



# Natick's Net Zero Action Plan

JANUARY 2021



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# Acknowledgements

Thank you to the many members of the community who participated in the public input opportunities throughout the Plan's development.

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Conservation Commission

Transportation Advisory Committee

Economic Development Committee

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# Letter from the Future:

## A Message from the Sustainability Committee in the Year 2050

Dear Natick residents, living in the year 2021,

Congratulations on adopting an ambitious, achievable plan to reach net zero greenhouse gas emissions by 2050. We are writing to thank you and tell you about the consequences of your actions in 2021.

Your pursuit of net zero has bettered our community and our world, and, nearly 30 years later, the Sustainability Committee is pleased to report your success.

Looking back on this transformation, it is clear you acted at a pivotal moment. In 2021, the challenge was great, but the cost of inaction—to our natural environment, health, and the resilience of our community—could not be ignored. Natick, the Home of the Champions, rose to the occasion. Your actions, amplified by state and federal leaders, laid the foundation for an incredible journey.

After the Net Zero Action Plan was adopted, implementation became an all-hands effort, driven by members of a task force that drew on the expertise and participation of diverse boards, departments, committees, and civic organizations. Together you sought to fulfill the vision of plans, including the Massachusetts 2050 Decarbonization Roadmap and the Clean Energy and Climate Plan for 2030, and the early stages of the Transportation and Climate Initiative. Energetic, creative partnerships with like-

minded communities, such as Ashland, Framingham, Holliston, and Westborough helped accelerate momentum. Working in tandem, you created deep, lasting change.

**You started by greening the electricity grid.** Requiring carbon-free electricity by 2030 was a bedrock decision. Paired with policies that made clean energy technology cheaper and easier to install, a green grid deepened the impact of sustainable choices as a matter of course. It meant every resident who electrified their heating and appliances, every business that upgraded its facilities, and every commuter who traded their gas car for an electric was instantly contributing to the health of the community and the planet.

**You assessed and readied our buildings for the future.** You took a good look at our homes, offices and commercial spaces – and you asked questions. Which roofs could have solar? How could new construction be built to net zero standards? How could Natick support retrofits to improve efficiency? You started a massive, regional electrification campaign that did more than reduce emissions – it saved residents millions of dollars and created thousands of Massachusetts clean energy jobs.

**You changed how we move around town.** You prioritized embedding broadly accessible transportation options into our community's development, and worked to make our roads, sidewalks, trails, and railways cleaner, more reliable, equitable, and resilient. Because of you, our bike, electric car and ride share programs emerged in tandem with a charging station revolution, making it possible for people to choose the best transit option for their needs in the moment. It's paid off: a 2045 Select Board survey found for the first time that the majority of Natick households had become single-car, and an astounding 85% of one-car households said they had no desire to add a second.

Of course, those are just the headlines, not the countless small, smart choices elected officials, Town staff, local businesses and residents – *leaders like you* - made along the way. Net zero wouldn't have been possible without you, and we are all incredibly grateful for the foresight and focus you had in 2021.

Thank you for making tomorrow possible.

Cordially,

2050 Natick Sustainability Committee

# Introduction

The Town of Natick is striving to achieve net zero emissions by 2050.

This work builds on Natick's history as a sustainability leader and is in response to a non-binding resolution Town Meeting passed in 2018.

## OUR PROGRESS TO NET ZERO

The Town of Natick has a history of forward-thinking action on climate change that serves as a valuable foundation for achieving its 2050 net zero goal.

Natick's history of climate leadership is thanks to the efforts of community volunteers and dedicated employees. These individuals and groups include many Town committees, such as the Select Board, Planning Board, Conservation Commission, Recycling Committee (1990-2016), Sustainability Committee, Energy Task Force, and various building committees, and grassroots groups such as Renewable Natick.

Natick is proud to have a strong community volunteer base, which will continue to be important in carrying out many of the actions identified in this plan.



**2004**

Natick joins ICLEI Local Governments for Sustainability, which required the Town to establish a baseline greenhouse gas emissions inventory for school and municipal operations and set reduction goals.



**2010**

Natick is designated as a founding Green Community by the MA Department of Energy Resources. Over the next decade, Natick receives more than \$1.5 million in grants to support energy efficiency projects from this program.

**2007**

Natick establishes a staff-led Energy Task Force, focused on implementing energy efficiency measures such as lighting retrofits, in school and municipal buildings.

**2012**

Natick becomes one of the first MA municipalities to install solar on public buildings, including Natick High School, Kennedy Middle School, Wilson Middle School, Bennett-Hemenway Elementary, Memorial Elementary and the Community Senior Center. In future years, solar is added to the Department of Public Works, the Chase Arena, Lilja Elementary School, and West Natick Fire Station.





**2017**

Natick passes a Solar Bylaw and is designated as a SolSmart Gold community, the highest SolSmart designation offered by the SolSmart Foundation and the U.S. Department of Energy. Natick also begins sourcing more renewable energy to support its electricity aggregation program.

**2019**

Natick works with the Metropolitan Area Planning Council (MAPC) and the communities of Arlington and Melrose to develop a publicly available, community-wide GHG inventory tool and completes its first community-wide GHG inventory.

**2020**

The Natick Sustainability Committee partners with community members to draft its first net zero action plan, with the goal of finalizing the plan in 2021.

**2014**

Natick achieves a 20% reduction in energy use from school and municipal operations. The Town also becomes the first MetroWest community to hire a Sustainability Coordinator.

Natick adds its first electric car to the municipal fleet and begins installing public electric vehicle charging stations.

**2015**

Natick runs the state's most successful Solarize Mass campaign as measured in terms of capacity. The program adds more than one megawatt of new solar, across 156 properties in the community.

**2016**



Natick Fall Town Meeting passes a non-binding resolution to adopt a goal to achieve net zero greenhouse gas emissions by 2050 and receives a grant from the MA Executive Office of Energy and Environmental Affairs to develop a net zero plan. The Town also becomes a founding member of the Municipal Vulnerability Preparedness Program.

**2018**



## DEVELOPING THIS PLAN

Natick's Net Zero Action Plan was developed by the Town of Natick, in a collaborative effort between municipal staff, committee members, residents, and businesses, with support from the Metropolitan Area Planning Council (MAPC).

The Natick Sustainability Committee, a seven-member group appointed by the Select Board, served as the primary advisor in developing the Plan. Elected boards and committees, including the Select Board, Planning Board, School Committee, Board of Health, Conservation Commission, Economic Development Committee, and Transportation Advisory Committee were engaged throughout 2019 and 2020. These groups were provided with updates during public meetings and via email regarding the plan's development. Select members attended a focus group to assess proposed actions in October 2020. Members of these groups also received draft documents in January 2021 and were invited to provide input in finalizing the Plan.

The strategies and actions identified in the Plan were primarily informed by research MAPC completed on other communities' climate action plans and align with MAPC's Municipal Net Zero Playbook, a regional guide for municipalities seeking to reduce emissions. The final priority actions included reflect Natick's net zero journey, community feedback, and the major sources of GHG emissions in Natick.

## ENGAGING THE COMMUNITY

The Town sought to engage the public in drafting and finalizing the Net Zero Action Plan. Initially, the planning team anticipated engaging residents in community events and focus groups. Unfortunately, the COVID-19 pandemic did not allow for in-person gatherings. However, the citizenry of Natick was able to learn about and participate in the development of the Plan in other, meaningful ways.

### Residents

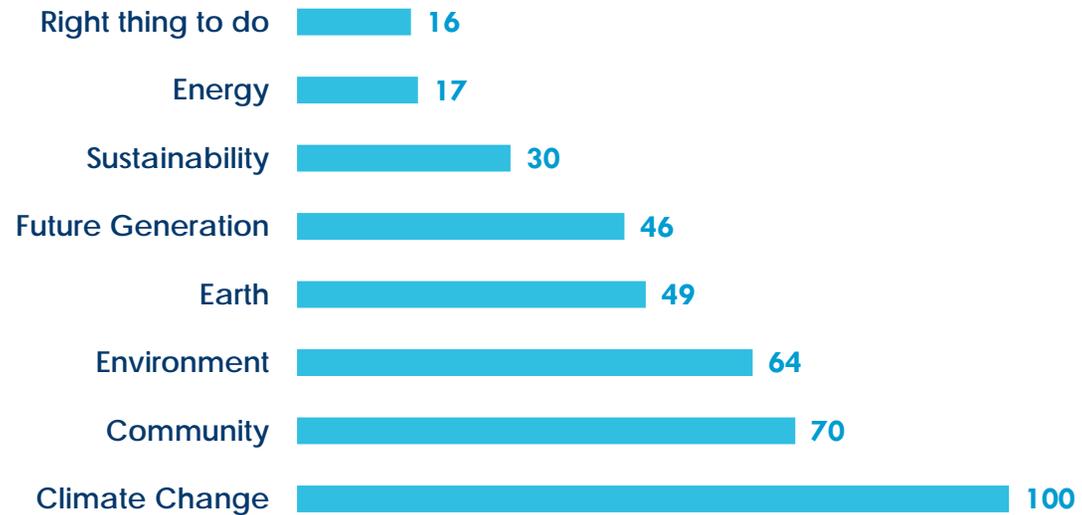
Approximately 3,000 residents receive regular emails from Natick's Sustainability Coordinator regarding local climate initiatives. Subscribers were provided with

frequent updates on net zero through 2019 and 2020.

In 2019, the Sustainability Committee also sought to engage residents at the Town's annual Natick Days Festival. During the event, Committee members challenged residents to sign up to be Net Zero Heroes and shared information about the net zero planning process.

### Business Community

The Sustainability Committee worked to engage local businesses in the net zero planning process. In early 2020, the Committee presented findings from the Town's GHG inventory to small businesses as part of a Natick Center Cultural District (NCCD) meeting. NCCD also received regular updates on the net zero planning



SOURCE: NATICK'S 2020 COMMUNITY INPUT SURVEY, CONTENT ANALYSIS OF "WHY ARE YOU INTERESTED IN NATICK'S NET ZERO PLAN?" RESPONSE THEMES

process and was a partner in inviting Natick Center businesses to participate in the community survey and the Online Open House.

### Community Survey

In February 2020, the Natick community was invited to participate in an online survey that asked: how they wanted to participate in the net zero planning process, why they were interested in it, what concerns they had, and what strategies they thought Natick should prioritize. More than 350 people completed the survey.

### Virtual Earth Day

In lieu of an in-person event, Natick held a virtual Earth Day festival in April 2020, which included a 'tent talk' on the Town's GHG inventory and net zero planning process.

### Online Open House

More than 300 Natick residents participated in a Net Zero Online Open House in October 2020. Participants reviewed each of the actions presented in the Plan and shared their feedback through a series of survey questions. On average, 89% of participants felt either positive or very positive about the actions presented.

### Future Community Engagement

The success of Natick's net zero goal is dependent on the support of residents and business owners. As the Town seeks to advance this goal, it will engage the public in the education and implementation of the net zero actions identified in the Plan.



