

# COOPERATIVE CONNECTIONS

## Invasive Species

**Zebra Mussels  
on the Missouri**  
Pages 8-9

**Drone Spraying**  
Pages 12-13



# 2022 ANNUAL MEETING MINUTES

The 76th Annual Meeting of the Members of Douglas Electric Coop., Inc. was held at Douglas Electric Headquarters on September 12, 2022.

The meeting was called to order at 7:00 P.M. by Chairman Ervin Fink and Secretary David Neugebauer kept the minutes thereof.

Rev. Ryan Loeslie gave the invocation.

The Chairman declared that a quorum was present.

The Affidavit of Mailing and Notice of Meeting were read by Secretary David Neugebauer.

Motion was made and second to waive the reading of the minutes of the last Annual Meeting and to approve minutes as printed in the September Cooperative Connections. Motion carried.

Treasurer David Neugebauer presented the Audited Financial Report for the past fiscal year. Motion was made and second to accept the Audited Financial Report. Motion carried.

Project Attorney Don Petersen assumed the chair to conduct the election of Director. A petition had been returned by David Neugebauer of District No. 2 and Blake Ligtenberg of District No. 3 and shall be deemed elected as Director's from said Districts.

Jay Spaans gave the Manager's Report, which consisted of the following items: explained the East River Map and Basin's, various projects that Douglas did, prevention by good service measures, material shortages and new building addition.

Bob Sahr gave the East River Report and he explained East River History, weather issues and how they fixed it, safety measures practiced and Reed Fund goals.

Mark Hofer, NRECA gave a brief report.

Tom Boyko, former East River Manager, thank you for Ervin and Dee Fink.

Jay Spaans presented a Retirement Gift to Ervin Fink for 36 years of dedicated service to Douglas Electric.

Joel Baier presented the Service Awards to Director David Neugebauer 25 years, Lineman Randy VanZee 25 years, Director Larry VanderLey 5 years and Lineman Adam Nase 5 years. Jay presented \$50.00 to the youngest member present who was Tyler Lau age 32.

Chairman Ervin Fink called for any old business. There was none. He then called for any new business. There was none.

Chairman Ervin Fink then made some introductions of visitors present. He also thanked the Members for attending, Rev. Ryan Loeslie, Wagner Food and all those that helped to put the meeting together successfully

Motion was made and second to adjourn the meeting. Motion carried.



## RE-ENERGIZING CO-OP MEMBERSHIP

**YOUR VOICE. YOUR POWER. YOUR CO-OP.**  
*The best part about being a member of your local Touchstone Energy® Cooperative is just that...it's YOUR cooperative. That means:*

- **ONE MEMBER = ONE VOTE**  
Your co-op membership means that you get a vote, which ensures that your voice is heard and accounted for. Every member can vote and has a right to help elect local board members - shaping policies and influencing business.
- **YOU HAVE A SAY**  
The democratic process means you have a say in co-op decisions that affect your home, business and community.
- **YOUR CO-OP ANSWERS TO YOU**  
Because your local Touchstone Energy Cooperative is not-for-profit, its responsibility is to answer to you, not shareholders.
- **INVESTED IN COMMUNITY**  
When you're a member of a local Touchstone Energy Cooperative, you're part of an organization that is dedicated to your local community.
- **CAPITAL CREDITS**  
Because rural electric co-ops are not beholden to shareholders and are not-for-profit, they are able to return profits to their members. That means you can get money back in your pocket for being an electric co-op member!

Learn more about the power of membership at [YourCoopPower.com](http://YourCoopPower.com)

**COOPERATIVE  
CONNECTIONS**

**DOUGLAS  
ELECTRIC**

(USPS No. 019-046)

**Board of Directors:**

Wayne Lefers - President  
Larry VanderLey - Vice President  
David Neugebauer - Secretary/Treasurer  
Joel Baier  
Blake Ligtenberg

**Office Staff:**

Jay Spaans - Manager/Line Superintendent  
Phyllis Hrdlicka - Staff Assistant  
Sheila Sanders - Cashier-Receptionist

**Line Crew:**

Troy Ziebart - Line Foreman  
Randy VanZee - Journeyman Lineman  
Brandon Metzinger - Journeyman Lineman  
Adam Nase - Journeyman Lineman

Douglas Electric Cooperative Connections is the monthly publication for the members of Douglas Electric Cooperative, 27913 US Hwy 281, Armour, SD 57313-5726. Families subscribe to Cooperative Connections as part of their electric cooperative membership. The purpose of Douglas Electric Cooperative Connections is to provide reliable, helpful information to electric cooperative members on electric cooperative matters and better rural living. Subscription information: Douglas Electric Cooperative members devote 50 cents from their monthly electric payments for a subscription. Non-member subscriptions are available for \$12 annually. Periodicals Postage Paid at Armour, SD 57313 and at additional mailing offices.

