MOREAU-GRAND Electric Cooperative A Touchstone Energy® Cooperative

MOREAU-GRAND ELECTRIC
SEPTEMBER 2023 VOL. 24 NO. 5

COOPERATIVE CONNECTIONS

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September Update

Melissa Maher
Manager

There will not be a director election at this year's annual meeting which will be held in Eagle Butte on Wednesday, Oct. 4. Petitions were available from June 20 through July 20. The following individuals completed petitions for the various districts: District #2, Ryan Maher (incumbent) from Isabel area; District #3, Geralyn Hahne (new board member) from Trail City area; and District #5, Kerry McLellan (incumbent) from Dupree area. Note: the board voted to leave the vacancy in District #3 created by the death of Kelly Landis open over the next two months until the October election.

Your board selected Kerry McLellan as your representative on the Rushmore Electric Power Cooperative board to replace Kelly Landis. Kerry will be officially seated to the Rushmore Board at their August board meeting in Rapid City.

The October issue of *Cooperative Connections* will be the official annual meeting publication and will include the 2022 annual report along with the director candidate profiles. This year's annual meeting is scheduled for Wednesday, Oct. 4 at the 20-1 Eagle Butte School. A meal will be served in the school cafeteria with the meeting to follow in the gymnasium. The theme for the meeting is "Cooperative Strong". This strength comes from you, the member/owners, along with the employees and directors who willingly serve you.

At the July meeting, the board approved a $300,000 general capital credit retirement for a December payment schedule. This payment will complete retirement for year 1997 and a portion of 1998 with the balance distributed on a percentage basis to all members up through 2022 who are eligible for a capital credit payment. All current rate payers will see their credit applied to their account. Total capital credit retirement since Moreau-Grand's inception will surpass $10.5 million by the end of this year. Returning capital credits is the mark of the 'cooperative' way of doing business.

Your board will once again be supporting a scholarship with their own personal money in 2024. This will be the fifth year for your board to support our youth attending college. In combination – they will provide a $2,500 scholarship to an individual, no matter the profession, planning to attend college of their choice. Stay tuned for more information on this.
PO BOX 436, Eagle Butte SD

We have begun the process of working with our engineering firm on a cost-of-service study in anticipation of an upcoming rate increase in the 2024 timeframe. The entire procedure will take several months with the final decision made by the board upon review and recommendations from the study. Our last rate increase was in August of 2016. The time has come when we can no longer sustain the continued rising prices of everything. We will keep you updated as this develops.

By the time you receive this newsletter – our new office building precast walls should be erected – it will begin to take shape and look like a building.

Until next month… God Bless our Strong Cooperative

LOCATE YOUR ADDRESS

If you locate your address on any of the inside pages of the Moreau-Grand Electric's *Cooperative Connections*, notify us and you will receive a $25 bill credit. "Eligible addresses will not be on the front or back cover."

COMPARATIVE REPORT	Current (June 2023)	1 year ago (June 2022)	10 Years Ago (June 2013)	% Change in 10 years
Number of Meters	7,128	7,121	6,787	5%
Kilowatt Hours Sold	6,937,586	6,679,929	5,496,078	26%
Cost of Purchased Power	$502,308	$479,612	$372,204	35%
Overall Ave. Rate / kWh Per Member	0.1202	0.1194	0.1112	8%

COOPERATIVE
CONNECTIONS
MOREAU-GRAND
ELECTRIC

(USPS No. 018-951)

Manager: Melissa Maher

Editor: JJ Martin, Member Services and IT Director

Directors
Larry Hieb, President
Kerry McLellan, Vice President and acting Secretary-Treasurer
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Clint Clark
Bob Keckler
Paul Lawrence
Ryan Maher
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Jamie Jones, Accountant

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July 18, 2023 Board Meeting Minutes and May 2023 Financial Information

The July 18, 2023, board of directors' meeting was held at the Timber Lake office with the following directors present: Bartlett, Clark, Hieb, Keckler, Lawrence, Maher, McLellan, Walker and Wall, director absent: Landis and others present: Manager Maher and Finance Officer Lemburg (Delegated Recorder of Minutes).

