### Buttoning Up and Zoning Out

#### Middlesex Family Taps Into WEC’s Incentives

Callah Mandell Wood is three months old. Her big brother, Loren, is two. The house they live in, in Middlesex, is lots older – 184 years, in fact. It was built in 1833. Callah and Loren’s mother, Bekah Mandell, grew up there, and when she and her brother were kids they didn’t spend a lot of time in their rooms upstairs because for much of the year it was too cold up there.

Bekah remembers doing her homework at the wooden table in the large, open room on the first floor where the woodstove is. Her parents, Larry and Marcie Mandell, who bought the house in the 1970s, had originally divided it among several smaller rooms. Opening it up let the heat travel from the woodstove, and turned much of the first floor into a lovely, honey kitchen-living room-dining room, with natural light pouring in from the windows along the front and rear walls.

That was the kind of renovations people did in the 1970s, ’80s, and ’90s, to make the old farmhouses more comfortable. And it surely helped. But in the upstairs rooms, and even in the room off to the side of the living area – where, to this day Bekah, who works from home, wears fingerless gloves at her keyboard in the wintertime – it’s not exactly warm.

So Bekah and her husband, Patrick Wood, who purchased the house from the Mandells four days before Callah was born in April, are doing the kinds of renovations people can do today, which are several steps, technologically, beyond the improvements people her parents’ age undertook when they were young.

Speaking of renovations, Larry and Marcie Mandell, who were kids they undertook when they bought the house in the 1970s, had originally divided the walls that, like a typical Vermont farmhouse, had originally divided it among several smaller rooms. Opening it up let the heat travel from the woodstove, and turned much of the first floor into a lovely, honey kitchen-living room-dining room, with natural light pouring in from the windows along the front and rear walls.

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### PUC Workshop To Review Regulation, Rates, Energy Sector

**Echoes of WEC’s Rate Design Study**

Just as Washington Electric Cooperative has recently begun to contemplate how the Co-op will meet the mandates and obligations imposed on the state’s electric utilities by recent legislation, Vermont regulators, in an order published on June 26, have announced a workshop that will tackle some of the same questions for utilities statewide. According to the announcement, Vermont’s newly renamed Public Utility Commission (PUC) – formerly the Vermont Public Service Board (PSB) – has scheduled the workshop to "broadly review emerging trends in the utility sector and to evaluate existing forms of regulation in light of these trends."

The PUC is seeking input from utilities and other interested parties to consider the cumulative effects of regulations and technological advances on the utilities, including regulations related to rate-setting practices. Cost recovery and rate design – the very concerns of WEC’s Board of Directors, as discussed in these pages last month ("WEC Eyes Changes To Its Rate Structure," continued on page 7)
President's Message

Sweet Smells of Summer
Plus: Thoughts on Rate Design, and Co-op Departures

By Barry Bernstein

S
ummer is here in full force. I watch the fields around me get mowed, winnowed into rows, and then baled. What a sweet smell in the air when the farmers are doing their magical work, racing before the next storm rolls in, and how it lingers in the summer air when they're done.

Storms
This year we have experienced heavy rains and winds. As Dan Weston, Director of Engineering & Operations, says in the article on page 8 ("WEC Walloped By Storms and Outages"), the storms haven't really let up since May. "Storms have been a constant throughout our service area," he says. "And it's not just the heavy rains and winds. As Dan Weston, Director of Engineering & Operations, says in the article on page 8 ("WEC Walloped By Storms and Outages"), the storms haven't really let up since May. "Storms have been a constant throughout our service area," he says. "And it's not just the heavy rains and winds. As Dan Weston, Director of Engineering & Operations, says in the article on page 8 ("WEC Walloped By Storms and Outages"), the storms haven't really let up since May. "Storms have been a constant throughout our service area," he says. "And it's not just the heavy rains and winds."

New Rate Design Process

In the June issue of Co-op Currents, both in my President's Message and an article, we discussed the beginning of the process of a new rate design. We appreciate some of our members taking the time to either call and talk with the folks who serve on the Board of Directors or also writing to the Co-op Currents Postmaster: Send address changes to Co-op Currents, P.O. Box 8, East Montpelier, Vermont 05651.- We welcome your continued input and thoughts on the rate design question, and look forward to a thoughtful discussion before we make any decisions affecting our membership.