POSTMASTER: Send address changes to Douglas Electric Cooperative Connections, 27913 US Hwy 281, Armour, SD 57313-5726, Phone (605) 724-2323; Fax (605) 724-2972; e-mail sheila@douglaselec.coop

**In case of a power outage, call  
(605) 724-2323**

**MISSION STATEMENT**

Dedicated to provide safe, low-cost reliable electricity to all our Members.

# NOTICE OF 77th ANNUAL MEETING OF THE SHAREHOLDER MEMBERS OF DOUGLAS ELECTRIC

NOTICE IS HEREBY GIVEN to all members of Douglas Electric Cooperative, Inc., that pursuant to provision of the Bylaws, the Annual Meeting of the shareholder members of the above cooperative will be held at the Douglas Electric Headquarters at 27913 US Hwy 281, County of Douglas, State of South Dakota commencing at 7:00 PM on the 11th day of September, 2023, to take action upon the following matters:

1. To elect two Director's for a three year term for District No. 1 consisting of Belmont, East Choteau and Independence Townships and District No. 5 consisting of Holland, Joubert and Walnut Grove Townships.
2. To hear reports and transact any other business as may properly come before the meeting or any adjournment thereof.

David Neugebauer  
Secretary-Treasurer  
Douglas Electric Cooperative, Inc.

This meeting is accessible to persons with disabilities. If special assistance is needed, please contact Douglas Electric Cooperative, Inc., 27913 US Hwy 281 Armour, SD (605) 724-2323.

## 77th ANNUAL MEETING AGENDA

- 6:30 P.M.**      **Member Registration**  
**Dinner Served**  
**Displays**
- 7:00 P.M.**      **Business Meeting Called to Order**  
**Invocation**  
**Determination of Quorum**  
**Proof of Notice for Meeting**  
**Minutes of Previous Meeting**  
**Financial Report**  
**Director Election**  
**Manager's Report**  
**East River Report**  
**Award Presentation**
  - Phyllis Hrdlicka – 55 Years
  - Troy Ziebart – 30 Years
- Adjournment of Meeting**  
**\$50 Cash to Youngest Member Present**

# No One Can Take Your Place

## National Farm Safety and Health Week Sept. 17-23, 2023

The 2019 data for the U.S. Bureau of Labor Statistics indicates that the agricultural sector is still the most dangerous in America with 573 fatalities, or an equivalent of 23.1 deaths per 100,000 workers.

Fall harvest time can be one of the busiest and most dangerous seasons of the year for the agriculture industry. For this reason, the third week of September has been recognized as National Farm Safety and Health Week.

This annual promotion initiated by the National Safety Council has been proclaimed as such by each sitting U.S. President since Franklin D. Roosevelt in 1944. National Farm Safety and Health Week is led by the National Education Center for Agricultural Safety (NECAS), the agricultural partner of the National Safety Council.

### Did you know?

- Rural roads pose special dangers especially during harvest season. Watch out for slow-moving farm vehicles and be informed, aware, and patient while sharing rural roadways.
- Farm stress is real, and many things like weather events, tragedies, market uncertainty, or diseases can tip us out of our comfort zone.
- Every day, about 33 children are seriously injured in agricultural-related incidents.
- Hazardous gasses on farms can be found in silos, manure storages, grain bins, and other confined spaces. Be in the know about hazardous gasses and where they can be found on farms.

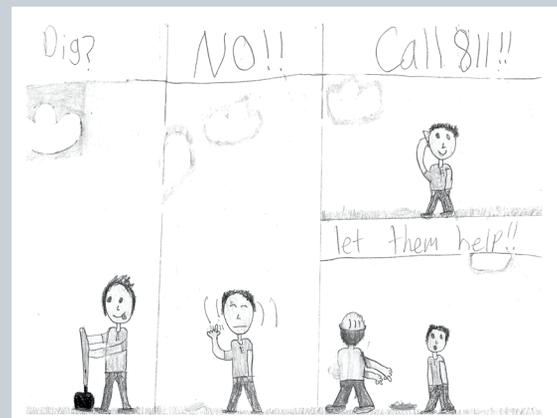
Farm and ranch life can be demanding and stressful. Over the past several years, it has reached a critical stage for the folks who grow America's food with COVID-19 pandemic impacts on top of natural disasters, extreme weather events, financial pressures due to fluctuating commodity prices, labor shortages, trade disruptions and a

long list of other factors. Given these ongoing challenges, it's no surprise that more farmers and farm families are experiencing stress and mental health concerns.

