

Moretown Enhanced Energy Plan

Draft – August 2019

Prepared by the Moretown Energy Committee
and Central Vermont Regional Planning
Commission

Contents

Introduction	3
Analysis & Targets	5
Data Sources	5
Transportation	5
Residential and Commercial Thermal Energy	6
Electricity & Renewable Energy	9
Pathways	12
Mapping (and Preferred/Unsuitable Sites)	25

August Draft Guidance:

■: For Planning Commission/Select Board Review

■: To be completed by Energy Committee/CVRPC

DRAFT

Introduction

Moretown has a long history of renewable energy generation (the town's first electricity generating hydro dam was built on the Mad River in 1885) and continues to demonstrate a strong commitment to environmental stewardship and thoughtful energy planning. The passage of Act 174 in 2016, which allows towns a higher level of deference in Section 248 proceedings if they meet specific enhanced planning standards, offers an opportunity for Moretown to reexamine the actions the community is taking toward meeting its energy and climate goals. This requires looking comprehensively at how we generate and use energy and considering ways to reduce energy use and shift away from fossil fuels to cleaner, renewable sources of energy.

Moretown's Enhanced Energy Plan serves as an appendix to the Moretown Town Plan which it supports and references throughout. It represents the efforts of numerous community members with guidance and support from the Moretown Energy Committee, Planning Commission, Select Board, and the Central Vermont Regional Planning Commission with the goal of creating a more in-depth local energy roadmap as well as a plan that meets the requirements for a Determination of Energy Compliance (DOEC). A DOEC will give the Moretown Enhanced Energy Plan "substantial deference" before the Public Utilities Commission (PUC) as it reviews renewable energy applications that require a "Certificate of Public Good" (CPG).

Moretown's Enhanced Energy Plan puts State and Regional goals into our local context to achieve the broader climate goals defined in the Vermont Comprehensive Energy Plan and as amended in Act 174 to:

- Meet 25% of energy need with renewable energy by 2025, 40% by 2035, and 90% by 2050,
- Reduce total energy consumption per capita by 15% by 2025, and by more than 1/3 by 2050,
- By 2025, 10% renewable transportation, 30% renewable buildings, and 67% renewable electric power,
- 40% reduction in Greenhouse Gases (GHGs) below 1990 levels by 2030,
- 80-95% reduction in GHGs below 1990 levels by 2050

Moretown adopted its most recent municipal plan in 2016. In 2019, the Moretown Energy Committee began working with CVRPC and the Moretown Planning Commission to draft an enhanced energy plan. It is the goal of this document to be adopted into the 2016 Town Plan as an appendix. The 2016 Town Plan provides key background information on Town energy sources and usage as well as actions to achieve the goals identified therein. The Enhanced Energy Plan seeks to act as an extension of the Town Plan, consolidating information on goals, pathways, and metrics to enable easier guidance and progress tracking. By engaging in this planning process, Moretown can more effectively plan its energy future and track progress, as well as attain more input into generation siting in the Town. By publishing updated energy generation and usage data, and establishing clear actions, the goals of the municipality can remain visible beyond changes in personnel and varying levels of interest from the community.

Rationale

The Vermont Comprehensive Energy Plan (CEP) identified a goal to have 90% of the State's energy needs derived from renewable sources by 2050. In 2016, the Vermont Legislature passed Act 174 to help advance this goal through enhanced energy planning that goes beyond what is outlined in State statute (24 VSA 117 Sections §4348a and §4382 respectively). Through enhanced energy planning, Act 174 enables regions and municipalities to have more input into the PUC's issuing of Certificates of Public Good for renewable energy generation facilities. In order to have a town energy plan receive a DOEC and achieve "substantial deference", local plans must meet standards specified in Act 174 that serve to advance the State goal of 90% renewable energy by 2050. Without an approved enhanced energy plan, municipal plans will receive "due consideration" in the Section 248 review process instead, which connotes a lesser degree of consideration.