WEC is part of the alliance working to advance and support the principles of cooperatives in Vermont.

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Middlesex Family Taps Into WEC's Incentives
continued from page 1

their homework down here." The renovations will create a number of individually controllable heating zones in the house. When the first stage is accomplished in coming months, the room the kids share will be part of a zone that will also heat Patrick and Bekah's bedroom just steps down the hall. When the kids are older, they'll have separate rooms, so the plan is to add at least one more zone upstairs.

The first floor, too, will be divided into zones. The office, where Bekah provides communications services for the National Domestic Workers Alliance, will no longer have to rely on heat emanating from the wood stove on the far side of the adjoining room, so she should be able to ditch the fingerless gloves.

Made in Vermont
Just as important to Patrick and Bekah as the presence of actual heat throughout their home, is the source of that heat. They're getting off fossil fuels. For the woodstove in the large front room isn't the only heating source in the home; it complements a boiler that Bekah's parents purchased about 10 years ago, which sends warm air up from the basement through a venting system. It helps, but does not solve, the problem of disseminating the warmth.

The zones, however, will do that. And the source of the heat will be a pellet boiler, mechanically fed from a large bin beside it in the basement. The pellet boiler will heat water contained in two insulated tanks, and those tanks will circulate the water to wall-mounted units (basically, radiators) in the various zones. It will not be only a non-fossil fuel heating system, but an energy-efficient one, because it won't take a lot of energy to maintain the water temperature in a closed system.

Fossil fuels won't be a thing of the past for the Wood and Mandell family. Their cook stove and clothes dryer run on propane. So does their hot water heater, but not for long. Patrick doesn't believe it has a lot of life in it, and when it gives up the ghost he plans to install a new one that will be connected to the pellet boiler.

continued on next page
Serving more than 10,800 member/owners in central Vermont. A rural electric cooperative since 1939.

A summer is in full swing, we hope you are staying dry and cool during this season of soggy and unpredictable weather. Along with summer usually comes an occasional thunderstorm, but this year we have had more than our share. Several severe, localized weather events resulting in power outages have been keeping our crews busy since May (see more on page 8). In Washington County, the areas of Fayston, Moretown, and Duxbury were hit hard with flooding in June and July, taking out roads and bringing down trees. These pop-up thunderstorms continue to plague our system, and they have been disruptive in many ways including causing power outages.

**Annual Meeting Thank You**

I want to thank all our members and staff who attended our 78th Annual Meeting this year. We had just under 250 in attendance and we were yet again at capacity for seating. We had a terrific evening and enjoyed the presentation of Sue Morse from Keeping Track, with breathtaking photos of wild animals in their natural settings. Once again we pushed to the capacity of the venue’s space at our new location at U-32 High School in Montpelier. For next year’s meeting we will look for an even larger space in hopes of enticing a bigger turnout! To all who could make it, I want to personally thank you for coming and enjoying an evening talking about electricity-related issues and simply catching up to say hello.

**Integrated Resource Plan (IRP)**

Every three years WEC must complete and file an Integrated Resource Plan with state regulators. This is a chance to document and make public where your power comes from — not only this year but for the next 20 years. We are proud of that, because we think our members will approve of these power sources, both for financial and environmental reasons. The IRP showcases our green and clean commitments for the next two decades, and members can rest assured we will have sufficient environmentally responsible power to meet those needs. The IRP is both a regulatory requirement and internal planning tool. In this important document we describe how we will meet the electric service needs of our members in a reliable, secure, and sustainable manner, while assuring affordability and efficient use of energy.

There will also be a focus in the IRP on how we deliver power in the new era of small-scale “distributed” generation, like solar, with its impacts on our infrastructure (substations, wires, and poles). We will run engineering studies to examine those impacts, on a circuit-by-circuit basis, from the standpoint of how much solar energy our system can handle and at what locations more distributed generation can help. As the number of solar installations increases we must be mindful of the impacts on our equipment and grid delivery system.

We filed the IRP with the Public Utility Commission (PUC) in early July and look forward to working with our regulators to gain their support and approval. You can also find WEC’s IRP on our website.

