Re • sil • ience

def.: the capacity to recover quickly from difficulties; toughness

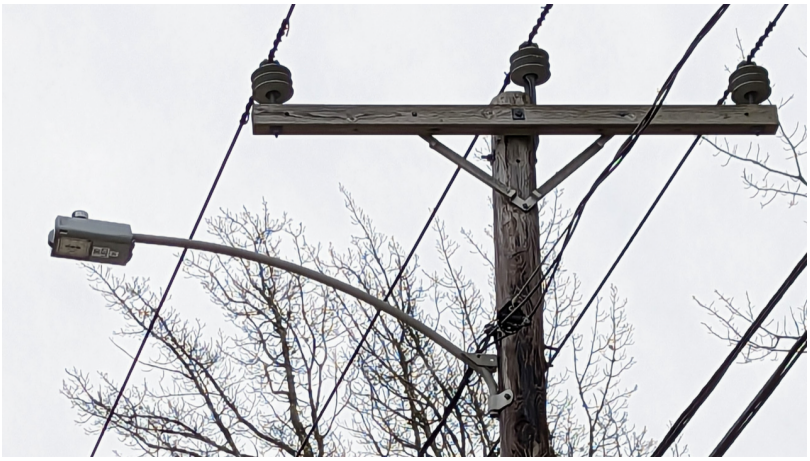
Municipal efforts to improve energy efficiency and reduce emissions began at the Transfer Station—but haven't ended there

In 2018 our town took a very visible step to reduce both its electrical costs and greenhouse gas emissions with the installation of a 67.5 kW solar photovoltaic project on the Transfer Station roof in partnership with ReVision Energy. This project was championed by Dan Verillo from the Town's Conservation Commission, with potential cost-savings carefully analyzed by Select Board member Jerry Hall. So far the Town's savings from the installation are greater than that initially projected, and the latest calculations indicate that once the town purchases the system from ReVision in 2024 it will start saving conservatively more than $18,000 a year in electricity costs. Already the project is preventing the annual pollution of more than 30 tons of carbon dioxide into the earth's atmosphere.

Just as visible in its own way was the undertaking instigated in 2019 by Town Manager Timothy Polky to replace town street lights, along with the lighting throughout the Town Office, with high-efficiency bulbs. Together these measures prevented the annual pollution of more than 15 tons of carbon dioxide into the atmosphere and again saved money.

With these two projects our municipality is already more than half way to the State's 2030 goal of reducing its greenhouse gas emissions by 45 percent below 1990 levels, an objective laid out in its "Maine Won't Wait" climate action plan, in line with the 2015 Paris Climate Accords that the U.S. committed (and recommitted) to. Now the obvious question is, what do we tackle next?

Currently, our municipality's two largest sources of greenhouse gas emissions come from transporting our recyclable materials and solid waste off the peninsula and from heating town buildings. Reducing this first category is going to be difficult in the short term; ideas include compressing the materials and waste further to reduce the number of trips required and/or moving towards more fuel-efficient haulers.



More immediately, though, it looks like improving the heating systems in town buildings will be the easiest and most cost-effective next step for us to reduce emissions. The calculations needed to estimate the savings in dollars and greenhouse gases are ones anyone can do, whether for their own homes and businesses or for a community building—there are several websites that give guidance on performing the needed calculations.

The problem is like a classic high-school math question, where you have a leaky paddling pool, being filled by a hose; what flow through the hose do you need to balance all the leaks?

With our town buildings we are looking at the heat, not water, that is leaking. We know how much oil we use to heat them, and the boiler efficiencies, and we can calculate how much leaks out through walls, windows and roofs. Different building materials leak at different rates—the larger the R-factor, the less the leakage.