Today, safety professionals still use this promotional week to remind those working in our nation's most dangerous industry to be careful. Agriculture's death rate is why farmers and ranchers must use safe farming practices during harvest and throughout the year.

South Dakota's electric cooperatives urge our agricultural producers to make better safety and health decisions this harvest season and during the next year. Join us in promoting safety during the 80th annual **National Farm Safety and Health Week Sept. 17-23, 2023**.

During this time, please encourage others to adopt safe practices and behaviors as we prepare to prevent injuries during this harvest season.



### Call 811!

#### Evey Hinrichs, Age 9 3/4

Evey Hinrichs advises people it's not safe to dig before calling 811. Evey is the daughter of Kelby and Carrie Fey from Aberdeen, S.D., members of Northern Electric Cooperative.

Kids, send your drawing with an electrical safety tip to your local electric cooperative (address found on Page 3). If your poster is published, you'll receive a prize. All entries must include your name, age, mailing address and the names of your parents. Colored drawings are encouraged.

# DIPS AND SPREADS

## SPINACH DIP

Ingredients:

- 16 oz. sour cream
- 1 cup mayonnaise (must be mayo)
- 1 pkg. frozen chopped spinach, thawed and drained
- 1 can water chestnuts, chopped
- 1 tbsp. minced onion
- 1 tsp. season salt
- 1/2 tsp. Accent
- Dash of Worcestershire sauce
- 2 dashes of hot sauce

**METHOD**

Serve with Club or Ritz crackers.

Linda Hubbard  
Rapid City, S.D.

## CREAMY CINNAMON DIP

Ingredients:

- 1 pkg. (8 oz.) cream cheese, softened
- 1 container (8 oz.) sour cream
- 1/4 cup packed brown sugar
- 2 tbsps. milk
- 2 tps. ground cinnamon
- 1 tsp. all natural pure vanilla extract

**METHOD**

Beat all ingredients in medium bowl with electric mixer on medium speed until well blended. Spoon into serving bowl. Cover.

Refrigerate until ready to serve. Serve with fresh fruit slices, cookies or pound cake or angel food cubes.

[mccormick.com](http://mccormick.com)

## CARAWAY CHEESE SPREAD

Ingredients:

- 1 container (12 oz.) Cheddar cheese spread, at room temperature
- 2 tps. minced onions
- 1 1/2 tps. whole caraway seed
- 1/2 tsp. Lawry's® Seasoned Salt

**METHOD**

Mix cheese spread and seasonings in medium bowl. Cover. Refrigerate at least 2 hours to blend flavors.

**Serving Suggestion:** Serve with assorted vegetables such as celery sticks, cherry tomatoes, jicama sticks, carrot sticks, endive leaves, and/or assorted crackers.

[mccormick.com](http://mccormick.com)

Please send your favorite recipes to your local electric cooperative (address found on Page 3). Each recipe printed will be entered into a drawing for a prize in December 2023. All entries must include your name, mailing address, phone number and cooperative name.

# Energy Efficient Windows

**Q:** My windows are old and drafty, and I'm thinking about replacing them. Can you recommend a few options I should consider?

**A:** Upgrading or improving your windows is an important component of your home's energy efficiency. According to the Department of Energy, heat gain and loss through windows consumes 25% to 30% of residential heating and cooling energy use.

Start by identifying the kind of windows you have. Are they single pane or double pane? Looking closely at the window's edge, you can see the number of windowpanes. Are the frames metal, wood or vinyl? Some manufacturers etch the make and model numbers in a corner of the glass, so you can look up the manufacturer for more information.

Single-pane windows and double-pane windows with metal frames are the least energy efficient. The lower the efficiency of your existing windows, the higher the potential for energy savings.

There are several options for improving your windows, ranging from replacement windows to storm windows to budget-friendly repairs.

## Window Efficiency

Several components can make windows more efficient. High-quality frame materials insulate and reduce heat transfer. Two or more panes of glass with space in between (filled with air or gas) improve the window's insulation capability. Warm edge spacers hold the panes of glass the proper distance apart and help insulate the edges of the panes. Low-emissivity coatings applied to the glass can reflect infrared light, keeping the heat in during the winter and out during the summer.