**Button Up Your Home**

WEC wants to give its members money to lower their carbon footprint. Yes, you heard that right! You have probably been reading about our Tier III programs — where we are now calling our Button-Up Program due to its emphasis on weatherization and energy efficiency — in *Co-op Currents*, including a feature article on page one of this July edition.

Following instructions from the state, we have set aside money to help our members reduce their dependence on fossil fuels. Our programs include financial incentives to weatherize homes, install solar hot water systems, install heat pump hot water systems, install wood-pellet boiler systems, and to add cold climate heat pumps in tight, well-weatherized homes.

WEC is committed to working with its members to achieve meaningful changes and we want to work with you to lower your carbon footprint and Vermont’s greenhouse gas impacts. So if you are looking to weatherize your home and make some of the energy-saving changes noted above, this is a great time to do it because you can receive actual financial assistance! We encourage you to call Bill Powell here at Washington Electric to learn more.

**Net Metering**

The state’s new (January 2017) net metering rules are well underway, and the pace of requests for installations from WEC members has been vigorous.

The Public Service Board — now the PUC — issued new rules and orders for the statewide program in response to instructions from the Legislature in 2014 to regalvanize the state’s non-utility-scale generation (less than 500 kW).

Typically, net metering applications in WEC’s service territory take the form of solar panels installed by Co-op members at their homes.

To comply with the PUC’s new approach to net metering, WEC filed a plan that went into effect, as required, at the beginning of the year, and we have begun to implement that plan and bill our net-metering members accordingly.

We are glad to report that there is still robust interest in net metering and home generation among Co-op members. We have 72 new applications in hand already, totaling just under 500 kW of total installed generation. In fact, we expect this year’s applications to exceed the total amount of solar systems installed in our service area over the past 15 years. I’ll repeat: In just one year we will have more applications for solar systems than all prior years combined. While the pace and volume of interest has been a challenge for us to keep up with internally, we are working out the bugs of the new program and getting members installed and on line every month.

**The Co-op Difference**

Being part of a cooperative utility means you have a voice. You are not just a consumer, but rather you are a partial owner and a member. One of the many differences of being part of a co-op is not only the return of excess funds to you through what is known as capital credits (because co-ops, unlike investor-owned utilities, don’t keep their “profits;” but rather share them among their member/owners), but you also can participate in the democratic control and decision making of your cooperative. There is no better example of local control than the cooperative model. At the annual meeting members elected three fellow members to serve on the nine-seat Board of Directors (two returning — Don Douglas and Mary Just Skinner — and one new director, Jean Hamilton).

Work is underway to calculate this year’s return of capital credits to members. We will be ready to issue credits to members in November. (Inactive members receive a check.) The work is well underway now to prepare for this important endeavor, with WEC staff Dawn Johnson and Linda Nelson leading the way.

WEC also maintains a community- and civic-minded fund called the Community Fund, which is supported through member-donated capital credits. On page 6 we highlight activity and donations made in 2016. We would love to have more members participate. This is a way to make very small amounts add up and make a difference in the lives of those in the central Vermont region. Just another reason why being a part of a co-op is different!
When, Where, And How Much?
A Lot Rides on WEC’s Role in Power Predictions

If you don't look deeply into the details, the work of an electric utility like Washington Electric Cooperative seems pretty straightforward. The Co-op's job is to provide power to its 10,800 members' homes, businesses, farms, offices, and schools. That means keeping the power lines up and in good working order, and the substations, too, to get the electricity from where it was generated to where it will be used. So the line crews go out each day for maintenance and repair projects, or to rebuild or relocate power line sections according to the carefully laid plans of WEC's engineers. Just keeping the system running.

Meanwhile, at WEC's headquarters in East Montpelier, the member services and bookkeeping staff are responding to people's phone calls, preparing bills and tracking payments, and keeping the books. Taking care of business.

Again, that's if you don't look very deeply.

But if you do look deeply, you discover that Washington Electric, and New England's other utilities, too, are engaged minute by minute, hour by hour, day by day, month-by-month, and of course long-term, in lining up the electricity you're going to need and predicting - not vaguely, but as precisely as possible (because there's money riding on it) - what WEC's power demands are at any moment.

