SUSTAINABLE SHERBORN

EDUCATE - COLLABORATE - TAKE ACTION

June 2023

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Letter from Town Administrator and Sustainability Coordinator

Our Sherborn Community,

It is with great enthusiasm that we release the Sustainable Sherborn Climate Action and Resilience Plan. This plan is the result of tireless effort on the part of our Climate Resilience Working Group, Town staff, and all of YOU. It represents a shared commitment to work together to create a more sustainable and resilient future for Sherborn and our surrounding region. Sherborn is proud of its long history of nourishing its rural character, strong community, and rich natural resources. Climate change presents an unprecedented threat to all of us and we all have a role to play in reducing our contributions, in the form of greenhouse gas emissions, and in preparing our community for the anticipated impacts of climate change, some of which we are already beginning to experience.

This plan describes our existing assets and efforts to date from which we can continue to build momentum around climate action. It outlines a set of goals and specific actions that we can begin implementing now to meet the urgent need for decarbonizing our buildings and vehicles, conserving and restoring our valuable natural resources, protecting our most vulnerable from climate impacts, and creating a culture of sustainable resource consumption throughout our community. Accompanying this plan is a Residential Climate Action Toolkit with specific guidance on actions YOU can each take in your daily lives to support these efforts. We are beyond grateful to the hard-working Town staff and volunteers and to the extremely engaged community as a whole, who have all shaped this plan. And we are ready to continue to work together with everyone to implement, assess, update, and continuously improve in Sherborn's climate action journey. Please join us!

Warm regards,

Jeremy Marsette, Town Administrator and Dorothea Von Herder, Sustainability Outreach Coordinator

Acknowledgments

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Stefani Harrison, Groundwater Protection Committee
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Brian McSweeney, Tree Warden
Emily Eldh, Recycling Committee
Julie Dreyfus, Pine Hill School Committee, Parent Representative

Raffle Prize Providers

The Heritage
Rose's Automotive
Sense Home Monitors
Steve the Bike Guy
Ocean Dreams Market

Prepared for the Town of Sherborn by Hewitt Sustainability Strategies, LLC, as part of a climate action grant from the Massachusetts Executive Office of Energy and Environmental Affairs Municipal Vulnerability Preparedness (MVP) Program.

I. Introduction

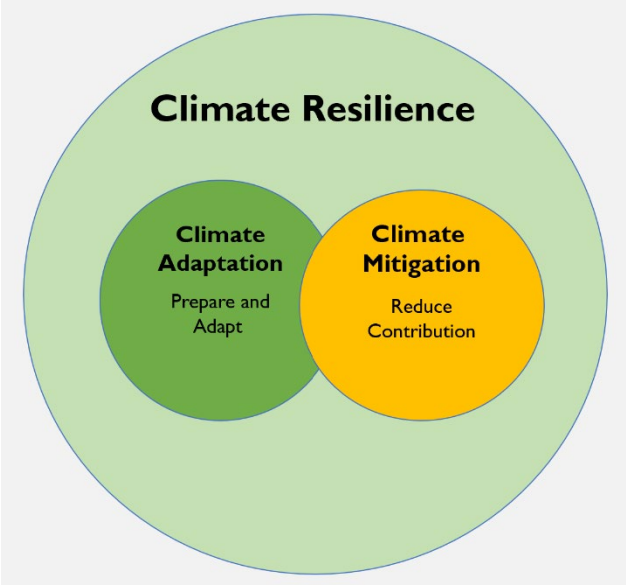
Residents of Sherborn often cite their love of the community's rural character, scenic views, natural resources, and embrace Sherborn as a safe and healthy place to live and raise a family. Like many other communities in Massachusetts and throughout New England, climate change is presenting an increasing threat to the health and well-being of Sherborn's residents, infrastructure, and natural resources. At the same time, Sherborn is also contributing to the emission of greenhouse gases (GHGs) which are further driving changes in the climate. Maintaining Sherborn's beauty, character, and livability requires a concerted effort to prioritize sustainability, GHG reduction, and resilience.

In 2022, the Town of Sherborn was awarded a grant from the Massachusetts Municipal Vulnerability and Preparedness (MVP) program for development of a Climate Action and Resilience Plan that would identify targeted policies, programs, and projects that will mitigate Sherborn's contributions to climate change through the reduction of GHG emissions and also prepare the community for the unavoidable impacts of climate change. This Plan also serves to address several of the imperatives of the Sherborn Climate Emergency Declaration, which passed at the Sherborn Annual Town Meeting on April 26, 2022 (with a vote of 96 to 10). That same declaration also established community-wide GHG reduction targets aligned with the State's decarbonization targets.

Sherborn Annual Town Meeting

- Reduce GHG emissions by 50%, with an ambition of 75%, by 2030.
- Net zero GHG emissions by 2050.

This plan has defined "climate action and resilience" as a function of both climate mitigation and climate adaptation, with the understanding that reducing Sherborn's contribution to climate change (in the form of GHG emissions) must go hand in hand with preparing for and adapting to the climate impacts that are already occurring and projected to occur.



The following section provides some context around the challenges and opportunities related to climate change as well as the efforts that Sherborn has already been engaged with to reduce greenhouse gas emissions, adapt to changing conditions, and to enhance its overall resilience.

II. Climate Action in Context

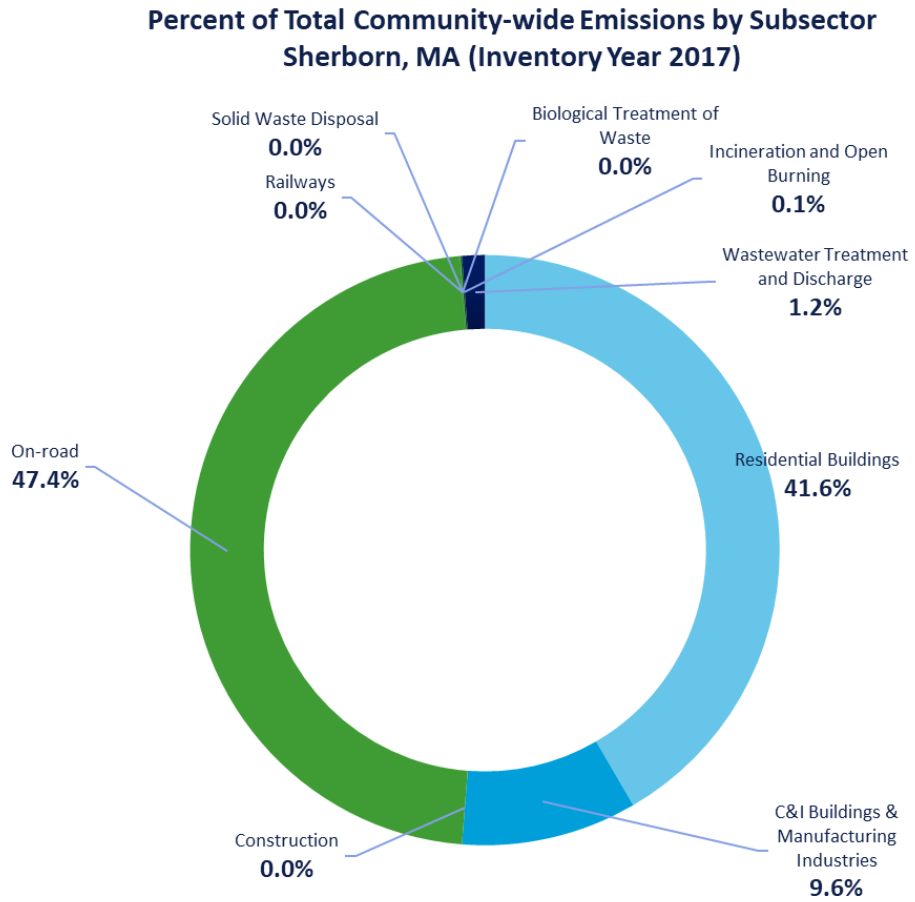
Sherborn, like much of the region, is already experiencing more extreme weather events and impacts from changing climate conditions. This section of the plan provides context for Sherborn's *contributions* to climate change in the form of GHG emissions as well as the *consequences* of climate change, by laying out some of the key climate trends and future risks that Sherborn and the region are already experiencing and are likely to experience in the coming years.

Sherborn's GHG Emissions

In 2021, Sherborn utilized the Metropolitan Area Planning Council (MAPC) GHG Inventory Tool (v4.1) to complete a municipal and community-wide emissions inventory for the year 2017, the most recent year with complete and available data. It is a reasonable assumption that the breakdown of emissions has not changed significantly in the years since then. However, Sherborn will continue to update its inventory regularly to track progress on emissions reductions and meeting its targets.

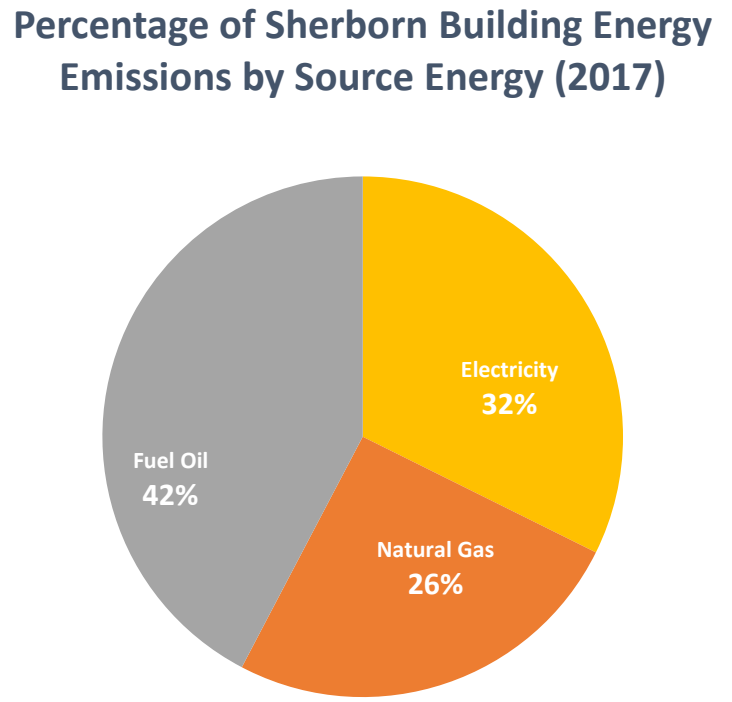
Sherborn's community-wide emissions totaled 37,739 metric tons of carbon dioxide equivalent (MTCDE). Municipal operations were responsible for 807 MTCDE emissions (2.1% of total community emissions). As can be seen in Figure 1 below, the vast majority of Sherborn's emissions are being generated from residential buildings (41.6%) and passenger vehicles (44.3%).

Figure 1: Sherborn Community GHG Emissions



Additionally, as seen in Figure 2 below, the breakdown of building emissions indicates that 68% of emissions are coming from consumption of fuel oil and natural gas.

Figure 2: Sherborn Building Energy Emissions



All of this indicates that efforts to reduce GHG emissions in Sherborn – with a target of halving emissions by 2030 and getting to zero emissions by 2050 – must be focused on reducing energy consumption, improving efficiency, and shifting to emissions-free sources of energy in Sherborn residents' homes and transportation choices.

The Town can lead by example by converting its vehicle fleet to electric vehicles and updating its facilities to move toward net zero, and this will be important for demonstrating such efforts to the community. It is worth noting that the Town recently received approval for the purchase of its first electric vehicle. However, with municipal operations accounting for just two percent of total community emissions, for Sherborn to meet its ambitious reduction targets, homes and personal vehicles will need to be made as efficient as possible and also electrified, maximizing the potential for energy to be supplied from renewable sources. This imperative will be further explored in the chapters that follow.

Climate Risks

The understanding of changing climate trends has become quite robust in recent years in Massachusetts. The Massachusetts Municipal Vulnerability Preparedness (MVP) program has put significant technical and financial resources into state, watershed, and local level assessments of climate risks, vulnerability, and resilience opportunities. In 2018, Sherborn utilized funding from an MVP planning grant to conduct a Community Resilience Building Workshop and assess the town's greatest climate hazards as well as its

strengths and vulnerabilities in resilience to those risks. The top hazards identified in that process included:

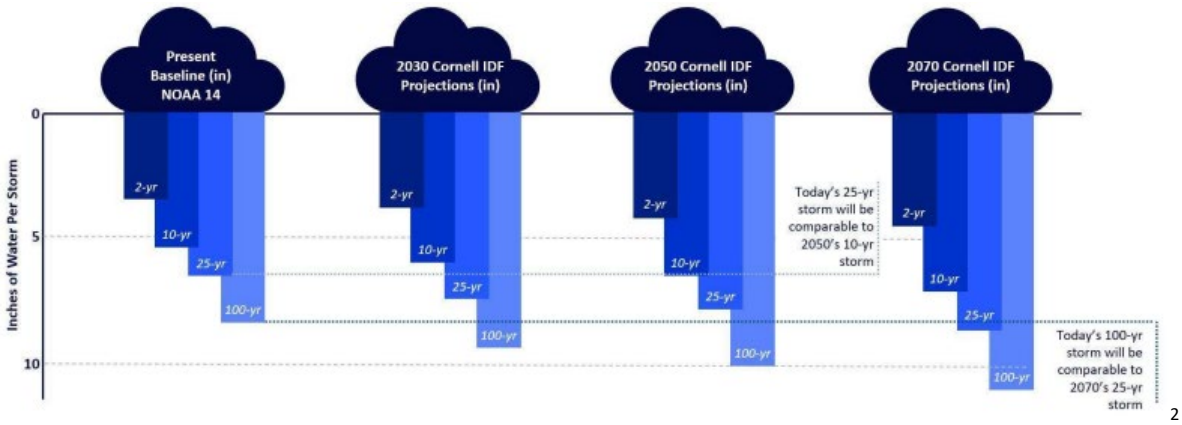
- Flooding and precipitation
- Storm events/wind
- Drought
- Extreme temperatures

Descriptions of these hazards are provided below. It should also be noted that, aside from the hazards identified in Sherborn's MVP planning process, there are also concerns about the increase in vector-borne disease (such as Lyme and Eastern Equine Encephalitis (EEE)) given that climate conditions continue to become more favorable to mosquitos, ticks, and other pests that may carry such pathogens. This will continue to be a public health concern, especially for a community with significant outdoor recreational activity.

Flooding and Precipitation

According to the Charles River Flood Model (CRFM), the Northeast has experienced a 10% increase in average annual precipitation over the past 50 years. Additionally, that precipitation is falling in heavier events. Figure 3 below shows how extreme precipitation events will continue to become increasingly likely in the coming decades.

Figure 3: Projected Precipitation Events through 2070 – Charles River Watershed[1]



[2]

As noted in the figure, today's 25-year storm is projected to be comparable to the 10-year storm by mid-century, meaning that by 2050, a 6-inch rainfall event that would only have a 4% chance of happening in a year currently will have a 10% chance of occurring in a given year. Additionally, the total inundated area in the Charles River watershed is expected to increase substantially during storm events – as much as 78% over current day for the 2-year storm by 2070.

[1] Charles River Climate Adaptation and Flood Mitigation Plan, 2022, https://www.crwa.org/s/Charles-River-Climate-Adaptation-Flood-Mitigation-Implementation-Plan_112222.pdf
[2] *Ibid.*

Table 1: Inundated Area Projections - Charles River Watershed[3]

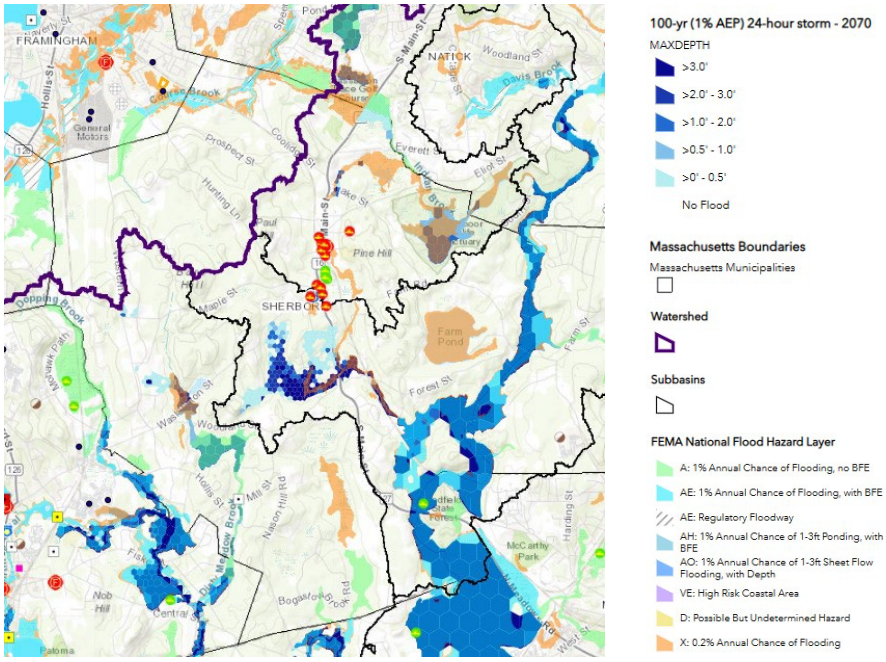
Climate Scenario	Total Inundated Area (acres) by Storm Event (Recurrence Interval)		
	2-year	10-year	100-year
Baseline (Present Day)	3,523	7,659	11,991
2030	4,409	8,925	13,089
2030 Increase Above Baseline, acres (% change)	886 acres (25%)	1,266 acres (17%)	1,098 acres (9%)
2070	6,256	10,673	14,605
2070 Increase Above Baseline, acres (% change)	2,733 acres (78%)	3,014 acres (39%)	2,614 acres (22%)

More specifically, the CRFM assessed inundation extents by sub-basin with the Charles River watershed and the sub-basins with which Sherborn is associated will see increases in the extent of inundation between 29% to 175% by 2070 for the 10-year storm.

Sherborn has been a member of the Charles River Climate Compact and engaged in the development of the Charles River Flood Model as well as the Charles River Climate Adaptation and Flood Mitigation Plan, funded through a multi-year MVP grant and supported by Sherborn's Energy & Sustainability Committee. Continued participation in these efforts will be important for Sherborn's ongoing efforts to understand flood risks and to collaborate regionally on adaptation solutions.

Figure 4: Map of Sherborn 2070 (100-yr, 24-hr storm)[4]

Map of Sherborn: Charles River Flood Model (year 2070 predicted 24-hr, 100-yr storm) and FEMA historical flood hazard layer

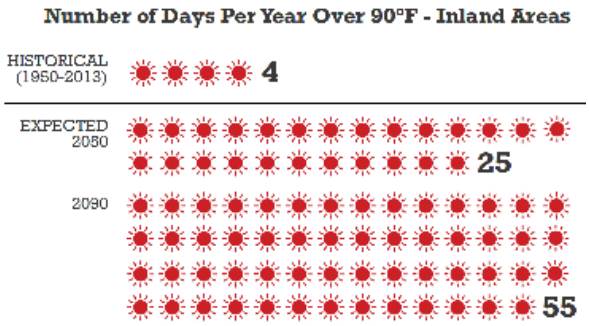


[3] *Ibid.*

[4] Charles River Flood Model, re-created by Tom Trainor, Sherborn Energy & Sustainability Committee, CRWG member.

Temperature

Increasing average temperature and increased number of extreme heat days and heat waves are another significant risk for Sherborn and the region. According to the 2022 Massachusetts Climate Change Assessment, inland areas of the state could experience more than six times as many days per year over 90°F and as many as 55 days per year (nearly two months) over 90°F by later this century. [5]



> *"The 2022 drought was a wake-up call on the risks that we'll be facing in the future." --Sherborn resident*

While Sherborn's comparably low percentage of impervious land cover and robust tree canopy helps to keep it cooler than many other communities in the area, such increases in extreme heat will increase energy demands for cooling and impact water quality. Multiple survey responders have already indicated that increased heat events are already impacting them personally.

Major Storm and Wind Events

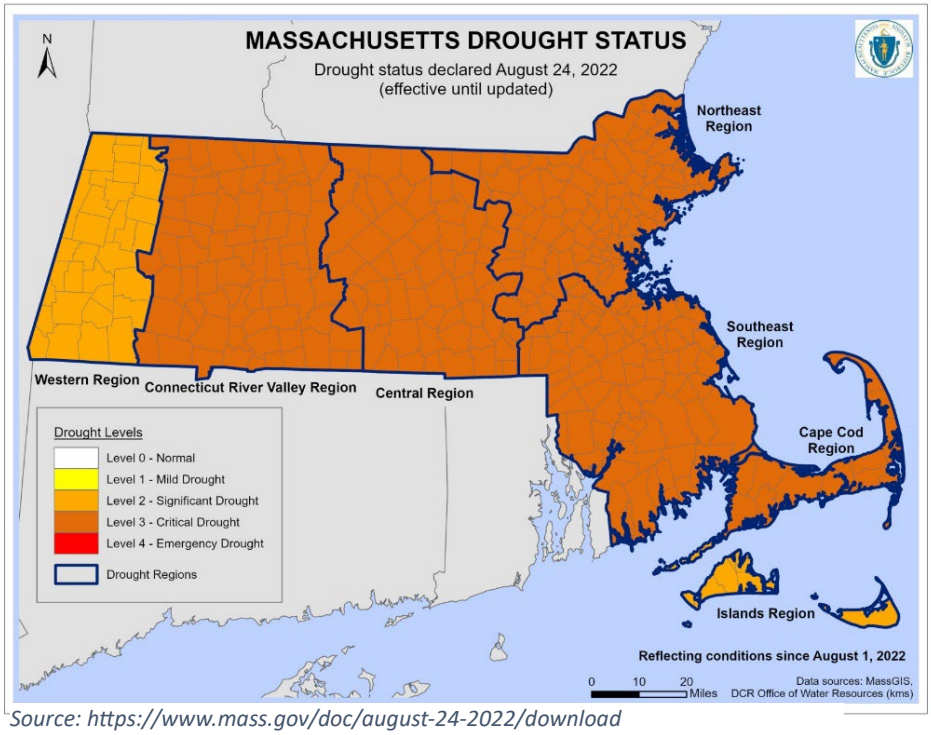
Extreme storm events are not foreign to Sherborn. It is vulnerable to hurricanes and nor'easters, snow and ice events. Since 1991, Sherborn has experienced 17 natural hazards that triggered federal or state disaster declarations. (Town of Sherborn Hazard Mitigation Plan, p. 5) While harder to project with certainty, severe storms are expected to continue to increase in both frequency and severity. A major concern for Sherborn for such events is property damage, downed trees, and power outages.

Drought

Research on projected drought scenarios is limited, particularly for Massachusetts. However, increased temperatures and alternating periods of heavy rainfall followed by extended dry periods have already been producing drought conditions across the state. In 2022, Sherborn was in a period of moderate to extreme drought all summer, including an extended period of Level 3 Critical Drought. As a community that depends on groundwater wells for their drinking water supply, drought conditions present an increasing threat. Last summer, at least four private wells ran dry. Additionally, the Fire Department depends on a "dry hydrant system" for firefighting and lower water levels in ponds and streams may limit emergency response capabilities. Sherborn has mutual aid agreements with neighboring communities that can support emergency response, though a lack of adequate water supply within Sherborn's boundaries persists as a significant vulnerability, especially since increased temperatures and drought conditions lead to increased risks for wildfires, a considerable risk for Sherborn and its large tracts of

[5] MA Emergency Management Agency and MA Executive Office of Energy and Environmental Affairs. Massachusetts Climate Change Assessment, Volume 1. p.ES3. https://www.mass.gov/doc/2022-massachusetts-climate-change-assessment-december-2022-volume-i-executive-summary/download

forested land. Additional information on the State's drought management activities can be found in the Massachusetts Drought Management Plan.

