

# MICHIGAN COUNTRY LINES

## Keeping Soil Healthy

Gypsum's Role In Agriculture  
And Electricity

### Plus!

Investing In Our Membership

2016 Line Clearance Plans

Energy Optimization Benefits  
Local School



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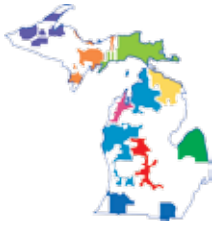
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\*EPA study "Space Conditioning, The Next Frontier" (Report 430-R-93-004)



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

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**Change of Address:**  
Please notify your electric cooperative.  
See page 4 for contact information.

# IN THIS ISSUE

## ON THE COVER\*

Healthy soil is crucial for farmers, and when key nutrients like sulfur are lacking, crops won't thrive. Electric co-op member and farmer, Brian Stratton, is adopting new agricultural fertilizer technology from coal fired power plants to feed his soil with much needed sulfur made from pelletized gypsum.

*\*Some co-op editions have a different cover.*

## IN YOUR WORDS

Question Of The Month—We Asked, You Answered.

Last month, we asked electric co-op members a question: If you could only have one meal for the rest of your life what would it be? Thank you for all the responses. Here are some answers from our members...

"The meal I would eat for the rest of my life would be pizza because it can come in many different shapes and flavors."

"Chicken, sweet potatoes/squash, vegetable salad, strawberry shortcake (biscuit) and chocolate milk."

"Two poached eggs, two strips of crisp bacon, two slices of whole wheat toast, fresh squeezed orange juice and coffee."

Our new Question of the Month is:

What is the best compliment you have ever received?

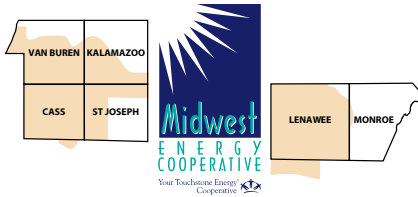
Please submit answers to [countrylines.com](http://countrylines.com) by March 1.

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Midwest Energy Cooperative is an equal opportunity provider and employer.

# System Investments Equal Membership Investments



**Robert Hance**  
President/CEO

I'm always tickled when we receive notes like the one posted by "Andrew" on our Facebook page on Dec. 24, 2015: "I would like to thank Midwest Energy for all the tree trimming they have done in the past few months. I fully expected our power to go out last night in the wind, but it never even flashed! Thanks again..."

We weren't completely spared from outages with the Christmas Eve storms, or in the days after Christmas when an ice storm with strong wind gusts broke poles and took down trees and power lines across our entire southern Michigan service area. However, our overall outage numbers and duration were minimal compared to surrounding utilities. This is not a coincidence, but rather the positive outcome of a strategic investment of time and money.

More and more members are connecting the dots between our line clearance efforts and power outages. We were a leader in Michigan, implementing an aggressive stance and approach more than a decade ago. Many of our counterparts around the state are just now beginning to implement similar measures as a result of state and federal mandates to reduce outages. We realized many years ago that our system was a mess from years of inattention to our rights-of-way, and implemented a multi-year plan to reclaim that space and improve reliability for our members. It was the right thing to do, and the difference is telling—both in our reports, but more importantly in your comments and observations.

Learn more about our line clearance approach and 2016 plans on page 5.

An aggressive line clearance program is expensive, but we view it as an investment in our membership. Many of the efforts that we've undertaken in recent years, from line clearance to a system-wide rollout of advanced metering equipment to implementation of a fiber-based communications system across our distribution grid, are all investments in our system and our membership. Technology is advancing at a rapid-fire pace, and today's electric utility needs to be prepared or its members and customers will lose out on opportunities for home automation and other solutions that will create efficiencies and conveniences never previously imagined.

At Team Midwest we have our eyes on the horizon, and are taking steps today to build the utility of the future. Under the leadership of your board of directors, we've designed a strategic plan and road map that will allow you to take advantage of technology as it is introduced. What that all looks like remains to be seen, but we're ready.

Today, we're investing in space to grow this vision. We're investing in staff to implement the plan. We're investing in technology to drive the solutions. Ultimately, we're investing in you as a member-owner of this utility—the utility of the future! ■

# Line Clearance Plan To Promote Safe And Reliable Electricity

**R**eliable electricity is not just a luxury; it's an expectation. Our chief responsibility as your cooperative is to provide a safe and reliable electric distribution system, and trees are a major obstacle. To improve your service experience, we employ an aggressive, proactive line clearance program proven to significantly reduce outage hours related to our distribution system.

## What We Do And Why

Our line clearance standard is to obtain and maintain a ground-to-sky clearance of 15 feet, free from all obstructions, on each side of the power line. Where our facilities cross personal property, easement gives us the right to access and use that property to maintain our right-of-way. An easement can be recorded, meaning it is signed and on file at the Register of Deeds office in the county of service, or prescriptive, meaning the land has been used in a continuous and open manner for the statutory period of 15 years for utility purposes.

We have worked diligently over the last decade to reclaim our rights-of-way, and are now in full maintenance mode, including re-grooming and spraying, moving forward. Following is a description of each method, with specific plans for 2016.

**Re-grooming:** Once the line is clear, we return to trim and mow for any new growth. Maintaining cleared rights-of-way is critical.