PHOTO ABOVE: RESIDENT BETH PULZETTI (WITH DR. SMOG) SIGNS UP TO BE A NET ZERO HERO AT 2019 NATICK DAYS FESTIVAL

## Dear 2020 Self,

"I can't wait for you to see what this community has created by coming together to make change. Our town is now safe for walkers and bikers in all our neighborhoods, solar panels are integrated into the rooftops of every town building and most homes, and our streets are quieter and less congested with traffic...You're going to love it here!"



"I know it took planning and determination, but it worked. Natick is Net Zero. Our grid is completely green. Our homes and businesses are efficient and healthy. The town is connected by an ever-growing network of walking and biking trails and green spaces. Combined with the free electrical town shuttles, you never have to drive anywhere."



"Reflecting on the last three decades, I believe there were three elements that were foundational to Natick's contribution to the successful mitigation of climate change. First was having an engaged and intentional community of forward-thinking, action-oriented residents and businesses. Second was having local leadership - both in town as well as at the State-level - that was committed to prioritizing the fight against climate change. Finally, the third key element was the community's willingness to continuously evaluate, embrace, adopt and invest in new technologies - some that didn't even exist back in 2020!"



## OUR EMISSIONS IN NATICK

Every day, Natick residents and businesses rely on fossil fuels to heat and cool our homes, keep the lights on, power our electronics and drive our cars. In doing so, we release **greenhouse gas emissions**.

In 2020, Town staff and volunteers worked with MAPC to identify the primary sources of emissions across our community in 2017, the most recent year for which complete data were available, and to calculate a baseline for future emission reductions. The team followed the *Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC)*, an internationally recognized greenhouse gas accounting and reporting standard (see the methodology report for details on the data sources and methods).<sup>1</sup> Neighboring communities, including Ashland, Framingham, Sherborn, Medfield, and Westborough have completed GHG inventories using the same tool and methodology.

### What are the sources of emissions in Natick?

In Natick, buildings are the largest source of emissions (65%). On-road transportation is another major source of emissions (35%). Natick's solid waste and wastewater account for less than 1% of our community's total emissions.

**IN 2017, OUR TOWN WAS RESPONSIBLE FOR EMITTING**

**326,297**  
**METRIC TONS OF CO<sub>2</sub>e**

**in NATICK THAT WORKS OUT TO**

**9**  
**METRIC TONS OF CO<sub>2</sub>e per resident**

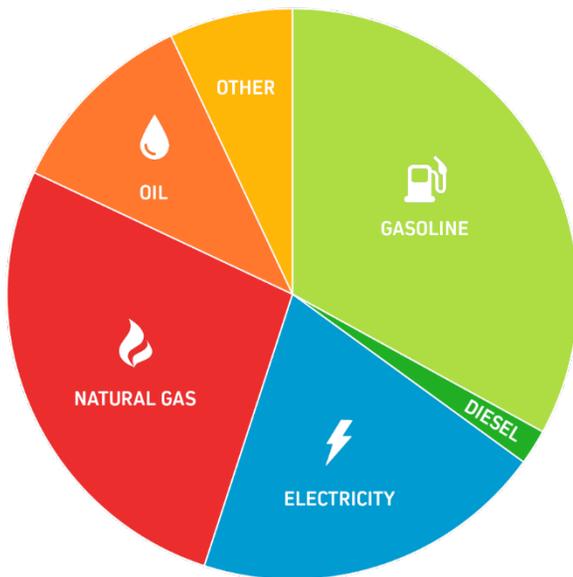


**OUR EMISSIONS BREAKDOWN**



## Which fuels generated the most emissions in Natick?

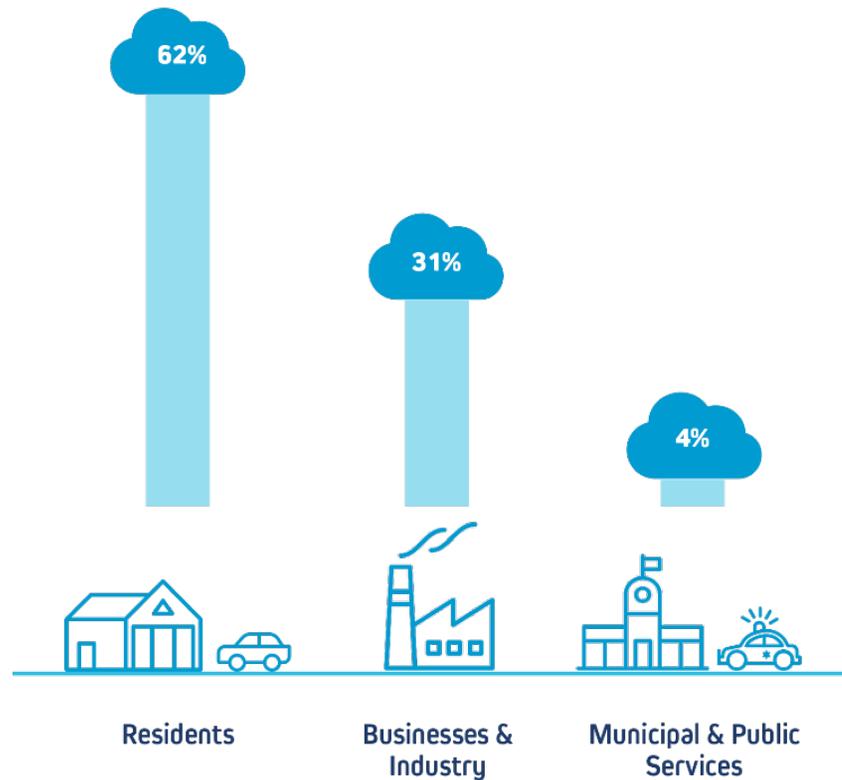
The types of fuel our homes, businesses, and vehicles rely on every day generate different amounts of emissions in our community. Our 2017 inventory of greenhouse gas emissions shows that the combustion of fossil fuels, such as oil, natural gas, diesel, and gasoline, was responsible for over 73 percent of our community-wide emissions.



SOURCE: NATICK'S 2017 GREENHOUSE GAS INVENTORY

## Who is responsible for emissions in Natick?

As a community, the actions and choices we make each day contribute to the amount of emissions we are responsible for. In Natick, nearly two-thirds of emissions come from residents' homes and vehicles and another third comes from businesses and industry in Natick.



SOURCE: NATICK'S 2017 GREENHOUSE GAS INVENTORY

## What emissions are not included in the 2017 GHG inventory?

While the 2017 GHG inventory covers a majority of the largest sources of emissions in Natick, there are a few gaps in what is covered by the analysis. One area that is not addressed is the carbon capture and storage benefits of the Town's natural assets (e.g., trees, wetlands, and soils). In 2021, Natick will be working with MAPC on a new project that seeks to address this side of the emissions equation.

# Getting to Net Zero

Natick has committed to reaching net zero greenhouse gas (GHG) pollution by 2050. What exactly does this mean for our community? Why does our local goal matter? How will we get there and what do we need to do to reach that goal? This Net Zero Action Plan aims to answer these questions and to create a roadmap for our town to reach net zero by 2050.

## WHAT DOES “NET ZERO” MEAN?

Reaching “net zero” means that our community will reduce its GHG emissions as much as possible and remove or offset any remaining emissions by 2050 and ideally sooner. This will require a major shift in the way we heat and cool our homes, how we get around, and where our energy comes from. It also presents a huge opportunity to change our community for the better. By achieving net zero GHG emissions, we can also have cleaner air, healthier people, and a more equitable and prosperous community for everyone. **Sounds pretty good, doesn't it?**

## From this...



## ...to this!



## WHY NET ZERO?

Climate scientists have made it clear that we need to reduce global GHG emissions to net zero by 2050, or sooner, to avoid catastrophic climate change.

We know that the planet has already warmed by about 1° Celsius since we started burning fossil fuels like coal, oil, and gas in the mid-1800s.<sup>ii</sup> We also know that if we can keep warming below 1.5° Celsius, we can avoid the worst impacts of climate change like extreme floods, wildfires, and droughts.<sup>iii</sup>

We have a limited “carbon budget,” or amount of GHG pollution that we can afford to put into the air without passing 1.5° Celsius of warming. The longer we wait to start reducing our GHG pollution, the faster we use up our carbon budget and the less time we give ourselves to meet our goal.

We recognize climate change is a global problem and that many of the solutions are beyond our control. To reach our net zero goal, we will need help from global, federal, state, and regional policies that support our transition to clean energy, but we can lead at the local level. Our net zero roadmap highlights the strategies that we can deploy locally to accelerate this transition over the next five years.

## GETTING THERE EQUITABLY

Climate change is an existential challenge, but it is also an opportunity to re-imagine Natick’s future, and to make that future both safe and equitable for all who live and work in our community. Massachusetts municipalities are increasingly undertaking climate mitigation and adaptation strategies and are starting to seek out ways in which to advance equity within those measures. By centering equity in this plan, we can build a future that not only is safer for all, but also allows everyone in Natick to thrive. An equitable net zero future must be our goal.

In equitable planning, we must be conscientious of the history of our region, the differences in how populations are able to respond to a changing climate, and the needs of residents. We recognize that the effects of climate change systemically impact Environmental Justice communities and other vulnerable populations inequitably. The comparatively negative health outcomes that people of color experience are one example. The inequities we see today will persist in the future if we do not act. Accordingly, it is essential to assess the potential social equity impacts of climate mitigation strategies. For our plan to be actionable and for our vision of the future to be equitable, we must center equity throughout the planning and implementation of our net zero strategies. An equitable net zero plan investigates the anticipated outcomes of its proposed actions on Environmental Justice communities and other vulnerable populations.

## HOW DO WE GET THERE?

A lot can change in 30 years and this plan is a starting point on our path to net zero that we will revisit and adjust course as we continue to move forward in the coming years. We know that we need to make our buildings and vehicles, the two major sources of emissions in our community, much cleaner and more efficient. To reach our net zero goal, our community will need to work towards six core transitions.



### Green the grid with renewable energy sources.

Renewable energy comes from endlessly sustainable sources such as wind, the sun's heat or light, or the earth beneath our feet. Our electricity is getting greener all the time thanks to state and local policies, but natural gas still provides most of our electricity in New England.



### Produce more renewable energy locally.

Generating renewable energy locally avoids the expensive and inefficient long-distance transmission of power, and small-scale clean energy projects, such as rooftop solar PV, can provide new power sources more quickly than large developments.



### Make our homes and buildings super-efficient.

Making existing buildings super-efficient and constructing new buildings to high efficiency standards will reduce emissions and make energy bills more affordable for everyone.



### Electrify heating and cooking equipment.

Switching to electric heating and cooking appliances like air-source heat pumps and induction cooktops immediately reduces carbon emissions and improves indoor air quality, and these benefits only get better as our electric grid gets cleaner.



### Make walking, biking, and public transit the best way to get around.

By designing greener and people-centered streets and sidewalks, we can reduce emissions and air pollution while also providing opportunities for residents to be healthier and more connected to their community.



### Electrify cars, trucks, buses, trains, and other ways we get around.

Electric vehicles are cleaner, cheaper to run over time, and require less maintenance. Providing access to charging stations and creating electric transportation options for those who do not own vehicles are essential to this transition.

# Net Zero Action Roadmap

The Town of Natick developed this Net Zero Action Roadmap to inform our next five years of action to reduce greenhouse gas emissions across all sectors of the Town's economy.