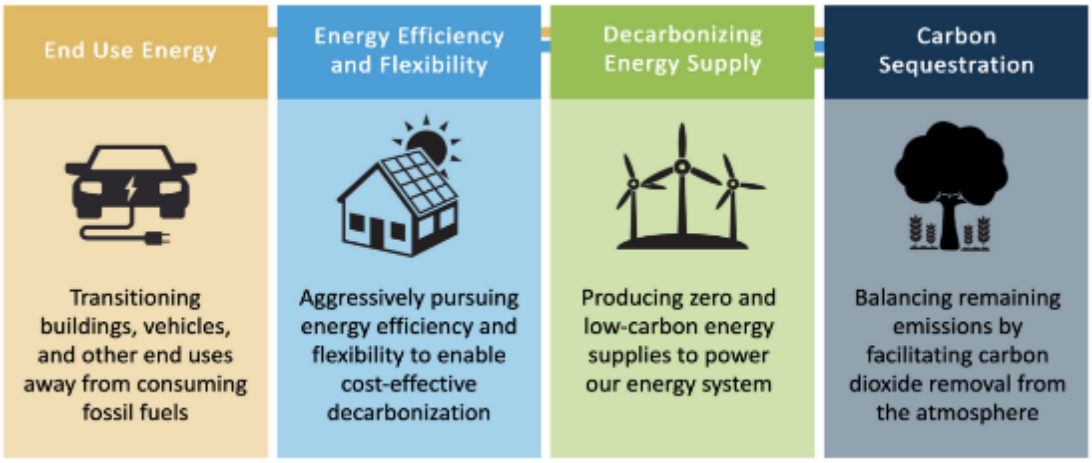


Source: https://www.mass.gov/doc/august-24-2022/download

State and Regional Context

Boundaries have little meaning in the context of a changing climate. While this plan focuses on what Sherborn will do to decarbonize its community and enhance its resilience to climate change, it is important to remember that no single city or town will solve the climate crisis on its own.

In 2021, an Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy was signed into law. It requires a minimum 50% GHG emissions reduction statewide by 2030, a 75% reduction by 2040, and net zero emissions by 2050. The law codified the Massachusetts 2050 Decarbonization Roadmap, which also informed the MA Clean Energy and Climate Plan for 2025 and 2030, which was released in June 2022. The Decarbonization Roadmap outlined four key "pillars of decarbonization" for the Commonwealth.



Local municipalities like Sherborn will need to work in tandem with state and regional entities to ensure that the statewide decarbonization goals are met. Efforts at state, regional, and federal scales will further support Sherborn's local efforts to reach its own decarbonization targets and improve community resilience. Such efforts include the development of a vast network of electric vehicle charging infrastructure and supporting policies and incentives to encourage individual and fleet adoption of electric vehicles. Electric vehicles and electrified buildings can then leverage the decarbonizing energy supply to rely on zero-emissions energy sources.

Part of these efforts has also included the revision of the Massachusetts Stretch Energy Code. For all Green Communities (of which Sherborn is one), the updated Stretch Code automatically took effect on January 1, 2023 (with some provisions taking effect on July 1, 2023 or 2024). An even more aggressive Municipal Opt-In Specialized Code, a set of net-zero building standards that ensure new construction is highly energy efficient, electrified, and has reduced heating loads, requires municipal adoption. Sherborn adopted the Specialized Code at Annual Town Meeting in April of this year and was the 12th municipality in the Commonwealth to do so. It will take effect in January 2024.

Additionally, there is federal funding making its way to states and down to municipalities through the Bipartisan Infrastructure Bill and the Inflation Reduction Act. Through these two unprecedented federal acts, there will be investments at the state and local levels in infrastructure improvements, including resilient infrastructure, flood mitigation, electric vehicles and charging infrastructure, energy efficiency, and clean energy.

What Will It Take to Decarbonize?

There is not one singular pathway to decarbonization. It will take aggressive and ambitious efforts at all levels for us to reach 2050 decarbonization targets and moving quickly between now and 2030 will help build the necessary momentum. From federal level policies and incentives down to the state, municipal, business, and individual action, a rapid electrification and transition to clean energy sources will be essential in our buildings and transportation sectors.

The table below outlines where Sherborn is starting from and some estimated targets for where we need to go by 2030 and 2050 in alignment with state level targets.

	Current	2030 Target	2050 Target
Home Electrification	3.5% of homes[6]	40% of homes electrified[7]	100% of homes electrified
Home Rooftop Solar PV	10% of homes[8]	40% of homes[9]	100% of homes are powered by rooftop solar OR purchased renewable electricity
Electric Vehicles	9.6% are EV/Hybrid[10]	15 – 20% of vehicles on the road are fully electric[11] OR 50% of new vehicles purchased	100% of vehicles on the road

[6] Based on air source heat pump and ground source heat pump data from Sherborn Building Inspector.
[7] Based on MA Clean Energy Plan for 2025 and 2030: 38% of households electrified by 2030. https://www.mass.gov/doc/clean-energy-and-climate-plan-for-2025-and-2030/download
[8] Based on solar installation data from Sherborn Building Inspector.
[9] Based on Governor Healy target of getting solar on 1 million roofs in MA by 2030, equates to roughly 40%. https://environmentamerica.org/massachusetts/articles/million-solar-roofs-for-massachusetts/
[10] MassDOT Vehicle Census, June 2023, https://geodot-homepage-massdot.hub.arcgis.com/pages/massvehiclecensus
[11] Based on MA target of 900,000 EVs on the road by 2030. (MA Clean Energy Plan) With over 5.2 million vehicles currently on the road, equates to about 17% of vehicles.

Sherborn's Sustainability and Climate Action to Date

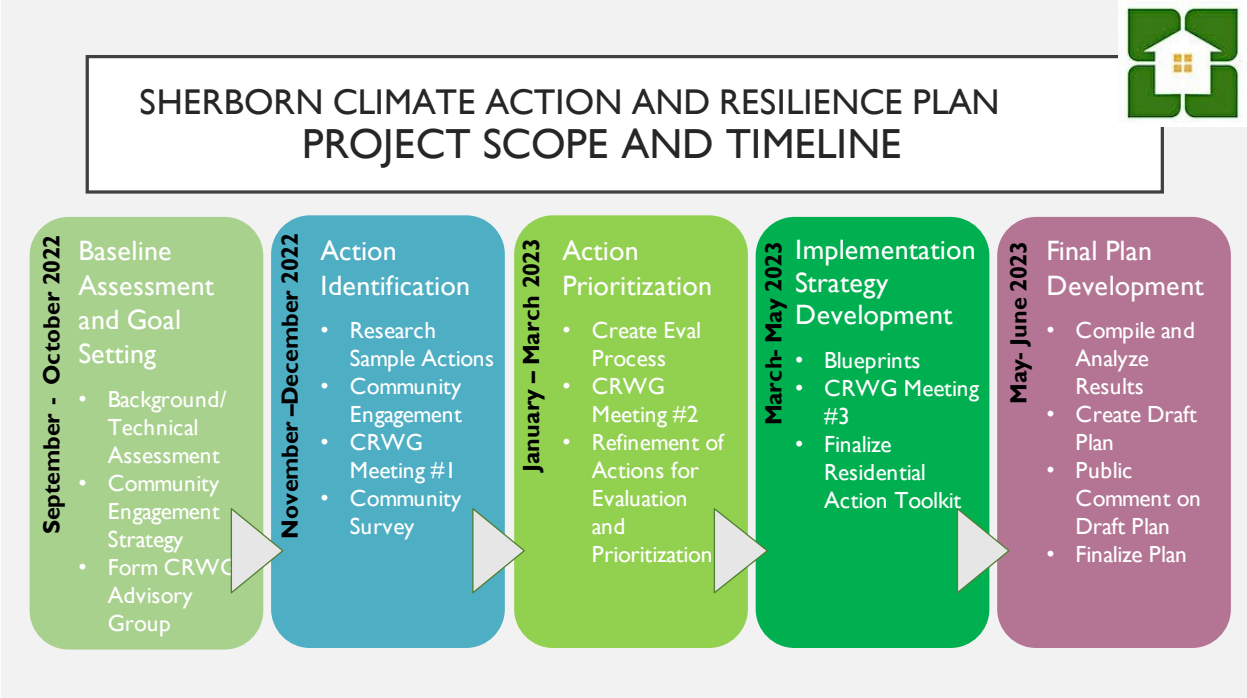
While this is Sherborn's first Climate Action and Resilience Plan, the Town already has a robust history of climate and sustainability action. The following is just a sample of highlights from Sherborn's action to date, demonstrating a strong foundation from which this Plan can continue to build momentum.

2011	Designated as a Green Community *Included adoption of Stretch Energy Code and development of Town Energy Reduction Plan*
2012 – 14	Implemented first Green Communities grant – installed efficient lighting and insulation in Town buildings, converted to LED traffic signals, installed anti-idling devices on police vehicles
2013	Initiated Solar Sherborn Challenge *Over 30 homes installed a total of approximately 250 kW of rooftop solar*
2015	Implemented second Green Communities grant – upgraded HVAC equipment, conducted air sealing and additional insulation *16% reduction in Town energy use from 2009 baseline*
2016	Adopted a Complete Streets Policy *National Complete Streets Coalition, a part of Washington, D.C.–based Smart Growth America, rated Sherborn's Complete Streets policy second in the nation!*
2017	MVP Planning Grant awarded
2017	Installed 97 kW solar array on DPW Garage
2018	MVP Community Resilience Building Workshop held
2019	Establishment of the Sustainability Task Force *Empowering students to lead environmental actions they envision in our school district and the community*
2020	Hired Sustainability Coordinator
2020	Approved Community Choice Aggregation – Sherborn Power Choice
2021	Received a "Cooler Communities" grant through the Harold Grinspoon Foundation's Ener-G-save program. *The grant sponsors three unique curriculum projects at Sherborn's Pine Hill Elementary, the Dover Sherborn Middle and High Schools with the goal to strengthen students' leadership on climate-related issues.*
2021	Converted all Sherborn streetlights to LEDs with Green Communities grant funding
2021	Complete Sherborn GHG Emissions Inventory using MAPC tool
2022	Climate Emergency Declaration approved at Annual Town Meeting

2022	MVP Action Grant awarded and Climate Action and Resilience Planning effort launched
2022	Received a second “Cooler Communities” grant *For promoting building energy efficiency and renewable energy solutions at Pine Hill School (with solar shed for outdoor teaching classroom).*
2022	Started program to increase home energy audits and weatherization with All-In Energy
2022	Town approved installation of solar arrays on the Fire Station and Transfer Station
2022	Installed Level 2 EV Charging Station at Town Hall
2021-23	Participant in the Charles River Watershed (and Flooding) Modeling Project
2023	Received a third “Cooler Communities” grant *For education on water conservation and starting a Pollinator Pathway initiative to curb pesticide use on private property.*
2023	Municipal Opt-In Specialized Code adopted at Annual Town Meeting

III. Plan Development and Engagement

The Climate Action and Resilience Plan was developed over the course of 10 months, beginning in September 2022. The graphic below provides an overall timeline of the plan development process and its components.



It was guided by a comprehensive stakeholder and community engagement process alongside the ongoing work of the Town's Sustainability Coordinators. The following programs, activities, and advisory services all contributed to the development of the plan while also laying the groundwork for a more informed and engaged "climate smart" community.

Open House

Approximately 25 residents joined the Open House held on November 29, 2022 at Sherborn Town Hall. It was an opportunity to introduce the community to the planning process and hear from them about priorities and concerns related to climate and sustainability.

Climate Resilience Working Group (CRWG)

The role of the CRWG was to act as an advisory group in the development and implementation of Sherborn's Climate Action and Resilience Plan. To do this, the Town and its consultant leveraged the knowledge and experience of the members of the CRWG through regular coordination.

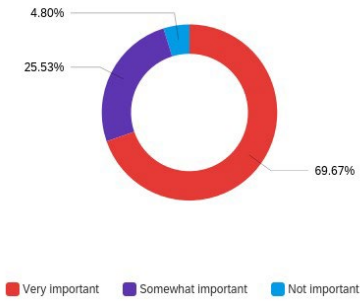
Contributions of the CRWG included:

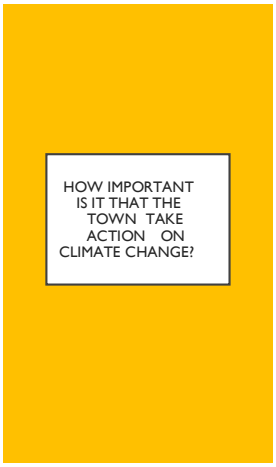
- Attending and actively participating in three workshops over the course of the process (December, March, and April). The first two meetings were held over Zoom. The first covered an overview of the planning process, baseline information, and engaged with members to understand goals and priorities for the plan. The second meeting focused on identifying, refining, and prioritizing action ideas. The third meeting confirmed final actions and engaged members in implementation blueprint development.
- Periodically reviewing and providing feedback on goals, action items, and implementation strategies in between meetings.
- Being a champion for this Plan by learning about climate action and promoting and supporting the Plan throughout its development and implementation.

Members of the CRWG represented a cross-section of Town staff, a number of volunteer boards, committee members, and other local stakeholders.

Interviews

Interviews were held with nine representatives of Town departments and committees early on in the planning process. These interviews were critical to informing the plan's baseline assessment and for better understanding the unique challenges and opportunities for Sherborn related to climate action.

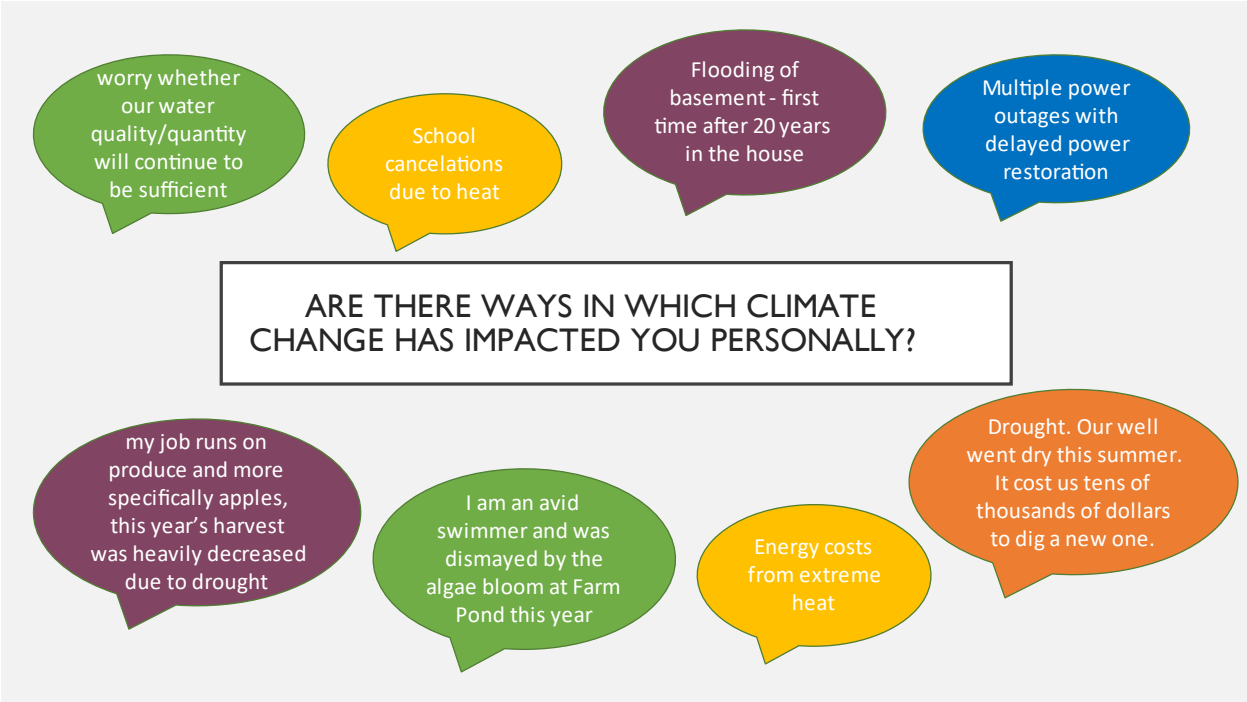




Surveys

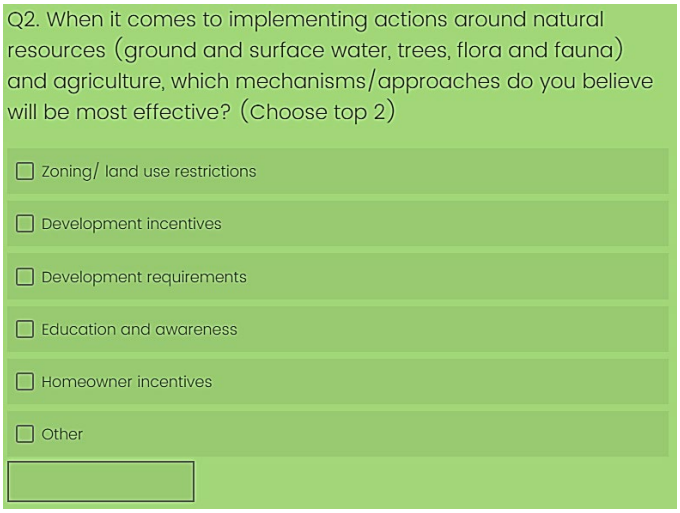
Two surveys were conducted during the course of the planning process. The first survey was intended to gauge priorities and concerns among community members with regards to topics that are central to

Sherborn's sustainability and climate resilience efforts. The first survey was launched on November 29, 2022 and closed on December 19, 2022. There were 400 responses to the survey.



The second survey was open from March 10th through the 27th and had 172 responses. This survey asked for participants to rank potential actions within each plan element and to also provide input on strategy approaches and barriers to implementation.

Participation for both surveys was incentivized through raffles, made possible by generous donors in and around the community.



Residential Climate Action Toolkit

Climate action in Sherborn will not be successful without a concerted effort on the part of its residents. The Residential Climate Action Toolkit (see Appendix B) serves as a guide for reducing homeowners' GHG emissions and better preparing residents and their families for changing climate conditions. It includes best practices for:

- Sustainable Landscaping Practices
- Water Conservation and Water Supply Protection
- Healthy Tree Care and Maintenance

- Waste Reduction
- Home and Transportation Efficiency
- Sustainable and Healthy Consumption
- Emergency Preparedness

Sustainability Coordinator Newsletters

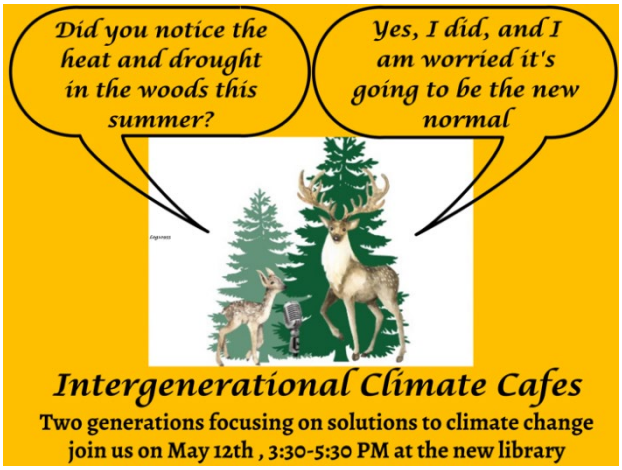
The Town's Sustainability Coordinator sends out regular newsletters to more than 900 subscribed residents, often combining humor with resources, upcoming events, and other tips for taking action on sustainability. These newsletters were critical to communication and engagement around the development of this plan and will continue to be essential in engaging the community in its implementation.

Expert Panel on Building Efficiency

On February 27, Sherborn hosted an Expert Panel on Building Efficiency. The event was held in person and livestreamed over YouTube. The panel featured experts on building and retrofitting net-zero and electrified homes and included an overview of the State's new stretch energy code and specialized opt-in code.

Intergenerational Climate Conversations

The Town is hosting intergenerational climate cafes to provide an opportunity for residents of different generations to reflect and discuss their perspectives on climate change.

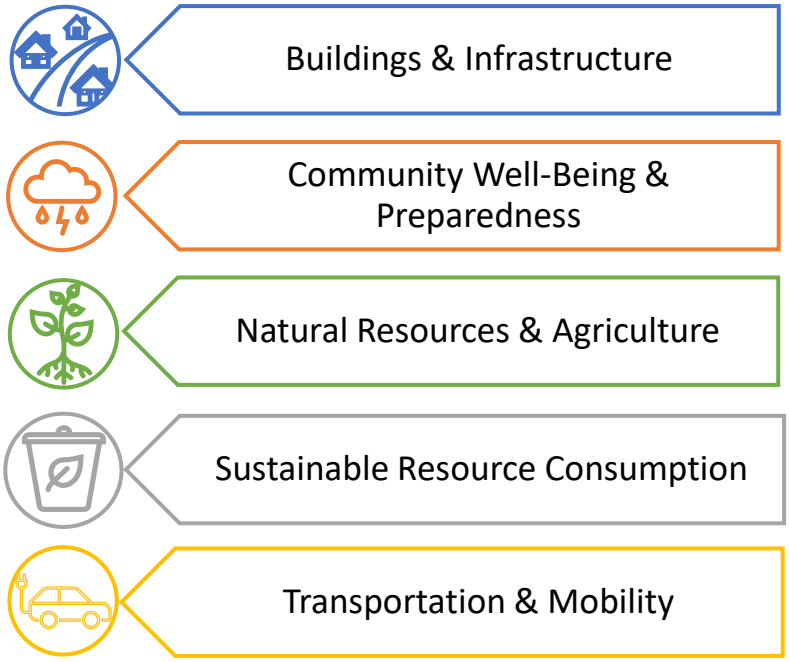


Sustainable Sherborn website (Mass Energize)

Sherborn has maintained a Mass Energize website with extensive information about Sherborn's sustainability activities and actions that residents can take. One such action was to complete a home energy audit through Mass Save and 80 audits were completed since November 2022.

IV. Plan Elements, Goals, Guiding Principles

To provide structure to Sherborn's Climate Action and Resilience Plan, and with input from Town staff and stakeholders, five plan elements were identified and serve as the main chapters that follow in this plan.



The goals for each of the plan elements are as follows:

Buildings & Infrastructure (BI)

Sherborn's buildings and infrastructure are low-carbon, resilient to climate impacts, and efficiently meet the needs of the entire community.

Community Well-Being & Preparedness (WB)

Sherborn is a socially connected community engaged in ensuring the health, well-being, and emergency preparedness of all its members.

Natural Resources & Agriculture (NR)

Sherborn maximizes its natural resilience through protection and restoration of its environmental resources and agricultural heritage.

Sustainable Resource Consumption (SR)

Sherborn fosters a culture of sustainable resource consumption in which residents make informed decisions about healthy material use, efficient energy and water consumption, and waste reduction.

Transportation & Mobility (TM)

Sherborn residents and visitors enjoy a low-carbon, safe, connected, and multi-modal transportation network.

In addition to the plan elements that organize the goals and actions of the plan, the Town also established a Sustainability and Resilience Framework, which utilizes guiding principles of resilience, GHG reduction, education and community engagement, regional collaboration, and resource conservation to assess and evaluate all potential actions considered for the plan. This Framework was developed based on research and conversations with Town of Sherborn staff, survey results from community members, and feedback from Sherborn's Climate Resilience Working Group (CRWG). The Framework is designed to reflect Sherborn's values and priorities as related to a more sustainable future for all. The Framework can be used to assess or screen a program, project, or initiative to ensure that it is meeting Sherborn's priorities. The framework is meant to be a "living" tool that evolves as Sherborn does. Criteria can be adjusted over time and/or weighting could be given to certain principles over others if that becomes helpful in prioritizing projects. There should be periodic reviews and updates to the Framework based on Sherborn's experience utilizing it.