**2016 Plan:** Over the year we will re-groom nearly 400 miles of line in Calvin, Constantine, Florence, Howard, Mason, Milton, Mottville, North Porter, Ontwa, South Porter, White Pigeon and York townships in southwest Michigan. Work will also be



The ground-to-sky approach to line clearance helps to make sure that trees don't form a canopy over the lines.



Before and after shots of a line circuit in Dowagiac. A newly cleared right-of-way can look extreme at first, but as the growth returns the landscape regains its natural beauty.

done in Hudson and Medina townships in southeast Michigan. We will attempt telephone contact prior to beginning any work.

## Integrated Vegetation Management (IVM):

This is a long-term spraying strategy to manage continued regrowth in newly cut areas. It effectively controls tall-growing trees and bushes while promoting low-growing plants such as grasses, wildflowers and shrubs that are beneficial to wildlife. It offers longer term results in a more cost effective way, and is endorsed by a number of environmental, forestry and wildlife providers as offering benefits to many wildlife species.

**2016 Plan:** Between April and September we will spray 344 miles of line in Calvin, Constantine, Fabius, Howard, Jefferson, Lagrange, Marcellus, Pokagon and Porter townships. An informational letter will be sent to all homeowners in areas where we use IVM prior to beginning any work.

## For More Information

For more information about our line clearance procedures, please contact our Customer Care Department at 800-492-5989 or visit [TeamMidwest.com](http://TeamMidwest.com). ■



# Keeping Your Pets, Energy Budget Comfortable!

By Patrick Keegan

**P**et owners often assume their indoor pets want the same level of cooling and heating as the rest of the family. However, most dogs and cats can be comfortable with a wider range of temperatures.

Those with unique pets, like birds or lizards, may need to keep them in warmer environments. Consider moving these pets to a room that can be kept warm easily, but note that this may change over the course of a year.

Pet doors are popular, but they can also be a major air leak that drives up your energy use. When purchasing a pet door, make sure it has energy-efficient features, such as thick construction, weather sealing and the ability to be closed off when not in use. Some newer models have magnet or battery locks: a small magnet or sensor on your pet's collar opens the door, and the rest of the time, the door is shut tight, keeping out other critters—as well as blowing wind and snow!

Some people also leave the TV or radio on while they're away, thinking that the voices will keep their pets from being bored (and destroying their shoes!). However, there are other ways to keep your poodles and kitties entertained. Exercising your pet when you're home and giving them a variety of toys or a nice perch to see out a window when you leave will be more entertaining and less energy

intensive than a TV. If you must leave something on when you're away, try soothing, calm music instead of a blaring TV.

We all love our furry family members, but remember, keeping them comfortable doesn't mean you have to pay more on your monthly bill. ■

## Here are a few tips to keep your pet comfortable without cranking up the thermostat:

- A cozy, insulated doghouse might be all your outdoor dog needs, except on the very coldest days.
- Make sure that your indoor pet has a warm place to sleep, like a pet bed with a blanket. Consider giving him a few sleeping options throughout your home in different temperature zones, so your pet can adjust his comfort as needed.
- If you have a very drafty home or an older pet who may appreciate more warmth, a heated pet bed or bed warmer will use far less energy than running your central heating higher all day. This solution can also be good for those who keep their pets in the garage and worry about them staying warm enough. Instead of heating a large, uninsulated space, provide a nice warm bed!



# DANGER! Outlet Overload

Every year, U.S. fire departments respond to an estimated **25,900 home electrical fires**. These fires cause an estimated **280 deaths, 1,125 injuries** and **\$1.1 billion in property loss**.

Thirty-nine percent of home electrical fires involve outlets and receptacles, and other electrical wiring.

To ensure safety, you should only use about 80 percent of the available current for each electrical outlet in your home.

Are you overloading outlets?  
Use this formula to find out:

$$\text{WATTAGE/VOLTS}=\text{AMPS}$$

## Example:

Let's say you are using 2,000 watts of power (for one outlet). Divide the watts by the volts in your home (typically 120), and you come up with 16.6 amps of current being used. With a 20 amp electrical outlet, you are using about 80 percent of the available current.

# Energy Savings For Farmers, Agribusinesses

**F**armers: Are you tired of high energy bills eating up your budget? Reducing the amount of electricity used to power your equipment is a smart way to eliminate energy waste and unnecessary costs. Midwest Energy Cooperative's Energy Optimization program offers rebates toward a wide range of energy efficiency improvements which could add up to big savings.