Numerous Co-op CURRENTS articles, including “The REC Question” (June 2017), have described the regional power managers at ISO-New England ordering electric generating plants to ramp up production, or cut it back, or turn it off altogether, because the electric grid is a balanced system. The industry hasn't arrived yet at a point where mass quantities of power can be cost-effectively stored for later use. Therefore, power production must match power demand at all times. If perfect balance is not maintained it leads to equipment failures and potentially major outages.

But how do the operators at ISO-NE (the Independent System Operator) stay ready to do that? How do they know how much power will be needed in the Green Mountains of Vermont, the White Mountains of New Hampshire, on the seacoast of Maine, the cities and suburbs of Boston and the villages of the Berkshires, plus Connecticut and Rhode Island?

It's because there's someone at each of the utilities, or someone working for a group of utilities, generating that information, reviewing and renewing forecasts, and communicating it to ISO-NE. Not after the fact, not (hopefully) during the fact. But before the fact. At WEC, that constant, vigilant duty is performed by General Manager Patty Richards, who also taps into the expertise and resources of the Vermont Public Power Supply Authority (VPPSA) for short-term, day-to-day predictions. Because there are costs associated with "truing up" any difference between what the Co-op projected it would need and what it actually used when the time came, the closer Richards and VPPSA are in their predictions the better it is, financially, for Washington Electric.

Coming close to the mark
Patty Richards came to the Co-op in June 2013, after working in the electric utility industry in Vermont for 24 years as a power planner. Richards is a self-described "power-supply wonk," and enjoys her immersion in the technical aspects of utility management. She's also the public face of Washington Electric Co-op, representing WEC in hearings and at public meetings, taking phone calls from members who want to take their questions or complaints -- and sometimes their compliments -- beyond the member services staff, and she's involved with policy formation with the Board of Directors. That just scratches the surface of her duties.

This article focuses on her work in power planning.

"Every kWh [kilowatt-hour] we draw from the grid is charged to us by ISO-New England," says Richards. "There are other charges from them besides the energy we use, but energy is by far the largest component."

"We also get paid for generation, meaning the electricity we produce at our Coventry [landfill methane] and Wrightsville [hydro] plants and other power contracts that delivery power to the grid," she explains. "We net the dollars we pay and the dollars we get paid. To the extent that we can be really accurate with our load projections, we save on the payment side."

Richards describes ISO-NE, at its command post in Holyoke, Massachusetts, as the "central brain" of New England's almost living-and-breathing electric grid.

"They’re in charge of giving the generating plants real-time operating instructions," she says. "They start with a plan for the next day: This will be the load forecast tomorrow; this generator will come on at 2 a.m., this one at 10 a.m., this one turns off at 3 p.m."

"They do that based on the expectations -- the load forecast -- for the next day. And the way they get that is from us, at the utilities, saying, 'This is what we’re going to need to serve our members' electricity needs on an hour-by-hour basis for tomorrow.'"

When the time comes, if Richards and her VPPSA team had predicted that WEC would draw 14 megawatts (MW) of power at noon but the Co-op used only 13 MW, WEC would nevertheless be charged for 14 MW.

"ISO would say, 'We used your forecast and they were the power plants lined up and ready to serve your load, but it turned out we didn’t need that extra megawatt.'"

"So we do not pay the per-megawatt charge for power we didn’t use, we could also have paid a higher amount if our miscalculation had required the ISO to find sources of peak power [when demand is high], which is more expensive. Obviously, the closer we get to the actual number, the better off we are." This is the scenario if WEC over-projects its power needs.

"If we under-project," Richards continues, "we have to buy more power than we had anticipated. The power forecasting we do, which is based on what we call the 'load shape,' is an effort to reduce and control our power costs, and also minimize the effects of the market's price volatility for us."

Fortunately, Richards says, her load forecasting is based on fairly predictable variables, and VPPSA gets the daily load shape right with less than 5-percent error.

"The more we know about how the load shape responds to changes in weather, time of day, or day of week, the more accurate we are," she explains. "This is a great example of applying math skills to real-world problems."