The journey on the road to Net Zero in Natick will be a long one, but we know where we need to be by 2050 to achieve this goal and where we are today.

Informed by engagement with Natick's Sustainability Committee members, municipal staff, and the public, the following actions in Natick's Net Zero Action Roadmap have been prioritized to identify immediate next steps for the Town to implement based on potential for impact.

Each section of the roadmap contains actions that are highlighted as PRIORITY ACTIONS, followed by suggested additional measures for the Town to implement on its journey to net zero. All the actions contribute the core strategies and goals of the Net Zero Action Roadmap.

## NAVIGATING THE ROADMAP

For each priority action identified the Net Zero Action Roadmap, there are a few important indicators identified to support the Town's implementation of the plan over the next five years.

### Potential Co-Benefits

This section identifies the high-level potential for the types of benefits, in addition to greenhouse gas emissions reductions, our community may experience through effective implementation of the action.



**PUBLIC HEALTH BENEFITS**



**ECONOMIC BENEFITS**



**ENERGY SYSTEM BENEFITS**



**ENVIRONMENTAL BENEFITS**

### Equity Considerations

This section describes how the Town will work to ensure that implementation of the action does not cause undue burden on historically disadvantaged populations in Natick and actively works to enable direct benefits and co-benefits for these populations.

### Measures of Success

This section identifies the key performance indicators the Town intends to track throughout implementation of the roadmap and the particular action. Some measures may be data-driven, while others may indicate key achievements to work toward.

### Partners for Implementation

This section calls out those members within municipal operations and the broader community-at-large that will be critical to successful implementation of the action.

Across the six main strategies of the Town’s Net Zero Action Plan, there are milestones and goals to strive toward along the way.

This roadmap milestone chart is meant to provide a high-level understanding of the direction the actions in this five-year plan set us on the pathway toward as a community.

ROADMAP MILESTONES	TODAY	2030	2050	
 <p><b>Green the grid with renewable energy sources.</b></p>	<p>Our electricity supply comes from 26% carbon-free sources.<sup>iv</sup></p>	<p>Our electricity supply comes from 100% carbon-free sources.</p>		
 <p><b>Produce more renewable energy locally</b></p>	<p>There are 15.5 megawatts of installed solar capacity in Natick.</p>	<p>Half of all viable roofs in Natick have solar.</p>	<p>Maximize the installation of solar capacity in Natick.</p>	
 <p><b>Make our homes and buildings super-efficient.</b></p>	<p>All new buildings built to the state stretch energy code. 25% of residents participate in the MassSave Program<sup>v</sup></p>	<p>All new buildings are built to net zero standards and nearly half of all homes have been retrofitted.</p>	<p>Nearly all existing homes and businesses in Natick have been retrofitted.</p>	
 <p><b>Electrify heating and cooking equipment.</b></p>	<p>Approximately 21% of homes rely on electric heating.<sup>vi</sup></p>	<p>Every new heating and cooking system installed is electric.</p>	<p>Nearly all homes and businesses rely on electric heating.</p>	
 <p><b>Make walking, biking, and public transit the best way to get around.</b></p>	<p>Approximately 17% of residents walk, bike, telecommute or take public transit to work.<sup>vii</sup></p>	<p>All new developments are accessible by biking walking or connected to public transit.</p>	<p>Nearly every Natick home and business is accessible by biking or walking or connected to public transit.</p>	
 <p><b>Electrify cars, trucks, buses, trains, and other ways we get around.</b></p>	<p>Less than 0.1% of vehicles registered in Natick are zero emissions.<sup>viii</sup></p>	<p>Nearly all new vehicle purchases are zero emissions (where feasible).</p>	<p>Nearly all passenger and commercial vehicles registered in Natick are zero emissions.</p>	

# ROADMAP ACTION SUMMARY



WHERE OUR ENERGY COMES FROM	1. Pursue 100% carbon-free electricity in Natick's aggregation by 2030.	●	●				
	2. Transition municipal electricity to 100% carbon-free electricity by 2030.	●	●				
	3. Change zoning to make it easier to install clean energy technology.		●	●	●		●
	4. Maximize clean energy technology on municipal and school properties.		●				
	5. Support state legislation and policies to decarbonize the region's electricity.	●	●				
	6. Advocate for the accelerated repair of natural gas leaks.	●					
	7. Partner with residents and businesses to increase local solar capacity.	●	●				
OUR HOMES AND BUSINESSES	8. Create an ongoing program to help home and small business owners reduce emissions.		●	●	●		●
	9. Require large, new commercial buildings to gradually achieve net zero by 2040.		●	●	●		
	10. Require large commercial building owners to report on and reduce energy use.		●	●			
	11. Adopt net zero standards for new public buildings and major renovations.		●	●	●		
	12. Support state legislation to establish a net zero stretch code.		●	●	●		●
	13. Require at least one climate-ready feature on all new or replaced roofs.		●				
	14. Opt into the state's commercial Property Assessed Clean Energy law.		●	●	●		
	15. Support training for Town staff, leaders, and developers on net zero buildings.		●	●	●		●
GETTING AROUND NATICK	16. Expand access to and better promote electric vehicle charging stations.						●
	17. Prioritize zero emissions mobility options in community planning.					●	●
	18. Pilot bike, electric car and ride share programs.					●	
	19. Adopt zero emission standards for the municipal fleet.						●
	20. Advocate for improvements and electrification of transit.					●	●
	21. Partner with local EV dealers to offer discounts and promote state rebates.						●
	22. Advocate for changes that are beneficial to EV owners and the electric grid.	●					●



# Where Our Energy Comes From

ROADMAP MILESTONES & ACTIONS

## WHERE OUR ENERGY COMES FROM

There is no path to achieving net zero GHG emissions without dramatically changing where our energy comes from and how we use it. The approach outlined in this section is at the heart of Natick's net zero plan and is reflected in many of the actions proposed in the Our Homes and Businesses and Getting Around Natick sections of this Plan.

In 2018, **96% of Massachusetts's energy use relied on fossil fuels.**<sup>ix</sup> These fuels are responsible for emitting greenhouse gases that contribute to climate change and are burned to power use technologies that either run on electricity or directly combust fuels like oil, gasoline, natural gas, or biomass.

There is broad consensus that a path to zero-carbon electricity is possible by sourcing power from wind, solar, nuclear, hydro, geothermal, and minimal natural gas with carbon capture and sequestration. Combustion fuels are more difficult to

decarbonize, and the majority of city, state and nation-wide plans to reduce emissions focus on electrifying technologies that rely on combustion (e.g., moving from natural gas furnaces to heat pumps, from gas cars to electric cars, and from diesel generators to solar plus storage systems) to protect the climate. However, the success of this strategy depends on fully transitioning our electric grid to renewable sources of energy.

**How we power the electric grid is changing rapidly. In the last five years, Natick's reliance on renewables has increased by 20%, and the 55% of the community's**

## STRATEGIES / MILESTONES



**Green the grid with renewable energy sources.**



**Produce more renewable energy locally.**

### 2030

**Our electricity supply comes from 100% carbon-free sources.**

Achieving this milestone ahead of 2050 will unlock the benefits of electrification and result in simultaneous reductions in building and vehicle emissions.

**Have of all viable roofs in Natick have solar.**

At this milestone, every new roof will be installed with climate features, including solar, where viable. Existing buildings, including homes and businesses, will continue to add solar to their properties.

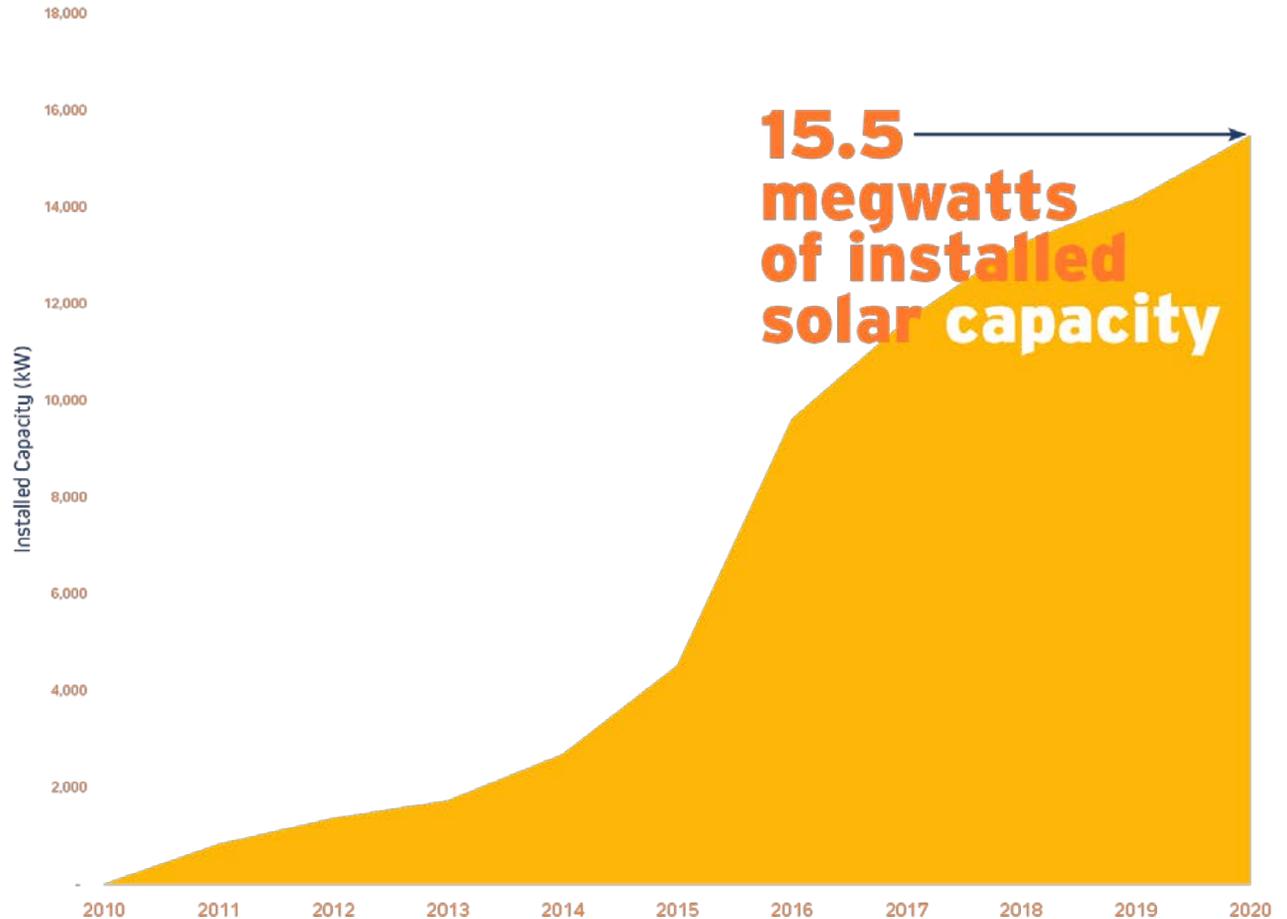
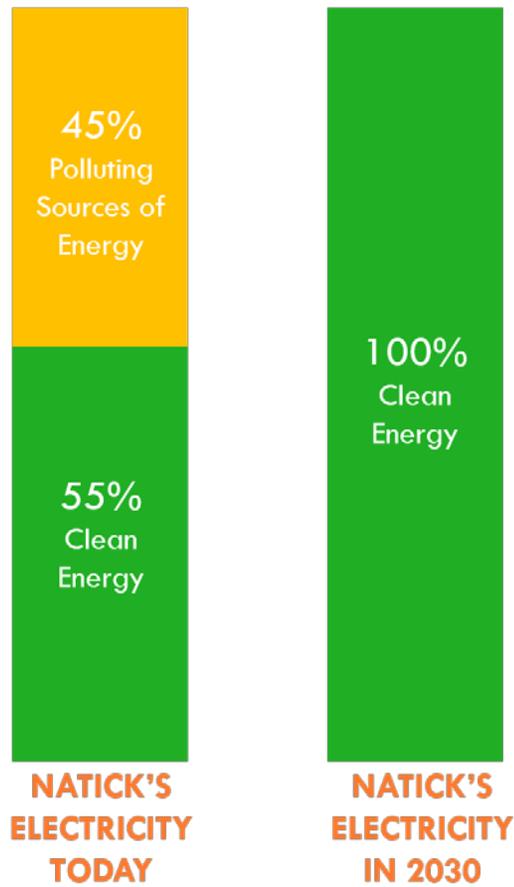
### 2050

**Natick is at full solar capacity; every viable roof and parking lot has solar.**

At this milestone, solar will be a standard component of nearly every new development. 60% or more of Natick's rooftops will have solar.

