Decarbonization & Electrification Engagement

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Decarbonization and Electrification Engagement Toolkit Designed for Traverse City

The Decarbonization and Electrification Engagement Toolkit is a publicly available resource that provides recommendations and example language for educating property owners about the benefits of reducing greenhouse gas emissions through transitioning from natural gas to electricity. While created specifically for Traverse City, the material can be copied and modified as needed for other communities interested in spurring community electrification. The example language for a website is designed to provide information about emissions-cutting strategies such as home weatherization techniques and the benefits of heat pumps. This product works in tandem with a website about Traverse City's electric vehicle charging network and includes a webpage about the health risks related to burning natural gas in the home. The Green Fair Proposal provides an overview of what elements could be included in a day-long community event geared toward educating and engaging residents about environmentally-friendly living.

About Traverse City

Electricity for Traverse City's roughly 15,500 residents comes from Traverse City Light & Power, a municipal electric utility.

Light & Power has about 13,000 metered customers across an 8-square-mile service area. Residential use makes up 80% of the utility's customer base, but 80% of revenue comes from commercial users.

According to the U.S. Census, the median household income was a little more than \$61,000 and the median home value was \$282,900 in 2020.

The median household income in Michigan was about \$59,200 and the median home value was \$162,600.

The city sits at the base of Grand Traverse Bay and experiences mild summers and harsh winters affected by Lake Michigan. This position on the bay makes Traverse City an attractive place for summer tourism. Vacation homes are common in the city, but the year-round population is growing.

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2020



U.S. Environmental Protection Agency (2022). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2020

Why focus on home natural gas usage?

As Michigan municipalities like Traverse City look at setting net zero emissions goals, it will be crucial to encourage residents to cut back on greenhouse gasproducing activities in their homes. A U.S. Environmental Protection Agency report estimated that 13% of the nation's greenhouse gas emissions came from residential and commercial properties in 2020. About 80% of those emissions were related to burning natural gas. Like many municipal power companies, the bulk of Traverse City Light & Power meters, about 80%, are at residential units and the majority of homes use natural gas for heating. Reducing home natural gas usage can have a significant impact on GHG emissions as well as public health.

The Importance of engagement

A significant challenge exists in most northern communities — natural gas remains inexpensive and is often the preferred fuel for heating and cooking. With the complete elimination of natural gas unlikely for many years, this project hopes to help Traverse City and other communities create interest in beginning the electrification process. Small steps toward electrification can build into larger transitions. For instance, informing someone about the efficiency of a heat pump can spur them to replace a worn-out air conditioner. Providing suggestions and financing options for weatherization can inspire homeowners to think more about efficiency and reduce the community's carbon foot.

Traverse City has a robust network of electric vehicle charging stations, but a website about EVs, tcev.org, redirects to the Traverse City Light& Power's main domain. As the utility and city look to promote the EV chargers with a new website, it made sense to expand the utility's online content to include other aspects of electrification. The material produced through this The Importance of engagement project will live on tclp.org as a web page explaining the electrification process to Traverse City-area residents interested in decarbonizing. Other Michigan cities could consider a similar approach, creating a full-service electrification website under the branding of a community decarbonization goal. Some of the language available here, such as the description of heat pump operations, health and safety research, and weatherization techniques can be directly copied to another municipality's platform. Other aspects, like cost estimates, should be unique to individual communities.

Research Methods

This project relied heavily on interviews and the aggregation of existing data and research. Phone and video interviews were conducted with Michigan Saves, the Northwest Michigan Community Action Agency, clean energy and HVAC experts, and officials in Burlington, Vermont. Burlington is a national leader in decarbonization. HVAC data such as equipment costs complemented academic research from multiple universities and the federal government.

Background and scoping

To determine what types of engagement tools have been effective in other cities, research focused on communities with existing and robust net zero programs. In Michigan, the leading community is the City of Ann Arbor, but similar and more advanced work is being done in Burlington, Vermont; Boulder, Colorado; and Ithaca, New York.

With a municipal power company and a similar climate to Traverse City, Burlington offers an easy comparison. Burlington has an aggressive goal of net-zero emissions by 2030 and significant community buy-in. Multiple interviews with Burlington Energy Department staff provided a lesson in how the city set and communicated its climate goals as well as what has been effective about their communication strategy.