How renewables benefit
The greatest challenge to getting load predictions right is weather. WEC retains relationships with multiple weather-forecasting services and checks their predictions frequently each day, even more so when storms are known to be approaching. These
services, some of which are familiar names to central Vermont radio listeners and weather aficionados, are able to provide clients like Washington Electric Co-op more-precise details about storm strength, location, and duration than the general public usually receives.

The latest thing to come along is “Deep Thunder.” It’s a forecasting tool developed by the Vermont Electric Power Company (VELCO), which owns and operates the state’s high-voltage transmission system) in partnership with IBM. Deep Thunder is part of a concept the two entities are creating called the Vermont Weather Analytics Center. WVEC, as it is known, uses advanced tools that will enable it to provide what Kerrick Johnson, VELCO’s vice president for strategy and communications (Kerrick is also a Washington Electric Co-op member), describes as “hyper-local and hyper-accurate forecasts.”

The concept is exciting, and while it hasn’t fully arrived yet, Deep Thunder has been active and available for nearly two years. WEC and VPPSA regularly tap into it to help predict peaks in energy needs and adjust the Co-op’s daily load forecasts. The model also includes sun and cloud data, factors that enable the Co-op to anticipate how productive members’ net metered solar systems will be, which in turn impacts WEC’s power needs.

“The model is taking weather for the state, and load patterns for the utilities, and saying, ‘Here is what we think the state’s load [energy demand] is going to be. This is big-picture, but it helps us do our forecasts, anticipating temperatures, wind, precipitation, sunshine… the factors that drive our load and potentially cause outages,’” this information provides other benefits, as when thunder storms or wind events are predicted WEC can target its outage-response even before the damage is done. Information from Deep Thunder sometimes helps WEC “save” its peak, using tools at its disposal to maximize generation at the time of the highest demand on the system – another way, since peak power is expensive on the retail electric market, to control costs.

Then there’s this. As weather-prediction technologies advance and become more finely tuned, the certainty they provide assists in taking full advantage of intermittent renewable generation sources. Whether it’s Patty Richards using Deep Thunder, and someday WVEC, to anticipate when, where, and how strongly the sun will be shining for Co-op net metering solar systems, and building that information into their reports to ISO-NE, or whether it’s ISO-NE itself gaining maximum benefit for the region by knowing when wind turbines on New England mountain tops or in the sea are likely to be most (or least) productive, advances in this technology can only help in our gradual transformation to a far greener grid.

Every day WEC employees show up and do the business of the Co-op. They keep the lines up and the power running, and see to the details of member services and management. Meanwhile, behind the scenes, they are playing a crucial part in assembling a region-wide system of information that makes sure, almost no matter what the weather, that your lights will come on when you flip the switch. It’s incredibly intricate work, and it all starts with utilities like Washington Electric Cooperative. 

Believe It: A $10,000 Discount For WEC Members And Employees From Freedom Nissan

If you’ve been thinking about changing your ride – making the switch from a gasoline- or diesel-fueled car or truck to an all-electric vehicle – Freedom Nissan in South Burlington has sweetened the pot. This summer, members of Washington Electric Cooperative are eligible to receive $10,000 off the manufacturer’s suggested retail price (MSRP) on a new 2017 Nissan Leaf.

“If you’re thinking about purchasing an electric vehicle, this is a fantastic time to do it,” says Patty Richards, WEC’s General Manager. The offer extends until September 30, 2017, if supplies last.

The 2017 Nissan Leaf has a range of up to 107 miles and an eight-year or 100,000-mile limited battery warranty. In addition to this offer for WEC members and employees, purchasers of electric vehicles potentially can receive up to $7,500 in federal tax incentives. With the Nissan Leaf MSRP starting at $30,680, this means that WEC members enjoying both the $10,000 rebate and the federal incentives may be able to buy a new electric vehicle for half price.

To receive the rebate at Freedom Nissan, WEC members can simply show their WEC electric bill and supply Fleetail Certification Code B96647. Richards points out that gasoline-fueled vehicles make up 46 percent of Vermont’s greenhouse gas emissions. Because WEC serves a rural territory, its members generally rely on cars for transportation and contribute significantly to that unfortunate statistic. However, WEC is a green leader among electric utilities with a 100-percent renewable power supply. As a result, electric vehicles that plug in at WEC charging stations, or at members’ homes, not only produce zero emissions, but are powered by energy generated using zero fossil fuels.