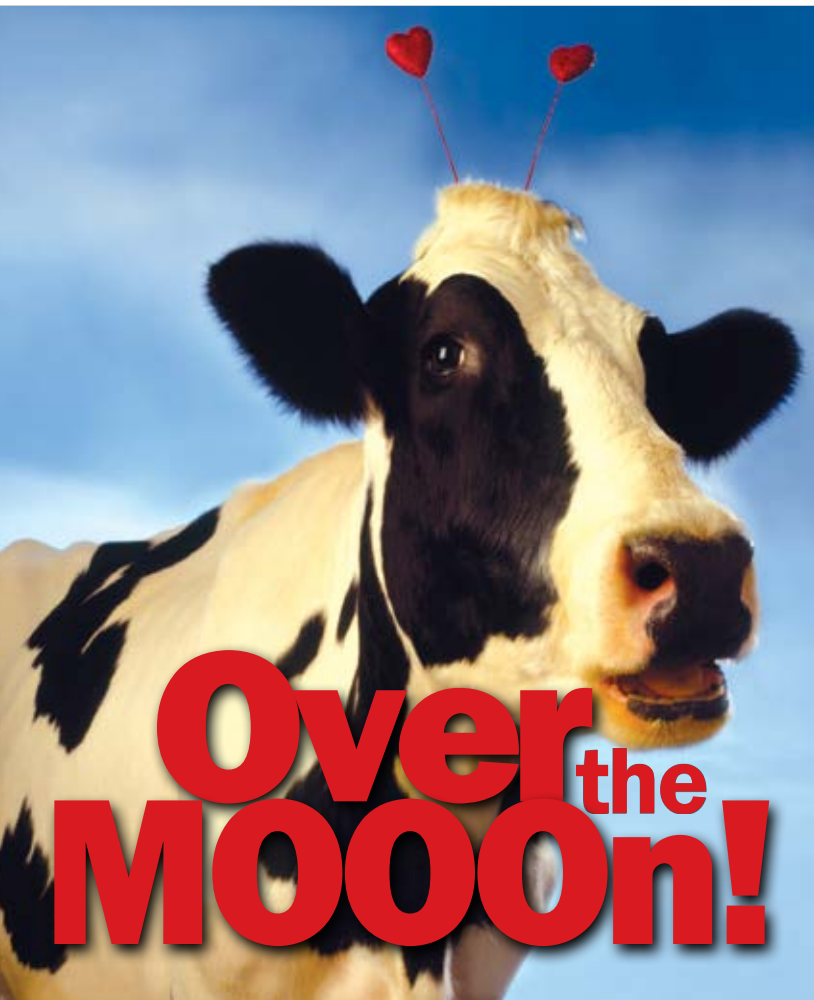
**Farm Energy Audit:** The Energy Optimization program has partnered with the Michigan Farm Energy Program (in conjunction with Michigan State University Extension) to offer a **\$500 rebate** toward the cost of a farm energy audit. The audit will help you identify where and how to implement practical, energy-saving alternatives to outdated, inefficient equipment.

**Rebates for Energy Efficient Products and Equipment:** Receive cash back when you purchase and install energy efficient measures such as low-energy livestock waterers, fans and controls, milk-handling equipment, variable speed pumps and controllers, dairy refrigeration tune-ups, lighting upgrades, variable frequency drives, and more.



**Rebates for Custom Projects:** Have an energy efficiency project in mind, but don't see it on our list? The Energy Optimization program provides rebates for innovative and unique energy efficiency projects designed to meet specific needs, such as long-day lighting systems, milk harvesting and cooling equipment, controlled atmosphere storage room upgrades, and more.

These are just a few of the energy-saving offers currently available for Michigan agribusinesses. View all farm service incentives at [michigan-energy.org](http://michigan-energy.org) or call **877.296.4319** for details. ■



**Over the MOON!**

## Fall In Love With Energy Efficiency

We know how hard Michigan farmers work just to keep the lights on. That's why the Energy Optimization program offers rebates for energy-saving upgrades—for everything from lighting, to pumps, compressors, irrigation, fans, and more. You'll be hooked when you see how saving energy improves your bottom line!

**ENERGY TIP:** Discover the most effective ways to start saving with a farm energy audit. Act now to receive a \$500 rebate!

**ONLINE:** [michigan-energy.org](http://michigan-energy.org)

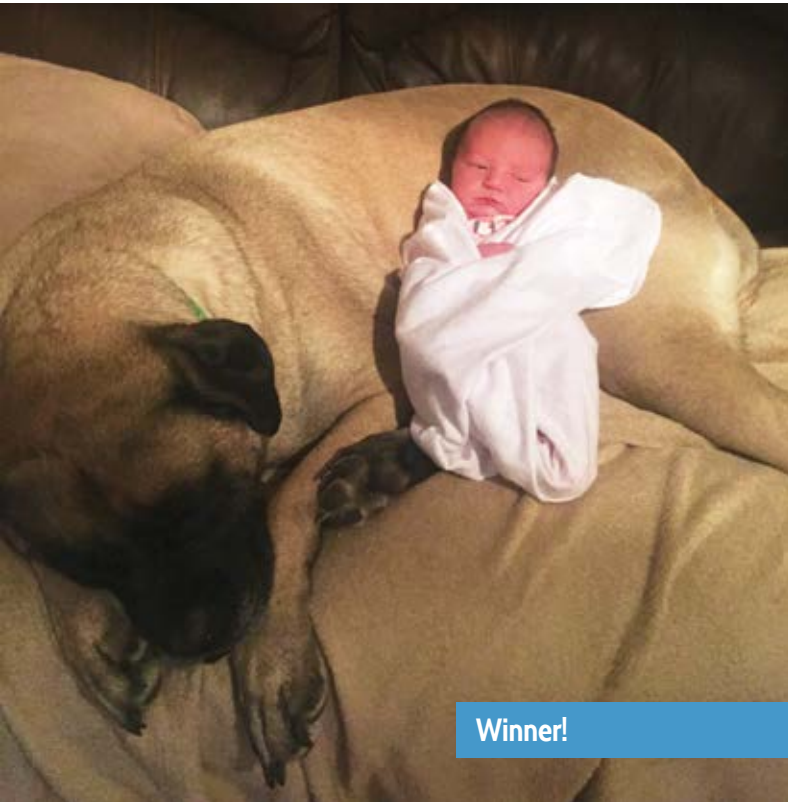
**PHONE:** 877.296.4319



Energy Optimization programs and incentives are applicable to Michigan service locations only. Other restrictions may apply. For a complete list of participating utilities, visit [michigan-energy.org](http://michigan-energy.org).