**electricity comes from carbon-free sources.**

Our electricity is getting cleaner and greener all the time thanks to the recent growth of renewable energy. However, natural gas still provides most of the electricity consumed in New England. State and local policies, like the Massachusetts Renewable Portfolio Standard (RPS) and local electricity aggregation programs, can speed up the process of transitioning to a carbon-free grid.



SOURCE: MASSACHUSETTS DEPARTMENT OF ENERGY RESOURCES, SREC I, SREC II, AND SMART QUALIFIED PROJECT DATA IN NATICK

Increasing local solar capacity is also important and can create a variety of benefits. Today Natick's solar capacity is spread across **more than 800 local properties** and tools like Google Project Sunroof indicate the has more capacity.

Clean energy enhances a community's resilience, supports area jobs, and delivers

cost savings. A 2014 study found that 1 megawatt (MW) of locally-owned solar can mean as much as \$5.7 million in lifetime economic benefits for a community (**Natick's installed solar capacity was 15.5 MW in 2020 – or \$88 million in potential benefits**).<sup>x</sup> Imagine what tripling those benefits would mean for the local economy!

## 1. Pursue 100% carbon-free electricity in the aggregation by 2030.

*The Town of Natick will gradually increase the amount of renewable energy in Natick Community Choice Aggregation (CCA) program so the default level is 100% carbon-free by 2030, and then maintain that outcome permanently.*

Achieving 100% carbon-free electricity is critical to not only reducing Natick's baseline emissions from electricity consumption, but also because the electrification of cars and heating and cooking equipment is a key component of Natick's Net Zero Action Roadmap. To fully realize the benefits of electrification, Natick should seek to pursue 100% clean electricity in the next decade (and not wait until 2050).

In the absence of a 100% clean electricity requirement at the State level (see Action 20), Natick can provide clean electricity to its residents and businesses its electricity aggregation program.

In 2021, 55% of the electricity provide by Natick's aggregation program's default offering comes from clean energy sources. 42% of this power is sourced by state mandate: 22% through the Massachusetts Clean Energy Standard, which includes solar, wind and hydro, and 20% through the Clean Energy Existing Standard, which is sourced primarily by older nuclear plants.

The remaining 13% reflects an additional requirement set by Natick's electricity aggregation program that includes only renewable energy. As part of the program, the Town also provides customers with the ability to "opt up" and purchase 100% renewable electricity or "opt down" and purchase the state minimum.

While Natick's requirements for additional renewable electricity are impactful, they are not unprecedented, nor are they as aggressive as requirements imposed by other communities. The cities and towns of Brookline, Newton, Lexington, Lincoln, Sharon, Westborough, and Worcester require 20% - 62% additional renewable energy in their aggregation programs.

Natick can set a path for gradually increasing its electricity supply to 100% clean electricity. In 2020, the Select Board agreed to increase the program's renewable requirements by 3% annually in 2021 and 2022. Moving forward, the Natick Select Board is considering a policy to institutionalize this approach for future contracts, which, in tandem with the MA RPS, would set Natick on a path to gradually achieve 100% clean electricity by 2030.

As a next step, the Sustainability Committee will seek to revisit the proposed policy with the Select Board and request a vote of support by the end of 2021.

### Potential Co-Benefits



Increased stability in electricity prices and less variation by season. Investments in renewable energy also create new, local jobs.



Greater percentage of renewable electricity than is required by state law.



Increased supply of local renewable energy could lead to improved air equality.

### Equity Considerations

Pay attention to the cost of participating in the aggregation compared to utility electricity costs and provide an optional rate that is competitive with these prices.

Partner with trusted community organizations on messaging rate options and conducting outreach.

### Partners for Implementation

Select Board, Energy Broker, electricity supply vendor, Sustainability Committee, Department of Public Utilities, and Department of Energy Resources.

### Measures of Success

- Number of customers in the green municipal aggregation.
- Number of customers that opt-up to 100%.
- Percentage of additional renewable energy purchased.

## 2. Transition municipal electricity supply to 100% renewable by 2030.

*The Town of Natick will lead by example by adjusting its electricity supply contracts to increase the amount of renewable energy sourced for its electricity needs, with a goal of reaching 100% renewable energy sources by 2030.*

Large electricity customers, including the Town of Natick, often have separate electricity supply agreements and do not participate in community electricity aggregations.

Natick should progressively increase the amount of renewable electricity in its municipal supply contracts until reaching 100% clean electricity for municipal operations by 2030. While this would result in a slight cost increase, 90% of residents who participated in the Net Zero Online Open House reported they would feel comfortable with the Town paying a small

premium for renewable energy, with most being comfortable with a 6-10% premium.

Natick is currently on a fixed price energy supply contract that ends in December 2022. In the years leading up to this contract end date, the Town will investigate the best rates for a substantial increase in renewable electricity supply.

Similar to Natick's aggregation program, the Town will seek to prioritize purchases of MA Class I RECs to support local (New England) renewable energy development. However, the Town will also investigate the feasibility of creating new, on-site renewable electricity generation (e.g., behind-the-meter solar at Town facilities) as well as Power Purchase Agreements to help meet this 2030 goal. At all points of implementing this action, the Town will consider cost impacts to taxpayers in Natick.

### Potential Co-Benefits



Increased stability in electricity prices and less variation by season.



Greater percentage of renewable electricity than is required by state law.

### Equity Considerations

Provide opportunities for community feedback on the policy to promote greater transparency and community involvement in lead by example efforts.

### Partners for Implementation

Select Board, Finance Department, Facilities Management Department, and energy supply provider.

### Measures of Success

- Percentage of electricity sourced by renewable energy.
- Percentage of municipal operations supplied by on-site carbon-free electricity.

### 3. Change zoning to make it easier to install clean energy technology.

*The Town of Natick will encourage and reduce barriers to clean energy technology, such as heat pumps, battery storage, electric vehicle charging stations, white roofs, insulation, and more.*

Because these technologies can significantly increase the energy efficiency of a structure, allow for a structure to avoid on site combustion or to source GHG emissions-free energy, or to store energy on site, Natick should – at a minimum – work to allow their installation by-right.

A simple update to the Zoning Bylaw that names the technology, acknowledges that it is permitted by-right and clarifies height and setback requirements is a good place to start. The Town has experience revising its zoning in this respect with regards to solar. In 2017, the Town passed a solar zoning bylaw that made installing rooftop solar a by-right action, meaning any property owner could install rooftop solar without requiring a special review by the Planning Board (note, electrical and building permits are still required).

The Town can take these efforts even farther by exploring opportunities to require clean

energy technologies, where appropriate, in the Zoning Bylaw. This could include requiring EV charging stations for new commercial and large multi-family buildings (see Action 15) or climate-ready features on new roofs (see Action 13).

In other cases, a closer look at the unintended consequences of Natick’s existing zoning regulations may be necessary. For example, home energy efficiency projects, such as the addition of insulation wraps or the construction of a vestibule, could face barriers if they extend into a setback or exceed height requirements. As such, the Zoning Bylaw should be reviewed and updated to ensure such projects are possible.

As a next step, the Town will work to ensure key net zero terms and technologies are, at minimum, defined in the Town’s Zoning Bylaws, and permitted by-right. The Town will also identify appropriate opportunities to require clean energy technology and review existing regulations for potential barriers.

#### Potential Co-Benefits



Improved indoor air quality, lighting, and comfort.



Reduced costs for developers in pursuing clean energy technology.

Reduced energy costs from installation of efficient technology and on-site generation.



Improved building resiliency during outages with combined solar and storage.

#### Equity Considerations

Consider cost impacts to affordable housing developments when requiring clean energy technology.

#### Partners for Implementation

Planning Department, Zoning Board, Planning Board, Building Department, developers, and building professionals.

#### Measures of Success

- Number of permits issued for clean energy technology (by technology type).
- Reduced emissions from residential and commercial buildings.
- Number of kilowatts of non-municipally owned solar installed.

## 4. Maximize clean energy technology on municipal and school properties.

*The Town of Natick will seek out opportunities to pair existing solar with storage to maximize resiliency and explore opportunities to retrofit municipal heating and cooling systems to ground- or air-source heat pumps.*

Under the Solar Renewable Energy Credit (SREC) I and II and Solar Massachusetts Renewable Target (SMART) programs, Natick installed nine solar projects as Power Purchase Agreements on municipal property with more than 2 megawatts (MW) of solar capacity.

In 2020, the Town expects to install its first solar plus battery storage system at the new Kennedy Middle School and add solar to the roof of the West Natick Fire Station.

Building on this experience, the Town will explore opportunities to add new solar canopies and pair existing solar arrays with storage to maximize resiliency benefits at critical publicly-owned facilities. This will include evaluating sites including Wilson Middle School, the Town's freshwater system, and Natick Center municipal complex.



PHOTO ABOVE: RENDERING OF NEW KENNEDY MIDDLE SCHOOL. THE SCHOOL WILL FEATURE A 403 kW AC SOLAR PV CANOPY AND ROOFTOP SYSTEM AND A 223 kW AC BATTERY STORAGE SYSTEM. COMBINED THE SYSTEMS ARE EXPECTED TO SAVE NATICK PUBLIC SCHOOLS \$1.7 MILLION ON ENERGY COSTS OVER THEIR 20 YEAR LIFE.

### Potential Co-Benefits



Improved indoor air quality from the elimination of fossil fuel combustion.



Reduced energy costs from efficiency and on-site energy generation.



Improved building resiliency during outages with combined solar and storage.

### Equity Considerations

Provide opportunities for community feedback on the policy to promote greater transparency and community involvement in lead by example efforts.