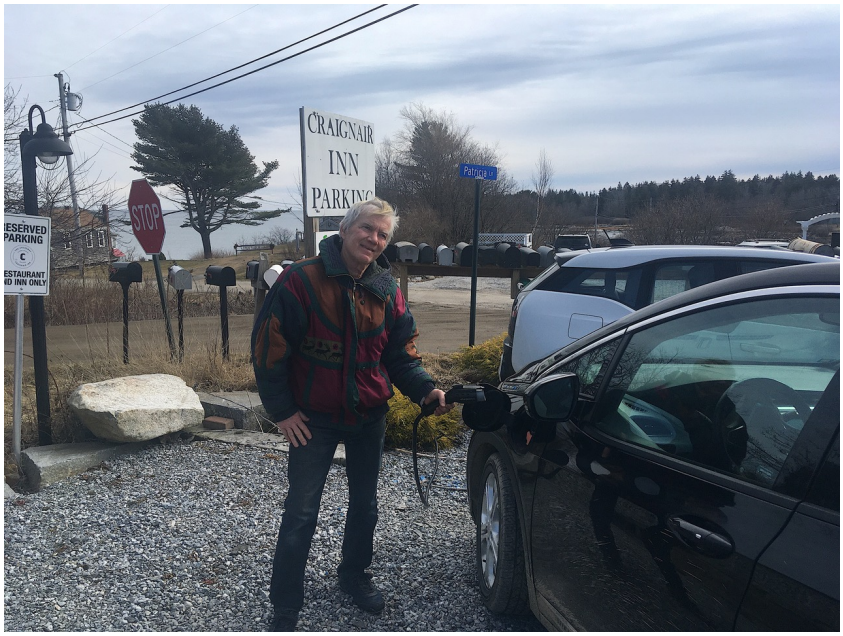
The fastest payback seems likely to come from using efficient electric heat pumps instead of burning oil. In addition, the windows in the older part of the Town Office have a low R-factor, so replacing them with more energy efficient units will let less heat leak out in winter and in summer will reduce cooling needs. Improving the insulation in the ceiling also looks like it will yield dollar and greenhouse gas savings.

Finally, since estimates are that municipalities themselves contribute less than three percent of a town's total greenhouse gas emissions, our town is now starting to reach out to other municipalities in Knox county to share ideas about possible ways to amplify efforts to improve energy efficiency and reduce emissions throughout our communities. This is important because it will take all of us—homeowners, businesses and organizations, as well as town government—to achieve a sustainable economic and environmental future to protect the generations living here after us.

—Richard Bates *(Bates is currently chair of the St. George Select Board.)*

My EV and ME

Cars account for more than half the air pollution in Maine, and I wanted to cut down on my share of dirty air while still driving. Hard not to have to drive, where we live.



For decades I drove polluting cars that ran on gasoline. Some 15 years ago, we converted our pair of Volkswagen diesels to run on vegetable oil, at least partially. That meant messy buckets of used grease from a pub and other places. But now, I happily motor about in a Chevy Bolt, an entirely electric vehicle (EV). Not to be confused with Chevy Volt, which is a gas-electric hybrid like the Toyota Prius.

It was two years ago that I decided to go for the whole electric enchilada. Being a

frugal Mainer, I bought a used car from a South Paris dealer, taking a chance on “sight unseen” when the dealer told me it would likely be sold by the time it was delivered to his shop. It paid off. For about $24,000 including tax, I acquired a compact hatchback car in immaculate condition. It’s a 2017 model and it had 15,000 miles on it. For me that’s a new car.

A sporty four-door, it’s roomy inside, and if you step on the (can’t say gas) pedal, it takes off like nobody’s business. When you brake, or even slow down without braking, the car charges the battery. Still, I’ve learned to watch the miles left to drive. If I ran out of electricity on the road, I’d be stuck. It hasn’t happened.

I power up the car with a 240 volt charger in my garage, usually leaving it plugged in overnight. A green light tells me it’s fully charged. On a warm summer day, the driving range on one charge can be as much as 300 miles. On a cold winter night, less than 200 miles. That still gets me around pretty well, and there are an increasing number of free charging stations around the state. Our own Jackson Memorial Library is going to install two.

I don’t for a moment think I’m so “green” that I don’t pollute. I just think every small step we take toward sustainability is worthwhile. It pertains to our survival, of which there is no certainty.

Oh yes, those reports of batteries catching on fire. Well, I just don’t worry about things like that, but then Chevrolet installed a new battery free of charge, so now my Bolt is really like new. And safer. The lithium-ion batteries can be recycled, and there are companies currently in that business. We know gas and diesel are expensive, and I’m sure I’m paying extra on my CMP bill, but since my car battery charging isn’t separated from my other household electricity, I can’t say how much more. I haven’t been shocked beyond the usual dismay.