Heat Pumps Research

Aggregating heat pump descriptions and determining costs was a key element of the engagement material. Because many heat pump explainers exist online from a variety of sources this project sought to provide a concise description from a trusted source. Primary sources included the federal government's Energy Star and Energy Saver programs as well as Michiganbased HVAC contractors.

Local context is important. In order to understand what a Traverse City resident would pay for a heat pump, quotes from GeoFrunace and Team Bob's Heating and Cooling were used to determine the average installation cost for different heat pumps.

This project also sought to quantify if and how much a residential ratepayer might save by cutting their gas bill with the use of a heat pump. This proved to be quite difficult because operating costs vary depending on the home and the type of heat pump in use. A Michiganspecific study of heat pump efficiency could not be found. Such a study would require monitoring the efficiency of multiple heat pumps in various locations over a timeframe well beyond the scope of this project. A third-party analysis of federal data from the National Renewable Energy Laboratory found average savings for heat pumps installed in five states with similar climates to Michigan: Massachusetts, Maine, New York, Ohio, and Pennsylvania. However, many unknown variables exist with that data, including the price of natural gas.

A 2017 study from Minnesota's Center for Energy and Environment (CEE) provided the backbone for an analysis designed to show what Michigan ratepayers could expect after converting to a heat pump. The CEE study assessed the efficiency of five heat pumps installed across Minnesota and one in Wisconsin. Since Minnesota and Wisconsin have similar climates to Michigan, our analysis assumed the heat pumps would operate the same in Michigan. Using annual heating load data from the CEE study, we determined each heat pump's annual energy use in kilowatt hours (kWh). That number divided by a coefficient of performance (COP) and then multiplied by Traverse City's electric rate allowed us to determine the operating cost for each heat pump. The COP is an expression of the efficiency of a heat pump. Our model, available in a spreadsheet, allows the COP and electric rate to be changed as needed. A similar process found the operating cost of a furnace to produce the same annual heat loads as the heat pumps with furnace efficiency and natural gas prices acting as the variables. With this, we determined heat pumps with a COP of 2.5 were comparable in operating cost to furnaces operating at 85% efficiency. Furthermore, heat pumps became cheaper to run as the COP improved beyond 2.5 point. To expand on this analysis, a Michiganspecific assessment of heat pump efficiency is required as well as a model comparing propane costs and efficiency.

System Size	Location	Installation	Heating Load	Annual Heating Load	Annual Heating Load	Energy Usage	Annual Cost	Average Cost for ducted	Average cost for du	uctless
		One time cost	Btu/hour	Therms/Year	kWh/year	kWh/Year	\$/year			
4 Ton Ducted	Farmington, MN	\$11,149	34,341	799	23,411	9364.32	\$ 869.01	\$ 727.89		
4 Ton Ducted	Hastings, MN	\$15,864	28,339	652	19103.7	7641.48	\$ 709.13			
3 Ton Ducted	Kenyon, MN	\$15,970	24,734	562	16466.7	6586.68	\$ 611.24			
3 Ton Ducted	Pelican Rapids, MN	\$13,520	24,306	664	19455.3	7782.12	\$ 722.18			
Ductless	Lusten, MN	\$4,500.00	11,950	442	12950.6	5180.24	\$ 480.73		\$	373.05
1.5 Ton Ductless	Superior, WI	NA	8,400	244	7149.23	2859.692	\$ 265.38			
						Input COP here:	Input rate (\$/kWh) here:			
						2.5	0.0928			
Comparison: Same Units as Furnaces										
				Furnace usage			Annual Operating Cost			
				Therms/year			\$/year	Average Ducted	Average ductless	
4 Ton Ducted	Farmington, MN			940			\$ 864.80	\$ 724.36		
4 Ton Ducted	Hastings, MN			767.0588235			\$ 705.69			
3 Ton Ducted	Kenyon, MN			661.1764706			\$ 608.28			
3 Ton Ducted	Pelican Rapids, MN			781.1764706			\$ 718.68			
Ductless	Lusten, MN			520			\$ 478.40		\$	107.15
1.5 Ton Ductless	Superior, WI			287.0588235			\$ 264.09			
						Input furnace efficienc Input natural gas price (\$/therm):				
						85%	0.92			

The spreadsheet above compares the operating costs of various sized heat pumps to their ducted system equivalents for 6 Midwestern cities. Note that these figures do not include monthly bill fixed charges for electricity or natural gas. Schoenbauer, B., Kessler, N., & Kushler, M. (2017). (rep.). Cold Climate Air Source Heat Pump . Minnesota Department of Commerce, Division of Energy Resources. Retrieved June 28, 2022, from https://www.mncee.org/sites/default/files/report-files/86417-Cold-Climate-Air-Source-Heat-Pump-%28CARD-Final-Report-2018%29.pdf.