### Partners for Implementation

Eversource, MassCEC, Ameresco, Facilities Management Department, and Public Works Department.

### Measures of Success

- Percentage of municipal operations supplied by on-site carbon-free electricity.
- Reduction in emissions from municipal facilities.
- Number of buildings retrofit with clean heating and cooling systems.

## ADDITIONAL MEASURES

### 5. Support state legislation and policies to decarbonize the region's electricity supply.

Natick will advocate for state policies that increase the Renewable Portfolio Standard (RPS) and promote incentives specifically for low to moderate income residents such as low- and moderate-income (LMI) solar incentives, and programs and procurements that further decarbonize the region's energy supply, such as offshore wind development. The current RPS puts the state on track to reach 35% renewable energy by 2030. In light of a study from the Acadia Center on energy needs for New England, the Town will advocate for the state to achieve a goal of 45% renewable generation by 2030 (equivalent to a 3% increase per year) and 100% by no later than 2050.

### 6. Advocate for the accelerated repair of natural gas leaks.

Repairing gas leaks improves residents' health, makes the gas distribution network more efficient, and helps to reduce GHG emissions. Natick will advocate for detection and mitigation of gas leaks and work to expedite the repair of local leaks.

To facilitate the repair of gas leaks, The Town will coordinate information and data sharing with Eversource and will continue to work with Eversource to see where priorities for gas leak repair and street repair overlap and explore opportunities to develop a shared schedule to complete multiple repairs in the same street opening and re-pavement. This action could also include consideration of ways to expedite permitting for these repairs.

Finally, Natick will seek to develop a MetroWest Multi-Town Gas Leaks Initiative, working with communities throughout the region to accelerate leak repair by improving data sharing, communication, and coordination between municipalities and Eversource.

### 7. Partner with residents and businesses to increase local renewable energy capacity.

Natick homes and businesses have the capacity to produce more renewable energy – and to produce benefits to the local community.

Natick will work with residents and business owners seek to support the installation of rooftop, parking, and community solar projects. As outlined in Action 8, solar will be a core component of an ongoing program Natick creates to help home and small business owners reduce their emissions and reap the economic benefits of installing solar.



# Our Homes and Businesses

ROADMAP MILESTONES & ACTIONS

## OUR HOMES AND BUSINESSES

Reducing emissions from our homes and buildings will be one of the most challenging aspects of achieving net zero. Progress will depend on achieving carbon-free electricity, converting as many building components to electricity as possible, and increasing energy efficiency dramatically.

In Natick, buildings – including offices, homes, and retail stores – emit **nearly two-thirds of our GHG emissions** and use more than 99% of our electricity.

**Most buildings waste energy needlessly.** On average, 30% of the energy used in commercial buildings and 45% of the energy used in residential homes is wasted. Energy efficiency is the single largest way to eliminate this waste, reduce emissions, and save money.

Improvements in HVAC systems, stronger building envelope insulation, and

technologies like heat pumps, LED lightbulbs, and efficient appliances are at the core of realizing buildings' energy efficiency potential, and Natick will seek to support deep energy retrofits in commercial buildings and residential homes.

**But efficiency improvements alone will not result in net zero. Electrification of heating and cooking is critical.**

In 2017, **37 percent of building-related emissions** in Natick resulted from the use of heating fuels like natural gas and fuel oil.

## STRATEGIES / MILESTONES



**Make our homes and buildings super-efficient.**



**Electrify heating and cooking equipment.**

### 2030

**All new buildings are built to net zero standards and nearly half of all homes have been retrofitted.**

At this milestone, every new building will be built with the future in mind and 40% of homes and businesses in Natick will have undergone a deep energy retrofit with the support of the proposed programs in this Plan. Natick will also have requirements in place for new public buildings to be built to net zero standards.

**Every new heating and cooking system installed is electric.**

At this milestone, our homes and businesses will also be powered by 100% carbon-free sources. Additionally, the number of homes and businesses relying on electric heating will have doubled (from 21% to 40%).

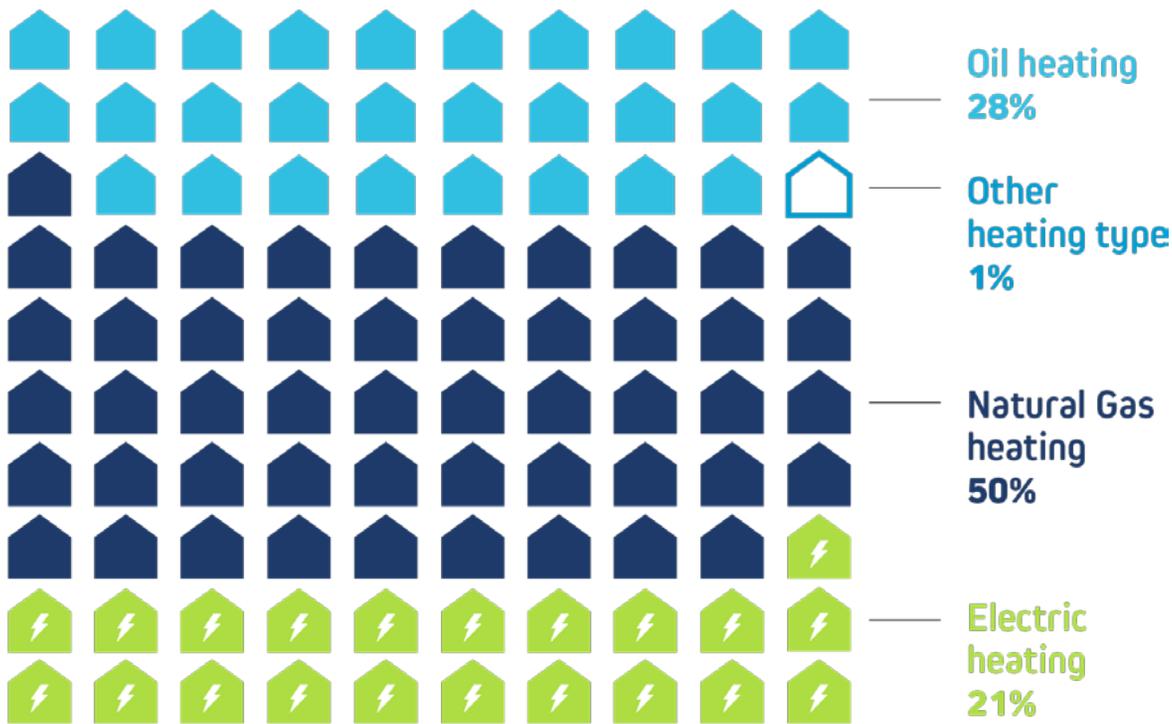
### 2050

**Nearly all existing homes and businesses in Natick have been retrofitted.**

At this milestone, even the most challenging building types have been retrofit to run as high performance as possible. A subset of buildings has even achieved “net positive” status, balancing out the emissions from buildings that are unable to reduce their emissions further.

**Nearly all homes and businesses rely on electric heating.**

At this milestones, all feasible building types have transitioned to rely on electricity to meet their energy needs and are reaping the operational cost savings as electricity has become the most affordable energy source.



HOW NATICK HOMES ARE HEATED IN 2017, SOURCE: AMERICAN COMMUNITY SURVEY 2013-2017 ESTIMATES

**Ground source heat pumps** An energy-efficient heating system which uses energy from the earth to efficiently heat or cool a building. These systems use the temperature difference between the earth’s ground temperature and a building’s indoor air to provide space heating or cooling, depending on the season.

**Air source heat pumps** An energy-efficient heating system which uses electricity to transfer heat from outside to inside a building, or vice versa. Manufacturers have developed cold climate air source heat pumps that provide efficient heating and cooling for homes and businesses in the northeast.

**Induction cooktops** A type of electric cooktop with electromagnetic coils beneath a ceramic glass surface that transfers energy directly into metal objects. By heating the metal cookware directly, these appliances cook much faster without making the cooktop hot to the touch.

Switching to highly efficient electric heating and cooking appliances like ground-source and air-source heat pumps and induction cooktops immediately reduces carbon emissions and improves indoor air quality, and these benefits only get better as our electric grid gets cleaner.

Ultimately, the Town will need to ensure all of Natick’s 12,687 buildings are net zero capable by 2050 – meaning they run on 100% clean electricity, procured or generated on-site. Reaching that goal would require converting a little more than one building every day between now (2021) and 2050 – or more than 420 buildings a

year for 30 years. Realistically, the majority of conversions will happen as building components age and are replaced over time.

**Capitalizing on the timing of planned/ needed system replacements will be of the essence** as the average home heating system will be replaced once or twice over the next 30-year period, so **there will only be up to two chances to convert the heating system to a zero emissions technology.**

A subset of buildings will also undergo a significant renovation or be replaced with a new building in the next 30 years. For these buildings, it is important to ensure that they will be both allowed and encouraged to achieve the highest possible energy and emissions reductions because those buildings may not undergo significant re-building for another 50 to 100 years.

## 8. Create an ongoing program to help home and small business owners reduce emissions.

*The Town of Natick will create an ongoing program to help home and small business owners complete deep energy retrofits and convert to all electric, energy-efficient heating, cooling, and cooking equipment and appliances.*

**Residential homes represent 31% of Natick's total GHG emissions.** Partnering with homeowners to reduce emissions is critical to achieving net zero in Natick.

In the Net Zero Online Open House, residents reported a lack of information, confusion over costs, and difficulty identifying reputable vendors as barriers to advancing clean energy in their homes. Education, support, and incentives are needed, and Natick will build on the successful framework it deployed during its 2012 and 2016 Solarize campaigns to create an ongoing program that includes:

- A website with key information about how and why to electrify and make a home or business energy efficient, with case studies from residents
- Access to a community "efficiency and electrification coach" advisory service, with coaches who will help participants evaluate their options
- Regular events and communications to residents promoting solutions

- Published equipment and installation prices to create price transparency and more competitive prices
- A list of qualified installers the Town recommends working with
- Special promotions with bulk-discounts for different technology
- Heavily discounted appliance and HVAC pricing from participating contractors and manufacturers

Recognizing the potential for strength – and cost savings - in numbers, Natick will seek to partner with MetroWest communities to develop a regional energy efficiency and electrification program for home and business owners and will seek funding to support these efforts.

To jumpstart this effort, Natick will partner with Ashland, Framingham, and Holliston in 2021 on a short-term solar and clean heat campaign and will use this initiative as a learning opportunity to inform the proposed regional program.

### Potential Co-Benefits



Improved indoor air quality and occupant comfort from efficiency and weatherization.



Increased value of the building stock and reduced energy costs.

### Equity Considerations

Target outreach to renters, landlords, residents who speak languages other than English, and low- and moderate-income residents. Partner with trusted community organizations for more effective engagement of residents.

### Partners for Implementation

Neighboring communities, Eversource, Mass Save, MA Dept. of Energy Resources, and home performance contractors.

### Measures of Success

- Number of homes and businesses receiving energy efficiency retrofits.
- Number of homes converted from oil, propane, and/or electric resistance heating systems to clean heating and cooling systems.