Window efficiency is rated in U-factor and Solar Heat Gain Coefficient, or SHGC. U-factor measures heat transfer through the window, which relates to how well it insulates. The lower the U-factor, the more efficient the window. The

SHGC measures how effectively the window blocks heat from the sun.

## Replacement and Maintenance

If you want to replace your existing windows, I recommend shopping for ENERGY STAR®-certified windows. ENERGY STAR® sets specific U-factor and SHGC requirements based on your geography, so you get the best fit for your location. Replacement windows offer additional benefits, like improved operability and aesthetics. As with many industries, the window industry has been impacted by price increases over the past few years, so keep in mind, this can be an expensive upgrade.

Storm windows are a lower-cost solution for some homes. Traditional storm windows are made with clear glass. Low emissivity storm windows have energy savings similar to replacement windows at about a third of the cost.

Storm windows are mounted to the interior or exterior and are available in operable styles, so you can still open and close your windows. Look for ENERGY STAR®-certified models.

If you want to maintain the historic architecture of your existing windows, low-e storm windows are a great option. Some companies can refit your existing window frames with custom double-pane glass and weatherstripping.

As with any home improvement project, be sure to get multiple quotes to compare pricing and scope of work. You may find additional savings with rebates from your electric co-op, or state or federal tax credits for window upgrades.

If new windows or storm windows are not in the budget, your best bet is to maintain your existing windows. Keep the paint and caulking on the exterior in good condition. That will help prevent damage from the elements. Caulk around the inside trim, ensure sash locks are installed properly and seal tight when locked. There are a variety of weatherstripping types for windows to keep drafts at bay.

Whether you replace or make improvements to what you have, adding efficiency to your windows will add year-round comfort to your home.



**Miranda Boutelle**  
Efficiency Services  
Group

# TERMESPHERE PAINTER

## Local Art Legend Has a Complete Perspective on Art

Jocelyn Johnson

jocelyn.johnson@sdrea.coop

Dick Termes, a local artist from Spearfish, S.D., has an original artistic ability. He has found a way to capture the complete perspective of his environment into one piece of art – the Termesphere.

This unique type of art isn't practiced by anyone else – it's an exclusive artform that embodies all that a person sees around them if they were to turn in a circle while looking up and down.

Termes hit upon the idea of six-point perspective in 1968 at the University of

Wyoming where he earned his master's degree in art.

Later, while teaching visual perspective as an art professor, his panoramic view of art grew. During a class discussion, a student of his compared five-point perspective to a ball. This comment was the start of his six-point perspective art.

"I imagined I was on the inside of a ball but still was drawing on the outside," Termes said. "I would have what's behind me in the picture as well as what's in front of me and all around me. This would be a six-point perspective and I would have to put it on a sphere to do that."

"I thought at the time, certainly other people have done this; but, 52 years later, I realize, no, no one has done this," Termes said. "It opened such a big door. There could be a thousand people doing it and we wouldn't be doing the same thing."

Termes has gained

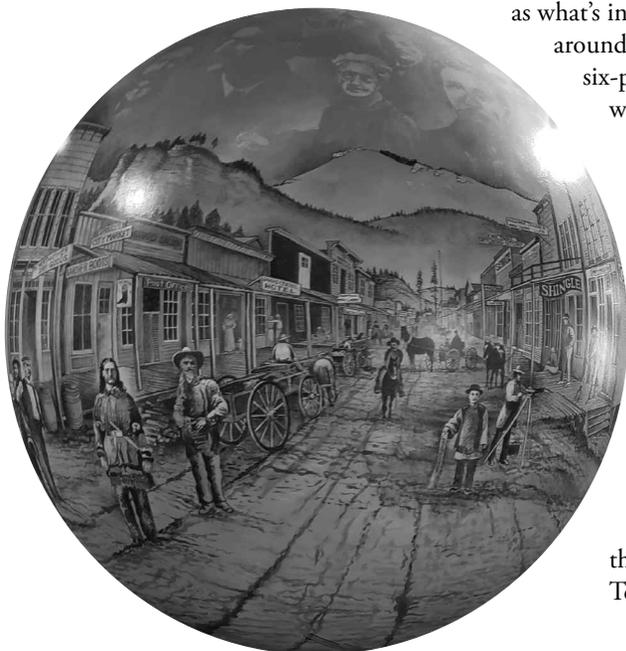
notoriety worldwide for his art. In 1998, he was invited to showcase his art alongside M.C. Escher, a renowned graphic artist, at the University of Rome.