Much of Maine’s electricity is generated by renewable power such as hydro, solar and wind. That means that while I’m driving, I’m not polluting very much. This is a good feeling. The fossil fuel industry may not want me to say so, but I recommend EVs without hesitation.

A warning: Electric cars are so pleasantly quiet, people walking along the road, or bicycling or running, won’t hear you. So I slow down, roll down the window and say something. It’s neighborly.

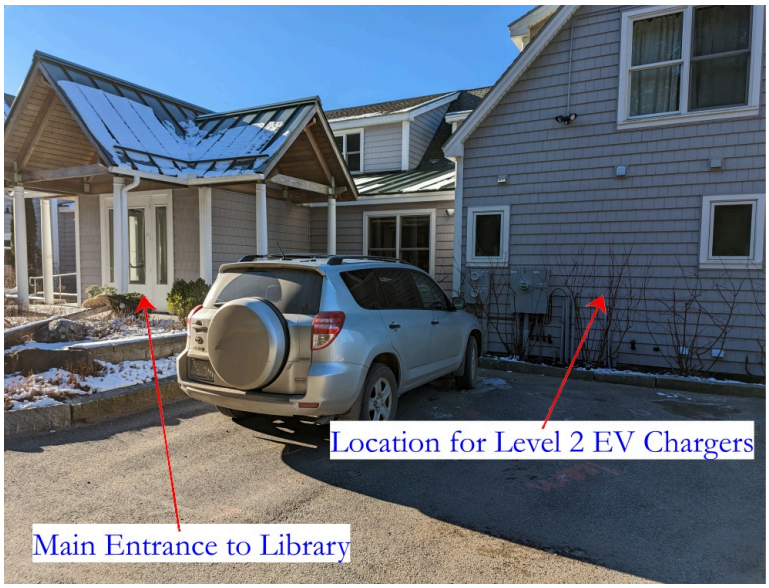
—Steve Cartwright *(Cartwright lives on Hart’s Neck, and is a member of the Select Board.)*

Two new EV chargers to be installed at the JML

This spring the Jackson Memorial Library (JML) will be installing two networked Level 2 Electric Vehicle charger outlets. The project has been made possible by a grant from Efficiency Maine and the Nature Conservancy which will cover 90 percent of the cost. The rest of the funds are coming from library donors.

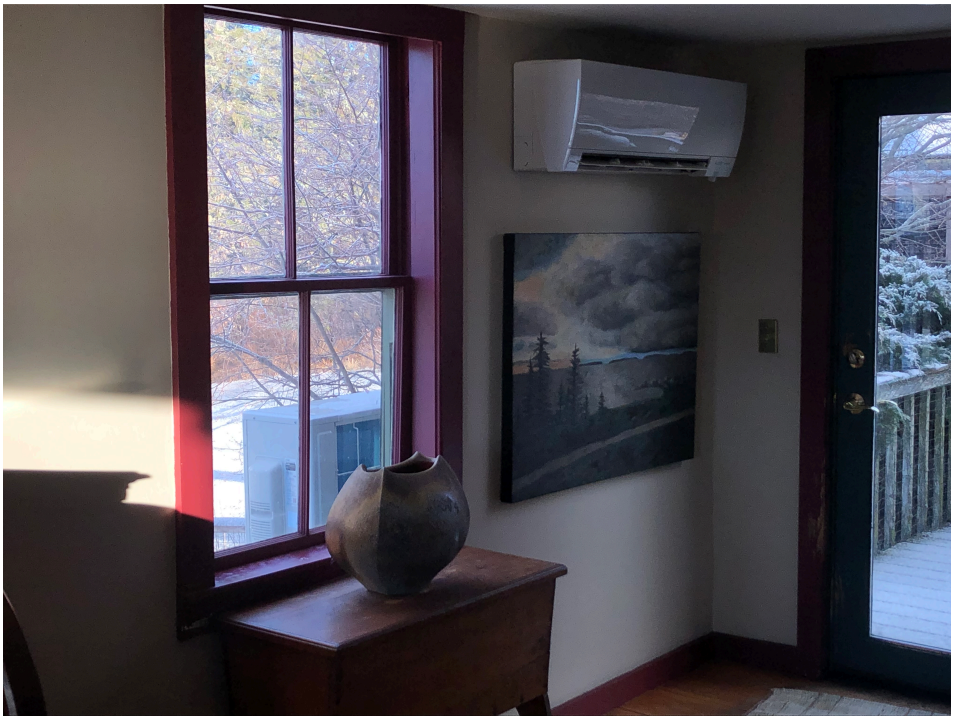
To use a charger the driver uses an app on their phone to "start the pump" and pay for the electricity. “Networked chargers” make it possible for potential users to check their status before before driving to the library so they can find out if they're operational or in use, a plus since not many chargers in the area are networked.