## 9. Require large, new commercial buildings to gradually achieve net zero by 2040.

*The Town of Natick will require large, new buildings subject to the Planning Board's review to demonstrate strong environmental performance and an ability to achieve net zero emissions by 2040.*

A subset of Natick's buildings will undergo a significant renovation or be replaced with a new building between now and 2050. The decisions made in their design and construction will impact GHG emissions for 50 to 100 years, and the Town will seek to ensure new buildings support its net zero goal. There are already many examples of net zero buildings in Massachusetts that were built with no additional upfront costs.

While the Town does not have the legal authority to establish its own municipal energy code (see Action 12), it may develop performance-based standards that require new buildings to achieve net zero emissions/energy use. These standards are not prescriptive, meaning developers can define their own compliance approach if the performance standards are achieved, and have been modeled by cities including Boston and Cambridge.

Natick is interested in applying similar standards to new construction and major renovations and will focus on projects that are already subject to the additional oversight required by a Special Permit. The majority of Natick's commercial buildings

are subject to a Special Permit, including those located along Route 9 and in Natick Center. In the past, the Planning Board has recommended Special Permit applicants pursue net zero features, such as solar canopies, electric vehicle charging stations, and other measures consistent with the Leadership in Energy and Environmental Design (LEED) certification program. In other communities, such as Newton, Planning Boards simply require buildings subject to their review to achieve specific levels of LEED certification.

The Sustainability Coordinator will work with the Community and Economic Development team, Planning Board, and local developers to design zoning regulations that require buildings subject to a Special Permit are designed and constructed to meet performance standards that support achieving net zero emissions by 2040. In some cases, this will mean new buildings are built to emit zero emissions from the start. In other cases, a developer would demonstrate how the building's design and construction would allow for the transition to net zero by 2040.

*Note, if Massachusetts does develop a net zero stretch code, as proposed by Bill S.2995, An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy, in January 2021, and it is adopted by the Town of Natick, this action may not be*

### Potential Co-Benefits



Reduced safety risk from combustion of fossil fuels.



Increased value of the building stock and reduced energy costs.

### Equity Considerations

Develop requirements in consultation with developers and building owners to avoid unintended impacts on energy bills.

### Partners for Implementation

Building developers, local businesses, and environmental advocates.

### Measures of Success

- Adoption of zoning regulations.
- Number of new buildings constructed that meet performance standards.

*necessary or a different approach may be warranted.*

## 10. Require large commercial building owners to report on energy use and complete emissions reduction projects.

*The Town of Natick will require large commercial building owners to (a) report on their annual energy usage (i.e., total electricity, natural gas, and fuel oil), and (b) complete projects that reduce their greenhouse gas emissions every five years.*

There is an adage in business that, “what gets measured gets managed, and what gets managed gets measured.”

Founded in this philosophy, most major cities, including Boston and Cambridge, require large commercial property owners to measure and report on their energy usage. Smaller, local communities, such as Westborough, have also included identified this action in their preliminary net zero plans.

The intent is to make building owners more aware of their energy usage and GHG emissions and opportunities to reduce both. In increasing awareness, the goal is to ensure all buildings are operating optimally, and, where necessary, are retrofitted to maximize efficiency.

In Natick, commercial buildings account for 31% of total emissions. Natick will seek to support emission reductions in this sector by requiring owners of buildings above a certain size to report their energy use annually and to demonstrate efforts to reduce their GHG emissions every five years through approved projects or energy audits. Town staff will work with the Building Commissioner and Planning Board to set a building size threshold at a level that will address a large portion of commercial GHG emissions.

The Town will also seek to provide technical assistance and connect building owners to funding, through programs such as the commercial MassSave offerings, that will support efficiency and clean energy projects.

The Town anticipates using ENERGY STAR Portfolio Manager or a similar software to oversee compliance. Note, while the reported data will be public, the Town will not seek to compare individual buildings or building owners. Instead, the data will be used to educate owners and encourage property-level improvements.

### Potential Co-Benefits



Improved indoor air quality, lighting, and comfort.



Reduced operational costs for building owners that implement energy efficiency measures.



Increased owner awareness of energy consumption in buildings.



Improved building resiliency to extreme weather conditions.

### Equity Considerations

Identify strategies to connect small businesses, who may not be included in the energy reporting policy, with energy efficiency incentives and associated benefits.

### Partners for Implementation

Select Board, large building owners, Eversource, EnergySTAR, Northeast Energy Efficiency Partnerships (NEEP), and Institute for Market Transformation (IMT).

### Measures of Success

- Adoption of the disclosure policy.
- Number of buildings that report annual energy use.
- Reduction of emissions from commercial buildings.

## 11. Adopt net zero standards for new public buildings and major renovations.

*The Town of Natick will lead by example by constructing, retrofitting, and maintaining Town-owned buildings to reduce energy use and maximize clean energy technology as much as feasible.*

**Municipal buildings are the largest source of GHG emissions from municipal operations (1.8% of total community-wide emissions),** and they also present a highly visible opportunity for the Town to demonstrate the feasibility and appeal of net zero buildings.

Natick has made tremendous progress in reducing energy use and GHG emissions from municipal buildings. Since becoming a Green Community in 2010, Natick has already reduced municipal energy use by about 20 percent through a range of measures. The Town has also installed nearly two megawatts of solar on public roofs. However, there are still many opportunities for further improvement.

In existing Town-owned buildings (including school and municipal buildings), Natick will complete energy audits and retro-commissioning projects that ensure existing

energy systems are operating efficiently, perform deep energy retrofits that maximize energy efficiency, and deploy renewable energy projects that provide as much on-site energy as possible.<sup>xi</sup>

For new construction, the Town will seek to adopt a net zero carbon standard for new public buildings and major renovations. There are many examples of this being done at the same cost as a traditional building or for a small upfront investment that is paid back over the life of the building. Natick's effort will be modeled after the leadership of other communities, such as Lexington and Wellesley, which have all recently built or are in the process of building net zero, fully electric or super-efficient new public buildings.

As part of this work, Town staff will engage members of recent building committees, such as the Kennedy Middle School, Natick High School, Community Senior Center and West Natick Fire Station Building Committees to seek input and develop achievable policies.

### Potential Co-Benefits



Improved indoor air quality, lighting, and comfort.



Reduced operational costs for new buildings.



Increased access to renewable energy through on-site generation.



Improved building resiliency to extreme weather conditions.

### Equity Considerations

Prioritize improvements to public buildings that are utilized by residents in our community.

### Partners for Implementation

Select Board, past and future Building Committees, Building and Facilities Management Departments.

### Measures of Success

- Adoption of net zero standard for public buildings.
- Number of energy conservation projects completed in public buildings.
- Reduction of emissions from public buildings.

## 12. Support state legislation to establish a net zero stretch code for all buildings in Natick.

A net zero stretch code would allow Natick and other communities to ensure new construction and major renovations will be built to net zero standards and helps ensure buildings are not locked into high emissions for years into the future.

Natick will continue to support legislation that establishes a net zero stretch code and the adoption of the net zero stretch code by the Board of Building Regulations and Standards (BBRS). Town staff will: meet with state legislators to discuss the net zero plan and the importance of a net zero stretch code; submit comments to the BBRS, attending and testifying at the May and November public hearings each year; and work to adopt the net zero stretch code once it is adopted by the BBRS.

## 13. Require at least one climate-ready feature on all new or replaced roofs.

The National Renewable Energy Laboratory estimates that 47% of Massachusetts' electricity needs can be generated by rooftop solar photovoltaic (PV), and Natick seeks to encourage developers to make use of frequently underutilized rooftop space.<sup>xii</sup> Ultimately, this will require allowing homeowners and developers discretion in selecting the best implementation for each building and location, and will include a list of possible compliance options, such as:

- a roof with solar PV or solar thermal,
- a blue roof that helps to manage stormwater,
- a green and/or a living roof that uses green infrastructure to store water, reduce heat, and improve air quality, or
- a white roof, which has a finishing surface that reflects light to reduce temperature.

## 14. Opt into the state's commercial Property Assessed Clean Energy (PACE) law.

Natick will explore opting into Property Assessed Clean Energy (PACE), a financing structure that allows businesses to borrow money for clean energy projects and make repayments through an assessment on their property tax bill.

Natick can opt into PACE by a majority vote of the Select Board. Before opting in, the Town should explore the degree of interest from the business community in this opportunity. PACE allows commercial property owners to make more comprehensive clean energy upgrades and finance them with longer payback periods. Check MassDevelopment's website for more information.



# Getting Around Natick

ROADMAP MILESTONES & ACTIONS

## GETTING AROUND NATICK

Electrifying our transportation system and giving people choices about how they get around are core to Natick's Net Zero Action Plan.

**Transportation accounts for more than a third of Natick's community-wide emissions,** with the vast majority (33%) coming from vehicles that run on gasoline.

Electric cars and buses are cleaner, cheaper to run over time, and require less maintenance than their gasoline and diesel counterparts, and, when paired with 100% carbon-free electricity, run on zero emissions.

**Between 2014 and 2020, more than 240 new plug-in hybrid electric and battery electric vehicles were purchased or leased by Natick residents<sup>xiii</sup>.** Such vehicles are

becoming more common and more affordable every year, and the range of makes and models available at comparable price points to gasoline- and diesel-powered vehicles is set to increase immensely in the next five years.

As these larger market forces gradually shift consumers to electric vehicles, **Natick can speed this transformation locally by expanding EV charging infrastructure, piloting electric car sharing programs, and leading by example with the Town's municipal fleet.**

## STRATEGIES / MILESTONES



**Make walking, biking, and public transit the best way to get around.**



**Electrify cars, trucks, buses, trains, and other ways we get around.**

### 2030

**All new developments are accessible by biking walking or connected to public transit.**

At this milestone, all new major developments will be sited, designed and constructed to support pedestrian and bike-friendly neighborhoods.

**Nearly all new vehicle purchases are zero emissions (where feasible).**

At this milestone, our electric vehicles are powered by 100% carbon-free sources. Residents and visitors of Natick have access to charging infrastructure within a ¼ mile of their home or destination.

### 2050

**Nearly every Natick home and business is accessible by biking or walking or connected to public transit.**

At this milestone, every Natick resident will live within walking or biking distance of everyday, essential public and retail services.

**Nearly all passenger and commercial vehicles registered in Natick are zero emissions.**

At this milestone, market forces have made electric vehicles the norm. Every new home and housing development is outfitted with Level II charging stations.

**Reducing our reliance on personal vehicles will also play a role in achieving net zero.** In 2019, most Natick residents lived in households with two or more cars (75%) and drove to work alone (76%).<sup>xiv</sup> **Helping these residents switch to low-carbon mobility options like walking, biking, and public transit** will help reduce air pollution, make residents healthier and increase connections in the community.

This strategy is at the heart of Massachusetts's participation in the regional Transportation and Climate Initiative Program (TCI-P), which will fund clean transit options by increasing the price of gasoline and diesel, starting in 2022. Investments are expected to focus on: improvements in the reliability of public transit; providing bus rapid transit and developing new bus routes in suburban and rural communities; expanding safe bike lanes, walking trails, and sidewalks; offering incentives for continued telecommuting to reduce congestion; and more.