The Large Power Users monthly report was given by Stephanie Bartlett, which included topics on large power usage and payments.

The Member Services report was given by JJ Martin, which included a Cooperative Connections interview with Andy and Bev Velsko focusing on their solar array, ice cream socials were successful, solar trailer demos, visited the Upper Elementary School in Eagle Butte in preparation for this year's annual meeting, interview with Good Neighbor award winners Buddy and Helen Neigel, annual meeting meal bid specifications, will continue the pre-boxed meals, and this year's theme will be 'Cooperative Strong.' Manager Maher stated Roger's retirement party is scheduled for August 2, 2023, at the Timber Lake Community Center, and provided a solar project update. The Board thanked Roger for his years of service.

The Operations report was given by Kent Larson, which included RAM/ EXO pole changeouts from last year's inspection, re-sagging line by the Keldron substation, RAM/ EXO is currently performing pole inspections in the cities of Dupree, Isabel and Timber Lake, Federated Insurance visit, Dodge Bucket Truck is currently being repaired and will be sold soon, Apprentice Linemen Brent Spafford and Collin Grage started July 17, 2023, accepted sealed bids for hail damaged steel siding and roofing from the Timber Lake Warehouses, Timber Lake to Isabel GOAB maintenance was completed by Boldt Power, and outage updates.

Manager Maher gave the Managers report, which included an update on the recently approved RUS loan, new headquarters facility update, FEMA funding received for the December 2022 Ziebach County storm, Basin Electric CEO resignation, Basin Electric June financials, Basin Electric Annual Meeting to be held August 16 and 17, 2023, Ag Appreciation Event being held at the Central States Fair in Rapid City will honor West River/ Rushmore Electric board member Jerry Hammerquist as a 2023 Rural Neighbor, no update on the IIJA Grant applications previously submitted, and provided SDREA's recent newsletter.

The Board discussed the vacant District 3 Board seat, due to Director Landis' passing. With only two months left of Landis' term, the Board will not appoint someone at this time.

The Board reviewed the Director candidate petitions received in Districts 2 and 5.

Manager Maher presented highlights from the 2022 CFC KRTA Report.

Director Clark gave the SDREA Board meeting report, which included 2022 audit report, RESCO record sales, Lake Region Electric Manager update, roundtable discussions, Basin Electric report, Cooperative Connections magazine changes, 2024 membership dues increase, Touchstone fair sponsorship increase, CFC educational fund grant, wind energy report and showed a video of a climate change hearing in the US House Foreign Affairs Committee.

Manager Maher gave the SDREA Managers meeting and Legal Seminar report, which included Federated Insurance and CFC presentations, updated rules for Code 1600 projects, pre-mitigation funding, SPP update, SDREA budget, new NRECA field representative, RESCO supply chain update, roundtable discussions, Federated Insurance presentation regarding legal issues, SD 811 presentation, and employment law discussion.

Manager Maher gave the Rushmore Electric Managers Webex meeting report, which included IIJA Grant application updates, Ag Appreciation Event, Basin Electric Legislative Tour, update on Rushmore Electric's advertising through Odney, roundtable discussions, Basin Electric CEO resignation, new EPA rules will affect Basin Electric, crypto mining rates, potential WAPA increase in 2025, IT support provided by Rushmore Electric, the future of Rushmore Communications, potential joint meeting with East River Electric cooperatives, and strategic planning.

Board approved the following: the agenda, the minutes from the June meeting, new members, refunds, line extensions, financial statistics, disbursements, safety report, selected Director McLellan to serve as MGEC's Rushmore Electric Board member, 2022 IRS Form 990, a general capital credit retirement of $300,000, once again offering a purchase price for Lot 1, Block 18 in the City of Timber Lake, Director Clark as voting delegate and Director McLellan as alternate delegate at the NRECA Regional Meeting, offering a Director scholarship in 2024, Special Equipment Summaries 448-450 in the amount of $45,671.32,

The next board meeting was scheduled for August 22, 2023, at 8:30 a.m. in the Timber Lake office.