Principles		Evaluation Criteria		
		Positive Contribution (+1)	Neutral Contribution (0)	Negative Contribution (-1)
GHG Reduction		The strategy will or is likely to minimize fossil fuel use or reduce GHG emissions.	The strategy will result in GHG emissions reduction potential that is indirect, minimal, or nonquantifiable.	The strategy has the potential to increase fossil fuel use or GHG emissions.
Resilience	**Infrastructure Resilience**	The strategy will contribute to enhancing the resilience of Sherborn's built infrastructure systems to the impacts of climate change.	The strategy will not directly contribute to enhancing the resilience of Sherborn's infrastructure to the impacts of climate change.	The strategy has the potential to directly reduce the resilience of (or create new hazards or stressors for) Sherborn's built infrastructure.
	Natural Resilience	The strategy will increase resilience of Sherborn through nature-based solutions and/or preserving or restoring ecosystem services.	The strategy will neither increase nor decrease the resilience of Sherborn's natural systems.	The strategy has the potential to reduce the resilience of (or create new hazards or stressors for) Sherborn's natural systems.
	Social Resilience	The strategy will enhance Sherborn's resilience by reducing the vulnerability of community members to climate change impacts, through reduced exposure to hazards, increasing social connectedness, and/or mitigating chronic stressors.	The strategy will have no positive or negative impacts on Sherborn's social connectedness or community vulnerabilities.	The strategy has the potential to increase vulnerabilities or enhance chronic stressors for Sherborn's community members.
Education and Community Engagement		The strategy will provide opportunities to raise awareness among Sherborn's community members around climate change and to encourage more active engagement around climate action.	The strategy is not likely to provide opportunities to increase Sherborn's awareness around climate change and resilience initiatives.	The strategy could confuse members of the community or may make certain portions of the community feel isolated from its benefits.

Regional Collaboration	This strategy will increase Sherborn's collaboration opportunities with neighboring towns and cities to enhance capacity for projects, funding, and/or thought leadership.	This strategy will have no impact on Sherborn's collaboration opportunities with neighboring towns and cities.	This strategy may harm Sherborn's relationships with neighboring towns and cities or will decrease collaboration opportunities with those communities.
Resource Conservation	This strategy will support the conservation of water, land, energy, and/or material resources in Sherborn or as a result of activity in Sherborn.	This strategy will have no positive or negative impacts to resource consumption in Sherborn.	This strategy has the potential to increase the consumption of resources in Sherborn.

The chapters that follow in this plan synthesize all of the findings and priorities that emerged from the planning process. First, it is important to frame the context around contributions to and consequences of climate change for Sherborn, and thus the next chapter will cover the Town's GHG emissions as well as the key climate change risks and vulnerabilities Sherborn is, or is expected to, experience. Then, each of the subsequent chapters will focus on one plan element and cover the following:

- Goal for that element;
- Baseline understanding of Sherborn's current position and conditions, including existing programs, policies, and current strengths and opportunities;
- Key actions identified to advance climate action;
- Suggestions for metrics to track progress; and
- Implementation blueprints for 2 highly prioritized actions.

The implementation blueprints include steps, responsibilities, and technical and financial resource recommendations for advancing the top actions within each plan element. A blank blueprint template can be found in Appendix A.

Finally, the plan is concluded with a chapter on implementation and governance to ensure that this plan is implemented, progress is tracked, and that the hard work of climate action in Sherborn continues.

V. Summary Action Table

The following table is a summary of the actions identified for inclusion in this plan. This list was narrowed down and synthesized from hundreds of ideas and suggestions from community members, Town staff, and other stakeholders, as well as relevant actions from other recent Sherborn planning efforts, and known best practices from other communities with similar goals. Action ideas were screened using the evaluation criteria described in Section IV, and further prioritized through a community survey and CRWG discussions. Those in **bold** font in the table ranked as highest priorities within each Plan Element and/or in greatest need of additional implementation guidance and, therefore, an implementation blueprint has been provided within this plan. Blueprints for all other actions should be developed and refined by the Climate Action Steering Committee (CASC). The Town and the CASC will have all of the actions identified to date and maintain a list of additional recommendations that may arise, and will utilize the Sustainability and Resilience Framework's guiding principles and evaluation criteria to continue to assess priorities, refine actions, and track progress on achieving goals. Actions include efforts that may be entirely led by Town staff or committees/boards, but also those that may rely on leadership and collaboration from community members and regional and state level stakeholders.

Plan Element	Action	Co-Benefits	Timeframe
Buildings and Infrastructure (BI)	Adopt a more efficient building code.*	SR	Short
	Collaborate with regional partners to engage an energy coach(es) to promote financial and technical resources for home energy assessments and upgrades.	SR; WB	Short
	Maximize solar installations on Town and School properties.	SR; WB	Medium
	Encourage household use of renewable energy through Community Electricity Choice Aggregation and/or incentivized solar installations on property.	SR; WB	Medium
	Conduct a feasibility study to identify options and costs for improving the town's water supply.	NR; SR; WB	Medium
	Promote electrification of buildings and infrastructure to maximize cleaner electricity sources.	SR; WB	Short
	Adopt sustainable design requirements for all new development projects.	NR; SR; WB	Medium
	Enhance the resilience and efficiency of Sherborn's historic buildings.	SR; WB	Long
	Inventory the town's culverts and address sizing and condition inadequacies.	WB	Medium
	Explore options for leasing Town land for solar battery storage.	SR; WB	Long

**Note that the Specialized Opt-In Code was adopted at Annual Town Meeting in April, after its prioritization was raised in the course of this plan development. Next steps will be to implement it as it goes into effect next year.*

Community Well-Being and Preparedness (WB)	**Ensure school facilities are upgraded to provide renewable and energy efficient cooling during extreme heat events.**	BI; SR	Medium
	Update the Town's emergency response plan, ensuring needs of most vulnerable populations are met.	TM	Medium
	Support agricultural community in addressing climate threats.	NR	Medium
	Assess and implement improvements around communication before, during, and after extreme weather events, inclusive of seniors and others with limiting means of communication.		Medium
	Create accessible, intergenerational spaces for social/recreational activities.	BI	Long
	Engage more residents in the work of the Town (committee participation, etc).		Medium
	Improve information and signage around neighborhood and recreational trail connections.	TM; NR	Short
	Organize community walks to promote health and social interaction.		Short
Natural Resources and Agriculture (NR)	**Encourage sustainable and regenerative agricultural practices among farmers (conservation tillage practices, organic soil management, integrated pest management, etc.).**	SR; WB	Short
	Provide educational resources on selection of native species of vegetation and those that best support pollinator habitat.	SR	Short
	Manage Sherborn's public and private trees through a Tree Management Plan.	WB	Medium
	Integrate climate change considerations into local regulations (wetlands protection, stormwater management, irrigation restrictions, etc).	WB	Medium
	Develop and implement a comprehensive invasive species management plan for public and private land.		Medium
	Allow for flexible and compatible uses on existing agricultural property (such as kitchens, markets, farm-to-table, or agri-tourism activities).	WB	Long

Sustainable Resource Consumption (SR)	**Implement more stringent water restrictions during periods of drought.**	NR; WB	Short
	Promote sustainable landscaping practices (inclusive of reducing chemical use, water conservation, appropriate plant selection).	NR; WB	Short
	Launch an education and awareness campaign around local agriculture, community gardening, and other local food options.	NR; WB	Short
	Implement restrictions on gas and diesel-powered landscaping equipment.	NR; WB	Medium
	Provide education resources around healthy and sustainable purchasing.	WB	Short
	Provide more educational resources around waste reduction and diversion options in town, including recycling, composting, and reuse/upcycling options.	NR	Short
	Implement a "dark sky" ordinance to minimize light pollution.	NR	Medium
	Expand Swap Shop hours and install a paid manager.		Medium
Transportation and Mobility (TM)	Implement improvements to enhance the walkability of Town Center.	BI; WB	Long
	Assess needs and implement shuttle services to nearby transit and Town services.	WB	Medium
	Implement improvements to make bicycling safer on Sherborn's main roads.	BI; WB	Long
	Encourage the adoption of electric vehicles among Sherborn residents.	BI; SR	Medium
	Transition public school buses to battery electric buses.	SR	Medium
	Continue to implement Town's Complete Streets policy to ensure safety, comfort, and accessibility for all users of streets, sidewalks, and trails.	BI; WB	Long
	Coordinate with neighboring communities on plans for strategic siting of electric vehicle charging infrastructure.	BI	Medium
	Convert the Town vehicle fleet to electric as soon as appropriate vehicles are available.	SR	Medium
	Assess barriers and encourage use of public school buses by Sherborn students.	SR; WB	Medium
	Explore development of an electric bike share (or similar micromobility) program.	SR; WB	Medium

VI. BUILDINGS & INFRASTRUCTURE

Goal: Sherborn's buildings and infrastructure are low-carbon, resilient to climate impacts, and efficiently meet the needs of the entire community.

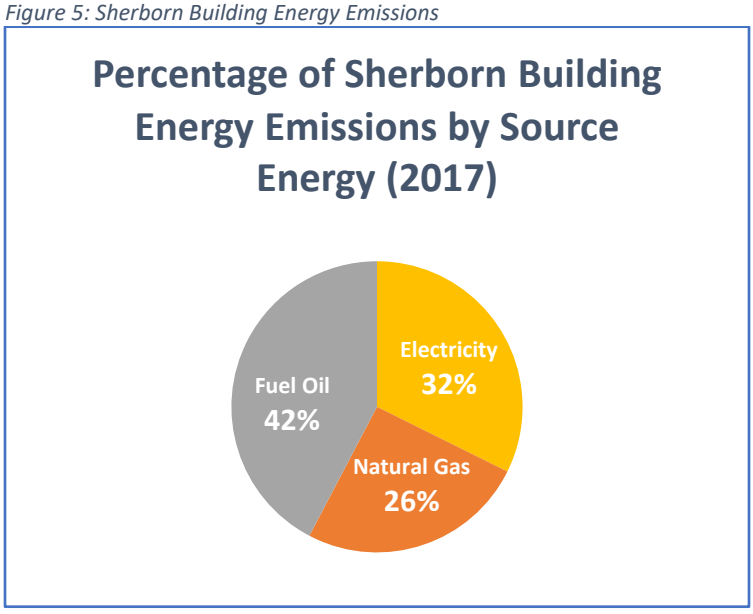
A critical area of climate action for Sherborn lies in its buildings and infrastructure. Buildings represent more than half of the community's GHG emissions. These buildings, many of them historic, as well as Sherborn's aging infrastructure are increasingly in need of upgrades. This is especially true in light of changing climate conditions. Reducing the emissions associated with operating Sherborn's buildings and infrastructure while also making them more resilient to climate change, are essential to meeting the Town's climate goals and maintaining residents' quality of life.

As development pressures continue to mount, particularly for affordable housing development, Sherborn has already begun to take significant action for a more sustainable built environment. As a Green Community since 2011, the Town has already been implementing energy efficiency and clean energy measures in its municipal buildings. Measures have included efficient lighting upgrades, improved insulation and HVAC at the Fire Station, window replacements at Pine Hill School, and solar PV panels on the DPW Garage and Fire Station.

Buildings

As previously mentioned, more than half of Sherborn's GHG emissions come from energy used in buildings. As shown in Figure 5, the majority of energy emissions are coming from fuel oil and natural gas. As Sherborn is able to shift its electricity supply to renewable sources, it will be critical for buildings to become electrified, eliminating reliance on fossil fuel-based energy sources and getting Sherborn closer to zero emissions.

Figure 5: Sherborn Building Energy Emissions



Source: MAPC v4.1 Emissions Inventory Tool - Sherborn

The NEW Sherborn Public Library

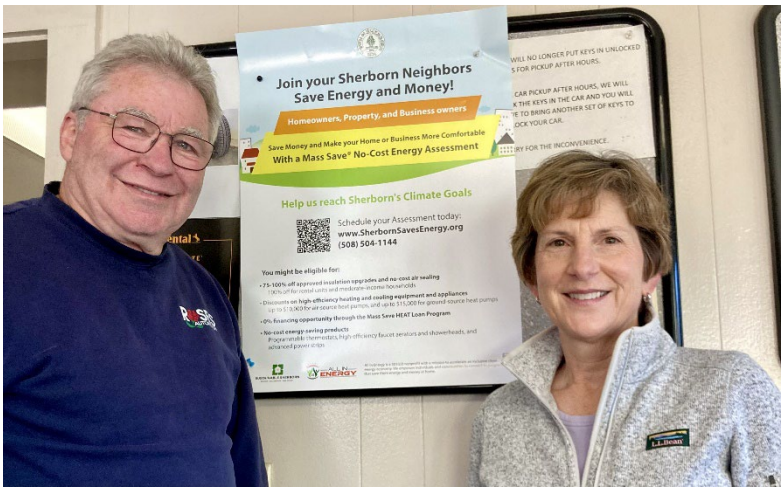
The innovative building serves as a hub for intellectual enrichment for all generations and showcases many features of a 21st-century library. The original three-level building, built in 1970, was brought up to code, retrofitted with 21 energy-efficient air-source heat pumps, and is fully accessible to people with mobility disabilities. The project also added 9,007 square feet in a two-level addition that includes a community meeting room, a dedicated space for teens, a public conference room to seat 150 people, and a new children's room.

The funding for Sherborn's Library expansion & renovation project came from a combination of private, state, and local sources. The Sherborn Public Library will qualify for additional funding from MPLCP Green Library Incentives if it attains official LEED (Leadership in Energy & Environmental Design) certification from the U.S. Green Building Council.

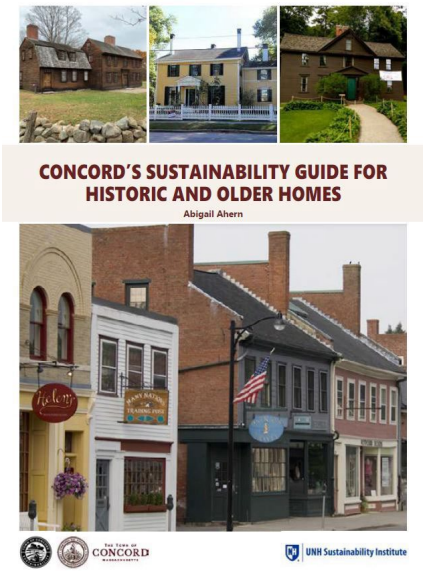
For new construction, Sherborn has just recently become the 12th municipality in the Commonwealth to adopt the Municipal Opt-in Specialized Code. This Opt-in code is the most ambitious of the recently updated energy codes. As a Green Community, Sherborn automatically had to comply with the updated Stretch Energy Code, consisting of the IECC 2021 code plus state-specific and stretch code amendments. Now, with the adoption of the Specialized Code at Annual Town Meeting, Sherborn will comply with the updated stretch code *plus* specialized appendices. These new requirements for construction ensure that new buildings in Sherborn will meet the most stringent requirements for energy efficiency, solar readiness, and electrification. As outlined in the "Massachusetts Voters Guide to the Municipal Opt-In Specialized Code" developed by the Northeast Energy Efficiency Partnerships (NEEP) and the MA Net Zero Buildings Coalition, the specialized code:

- "Requires large homes (greater than 4,000 square feet of conditioned floor area) to be zero energy or all-electric;
- Requires Passive House certification for multifamily buildings over 12,000 square feet;
- Decreases the costs of retrofits for homeowners who eventually want to install electric equipment by adding 'electric ready' and 'solar ready' provisions; and
- Adds new requirements for on-site renewable energy generation (such as solar panels) in certain situations when feasible."[12]

[12] https://neep.org/sites/default/files/media-files/the_ma_voters_guide_to_the_municipal_opt-in_stretch_code.pdf



To truly reduce GHG emissions in Sherborn, however, its existing buildings will need to be upgraded. With two National Register Historic Districts and a fifth of homes built before 1940, it will be essential to approach decarbonization strategies as well as resilience strategies for these buildings while preserving their historic features and character. Preserving existing buildings also reduces the unnecessary consumption of material resources needed for new construction and avoids additional embodied carbon impacts. Sherborn's Master Plan, in fact, calls for establishing a demolition-delay bylaw to provide ample time for historic assets to have preservation options considered. As Sherborn faces numerous climate risks, protecting its historic assets will be important as well.



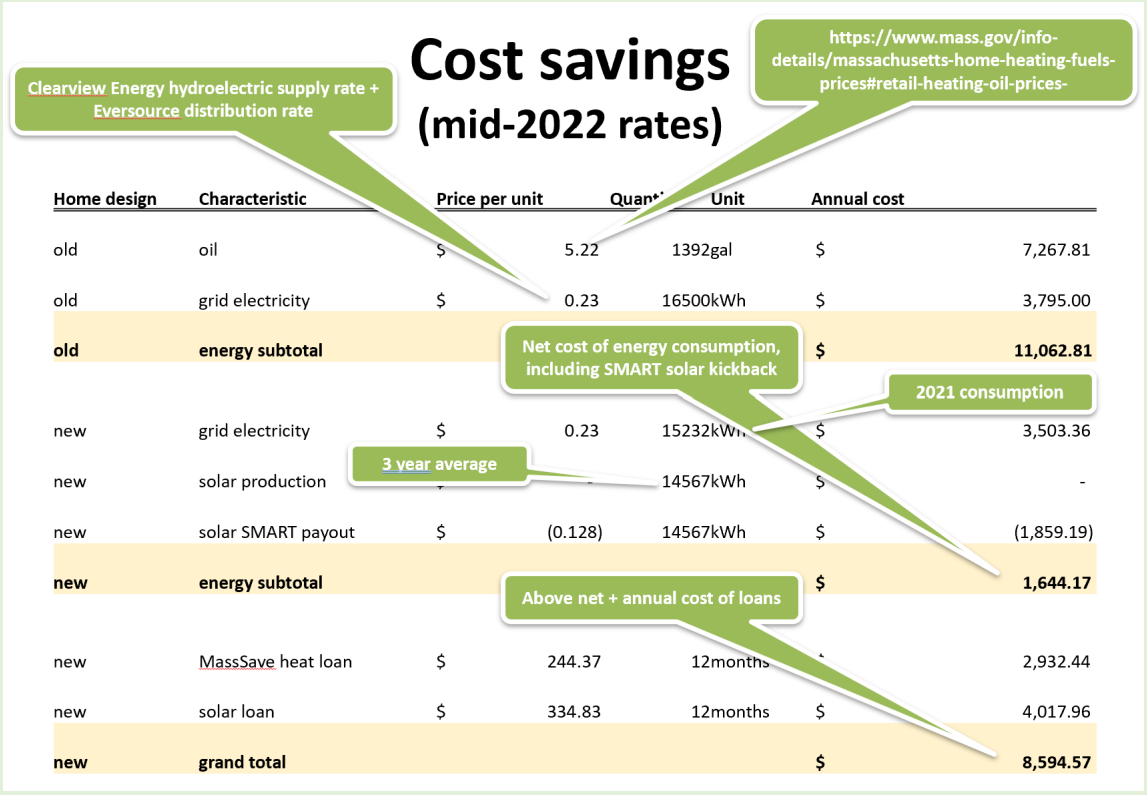
The Town of Concord, like many other New England communities faces similar challenges in sustainably preserving its historic resources, and thus developed "Concord's Sustainability Guide for Historic and Older Homes."

Relatedly, the City of Boston developed a "Resilient, Historic Buildings Design Guide."

As single-family homes represent 92% of Sherborn's housing stock, getting Sherborn residents to maximize energy efficiency and clean energy options in their homes will play a significant role in the town's GHG reduction efforts while simultaneously stabilizing and reducing energy costs and making homes healthier and more comfortable. Tackling energy consumption in Sherborn's buildings should follow a hierarchy of *conserving energy* (or reducing energy demand), *improving energy efficiency*, and utilizing *clean energy* to the greatest extent possible.

Best Practice Example

A local Sherborn resident implemented numerous upgrades to his family's home, took advantage of the available rebates and incentives, and even after accounting for the annual loan repayment costs, is saving thousands of dollars per year. He installed an entire home air source heat pump system to replace an oil boiler and central air conditioning system. He additionally installed a rooftop solar PV system (just over 14 kW capacity). See below for his cost savings summary. It is worth nothing that some lower income bracket homes may have additional incentives available.



Home design	Characteristic	Price per unit	Quant…	Unit	Annual cost
old	oil	$	5.22	1392gal	$ 7,267.81
old	grid electricity	$	0.23	16500kWh	$ 3,795.00
old	**energy subtotal**				**$ 11,062.81**
new	grid electricity	$	0.23	15232kWh	$ 3,503.36
new	solar production	$	-	14567kWh	$ -
new	solar SMART payout	$	(0.128)	14567kWh	$ (1,859.19)
new	**energy subtotal**				**$ 1,644.17**
new	MassSave heat loan	$	244.37	12months	2,932.44
new	solar loan	$	334.83	12months	$ 4,017.96
new	**grand total**				**$ 8,594.57**

Infrastructure

Sherborn's infrastructure is also aging. Challenges of keeping roads, bridges, culverts, and water infrastructure in a state of good repair are only becoming further exacerbated by climate change. Water – too much of it at times, and not enough at others – emerged as a central issue for Sherborn in development of this plan. In Sherborn's Community Resilience Building Workshop, transportation infrastructure was identified as a major vulnerability, as flooding could limit emergency access to the Town and severe storms could cause damage and safety hazards to roadways. Additionally, culverts are recognized as a significant concern town wide. "Workshop participants noted that road crossings at Course Brook at Coolidge Street and Indian Brook at Eliot Street were points of concern, as the culverts may be undersized and cause blockages and restrict flow. Culverts are known by the Community

Maintenance and Development department to be undersized in many locations, though no detailed inventory has cataloged the size and condition of culverts town-wide."[13]

Interviews with Town staff echoed these concerns and raised the need to do a culvert assessment to better understand where failures are likely to occur so that they can be resized or replaced. Without this up-to-date inventory and condition assessment, the Town has been in a position where it has made more sense from a financial and labor standpoint, for the Town to fix them as they fail, utilizing emergency claims to replace them in kind, but likely to fail again in the future. With a full inventory and condition assessment, culverts that are undersized and/or in poor condition can be prioritized for improvements before they fail.

Water supply and quality issues were also raised numerous times throughout the planning process. Sherborn's regulations for septic systems are stricter than the state minimum requirements. However, there is still evidence of water quality deterioration. Aging septic systems can lead to failures and, with the potential for increased flooding and higher groundwater, septic failures can result in discharges of wastewater to the environment. Limited septic capacity and failures have led to problems in the Town Center, limiting business development and expansion. In Sherborn's most recent Open Space & Recreation Plan, it was suggested that, "Under Title 5 regulation, it is possible that certain aquifer recharge zones could be designated 'nitrogen sensitive zones'" and three such zones already exist in Town. "Septic systems in nitrogen sensitive zones are subject to standards that limit the amount of nitrogen and organic matter permitted to leach into the soil. The possibility of establishing local 'groundwater aquifer overlay districts' that delineate major aquifers and recharge areas has been discussed" but ultimately has not been pursued[14] by the town as the Groundwater Protection Committee has not found that they will provide much benefit in Sherborn. Water testing has also indicated elevated levels of sodium and per- and polyfluoroalkyl substances (PFAS), particularly in the Town Center. Proper winter road maintenance to minimize salt runoff was raised by some community members. And reducing PFAS in the water supply is an ongoing challenge for Sherborn and many water supplies throughout Massachusetts and the country.

The entire town is also reliant on wells for its potable water supply. As mentioned earlier in the plan, the risks posed by drought and contamination are significant concerns for Sherborn's public and private wells. While the risk to water supplies is not unique to a well-dependent community, this has become a challenge for some residents and businesses, and also for new development, including needed affordable housing development. At least four private wells ran dry in the summer of 2022. There are higher water yields along the borders of the town, but less so in Town Center. There are 14 public wells that have not yet run dry, but are considered to be at risk. Over the years, several discussions and studies have been carried out to address Sherborn's water issues, including, but not limited to, setting up a special water district near Framingham to connect to its water supply, creating a new Town Center water district, creating a new sewer district on North Main Street, and others. The estimated costs for such projects are high, and the Town is already in a long-term MS4/stormwater management program, investing significant budget into stormwater best management projects and limiting phosphorous levels. However, increased climate risks and local and regional development pressures have brought renewed attention to the need to solve the Town's water challenges. Currently, the Town's Select Board is

[13] Fuss & O'Neill (2018). Community Resilience Building Workshop Summary of Findings. Town of Sherborn, Fuss & O'Neill, Inc. Sherborn, Massachusetts.