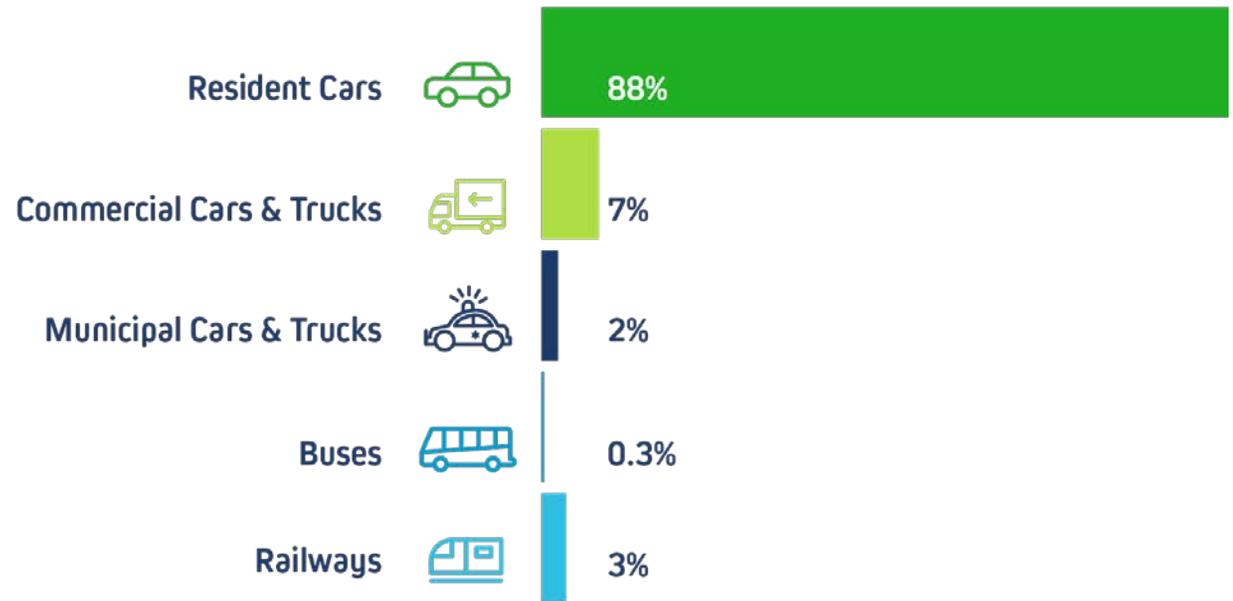
As COVID-19 changes how residents commute and the TCI-P offers new funding sources, Natick will have new opportunities to influence residents' transportation decisions. By considering mobility in community planning and designing greener,

people-centered streets and sidewalks, Natick has the potential to make walking, biking, and public transit as attractive as taking a solo trip in a personal vehicle – and reduce traffic too.

### Regional Influence

Natick's roadways also host thousands of "pass through" commuters that drive through Natick on their way to work. The emissions from these trips are not reflected in

Natick's community-wide GHG inventory because the vehicles are not registered in Natick. However, because of this dynamic, the investments Natick makes in community planning and transportation infrastructure have the potential to reduce emissions that originate from vehicles registered in other communities. Historically, Natick has sought to engage neighboring communities and regional partners in its transportation planning; it is vital this practice continue.



SOURCE: NATICK'S 2017 GREENHOUSE GAS INVENTORY

## 15. Expand access to and better promote electric vehicle charging stations.

*The Town of Natick will explore budget-friendly ways to increase the availability, use, and awareness of electric vehicle charging stations on commercial and public property.*

A shift to electric vehicle technology is slated to play a significant role in reducing GHG emissions in the transportation sector when paired with clean electricity (see Actions 1 and 5), and the Town seeks to accelerate the use of electric vehicles (EV) by facilitating the development of charging infrastructure community wide.

Providing opportunities for charging at home and at work, when cars sit idle for hours at a time, is an important outcome of this strategy. In Natick, there are currently eight public and six private parking lots with EV charging stations. As of December 2020, there are also stations under construction at the Kennedy Middle School and the West Natick Fire Station. No apartments or condo buildings have charging stations.

To facilitate the development of charging infrastructure community-wide, Natick will:

- Identify priority locations for charging stations and develop a plan that will

result in a distributed EV charging network.

- Shift its focus from developing a publicly owned charging infrastructure to supporting installation on commercial properties.
- Update local zoning regulations to provide by-right permitting for Level I and II EV charging stations and establishing EV parking space requirements for new construction.
- Develop and install consistent, wayfinding signage to support existing EV drivers and send a signal to other drivers that EV may be a viable alternative.

In pursuing these actions, Natick will seek to connect commercial property owners with funding opportunities (e.g., Volkswagen Settlement, MassDEP Electric Vehicle Incentive Program, and the Eversource Make-Ready program) to install electric vehicle charging stations on their sites. The Town will also leverage connections through the MetroWest Chamber of Commerce to work with large private sector actors interested in installing electric vehicle charging stations.

### Potential Co-Benefits



Greater price stability of electricity in comparison to imported gasoline.



Reduced air pollution because electric vehicles have zero tailpipe emissions.

### Equity Considerations

Plan for equitable geographic distribution of charging stations across our community and pair with programs to reduce economic barriers to EV adoption (Action 19).

Currently, there are cost barriers associated with purchase/lease of EVs and at-home charging stations. However, the used EV market is expected to grow in coming years.

### Partners for Implementation

Eversource, Department of Public Works, and EV charging station vendors.

### Measures of Success

- Number of installed public EV charging stations and rate of utilization at each station.
- Number of EVs registered in Natick.

## 16. Prioritize zero emissions mobility options in community planning.

*The Town of Natick will incorporate zero emission mobility goals into existing community planning and transportation improvement programs, including Complete Streets, annual street paving efforts, trails, and other initiatives.*

Pairing vibrant community destinations with robust pedestrian, bicycle, and green infrastructure is critical to making carbon-free choices the most appealing and feasible option for residents.

Currently, it is difficult for many Natick residents to walk, bike or take public transit to meet their day-to-day needs (e.g., go to work, buy groceries, visit the library). While the new Cochituate Rail Trail, which is scheduled to open in 2021, will connect Natick Center to shopping and employment destinations in the Golden Triangle (including the major commercial areas of Speen St, Route 9, Route 30 and Route 126), a significant number of isolated neighborhoods and disconnected bicycle and pedestrian infrastructure remains. As the Golden Triangle and other heavy retail sections of Natick are redeveloped, the Town should consider updating its zoning to

encourage the development of 'Complete Neighborhoods', in which residents have safe and convenient access to retail and commercial goods and services, a variety of housing options, and community services.

Simultaneously, Natick must ensure it focuses on planning, designing, operating, and maintaining streets that enable safe, convenient, and comfortable access for users of all ages and abilities regardless of their mode of transportation. This approach is in line with the Town's commitment to 'Complete Streets' and should remain a core principle of future roadway improvements.

As a next step, the Town will work to review opportunities to implement mixed-use zoning to ensure a diversity of residential types, small-scale offices, small-scale healthcare facilities, grocery stores, essential retail and more. It will also work to identify disconnected bike and pedestrian assets, such as isolated bike lanes or walking trails that do not connect to a larger trail network and prioritize connections in short and long-term transportation projects.

### Potential Co-Benefits



Increased cardiovascular health from use of active modes of transportation.



Reduced air pollution from displaced vehicle trips with bike/walk trips.

### Equity Considerations

Ensure robust engagement of vulnerable populations in the planning processes. Plan for the provision of equitable access to infrastructure investments.

### Partners for Implementation

Department of Public Works, Planning Department, Transportation Department, and local bicycle and pedestrian advocacy groups.

### Measures of Success

- Increased percentage of biking and walking mode share (broken down by different demographics when possible).
- Decreased number of bike and pedestrian injuries and fatalities.

## 17. Pilot bike, electric car, and ride share programs.

*The Town of Natick will explore opportunities to pilot bike, scooter, electric car and ride share programs to support residents who have one car, no car, or are interested in reducing the number of cars they own.*

Shared transportation options, such as bike or car share, can provide residents and visitors with access to necessities and opportunities without requiring them to own a car. These programs provide a flexible and affordable option to individuals and families that could make a carbon-free trip an easier and more accessible choice to make in Natick.

As a next step, Natick will explore the feasibility of implementing a local bike share program. Bike share expands the accessibility of cycling by allowing users to rent bicycles for short trips. Bike share is often used by commuters as a first mile, last mile connection to transit, residents or employees running errands, and visitors looking for a convenient way to travel. Future infrastructure investments related to

bike share could include support for emerging micro-mobility options, such as electric bikes, electric scooters, and other motorized personal mobility devices.

Implementation of this action could look like:

- Bike rental kiosks in Natick Center, along the forthcoming Cochituate Rail Trail, and at other key destinations, such as commuter rail stations and major employers.
- An income-tiered electric car sharing program, similar to ZipCar, in partnership with community organizations, such as Natick Center Associates, the Affordable Housing Trust, Natick Housing Authority and local business parks.
- A ride sharing service in which advanced algorithms allow multiple riders to share the same vehicle while directing passengers via an app to nearby "virtual" bus stops within a short walking distance.

### Potential Co-Benefits



Increased cardiovascular health from use of active modes of transportation.



Reduced or eliminated financial burden of vehicle ownership and increased access to employment and educational opportunities.



Reduced air pollution from displaced vehicle trips with bike trips.

### Equity Considerations

Develop pricing structures and technology/equipment options that support accessibility for all income levels, ages, and occupations.

### Partners for Implementation

Planning Department, Transportation Department, Housing Authority, housing developers, and bike share and car share providers.

### Measures of Success

- Increased percentage of biking and walking mode share (broken down by different demographics when possible).
- Number of neighborhoods served by a bike share or car share program.

## 18. Lead by example and adopt zero emission standards for the municipal fleet.

*The Town of Natick will work to develop and adopt a policy that commits to a complete transition to zero emission vehicles for all non-emergency vehicles.*

The Town of Natick's municipal fleet represents an important opportunity to reflect and make progress on our community's net zero goal.

In 2018, Natick undertook an Electric Vehicle Suitability Assessment with MAPC and the Sawatch Group that examined the drive cycles of 40 of its Department of Public Works vehicles. This study found that nearly all vehicle trips taken by these vehicles were conducive to replacement with an electric vehicle option, and that, as new technology becomes available, the Town is well positioned to transition to a fully electric municipal fleet over time.

In the next one to three years, the Sustainability Coordinator will work with the Department of Public Works to update its current emissions policy with the goal of shifting to a majority zero emissions fleet by 2035.

The updated fleet policy will set zero emissions standards for new acquisitions and leased vehicles that are dedicated to non-emergency uses. The policy will also commit to revising and regularly updating the zero emission municipal fleet policy to require zero emission vehicles or better (e.g., exploring where to make vehicles net positive through utilization of Vehicle to Grid) whenever available and operationally feasible.

The Sustainability Coordinator will also work with Natick Public Schools to develop a plan to transition to a fully electric school bus fleet as part of future contract cycles.

### Potential Co-Benefits



Reduced exposure to tailpipe exhaust and pollution.



Increased price stability of electricity in comparison to imported gasoline.



Reduced air pollution because electric vehicles have zero tailpipe emissions.

### Equity Considerations

Provide opportunities for community feedback on the policy to promote greater transparency and community involvement in lead by example efforts.