# Midwest 'Cute Pets' Photo Contest Winners



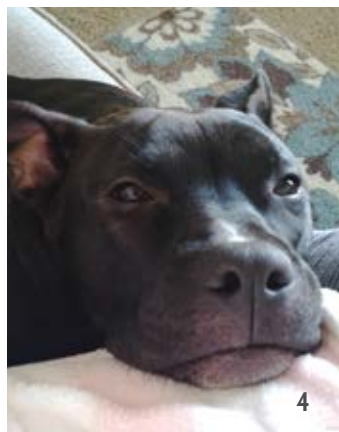
Winner!

## Photos With The Highest Facebook Votes!

The votes are in, and we're happy to share the winning photo (and some cute runners-up) from our January photo contest. Winners were selected from 156 Facebook entries and 2,300 votes! Thanks to everyone who submitted a photo, voted and spread the word by sharing the post on Facebook.

- 1. Winner:** John Solloway, of Cassopolis—  
Avery and Brynley napping.
- 2.** Billie Austin, of Cassopolis—  
Sitting pretty
- 3.** Bob Herwick, of Cassopolis—  
Santa, I've been a good girl.
- 4.** Stephanie Dimarzio, of Niles—  
A little afternoon snoozing....

Visit [teammidwest.com/photo-contest/](http://teammidwest.com/photo-contest/) to view all the photos submitted.



## Enter Your Photos And Win!

Team Midwest's photo contest is under way and one lucky winner will end up with a credit of up to \$200 on their December 2016 electric bill. Every month, we will announce a new theme and invite you to submit your best shot. The photo receiving the most votes each month on our Facebook contest page will be entered into the drawing for the year-end bill credit, and will also be featured in a subsequent issue of *Michigan Country Lines* for all to enjoy.

How to submit? Just visit [facebook.com/TeamMidwest](https://facebook.com/TeamMidwest) and click on "Photo Contest" from the menu tabs. Not on Facebook? You can also enter at [TeamMidwest.com/photocontest](http://TeamMidwest.com/photocontest). Make sure to vote, and encourage others to vote for you, too! A high resolution photo (at least 1 MB) will be required to print your photos in *Michigan Country Lines*. We look forward to seeing your photos!

Our February theme is "**Birds of Beauty.**" Photos can be submitted from **Feb. 1 to Feb. 20**. The winning February photos will be featured in the April issue of *Michigan Country Lines*.

The March theme is "**Saluting Our Armed Forces.**" Photos can be submitted from **March 1 to March 20**. The highest voted photos will be featured in the May issue.

# SIMPLY...GLUTEN-FREE

These recipes show how delicious and easy a gluten-free diet can be.



## Chocolate Devil's Food Cupcakes

*Laura Harrand, Traverse City*

- 1 c. boiling water
- 1 c. gluten-free unsweetened cocoa powder
- 1 c. brown rice flour
- ½ c. sweet sorghum flour
- ½ c. potato flour
- 2 t. baking soda
- 1 t. guar gum
- ½ t. salt
- 2 c. granulated sugar
- 8 T. (1 stick) salted butter, at room temp
- 2 eggs, at room temp
- 1 t. gluten-free vanilla extract
- 1 c. low-fat buttermilk
- icing of your choice

Preheat oven to 400°. Line a 12-cup muffin tin with cupcake liners. In a large bowl, whisk the hot water and cocoa powder together. In another large bowl, stir together the brown rice flour, sorghum flour, potato flour, baking soda, guar gum and salt. Add the sugar and butter to the cocoa mixture. With an electric mixer on high speed, beat until a smooth shiny mixture forms, about 30 seconds. Then beat in the eggs and vanilla on low speed until incorporated. Add half of the flour mixture and beat on low speed just until combined; there may be dry spots. Add ½ c. of the buttermilk, mixing on low speed just until incorporated. Repeat with the remaining flour mixture and the remaining buttermilk.

Fill each muffin cup  $\frac{3}{4}$  full with the batter. Reserve the remaining batter and fill four more cupcake liners; set aside. Bake for 15–20 minutes, until the centers of the cupcakes are firm to the touch. Remove the cupcakes from the muffin tin and let cool completely on wire rack. Repeat with the remaining batter. Once the cupcakes are cooled, use a small spatula or butter knife to ice them with your choice of icing. Store in an airtight container in the refrigerator for up to five days.

