a ballot initiative that was intended to prevent gerrymandering. A professional with knowledge of GIS and mapping would be of value to the Commission and the Commonwealth.

Applicants must have been registered to vote in Virginia for the last three years and voted in two of the last three General Elections. Eligible applicants must not have ever held or run for partisan or political office, have been a lobbyist for the last five years, or have ever worked for the General Assembly or United States Congress. Career government employees are eligible.

Applications can be submitted until just after Christmas. The application forms have been posted on the Virginia Division of Legislative Services.

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ETSU's Virtual CBAT Career Fair 2021

VIRTUAL CBAT CAREER FAIR 2021
Wednesday, February 17
ETSU is extending an invitation to attend the Virtual CBAT Career Fair 2021. Engage with students regarding jobs and internships/co-op work experiences. Brand your company. Plan for future hiring. Due to COVID-19, the virtual career fair will be using the Career Fair Plus platform. Students will be able to sign up for one-on-one 10 minute meetings with employers of interest. Career Fair Plus will provide information on company profile setup as well as other details as well as be available for help.

CBAT majors expected to attend:

- Engineering, Engineering Technology (including Electronics, Manufacturing, Construction, Products Development, Industrial, Biomedical), Surveying, Interior Architecture
- Computing: Computer Science, Information Technology, Information Systems, Cybersecurity
- Business: Accounting, Finance, Economics, Marketing (including Data Analytics), Management (including HR, Logistics, and International Business)
- Digital Media: Animation Visualization, Game Design, Visual Effects


Click here to pay by credit card or by invoice. Note for employers registering/paying by invoice: the total for the invoice will remain 0.00 throughout the registration process. An invoice will be emailed to your company contact for $250.

Are L.E.D. Lights Interfering With Your Work?
by Mike Jiantonio, Carlson Survey Supply

L.E.D. (Light Emitting Diode) lights have quickly replaced other technologies for efficient environmentally friendly lighting. Unfortunately, many new technologies come with a price and L.E.D.’s are no exception. L.E.D.’s powered by alternating current have power supplies that may be radiating excessive electrical (EMI) noise and interfering with some of your electronic devices.

I experienced this first hand while watching TV. I have a TV antenna (similar to rabbit ears for those who remember them) which allows me to receive 44 broadcast channels. Some are difficult to receive because they are farther away or because they come from the other side of the hill in my back yard. Staying home more often during the pandemic I found myself watching more TV and getting frustrated by some of my favorite shows blinking out or not coming in at all at certain times of the day. Then one night, I turned on my kitchen light and the TV station that I was watching disappeared! Turn the light off and the station re-appeared as if by magic. I repeated this test a number of times and the problem followed the status of the light. I also discovered that this was interfering with the Wireless connection to my printer. (I think I owe the MFG an apology….). I removed the L.E.D. bulb and installed an “old style” incandescent bulb and repeated the test. No interference was detected and my printer worked much better.

It turns out that the power supply in the L.E.D. lamp was creating so much EMI (Electro
Magnetic Interference) that the noise “washed out” the weaker TV signals and WiFi connection to my printer that is in another room. Technically speaking it lowered the Signal to Noise Ratio (SNR).

Why is that happening?

The power supply in L.E.D. lamps need to convert 110V AC to 3V or 4V DC (per segment) to safely power the L.E.D. segments. “Cheap” L.E.D. lamps do not filter the current going through the L.E.D. segment which essentially toggles the lamp ON/OFF rapidly. This creates EMI noise which, if not shielded, can broadcast radio noise some distance away as well as along the wiring in the house.

Why I am telling this story to the Survey community?

Robotic Total Stations use Radios for communication and GPS IS a Radio receiver that communicates with radios between the Base & Rover, and to your data collector. Not to mention you may be using a Network Rover which is connected to the internet using… more radios! And for those who think that BlueTooth and WiFi are some mystical technologies…. They are not. They are 2-way digital radios operating in a specific frequency range with specific communication and security protocols… still radios, and still subject to interference.

L.E.D. lights are everywhere now and some may be creating a lot of noise (EMI). Keep the following in mind:

- Street Lights are being switched over to L.E.D.’s
- Traffic Lights are being switched over to L.E.D.’s
- Automobile lights are being switched over to L.E.D.’s
- And all homes are switching over to L.E.D.’s for power savings, style and longevity.

This has the potential to create a LOT of noise. I now know that some towns in my area are replacing the L.E.D. traffic lights because they are interfering with Police, Fire and Ambulance radios. Look at the following spectrum analyzer signals showing ambient radio noise with the test L.E.D. off, and then ON:

(Data provided by LED Benchmark

Even though this test shows the noise in a specific radio frequency range, for one specific brand/model L.E.D. product, it does not mean that this noise cannot interfere with the intermediate frequency section of a radio, nor that it does not create harmonics in other radio bands.

There is no guarantee that your Survey (and office) Equipment is immune!