### Partners for Implementation

Department of Public Works, School Department, Finance Department, and Fleet Management staff.

### Measures of Success

- Percentage of total municipal fleet made up of zero emission vehicles.
- Reduced emissions from municipal fleet vehicles.

## ADDITIONAL MEASURES

### 19. Partner with local electric vehicle dealerships to offer discounts and promote use of state's rebates.

At first glance, the transition to zero emission vehicles may seem to rest squarely in consumer choices and behavioral changes of a community's residents. However, there is an important role for larger market forces, federal and state incentives, and local education and awareness building to nudge residents toward the choice that aligns with getting to net zero.

The Town will target its efforts in establishing partnerships with local dealerships to provide discounts on electric vehicles for residents and commercial fleets. It will also explore the feasibility of offering local incentives, such as a discount on first year excise taxes for owners of electric vehicles.

### 20. Advocate for community transit, bus improvements, and electrification of transit.

Natick will identify priority areas to increase access and community transit ridership and advocate during upcoming planning processes with the MetroWest Regional Transit Authority (MWRTA) and MassDOT.

In particular, the Town would like to see additional service to connect residents from surrounding communities to transit without needing a single occupancy vehicle. By working in partnership with local and regional transit authorities, Natick may also be able to reallocate roadway space to prioritize bus traffic, which is particularly important on high-ridership routes. The Town's near-term priority will be to advocate for improvements to local bus routes and in the longer term the Town will encourage MWRTA to make the transition to electric vehicles.

### 21. Advocate for regulatory changes that are beneficial for both EV owners and the electric grid.

Transitioning to electric vehicles can support achieving net zero in more than one way. EVs enable reliance on a cleaner, and eventually 100 percent renewable, source of fuel. EV batteries can also be used as an energy resource to stabilize the electric grid through effective regulation and incentives.

To fully realize the resiliency benefits of vehicle electrification, electric utilities need to design electric rates that incentivize charging at the most efficient times of day and use of electricity stored in EV batteries during times of high demand for electricity. The Town will actively advocate for these regulatory changes at the Department of Public Utilities and explore opportunities to coordinate with neighboring communities on formal comments and testimony.

# Implementation: What's Next?

This Net Zero Action Plan is just the beginning for the Town of Natick. The following initiatives will be spearheaded by the Town's Sustainability Coordinator, in collaboration with key leaders, to facilitate implementation of the actions prioritized in this plan.

The transitions required to achieve net zero in Natick necessitate an all-hands-on deck approach – both internally, with Town staff and elected bodies, and externally, with local community partners and municipal peers. This five-year plan focuses on actions the Town can implement in the near term to ramp up progress towards the Town's net zero goal.

## GOVERNANCE

**Establish a Net Zero Action Task Force to support implementation across the community.**

The Town will ask key Town boards and committees and departments to select a representative to join a Net Zero Action Task Force. Task Force members will support the Sustainability Coordinator in implementing and reporting on the progress of priority actions identified in the plan. The Task Force

will also be structured to be a two-way exchange of information – providing opportunities to increase climate literacy and technical capacity across all boards and committees.

**Align municipal department responsibilities with plan objectives.**

One of the first objectives of the Net Zero Action Task Force will be to align municipal department responsibilities with the goals of the Net Zero Action Plan and identify any areas where municipal activities may be acting in friction to the goals of the plan.

This process will result in the incorporation of a climate framework into the goals of every municipal department.

**Report on metrics of success and update the Town's greenhouse gas inventory on a semi-annual basis.**

The Town's GHG inventory will be the core tool for benchmarking progress towards its net zero goal. The Town will update its GHG inventory as new data sets are made available, using MAPC's Community Greenhouse Gas Inventory Tool. The expectation is that this will occur every two years. The 2017 GHG inventory developed as a part of this planning process will be used as the baseline to measure progress against.

**Revisit and update the plan every five years.**

The Net Zero Action Plan is intended to serve as a living document that will be revisited and revised regularly by the Sustainability Committee and Net Zero Action Task Force to ensure our community is always pushing ahead and successfully working toward its goals.

## PUBLIC ENGAGEMENT AND EDUCATION

**Build relationships and capacity to engage with vulnerable populations in Natick.**

A core component of the community engagement plans to convene focus groups during the planning process had to be put on hold due to the COVID-19 pandemic. As such, the Town will prioritize building and strengthening relationships with vulnerable populations that are not currently reached or saturated by the Town's communication and engagement channels.

As a starting point, the Town intends to issue a brief survey to local community organizations to provide feedback on the preferred methods of engagement and ways to be involved in implementation of the Net Zero Action Plan.

## Support training for Town staff, leaders, and developers on net zero.

Natick will work to familiarize Town staff, leaders, and members of boards and committees with high-performance building practices, to empower them to support implementation and monitor success of the actions outlined in the Town's Net Zero Action Plan. A thorough curriculum will cover topics such as: LEED, Net Zero, Passive House and other high-performance standards, HERS ratings, life safety benefits of Net Zero buildings, and energy modeling.

It is important to acknowledge that the Town currently lacks sufficient resources to offer adequate training as envisioned in this measure. The Town should seek assistance in the form of grants or pro bono training offered by nonprofits and others.

## PARTNERSHIPS AND COLLABORATION

### Build a local action coalition with community business partners.

Addressing commercial emissions is a key component to Natick's approach to achieving net zero. The Town will seek to convene a group similar to the Boston Green Ribbon Commission<sup>xv</sup> that brings together commercial property owners, businesses, and institutions, and encourages them to develop their own initiatives to reduce GHG emissions and share best practices. Membership could include owners of buildings larger than 100,000 square feet. Activities of the Natick Green



PHOTO ABOVE: SOLAR INSTALLATION AT NATICK'S DEPARTMENT OF PUBLIC WORKS BUILDING

Business Leadership Coalition could include workshops, training sessions, networking opportunities, and coordinated net zero initiatives.

### Coordinate climate action regionally with MetroWest municipalities

As outlined in Action 8, coordinated action with surrounding municipalities will be an amplifying component to the success of Natick's Plan. The Town will continue to connect and share best practices with staff in the MetroWest municipalities, utilizing existing regional networks like the Metro

West Regional Collaborative (MWRCC) and 495 Partnership to identify regional priorities and programs for implementation.

### Strengthen collaborative relationship with Eversource.

A strong partnership with the Town's primary utility provider, Eversource, will be critical to the success of the actions outlined in this Plan. Town staff will continue to coordinate with Eversource on the initiatives outlined in

the Plan, including proactive grid resource planning as buildings and vehicles across our community switch to electric fuel sources.

## HOW CAN YOU BE A NET ZERO HERO?

Getting to net zero is a journey that will require Natick to assemble its own A-Team. There is a place and a way for everyone in our community to contribute to, and benefit from, achieving our net zero goal. While this Net Zero Action Plan highlights the strategies and actions our municipal government will take to support our community-wide goal, we also want all members of our community to envision themselves as Net Zero Heroes.

Community members of all types – from residents to large employers and everyone in between – are invited to be Net Zero Heroes. Below are some ways they are encouraged to participate in Natick’s net zero journey:

**Natick Resident:** Share your voice, get involved, and act on choices in your control (e.g., complete an energy audit, insulate your home, go solar, switch to clean heating, make your next car electric) and participate in the local and state programs available to support you.

**Elected and Appointed Officials:** Consider how the decisions your Board, Committee, or legislative body will impact Natick’s net zero goal. Ensure your Board or Committee



PHOTO ABOVE: LOCAL NET ZERO HEROES TAKE ON DR. SMOG AT NATICK DAYS 2019

has a representative who is active on the Net Zero Action Task Force. Advocate or vote to support policy or regulations that advance actions identified in the net zero plan.

**Natick Small Business:** Share your commitments with patrons or employees. For those in a climate-adjacent field - participate in the green economy and support “green growth” locally.

**Larger Employer or Local Institution:** Become a founding partner of Natick’s first Green Business Leadership Coalition, help inform zoning and other regulations that support net zero – and work for your organization; provide programs that assist employees in decarbonizing their homes and commute; and work with other large businesses to share experiences and support community-wide GHG emissions reductions.

# End Notes

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<sup>i</sup> <https://www.natickma.gov/1680/Mitigating-Climate-Change>

<sup>ii</sup> [https://earthobservatory.nasa.gov/world-of-change/global-temperatures#:~:text=According%20to%20an%20ongoing%20temperature,2%C2%B0%20Fahrenheit\)%20since%201880.](https://earthobservatory.nasa.gov/world-of-change/global-temperatures#:~:text=According%20to%20an%20ongoing%20temperature,2%C2%B0%20Fahrenheit)%20since%201880.)

<sup>iii</sup> <https://climate.nasa.gov/news/2865/a-degree-of-concern-why-global-temperatures-matter/>

<sup>iv</sup> Natick Electricity Aggregation Program webpage, <https://masspowerchoice.com/natick>

<sup>v</sup> "Residential Nonparticipant Customer Profile Study," *DNV GL*, February 6, 2020, Table 7.2. Community outreach metric table: dual fuel, p.94, [https://ma-eeac.org/wp-content/uploads/MA19X06-B-RESNONPART\\_Report\\_FINAL\\_v20200228.pdf](https://ma-eeac.org/wp-content/uploads/MA19X06-B-RESNONPART_Report_FINAL_v20200228.pdf)

<sup>vi</sup> "Housing Tenure by Fuel Type by Municipality," American Community Survey (ACS), 2014-2018, <https://datacommon.mapc.org/browser/datasets/191>

<sup>vii</sup> "Transportation to Work from Residence by Municipality," American Community Survey (ACS), 2014-2018, <https://datacommon.mapc.org/browser/datasets/38>

<sup>viii</sup> "Massachusetts Vehicle Census Summary Statistics for GHG Inventories (Municipal)," Metropolitan Area Planning Council, 2014, <https://datacommon.mapc.org/browser/datasets/412>

<sup>ix</sup> <https://www.eia.gov/state/?sid=MA#tabs-1> (2018, consumption by source)

<sup>x</sup> <https://ilsr.org/report-advantage-local-clean-energy-ownership-matters/>

<sup>xi</sup> Six of Natick's eight schools, the Community Senior Center, Department of Public Works Headquarters and William Chase Ice Rink already have rooftop solar power systems, and the Kennedy Middle School and West Natick Fire Station, currently under construction, will have new or increased solar generating capacity relative to existing systems. Further, Natick High School and Kennedy Middle School will have solar canopies in their parking lots. Kennedy Middle School is also expected to install an energy storage battery on site.

<sup>xii</sup> <https://www.nrel.gov/docs/fy16osti/65298.pdf>

<sup>xiii</sup> Massachusetts Offers Rebates for Electric Vehicles (MOR-EV), <https://mor-ev.org/program-statistics>

<sup>xiv</sup> "Transportation to Work from Residence by Municipality," American Community Survey (ACS), 2014-2018, <https://datacommon.mapc.org/browser/datasets/38>

<sup>xv</sup> The Boston Green Ribbon Commission is a "group of business, institutional, and civic leaders in Boston working to develop shared strategies for fighting climate change in coordination with the City's Climate Action Plan." <https://www.greenribboncommission.org/>