## Almond Butter Quinoa Blondies (pictured)

Jan Anglebrandt, Gaylord

- ¼ c. unsalted butter, softened
- ¾ c. smooth or crunchy natural almond butter
- 2 lg. eggs
- ¾ c. packed light brown sugar
- 1 t. vanilla extract
- ¾ c. quinoa flour (see tip below\*)
- 1 t. baking powder
- ¼ t. salt
- 1 c. semisweet chocolate chips

Preheat oven to 350°. Line an 8-inch-square baking pan with parchment paper (or foil), allowing it to overhang the opposite ends slightly. Coat with cooking spray. \*To make your own quinoa flour, grind raw quinoa into a powder in a coffee grinder or blender.

Beat butter and almond butter in a mixing bowl with an electric mixer until creamy. Beat in eggs, brown sugar and vanilla. Whisk quinoa flour, baking powder and salt in a small bowl. Mix the flour mixture into the wet ingredients until just combined. Stir in chocolate chips. Spread the batter evenly into the prepared pan. Bake until a toothpick inserted into the center comes out with just a few moist crumbs on it, 25 to 35 minutes. Do not overbake. Let cool in the pan for 45 minutes. Using the parchment (or foil), lift the whole panful out and transfer to a cutting board. Cut into 24 squares. Let cool completely before storing. Makes 24 blondies.

## Red Lobster Style Cheese Biscuits

Christine Server, Afton

- ⅓ c. shortening
- ½ c. potato starch
- ¾ c. cornstarch
- 1 ¾ t. xanthan gum
- 1 T. baking powder
- ¼ t. baking soda
- ¾ c. milk
- ½ t. salt
- 1 T. sugar
- ½ c. shredded cheddar cheese
- ¼ c. softened butter
- ¼ c. melted butter
- ½ t. garlic powder

Preheat oven to 375°. In a large bowl, mix together the shortening, potato starch, cornstarch, xanthan gum, baking powder, baking soda, milk, salt and sugar. Add shredded cheddar cheese and softened butter. Pat into ½" thickness on cornstarch covered board. Cut into round shapes. Bake on lightly greased sheet for 12–15 min. As soon as baking is completed, brush with a mix of melted butter and garlic powder.



## Roasted Cabbage Steaks

Barbara Olson, Middleville

- 1 head of organic green cabbage, cut into 1" thick slices
- 1½ T. olive oil
- 2–3 lg. garlic cloves, smashed
- kosher salt
- freshly ground black pepper
- spray olive oil or non-stick cooking spray

Preheat oven to 400° and spray a baking sheet with non-stick cooking spray. Pull outer leaf off cabbage, and cut cabbage from top to bottom (bottom being root) into 1" thick slices. Rub both sides of cabbage with smashed garlic. Use a pastry brush to evenly spread the olive oil over both sides of the cabbage slices. Sprinkle each side with a bit of kosher salt and freshly cracked black pepper.

Roast on the middle rack for 30 minutes. Carefully flip the cabbage steaks and roast for an additional 30 minutes until edges are brown and crispy. Serve hot and enjoy! *"I usually serve this with potatoes and carrots sautéed in vegetable broth with some caraway seed sprinkled in. This is a simple side dish worthy of a dinner party, and couldn't be easier to make."*

## SUBMIT YOUR RECIPE!

Thanks to all our readers who send in recipes. Please send in your favorite "Snacks and Appetizers" recipes by **March 1** and "Quick and Easy" recipes by **April 1**.

Enter your recipe online at [countrylines.com](http://countrylines.com) or send to (handprint or type on one side, please): *Country Lines Recipes*, 201 Townsend St., Suite 900, Lansing, MI 48933. Please note the co-op from which you receive your electric service.

## A RECIPE WINNER EVERY MONTH!

Contributors whose recipes we print each month will be entered in a drawing and *Country Lines* will pay the winner's electric bill with a \$50 bill credit! A winner will be selected every month.

# Midwest In The Community

**N**eighbor helping neighbor—that's how your Team Midwest family approaches daily work and efforts to give back. We live, work and serve right here in your local community, and strive to actively live our Community value in meaningful and impacting ways. Here are just a few of our recent efforts to strengthen and support our communities and members.

## RACK Attack

Team Midwest celebrated the spirit of the Christmas season by delivering Random Acts of Community Kindness, also known as our RACK Attack. Activities were many and varied, and included decorating a local village with winter scarves for people to take as needed, serving breakfast to Council on Aging volunteers at their annual appreciation event, preparing meals at the Ronald McDonald house, delivering poinsettias for the nurses' stations at a local hospital, and buying supplies and stocking the shelves at a local food pantry. With each act of kindness, we left behind a card encouraging the recipient to pay it forward.

## All in a Day's Work

After narrowly escaping the major Christmas Eve outages that plagued many around the country, we watched the radar closely on Dec. 28 as forecasters called for ice storms and sustained winds of 30 mph and above. It's a bad combination in our industry! The morning hours were filled with a sleet and rain mixture, and through the afternoon the winds howled and ice began to accumulate.

In the 24-hour period that followed, we restored service to nearly 4,000 members who lost power—some of them multiple times as ice-related outages tend to be a little tricky.

Service excellence is always a top priority, but the Team Midwest employee family rises to the occasion during these types of situations. It's all in a day's work on behalf of our members and customers! ■



Lineman Zac Lock serves volunteers at the Council on Aging appreciation event.



Angie Edge, manager of process innovation, places scarves around a local community for people to take as needed.



Downed poles and wire dotted the landscape following the storms.