Through Act 174, three primary planning areas are identified and need to be met satisfactorily in order for successful compliance. These sections include Analysis & Targets, Pathways & Implementation Actions, and Mapping. All three sections include an evaluation of three energy sectors - thermal (heating), electrical, and transportation. The Analysis & Targets section provides necessary background information to understand the opportunities and needs present in Moretown. The Pathways & Implementation Actions section shows local efforts that will be undertaken in support of the State's goal. These actions are based on the analysis and targets provided to Moretown by the Central Vermont Regional Planning Commission (CVRPC). Finally, the Mapping section allows Moretown to designate certain areas as preferred, or unsuitable, for renewable energy generation. This section is important as it will allow the Town to avoid conflict between development and conservation goals.

Analysis & Targets

This section contains energy data tables provided by the CVRPC as well as some town data. By statute, this section must contain an analysis of resources, needs, scarcities, costs, and problems across the three energy sectors (electric, thermal, and transportation).

This section primarily focuses on background data and targets. Narratives are provided alongside tables, with explanations to clarify the data provided.

In order to effectively evaluate where Moretown needs to go in terms of its energy future, it first needs to understand where and how its energy is currently generated and consumed. The following tables include information provided by the CVRPC for the purposes of this plan.

Data Sources

The Data used in this plan originates primarily from the 2016 American Community Survey (ACS). Other sources include Vermont Agency of Transportation (VTTrans), Vermont Department of Labor (DOL), Vermont Department of Public Service (DPS), Energy Information Administration (EIA), and Efficiency Vermont (EVT). The targets that follow were generated by the Long-range Energy Alternatives Planning (LEAP) model, which was completed by the Vermont Energy Investment Corporation (VEIC). For more information on the methodology behind the LEAP model, please see [CVRPC's website](#).

Transportation

Transportation in Vermont represents 44% of all energy use in the State and is responsible for 52% of the State's energy cost burden¹. Since transportation is one of the largest sources of greenhouse gas (GHG) emissions in Vermont (53%), switching from gasoline to electric-powered vehicles and reducing the number of vehicle miles driven are critical strategies of the CEP². Setting goals and monitoring progress toward this transition to cleaner transportation requires establishing a current baseline for transportation for the Town. Table 1A provides information on the total number of vehicles registered in Moretown, the estimated number of miles those vehicles drive, as well as the amount of gasoline they use, and the annual cost of fuel.

Guide to Energy Tables

A Watt is a measure of power capacity, and a watt-hour is a measure of energy. Often, people associate and understand kilowatt hours (kWh) due to their electric bills. In this plan, all electricity values are labelled kWh, and capacity values are measured in kW.

Heat energy, in this chapter, is measured in British Thermal Units (BTUs). 1 BTU is the amount of heat energy it takes to raise 1 pound of water by 1 degree Fahrenheit. Heat energy in this plan is measured in MMBTUs – Million British Thermal Units.

¹ 2018 Greenhouse Gas Emissions Inventory Brief (1990-2015), VT Agency of Natural Resources

² Ibid

Table 1A: Current Municipal Transportation Energy Use ³	
Transportation Data	Municipal Data
Total # of Vehicles (ACS 2011-2015)	1,336
Average Miles per Vehicle (VTrans)	12,500
Total Miles Traveled	16,700,000
Average Gallons Used per Vehicle per Year (VTrans)	576
Total Gallons Use per Year	897,849
Transportation BTUs (Billion)	108
Average Cost per Gallon of Gasoline (RPC)	\$2.31
Gasoline Cost per Year	\$2,074,032.00

Annually, residents of Moretown spend over 2 million dollars on gas. Improvements such as increased fuel efficiency and fuel-switching to biodiesel or use of electric vehicles may result in lower costs as well as reduced emissions. In the absence of public transportation and widespread ridesharing to reduce vehicle miles traveled, a focus on cleaner passenger vehicles is a high priority for rural towns.

Table 1B below shows the targets for 2025, 2035, and 2050 regarding transportation fuel switching. Biodiesel and electric vehicles start off similar in numbers in 2025, but electric vehicles soon depart as the preferred method of achieving the State’s goal. Electric vehicles will be able to utilize increasing levels of renewable energy to meet residents’ transportation needs.

Table 1B: Transportation Fuel Switching Targets ⁴			
	2025	2035	2050
Biodiesel Vehicles	200	371	601
Electric Vehicles	115	793	1,583

As electric vehicle adoption increases, it is critical to ensure a clean power mix of resources that generate electricity. To reach our climate goals, the increased adoption of electric vehicles must be met by a parallel increase in renewable energy generation. The State’s renewable energy targets are shown in Table 1C, below.