[14] Town of Sherborn (2018). Open Space and Recreation Plan. https://www.sherbornma.org/open-space/files/open-space-recreation-plan

considering the establishment of a North Sherborn Water & Sewer District to bring MWRA water/sewer from Framingham into Town to support certain specified new housing developments on Coolidge Street.

Actions

The table below outlines some key actions that have been identified to advance decarbonization and resilience of Sherborn's buildings and infrastructure. More detailed Implementation Blueprints can be found at the end of this chapter for the actions in bold and highlighted in blue.

Plan Element	Action	Co-Benefits (Supports Other Plan Elements)	Timeframe
Buildings and Infrastructure	Adopt a more efficient building code.*	SR	Short
Buildings and Infrastructure	**Collaborate with regional partners to engage an energy coach(es) to promote financial and technical resources for home energy assessments and upgrades.**	SR; WB	Short
Buildings and Infrastructure	Maximize solar installations on Town and School properties.	SR; WB	Medium
Buildings and Infrastructure	Encourage household use of renewable energy through Community Electricity Choice Aggregation and/or incentivized solar installations on property.	SR; WB	Medium
Buildings and Infrastructure	**Conduct a feasibility study to identify options and costs for improving the town's water supply.**	NR; SR; WB	Medium
Buildings and Infrastructure	Promote electrification of buildings and infrastructure to maximize cleaner electricity sources.	SR; WB	Short
Buildings and Infrastructure	Adopt sustainable design requirements for all new development projects.	NR; SR; WB	Medium
Buildings and Infrastructure	Enhance the resilience and efficiency of Sherborn's historic buildings.	SR; WB	Long
Buildings and Infrastructure	Inventory the town's culverts and address sizing and condition inadequacies.	WB	Medium
Buildings and Infrastructure	Explore options for leasing Town land for solar battery storage.	SR; WB	Long

**Note that the Specialized Opt-In Code was adopted at Annual Town Meeting in April, after its prioritization was raised in the course of this plan development. Next steps will be to implement it as it goes into effect next year.*

Measuring Progress

The following are some potential metrics related to this plan element for Sherborn to track as it implements this plan.

- GHG reduction from buildings sector
- # of culvert failures
- # of culvert upgrades
- Renewable energy capacity installed (MW)
- # of buildings with rooftop solar PV
- Residential energy savings
- All electric new house construction
- New multifamily projects using Passive House design
- MassSave audits performed

BLUEPRINT – BUILDINGS & INFRASTRUCTURE

ACTION: Collaborate with regional partners to engage an energy coach(es) to promote financial and technical resources for home energy assessments and upgrades.

DESCRIPTION OF ACTION	Sherborn will collaborate with neighboring communities and energy efficiency technical advisors to establish and maintain an energy coaching program to advise residents in navigating home energy assessments, upgrades, and rebate/incentive programs.	
CHAMPION	COST SCALE*	PLAN ELEMENT(S)/CO-BENEFITS
Sustainability Coordinator	Medium - $$	Buildings & Infrastructure Sustainable Resource Consumption

*Cost: $ = less than $50k/existing resources; $$ = between $50k-$150k; $$$ = more than $150k

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS	
	Timeframe (Short, Medium, Long)*	Key Partners
1. Identify regional partners with whom to collaborate on a shared energy coaching program.	Short	Neighboring Communities
2. Identify and engage a technical partner in energy efficiency/home energy assessments to design training and delivery program for coaches	Short	Technical Advisor
3. Determine funding feasibility of paid vs volunteer energy coach(es).	Short	Neighboring Communities Technical Advisor Mass Save/ Eversource
4. Hire/engage coaches, train them, and establish materials for coaching, including financial/technical resources and contractor list for upgrades.	Medium	Neighboring Communities Technical Advisor Mass Save/ Eversource MA Clean Energy Center
5. Launch program, advertise, and track participation/implementation.	Medium	Neighboring Communities Energy Coaches Mass Save

* Short = less than 1 year; Medium is 1-3 years, Long is 4-5 years

FUNDING RESOURCES	TECHNICAL RESOURCES
Energy Efficiency and Conservation Block Grant (EECBG) Funding for Massachusetts Municipalities	Newton Energy Coach program - https://newtonenergycoach.org/ Regional Energy Coaches – program of Green Municipal Fund (FCM, Canada) - https://greenmunicipalfund.ca/resources/regional-energy-coaches

MEASURING SUCCESS*	ENGAGING THE COMMUNITY
How can we measure the progress and success of this action? **Outputs***: Creation of the program; Energy coaches; List of good contractors **Outcomes***: # of households participating; estimated energy savings from implemented measures; residential sector GHG reduction	*How can we engage and educate the community on the value of implementing this action?* Outreach to residents through sustainability newsletter, website, utility bills.

*An **output** describes what has been created through implementation of the action. An **outcome** is the level of performance or achievement that occurred based on what was created.

BLUEPRINT – BUILDINGS & INFRASTRUCTURE

ACTION: Conduct a feasibility study to identify options and costs for improving the town's water supply.

DESCRIPTION OF ACTION	Sherborn's water supply faces threats from contamination and drought. Over the years, the Town has studied and considered numerous options for providing a more consistent, clean water supply to its residents and businesses, but cost and feasibility barriers have prevented the Town from moving forward. The Town will review and synthesize the findings of previous studies and conduct a renewed assessment based on current conditions and costs so that the Town has a list of options and current day costs for improving the Town's water supply. The study will examine all supply options (including local public supplies, MWRA, and private wells) with a focus on near-term issues facing the Town Center, but exploring options for larger developments and private residences.	
CHAMPION	COST SCALE	PLAN ELEMENT(S)/CO-BENEFITS
Water Commission	High ($$$)	Buildings & Infrastructure Natural Resources & Agriculture Sustainable Resource Consumption Community Well-Being & Preparedness

*Cost: $ = less than $50k/existing resources; $$ = between $50k-$150k; $$$ = more than $150k

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS	
	Timeframe (Short, Medium, Long)*	Key Partners
1. Compile and synthesize all previous studies done to assess options for improving the Town's water supply. These may include studies focused on the Town Center or community wide.	Short	Groundwater Protection Committee DPW Board of Health Sustainability Coordinator MWRA
2. Identify gaps in previous studies and any needs to update costs or benefits to reflect current dollars, risks, and feasibility.	Medium	Groundwater Protection Committee DPW Board of Health Sustainability Coordinator MWRA
3. Connect with other communities that have faces similar issues and learn best practices. The Planning Board has already engaged in some conversations and could revisit these.	Medium	Planning Board Groundwater Protection Committee DPW
4. Establish goals for the Town's water supply and desired outcomes for a feasibility study. The Town may decide to focus on just the Town Center or explore options community wide.	Medium	Groundwater Protection Committee DPW Board of Health Sustainability Coordinator Planning Board

5. Develop a request for and solicit proposals for the feasibility study.	Medium	DPW Finance Director Advisory Committee Capital Budget Committee
6. Work with a selected consultant to carry out the study and determine solution(s) to advance.	Medium	Groundwater Protection Committee DPW Board of Health Sustainability Coordinator Select Board Advisory Committee Capital Budget Committee

* Short = less than 1 year; Medium is 1-3 years, Long is 4-5 years

FUNDING RESOURCES	TECHNICAL RESOURCES
MA Clean Water State Revolving Fund loan program: https://www.mass.gov/state-revolving-fund-srf-loan-program MA EEA – Drinking Water Supply Protection Grant program: https://www.mass.gov/service-details/drinking-water-supply-protection-grant-program Community Septic Management Program: https://www.mass.gov/guides/the-community-septic-management-program Healthy Communities Grant Program: https://www.epa.gov/newenglandhc/healthy-communities-grant-program-new-england 604(b) Grant Program: Water Quality Management Planning: https://www.mass.gov/info-details/grants-financial-assistance-watersheds-water-quality#604(b)-grant-program:-water-quality-management-planning- MAPC Accelerating Climate Resilience Grant: https://www.mapc.org/resource-library/accelerating-resiliency/	*Are there case studies, reports, or organizations that could be a resource for implementing this action?* Previous Sherborn water studies Town of Boxborough, MA Water Distribution Feasibility Study: https://www.boxborough-ma.gov/DocumentCenter/View/2019/CDM-Final-Report---Water-Distribution-System-Feasibility-Study-2008 Ashby Village Public Water Feasibility Study

MEASURING SUCCESS*	ENGAGING THE COMMUNITY
How can we measure the progress and success of this action? **Outputs***: Study with options, costs, benefits **Outcomes***: Consensus on path forward to resolve water supply and quality issues	*How can we engage and educate the community on the value of implementing this action?* This is a highly contested issue in Sherborn, but many agree that something needs to be done. It will be essential to frame this action as an effort to simply understand what the options are and, as any particular solutions are identified, hold workshops with residents and business owners to discuss them in depth.

*An **output** describes what has been created through implementation of the action. An **outcome** is the level of performance or achievement that occurred based on what was created.

VII. COMMUNITY WELL-BEING & PREPAREDNESS

Goal: Sherborn is a socially connected community engaged in ensuring the health, well-being, and emergency preparedness of all its members.

In this plan, and in many other state, regional, national and global reports, there is mounting evidence that climate change is already impacting society with more frequent and severe impacts to come in future years. Earlier in this document, data on climate trends and projections were cited. However, what is often even more impactful than scientific evidence or lengthy hazard reports are first-hand experiences. In the first survey conducted for this planning effort, participants were asked,

"Are there ways in which climate change has already impacted you personally?"

Here are just a few examples of the responses:

- "Confined to house for much of summer because of extreme heat."
- "Too many roadside tree removals without replacement"
- "2022 drought was a wake-up call on the risks that we'll be facing in the future"
- "A tree fell on my car - not due to a storm but likely due to the summer's drought; we lose power at least once a month due to trees falling on power lines."
- "constantly worry whether our water quality/quantity will continue to be sufficient"
- "Cyanobacteria blooms, high algae and high phosphorus at Farm Pond"
- "Worry about well in drought due to needing a lot of water for horses"
- "Droughts have caused our well to be almost empty, so we had to do things like stop flushing the toilet or not taking showers. The weather has been warmer later in the year so there is a lot less snow. Our basement has flooded on occasion from storms."
- "Energy costs from extreme heat increasing everyone's air conditioning usage. Felt it necessary to pay for a generator given water and heat and food loss in outages."
- "The extremes of heat, drought, and floods have reduced my ability to perform and/or enjoy outdoor hobbies and activities."
- "The global warming and allergies impacted my health"
- "worsening asthma, difficulty cooling home in the summer"

These responses, and many other similar ones, tell a story of concerned residents with first-hand experience of climate-related impacts that are likely to become more commonplace.

The most common response to the above question was, by far, related to the risks associated with drought conditions. As described in earlier sections, the quality and quantity of Sherborn's water supply is a major concern. In Town Center, there is additional concern since the municipal campus serves as an emergency shelter. Risks to infrastructure from flooding and extreme storm events were also described in the Buildings & Infrastructure chapter.

Another notable risk is related to extreme heat, which can disproportionately affect older adults, those with chronic conditions, children, and outdoor laborers (such as farm workers). The over 400 students at the Pine Hill Elementary School have already experienced numerous early release/school cancellation days due to extreme heat and unsafe conditions in the school building, which lacks proper air conditioning. Last year, such extreme heat dismissals actually outnumbered snow days for these students.

As described in the Climate Context section of the Plan, there is also increased risk of wildfire, not just in Sherborn, but throughout the region. And as has been experienced even just the last two summers, smoke from wildfires presents as serious a health risk as fires themselves. Preparing all residents, but especially those vulnerable to poor air quality conditions, for the risks of increased smoke has become an urgent need.

And finally, the increased risk of vector-borne diseases, such as Lyme and Eastern Equine Encephalitis (EEE), from ticks, mosquitoes, and other pests will require that Sherborn residents are educated about the risks and proper protection measures. The Board of Health and the Recreation Department should work together to raise awareness and share resources for how families can protect themselves in their own backyards and during outdoor recreational activities.

The risks to Sherborn are very real, but fortunately, many strategies to improve the community's preparedness for these risks are also beneficial to residents' health and well-being, and can support a sense of community and social cohesion, ensuring that Sherborn remains an inviting and enjoyable place to live and play.

Sherborn has numerous strengths and assets in place to support its well-being and preparedness. Its trail system promotes the health of both residents and visitors who take advantage of opportunities for hiking, biking, horse riding, and other recreational activities. To leverage these tremendous resources, it has been suggested that the Town needs to raise awareness of the trails, locations, and activities. Doing so will provide both physical and mental benefits to residents and visitors from throughout the region.

Another important dimension of wellness and community resilience is social connectedness. When residents know each other, they are less likely to feel lonely or isolated, and are better prepared when emergencies occur. Suggestions arose during this and other planning processes for creating social spaces and activities where people can gather, especially from multiple generations.

In cases of emergencies, Sherborn does have some procedures and operations in place. There is a reverse 911 system and names can be added to the database via the Town's website. Additionally, multiple Town facilities and churches have backup generators that can act as shelters when necessary. However, as mentioned in earlier sections, there are unique challenges given Sherborn's aging population. There have been challenges in connecting older adults with essential communications, transport options, medical services, and shelters during emergencies. It can also be difficult to get seniors to leave their homes, even if they are at risk.

Sherborn's efforts to enhance emergency preparedness must begin with an update to its emergency response plan, with a particular consideration for climate change risks and for the uniquely vulnerable population of older adults, children, and those with disabilities.

One positive outcome of the community's heightened awareness of climate risks to Sherborn comes from a resident in response to the question of, "Are there ways in which climate change has already impacted you personally?"

> "Yes, it has encouraged me to get involved in Town climate planning."

Actions

In the face of climate change and other threats to Sherborn's health, well-being, and resilience, the following actions were identified to enhance the overall community well-being and preparedness of Sherborn and its residents. More detailed Implementation Blueprints can be found at the end of this chapter for the actions in bold and highlighted in blue.

Plan Element	Action	Co-Benefits (Support Other Plan Elements)	Timeframe
Community Well-Being and Preparedness	**Ensure school facilities are upgraded to provide renewable and energy efficient cooling during extreme heat events.**	BI; SR	Medium
Community Well-Being and Preparedness	**Update the Town's emergency response plan, ensuring needs of most vulnerable populations are met.**	TM	Medium
Community Well-Being and Preparedness	Support agricultural community in addressing climate threats.	NR	Medium
Community Well-Being and Preparedness	Assess and implement improvements around communication before, during, and after extreme weather events, inclusive of seniors and others with limiting means of communication.		Medium
Community Well-Being and Preparedness	Create accessible, intergenerational spaces for social/recreational activities.	BI	Long
Community Well-Being and Preparedness	Engage more residents in the work of the Town (committee participation, etc).		Medium
Community Well-Being and Preparedness	Improve information and signage around neighborhood and recreational trail connections.	TM; NR	Short
Community Well-Being and Preparedness	Organize community walks to promote health and social interaction.		Short

Measuring Progress

The following are some potential metrics related to this plan element for Sherborn to track as it implements this plan.

- % of residents in reverse 911 system
- # school dismissals/closures due to heat
- Diversity of Town committee membership
- Cases of Lyme, EEE, other vector-borne illnesses

BLUEPRINT – COMMUNITY WELL-BEING & PREPAREDNESS

ACTION: Ensure school facilities are upgraded to provide renewable and energy efficient cooling during extreme heat events.

DESCRIPTION OF ACTION	As average temperatures have already been rising and Sherborn will continue to experience extreme heat events, it is essential that students and teachers are able to learn and teach in a safe and comfortable setting. Lack of cooling in school facilities has already resulted in school closures, and even begun to exceed snow days. The schools need to be upgraded to provide efficient cooling, ideally with a shift to clean energy sources. This will also enable the school to better serve as an emergency shelter when needed.	
CHAMPION	COST SCALE	PLAN ELEMENT(S)/CO-BENEFITS
Building Department	High ($$$)	Buildings & Infrastructure Sustainable Resource Consumption

*Cost: $ = less than $50k/existing resources; $$ = between $50k-$150k; $$$ = more than $150k

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS	
	Timeframe (Short, Medium, Long)*	Key Partners
1. Collect baseline data on building and classroom temperatures in order to prioritize highest needs. Begin with Pine Hill Elementary School as it has greatest need for additional cooling currently.	Short	Dover Sherborn Regional School District Sustainability Coordinator
2. Consult with HVAC specialists on options for cooling with consideration for full building upgrades, but also short-term solutions such as installing mini-splits in certain areas.	Short	Dover Sherborn Regional School District Sustainability Coordinator Mass Save HVAC Contractors
3. Evaluate financing and rebate options for the various pathways and assess costs and benefits for both short and long-terms solutions that prioritize overall efficiency, air quality, and occupant comfort, with a goal of sourcing building energy from renewables.	Medium	Dover Sherborn Regional School District Sustainability Coordinator Mass Save HVAC Contractors
4. Consider passive cooling options such as shading through tree planting or other mechanisms as well.	Medium	Dover Sherborn Regional School District Sustainability Coordinator
5. Make decisions on short-term upgrades and establish a plan for long-term building renovations that will move school facilities to net zero.	Medium	Dover Sherborn Regional School District Sustainability Coordinator Select Board Advisory Committee

* Short = less than 1 year; Medium is 1-3 years, Long is 4-5 years

FUNDING RESOURCES	TECHNICAL RESOURCES
Are there grants or other funding resources that can help support this action? Massachusetts School Building Authority Grant Program - https://www.massschoolbuildings.org/building US Dept of Energy – Renew America's Schools Grant Program - https://www.energy.gov/scep/renew-americas-schools US Dept of Energy – Better Buildings Solution Center – Financing Navigator - https://betterbuildingssolutioncenter.energy.gov/financing-navigator	*Are there case studies, reports, or organizations that could be a resource for implementing this action?* US Dept of Energy – Better Buildings Solution Center – K-12 Schools - https://betterbuildingssolutioncenter.energy.gov/sectors/k-12-school-districts Acton-Boxborough Regional School District – Net Zero Energy and Net Zero Water Elementary School

MEASURING SUCCESS*	ENGAGING THE COMMUNITY
How can we measure the progress and success of this action? **Outputs***: Upgrade options and cost benefit analysis; facility upgrades **Outcomes***: Fewer school closures due to heat; fewer illness/absences	*How can we engage and educate the community on the value of implementing this action?* Engage with students, parents, and teachers to understand experience within school facilities and their needs.

*An **output** describes what has been created through implementation of the action. An **outcome** is the level of performance or achievement that occurred based on what was created.

BLUEPRINT – COMMUNITY WELL-BEING & PREPAREDNESS

ACTION: Update the Town's emergency response plan, ensuring the needs of the most vulnerable populations are met.

DESCRIPTION OF ACTION	As climate change presents new and heightened risks to Sherborn's residents, it is essential that the Town update its emergency response plan to account for both existing risks as well as emerging risks from climate change hazards. The plan needs to address the needs of the most vulnerable, leverage available resources and partnerships, and emphasize clear and effective communication before, during, and after an emergency event.	
CHAMPION	COST SCALE	PLAN ELEMENT(S)/CO-BENEFITS
Emergency Management	Medium ($$)	Transportation & Mobility

*Cost: $ = less than $50k/existing resources; $$ = between $50k-$150k; $$$ = more than $150k

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS	
	Timeframe (Short, Medium, Long)*	Key Partners
1. Convene an Emergency Preparedness Committee, inclusive of Fire, Police, Board of Health, schools, Council on Aging, and others as deemed appropriate.	Short	Board of Health Fire Department Police Department Council on Aging Dover Sherborn Regional School District
2. Compile and review previous plans and existing resources, inclusive of communications plans/methods, transportation resources, shelter and cooling/heat center resources, mutual aid agreements, etc. Identify gaps, particularly in consideration of new risks or vulnerabilities.	Medium	Board of Health Fire Department Police Department Council on Aging Dover Sherborn Regional School District Neighboring Communities
3. Identify risks, vulnerable populations, and goals for emergency response. Utilize resources from MEMA and the State's 2018 State Hazard Mitigation and Climate Adaptation Plan (SHMCAP).	Medium	Board of Health Fire Department Police Department Council on Aging Dover Sherborn Regional School District MA Emergency Management Agency (MEMA) Red Cross
4. Hold open workshops with community stakeholders to understand concerns, priorities, resources available, and to share information on existing procedures and resources. Use this opportunity to conduct	Medium	Board of Health Fire Department Police Department Council on Aging

education on developing family preparedness kits and plans.		Dover Sherborn Regional School District Local businesses Local faith-based organizations
5. Develop a robust and inclusive emergency response plan and communicate it broadly.	Medium	Board of Health Fire Department Police Department Council on Aging Dover Sherborn Regional School District Local businesses Local faith-based organizations

* Short = less than 1 year; Medium is 1-3 years, Long is 4-5 years

FUNDING RESOURCES	TECHNICAL RESOURCES
Are there grants or other funding resources that can help support this action? MEMA Emergency Management Grant Programs - https://www.mass.gov/mema-emergency-management-grant-programs	*Are there case studies, reports, or organizations that could be a resource for implementing this action?* MEMA – Local Emergency Management Planning Guidance - https://www.mass.gov/info-details/local-emergency-management-planning-guidance SHMCAP - https://resilientma.mass.gov/shmcap-portal/#/

MEASURING SUCCESS*	ENGAGING THE COMMUNITY
How can we measure the progress and success of this action? **Outputs***: Emergency Response Plan **Outcomes***: Workshop participants; # residents signed up for communications; # shelters/cooling centers	*How can we engage and educate the community on the value of implementing this action?* It will be important to ensure that this plan is developed and executed in an inclusive way – taking a "whole community" approach. (See FEMA – Whole Community - https://www.fema.gov/glossary/whole-community and CDC EPIC Exchange - https://emergency.cdc.gov/newsletters/epic/2023/031423.htm)

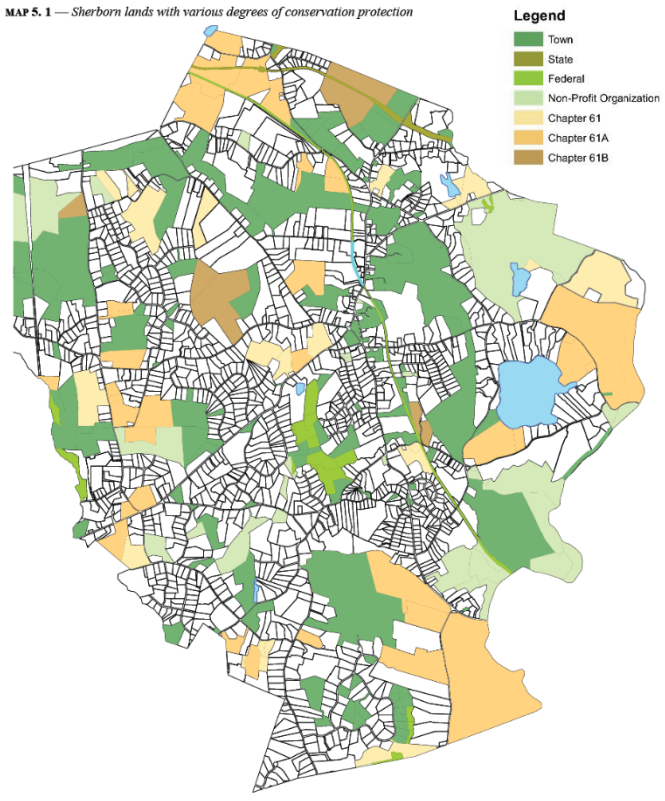
*An **output** describes what has been created through implementation of the action. An **outcome** is the level of performance or achievement that occurred based on what was created.