## Safe And Secure Options For Paying Your Bill

**E**lectricity is dangerous. That's why we spend a lot of time and effort training our employees, educating our members, and practicing due diligence in everything we do to keep your lights on. But your safety goes beyond the distribution of kilowatts. We also work very hard to protect the privacy of your personal information.

Hardly a week goes by that we don't hear about a breach of information within a retail environment. Credit card numbers and other information are at risk with every financial transaction. Following are convenient and safe ways you can conduct financial transactions with Team Midwest.

**SmartHub:** This is our online and mobile platform through which you can safely and securely manage your account and service experience. A one-time registration is required. Click on the "Account Access" icon at TeamMidwest.com, or download the free SmartHub app from iTunes or Google Play. Please contact our Customer Care department if you need assistance.

**Automated Phone System:** You can make payment through our automated phone system by calling 800-492-5989 and choosing option 2. Please have your account number ready. The automated system processes your payment and maintains no record of credit card or banking information.

**Autopay:** With a one-time set up, you can have your bill automatically paid monthly through a designated

credit card or bank account. Sign up for autopay through SmartHub or our automated phone system.

**MoneyGram Community Pay Stations:** This is a community-based payment option that guarantees your funds and posts your payment immediately, just like you walked in and paid at one of our district service centers! With a quick zip code search, you can easily find local retailers like Walmart, Dollar General, CVS and Speedway where payment can be made through a simple transaction. Payments are typically only accepted by cash; please call ahead to inquire about other payment methods. Visit [secure.moneygram.com/locations](https://secure.moneygram.com/locations) to find a local payment center.

**District Service Centers:** Team Midwest offers three district service centers where you can make payments or speak with a customer care representative. All are equipped to take both electric and propane payments, and if you are unable to stop during business hours, drop boxes are available. Payments left after hours are posted during the next business day. Visit TeamMidwest.com to locate a service center near you.

**Mail:** Payments may be sent to P.O. Box 127, Cassopolis, MI 49031. Never send cash through the mail; use a check or money order. To help us credit your payment correctly, please include the bill stub and write the account number on your check. Please allow at least five days for the payment to reach our office. ■

Brian Stratton is a third generation farmer in Vestaburg, MI, and a member of HomeWorks Tri-County Electric Cooperative.



# Keeping Soil Healthy

## Gypsum's Role In Agriculture And Electricity

By Jeannine Taylor

**W**e can grow more food, but we can't grow more land. So, how do we protect our planet and get the most out of every acre? It starts with healthy soil. Soil is everything to a farmer. It houses the nutrients, minerals and water for crops to grow. Essential nutrients like nitrogen, phosphorus, potassium, magnesium, calcium and sulfur are the life-blood of every plant and are crucial to their survival. When the soil is lacking any of these key nutrients, a farmer's crops will know it.

Brian Stratton knows this all too well. Stratton is a third generation farmer in Vestaburg, MI, and a member of HomeWorks Tri-County Electric Cooperative. His family began farming the area in 1909, and Stratton continues to cultivate the soil—over 800 acres of it. His crops, mainly white winter wheat, dry edible beans and corn, help feed people in the United States, but also in places like Italy, Spain, China and Pakistan.

Stratton leases 80 acres of farmland from Wolverine Power Cooperative near its Vestaburg Power Plant. He started farming this ground in 2010, planting his rotation crops as well as rye and switchgrass wildlife plots. After testing the soil, he found that it was low in calcium and sulfur. "With low calcium

and sulfur levels, you aren't going to be able to take advantage of the nutrients that are there," Stratton explains. "You've got to have all these things balanced as much as possible for the whole system to work efficiently."

So, why was the soil lacking sulfur? A big reason is because coal-fired power plants have greatly reduced sulfur emissions into the air. When the Clean Air Act Amendments were passed in 1990, coal-fired plants were required to reduce their sulfur dioxide emissions. Over time, new rules continued to decrease sulfur dioxide emission limits, ultimately requiring coal-fired plants to install environmental control equipment, such as scrubbers, to meet the new limits. An unintended result is that crops are no longer receiving sufficient sulfur from the atmosphere.

Coal-fired plant owners, such as the Ohio Valley Electric Corporation's (OVEC) Kyger Creek and Clifty Creek Plants, of which Wolverine is a partial owner, have spent over \$1 billion installing environmental controls to capture and remove sulfur dioxide emissions. A process known as flue gas desulfurization (FGD) scrubs the sulfur dioxide from the power plant exhaust by using a limestone slurry that contains calcium. The sulfur and calcium react to produce calcium sulfite, and then oxygen is added to create calcium sulfate, otherwise known as synthetic gypsum.

This high-quality gypsum is becoming a hot commodity for beneficial reuse in everything from wall board to soil amendment fertilizers. For a by-product like synthetic gypsum to be considered for reuse, it must provide a functional benefit to end users and meet or exceed the specifications of the virgin material that it is replacing.



OVEC's synthetic gypsum used to manufacture soil amendment fertilizer.