May 2023 Financial Information

	MAY '23	MAY '22	YTD 2023
Operating Revenues	$965,382	$1,022,289	$5,801,259
Cost Of Power	$430,151	$407,378	$2,580,292
Cost Of Electric Service	$911,326	$879,388	$5,313,599
Margins	$75,501	$150,174	$579,465
kWh Purchased	7,148,992	7,141,437	50,583,282
kWh Sold	7,004,636	6,855,660	47,372,090

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?

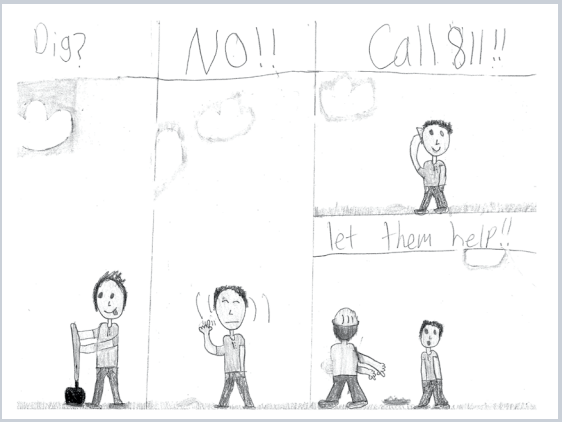
- Rural roads pose special dangers especially during harvest season. Watch out for slow-moving farm vehicles and be informed, aware, and patient while sharing rural roadways.
- Farm stress is real, and many things like weather events, tragedies, market uncertainty, or diseases can tip us out of our comfort 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 Worchestershire 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 tsps. 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.

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CARAWAY CHEESE SPREAD

Ingredients:

- 1 container (12 oz.) Cheddar cheese spread, at room temperature
- 2 tsps. minced onions
- 1 1/2 tsps. 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.

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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

Miranda Boutelle
Efficiency Services Group

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.

TERMESPHERE PAINTER

Local Art Legend Has a Complete Perspective on Art

Jocelyn Johnson
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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."

INVASIVE SPECIES

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
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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."

Prairie Oasis

Andy and Bev in front of their solar array

Andy and Bev Velsko Member Profile

JJ Martin
Member Services and IT Director

Traveling about nine miles north of Timber Lake, members Andy and Bev Velsko have created a prairie oasis for themselves and the surrounding wildlife. Their beautifully manicured acreage is a testimony to what hard work and planning can accomplish. Their oasis has a close tie to our cooperative. Like Moreau-Grand's Cooperative family, they practice an all-of-the-above energy strategy. Their thoughtful planning has significantly reduced their energy footprint, creating opportunities to utilize various sources of energy.

As we toured the Velsko Oasis, I was taken time and time again by the marriage of polished nature and modern technology. From the young orchard to the solar fountain, from the walking path to the bunkhouse, I never struggled to find something to inspect. Andy and Bev truly have carved out a beautiful island in the prairie.

Solar energy is nothing new to the Velskos. Prior to moving to Timber Lake, Andy and Bev lived in New Mexico. In the southwestern corner of the country, the quantity and angle of sunlight is perfect to power an entire house, and that's just what they did.

They moved here in the spring of 2010 after a particularly rough winter. It was then that they decided to prepare for the worst by using alternative energies.

After touring the property, we focused on the solar array attached to the front porch.

MG: You've got five panels here. What is the wattage of the panels?

Andy: 100 watts each. Four of them run the refrigerator, and I can also run a well in the basement. That's the main well for the house (in a power outage). It's only a 20 foot well, so I went and put a jet pump down there and wired an outlet and a plug (from the solar batteries) that I can plug in and run it off of solar. When we moved here, that's the year you lost those 1,500 power poles. That's why we bought

Roger's first day at Moreau-Grand

The hardware and storage that enables the Velsko's solar array to stay off grid

that drip stove for the house. We had the big storm and we decided we better get back up heat, so that's why we put that drip stove in before we moved in here.