The grant requires that the chargers be operated for five years and covers the networking fees for this period.



Becoming [slowly] more energy efficient in this old house

The great Arctic chill of February 3 and 4 was our first real test of the heat pump we installed about a year ago. When it was clear that we needed to replace our old forced-air furnace, the question was with what? We have a soapstone wood stove that keeps the house fairly comfortable until temperatures dip into the lower 20s and below, and so had relied on the oil furnace to keep water pipes, people, and dogs from freezing. Pretty much everyone we talked with about heat pumps warned against counting on them as the only heating source in our climate as they lose efficiency and effectiveness during the occasional Arctic blast. So when we ordered the heat pump we crossed our fingers and hoped that the wood stove would be a sufficient auxiliary heat source if it got really, really cold. And it was.



At the same time that we put in the heat pump we also added solar panels to our array to help cover the additional electrical draw. So if we have calculated correctly we should come out even with the energy we generate. Oh, and a perk of having the heat pump is that it also works in reverse to cool air in the summer: Wasn't *that* nice on those hot days in August!

In addition to the heat pump, which is about as efficient a heating source as there is, we insulated the cellar last year (and at the same time dealt with the standing water we would get down there during heavy rains). It seemed like a good idea, but wow, was it ever. I am sure that the ambient temperature in the house was at least five degrees warmer the first morning after the insulation had been put in. I am also certain that the insulation is what kept the pipes in the cellar from freezing up during the Arctic blast in February, as there is no other heat source down there, and we have had problems with frozen pipes in the past.

The other thing we are slowly doing to make this old (1826) house as energy efficient as possible is slowly replacing the single-pane windows with energy-efficient units, with the last of these to go in this spring. We have also added insulation to the walls of the house each time we have reshingled a side.

All of the work we have done to make the house more energy efficient has taken the 26 years we have lived here so far, as we have only been able to afford a bit at a time. One nice thing is that with the recent work there have been some good rebates from Efficiency Maine that have helped with the cost of all of these upgrades. I am enjoying being warmer, and having the relatively quiet (the oil furnace sounded like a freight train), steady flow of warm air. Additionally, our upstairs is warmer in the winter than it has ever been because the fans on the heat pump are angled to move the heated air more effectively throughout the house. And one other perk of removing the old oil furnace and attendant ductwork is that it is way easier to maneuver in the cellar (though we still have to stoop since the ceiling is rather low).

—Anne E. Cox *(Cox lives in Martinsville.)*

Know about Efficiency Maine?

Efficiency Maine is a Trust that administers programs to improve energy use and reduce greenhouse gases in Maine. It offers consumer information, discounts, rebates, loans and investments for high-efficiency, clean energy equipment and strategies to manage energy demand. Weatherization upgrades for low- and moderate-income residents is a priority, along with expanding energy efficiency investment among local governments, schools, community organizations and businesses. Go to efficiencymaine.com to learn more.