Weatherization Research

For this project, the term weatherization refers to improving a home's energy efficiency by protecting the home from outside weather not only through insulation but also by sealing gaps and other techniques. The Northwest Michigan Community Action Agency provided financing information for the weatherization page. The do-it-yourself techniques were compiled from a variety of efficiency sources including Efficiency Vermont and the Energy Resource Center, a Coloradobased nonprofit.

Health & Safety Research

The Environmental Protection Agency has long kept tabs on emissions from natural gas, with research readily available on the agency's website. To expand on that work, this project turned to academic research conducted by a number of universities including Havard, Sanford, and Oregon State University. Scholarly journals referenced include Environmental Science & Technology and Environmental Health. News sources such as Boston's WBUR public radio station and the Smithsonian Magazine were also referenced.

Green Fair Research

The Green Fair Proposal provides a framework for Traverse City to host a day-long expo centered on environmentally friendly practices. Ann Arbor's downtown Green Fair provided the backbone for the recommendations as well as a similar fair in Meridian Township. Vendor or booth suggestions are intended to provide host communities with an idea of what should be made available to fair visitors. This framework recommends Traverse City-area partners, so other municipalities or utilities would need to connect with organizations in their area.

A

Key Website Strategies

Language should be clear and concise. When describing complex technology or research, avoid jargon. Government and academic terms are confusing to the general public. Use simple language. Ask: Would a middle school student understand this? Additionally, make sure figures, such as electric rates, are updated routinely.



It is a cliche, but people think with their pocketbooks. When discussing costs, try to show savings not just expenses. Making comparisons to known costs will help the reader rationalize the price. For instance, a new air conditioner can be similar in cost to a new heat pump.



Use graphics to explain complex topics. Many people are visual learners, so simple graphics are a perfect complement to text explanations. Many heat pump-related graphics already exist or can be created without significant work. Graphics used in the report are from the U.S. Department of Energy.



Build confidence with solid sources. For research or data not created in-house, cite the source and consider linking to the original material. Providing people access to information improves trust and transparency.

Example Language: Heat Pumps

Is a heat pump right for you?

Traverse City residents can save as much as \$200 a year off of their gas and electric bills by switching to a heat pump, according to an analysis of cold climate heat pumps conducted for Traverse City Light & Power. The best time to switch is when replacing a worn-out air conditioner.

Heat pumps operate similarly to air conditioners, but provide both heating and cooling. They use a small amount of energy to move heat around. In the winter, they pull heat out of the air or ground to warm a home.

In the summer, the process is reversed to cool the building. Because heat pumps move heat rather than generate heat they consume less energy than a traditional heating and cooling system. Insulation is key: Weatherizing your home will help you save money on heating and cooling.



Air Source Heat Pumps Heating Cycle

This graphic shows the operations of an air source heat pump. Source: U.S. Department of Energy.



New heat pumps are efficient even in cold climates like Traverse City. Source: Jacob Hardy/Traverse City Light & Power

Example Language: Heat Pumps

Is a heat pump right for you?

Costs: Heat pump installation could cost between \$6,000 and \$16,000 with an average of around \$10,000. Pricing for heat pumps varies based on the size and style of the unit as well as the cost of labor. Installing or upgrading ductwork will increase costs. Heat pump installation is usually done when replacing an existing air conditioner with the forced air furnace remaining in place as a backup for ultra-cold days. A typical AC replacement costs about \$6,200 according to a quote from Geofurnace Heating & Cooling. Homes with natural gas may not see immediate energy savings and electric bills may go up depending on usage.

Operating costs for heat pumps vary best on the model and size. A 5 Series WaterFurnace geothermal heat pump with a 3-ton capacity has an annual average operating cost of \$494 or a monthly cost of \$41 at 10.5¢ per kWh based on 80 units installed in Michigan. A larger 4-ton capacity system has an average operating cost of \$674 a year or \$56 a month based on 11 Michigan units.