Even though his art is known worldwide, his home is South Dakota. "I get a lot of inspiration by living in South Dakota and the Black Hills," Termes said. "It's been the perfect spot for me."

Termes received the South Dakota Governor's Award in the Arts and has been inducted into the South Dakota Hall of Fame. His hometown of Spearfish, S.D., also proclaimed September 9 as "Dick Termes Day."

In 1992, Termes opened Termesphere Gallery outside of Spearfish, S.D., where he sells his art. Since its opening, his gallery has been visited by thousands of art enthusiasts from around the world.

"People are intrigued with this art because it's the first time a painting can be the total environment," Termes said. "It doesn't have to just be a square or rectangle. Every second of every day, you're in a complete environment. All you have to do is turn around and look at is and you have a Termesphere."





State run boat checks and washing stations aim to reduce the spread of aquatic invasive species, such as zebra mussels, in South Dakota.

## Zebra Mussels and Their Impact on the Missouri River

**Frank Turner**

frank.turner@sdra.coop

The Missouri River in South Dakota, renowned for its outstanding recreational areas, fishing holes and scenic campgrounds, draws a wide swath of tourists from around the world. However, these welcoming public waters have become the home of one unwelcome intruder—the infamous zebra mussel.

Endemic to southeastern Europe, the zebra mussel made its journey to the United States Great Lakes in the '80s as an unlikely stowaway, clinging to the hulls of large ships and barges. Since their arrival, the mussels have proliferated across the Midwest, spreading from one river system to the next.

So how can a mollusk, merely the size of a fingernail, inflict millions of

dollars in economic damage to local recreation, agriculture and hydroelectric power generation? Martin Goding, Gavins Point Dam maintenance and operations manager with the U.S. Army Corps of Engineers, explains that one zebra mussel can spawn more than a million eggs in a season, overrunning the local ecosystem. Once established, the mussels latch onto every viable surface in the water—they envelop pipes, ruin beaches and disrupt hydroelectric dams.

In 2015, local governments detected South Dakota's first infestation of zebra mussels in Lewis and Clark Lake. Goding says this discovery ignited a fierce battle against the invasive species.

“We are in the war to eradicate the zebra mussel, but I don't think we're ever going to completely eliminate them,” said Goding. “They are multiplying faster than we can get rid of them.”



Zebra Mussels completely envelop Gavins Point Dam's water gates, adding up to an additional 30 tons of weight.



With few effective treatments at their disposal, the U.S. Army Corps of Engineers has been forced to adjust to operating within a river infested with mussels. The change has significantly

increased the maintenance costs associated with running Gavins Point Dam. Pipes, essential for cooling the dam as it produces electricity, now require routine disassembly and cleaning. Over the course of six months of warm weather, the dam's lakeside gates collect an additional 30 tons of weight from the relentless accumulation of zebra mussel shells and the debris they carry.

"We have spent a million and a half dollars over the last five years just in maintenance to deal with this invasive species—and that's not even counting the cost of materials," said Goding. "Zebra mussels have really impacted the operation and turned maintenance into a nightmare."

Beyond maintenance, zebra mussels have also disrupted power generation. Outbreaks of zebra mussels within

the dam's infrastructure have resulted in unscheduled and forced outages, interrupting an energy source that has been historically reliable.

"One could safely say that Gavin Point Dam has lost a million dollars in power generation over the last five years," said Goding.

Since the initial invasion in 2015, some strategies have emerged to mitigate damage from the invasive species. The introduction of UV lights and the addition of strainers have curbed the presence of zebra mussels within the dam. Even still, the mussels have continued their spread northward through the Missouri River to Lake Sharpe near Pierre, S.D.

According to Goding, the experiences at Gavins Point Dam serve as a stark warning for dams and water systems yet to face infestation.

"Lewis and Clark Lake is beyond prevention," said Goding. "We have crossed that bridge and they are not going away."