Table 1C: Use of Renewables for Transportation ⁵			
	2025	2035	2050
Renewable Energy Use - Transportation	9.6%	31.3%	90.2%

Residential and Commercial Thermal Energy

Vermont has long, cold winters and one of the oldest housing stocks in the country. This combination makes residential heating one of the highest energy uses and costs for most homeowners. Weatherizing homes to reduce heating loss and transitioning from fossil fuel-based heating systems to cleaner, more efficient sources, such as heat pumps and advanced wood heating systems, is a critical strategy of the

³ This table uses data from the American Community Survey (ACS) and Vermont Agency of Transportation (VTrans) to calculate current transportation energy use and energy costs.

⁴ This tables displays a target for switching from fossil fuel-based vehicles (gasoline and diesel) to electric vehicles. This target is calculated by using LEAP and ACS data.

⁵ This data displays targets for the percentage of transportation energy use coming from renewable sources during each target year. This data was developed using the LEAP analysis.

CEP. The below table provides data on the number of homes, square footage, and energy consumed by fuel source for homes in Moretown.

Fuel Source	Municipal Households (ACS 2011-2015)	Municipal % of Households	Municipal Square Footage Heated	Municipal BTU (in Billions)
Natural Gas	4	0.5%	8,032	0.48
Propane	275	37.8%	442,806	26.57
Electricity	39	5.4%	70,404	4.22
Fuel Oil	207	28.4%	351,074	21.06
Coal	3	0.4%	6,024	0.36
Wood	195	26.8%	370,472	22.23
Other (Includes Solar)	5	0.7%	10,040	0.60
No Fuel	0	0.0%	0	0.00
Total	728	100%	1,258,852	75.53

Across Vermont, most households (78%) are relying on heating oil, natural gas, and propane to stay warm through the cold winter months. Space heating costs in 2018 totaled \$248 million. Of that, \$185 million left the Vermont economy entirely. Converting to non-fossil sources of heat will help keep our energy dollars in the local economy.

Although primarily a residential community, Moretown has close to 50 commercial establishments. As with homes, these commercial buildings are often older and lack adequate insulation and air sealing in walls and roof structures. They also can benefit from switching from fossil fuel-based heating systems and inefficient air conditioning systems to high efficiency heat pumps and advanced wood heating systems. The following table lists the number of commercial buildings and the energy consumed for heating in total and on an average per building basis.

Conversion Factors

1 MWh = 1,000 kWh

1 MMBTU = 1,000,000 BTUs

1 kWh = 3,412 BTUs

⁶ This table displays data from the ACS that estimates current municipal residential heating energy use.

	Commercial Establishments in Municipality (VT DOL)	Estimated Thermal Energy BTUs per Commercial Establishment (in Millions) (VDPS)	Estimated Thermal Energy BTUs by Commercial Establishments in Municipality (in Millions)
Municipal Commercial Energy Use	46	604	27,784

To meet renewable energy goals in an equitable and efficient way, efforts must include both weatherization and fuel-switching. As of 2018, roughly 10% of homes have been comprehensively weatherized in Moretown, 72 out of a total of over 700. Weatherization goals are listed in Table 1F below. Percent of structures comprehensively weatherized includes amounts of new efficient appliances purchased, as well as services recorded annually by Efficiency Vermont.

	2025	2035	2050
Residential – Increased Efficiency and Conservation (% of municipal households to be weatherized)	20%	42%	92%
Commercial - Increased Efficiency and Conservation (% of commercial establishments to be weatherized)	22%	33%	61%

Fuel-switching of heating systems to efficient wood heat systems or cold-climate heat pumps is a key strategy. Efficient wood heat systems can utilize locally-produced biomass while cold-climate heat pumps provide a year-round alternative utilizing locally and regionally-produced renewable energy while also providing cooling. Between 2016 and 2018, Efficiency Vermont data indicates that 2 residents in Moretown switched fuels out of 76 heating system replacements. Table 1G below provides future fuel-switching targets for Moretown.