When troubleshooting problems keep these sources of interference in mind. Pay attention to when and where you are encountering problems and look for potential EMI sources.
noise sources. Over my 30+ years in this industry, I have witnessed interference from many sources, some are surprising, here are a few:

- Strobe Lights on a Police Car (old style Xenon flash tubes)
- Police 2-Way radios
- Airport 2-Way radios
- Airport Radar system
- MRI machine (Hospital)
- Microwave towers
- High Voltage power lines
- Solar flares
- Welding equipment

What can you do to prevent this? Not much, unfortunately. If you are replacing lighting in your office look for products that are rated for “low noise”. If you do not want to replace your current L.E.D.s’ with low noise units try having an electrician add RF Chokes (ferrite beads) to the power feed close to the L.E.D... Avoid “dimmers” and remote controlled devices even if they are rated for L.E.D.’s as they can become another source of the noise.

Eventually, manufacturers of L.E.D’s and other products will build in noise reduction to prevent this issue. Until then, when all else fails, work in the dark!

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Mike Jiantonio is the owner of Carlson Survey Supply and NuMark Marker Co. He has 35+ years of experience in Survey Equipment sales, service and support.

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University of Maine Continues to Accept Applications

The University of Maine will continue to accept applications for the spring semester until mid-January. The current online options and how to apply can be viewed by clicking here and are:

1. Undergraduate certificate in surveying engineering technology
2. BS in surveying engineering technology (ABET ETAC accredited)
3. Graduate certificate in surveying engineering
4. Professional Science Masters in Engineering and Business surveying engineering option

The undergrad certificate is an easy application and is a good way to work into the BS degree. They currently have 210 surveying students spread across the four options. Out-of-state students enrolled in a UMaineOnline degree or certificate program receive a low tuition e-rate which is in-state*1.25.

Questions on admission to the certificate, or other UMaineOnline programs, should be emailed to tiffany.peterson@maine.edu. Surveying-specific questions should be directed to SVT program director ray.hintz@maine.edu.

Virginia Cell Phone Use While Operating a Motor Vehicle

Effective January 1, 2021, it will be illegal for Virginia drivers to HOLD a mobile device while driving. It doesn’t matter what you are doing with the device – the act of just holding it can get you in trouble. The new legislation is aimed at making Virginia roads safer.
safer. Gov. Ralph Northam and VA General Assembly members are hoping it will literally save lives.

Previous law only restricted texting and emailing while driving, but phone use was otherwise unrestricted, except in highway work zones. Holding a phone while driving will be a primary offense, which means police can pull you over for that alone. Violating the law is punishable.

First offense: $125  
Second offense: $250  
Holding a device in a work zone: $250 fine

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**Project Highlight - Princess Anne Middle School**

*by Greg Zoby, LS*

Buildings aren’t always just square or rectangular anymore. It is becoming more frequent that they contain different design aesthetics. That is true of the new Princess Anne Middle School in Virginia Beach, VA. The new Virginia Beach Pubic School building will be 257,784 SF and is anticipated to be completed in 2021. The design features elements that are unique and challenging when it comes to construction layout surveying. MSA performed the construction layout for this project for McKenzie Construction Corporation. Some of the unique features include a curved architectural design of the main building, a radial courtyard featuring a “circle of fifths,” curved step walls and runnels, and a theater with second floor seating. Additional elements such as radial common spaces and curved pathways featuring artistic inlays added to the complexity of staking out the design.

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Greg Zoby, LS is a Survey Project Manager and an Associate with MSA, P.C. Greg has been with MSA since 2003.
TWOELVE HOLIDAY SAFETY TIPS

1. Keep decorations at least three feet away from heat sources – especially those with an open flame, like fireplaces and candles.

2. The best decorations are safe decorations, so when you’re decorating, make sure not to run cords under rugs or furniture.

3. If you have a natural Christmas tree, water it to keep it fresh and safe.

4. Always turn off your decorations when you leave your home and when you’re sleeping.

5. If you’re using extension cords or adapters that add receptacles, consider having a qualified electrician add more outlets to your home.

6. Only use electronics in dry areas. As tempting as it is, you just can’t decorate your aquarium with icicle lights.

7. Remember that phones and tablets should stay on your nightstand.

8. Every home needs a working smoke alarm in each bedroom, outside sleeping areas and on every level, including the basement.

9. If you’re using a space heater, switch it off before leaving the room.

10. Inspect your decorations and discard any that are damaged or worn out.

11. Keep batteries stored safely in their packaging and out of reach from small children and pets.

12. The best gift for your family is an Arc-Fault Circuit Interrupter breakers or outlets. Many electrical fires that occur every year could be prevented by AFCIs.

Please share this free resource to save lives

Upcoming Events
• Thursday, January 21, 2021 - Board of Directors Virtual Meeting
• Friday, January 22, 2021 - Virtual Seminar
• 73rd Annual Convention & General Membership Meeting - April 21-24, 2021 (tentative)
• June Seminar and Board of Directors Meeting - 25-26, 2021 (tentative)
• September Seminar - 24-25, 2021 (tentative)

The Old Dominion Surveyor
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Editor
Chris Jensen

Publisher
Khea Adams - Virginia Association of Surveyors

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is doing for the surveying profession and be sure to tell the new member to include your name on the recommended by portion of their application.