In fact, the Michigan Department of Environmental Quality (MDEQ) is a strong supporter of beneficial reuse programs. Duane Roskoskey, with MDEQ's Office of Waste Management and Radiological Protection, said they promote the beneficial reuse of industrial by-products such as FGD, coal ash, cement/lime kiln dust, foundry sand and paper mill sludge. "Since 2009, the amount of industrial by-products reused in Michigan has more than doubled to over 900,000 tons per year," Roskoskey explains. "The MDEQ recognizes the benefits of adding FGD to agricultural soils—FGD contains both calcium and sulfur, which are needed micronutrients, for most crops." Over 36,000 tons of FGD were reused in Michigan in 2014.

Gabe Coriell, OVEC's senior environmental specialist, and a part-time farmer, did a great deal of research on synthetic gypsum and its potential for beneficial use. He contacted professors at Ohio State University, who had performed studies on synthetic gypsum and its role as a soil amendment, to learn about their findings. He also contacted professionals that were using synthetic gypsum and learned that it was successfully conditioning the soil by adding the level of sulfur and calcium needed for better plant growth. Finally, Coriell talked to several companies who market synthetic gypsum products and found an established one which had a set of specifications required for its products.

Coriell decided to work with Charah, a company based in Louisville, KY, that provides coal combustion product management and power



OVEC's synthetic gypsum being loaded for transport to Charah to make SUL4R-PLUS Fertilizer.

*Continued on page 18*

# Preferred Contractors Meet Cooperative Quality Standards



Choosing qualified and reputable contractors can be difficult. As a service to our members, we have compiled a list of Midwest Energy Cooperative preferred electrical contractors. As part of the qualification process, we researched, interviewed and checked references on a regional pool of contractors, and included on our final list only those that we feel confident will provide the level of service that you have come to know and expect from your cooperative.

Please feel free to contact any of these contractors with confidence if you are interested in more information about their services.

## Southwest Michigan:

### **Bender Electric**

19636 Allegheny  
Cassopolis, MI 49031  
269-445-3260

*Residential & commercial, repairs, trenching, bucket truck*

### **Byler Electric, Inc.**

550 Florence Rd., P.O. Box 86  
Constantine, MI 49042  
269-435-7156

*Industrial, commercial, residential & agricultural; new construction; service upgrades; bucket truck; trenching; Guardian/Generac generator dealer & service*

### **Edison Electric**

31158 56th Avenue  
Paw Paw, MI 49079  
269-657-6955

*Industrial, commercial & residential; electrical construction & maintenance*

### **Esper Electric, LTD**

7775 North 6th St.  
Kalamazoo, MI 49009  
269-342-6909

*Full service electrical contractor for residential, commercial & industrial*

### **Hi-Tech Electric Co.**

839 Lenox Avenue  
Portage, MI 49024  
269-323-1111

*Industrial, commercial & residential; data & communications systems; access controls; service & lighting upgrades; generator sales & service*

### **Jones & Son Electrical Contractors, Inc.**

23482 CR 4, Elkhart, IN 46514  
574-206-9465

*Residential & commercial services*

### **Kerwin Electric, Inc.**

7930 S. 8th St.  
Kalamazoo, MI 49009  
269-375-6543

*Residential, commercial, industrial & agricultural; generators; crane service; solar & wind power*

### **Ketelhut Electric**

7445 Territorial  
Watervliet, MI 49098  
269-468-5341

*Commercial & residential, all electrical & cabling needs*

### **Kusmack Electric, Inc.**

39560 72nd Ave.  
Decatur, MI 49045  
269-720-3821

*Residential & commercial, new construction, remodeling & service upgrades, troubleshooting, generator installations*

### **Midway Electric Inc.**

51433 63rd Ave.  
Lawrence, MI 49064  
269-674-3213

*Residential, commercial, & industrial; data & communications systems wiring*

### **Peterson's Electric, Inc.**

2010 West W Ave.  
Schoolcraft, MI 49087  
269-679-4797

*Commercial & residential service & repair*

### **Wolverine Electrical Contracting, Inc.**

2700 Old US-31 North  
Niles, MI 49120  
269-683-4850

*Commercial, industrial & residential; bucket truck; trenching; data & communication systems wiring; Generac generators sales & service; electric thermal storage heating sales & service*

## Southeast Michigan:

### **Creighton Electric L.L.C.**

260 Westfield Dr.  
Archbold, OH 43502  
419-445-2223

*Commercial, industrial & residential; full service electrical contractor; high voltage work; excavation work; Generac sales & installation*

### **Ford Electric L.L.C.**

8442 Brooks Hwy., Onsted, MI 49265  
517-467-4133

*Residential & commercial, new construction, remodeling, repairs, troubleshooting, generator systems*

### **MTC Electric**

P.O. Box 39, Tecumseh, MI 49286  
517-260-1664

*Residential, commercial & small industrial; troubleshooting*

### **Neil's Electric, Inc.**

2366 Carleton Rd.  
Adrian, MI 49221  
517-265-4459

*Residential & commercial electrical installation and service*

### **Sexton Electric**

6035 U.S. Hwy. 223  
Addison, MI 49220  
517-252-5187

*Residential & light commercial electrical*

### **Snyr Electric**

8380 Round Lake Hwy.  
Manitou Beach, MI 49253  
517-270-7777

*Residential, commercial & industrial; underground wire locator; trenching; aerial bucket truck; generator installation & repair*





## Huge Savings Expected After Lighting Upgrade At Tecumseh Schools

In 2014, Tecumseh Public Schools recognized a need for change. Preventive building maintenance procedures were minimal at best, and if the district was to achieve its goal of streamlining operations and cutting costs, the development of a formal maintenance and facilities plan was necessary. Mike Smith was hired to lead the charge as the new director of facilities, and a comprehensive evaluation was conducted to determine where and how money could be saved.