VIII. NATURAL RESOURCES & AGRICULTURE

Goal: Sherborn maximizes its natural resilience through protection and restoration of its environmental resources and agricultural heritage.

Sherborn is unique in its ecological richness. Its natural resources, trails, scenic open spaces, and agricultural heritage are assets that draw visitors and inspire families to make the community their home. These natural systems – Sherborn's forests and tree canopy, its wetlands, surface waters – are a strength for the community and the region. They provide ecosystem services, flood protection, clean air, keep the community cooler than its more developed neighbors, and offer recreational opportunities for residents and visitors alike. Local farms and gardens contribute to the local economy and produce fresh, local food for Sherborn and the surrounding region. These resources are also vulnerable – to climate change, invasive species and disease, pollution, and development impacts – and their protection, enhancement, and restoration is critical to a resilient future for Sherborn.

Figure 6: Land Conservation in Sherborn - from Open Space & Rec Plan



Source: Sherborn Town Planner

Development Pressures

There are policies and regulations in place to support the protection of Sherborn's natural environment and agricultural character. Approximately 27 percent of Sherborn is strongly protected from development through its zoning by-laws. An additional 21 percent is at least temporarily protected by inclusion in MA Chapter 61 programs, which allows forested land, farmland, and conservation land to be taxed at a reduced rate, reducing development pressures. Another three percent is protected through conservation easements. Meeting Sherborn's and the region's housing needs while minimizing impacts to the environment and conserving natural resources will be an ongoing challenge for the Town. Ensuring any new development has minimal impact to consumption of land and resources is important to Sherborn's resilience and preservation of its character.

Table 2: Sherborn Lands with Conservation, Recreation, or Other Protection

Status of land	Total acres	Portion of town (%)
Private, temporary protection (MA Chapter 61)		
Ch. 61 (Forestry)	319	3.09
Ch. 61A (Agriculture)	1,284	12.43
Ch. 61B (Open Space/Recreation)	569	5.51
Private, permanent restriction or easement	350	3.38
Public or nonprofit open land		
Federal (U.S. Army Corps of Engineers)	92.18	0.89
State (MWRA, Dept. of Corrections)	64.54	0.62
Town of Sherborn, Town Forest, other open lands	468	4.53
Town of Sherborn, Conservation Commission	931	9.01
Nonprofit organizations	933.54	9.04
Municipal		
Municipal campus	5.03	0.04
Recreational fields and facilities	63.25	0.61
Pine Hill School	10.70	0.10
Cemeteries	172.07	1.67

Source: 2018 Open Space & Recreation Plan

Water Resources

Sherborn lies within the Charles River Watershed and includes large bodies of surface water: Farm Pond, Little Farm Pond, and the Charles River itself. Additionally, there are several brooks including Dopping Brook, Bogastow Brook, Dirty Meadow Brook, Sewall Brook, and Indian Brook, which drain into the Charles River. Beaver Dam Brook and Course Brook flow north to the Sudbury River and are part of the SuAsCo Watershed. The entire town is considered an aquifer recharge area and 20 percent of Sherborn's land is occupied by wetlands. Given these resources, the Town has put several protections in place, including a strong wetlands bylaw that goes above and beyond federal and state requirements. Additionally, surface waters and the buffer areas surrounding them are also protected through environmental laws. The minimal quantity of impervious surface (5-6 percent) also serves to help Sherborn manage stormwater and recharge its groundwater supplies. However, polluted runoff and other contaminants remain challenges that Sherborn must still address. The Groundwater Protection Committee should continue to monitor and advise the Town on managing threats to Sherborn's groundwater resources. More on challenges and opportunities associated with water quality and water supply issues related to infrastructure will be covered further in the Buildings & Infrastructure chapter.

Trees

Sherborn is one of the most forested towns in the MetroWest area with some estimates of nearly 78% tree/vegetation cover. It has roughly 468 acres of Town Forest in addition to hundreds of acres of other forest and trees throughout town on public and private property. Trees provide numerous benefits, including shade and cooling, carbon sequestration and storage, stormwater management, improved air quality, and habitat for a variety of wildlife. They also contribute to the scenic quality of Sherborn. Trees and other forms of vegetation have been increasingly damaged by drought, storm events, and pests. A lot of dead trees have had to be removed. Eversource, the Town's energy provider, does tree

maintenance regularly (to protect power lines), but other trees that have died and require removal is a significant cost burden to the Town.

> "Trees on my property aren't living their full life due to climate change and I have to pay an arborist to address their health issues." --Sherborn resident

Sherborn, and several neighboring communities, have identified tree and vegetation management as an important issue to address and are garnering resources to collaboratively develop tree and vegetation management guidelines and potentially a tree preservation bylaw. The Residential Climate Action Toolkit also includes some guidance to private homeowners on proper selection, planting, maintenance, and removal of trees.

Agriculture

Sherborn has a long agricultural history and also adopted a "right to farm" bylaw that reaffirms the preservation of agriculture as a community priority. It also established an Agricultural Commission and agricultural activities and related open space are allowed in all of Sherborn's zoning districts. There are currently six food-producing farms in Sherborn occupying approximately 444 acres of land. There are some roadside farm stands and private homeowners with gardens, but some residents have voiced that water supply limitations have restricted the ability to establish more robust community gardens.

At the Pine Hill Elementary School, the Community School Association received a grant to restore a garden-based outdoor classroom. This Pine Hill Bird Garden, a certified Schoolyard Habitat®, models sustainable and climate-friendly garden practices for children, families, and the entire community.

> *"My job runs on produce and more specifically apples, this year's harvest was heavily decreased due to drought." --Sherborn farmer*

Farmers have raised concerns over changing climate conditions, including drought, severe storms, and impacts to crops and biodiversity. Some even expressed that drought conditions have made it harder to find good hay for their horses. Supporting and encouraging sustainable and regenerative agricultural practices emerged as a top priority for the community. And certain agricultural practices have additional benefits of carbon sequestration and storage, thus helping to mitigate climate change in addition to making farms more resilient to it.

Actions

In addition to the many ongoing efforts to protect and enhance Sherborn's environment, the table below outlines key actions related to natural resources and agriculture that have been identified to support climate action and resilience in Sherborn. More detailed Implementation Blueprints can be found at the end of this chapter for the actions in bold and highlighted in blue.

Plan Element	Action	Co-Benefits (Supports Other Plan Elements)	Timeframe
Natural Resources and Agriculture	**Encourage sustainable and regenerative agricultural practices among farmers.**	SR; WB	Short
Natural Resources and Agriculture	Provide educational resources on selection of native species of vegetation and those that best support pollinator habitat.	SR	Short
Natural Resources and Agriculture	**Manage Sherborn's public and private trees through a Tree Management Plan.**	WB	Medium
Natural Resources and Agriculture	Integrate climate change considerations into local regulations (wetlands protection, stormwater management, irrigation restrictions, etc).	WB	Medium
Natural Resources and Agriculture	Develop and implement a comprehensive invasive species management plan for public and private land.		Medium
Natural Resources and Agriculture	Allow for flexible and compatible uses on existing agricultural property (such as kitchens, markets, farm-to-table, or agri-tourism activities).	WB	Long

Best Practice Example – Natick Community Organic Farm

In the neighboring city of Natick, MA, the Natick Community Organic Farm sits on 27 acres of permanently conserved productive open space land. In addition to being certified organic (using no synthetic pesticides, herbicides, or fertilizers), the farm utilizes numerous sustainable and resilient practices. Animals are raised humanely and without GMO food; compost is used to enrich the soil; they practice no-till crop management that minimizes irrigation requirements, minimizes carbon releases, and maximizes soil health. Additional practices can be found at the farm's website: https://www.natickfarm.org/about/farming-practices/

Measuring Progress

The following are some potential metrics related to this plan element for Sherborn to track as it implements this plan.

- Acres of forested land
- Acres of wetlands
- Acres of farmland
    - Acres of farmland using organic practices
- Acres of open space
- Percent impervious surface
- Percent trees/forest in healthy condition
- Water quality – parameters defined by Board of Health regulations

BLUEPRINT – NATURAL RESOURCES & AGRICULTURE

ACTION: Encourage sustainable and regenerative agricultural practices among farmers.

DESCRIPTION OF ACTION	Sherborn will work with the agricultural community to educate and promote sustainable and regenerative farming practices, such as organic soil management, conservation tillage practices, and others.	
CHAMPION	COST SCALE	PLAN ELEMENT(S)/CO-BENEFITS
Agricultural Commission	Low ($)	Natural Resources & Agriculture Sustainable Resource Consumption Community Well-Being & Preparedness

*Cost: $ = less than $50k/existing resources; $$ = between $50k-$150k; $$$ = more than $150k

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS	
	Timeframe (Short, Medium, Long)*	Key Partners
1. Establish a working group or forum through which local farmers can engage in knowledge exchange.	Short	Local and Regional Farmers Sustainability Coordinator
2. Research and compile best practices for sustainable, regenerative, climate resilient best practices. Topic areas should include: • Conservation tillage • Resilience to erosion • Climate resilient crop selection • Organic practices • Water and energy conservation	Medium	Local and Regional Farmers Sustainability Coordinator Conservation Commission
3. Establish a regular forum and/or website/newsletter or other means for collecting, storing, and sharing examples and best practices.	Medium	Sustainability Coordinator
4. Report back regularly on implemented practices and results.	Long	Local and Regional Farmers

* Short = less than 1 year; Medium is 1-3 years, Long is 4-5 years

FUNDING RESOURCES	TECHNICAL RESOURCES
Northeast Sustainable Agriculture and Education (SARE) grants - https://northeast.sare.org/grants/get-a-grant/research-and-education-grant-program/	Northeast Sustainable Agriculture and Education (SARE) - https://northeast.sare.org/ Regeneration International - https://regenerationinternational.org/resources/ Green America - Re(Store) it! - https://greenamerica.org/restore-it

MEASURING SUCCESS*	ENGAGING THE COMMUNITY
How can we measure the progress and success of this action? **Outputs***: Forum/working group; compilation of best practices; newsletter or website **Outcomes***: Number of participants; Number of events held; Percent of farmers adopting resilient/ regenerative practices	*How can we engage and educate the community on the value of implementing this action?* Engage local farmers in this knowledge exchange and also provide information to the broader community. Some practices will apply to homeowners' gardens or landscapes. Invite community members to visit/tour farms where regenerative practices have been implemented to learn more.

*An **output** describes what has been created through implementation of the action. An **outcome** is the level of performance or achievement that occurred based on what was created.

BLUEPRINT – NATURAL RESOURCES & AGRICULTURE

ACTION: Manage Sherborn's public and private trees through a Tree Management Plan.

DESCRIPTION OF ACTION	Sherborn will collaborate with neighboring communities to develop a Tree Management Plan focused on addressing climate change. The effort will include engagement with the public around best management practices for trees on private property. It will include strategies around appropriate tree selection, siting, planting techniques, maintenance, and removal/replacement and consider ways to maximize carbon storage and sequestration.	
CHAMPION	COST SCALE	PLAN ELEMENT(S)/CO-BENEFITS
Tree Warden	Medium ($$)	Natural Resources & Agriculture Community Well-Being & Preparedness

*Cost: $ = less than $50k/existing resources; $$ = between $50k-$150k; $$$ = more than $150k

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS	
	Timeframe (Short, Medium, Long)*	Key Partners
1. Revisit the FY23 MAPC Technical Assistance Program (TAP) application submitted by Sherborn in collaboration with Dover, Medfield, and Ashland. Invite Holliston or others that may want to collaborate.	Short	Planning Neighboring Communities Town Forest Committee Sustainability Coordinator Open Space Committee
2. Explore funding options, including re-submitting the TAP application during next year's funding cycle. Make any appropriate revisions to the strategy.	Short	Planning Neighboring Communities Open Space Committee
3. Review best practices and example bylaws from other communities in Massachusetts and begin developing the plan, bylaw(s), and community guidance.	Medium	Planning Neighboring Communities Town Forest Committee Sustainability Coordinator Open Space Committee Forest Stewardship Professionals MA DCR
4. Refine and finalize the plan and conduct outreach and education to the community.	Medium	Planning Neighboring Communities Town Forest Committee Open Space Committee Sustainability Coordinator Eversource Forest Stewardship Professionals MA DCR

* Short = less than 1 year; Medium is 1-3 years, Long is 4-5 years

FUNDING RESOURCES	TECHNICAL RESOURCES
Metropolitan Area Planning Council (MAPC) – Technical Assistance Program MA Municipal Vulnerability Preparedness Action Grants MA Dept of Conservation and Recreation (DCR) Urban and Community Forestry Challenge Grants - https://www.mass.gov/guides/urban-and-community-forestry-challenge-grants Eversource Go Green Partnership Challenge Grants - https://www.mass.gov/guides/urban-and-community-forestry-eversource-partnership-challenge-grant	Concord, MA Tree Planting Guide - https://concordma.gov/DocumentCenter/View/28782/Concord-Tree-Guide---PDF Emerald Necklace Tree Management Plan - https://www.emeraldnecklace.org/olmsted-tree-society/projects/ MAPC Tree Protection Regulations - https://www.mapc.org/resource-library/tree-regulations/

MEASURING SUCCESS*	ENGAGING THE COMMUNITY
How can we measure the progress and success of this action? **Outputs***: Tree Management Plan; Tree Preservation Bylaw **Outcomes***: % of Town forest in healthy condition; # of tree removals; # of tree plantings; carbon stored in trees	*How can we engage and educate the community on the value of implementing this action?* Development and implementation of the plan will require coordination with Town departments and commissions, Eversource, neighboring communities, and private residents. Some tree selection and planting guidance has been included in Sherborn's Residential Climate Action Toolkit, but additional outreach and resources should be prioritized among Sherborn residents.

*An **output** describes what has been created through implementation of the action. An **outcome** is the level of performance or achievement that occurred based on what was created.

VIII. SUSTAINABLE RESOURCE CONSUMPTION

Goal: Sherborn fosters a culture of sustainable resource consumption in which residents make informed decisions about healthy material use, efficient energy and water consumption, and waste reduction.

For any community to tackle the unprecedented challenges of the climate crisis, change must happen at all levels, starting with the individual. While many individuals often feel that they are "just one person" and cannot have an impact on something as big as climate change, individual choices and behaviors drive larger trends and shifts. A widely known quote from Margaret Mead says, "Never doubt that a small group of thoughtful committed individuals can change the world. In fact, it's the only thing that ever has." In a community like Sherborn, this is especially true. The consumption (and disposal) choices of Sherborn residents can create a shift to a more climate aware and sustainable culture, focused on minimizing waste and using resources efficiently.

Numerous existing resources and opportunities for residents to take action in Sherborn have been laid out in the Residential Climate Action Toolkit developed as part of this planning process, and are evidence of a strong foundation of sustainable resources consumption already established in town.

Sherborn offers dual-stream recycling at its Transfer Station. A food scrap collection partnership with the company Black Earth Compost gives residents a way to keep food scraps out of the household trash. There is a bin for any clothing, footwear, accessories, and linens managed by BayState Textiles; and a book donation container from More Than Words. The Town also runs a Swap Shop where residents can donate household items for reuse. While these are beneficial resources for residents, the Town still hovers around a 32% recycling rate. The State has, in its 2030 Solid Waste Master Plan, set ambitious targets of reducing waste by 30% by 2030 and by 90% by 2050, and municipalities like Sherborn will need to achieve significantly higher diversion rates to support the state's targets. Without curbside pickup options, residents must be well-informed and committed to taking the steps necessary to ensure they are diverting as much as waste as possible. Survey and workshop participants noted repeatedly that more education and awareness is needed to truly make strides in reducing waste and properly diverting it.

Sherborn has also put a number of measures in place to support energy efficiency and clean energy options. As a Green Community, the Town adopted as-of-right siting for solar energy as well as an

expedited permitting process. The Town has led by example, installing a solar PV system on the DPW garage in 2017 through a power purchase agreement, which generates more than 94,000 kWh per year.

At the Town Meeting in 2020, Sherborn residents voted for Community Choice Aggregation. The Town has developed a plan for an electricity aggregation program called Sherborn Power Choice. A type of group electricity buying program, Sherborn Power Choice will provide the community with an opportunity to increase the amount of renewable energy in its electricity supply and create new electricity supply choices. The program is currently awaiting final Department of Public Utilities (DPU) approvals prior to launch.

The Town also initiated an outreach program (in 2014) (modeled on Solarize Massachusetts) to encourage residents to adopt solar technology resulting in about 40 residential solar systems providing 250 kW of solar generating capacity. During the course of this planning process, several residents suggested relaunching this or a similar program to further promote solar options, particularly in light of reduced costs and new rebates and incentives.

"Our well went dry this summer. It cost us tens of thousands of dollars to dig a new one. We watched others in town drain their own wells and use up our SHARED resource to keep their lawn green for the entire summer." –Sherborn resident

As discussed in other sections of this plan, supporting residents in implementing energy efficiency upgrades, electrifying their homes, and utilizing clean energy sources will be essential for Sherborn to meet its GHG reduction targets. Another area of conservation needed among Sherborn residents is water consumption. Workshop participants and survey respondents repeatedly emphasized the need for Sherborn residents to embrace more sustainable landscaping practices, including those that significantly reduce water used for landscaping purposes. The Residential Climate Action Toolkit outlines some strategies for this while the Town will continue to pursue additional options for managing Sherborn's water supply.

Finally, as a community with a rich agricultural history, and in light of increasing costs, supply chain issues, and the carbon footprint associated with sourcing food and other goods from outside the region, Sherborn has a unique opportunity to lean into its agricultural roots and promote more local growing and consumption. This will reduce emissions, improve the local economy, enhance food system resilience, and better the health of the Sherborn community.

Actions

In addition to the many ongoing efforts to educate and promote sustainable consumption practices among residents, the table below outlines key actions to further these efforts in Sherborn. More detailed Implementation Blueprints can be found at the end of this chapter for the actions in bold and highlighted in blue.

Plan Element	Action	Co-Benefits (Supports Other Plan Elements)	Timeframe
Sustainable Resource Consumption	**Implement more stringent water restrictions during periods of drought.**	NR; WB	Short
Sustainable Resource Consumption	Promote sustainable landscaping practices (inclusive of reducing chemical use, water conservation, appropriate plant selection).	NR; WB	Short
Sustainable Resource Consumption	**Launch an education and awareness campaign around local agriculture, community gardening, and other local food options.**	NR; WB	Short
Sustainable Resource Consumption	Implement restrictions on gas and diesel-powered landscaping equipment.	NR; WB	Medium
Sustainable Resource Consumption	Provide education resources around healthy and sustainable purchasing.	WB	Short
Sustainable Resource Consumption	Provide more educational resources around waste reduction and diversion options in town, including how to successfully manage household trash, recycling, composting, reuse and upcycling items before heading to the Transfer Station.	NR	Short
Sustainable Resource Consumption	Implement a "dark sky" ordinance to minimize light pollution.	NR	Medium
Sustainable Resource Consumption	Expand the Swap Shop to include a tool sharing library or other similar program to help residents reduce consumption of infrequently used items.		Medium

Best Practice Example – Harvard Grown

The Town of Harvard's Agricultural Advisory Commission launched an initiative in 2020 called Harvard Grown. The program emerged from Harvard's Climate Initiative and aims to promote individual farms throughout the town, while educating residents and visitors of the value that local farms generate for the community and the region. It is a branded marketing campaign with a website, list and map of participating farms, and additional educational information about programs and events.

Measuring Progress

The following are some potential metrics related to this plan element for Sherborn to track as it implements this plan.

- Energy use intensity of Sherborn residential buildings
- GHG emissions from residential sector
- Volume of waste and waste composition
- Recycling/ waste diversion rate

BLUEPRINT – SUSTAINABLE RESOURCE CONSUMPTION

ACTION: Launch an education and awareness campaign around local agriculture, community gardening, and other local food options.

DESCRIPTION OF ACTION	Sherborn will collaborate with its agricultural community and other local food suppliers to launch an education and awareness campaign that informs Sherborn residents and visitors about local farms and places to purchase local food options, while also educating them on opportunities to engage in backyard or community gardening.	
CHAMPION	COST SCALE	PLAN ELEMENT(S)/CO-BENEFITS
Agricultural Commission	Low ($)	Natural Resources & Agriculture Community Well-Being & Preparedness

*Cost: $ = less than $50k/existing resources; $$ = between $50k-$150k; $$$ = more than $150k

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS	
	Timeframe (Short, Medium, Long)*	Key Partners
1. Take inventory of all of Sherborn's (and possibly neighboring communities) local food and agricultural resources, such as: • Farms • Farmers' markets • Farm stands • Restaurants using local products • Stores selling local products	Short	Local farmers Sustainability Coordinator Neighboring Communities Mass Farmers Markets
2. Develop a recognizable brand for local food and agricultural resources. Consider having a competition in one or more of the local schools to come up with the brand (logo/name/tagline).	Short	Local farmers Sustainability Coordinator Neighboring Communities Dover Sherborn Regional School District
3. Using the brand, develop online and print materials to highlight local resources and opportunities for the community to engage with them.	Medium	Local farmers Sustainability Coordinator Neighboring Communities
4. Launch the program with an event at a local farm and schedule regular education, training, and celebratory events throughout the year.	Medium	Local farmers Sustainability Coordinator Neighboring Communities Dover Sherborn Regional School District

* Short = less than 1 year; Medium is 1-3 years, Long is 4-5 years

FUNDING RESOURCES	TECHNICAL RESOURCES
USDA Local Food Promotion Program: https://www.ams.usda.gov/services/grants/lfpp National Sustainable Agriculture Coalition – Community Food Projects competitive grants program: https://sustainableagriculture.net/publications/grassrootsguide/local-food-systems-rural-development/community-food-project-grants/	Community Involved in Sustaining Agriculture (CISA): https://www.buylocalfood.org/ Harvard Grown: https://harvardgrown.org/ Massachusetts Food System Collaborative: https://mafoodsystem.org/ National Sustainable Agriculture Coalition – Regional Food System Partnership Program: https://sustainableagriculture.net/publications/grassrootsguide/local-food-systems-rural-development/regional-food-system-partnership-program/ MAPC – Healthy Food Access program: https://www.mapc.org/our-work/expertise/public-health/healthy-food-access/

MEASURING SUCCESS*	ENGAGING THE COMMUNITY
How can we measure the progress and success of this action? **Outputs***: brand, online, and print materials **Outcomes***: Reduced emissions from transport of good and goods from outside the region (*not accounted for in Sherborn GHG inventory*); Increased revenue of local farms	*How can we engage and educate the community on the value of implementing this action?* This is an opportunity for the community to come together around a unique aspect of Sherborn's history and character. Families can learn more about where their food comes from, discover healthy recipes, and reduce their carbon footprint.

*An **output** describes what has been created through implementation of the action. An **outcome** is the level of performance or achievement that occurred based on what was created.

BLUEPRINT – SUSTAINABLE RESOURCE CONSUMPTION

ACTION: Implement more stringent water restrictions during periods of drought.