Types of Heat Pumps

Mini Split - Perfect for heating and cooling specific rooms. Ductless and inexpensive to install, **mini splits** are great for buildings without ductwork and can be less expensive to install and operate than other heat pumps.

A Mitsubishi Mini Split with two indoor units (one for the living and one for a bedroom) would cost \$9,767, according to a quote from Geofurnace. A typical Traverse City home would pay about \$300 a year to operate a similar unit.

Ducted Heat Pump - This unit replaces traditional central air and uses existing ducts to heat and cool the entire building. With an air-source heat pump, heat is exchanged between the home and the outside air. In extreme cold, a secondary heat source may be needed. Assuming no ductwork upgrading is needed, this option would cost between \$7,000 and \$15,000, according to Geofurnace. A 20 SEER Bosch heat pump may cost around \$7,200 while an upgraded Bryant model may be \$15,300. The average operating cost would be \$600.



A mini split heat pump is ductless and fixed to the wall. Source: U.S. Department of Energy.



With a vertical system, the holes are drilled A horizontal system is the most cost-effective of Energy.

40 to 100 feet down. Source: U.S. Department but requires a wider section of land. It is best for new construction. Source: U.S. Department of Energy.

Example Language: Heat Pumps

Is a heat pump right for you?

Ground Source - Also sometimes called geothermal heat pumps, these systems exchange heat between the building and the ground. These units are more expensive to install but provide more consistent energy bills. Great for large homes or commercial buildings.

Some units pipe coolant through tubes in the ground while others use a lake or pond. In most systems, antifreeze solution is circulated through a closed loop in the ground and a heat exchanger transfers heat between the refrigerant in the heat pump and the antifreeze. A direct exchange system pumps the refrigerant through copper tubing in the ground instead of using a heat exchanger.

More information about heat pumps can be found on the U.S. Department of Energy's Energy Saver website.

Making it Cheaper

Traverse City Light & Power makes paying for qualified energy-saving home improvements like heat pumps easy with on-bill financing. Projects can be eligible for \$5,000–\$30,000 at a fixed 3% interest rate for up to 10 years. Learn more here.

Michigan Saves, a nonprofit green bank, can connect consumers with financing for many home sustainability projects, including heat pumps with a SEER rating at or above 14.5. Homeowners can also receive tax credits for ENERGY STAR-certified equipment. A one-time \$300 tax credit can be applied after purchasing a heat pump, according to ENERGY STAR's tax credits for primary residents.

Tips and Recommendations

Provide Sources

When possible link back to sources, such as Michigan Saves, ENERGY STAR, or the U.S. Department of Energy savings estimates.

Localize Estimates

The cost estimates used here were based on quotes from WaterFurnace Renewable Energy, Geofurnace Heating & Cooling, and Team Bob's Heating, Cooling, Plumbing that were obtained in June and July 2022. Estimates may be similar across Michigan, but other municipalities should update and localize the figures. Multiple sources should be used for accuracy and to avoid the appearance of favoritism. Energy costs should also be routinely updated.

Testimonial

Why a testimonial?

People often trust their neighbors more than a representative from the government or utility, so hearing about the process of decarbonization from someone they know may spur action more quickly. A testimonial about the benefits of electrification or other green lifestyle changes from a local can be an important tool for engaging the broader community. Municipalities or utilities should consider short video interviews as well as written testimonials, A pull quote, as seen on the next page, can highlight a powerful or meaningful quote.

The following example is from an interview with Traverse City resident Paul McCarthy on June 21, 2022.

Testimonial: Paul McCarthy, Traverse City

Paul McCarthy started decarbonizing his historic home near downtown Traverse City shortly after buying it two years ago. He hadn't considered geothermal until a quote for replacing the inefficient boiler and window air conditioners was comparable to a geothermal unit. "The reason I did it is not financial. It's ethical," McCarthy said. "We have to decarbonize as fast as we can."

McCarthy has since invested heavily in decarbonizing the late 19th Century house. After replacing shingles with a metal roof and improving attic insulation with an efficient foam, he installed a solar array from CBS Solar. A fast Level 2 electric vehicle charger in the garage helps keep his Volt ready to go. He's now considering upgrading his gas range and water heater to electric models. "I use to have a bias toward natural gas for certain things like heating and cooking," said McCarthy, who enjoys gourmet cooking at home. "We just have to decarbonize everything."