“People can feel great about making this purchase and charging via WEC’s power supply,” says Richards. “You’re really making a dent in your carbon footprint using WEC’s electricity.”

WEC’s four EV charging stations are located at the Cabot Cooperative Creamery in Waitsfield, the VTTrans commuter lot off I-89 exit 9 in Middlesex, the Duxbury Creamery in Duxbury, and the Cabot Creamery in Cabot. A fifth charging station is planned for a location near WEC offices in East Montpelier, and should be operational sometime this year.

WEC members interested in purchasing a Nissan Leaf at discount may contact Freedom Nissan at 802-864-7400 for complete details.

Q: I’ve heard that heat pumps can provide cooling. What does WEC recommend?

WEC recommends that any building for which members want to replace existing fossil fuel heating equipment with a cold climate heat pump (CCHP) should meet certain thermal performance standards. This is to protect your investment, by making sure that the energy (electricity) your CCHP would consume for warmth or cooling would not be wasted through air leaks in or out.

Generally, the building should meet current Vermont Residential Energy Building Code standard or better. Members who want to determine what their current thermal performance is should contact WEC or Efficiency Vermont, to find a local “Home Performance with Energy Star” contractor. Especially for homes where the existing heating costs are high, before any equipment replacement is considered, the first order of business is an analysis of how much heating energy is being consumed, and the degree to which that can be corrected (and how much such corrections would cost).

For a building meeting today’s thermal performance standards, the CCHP does provide cooling capabilities. Depending on the house’s design and whether the CCHP is a single- or a multi-head unit, the cooling benefit can be throughout the whole building.

However, members not ready for a whole house CCHP installation have a range of wall-mounted or window air conditioners to consider. The important feature when shopping for window air conditioner (A/C) units is to look for the “Energy Star” certification. These are rated to use at least 10-percent less energy than non-Energy Star rated units. The CEER (see below) will vary with the BTU capacity, and should be > 10 generally.

Room Air Conditioners Key Product Criteria

Criteria: At least 10% more energy efficient than the minimum federal government standards

<table>
<thead>
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<th>Capacity (BTU/hour)</th>
<th>CEERBASE (units with louvered sides)</th>
<th>CEERBASE (units without louvered sides)</th>
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<tr>
<td>&gt;28,000</td>
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Combined Energy Efficiency Ratio (CEER): The ratio of measured cooling output (in BTU per hour) to the sum of the measured average annual electrical energy input (in watts) and measured annual standby/off-mode power consumption (in watts). CEER is expressed in BTUs per watt-hour.
Washington Electric’s ‘Community Fund’ Keeps Growing

2016 Report Shows Strong Performance for Local Causes

It is said that a society can be measured by how it treats its members who are most in need. The great number of charitable, service-oriented nonprofit organizations active in the central Vermont area, and the wide range of causes they address, reveal the towns and communities that make up this region to be compassionate, committed, and imaginative.

This program, the Community Fund of Washington Electric Cooperative’s Community Fund, has donated modest but meaningful grants to organizations doing good—primarily in central Vermont, but for statewide causes when needed (such as the relief effort after Tropical Storm Irene)—since 2003. The Community Fund is managed in-house, by Co-op staff and members of WEC’s Board of Directors, and because it has become well-known by the nonprofit community WEC does not need to advertise to attract grant applications. Consequently, there are no overhead costs associated with the Community Fund; every cent that people contribute to the fund reaches the organizations it is designed to help.

“While thanks go to the 1,300-plus WEC members who contribute their capital credits rather than taking the November deduction on their electric bills, it’s also important to recognize a major contribution from one of Washington Electric’s REC (renewable energy credit) members. Direct Energy generously contributed its $8,543 credit to the Community Fund, thus providing an additional benefit to central Vermont—supporting vital nonprofits besides helping finance renewable energy development.”