The facility evaluation quickly revealed that the fluorescent and metal-halide fixtures installed 15 years earlier were costly and inefficient to operate, giving Smith a perfect place to start. "Lighting popped out immediately as an area where change could make a real impact, and quickly," he said.

Tecumseh High School was the first campus in the district to undergo an LED lighting upgrade. By July 2015, all interior and exterior lights (more than 2,400) were replaced with highly-efficient LEDs; only four football field light posts remained untouched. The brighter, whiter light cast by LEDs is friendlier on the eyes, and enhanced exterior lighting increases safety—allowing the school's security cameras to better detect individuals within the vicinity.

The \$690,000 lighting upgrade project is expected to reduce the school's electricity usage by more than 940,000 kilowatt-hours per year, saving approximately 60 percent in electric costs—or \$1.2 million over the next 10 years. The project will pay for itself within five years, with the recent addition of dimmers and vacancy sensors in classrooms, hallways and restrooms. An additional \$800 to \$1,000 could be saved per classroom per

year if switches are set at 50 percent intensity. As an added bonus, GUSCO Energy's 10-year warranty on materials and labor means the school will not incur any lighting-related expenses until 2025.

The rewards for Tecumseh Schools don't stop there. Midwest Energy Cooperative presented the school with a \$61,216 Energy Optimization Program rebate check in December 2015. The Energy Optimization program, which provides cash-back incentives to help offset the upfront cost of energy efficiency improvements for Michigan electricity consumers, was instrumental in making this project a reality. The district plans to use its extra funds to complete similar energy efficiency projects at the middle and elementary schools.

"It is truly an honor to work with Mike and his team and support them as they begin evaluating and implementing measures to affect real change and realize real savings," said Roger Bowser, Midwest Energy's manager of energy programs and services. "We're eager to see how Tecumseh Schools reap the rewards of this smart investment now and into the future."

"This project is a perfect example of how the Energy Optimization program can help schools and businesses realize impactful and long-term savings on energy consumption," Bowser added. "As the locally-owned cooperative, we're thrilled to be part of the effort to make energy-efficient technologies available and affordable to our members and communities."

For more information about the Energy Optimization program, call 877-296-4319 or visit [michigan-energy.org](http://michigan-energy.org). ■

## Keeping Soil Healthy

Continued from page 15

plant support services for the coal-fired electric utility industry. While Charah has been around since 1987, they just recently began manufacturing a product called SUL4R-PLUS® Fertilizer, a patent-pending pelletized calcium sulfate product made from synthetic gypsum. "Charah may be new to gypsum," Coriell says, "but they've been in business a long time and have an innovative product that is very attractive. They have a newer process in the market and it is working."

Stratton agrees. He has been using SUL4R-PLUS Fertilizer on his crops and is currently participating



Charah's pelletized SUL4R-PLUS Fertilizer.

in a yield study with Charah to gather data and measure its effectiveness on the property he leases from Wolverine. "I like the pelletized product because it's a much friendlier product to handle," Stratton says. "It spreads more evenly and you don't have the dust to contend with." Results from the first year's use are coming in and, despite a heavy dose of rain that caused root rot to his cranberry beans, the yield results look promising.

With the new products on the market today, like SUL4R-PLUS, Stratton says his crops are getting the same sulfur they used to from the atmosphere, but now it's through a different route. The key is to replenish the nutrient levels in the soil so plants can achieve maximum growth. "With farm crop plants, it's the same as with our own bodies," Stratton explains. "The more attention you pay to your own nutrition, the healthier you're going to be. It's no different for a plant." ■

*Jeannine Taylor is communications and member relations director for Wolverine Power Cooperative.*

## Five Benefits Of Gypsum

### 1. Source of calcium and sulfur for plant nutrition.

Plants are becoming more sulfur-deficient, and the soil is not supplying enough of it. Gypsum is an excellent source of sulfur for plant nutrition and improving crop yield.

Meanwhile, calcium is essential for most nutrients to be absorbed by plant roots.

### 2. Improves acid soils and treats aluminum toxicity.

One of gypsum's main advantages is its ability to reduce aluminum toxicity, which often accompanies soil acidity, particularly in subsoils. Gypsum can improve some acid soils even beyond what lime can do for them, which makes it possible to have deeper rooting with resulting benefits to the crops.

### 3. Improves soil structure.

Soil needs a certain mass to give it a favorable structure for root growth and air and water movement. Gypsum has been used to improve this aggregation in soils.

Soluble calcium also enhances soil aggregation and porosity to improve water infiltration.

### 4. Improves water infiltration.

Gypsum also improves the ability of soil to drain and not become waterlogged due to a combination of high sodium, swelling clay, and excess water. Adding gypsum also allows water to move into the soil to stimulate plant growth.

### 5. Helps reduce runoff and erosion.

Agriculture is one of the major contributors to water quality, with phosphorus runoff the biggest concern. Gypsum helps to keep phosphorus and other nutrients from leaving farm fields.

Below: Charah's state-of-the-art manufacturing facility.



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