A 30% tax credit helped make the geothermal installation cheaper in the year he purchased the unit, he said, but all the upgrades together have been quite the investment. With gas prices increasing and climate impacts becoming more apparent, McCarthy said the costs were worth it.

"If you're worried about gas prices — go electric," he said.

"If you're worried about gas prices — go electric."

Example Language: Weatherization

Easy DYI home improvements

Reduce your home's energy burden with better insulation. Weatherized homes can save up to \$372 or more a year, according to the **U.S. Department** of Energy. Small steps can be taken today to improve your home's insulation.

Keeping your home weatherproof

Door and window weatherproofing seals out unwanted outside drafts, moisture, and dust. That helps prevent heat loss and mold. Weatherproofing also improves air quality and keeps bugs out of your home. Here are some cost-effective ways to weatherize your home:

Door Sweeps. Attaching door sweeps on exterior doors is one of the most affordable ways to weatherize your home. Lay a sheet of paper on the door frame, and close the door on it; if the piece of paper comes out easily without tearing that means you need a door sweep. Most door sweeps cost between \$10 and \$15.

Sealing Gaps with Caulk or Foam. To seal gaps and cracks around the nonmoving parts of the window, use caulk or expanding foam sealants. For moving parts, you may need weatherstripping and for gaps wider than 1/4inch, an expanding foam sealant is best. Foam sealants usually cost around \$15 to \$25.

Plastic on Interior Storm Windows. Drafty windows gobble up your money, especially in the winter. Plastic seals or insulation kits are an inexpensive way to prevent drafts without having to replace the whole window. Window kits can range from \$5 to \$20.

Improving energy efficiency. While weatherizing exterior doors and windows can offer major improvements for home energy consumption, don't overlook smaller areas inside the home.

Water Heater Tank Covers. Have you ever noticed how cold the garage or unfinished basement is? If your water heater is in a cold garage or basement, it could be losing heat, potentially costing extra money to reheat cooled water. Covering your tank with a water heater blanket could reduce heat loss by 25%. Affordable water heater blankets can reduce water heating costs by 4% or more. If you have a tankless water heater, inexpensive pipe insulation foam provides additional savings. A typical water heater bag costs around \$30 and wrapping exposed water pipes in foam can be as cheap as \$3.

Attic Door Insulation. Most attic doors are poorly designed and cause tremendous energy loss throughout the year. A 1/32-inch gap around the attic door perimeter can leave as much as a 5-square-inch opening all year. An attic tent can be used to insulate the attic door from the rest of the house. Most attic door insulators are easy to install and cost between \$50 and \$150, depending on the level of insulation.

Sealing Switches & Outlets. A small amount (2%-5%) of air infiltration comes from wall outlets. Though it's a minor amount of airflow, it adds up. Sealing switches and outlets on exterior walls prevents drafts and heat loss.

Making it cheaper

Northwest Michigan Community Action Agency may be able to help some Traverse City residents afford weatherization. Assistance is available to those making up to 200% of the poverty level. That includes homeowners and renters who meet these guidelines:

Household Size Last 3 months of Gross Income

- 1 person \$ 6,795
- 2 persons \$ 9,155
- 3 persons \$11,515
- 4 persons \$13,875

Michigan Saves, the green bank nonprofit, can also connect property owners to financing from energysaving projects like weatherization.

Tips and Recommendations

Update Costs

Pricing for DIY materials and tools was based on online prices from Lowe's and Home Depot with the store location set to the Traverse City area. Costs should be localized and could include estimates from local hardware stores. It is important to avoid the appearance of corporate sponsorship.

Localize Funding

Michigan Saves financing likely will not vary across the state, but opportunities for low-income households will. Municipalities should work with their local community action agency to promote community-specific funding options.

Example Language: Health & Safety

Breathing Easier

What do cigarettes and natural gas have in common? They both pump carbon monoxide, nitrogen dioxide, and formaldehyde into the atmosphere.

Natural gas has long been seen as a clean fuel source compared to coal, propane, or other petroleum products. While emissions for natural gas are significantly lower than other fossil fuels, a growing body of research suggests that natural gas has a negative impact on our respiratory systems, particularly for children and those with trouble breathing.

More than 20 toxic air pollutants known to cause cancer and other health problems were found in **Boston area homes**, according to **a recent Harvard study**. Though found at low levels, the most concerning toxin was benzene, which can cause cancer, blood disorders, and other health problems.