	2025	2035	2050
New Efficient Wood Heat Systems (in units)	2	0	23
New Heat Pumps (in units)	88	225	428

⁷ This table uses data available from the Vermont Department of Labor (VT DOL) and the Vermont Department of Public Service (DPS) to estimate current municipal commercial establishment energy use in the municipality.
⁸ This table displays targets for thermal efficiency for residential and commercial structures based on a methodology developed by DPS using data available from the regional Long-range Energy Alternatives Planning (LEAP) analysis and ACS. The data in this table represents the percentage of municipal households and commercial structures that will need to be weatherized in the target years.
⁹ This table provides a target for new wood heating systems and new heat pump systems for residential and commercial structures in the municipality for each target year. This target was calculated using data from LEAP and ACS.

Table 1H: Use of Renewables - Heating ¹⁰			
	2025	2035	2050
Renewable Energy Use - Heating	51.9%	66.3%	92.7%

Electricity & Renewable Energy

Continued efforts to promote energy efficiency are essential as the least-cost energy resource and to ensure that the electrical system can support increased loads expected from heating and transportation as those sectors become electrified. The following table lists the current electricity consumption for residential and commercial sectors in kilowatt-hours (kWh) and megawatt-hours (MWh) per year. A megawatt is equal to 1,000 kilowatts and is the unit of electricity most often used when describing larger volumes of electricity, such as at a municipal level compared to an individual home. This translates to about 7,300 kWh per household and 97,100 kWh per commercial building. This reflects how much larger commercial buildings are typically than homes, and how much more electricity they use on a per square foot basis. In Moretown, the commercial sector represents only 6% of buildings but consumes 46% of the electricity used. This highlights the importance of supporting commercial establishments with efficiency measures.

Table 1I: Current Electricity Use ¹¹	
Use Sector	Current Electricity Use
Residential (Efficiency Vermont) (kWh)	5,300,775
Commercial and Industrial (kWh)	4,466,144
Total (kWh)	9,766,919

Improvements in electrical efficiency continue to progress in Moretown. According to Efficiency Vermont, residential and commercial customers saved a total of 461,144 kWh between 2016 and 2018, representing 3.28%. Combined with thermal sector savings, customers saved \$111,160 in utility bills. These improvements included upgrading lighting, heating, air conditioning, and refrigeration systems. The below table projects future electricity efficiency targets needed to achieve energy goals.

Table 1J: Electricity Efficiency Targets ¹²			
	2025	2035	2050
Increase Efficiency and Conservation	1.5%	7.3%	15.2%

Table 1K: Use of Renewables - Electricity ¹³			
	2025	2035	2050
Renewable Energy Use – Electricity (MWh)	2,667	4,268	10,670

¹⁰ This data displays targets for the percentage of heating energy use coming from renewable sources during each target year. This data was developed using information from the LEAP analysis.

¹¹ This table displays current electricity use within the municipality. This data is available from Efficiency Vermont.

¹² Data in this table displays a target for increased electricity efficiency and conservation during the target years. These targets were developed using regional LEAP analysis.

¹³ This data displays targets for MWh generation coming from renewable sources within the municipality during each target year. This data was developed using information from the regional planning commission and DPS. This data is the same as the data in Table 1Q.

Moretown has a long history of renewable generation going back to the first electricity producing dam built on the Mad River in 1885. Hydro power continues to be the largest source of electrical generation in the town representing 4.3 MW or 55% of total generation. The methane digester at the former Moretown landfill represents the second largest source at 3.2 MW or 41% of generation. Solar power provides the lowest of the existing renewable generation at 0.26 MW or 3%, but this is not expected to remain the case for long. A critical aspect of the CEP goal to achieve 90% renewable energy by 2050 is a dramatic expansion of solar in Vermont. Already we have seen double-digit growth year over year in the industry with no signs that this is expected to slow down in the near future. The following graph shows the growth in solar in Vermont since 2000. Table 1L shows the distribution of current renewable energy generation by type by MW and MWh.