Maine in top ten states for energy efficiency policies

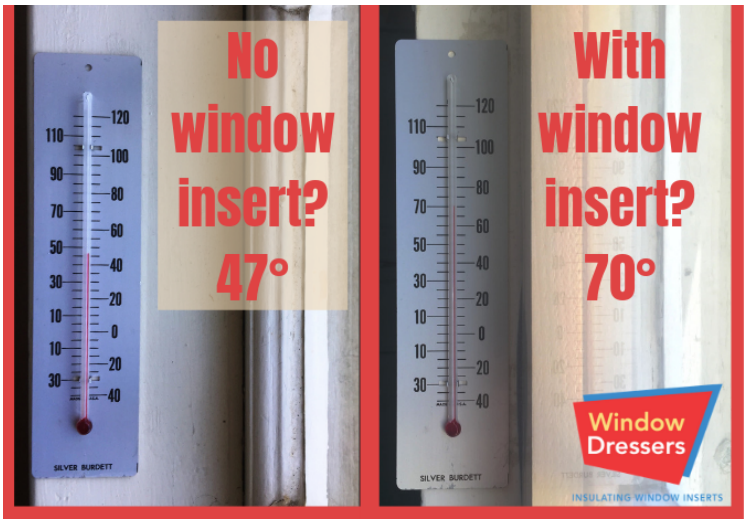
As Americans struggle to pay rising energy bills, leading states have instituted energy efficiency policies that cut utility bills—especially for those who need it most—while reducing greenhouse gas emissions, according to the *2022 State Energy Efficiency Scorecard* published by the American Council for an Energy-Efficient Economy (ACEEE). These policies, says the ACEEE, can serve as models for the dozens of states that have yet to prioritize energy-saving upgrades to reduce costs for disadvantaged households.

California comes in first place in the 50-state scorecard followed by Massachusetts (#2), New York (#3), Vermont (#4), Maine (#5), Washington, DC (#6), Maryland and Rhode Island (tied at #7), Connecticut (#9), and Minnesota (#10).

Maine improved most since the last ACEEE scorecard, moving up 11 spots to #5. The state set a goal to weatherize 35,000 homes and businesses and to heat at least 115,000 homes with high-efficiency electric heat pumps by 2030. State-funded affordable housing projects must be all-electric and include electric vehicle charging. Maine also adopted new appliance standards and enacted a comprehensive electric vehicle plan with equity as a key focus.

“As the most heating-oil-dependent state in the country, and with our electricity grid over-reliant on natural gas, improving energy efficiency in Maine is essential for cutting costs for Maine households while also curbing harmful carbon emissions,” said Governor Janet Mills. “This recognition by ACEEE affirms Maine’s leadership on energy efficiency, which is even more critical now given the unprecedented energy prices our region is experiencing since the Russian invasion of Ukraine. I am proud of Maine’s progress and will continue to make available programs and incentives to help Maine people reduce their energy costs and improve energy efficiency.”

(To see the full Scorecard report go to www.aceee.org/research-report/u2206)