# DOUGLAS ELECTRIC ANNUAL REPORT 2022

## Balance Sheet

	2022	2021
<b>ASSETS</b>		
Total Utility Plant	\$9,664,594	\$9,360,420
Less: Reserve for Depreciation	\$3,133,231	\$2,952,310
Net Value of Electric Plant	\$6,531,363	\$6,408,110
Investments in Associated Organizations	\$172,058	\$158,842
East River, Basin and CFC Capital Credits	\$1,932,531	\$1,816,220
Other Investments		
Total Investment Account	\$2,104,589	\$1,975,062
Cash and Temporary Investments	\$167,665	\$130,455
Accounts Receivable	\$369,812	\$345,290
Materials and Supplies	\$151,377	\$126,396
Prepaid Expense	\$25,412	\$57,817
Other Current Assets	\$342	\$337
Other Deferred Debits	\$11,499	\$40,749
TOTAL ASSETS and OTHER DEBITS	\$9,362,059	\$9,084,216
<b>MEMBER EQUITIES</b>		
Patronage Capital, Memberships & Other	\$3,501,296	\$3,349,995
<b>LIABILITIES</b>		
Long Term Debt (RUS, FFB & CFC)	\$5,525,620	\$5,473,085
Notes and Accounts Payable	\$203,344	\$149,441
Consumer Deposits	\$10,057	\$8,784
Accrued Taxes and Employee Benefits	\$108,686	\$94,247
Deferred Credits	\$13,056	\$8,664
TOTAL MEMBER EQUITIES & LIABILITIES	\$9,362,059	\$9,084,216

## Statement of Revenue and Expense

	2022	2021
<b>REVENUE</b>		
Farm and Residential Energy	\$2,265,638	\$2,144,627
Irrigation Energy Sales	\$68,945	\$58,572
Commercial Energy Sales	\$765,951	\$736,297
Other Electric Revenues	\$10,854	\$16,916
TOTAL REVENUE	\$3,111,388	\$2,956,412
<b>EXPENSES</b>		
Purchased Power Costs (East River Electric)	\$1,530,472	\$1,501,553
Operating and Maintenance	\$441,685	\$426,528
Customer Service, Consumer Accounting and Collections	\$172,542	\$166,518
Administrative, Office and General Expense	\$480,214	\$419,612
Depreciation	\$239,230	\$229,585
Interest on Long Term Debt	\$161,046	\$159,233
Other Deductions	\$339	\$1,242
TOTAL EXPENSES	\$3,025,528	\$2,904,271
<b>MARGINS</b>		
Operating Margins	\$85,860	\$52,141
Non-Operating Margins, Interest and Other	\$8,671	\$5,811
G & T Capital Credits (East River & Basin)	\$206,488	\$97,240
Other Capital Credits (RESCO & CFC)	\$19,271	\$13,706
TOTAL MARGINS	\$320,290	\$168,898

## Statement of Non-discrimination

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs).

Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotope, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at <http://www.acsr.usda.gov/complaintfilingcust.html> and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by:  
 (1) mail: U.S. Department of Agriculture Office of the Assistant Secretary for Civil Rights 1400 Independence Avenue, SW Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: [intake@usda.gov](mailto:intake@usda.gov).

USDA is an equal opportunity provider, employer, and lender.



**Need some Fence Post??**

**We have Pole Scrap for Sale \$1.00 Per Foot**

**Call (605) 724-2323**

## IN CASE OF OUTAGE, CALL 605-724-2323

1 <sup>ST</sup>	Look at your main meter.
2 <sup>ND</sup>	If the display is NOT lit up, you do not have power and should call Douglas Electric. If your main meter display is ON, you should have power.
3 <sup>RD</sup>	If the display is ON, you can check your breakers below the meter or the breakers in your house.
4 <sup>TH</sup>	When reporting outages, please give name of member and location number to assist with prompt response. If you don't get an answer at 605-724-2323, call: Troy Ziebart, 933-2249, Adam Nase, 770-0630, Brandon Metzinger, 770-6469, Randy VanZee, 770-2565 or Jay Spaans, 530-3683



## DRONE SPRAYING

# Drone Spraying

## A Modern Tool in Today's Agriculture

Scott Waltman

As modern agriculture continues to evolve, drones are one of the newer tools farmers can use to help their land and crops.

The hovering, unmanned aircraft can be handy for small areas and places it's difficult for traditional spraying options to get to, according to those who offer the service to those in the ag sector.

Drones aren't the weapon of choice to spray chemicals on 1,500 acres of corn or soybeans, but that day is likely coming, said Derek Ver Helst, who operates Dakota Unmanned Aerial in Brandt.

Closer to the coasts, drones are already used for a multitude of purposes that aren't just fun and shooting videos. They are only going to become more prominent in ag-heavy states like the Dakotas, he said.