Washington Electric’s employees continued on page 7

2016 Community Fund Recipients

AWARE
Barre Heritage Festival
Cabot Connects
Capstone Community Action
Central VT Adult Basic Education
Central VT Council on Aging
Central VT Home Health & Hospice
Champlain Valley Exposition-VI
Agricultural Hall of Fame
Chelsea Public Library
Cheyenne Public School
Corinth Historical Society
Dragonheart VT Boat Race
Dublet Productions
Faith In Action Northern Communities - Cabot Food Share
First Branch Ambulance
Fourth Grade Foresters
Friends of the Mad River
Friends of the Winooski
General Breed Fund
Good Beginning
Good Samaritan Haven
Green Mountain Council
Green Mountain Film Festival
Green Mountain United Way
Green Up Vermont
Grotton Community Club
Hardwick Area Food Pantry
HealthHub School Clinic
Home Share Now
Kellogg-Hubbard Library
Mad River Valley Rotary Club
Montpelier High School Project Graduation
Montpelier Senior Activity Center
NFI Vermont
North Branch Nature Center
People’s Health & Wellness
Plaintiff Historical Society
Prevent Child Abuse
Studio Place Arts
Stuff-A-Truck
The Governor’s Institute
The Topsham Historical Society
Tires for Tires
Toy Joy & Toy for Tots
Twin Valley Seniors
Twinfield Together Mentoring Program
Upper Valley Arts
VERSARE
Veterans of Foreign Wars
VT Center for Independent Living
VT Child Care Industries
VT Community Garden
VT Community Loan Fund
VT Council on Rural Development
VT Energy Education Program
VT Foodbank
VT Historical Society
VT Horse-Assisted Therapy
VT STEM
Woodbury Volunteer Fire Dept
Youth Service Bureau

To call the Co-op, dial 223-5245 Mon - Thur 7:30 am – 5 pm and Fri 7:30 am – 4 pm; toll-free for reporting outages & emergencies, 1-800-WEC-5245.
Community Fund continued from page 6

have adopted a few causes of their own, such as the Adopt-A-Family program to assist military families, and the annual Stuff-A-Truck food drive. The staff, plus several Co-op vendors, make their own contributions to these causes, adding some $3,000 a year to the Community Fund for these specific purposes.

In all, since the Community Fund began operations in 2003, it has contributed more than a quarter-million dollars to worthy groups and good causes in central Vermont. If you’re not already signed up to contribute to the Community Fund, please consider whether you can afford to do so. You can use the sign-up form on page 6, or call the Co-op and get assistance over the phone. WEC would love to hear from you.

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Serving more than 10,800 member/owners in central Vermont. A rural electric cooperative since 1939.

as you read it.
1:30 on Saturday afternoon, July 8, almost on the dot, a bank of ominous storm clouds that had been looming in the northwestern sky struck towns in Washington County with startling force, from Duxbury in the west to Barre in the southeast. A sunny and tranquil summer day was suddenly transformed by a dark turbulence, and for a while it didn’t feel entirely safe to go outside.

For good reason. In South Burlington, where the storm had swept through before moving into central Vermont, several F-16 fighter jets were damaged when the winds collapsed the doors on a hangar at the Air National Guard facility. Weather.gov later reported that “severe thunderstorm winds were estimated between 60 and 80 mph across many locations. The primary severe weather threat observed was damaging winds, which resulted in over 30,000 people losing power across Vermont and numerous trees down across the North Country.”

It was no different in central Vermont. The winds tore the roof off Project Independence in downtown Barre and toppled several trees in and around the city. Rain fell briskly, adding to concerns about flooding that had been nearly constant through the late spring and early summer.

In rural Washington County, where Washington Electric Cooperative’s poles and wires try to withstand these forces despite their exposure to the elements on hillsides and amidst forested terrain, the damage was extensive. Eight hundred and ninety-six Co-op members lost their power in Middlesex, as did 725 members in Fayston, 421 in Duxbury, 288 in Marshfield, 163 in Calais, 162 in East Montpelier, and 126 in Plainfield. In all, the outages affected more than 2,700 homes, camps, and businesses.

Not only did those Co-op members have to spend time without power (restorations were quick in some places, more prolonged elsewhere), but it also marked the start of a long night for Washington Electric’s line crews and assistants, the “birddogs” from other parts of the Operations team who help track outages. The damages were so extensive that WEC reached out to other local utilities and received invaluable help from the Stowe and Hardwick municipal electric departments.

“We had to bring in everybody we could get,” Dan Weston, Washington Electric’s Director of Engineering & Operations, said early the following morning.