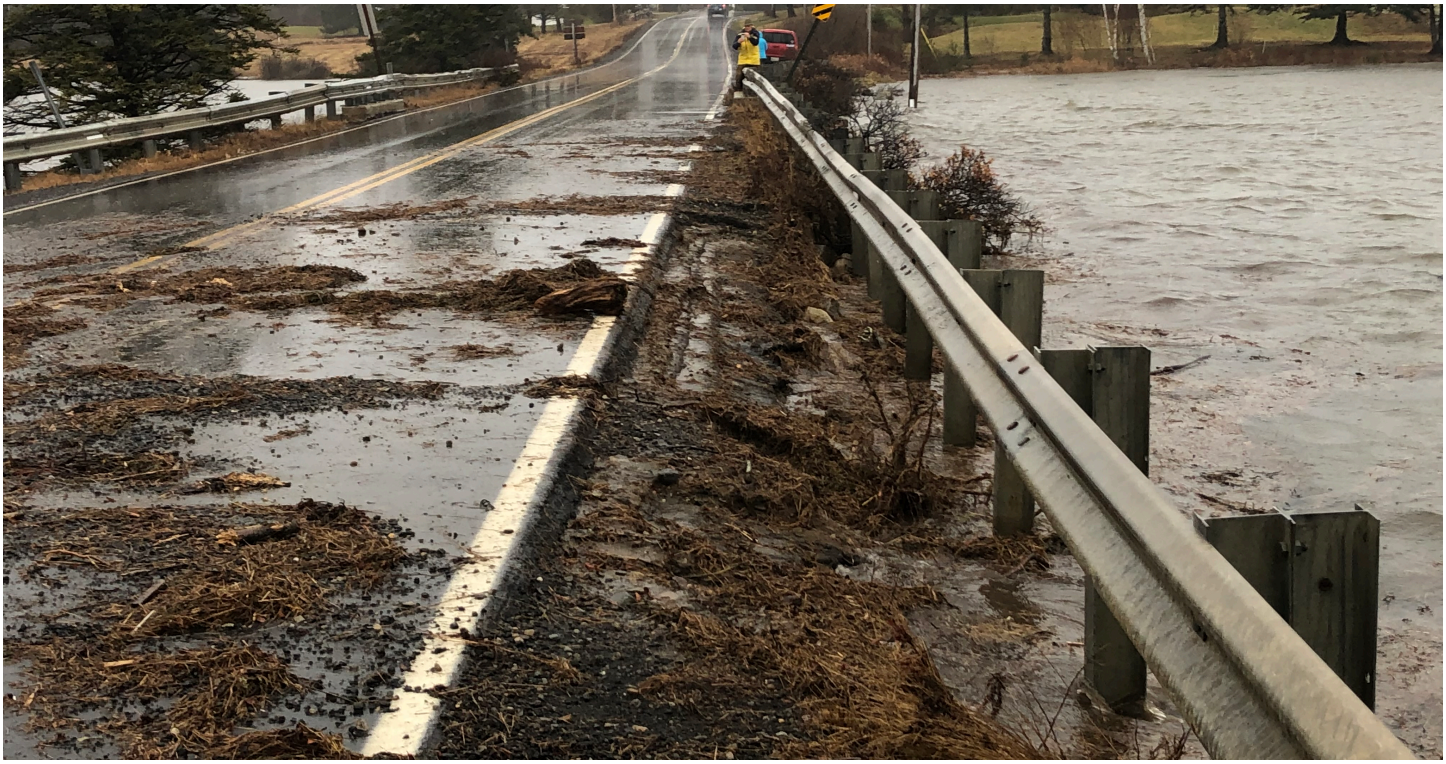


WindowDressers brings community volunteers of all economic and social situations together to improve the warmth and comfort of interior spaces, lower heating costs, and reduce carbon dioxide pollution by producing **low-cost insulating window inserts** that function as custom, interior-mounted storm windows.

WindowDressers Insulating Window Inserts let in light while stopping drafts. Each insert is made of a custom-made pine frame wrapped on each side with tightly-sealed, clear polyolefin film, creating an airspace between the two layers for additional insulation. The insert is finished with a compressible foam gasket. The foam allows enough give for the inserts to be easily slid into place in the fall and removed in the spring, while holding firmly enough to provide a tight, friction-based seal. The inserts are installed inside of your existing window frame with no fasteners required.

The inserts are free for those who cannot afford to pay, and low cost for middle and high income households, with low prices (50%-75% cheaper than commercial products) through our non-profit model of cooperative insert-building. This means that customers contribute time at our local Community Builds.

For information see https://windowdressers.org



Rising tides, safe roads, working waterfronts

A new interest group is forming on Feb. 28 to give input on sea-level-rise studies—please join!

St. George is undertaking a unique engineering study to address flooding caused by rising seas at several sites around town. Using new techniques to survey the problem areas and design options for adapting to rising water levels, the project will help residents understand the challenges and visualize solutions.

At the same time, St. George is helping to gather information on the important economic and community value of local fishing and aquaculture. This part of the work centers on understanding how sea level rise and increasingly severe storms impact St. George's working waterfronts, and what's needed for investing in the future.

Your help is needed! Do you live near one of the study sites? Are you involved in local fishing, aquaculture, or an affiliated business? Are you simply concerned? Then be part of the project's interest group. We need your knowledge, ideas, and feedback!

Please come to a round-table discussion on Tuesday, February 28, 2023, at 5 pm at the Town Office. Refreshments will be served.

To participate via Zoom, contact t.elwell@stgeorgemaine.com by 3pm on Feb. 28.

Study sites:

Harrington Cove Road
Scraggle Point Road
Rackliff Island Causeway
Turkey Cove Road
Drift Inn Road
Co-op Road
Marshall Point Lighthouse Access
Factory Road
Horse Point Road
Allen Island
Working waterfront sites (based on community input)

Re•sil•ience is an occasional newsletter published by the St. George Resilience Working Group aimed at keeping St. George citizens aware of its work and of opportunities to be involved in specific projects as they arise. The working group has a loose organizational structure that includes representatives of town committees and commissions and other interested persons. For more information contact Richard Bates, Select Board Chair (r.bates@stgeorgemaine.org).