"The possibilities are pretty much

just limited by your imagination," Ver Helst said.

He said his background as an agronomist piqued his interest in spraying with drones. Dakota Unmanned Aerial is a side hustle he started about two years ago. He works as a senior conservation agronomist for AgSpire.

Nick Williams had a background in agriculture working for CHS Cooperative and selling farm equipment before starting Williams Drones southeast of Parkston in August 2020. Business has been good, he said, estimating that it has doubled each year.

"It's really taken off, it continues to grow," Williams said.

He and Ver Helst agree that farmers have been receptive to the relatively new option, willing to give it a try when the project isn't too big.

Williams said he does mostly ag-related work. In late July, he was staying busy with fungicide applications.

Drones are great near shelter belts and around wet areas. Those are places



that are hard for a land rig or spray plane to get to. Drones work better because they are smaller and more agile, he said.

A route is mapped out and the drone reads that information and flies mostly autonomously, Williams said.

He sets the height, speed, gallons of application per acre and swath width. Once a drone is in the air, it does almost all of the work, though Williams said he can control the height a little, if needed.

Drones have sensors and other features so they don't run into trees, equipment, wind turbines or structures, he said.

Depending on the amount of land to be sprayed, it can take longer to map a field than to spray it, Ver Helst said.

His drones carry 10 liters, but others have a capacity of 40 liters, he said. When a drone runs out of chemical, it returns back to the operator, who puts on a new tank, changes the battery and sends it back out, Ver Helst said. The drone will pick up spraying right where it left off, he said.

In 2016, land-grant university researchers and educators started work to increase the use of drones in agriculture, according to information from the U.S. Department of Agriculture.

That work continues today. It includes identifying and evaluating the most user-friendly and cost-effective drone platforms and sensors, according to the USDA.

Some drone operators offer swarm spraying, Van Helst and Williams said.

For instance, there could be five drones programmed to follow the same grid over a field, pasture or slough working in unison, Van Helst said. As one runs out of spray, it returns for a new tank of chemical and battery until the job is finished.

Van Helst said he doesn't do a lot of spraying. Most of it is on pastures.

But, he said, he has done some work in orchards and vineyards where grapes are grown.

Williams has branched out a little more. Last year, he said, he was hired to do a dust-control project at the Sanford Underground Research Facility in the Black Hills. That is the former Homestake gold mine near Lead.

And both men say drones can be used to combat one of South Dakota's least-popular commodities – mosquitos.

Drones can be used to spray for skeeters on fairgrounds, when there's a big city gathering and even in a residential area.

During the COVID-19 pandemic, they were even used to shower stadiums with antibacterial spray, Van Helst said.

One drone operator in Texas was contacted to see if drones could be used to drop fish food into a pond, Williams said.

He said his drones can cover about 20 acres an hour, though some can do 30 hours an acre. And he expects the new drones released next year will be able to spray 40 hours in an acre.

For large fields, a land rig or a spray plane is still a better bet, Williams said. A traditional ground sprayer can probably cover 70 acres an hour, he said.

Van Helt said his T-40 drone can handle about 100 acres a day.

One challenge in getting started is getting all of the licensing needed from the Federal Aviation Administration.

He spent about two years testing and writing exemptions and working through the legalities.

Commercial drone operators need a remote pilot certificate from the FAA. Another license is needed to dispense chemicals from a flying aircraft, Van Helst said.

He said he has procured 14 FAA exemptions and will need two more next year.

That's why some drone operators hire a business to navigate that process. That's the route Williams took.

Being a drone operator can be fun or frustrating, just like any other job, he said. He just checks the forecast and hopes it holds. Trying to spray when the wind is 20 mph or more just isn't going to work, he said.

Even so, Van Helst said, drones are a fantastic tool. Ground rigs and spray planes will always be needed, and drones are just one more option for farmers to tap.

"There's a right time and a right place for everything," he said.





# SHIFTING GEARS

The Viborg-Hurley School District's new electric-powered school bus is expected to arrive in September.

## South Dakota School District Powers Forward with New Electric Bus

**Frank Turner**  
frank.turner@sdrea.coop

The shift from gas and diesel-powered vehicles to electric alternatives is gaining momentum across the U.S., encompassing cars, semi-trucks, and even school buses. Among these making the change is the Viborg-Hurley School District, which is preparing to modernize one of their classic yellow school buses.