DESCRIPTION OF ACTION	Sherborn has already and will continue to experience periods of drought. With large homes and yards throughout town, everyone must do their part to reduce water consumption in order to maintain and recharge groundwater resources. The Town will implement water restrictions for residents that are triggered by drought conditions. While these are more common for communities with public water supplies, an increasing number of communities have implemented restrictions for private wells as well.	
CHAMPION	COST SCALE	PLAN ELEMENT(S)/CO-BENEFITS
Water Commission	Low ($)	Buildings & Infrastructure Natural Resources & Agriculture Community Well-Being & Preparedness

*Cost: $ = less than $50k/existing resources; $$ = between $50k-$150k; $$$ = more than $150k

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS	
	Timeframe (Short, Medium, Long)*	Key Partners
1. Review examples of water restriction bylaws or other regulations in other communities that also have private wells, such as Sherborn's neighbor, Dover.	Short	Groundwater Protection Committee Sustainability Coordinator Board of Health Neighboring Communities MWRA MA Drought Management Task Force
2. Determine the appropriate thresholds for triggering restrictions and the level of restriction to be implemented.	Medium	Groundwater Protection Committee Sustainability Coordinator Board of Health MA Drought Management Task Force
3. Draft a bylaw that covers who has authority to initiate water restrictions, applicability of the restrictions, and enforcement procedures.	Medium	Groundwater Protection Committee Sustainability Coordinator Board of Health Select Board Advisory Committee
4. Educate the community about the proposed bylaw in advance of Annual Town Meeting.	Medium	Groundwater Protection Committee Sustainability Coordinator Board of Health

5. Adopt the bylaw at Annual Town Meeting.	Medium	Town Meeting
6. Develop a communications plan for informing the public when water restrictions are triggered as well as additional education about ways to conserve water.	Medium	Groundwater Protection Committee Sustainability Coordinator Board of Health

* Short = less than 1 year; Medium is 1-3 years, Long is 4-5 years

FUNDING RESOURCES	TECHNICAL RESOURCES
NA	Dover, MA Water Restriction Bylaw: https://www.doverma.gov/625/Water-Restriction-Bylaw#:~:text=At%20the%20May%202022%20Town,Municipal%20Water%2C%20and%20private%20wells.

MEASURING SUCCESS*	ENGAGING THE COMMUNITY
How can we measure the progress and success of this action? **Outputs***: water restriction bylaw **Outcomes***: Maintained water supply; reduced water consumption	*How can we engage and educate the community on the value of implementing this action?* This will likely be a highly contentious issue given the nature of private well ownership and government restrictions. Engage the community early and bring in representatives from Dover who can speak to benefits and lessons learned about implementing their new bylaw.

*An **output** describes what has been created through implementation of the action. An **outcome** is the level of performance or achievement that occurred based on what was created.

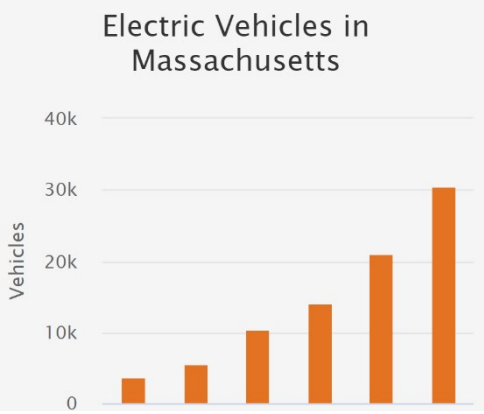
IX. TRANSPORTATION & MOBILITY

Goal: Sherborn residents and visitors enjoy a low-carbon, safe, connected, and multi-modal transportation network.

The combustion of fossil fuels in private vehicles generates 44% of Sherborn's community-wide greenhouse gas (GHG) emissions. Achieving the Town's GHG emissions reduction targets will require accelerated decarbonization of vehicles. Simultaneously, the residents of Sherborn are primarily dependent on private vehicles to get around, given the lack of public transit infrastructure. The closest commuter rail stations are West Natick and Natick Center, which still require vehicle transportation to get to. There are many trails and bike paths for recreational walking and biking. However, many of the main roads require improvements if they are to be made more pedestrian- and bike-friendly.

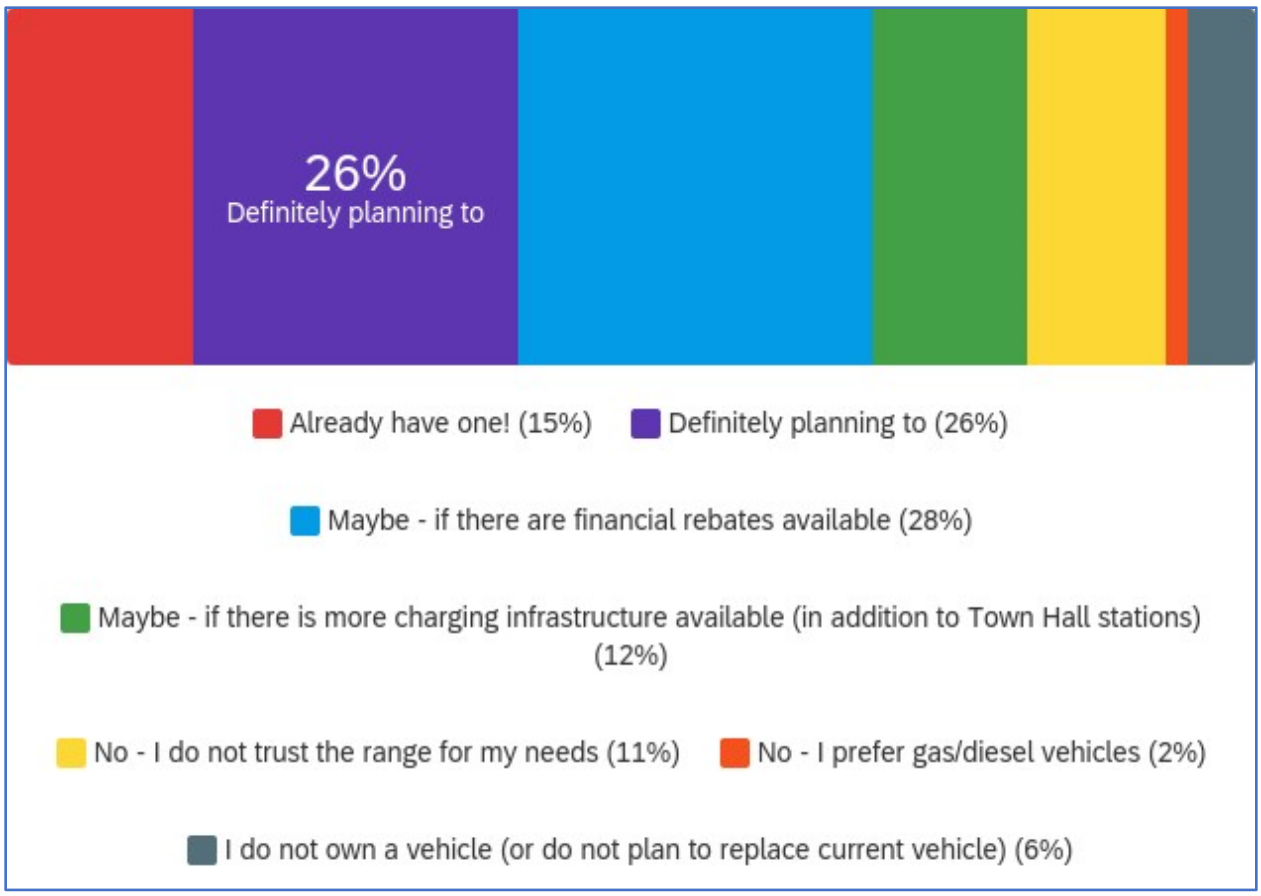
The Town has begun to work on improvements to make Sherborn a safer place to walk and bike for all ages and abilities. In 2016, the Town adopted a Complete Streets policy that promotes the use of design principles to ensure safety, comfort, and accessibility for all the users of streets, sidewalks, and trails. Unfortunately, upgrading all of Sherborn's roads and, particularly, ensuring safe connections between roads, trails, and bike paths, requires significant time and investment.

In the meantime, Sherborn remains a very car-dependent community, and thus electrification of private vehicles and fleets will be essential to reducing vehicle air pollution and GHG emissions. This electrification is underway. The Town utilized a MA Electric Vehicle Incentive Program (MassEVIP) $7,200 grant to install a public access EV charging station at Town Hall. The Town is beginning to plan for transitioning its fleet to EVs as replacements are needed. The Dover-Sherborn Regional School District is also working towards getting electric school buses.



Source: US DOE - Alternative Fuels Data Center - TransAtlas

The most impactful electrification shift will require that Sherborn residents invest in personal EVs and the necessary at-home charging infrastructure. Shifting out of single occupancy vehicles is also a beneficial strategy for emissions reduction and for individual health and well-being. However, the necessary infrastructure and multimodal connections must be in place to support that shift. Sherborn can capitalize on the significant increase in electric vehicles and supporting infrastructure in Massachusetts, as the state has seen a nearly tenfold increase in EVs on the road since 2016.



A unique challenge for Sherborn involves its changing demographics. Currently 22% of Sherborn residents are over the age of 60. This is expected to increase to 32% by 2035.[15] In addition to cost of living concerns (13% of a recent Council on Aging (COA) survey indicated they may not have adequate resources to meet their needs), seniors in Sherborn are increasingly vulnerable to isolation from communication and transportation limitations. In the same survey, 16% of respondent seniors indicated that they modify their driving behavior or don't drive at all. This number jumps to 38% for those over 80. And a third of respondents indicated dissatisfaction with transportation options in Sherborn.

As residents continue to age and all generations of Sherborn residents seek to find lower-carbon transportation options, the Town will need to continue to implement its Complete Streets projects and should consider the feasibility of one or more transit shuttle options, to services around town, and also to public transit services. The COA report also recommends broadening options and promoting ride-share and on-demand ride service options.

[15] https://sherborncoa.org/wp-content/uploads/2023/04/Sherborn-Final-Report_October2-2022.pdf

Actions

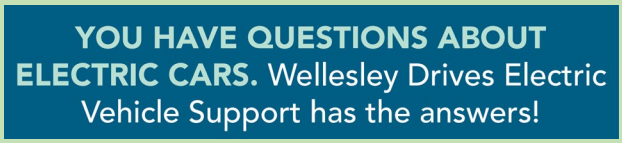
The table below outlines some key actions that have been identified to support transportation decarbonization, resilience, and multimodal options in Sherborn. More detailed Implementation Blueprints can be found at the end of this chapter for the actions in bold and highlighted in blue.

Plan Element	Action	Co-Benefits (Supports Other Plan Elements)	Timeframe
Transportation and Mobility	Implement improvements to enhance the walkability of Town Center.	BI; WB	Long
Transportation and Mobility	**Assess needs and implement shuttle services to nearby transit and Town services.**	WB	Medium
Transportation and Mobility	Implement improvements to make bicycling safer on Sherborn's main roads.	BI; WB	Long
Transportation and Mobility	**Encourage the adoption of electric vehicles among Sherborn residents.**	BI; SR	Medium
Transportation and Mobility	Transition public school buses to battery electric buses.	SR	Medium
Transportation and Mobility	Continue to implement Town's Complete Streets policy to ensure safety, comfort, and accessibility for all users of streets, sidewalks, and trails.	BI; WB	Long
Transportation and Mobility	Coordinate with neighboring communities on plans for strategic siting of electric vehicle charging infrastructure.	BI	Medium
Transportation and Mobility	Convert the Town vehicle fleet to electric as soon as appropriate vehicles are available.	SR	Medium
Transportation and Mobility	Assess barriers and encourage use of public school buses by Sherborn students.	SR; WB	Medium
Transportation and Mobility	Explore development of an electric bike share (or similar micromobility) program.	SR; WB	Medium

Best Practice Example – *Wellesley Drives Electric*

In partnership with Energy New England (ENE), the Town of Wellesley, along with several other municipalities, have established robust electric vehicle educational programs. The program includes information on why to make the switch to an EV, a buying guide, a charging guide, rebates and incentives, promotes events, coordinates an EV Ambassador program, and can connect people to an EV Advisor. Wellesley has held numerous showcases and test drive events in the community.

https://wellesley-ev.ene.org/



Measuring Progress

The following are some potential metrics related to this plan element for Sherborn to track as it implements this plan.

- GHG emissions from transportation sector
- # of charging stations
- EV ownership
- MAPC Local Access walkability score
- Miles of sidewalk in good repair
- Miles of bike lanes
- % Town fleet EV

BLUEPRINT – TRANSPORTATION & MOBILITY

ACTION: Encourage the adoption of electric vehicles among Sherborn residents.

DESCRIPTION OF ACTION	Sherborn will establish an education and awareness program around electric vehicles that demystifies owning an EV with guidance on total cost of ownership, benefits of EVs, and includes events to promote hands-on opportunities to test drive vehicles. The Town will lead by example by increasing the number of EVs in the Town fleet.	
CHAMPION	COST SCALE	PLAN ELEMENT(S)/CO-BENEFITS
Sherborn Police	Medium ($$)	Transportation & Mobility Sustainable Resource Consumption Buildings & Infrastructure

*Cost: $ = less than $50k/existing resources; $$ = between $50k-$150k; $$$ = more than $150k

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS	
	Timeframe (Short, Medium, Long)*	Key Partners
1. Identify key partners for collaborating and strategy for EV promotion campaign. The strategy can consult best practices from other communities and should include: • An online presence and newsletter/social media • In-person events for hands-on education and test driving • An EV coach or advisor(s) • Resident EV ambassadors (EV owners who can share their lessons learned)	Short	Energy & Sustainability Committee Sustainability Coordinator MA Dept of Energy Resources MA Clean Energy Center – Clean Transportation division Eversource Local auto dealerships
2. Town lead by example through shift to EVs in fleet. • Fleet replacement plan • Safety and maintenance trainings • Consider opportunities for fixed loop (and potentially automated) electric bus and/or shuttle routes.	Medium	Public Works Sherborn Fire Dover Sherborn Regional School District Advisory Committee Capital Budget Committee Select Board
3. Continue to develop supporting charging infrastructure needed for private, public, and Town fleet vehicle charging. • Consider charging infrastructure on Town property • Incorporate solar electricity sources for charging equipment • Strategic approach to balancing siting of public charging and charging	Medium	Eversource MA Dept of Energy Resources Charging station/equipment companies Solar panel charging canopy companies Neighboring communities Advisory Committee

levels/speeds with at-home charging equipment		Capital Budget Committee Select Board
4. Ensure ongoing education and information sharing as technology continues to evolve. • Battery maintenance, exchange, disposal considerations • Vehicle maintenance • New or expiring rebates/incentives • Documenting and sharing on lessons learned and total cost of ownership	Long	Town and resident EV owners Charging equipment providers MA Dept of Energy Resources Eversource MA Clean Energy Center – Clean Transportation division

* Short = less than 1 year; Medium is 1-3 years, Long is 4-5 years

FUNDING RESOURCES	TECHNICAL RESOURCES
Accelerating Clean Transportation (ACT) School Bus Fleet Deployment program: https://www.masscec.com/program/accelerating-clean-transportation-act-school-bus-fleet-deployment Eversource – Electric Vehicles and Charging Infrastructure: https://www.eversource.com/content/business/save-money-energy/clean-energy-options/electric-vehicles MA DOER – Leading by Example – Clean Transportation: https://www.mass.gov/info-details/lbe-priorities-and-efforts-clean-transportation	Energy New England (ENE) – ENE Drives Electric: https://ene.org/ene-drives-electric/ ACT School Bus Advisory Services program (no-cost): https://www.masscec.com/program/accelerating-clean-transportation-act-school-bus-advisory-services-program Mass Fleet Advisor: https://www.massfleetadvisor.org/ ReCharge MA: https://www.recharge-massachusetts.org/

MEASURING SUCCESS*	ENGAGING THE COMMUNITY
How can we measure the progress and success of this action? **Outputs***: EV fairs/events; website; newsletter; trainings **Outcomes***: Increase in EV ownership; increased # of EVs in Town fleet; Reduced GHG emissions from transportation sector	*How can we engage and educate the community on the value of implementing this action?* Engaging residents and fleet managers through multiple means, including in-person fairs/test-drive events, as well as one-on-one advising; training events; and online resources on rebates/incentives and available vehicles and charging infrastructure. Addressing "range anxiety", total cost of ownership, and safety concerns will be critical to more widespread adoption.

*An **output** describes what has been created through implementation of the action. An **outcome** is the level of performance or achievement that occurred based on what was created.

BLUEPRINT – TRANSPORTATION & MOBILITY

ACTION: Assess needs and implement shuttle services to nearby transit and Town services.

DESCRIPTION OF ACTION	In order to support the reduction in single occupancy vehicle use and to provide better accessibility and convenience for accessing transit and other services, the Town should conduct a needs assessment for shuttle services. Such services would reduce isolation among older adults and the disabled that cannot own or operate a vehicle, as well as provide increased opportunities to connect all residents with transit and other services.	
CHAMPION	COST SCALE	PLAN ELEMENT(S)/CO-BENEFITS
Sustainability Coordinator	High ($$$)	Transportation & Mobility Community Well-Being & Preparedness

*Cost: $ = less than $50k/existing resources; $$ = between $50k-$150k; $$$ = more than $150k

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS	
	Timeframe (Short, Medium, Long)*	Key Partners
1. Assess needs and demand for shuttle services. This could include initiation or expansion of a shuttle service that: • Connects older adults to essential services (medical, grocery, prescription, COA activities) • Connects residents to nearby transit service (commuter rail stations) • Connects people of all ages to recreational activities Potentially administer a community-wide survey to assess needs/willingness to utilize a shuttle or ride-share service.	Medium	Council on Aging (COA) MBTA Neighboring communities Dover Sherborn Regional School District Large employers in the area 495/MetroWest Partnership's Transportation Committee Recreation Commission
2. Develop a multi-phased strategy for procurement of vehicle(s), routes, frequency, and payment structures. Prioritize the procurement and use of electric vehicles and identify needed charging infrastructure. Determine appropriateness of fixed-route shuttle service vs on-demand ride-share services. Consider development of a Transportation Management Association for Sherborn and surrounding communities.	Medium	*Same as Step 1* MassCommute

3. Pilot an initial phase of service to gauge utilization, costs, and to document lessons learned prior to a full launch of permanent or additional services.	Long	*Same as Step 1*

* Short = less than 1 year; Medium is 1-3 years, Long is 4-5 years

FUNDING RESOURCES	TECHNICAL RESOURCES
Community Compact Efficiency & Regionalization grant program: https://www.mass.gov/efficiency-regionalization-grant-program Community Connections Funding Program: https://www.ctps.org/community-connections Barr Foundation – Climate/Mobility program: https://www.barrfoundation.org/climate/mobility MassDOT Community Transit Grant Program: https://www.mass.gov/community-transit-grant-program	MassMobility: https://www.mass.gov/orgs/massmobility MassCommute: http://www.masscommute.com/steps-to-develop-tma/ 128 Business Council: https://128bc.org/

MEASURING SUCCESS*	ENGAGING THE COMMUNITY
How can we measure the progress and success of this action? **Outputs***: Needs assessment summary; Mobility plan; Pilot service **Outcomes***: Ridership numbers; Reduced emissions from transportation sector	*How can we engage and educate the community on the value of implementing this action?* Engaging community members, especially seniors and disabled residents in the needs assessment and strategy phase will be critical to identifying an approach that will meet broad needs. Multiple modes of communication will be needed to reach those with limited communications options.

*An **output** describes what has been created through implementation of the action. An **outcome** is the level of performance or achievement that occurred based on what was created.

X. Implementation and Governance

The need for climate action is urgent. It is essential that we not only set ambitious targets, but move quickly to achieve them. This plan was developed through active participation from Town staff, committee members, and many members of the community – and it will require all of them and more to implement it. For the Town to achieve its climate goals, it must have a clear approach to implementation of this plan, governance that integrates sustainability and resilience throughout its decision-making, and transparent tracking of progress.

Leadership will come from the top, with a commitment by the Town Administrator to give authority and resources to staff to carry out the actions of the plan. The Sustainability Coordinator will continue to play a pivotal role in liaising between Town staff, committee members, community partners, and neighboring communities to continue to leverage multi-sector and regional approaches to climate action that can harness efficient use of funding sources. This role will also continue to serve as an educator and advocate for the implementation of this plan and for creating a culture of climate action within the Sherborn community.

The Energy and Sustainability Committee will continue to spearhead Sherborn's efforts and take leadership on key projects that can rapidly advance the Town toward its climate goals. And the Dover-Sherborn Sustainability Task Force will continue to play a critical role in driving sustainability at the schools and empowering youth climate action.

Additionally, this planning process has brought together a wealth of knowledge and experience across departments and expertise in the formation of the Climate Resilience Working Group (CRWG). The members of this group will continue to be critical to promoting and implementing the plan. Several members will join a newly formed Ad-Hoc Climate Action Steering Committee (CASC) that will be directly responsible for the implementation and tracking of this plan.

The CASC will consist of key elected officials, Town employees, volunteers that represent boards, committees, and/or civic groups, and additional volunteers that can support specific campaigns or projects. It is recommended that the CASC:

- Commit to a term of one to two years, with staggering rotations to ensure that new membership and perspectives are brought to the table regularly;
- Actively support recruitment of new members;
- Convene regularly to oversee the implementation of the CARP – ideally monthly, but quarterly at a minimum to discuss:
    - Prioritization of action implementation and blueprints pursued
    - Re-evaluation of priorities and key elements of implementation blueprints
    - Sources and approaches to metric data collection and tracking
    - Discussion of financial and technical resources available and opportunistic timing of strategic grant pursuits;
- Track progress on action implementation and trends in performance metrics, especially greenhouse gas emissions; and
- Report on progress to the Select Board and Advisory Committee twice per year and report progress annually at Annual Town Meeting.

Finally, everyone identified above will need to be strong advocates for regional, state, and federal actions that will further support climate action at all levels. Climate action occurs at varying scales and across multiple sectors and cannot be achieved by any public sector actor alone.

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Appendix A: Implementation Blueprint Template

BLUEPRINT – PLAN ELEMENT

ACTION:

DESCRIPTION OF ACTION	*Brief description of the action*	
CHAMPION	COST SCALE	PLAN ELEMENT(S)/CO-BENEFITS
Department, organization, committee name responsible for leading this action	*Low ($) – can be covered w existing resources or less than $50k* *Medium ($$) – Between $50k - $150k* *High ($$$) – more than $150k*	*plan element(s) addressed*

*Cost: $ = less than $50k/existing resources; $$ = between $50k-$150k; $$$ = more than $150k

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS	
	Timeframe (Short, Medium, Long)*	Key Partners
1.	*Timeframe = time start to finish of this particular step*	*List names of key partners and organizations.*
2.	*(Outcomes/impacts timing not included in timeframe)*	*List out key partners for each step in full.*
3. *May be more than 3 steps, but try to keep to 5 or less.*		

* Short = less than 1 year; Medium is 1-3 years, Long is 4-5 years

FUNDING RESOURCES	TECHNICAL RESOURCES
Are there grants or other funding resources that can help support this action?	*Are there case studies, reports, or organizations that could be a resource for implementing this action?*

MEASURING SUCCESS*	ENGAGING THE COMMUNITY
How can we measure the progress and success of this action? **Outputs***: **Outcomes***:	*How can we engage and educate the community on the value of implementing this action?*

*An **output** describes what has been created through implementation of the action. An **outcome** is the level of performance or achievement that occurred based on what was created.