“We had all but 500 of them back by 6 a.m. But these are gremuling hours. We worked through the night again on Sunday and finished up Monday morning.”

“Don’t remember ever experiencing that”

As storms go, and the damage and outages they cause for the Co-op, the July 8 event, though serious, was not spectacular. There’s really not unusual, as Weston sees it, is a reversal of the normal weather calendar. “We got May weather in April,” he said. Typically, in April, we get the seasonal transition of thunderstorms, wind, and that kind of stuff… wet, heavy snows a few times. This year that didn’t happen; we got what we’d normally get in May – fairly uneventful, decent weather.

“Then along comes May, and we got April weather and it hasn’t stopped. Since the beginning of May we’ve had all but 500 of them back by 6 a.m. But these are gremuling hours.

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— WEC Engineering & Operations Director Dan Weston

The storms have taken their toll on infrastructure. Together, they caused damages to outages for at least 24 hours.”

The Co-op’s outage data, a storm on May 5 knocked out power for 1,644 members in the southern end of the Co-op’s territory. Hardest hit were Orange (637), Tunbridge (404), Williamstown (262), Chelsea (218), and Washington (123).

Two weeks later another storm socked Washington County, causing hundreds of outages in Barre, Calais, Duxbury, East Montpelier, Marshfield, Plainfield, and especially Middlesex (1,374 members without power).

The May 5 storm was just one of two “significant weather events” that seriously damaged the Co-op’s infrastructure. Together, they caused damages to outages for 5,000 members homes – almost half the Co-op’s membership – in 26 different towns.

“The primary cause of the damage, in each instance, was very large, reasonably healthy trees that were located well outside of the utility right-of-way corridor we maintain, being blown over onto the power lines,” said Weston.

Most were white pine, but we’ve also encountered 200-year-old maple trees, three feet thick at their base, being blown right over.

The storms are often associated with severe thunderstorms accompanied by strong winds that have a shearing effect as they roll over the Vermont landscape.

What’s particularly unusual, as Weston sees it, is a reversal of the normal weather calendar. “We got May weather in April,” he said. Typically, in April, we get the seasonal transition of thunderstorms, wind, and that kind of stuff… wet, heavy snows a few times. This year that didn’t happen; we got what we’d normally get in May – fairly uneventful, decent weather.

“Then along comes May, and we got April weather and it hasn’t stopped. Since the beginning of May we’ve had a steady bout of pretty violent thunderstorms, microbursts, and wind events – things we might get occasionally in spring and early summer, but not with the repetition we’re seeing.

“And it’s continuing,” he added. “Normally, July starts turning into a hot, dry time of year. But the forecast is for more storms.”

The storms have taken their toll on WEC’s equipment. By July 12, WEC had to replace around 20 broken poles, and had repaired, restrung, or replaced more than 124 spans of wire that had been knocked to the ground. Crews had put in some 1,820 labor-hours fixing the damage, and nearly half the Co-op’s members had suffered outages at least once. For some members, it was multiple times.

“It’s been like one long outage-restoration project for us,” said Weston. The federal Rural Utilities Service (RUS), and WEC’s Service Quality Reliability Performance, Monitoring & Reporting Plan, established with the Public Service Board in 2004, define a major storm event as “an interruption or group of interruptions caused by conditions that exceed the design and operational limits of [a utility’s electrical] system.”

The State of Vermont’s definition is “a severe weather event that satisfies all three of the following criteria: extensive mechanical damage to the utility infrastructure; more than 10 percent of the customers in a service territory out of service due to the storm’s effects, and at least 1 percent of the customers out of service for at least 24 hours.”

Amazingly, Washington Electric Co-op got through 2016 without a single “major storm event” by these definitions. No such luck in 2017.

“We’re halfway through the year and have had three major events that have done significant damage to our infrastructure,” Weston said as his crews were out tidying up after the July 8 thunder-and-windstorm. “The weather appears stuck in a holding pattern where we are continually getting storm after storm accompanied by shearing winds and torrential rain. I don’t remember in the 21 years I’ve been at the Co-op ever experiencing that.

“But we’re not alone,” he pointed out. “Our farmers are struggling to get a three-day stretch without rain in the forecast!”