The initiative began when Viborg-Hurley School District secured a grant through the EPA's Clean School Bus Program earlier this year, enabling the purchase an electric school bus to join the school's fleet. Using nearly \$400,000 from the grant, the school bought their bus and accompanying charging station from Lion Electric,

a Canada-based electric vehicle bus manufacturer. Southeastern Electric, a local South Dakota cooperative,

was instrumental in encouraging the school district to apply for the grant, according to Matt Jensen, the Viborg-Hurley School District business manager.

"We have community members working at Southeastern who are always looking out for the school's best interests," said Jensen. "They keep us informed about opportunities like this."



Set to arrive in September, the new bus reimagines the classic yellow school bus for a greener future. Its entirely electric engine doesn't require any traditional fuel and instead relies on an electric motor and a charged battery to transport students. To comply with the grant, the school district will have to retire one of their existing diesel engine busses, phasing out the old technology for something new.

According to Jensen, the introduction of new electric technology into the school district's bus fleet has elicited a few questions

and some skepticism from the local communities. With a top speed capped at 60 miles per hour and a range of up to 155 miles, the bus comes with its own set of limitations. However, Jensen explained that the vehicle's primary purpose will be for everyday local bus routes, rather than long-distance extracurricular travel.

"There was, and maybe still is, some hesitation because it's something new," said Jensen. "That being said, there's still a lot of excitement and hope that this becomes a more efficient and cleaner way to operate our bus fleet."

The school district will not

be without support during this transition. Lion Electric offers complete after-sales support for their vehicles and nearby services providers have the capability to service the vehicle as necessary.

"What drew us to Lion is that their buses are climate tested, which is important to us in South Dakota," he said. "They are specifically designed for harsher climates. I think it will just take some getting used to but I think the community, our students and bus drivers, are excited for the new opportunity."



## REGISTER TO WIN!

Bring this coupon and mailing label to the Touchstone Energy® Cooperatives booth at Dakotafest or the South Dakota State Fair to win a prize!

Your Phone Number: \_\_\_\_\_

Your E-mail Address: \_\_\_\_\_



To have your event listed on this page, send complete information, including date, event, place and contact to your local electric cooperative. Include your name, address and daytime telephone number. Information must be submitted at least eight weeks prior to your event. Please call ahead to confirm date, time and location of event.

**SEPT 2**  
**Hidewood Valley Barn Dance**  
7 p.m.  
47236 183rd St  
Clear Lake, SD

**SEPT 4**  
**Hidewood Valley Steam Threshing Show**  
Steam Whistle Blows  
1 p.m.  
47236 183rd St  
Clear Lake, SD

**SEPT 8-10**  
**James Valley Threshing & Tractor Show**  
World's Largest Steam Traction Engine  
Andover, SD  
605-868-3242

**SEPT 9-10**  
**Old Iron - Fall Harvest Festival**  
Delmont, SD

**SEPT 10**  
**10th Annual Black Hill Beer Run**  
Spearfish Campground Pavilion  
Spearfish, SD  
605-642-7730

**SEPT 10**  
**100th Anniversary of Little Brown Church**  
11 a.m.  
Service, Potluck & Auction  
West of Hayes  
Hayes, SD

**SEPT 11-17**  
**Traditions & Olivia American Legion**  
Olivia, MN  
320-523-1000

**SEPT 11-17**  
**HOBO Days**  
Live Music-Fun  
Olivia, MN  
320-523-1000

**SEPT 16**  
**Midland Appreciation Day**  
Theme: Automobiles  
1:30 p.m.  
Midland, SD

**SEPT 17**  
**St. Anthony of Padua Catholic Church Church Bazaar**  
12 p.m.  
Hoven, SD

**SEPT 22-24**  
**Coal Springs Threshing Bee**  
Meadow, SD  
605-788-2229

**SEPT 23**  
**Springfield Dakota Senior Meals Fall Festival**  
9 a.m.  
Springfield Community Building  
Springfield, SD

**SEPT 30**  
**Day of Wellness**  
10 a.m.  
Sturgis Armory  
Sturgis, SD

**SEPT 29-30**  
**Junkin' Market Days**  
Ramkota Exhibit Hall  
Sioux Falls, SD  
605-941-4958

**OCT 6-7**  
**Holman Acres Pumpkin Fest & Vendor Show**  
Philip, SD  
605-441-1060

**OCT 7**  
**Spirit of Dakota Award**  
Huron Event Center  
Huron, SD  
605-352-6073

**Note: Please make sure to call ahead to verify the event is still being held.**