Appendix B: Residential Climate Action Toolkit

SUSTAINABLE SHERBORN

EDUCATE - COLLABORATE - TAKE ACTION

Residential Climate Action Toolkit

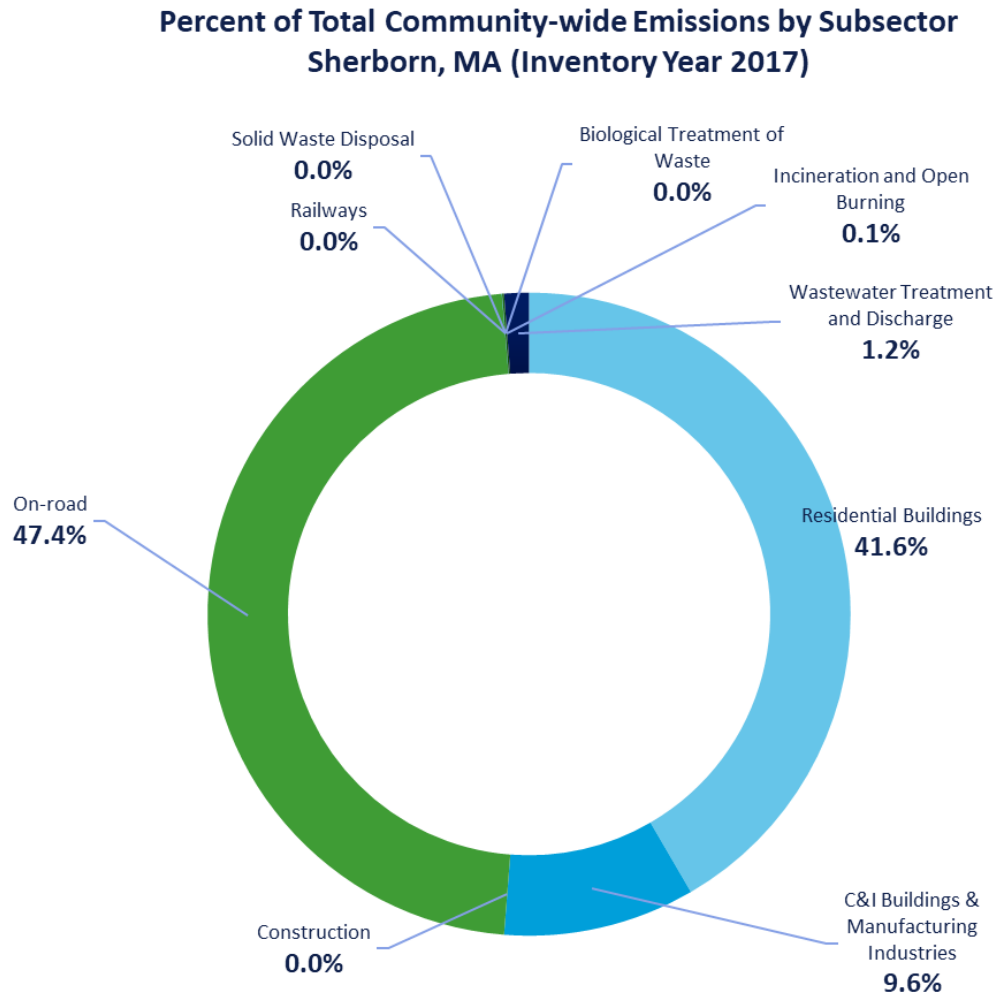
May 2023

Introduction

Residents of Sherborn often cite their love of the community's rural character, scenic views, natural resources, and as a safe and healthy place to live and raise a family. Maintaining Sherborn's beauty, character, and livability requires a concerted effort to prioritize sustainability and resiliency. Such an effort cannot be carried out without the support of all members of the community.

Like many other communities in Massachusetts and throughout New England, climate change is presenting an increasing threat to the health and well-being of Sherborn's residents, infrastructure, and natural resources. At the same time, Sherborn is also contributing to the emission of greenhouse gases (GHGs) which are further driving changes in the climate.

Given its rural nature, it is not surprising that most community emissions in Sherborn come from activities of its residents, primarily from passenger vehicles and energy consumed in the heating and cooling of our residential buildings.



Sherborn residents have a responsibility to reduce GHG emissions from these sources as part of the statewide and global efforts to curb climate change. Additionally, the climate is already changing due to

existing levels of GHG emissions. Sherborn is already facing threats from more extreme storms, flooding, periods of drought, and increasing temperatures. These climate risks can exacerbate existing challenges for stormwater management, water quality and supply, and emergency response during extreme heat, cold, and storm events.

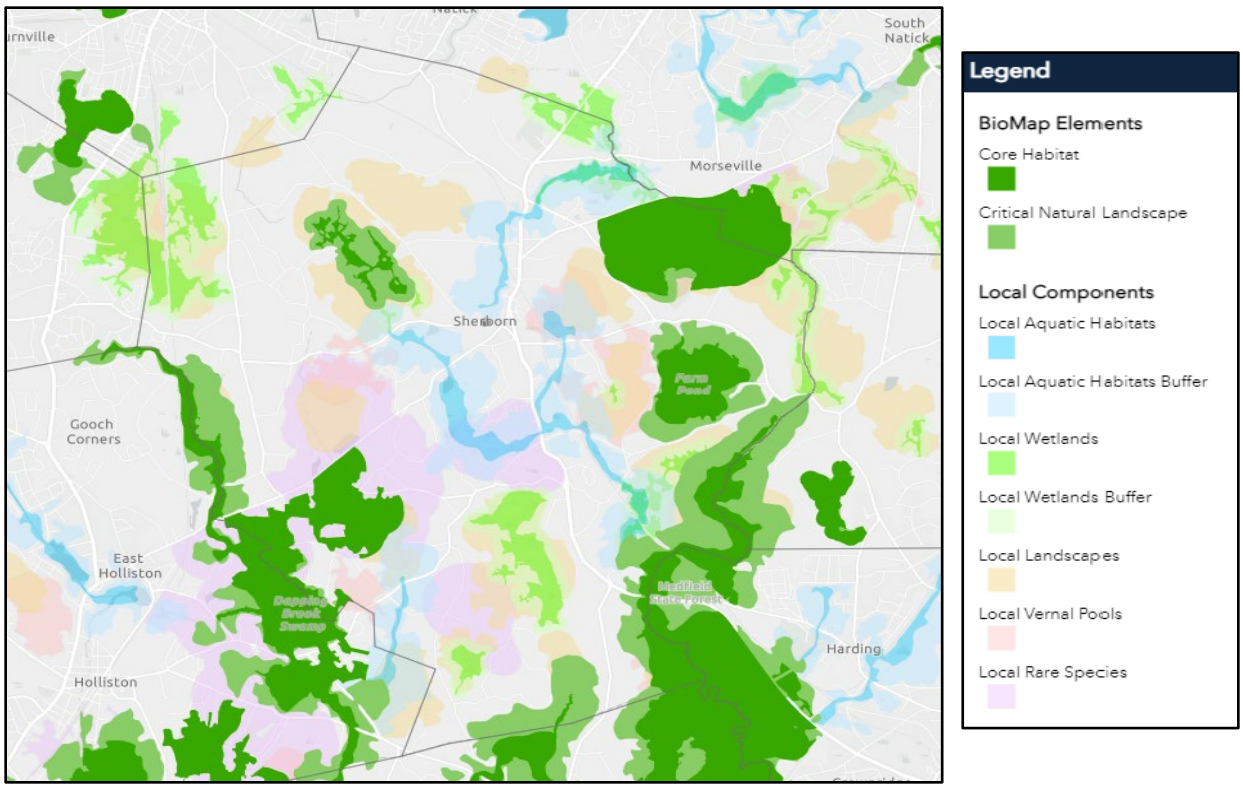
The good news is that within these challenges lie opportunities for both reducing emissions and better preparing the community for the impacts of climate change while also improving health, stabilizing energy costs, and enhancing quality of life overall.

This toolkit will serve as your guide for reducing your household's GHG emissions and better preparing you and your family for changing climate conditions. It includes tips on:

- Sustainable Landscaping Practices
- Water Conservation and Water Supply Protection
- Healthy Tree Care and Maintenance
- Waste Reduction
- Home and Transportation Efficiency
- Sustainable and Healthy Consumption
- Emergency Preparedness

Sustainable Landscaping

Sherborn has a unique ecological richness – an asset to the community for its aesthetic beauty and for the ecosystem services it provides to the region. Sherborn residents play an essential role in protecting this ecological richness through choices made in the management of their own properties, whether in the selection of new plantings or how existing native vegetation is maintained. Sustainable landscaping practices are beneficial to residents, the community, and our surrounding natural resources for several reasons. Good practices will protect water quality and water supply quantity and have the potential for better stormwater management. Sustainable planting strategies should provide pollinator habitat and increase biodiversity. And improved maintenance strategies can reduce noise, pollution, avoid use of hazardous materials, and save money. A focus on maintaining connected sections of habitat is essential for biodiversity. Our private properties can often contribute to maintaining habitat corridors.



Source: BioMap: The Future of Conservation in Massachusetts, produced by MassWildlife and The Nature Conservancy with support from the Executive Office of Energy & Environmental Affairs, © 2022 Commonwealth of Massachusetts and The Nature Conservancy, https://biomap-mass-eoeea.hub.arcgis.com/

What to Plant

When it comes to selecting the types of vegetation you are going to plant on your property, one of the most important considerations is for native plantings. Designing with native plants deepens a landscape's ecological function. They are essential for maintaining, and enhancing, the resilience and ecological integrity of local habitats and the larger ecosystem.

According to Healthy Yards, native plants "are adapted to the local weather, to the local soil and to the other plants and animals indigenous to the area in which they evolved. Most important, natives provide food for multiple species of insects, birds, and other native wildlife." In this way, native plants are also good for creating pollinator habitats. When buying native species, it is also best to buy what are called "straight species" instead of "nativars", which are modifications of native plants. These straight species are also preferred by pollinators.

Pollinator Pathway is a helpful resource for information about native planting and pollinator habitat. Visit their "Native Plant Resources" page to find extensive information about how to get started and where to find native plants. https://www.pollinator-pathway.org/native-plant-resources

It is especially important to avoid planting invasive species and to remove invasives wherever possible. Invasive plants alter the local ecosystem, crowd out native plants, and harm the symbiotic relationship between native plants and native pollinators. The Massachusetts Department of Agricultural Resources maintains a list of prohibited plants in Massachusetts. https://www.mass.gov/service-details/massachusetts-prohibited-plant-list It is also helpful to remove existing invasives, preferably manually and avoiding hazardous chemical use. You have to "pick your battles" with invasives as sometimes the only practical option is limiting their spread. Your Conservation Commission can advise on invasives management when near or in wetlands.

Grow Native Massachusetts is an extremely valuable resource for learning more about native planting, ecoregions within Mass, and management of invasive species. https://www.grownativemass.org/

Water Conservation and Water Supply Protection

Sherborn has been facing increased pressures on its local groundwater supply, which supports the approximately 1,550 individual private and 14 public water supply wells we have in town. The average U.S. household uses more water for outdoor uses than for showering and clothes washing combined.[16] Reducing the use of potable water for landscaping can ensure its availability for drinking and other essential potable uses. There are several ways to make your landscape more water efficient, sometimes called "xeriscaping," while maintaining its health and beauty.

1. Reduce the need for water by reducing the lawn area. Converting lawn to planting beds or letting portions of your yard be wild can reduce water needed. Using native and drought-resistant plants and turfgrass will also reduce watering needs, potentially eliminating the need for any watering beyond rainfall.
2. Keep your soil healthy with mulching and/or compost amendments. This will not only moderate soil temperature, but also improve its ability to hold water.
3. Manually remove weeds and invasives that steal needed water from your native plants and grasses.
4. Be smart about the type of irrigation or watering and its timing. Use watering zones (or "hydrozoning") for any vegetated areas that do require watering. Make sure sprinklers or drip irrigation systems are placed appropriately to water only the lawn and garden, not paved areas.

[16] U.S. Environmental Protection Agency, WaterSense, Outdoors, https://www.epa.gov/watersense/outdoors

Use smart, water-efficient irrigation systems with sensors to avoid overwatering. Micro-irrigation or drip irrigation systems that deliver water close to the roots are considered most efficient. Look for the EPA WaterSense label and visit their guidance for outdoor water conservation. https://www.epa.gov/watersense/landscaping-tips Avoid watering during the warmer 9-5 daytime hours when water will be largely lost to evaporation and adjust watering schedules based on the season.

5. Consider installing rain gardens. These gardens provide aesthetic beauty, attract pollinators, help to manage stormwater, recharge groundwater levels, and reduce runoff pollution from driveways, building roofs, and other impervious surfaces.
6. Use a rain barrel. Installing a rain barrel that can collect and store rainwater from your roof is a simple, low-cost way to reduce stormwater runoff and have water available for landscaping. Sherborn residents, through a partnership with Sustainable Wellesley, can purchase rain barrels from Wellesley's Natural Resources Commission, at a reduced price of $89. https://www.sustainablewellesley.com/news/rain-barrels-are-an-easy-way-to-save-water
7. The greatest risks of contamination of your private drinking water well are from hazardous waste sources right on your property, so protect your drinking water by:
    a. Testing your well water on a regular basis. For questions on what potential contaminants to test for, and what MassDEP certified labs are available in the area please contact the Sherborn Board of Health: https://www.sherbornma.org/board-health . Additional resources are available from the Sherborn Groundwater Protection Committee: https://www.sherbornma.org/groundwater-protection-commmittee
    b. Ensure your septic system is pumped and inspected annually.
    c. Do not pour down the drain any substances that you would not want to eventually drink (paints, pharmaceuticals, pesticides, solvents, etc).
    d. For those still on oil heating systems, have your oil tank and heating system inspected annually, and make sure it is covered for accidental oil leaks by your homeowner's insurance ((insurance companies are required by MA to offer this additional coverage (usually only adds $200 or so to your standard policy), and often fail to inform homeowners)). Cleaning up a heating tank oil spill can cost you tens of thousands of dollars and requires reporting any spill to the MassDEP. Better yet, and to save money on annual heating bills, replace oil heating systems with heat pumps.

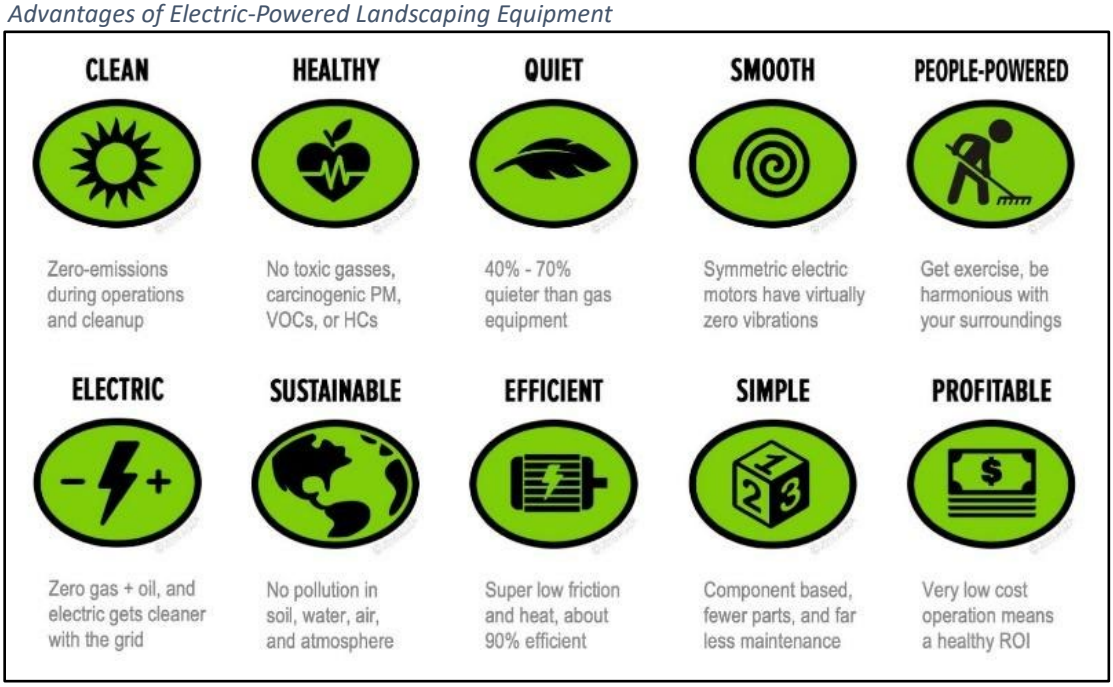
Maintenance Practices

Additional sustainable landscaping practices include:

- Significantly reduce, or better yet, completely eliminate on your property the use of commercial pesticides, herbicides, and mosquito/tick treatments. Additional resources to get started: https://agza.net/organic-best-practice-resources/ and https://www.healthyyards.org/homeowners/avoid-pesticides/
- Switching to electric lawn care equipment, which reduces both noise and pollution, while reducing GHG emissions associated with fuel use. Eversource provides information about battery-powered lawn equipment, including rebates and incentives available through Mass Save. https://www.eversource.com/content/residential/save-money-energy/efficient-products/lawn-equipment The American Green Zone Alliance (AGZA) also provides additional information and

certifications for establishing Residential Green Zones. https://agza.net/agza-residential-green-zone-initiative/

Advantages of Electric-Powered Landscaping Equipment



Source: American Green Zone Alliance

- Set your lawn mower to a higher setting. This will allow for your grass roots to grow deeper, making your soil healthier and more drought resistant.
- Hire professional landscapers that prioritize sustainable landscaping techniques. Grow Native Massachusetts maintains a list of such landscaping professionals: https://www.grownativemass.org/Great-Resources/landscape-professionals

Further Reading:

The Town of Concord produced a very thorough *Sustainable Concord Landscape Handbook*. This resource includes information on planning and designing a landscape, assessing soil health, managing drainage issues, controlling invasives, water management, and other maintenance considerations. https://concordma.gov/DocumentCenter/View/23326/Sustainable-Landscaping-Handbook-Dec-2019

If you are interested in learning more about the health of your soil, the UMass Amherst Center for Agriculture, Food, and the Environment has a Soil and Plant Nutrient Testing Laboratory where you can send or drop off soil samples for testing. https://ag.umass.edu/services/soil-plant-nutrient-testing-laboratory

Healthy Yards is an organization with extensive resources on sustainable landscaping and gardening practices. https://www.healthyyards.org/

The Ecological Landscape Alliance (ELA) maintains an extensive list of additional resources. https://www.ecolandscaping.org/resources/

Metropolitan Area Planning Council (MAPC) WaterSmart Toolkit: https://www.mapc.org/resource-library/watersmart-toolkit/

Preserving Our Trees

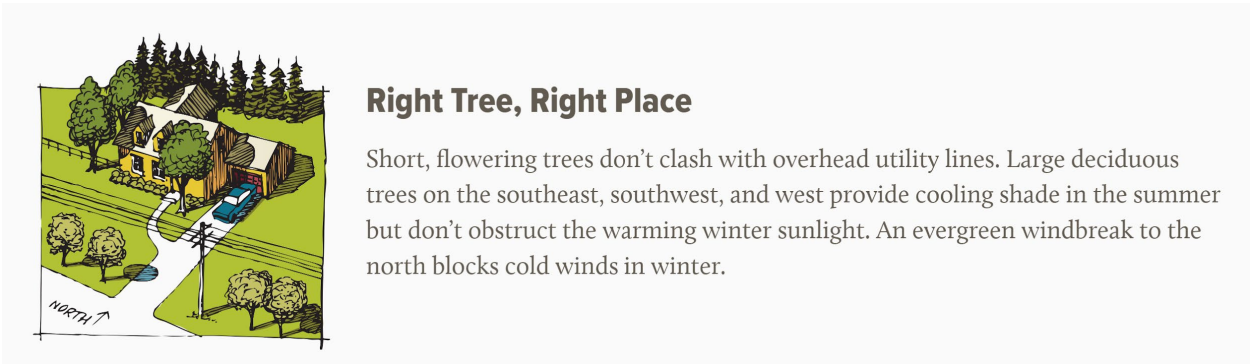
Among Sherborn's greatest natural assets are its extensive tree canopy and forested areas. Closely related to the other sustainable landscaping practices, proper protection and care for our native trees is critical to Sherborn's climate action efforts. Native trees have numerous benefits, including:

- Sequestering and storing carbon dioxide (the major greenhouse gas)
- Improving air quality
- Managing stormwater and protecting water quality
- Providing shade and cooling
- Providing habitat
- Improve mental and physical health
- Increased property values
- Slow wind speeds

The Town of Sherborn is currently working on developing tree management plans that will protect and preserve trees during construction, new development, and on public property, as well as establishing regulations around tree planting and removal. The Town also coordinates with Eversource to properly maintain trees near power lines to protect public safety and reduce power outages. Sherborn has also been collaborating with neighboring communities to identify resources to develop Tree and Vegetation Management Guidelines.

In addition to these Town-led efforts, residents can also play an important role in preserving and protecting the health of Sherborn's trees. The Arbor Day Foundation offers a set of "Tree Care Tips & Techniques" that can help guide you in the proper care of trees on your property. The following steps are outlined in that guidance, with additional details available here: https://www.arborday.org/trees/tips/

1. Choosing the right species of tree. Select the appropriate tree for its purpose and site limitations. The Tree Wizard tool can support you in your selection - https://www.arborday.org/shopping/trees/treeWizard/GetZip.cfm.



Source: Arbor Day Foundation, Tree Care Tips & Techniques

2. Selecting a healthy tree. The guide has recommendations for bare-root seedlings, balled and burlapped trees, container-grown trees, and additional considerations for purchasing a mature tree.
3. Planting the tree. The guide provides step-by-step videos for planting bare root trees, balled and burlapped trees, and containerized trees. It also includes guidance for proper mulching.
4. Watering the tree. Watering needs vary depending on the age of the tree and its species. The guide provides information for water when first planting, during the first two years to support root establishment, and ongoing watering needs. It includes guidance for both drought-tolerant and moisture-tolerant species.
5. Tree pruning. The guide provides guidance and videos on proper pruning techniques and seasonal timing of pruning based on the intent of pruning.

Waste Reduction

Reducing waste has become increasingly critical to the health of our communities and planet. While the Town of Sherborn has several helpful resources in place to support residents in reducing and recycling waste, there is much more that residents can do!

Reduce Your Waste Generation

Those who recall the "reduce, reuse, recycle" mantra know that the first step in waste management is to reduce the overall amount of waste you are generating. There are many ways to do this.

1. Minimize your use of excess packaging and single use plastics.
    a. Take reusable shopping bags with you for groceries and other shopping.
    b. Invest in a reusable water bottle and coffee mug. Have a few in rotation so you are never without your clean bottle and mug!
    c. Whenever possible, opt out of using plastic straws and utensils and throw-away take-out containers.
    d. Limiting the number of products you order online will also reduce excess packaging (and the GHG emissions from vehicle shipping/delivery).
2. Buy local! Not only does buying local support your local business owners, but it reduces emissions from shipping from long distances.
3. Purchase items second-hand. Who doesn't love a good thrift shopping outing? Finding items such as clothing, books, and toys from online or local second-hand shops reduces waste and saves you money. This is especially beneficial for children's items since they will often outgrow these things in short time. Sherborn's Swap Shop is a great resource for this! More information on what is accepted, and the hours of operation are available on the Town's recycling website. https://www.sherbornma.org/recycling-committee
4. Get your kids excited about waste reduction and recycling! This website has fun resources to educate and engage your kids in reducing waste protecting our environment. https://kids.niehs.nih.gov/topics/reduce

Swap Shop at the Sherborn Transfer Station

Source: Wicked Local, https://www.wickedlocal.com/story/thepress/2009/08/12/swap-shop-at-sherborn-transfer/39695236007/

Recycling and Composting

Sherborn's Transfer Station offers dual stream recycling, textile collection, and food waste collection.

FOOD WASTE DROP-OFF AT THE TRANSFER STATION

Information for Sherborn's Food Waste Collection

Thank you for participating in Sherborn's food waste collection program. In 2016 we diverted 36 tons of food waste from our trash stream. Households that compost generate, on average, 25% less trash each week, resulting in lower costs for hauling trash, in addition to the positive environmental impacts of composting.

We will provide you with a food waste pail to keep near your sink, as well as a 5-gallon bucket with a screw-on lid to collect several pails' worth of food waste. (The 5-gallon bucket with the screw-on lid is critter-proof and many residents store this bucket safely in their garages.) Some people like to store their food waste in biodegradable bags in the freezer until they are ready to take them to the transfer station! When the 5-gallon bucket is full, bring it or the biodegradable bags to the Sherborn transfer station and empty the food waste into the large, wheeled, green food waste bins across from the paper and commingled recyclables containers.

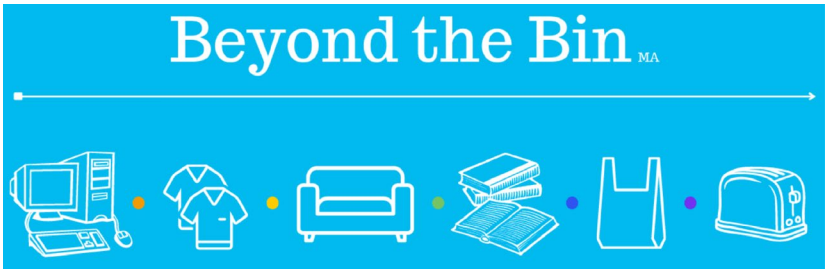
The following table describes what can and cannot be recycled at Sherborn's Transfer Station.