Renewable Type	MW	MWh
Solar	0.26	316.41
Wind	0.00	0.00
Hydro	4.30	15,067.20
Biomass	3.20	13,090.94
Other	0.00	0.00
Total Existing Generation	7.76	28,474.56

Moretown currently gets most of its renewable energy from hydroelectric, biomass, and solar sources. Hydroelectricity is provided by two facilities in Moretown: a 920 kW (3,592 MWh annually) facility on the Mad River owned by Algonquin Power Systems, Inc. and a 3,200 kW (14,400 MWh annually) facility on the Winooski River owned by Green Mountain Power. The former landfill in Moretown has a capacity of 3,200 kW and produces 21,024 MWh of biogas annually. These two renewable sources are supplemented by solar, which produces 316.41 MWh. As of 2019, Moretown has 72 solar installations, and is ranked 32nd in the State for solar ([Vermont Community Energy Dashboard](#)).

Renewable Type	MW	MWh
Rooftop Solar	0.96	1,175
Ground-mounted Solar	410.71	503,700
Wind	759.25	2,327,861
Hydro	0.00	0
Biomass and Methane	0.00	0
Other	0.00	0
Total Renewable Generation Potential	1,170.92	2,832,735

Moretown’s potential renewable energy generation in Table 1N includes opportunities in rooftop solar, ground-mounted solar, as well as wind. The Town has no opportunities for new hydroelectricity, nor

¹⁴ Table 1O shows existing renewable generation in the municipality, in MW and MWh, based on information available from the Vermont Department of Public Service.

¹⁵ Renewable generation potential is based on mapping completed by the regional planning commission that is based on the Municipal Determination Standards and associated guidance documents developed by DPS. The renewable generation potential is expressed in MW and MWh by the type of renewable resource (solar, wind, hydro, etc.).

biomass production according to the LEAP projection. These projections must be compared to the targets below for Moretown’s renewable energy generation.

Table 1N: Renewable Generation Targets ¹⁶			
	2025	2035	2050
Total Renewable Generation Target (in MWh)	2,667	4,268	10,670

In view of these targets, Moretown’s energy capabilities allow multiple options to meet the State goal. For example, by maxing out rooftop solar, Moretown would achieve 44% of the 2025 goal and 11% of the 2050 goal. The 2050 goal – 10,670 MWh – could be attained by building only 2% of all potential ground-mounted solar. With this in mind, Moretown may be able to avoid potential land use conflicts while achieving its energy goals. Moretown has sufficient land and generation potential to meet these targets (see Table 1O), but will need to focus its efforts proportionately over the transportation, thermal, and electricity sectors.

Table 1O: Sufficient Land ¹⁷	
	Y/N
Solar	Y
Wind	Y

¹⁶ Renewable generation targets for municipalities were developed by the regional planning commission.

¹⁷ This table shows whether or not there is sufficient land in the municipality to meet the renewable generation targets based on the renewable generation potential in the municipality.

Pathways

The following pathways and implementation actions will help the Town of Moretown effectively support State goals as outlined in the 2016 Comprehensive Energy Plan. The objectives listed below will be addressed through a variety of pathways including land use and siting of developments (including renewable energy generation); efficiency of building construction and weatherization; cleaner transportation; and fuel switching from fossil-based fuels to more sustainable and renewable options.

A. Conservation and Efficiency

Objective A-1: Increase conservation of energy by individuals and organizations.

	Implementation Action	Responsibility	Priority/Timeline	Measure of Success
1	Promote overall building efficiency improvements (lighting, smart thermostats, appliances, etc.) through public education	Energy Committee	High/Sustained 1-2 Years	Resources and rebate information is shared at events and on Front Porch Forum
2	Partner with State and area weatherization programs and neighboring energy committees to promote building efficiency upgrades Provide targeted outreach to medically-vulnerable senior citizens and low-income community members to expand awareness of weatherization assistance	Energy Committee, Efficiency Vermont, Capstone, Moretown's Care and Concern Committee, Weatherization Assistance Program, ButtonUp program, community volunteers	High/Sustained 1-5 Years	At least 5 - 10 Moretown buildings are weatherized each year through 2025; progress is documented on town's energy dashboard Weatherization upgrades for vulnerable community members are prioritized with volunteers

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
				<p>assembled as needed</p> <p>An efficiency forum that features residents who have completed efficiency projects is hosted annually</p>
3	Inform and engage Moretown residents in energy-related activities	Energy Committee, Energy Coordinator	High/Sustained 1-8 Years	Energy Committee provides a report on activities annually for inclusion in the Town Report with ongoing outreach through Front Porch Forum
4	Continue to support a Moretown Energy Committee and publicize its work to residents	Planning Commission, Selectboard, Town Administration, Moretown Energy Committee	High/Sustained 1-8 Years	Energy Committee grows and is active throughout the duration of the plan

Objective A-2: Promote energy efficiency in the design, construction, renovation, operation, location and retrofitting of systems for buildings and structures.