Gas stoves also emit nitrogen dioxide (NO2), carbon monoxide, and formaldehyde, according to the Environmental Protection Agency. The EPA defines NO2 as a toxic gas that even at low levels can trigger breathing problems for people with asthma or chronic obstructive pulmonary disease (COPD). In homes with gas stoves, kerosene heaters, or unvented gas space heaters, indoor levels often exceed outdoor levels, according to the EPA. Despite the EPA's interest, no federal agency regulates gas stove emissions.

Children are more likely to suffer from asthma in homes with gas stoves and poor ventilation. A 2014 **Oregon State University study** showed that children who lived in homes where ventilation, such as an exhaust fan, was used when cooking on a gas range were 32% less likely to have asthma than children who lived in homes where ventilation was not used. They were also 38% less likely to have bronchitis and 39% less likely to have wheezing. Using gas stoves for heating without proper ventilation also increased health risks. In homes where the gas kitchen stove was used for heating, children were 44% less likely to have asthma and 43% less likely to have bronchitis if ventilation was used. Homes could surpass EPA recommendations for outdoor nitrogen dioxide within a few minutes if cooking without ventilation, according to research from Stanford University.

Lowering Your Carbon Footprint

In 2020, 13% of the greenhouse gas emissions in the United States came from homes and businesses, mostly from burning fossil fuels like natural gas for heating, according to the **Environmental Protection Agency**. The combustion of natural gas for heating and cooking emits carbon dioxide, methane, and nitrous oxide and represents 79% of the direct fossil fuel CO2 emissions from the residential and commercial sectors in 2020.

Though natural gas is cleaner than other fossil fuels, its combustion releases compound harmful to the environment. Burning natural gas releases methane, a greenhouse gas that's 86 times as potent as carbon dioxide. Annual methane emissions for gas stoves in the U.S. is equivalent to about half-a-million cars' worth of carbon dioxide, according to **research published in 2022 by Stanford University**. Those emissions occur even when the stove isn't in use. Researchers found three-fourths of the methane they measured occurred with the stove switched off. Gas stoves pump 2.6 million tons of methane into the atmosphere each year.

Tips and Recommendations

Provide Sources

As with the heat pump section, whenever possible link back to sources, particularly to objective news articles explaining research. Linking directly to studies is important, but access to academic journals may be restricted in some cases.

Make Comparisons

If possible, relate complex topics to concepts people already know or understand. For example, the chemicals found in natural gas are also in cigarettes. The smoking of cigerattes is now widely regarded as a health risk.

Green Fair Proposal

As Traverse City looks to reduce the city-wide carbon footprint, building community support for energy efficiency and sustainable living will be key. A Green Fair can be a fun and simple way to promote decarbonization and green practices, including electrification. Hosting the event on a Friday or Saturday along Front Street or during Friday Night Live ensures a built-in audience of folks already downtown. A diverse selection of green sector vendors will give attendees a variety of information. At a recent Green Fair in Ann Arbor, city staff were available to answer questions about the A2Zero initiative as well as questions about recycling and composting in the city. Booths included a live bird of prey, a food co-op, and information about circular economies. For additional entertainment, a solar-powered band provided music. An event like this also gives Traverse City area businesses a chance to show off their commitment to environmental values.



Ann Arbor hosted a Home Electrification Expo on July 15, 2022 at the Kerrytown Farmers Market. Source: *Luke Ranker/ CLC Fellow*

Promotion and Organization

Traverse City can promote the Green Fair through a variety of channels, including social media, city newsletters, and newspaper and radio advertising. Partner organizations like Michigan Saves, NMCAA, and SEEDS can also promote the event to their members.

To register booth sponsors, the city or Traverse City Light & Power should establish a point of contact for interested vendors to contact directly. A web portal can also be set up to register vendors online. To recoup any eventrelated costs, the city could consider a fee (\$50-\$100) per vendor that is scaled based on whether the group is a nonprofit or for-profit entity.

Similar Michigan Events in 2022

Green Fair - City of Ann Arbor Friday, June 10th, 6 pm-9 pm Main Street and Library Lane Lot

Green Fair - Meridian Township Saturday, June 25, 9 am-1 pm Marketplace on the Green

Home Electrification Expo - Ann Arbor Friday, July 15, 5 pm-9 pm Kerrytown Farmer's Market

Green Fair Elements



Green Commuting and Electric Tool Demonstrations

Goal: Provide hands-on experience with electric cars, bicycles, scooters, and power tools.