What can I recycle at the Sherborn Transfer Station?

Material	What?	No-Nos
FOOD WASTE COMPOSTING	• Fruit, vegetables, dairy products, meat, poultry (including eggs and shells) and fish • Coffee grounds, filters, and tea bags • Biodegradable bags, paper napkins, towels, and tissues	• No food liquids including soups, grease, or oil • No compostable or non-compostable utensils, food wrappers, or containers • No parchment or waxed paper
PAPER	• All paper including paperboard (e.g., cereal, clean pizza boxes), corrugated cardboard • Food debris must be removed (oil stains ok) • Staples and tape may be left on • Shredded paper must be IN STAPLED OR TAPED PAPER BAG!	• **No gable-top waxed containers of any type,** e.g., no milk or juice cartons (place in trash) • No aseptic brick-shaped milk, juice, or soup containers (place in trash) • No cereal box liners or food • No paper towels, tissues, or napkins (compost!)
GLASS METAL PLASTIC	• **All glass, metal, plastic containers must be empty** • Labels and screw on tops (no corks) may be left on • Deposit and non-deposit cans are accepted • Metal food cans • Aluminum foil and pie plates • ALL plastic labeled with a triangle and recycling numbers 1 - 5, and 7; [NOT #6 which is STYROFOAM], including soda bottles, milk jugs, detergent bottles, yogurt containers, etc., as well as appropriately labeled rigid plastics	• No window glass, dishes, glasses, Pyrex, ceramics, mirrors, light bulbs, or aerosol cans • No paint or motor oil cans • No metal or plastic clothes hangers • No Keurig cups (K-cups) or other coffee pods • **No plastic bags or wrappers** • No Styrofoam
TEXTILES	• Clean clothing (stained/torn ok), footwear (singles ok), handbags, belts, hats, scarves, undergarments, blankets, sheets, drapes, linens, pillows, and stuffed animals accepted. Place in textiles bin.	• No wet or mildewed items • No oily rags • No carpets or mattresses **(mattress recycling in separate container)**

For additional information, visit: https://www.sherbornma.org/recycling-committee

In addition to Sherborn's transfer station, you may have other difficult-to-recycle items that you are looking to donate or recycle. The RecycleSmart MA "Beyond the Bin" program is an excellent resource. Visit this site to search for donation and recycling options by category. It includes drop-off, pick-up, and mail-in options. https://recyclesmartma.org/beyond-the-bin-search/



Additional Sharing and Exchanging

In addition to the Town's Swap Shop, consider finding (or starting your own!) community options for repairs or "library of things". Lending libraries for tools and other items have become increasingly popular as a shared resource in communities. Fix-it or repair shops and clinics are also a great option for repairing your electronics, appliances, or other household goods instead of trashing and replacing them.

And use your local library! Libraries have more than just books. You can find movies, music, and sometimes even outdoor gear that can be borrowed from a library instead of buying things new. You can

also enable others to reuse your items by placing them on www.freecycle.com. Furniture and household items can be donated locally to Habitat for Humanity as well as the New Life Furniture Bank in Walpole.

Alternatives to Open Burning of Waste

Although the Town of Sherborn grants permits for open burning from January through April, please consider getting rid of your yard waste through more ecological means. Some people have a bucolic image of open burning, but the health impacts on one's family and neighbors can be very serious. Wood burning is extremely high in particulate emissions, carbon monoxide, volatile organic compounds, nitrogen oxides, benzene, and formaldehyde. The American Lung Association concluded that "burning wood produces emissions that are widely recognized as harmful to human health. . . emissions from wood smoke can cause coughing, wheezing, asthma attacks, heart attacks and premature death, among other health effects. . . People with lung disease face special risks, but so do children, older adults, people with cardiovascular disease and diabetics."[17] Open burning also generates GHG emissions that contribute to climate change.

Instead, consider putting your tree limbs, brush, or other vegetative debris through a wood chipper and then mulch it, compost it, or identify an area on your property where you can allow it to naturally decompose.

Home and Transportation Efficiency

As described in the introduction of this toolkit, Sherborn's residential Heating and cooling and passenger vehicle emissions represent 86% of our total community GHG emissions. This means that reducing Sherborn's contribution to climate change requires dramatically cutting emissions in these two major sectors. The typical large size of Sherborn homes and the lack of public transit options in the area mean that Sherborn residents use a lot of energy in their houses and vehicles, as compared to the rest of Massachusetts. Reducing this impact requires EVERYONE to take action.

Energy in Your Home

Tackling energy consumption in your home should follow a hierarchy of *conserving energy* (or reducing energy demand), *improving energy efficiency*, and utilizing *clean energy* to the greatest extent possible. There are many ways to do this.

Start with some easy energy conserving habits:

- Turn off lights when leaving a room.
- Unplug electronics that are not actively in use.
- Use your electronics' energy saving features (brightness, screen savers, sleep functions, etc).
- Use a power strip for devices and appliances that can easily be switched off when not in use.
- Adjust your thermostat. Mass Save recommends:
    - "When home, set it at 78 degrees Fahrenheit or higher for cooling and 68 degrees Fahrenheit or lower for heating. Change the thermostat 7 to 10 degrees Fahrenheit each time you leave the house for two or more hours, and then again when you go to sleep at

[17] American Lung Association, https://www.lung.org/clean-air/at-home/indoor-air-pollutants/residential-wood-burning

night. If you have a condensing boiler or an air source heat pump, leave your thermostat at a constant indoor temperature. Its technology adjusts your system's temperature in response to the outdoor temperature."

    - Use smart thermostats to control heating and cooling not only when you are home, but also to manage via your phone when away. On the way home, reset to the temperature you want on arrival.
- When running your central or window unit air conditioners, set them to "auto" so the fan only runs when necessary.
- Additional tips from Mass Save are available here: https://www.masssave.com/en/residential/energy-tips/energy-saving-tips

If your home is feeling drafty, you are wasting energy!

- Make sure to properly seal and weather strip all doors and windows.
- Use storm doors and windows.
- Use a plastic film over your windows or heavy drapes during the winter.
- Be sure to take out any window a.c. units during the winter months.
- Add insulation around pipes and your building envelope.
- A Mass Save energy audit can help you manage many of the above issues (see below)

If you've already adjusted your energy saving behaviors and sealed up leaks and drafts, the next step is to make sure your lighting, equipment, and appliances are all as efficient as possible.

- Switch to LED light bulbs throughout your home.
- Replace old appliances with Energy Star certified models.
- Install programmable thermostats.

If you're not sure where to start, schedule a FREE Home Energy Assessment through Mass Save. These are offered in person or virtually and you can take advantage of a free assessment every two years.

Home Energy Assessments allow you to:

- Connect with an Energy Specialist in-person or remotely to help you find energy-saving opportunities in your home.
- Receive recommended no-cost energy-saving products shipped directly to your door for you to install, or provided on-site.
- Access generous Mass Save rebates and incentives to make recommended long-term energy-saving upgrades to your home, including 0% financing and **75% or more off approved insulation.**

More information is available here: https://www.masssave.com/en/residential/programs-and-services

In addition to the Home Energy Assessment, Mass Save offers numerous rebates and incentives to homeowners and renters. See the exhaustive list here: https://www.masssave.com/residential/rebates-and-incentives

Sherborn is partnered with the non-profit, All In Energy, to help connect residents with the various Mass Save programs. Find contact information and additional resources here: https://allinenergy.org/sherborn.html

Transitioning away from using fossil fuels like natural gas and oil to heat and cool our homes will be critical to meeting our GHG emission reduction and sustainability goals. Electrifying your home is the next important step in reducing your home's carbon footprint. Converting to air source heat pumps, induction stoves, and all electric appliances and equipment allows you to utilize renewable energy sources for powering your home, whether installing solar panels on site or purchasing green energy from the grid. You may not be ready for a new home or water heating system today, but you can commit today that when you DO need an upgrade you should consider and plan now for ground-source or air-source heat pump replacement versions. Do the homework now and plan for future installations when your budget allows.

Heat pumps can efficiently heat your home in the winter and double as a cooling system in the summer - while lowering greenhouse gas emissions.

Air Source Heat Pumps

Install air source heat pumps as your primary source of heating and receive rebates up to $10,000 from the Sponsors of Mass Save®.

Air Source Heat Pump Rebates				
Equipment Type	**Rebate Type**	**Efficiency Requirements**	**Rebate Amount**	**Enhanced Amount* (Income Qualified)**
Air Source Heat Pumps	Whole-Home	Refer to the MassSave.com /HPQPL	$10,000 per home	$16,000 per home
	Partial-Home		$1,250 per ton[1], up to $10,000	

1. Tons are calculated based on AHRI cooling capacity divided by 12,000 BTUs. Rebate amount based on tons. ↩

Sherborn PowerChoice

You can "green" your electricity usage by making the switch to local, renewable energy while also supporting the building of new green energy infrastructure.

At the Town Meeting in 2020, Sherborn residents voted for Community Choice Aggregation. The Town of Sherborn has developed a plan for an electricity aggregation program called Sherborn Power Choice. A type of group electricity buying program, Sherborn Power Choice will provide our community with an opportunity to increase the amount of renewable energy in our electricity supply and create new electricity supply choices. Sherborn Power Choice will be a Town alternative to the commercial electricity offers that many of us receive in the mail and over the phone, but without high pressure or fees.

How does Electricity Aggregation work?

Through Sherborn Power Choice, Sherborn will choose its own electricity supplier and set the price used to calculate the supply services portion of your electricity bill. However, Sherborn Power Choice will not replace Eversource as Sherborn's electricity utility transmission company. When Sherborn Power Choice goes live, you will remain an Eversource electricity customer with no interruption to your electricity. Eversource will continue to deliver your electricity, they will continue to send your electricity bill, and you will continue to call them if your power goes out. The only thing that changes is who Sherborn Power Choice contracts to supply the power that Eversource then distributes to your home.

If you are eligible for any discount from Eversource, such as a low-income discount, you will continue to receive that discount. Enrollment will be automatic for most electricity customers in Sherborn (though not for customers who have already signed an electricity supply contract). If your account is eligible for automatic enrollment, you will receive a notification in the mail from the Town before being enrolled with details like pricing and program options. If you already have an electrical supplier, you can switch to Sherborn Power Choice, although you should check for any penalties for leaving your independent supplier.

Sherborn's Electricity Aggregation Timeline

Before launching the program, Sherborn had to develop an Aggregation Plan and submit it to state regulators for review and approval. To ensure the public had an opportunity to be a part of developing this program, Sherborn made its draft Aggregation Plan available for review and comment before

beginning that regulatory review process. Sherborn's draft Aggregation Plan was available for public review and comment from March 1 until March 29, 2021. An overview of the plan was presented at a virtual public information session via Zoom on March 8, 2021 at 7:00 PM. Click here to access Zoom recording of the presentation. For the preliminary timetable and implementation process see details here.

Sherborn has been hard at work developing and submitting our Aggregation Plan to the required reviewing entities and is currently awaiting required approvals before implementing Sherborn Power Choice. What follows is a brief overview of progress to date.

- 2020 Aug: Town Meeting approved investigation of aggregation. After interviewing aggregation consulting firms, we selected Mass Power Choice, a consulting firm that specializes in aggregation planning and execution.
- 2020 Sep-Dec: The Energy and Sustainability Committee (ESC) drafted detailed plans and gathered the required documents to submit to regulators, under the guidance of Mass Power Choice, our Sustainability Coordinators, and with approval of the Select Board.
- 2021 Jan-Apr: The MA Department of Energy Resources (DOER) reviewed the plan, as required.
- 2021 May: Sherborn submitted the plan to the MA Department of Public Utilities (DPU) for approval, as required. Later, the DPU changed its requirements, prompting plan revisions. The DPU has been taking 18-24 months to review and act upon municipal plans, according to recent estimates.
- 2023 June: The DPU has not provided any additional guidance as to when they might approve any municipal plans that are in progress.
- Once DPU approval is obtained, Sherborn can move forward with Sherborn Power Choice.

Steps to take for participating in Sherborn Power Choice:

1. Wait to be notified by the Town about the Aggregation contract terms (the default rate and the different price tiers depending on the percentage of renewable energy). The notice will come by mail and carry the official town seal. **Any other solicitations will be from independent suppliers who are marketing in Sherborn and are not associated with Sherborn Power Choice.**

2. Familiarize yourself with the different price tiers and consider environmental and economic benefits. Participation is never required. While Sherborn Power Choice will have an automatic enrollment model in accordance with state law, you will be able to opt-out before being enrolled and any time after enrollment with no penalty. You do have the option either to opt down (less renewable content) or up (For more renewables than the default choice) within Sherborn Power Choice. The rates will vary depending on the percentage of renewable energy. Homeowners always retain the option to leave Sherborn Power Choice at any time and return to the Eversource basic rate or any other third-party supplier.

3. If you do nothing, you will be automatically enrolled by the Aggregation provider and you will need to take no action. If you choose another tier, make changes in just 5 minutes online or with a phone call! All you need is your electricity account number. Nothing changes with your electricity bill; it will still be coming from Eversource.

In addition to the purchasing of clean energy, you may also want to consider installing an on-site solar panel array. Resources such as Project Sunroof, Energy Sage, and MA Clean Energy Center can help you navigate this process. Project Sunroof uses solar radiation information and Google Maps to determine a roof analysis for solar energy potential along with recommendations for sizing, costs estimates, and financing options. Energy Sage and MA Clean Energy Center additionally provide incentive and financing information.

Project Sunroof

- https://sunroof.withgoogle.com/
- https://www.energysage.com/local-data/solar-rebates-incentives/ma/
- https://goclean.masscec.com/article/solar-incentives-financing-ownership-options/

Greening Your Transportation

Drive less

The typical Massachusetts household drives an average of 60 miles each day, assuming two cars per home. All our driving is a significant contributor to greenhouse gas emissions. 46% of Sherborn's greenhouse gas emissions come from individual residential transportation. **Make a commitment to walk or bike for a regular errand each week.** Take your child to and from school, meet with friends, mail a package, and grocery shop--start with one and increase the number of carless errands over time. You also help keep our Sherborn businesses vibrant by walking or biking to the local stores and restaurants. Apps such as Google Maps can make it easy by finding the best walking or biking routes and trip times. Our extensive public trails network in Sherborn's Town Forest and Conservation Commission lands also allow connection from some neighborhoods to our downtown area. **The American Heart Association recommends 150 minutes of moderate exercise weekly,** and walking and biking are both considered moderate exercise. Good for the environment and good for your health.

Plan your trips to achieve multiple errands rather than make separate trips to each location you need. A little preplanning can cut down on emissions from transportation when a car is needed.

Drive electric

Switching to an electric vehicle reduces your footprint drastically today and 100% when we reach 100% carbon-free electricity. Learn more about driving electric including rebates, charging, and available options here: https://www.greenenergyconsumers.org/drivegreen

https://www.greenenergyconsumers.org/drivegreen/learnmore/costrebates/rebatesincentives

There is currently one EV charging station (2 spaces) at Sherborn Town Hall. Here are some helpful links to find additional charging stations near your home, work, or destination.

- Alternative Fuels Data Center Station Locator
- Plugshare

- Chargepoint

The Green Energy Consumers Alliance has also developed a guide for Installing Electric Vehicle Charging at Home. https://cdn2.hubspot.net/hubfs/260434/Installing%20EV%20Charging%20at%20Home.pdf

Save money and put less demand on the grid by charging at night during off of peak load hours. Plug in, get a good night's sleep, and your car is ready in the morning.

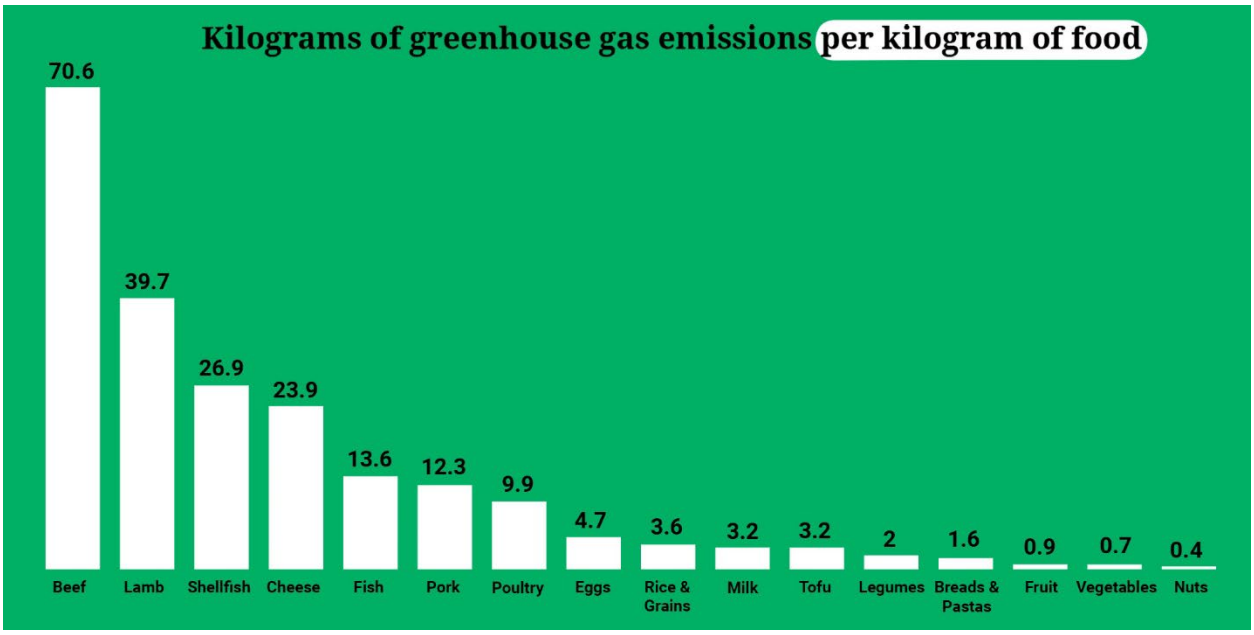
Health and Well-Being

There are numerous ways to keep our minds and bodies healthy while also lowering our impact on our environment. Consider the following ways to enjoy your day-to-day activities more sustainably.

Sustainable Eating

We know that what we eat matters greatly for our physical health, but every choice we make about what we eat and drink also has significant consequences for the environment as well.

- Eat locally and seasonally! Buying produce from local farms supports your local economy, reduces transport costs and emissions, and tastes better. Eating local also means you will likely eat foods that are in season, further reducing the need for excess shipping, refrigeration, and preservatives. Supporting local agriculture also makes the community more resilient to any impacts to the food system. Think about adjusting your diet to the season. For example, purchasing strawberries in January likely means those fruits had to be flown or shipped North from Central or South America, vastly increasing the carbon footprint of each berry.
- Eat more plant-based! Meat production typically requires a great deal of grassland, often created by clear cutting of trees, which releases carbon dioxide. Additionally, cattle emit a great deal of methane, a potent greenhouse gas. Raising animals for meat is also hugely water-intensive. The figures below from the UN show the carbon footprint of different food products.

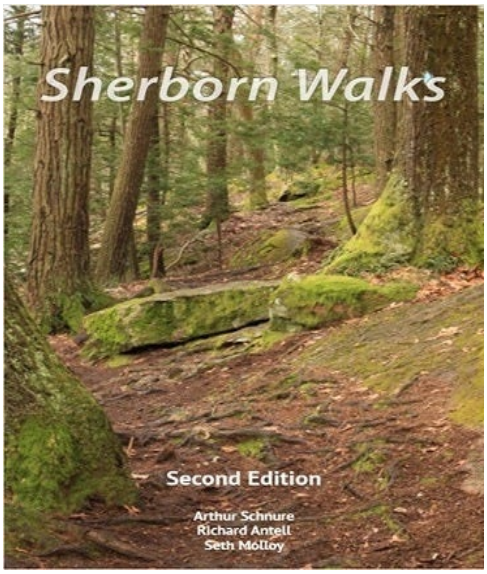


Source: United Nations: https://www.un.org/en/climatechange/science/climate-issues/food

If a shift to more plant-based eating sounds hard, consider starting with just one meatless meal a day or one day a week. There are many websites, books, podcasts, and videos available now with delicious plant-based recipes that are filling and rich in protein.

Active Lifestyle

Sherborn is rich with outdoor recreation opportunities, whether you like to walk, hike, bike, kayak, or ride a horse! The Sherborn Forest & Trail Association (SFTA) is a wonderful resource for information on the variety of outdoor recreational options and numerous events that they sponsor. The SFTA recently released the Second Edition of its Sherborn Walks book that provides information on 25 publicly accessible walks in town.



You can purchase the guidebook and find lots of other information and events at: https://www.sherbornforestandtrail.org/

The Sherborn Recreation Department also offers numerous activities for both kids and adults, including soccer, baseball, tennis, yoga, pickleball, and more! More information is available at: https://sherbornma.myrec.com/info/default.aspx

Healthy and Safe Products

It is important to carefully consider the products we use in our homes as they can impact the environment as well as the health of our families, including kids and pets. Some considerations when purchasing cleaning products or beauty and personal care products include, but are not limited to:

- Chemicals used and toxicity;

- Animal testing;
- Carbon footprint;
- Packaging and waste; and
- Septic safety.

Fortunately, there are some certifications that have made the transparency around such products much better. One to keep an eye out for is the Green Seal certification. Green Seal has been a trusted eco-label for cleaning products for over 30 years and is, in fact, often specified in public procurement policies in order to product workers and the environment. Recently, Green Seal also partnered with Amazon's Climate Friendly Pledge as well. Additionally, Green Seal has fully prohibited the inclusion of any PFAS in its certified products. To learn more and to search their product directory, visit: https://greenseal.org/home-consumers/.

The beauty and personal care industry has also been progressing in sustainability and health. There are numerous brands to consider that are minimizing waste, such as shampoo bars or refillable glass bottles for products. Many are now cruelty-free and plant-based. Credo is just one of many entities working to create this shift in the industry and providing standards for safe and sustainable beauty products. https://credobeauty.com/

Locally, consider visiting Ocean Dreams Market (https://www.oceandreams.market/) to find many of these types of eco-friendly products.

Emergency Preparedness

As climate change continues to bring more frequent and more severe storms and extreme weather events to the area, it is essential that you and your family are prepared for emergencies.

Make a Preparedness Kit

Emergency management professionals and agencies, including the Federal Emergency Management Agency (FEMA), recommend being able to "shelter in place" without power for a minimum of 72 hours. Assemble an emergency preparedness kit that will ensure you have all the things you need to meet your basic needs during that time, keeping in mind that sometimes other services are also cut off during these times. The Massachusetts Emergency Management Agency (MEMA) has developed a checklist for suggested emergency kit items: https://www.mass.gov/doc/emergency-kit-checklist/download

Have a Family Emergency and Communication Plan

The Massachusetts Emergency Management Agency (MEMA) provides detailed guidance on creating a Family Emergency Plan, inclusive of:

- Establishing meeting locations.
- Developing an emergency contact plan.
- Knowing how to receive emergency alerts and information.
- Evacuation plans.

- Shelter in place (see information on making an emergency kit above).
- Ensuring you've planned for the needs of seniors, family members with disabilities, young children, and pets.
- Practicing your plan.

Review all the guidance here: https://www.mass.gov/info-details/make-a-family-emergency-plan

Know Your Local Resources

The Town of Sherborn currently participates in the Code Red System, which provides public safety and emergency notifications to the community. Please visit the site below to register and receive emergency notifications from the Code Red system.

https://public.coderedweb.com/CNE/BF82494F0BDE

The Sherborn Police, Fire, Disability Advisory Committee, and Council on Aging have partnered to develop an emergency database to be better able to assist households with seniors and/or those with disabilities or other medical conditions. Provide your information through the Online Emergency Form so that you may be better served and protected during emergencies.

https://sherborncoa.org/online-emergency-form/