	Implementation Action	Responsibility	Priority/Timeline	Measure of Success
1	Include link to Moretown’s energy dashboard website on the municipal website to foster public awareness of progress towards goals established in this plan	Town Administration, Energy Committee	High 1-3 Years	Municipal website is updated with energy dashboard link and public awareness and usage of Moretown’s energy dashboard increases
2	Provide residents and developers with energy code information when applying for land use permits for new construction and alterations to current structures.	Town Administration, Zoning Administrator, Energy Committee	High 1-3 Years	Materials are prepared for distribution and made available to the public
3	Hold public meetings to encourage residents to bundle on-site usage of renewables with efficiency upgrades	Energy Committee, Planning Commission	Medium 4-6 Years	4 meetings focused on renewable energy generation are held in municipality during the term of this plan

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
4	Consider the adoption of the State Energy Stretch Code as the baseline energy code for Moretown	Planning Commission, Energy Committee, Selectboard	Medium 4-6 Years	A resolution considering the adoption of these codes is brought before the Planning Commission and Selectboard, following a presentation by the Energy Committee

Objective A-3: Identify ways to decrease the use of fossil fuels for heating.

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
1	Hold an annual “Gear Up for Winter” workshop to promote the upgrading of current heating systems	Energy Committee	High/Sustained 1-8 Years	Annual meeting held in December for duration of plan, and email list is kept of attendees
2	Identify feasibility of cold climate heat pumps or advanced wood heat	Moretown Energy Committee, Selectboard	High 1-4 Years	An inventory of current heating expenditures

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
	systems in municipally-owned buildings			and fuels for all municipal buildings is created and a discussion on budgets for upgrades is held
3	Identify opportunities for district heating in the Moretown Village area	Moretown Energy Committee	Medium 4-6 Years	An analysis of current and necessary densities is conducted and results presented before the Planning Commission

Objective A-4: Demonstrated municipal leadership by example regarding efficiency of municipal buildings.

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
1	Review 2009 energy audit of municipal buildings to identify completed projects; determine need for an updated audit	Energy Committee	Medium 4-6 Years	Energy Committee holds a meeting with Selectboard on priorities, funding opportunities,

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
				and new audit needs.
2	Assess energy usage trends in municipal buildings.	Energy Committee	Medium 4-6 Years	Energy Committee shares usage trends data with Selectboard at a public meeting
3	Leverage municipal resources provided through Vermont Climate Action Communities program	Selectboard, Moretown Energy Committee, Planning Commission	Medium 4-6 Years	Moretown becomes a member town

B. Reducing Transportation Energy Demand, Single Occupancy Vehicle Use, and Encouraging Renewable or Lower-Emission Energy Sources for Transportation

Objective B-1: Encourage increased use of transit as a primary method to complete daily trips and reduce demands on existing infrastructure such as roads and parking.

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
1	Assess the transit needs of Moretown residents	Energy Committee	High 1-3 Years	A paper and electronic survey will be distributed to community members to gauge transit interest, car ownership rates, common destinations, and park and ride usage
2	Partner with Middlesex and Waterbury to promote usage of the Waterbury Commuter and the Link Express by residents commuting to area employment centers and downtowns	Planning Commission, Selectboard, Green Mountain Transit, Mad River Valley Transportation Advisory Committee	Medium 4-6 Years	A local campaign to encourage Moretown residents to carpool or bike to the bus is launched

Objective B-2: Promote the shift away from single-occupancy vehicle trips to reduce congestion, impacts to local facilities, and support alternative options for transportation needs.