MG: You said your refrigerator is designed for solar?

Bev: We got it when we were in New Mexico, and we got the solar then. We decided to bring it with because you can still just plug it in regularly. When we got these (solar panels), we decided to unplug it and put it with those.

MG: I notice that you can adjust the tilt angle. Do you find that it significantly helps?

Andy: I don't adjust the angle. I went with what it was in the wintertime because you have the shortest days and I wanted to get the max amount of power then. When you get 12 hours of sunlight, you don't have to be 100% all of the time. This will charge in an hour and a half. Usually in a day it will go down to 80% on the battery.

Next, we descended the basement steps to check out the storage side of the solar system. Two low gauge cables are routed beside storage shelving into the necessary devices to control, monitor, and store the energy harvested from the sun. With alternating displays, a meter shows production, storage, and if the system is drawing power from the batteries or charging them.

Andy: Watch that meter. It tells you how much you're producing. You can watch when the sun comes up. The wattage goes up from the panels.

Andy retrofitted an old grain bin into a cozy bunkhouse, which is adorned by this dome, an homage to his late mother's Russian Orthodoxy.

MG: In the middle of winter when we had that four-day blizzard, how far did those batteries go down?

Andy: I think they got down to a little under 70%.

Rather than installing a system that could power the entire house and cover their peak demand, the Velskos chose to focus on the essentials.

MG: If you were to lose power and you're not using a generator, you will still be able to cool your food and get water.

Andy: If we lose power (in the summer), we can always just come down here because it is always cool. She can charge her cell phone or spotlights. It works for any kind of electronic with a cord.

The Velskos are prepared for any adverse weather conditions that may result in an extended power outage. Through past experiences and pragmatic determination, Andy and Bev have put together a cost effective and practical way to use alternative energy sources to suit their needs. They get to enjoy the best of both worlds: reliable energy from their co-op and independent power during outages.

Andy showing his young orchard

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
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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."

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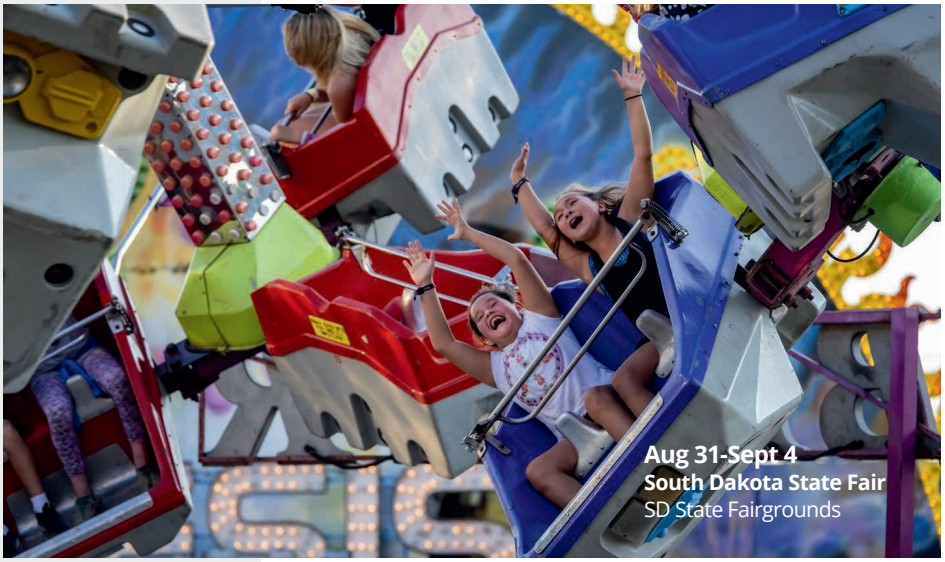

SEPT 2
Hidewood Valley Barn Dance
7 p.m.
47236 183rd St
Clear Lake, SD

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.