Sponsors: Local EV dealership, hardware store, Bay Area Transportation Authority, Michigan



Electric Auto Association

Green Fair Elements Electric Appliance/Convection Cook Demos Goal: Highlight energy-efficient electric appliances and provide cooking demonstrations for electric stoves. Generally, people perceive gas as a better cooking fuel, but advances in convection stoves make electric models competitive.

Sponsors: Local appliance store, local chefs



Green Home Lawn Care

Goal: Inspire residents to take up more environmentally friendly home lawn care practices, like converting grass to native plants.

Sponsors: Local landscaping companies



Local Ecology

Goal: Link the health of the Grand Traverse Bay with decarbonization and other green practices by engaging residents about the natural world around Traverse City.

Sponsors: Environmental or nature-focused groups, Great Lakes Children's Museum, Grand Traverse Natural Education Reserve/ Boardman River Nature Center

Green Fair Elements



Green Commuting and Electric Tool Demonstrations

Heating and Cooling

Goal: Inform residents about high-efficiency alternatives to natural gas furnaces and water heaters.

Sponsors: Geofurnance, Team Bob's, local HVAC contractors



Electric Auto Association

Weatherization and Insulation Goal: Help Traverse City residents save on heating and cooling costs with information about weatherization and installation techniques. Start with easy-to-do DIY home repairs, but also include information about large-scale projects and possible funding.

Sponsors: NMCAA, Michigan Saves, local contractor



Home Solar

Goal: Answer home or business solar installation questions and engage residents about renewable energy.

Sponsors: CBS Solar, Daylight Roofing and Solar



Traverse City Light & Power

Goal: Promote Traverse City Light & Power electrification efforts, on-bill financing, and green energy sources.

Sponsors: City of Traverse City, TCLP

Recommendations and Next Steps

Establish a Carbon Goal

Creating a carbon reduction goal, if one doesn't already exist, is not only important for climate action, but it also provides community members with a tangible target to aim for in their own habits. Goals should be realistic and community-focused. Some cities have set bold net-zero strategies like Ann Arbor's 2030 goal. In Holland, the city aims to reduce carbon emissions by 20% by 2030.

Keep it Local

As mentioned before, cost estimates and other data in this report are specific to Traverse City and focused on natural gas. Communities should obtain local data whenever possible. Those with more propane usage should focus on propane costs and impacts.

It is equally important to relate home climate action to the protection of the community's air and water quality and prized natural spaces.

Build a Brand

To make climate goals ubiquitous in the community, develop branding, including logos and slogans. The following are examples of branding used in communities with robust communication strategies.

Ann Arbor, Michigan

Along with a silhouette of the skyline, the City of Ann Arbor's A2Zero brand also features a tree, an iconic symbol of the city.





Burlington, Vermont

Burlington's commitment to net zero emission is symbolized by this logo which features a heat pump, an electric vehicle, solar and wind energy, and active transportation. The city flag is also present.



Ithaca, New York

The City of Ithaca leans on progressive ideals and connects the city's climate plan to national policy trends with this "Green New Deal" slogan. It states the goal simply with a leaf graphic, which is often seen in sustainability messaging.

Target audiences on multiple channels

Branding and information about a community's climate goals should not solely live on the city's website. Meet audiences where they are, not just with community events but also with messaging on multiple platforms.

Channels worth considering include:

- Newsletters
- Press releases
- Social media
- TV, print, and radio advertising
- Flyers and handbills
- Billboards and yard signs

For more insight into strategies for communicating climate goals, see the Green Communications Toolkit developed by CLC Fellow Kathryn Economou.

Map It

A spacial analysis was not part of this project due to time constraints, but a mapping tool would be beneficial for a number of reasons. For example, an analysis of building age may provide an understanding of which properties most likely need improved weatherization or insulation. Income data can provide a sense of where funding for such projects should be directed. A greenhouse gas emissions assessment would help a city target areas with high GHG emissions.

Consider Further Incentives

For municipal power companies, on-bill financing can provide one incentive for customers to take climate action with their home improvements. People may be further motivated with cash, tax, or bill rebates for the purchase of efficient tools, appliances, or e-bikes.

References

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