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
1	Promote public awareness of village park-and-ride	Planning Commission, Selectboard	High 1-3 Years	Meeting is held with CVRPC to identify possible funding opportunities for new signage
2	Pursue a GoVermont grant to promote creative local approaches to shared commuting and alternative transportation	Moretown Energy Committee	High 1-4 Years	Energy Committee receives a GoVermont grant to fund 1-2 community forums on local ridesharing options
3	Promote usage of the GoVermont resources by local residents	Town Administration	High 1 Year	GoVermont web page link is added to the Moretown website
4	Encourage bike to school and bike to work days	Energy Committee, Moretown Elementary School, area employers	Medium 2-6 Years	Energy Committee organizes at least 4 bike to

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
				school/work days during the term of this plan

Objective B-3: Promote the shift away from gas/diesel vehicles to electric or non-fossil fuel transportation options to reduce dependency on non-renewable fuel sources for transportation.

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
1	Promote local EV demonstrations	Energy Committee	High 1-3 Years	Moretown promotes 2 area EV demonstrations during the term of this plan and EC gains access to a list of attendees
2	Utilize Moretown’s location on 100B to install an EV charging station in the village	Energy Committee, Drive Electric Vermont, CVRPC	Medium 4-6 Years	An EV charging station is built in Moretown during the term of this plan

Objective B-4: Facilitate the development of walking and biking infrastructure to provide alternative transportation options for the community.

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
1	Invest in increased signage in the village to highlight sidewalks, road crossings, and bike paths	Selectboard, Town administration, and Planning Commission	Medium 4-6 Years	Signage in Village is increased, grant money is at least identified and funding sources compiled for this project
2	Assist Selectboard with additional sidewalk project proposals	Energy Committee, Sidewalk Committee	Medium 4-6 Years	Provide letter of support and input as needed for proposals to implement additional sidewalk segments in village and North Moretown

Objective B-5: Demonstrated municipal leadership with respect to efficiency of municipal transportation to show an on-going commitment on behalf of the Town of Moretown.

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
1	Conduct an inventory of municipal vehicle miles	Selectboard,	High	Energy Committee

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
	traveled for the duration of this plan and include in capital budget process	Energy Committee	1-3 Years	will work with Selectboard to inventory vehicle miles traveled and present findings annually

C. Patterns and Densities of Land Use Likely to Result in Conservation of Energy

Objective C-1: The Town of Moretown is committed to reducing sprawl and minimizing low-density development by encouraging density in areas where infrastructure exists or is planned to support growth.

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
1	Promote energy-efficient accessory dwellings to increase density	Planning Commission, Selectboard	High 1-3 Years	Explore possible updates to zoning regulations

Objective C-2: Strongly prioritize development in compact, mixed-use centers when feasible and appropriate and identify ways to make compact development more feasible throughout the Town of Moretown.

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
1	Prioritize a village zoning district, utilizing Form-Based Code, to incentivize concentrated development in Moretown’s historic village center	Planning Commission	High 1-3 Years	Meetings are held by Planning Commission to assess the need to reform zoning ordinance

D. Development and Siting of Renewable Energy Resources

Objective D-1: Evaluate generation from existing renewable energy generation including the identification of constraints, resource areas, and existing infrastructure by energy type.

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
1	Maintain up-to-date list of current solar PV sites on the Moretown website to recognize the achievement of those generating power.	Town Administration, Energy Committee	High 1-3 Years	Website includes a list of current renewable generation sources

Objective D-2: Evaluate generation from potential renewable energy generation including the identification of constraints, resource areas, and existing infrastructure by energy type.

Implementation Action		Responsibility	Priority/Timeline	Measure of Success
1	Discuss with Selectboard the potential for solar + storage as a source for emergency back-up power to protect critical infrastructure	Energy Committee, Selectboard, Fire Department, Moretown School Principal	High 1-3 Years	We have scouted resources and risks in this area

DRAFT

Mapping (and Preferred/Unsuitable Sites)

Maps must accompany our energy plan. CVRPC has supplied maps for Moretown from the regional plan, but we can also choose to undertake our own mapping. Maps provided by the CVRPC to include:

- Known Constraints
- Possible Constraints
- Solar Resources
- Wind Resources
- Woody Biomass Resources
- Hydroelectric Resources
- Existing Renewable Energy Generation Sites
- Statewide Preferred Sites

These maps may be edited in collaboration with the CVRPC and the municipality should work with the CVRPC to map local preferred sites. **The CVRPC will be able to support in this process.** All maps must be included with the energy plan to be approved.

Preferred Sites and Unsuitable Sites will be discussed in this area, as well as possible/known constraints and state preferred sites.