



# Town of Westwood



**WESTWOOD - A BETTER, BRIGHTER FUTURE**

## **CLIMATE ACTION, RESILIENCY & SUSTAINABILITY PLAN**

**July 2024**

**DRAFT**



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WESTWOOD - A BETTER, BRIGHTER FUTURE



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### Town of Westwood Select Board

Joseph E. Previterra (Chair)  
Marianne C. LeBlanc Cummings (Clerk)  
Robert R. Gotti (3rd Member)

### Advisors

Christopher Coleman | Town Administrator  
Nora Loughnane | Community & Economic Development Director\*  
Thomas Philbin | Energy Manager

### Climate Action Taskforce

Tom Carey | WPS Director of Facilities  
Karon Catrone | Conservation Agent, Tree Warden, Staff to Stormwater Authority  
Karyn Flynn | Zoning & Licensing Agent  
Melinda Garfield | WMC Executive Director  
Leslie Greffenius | WEAC Member  
Molly Kean | Assistant Town Administrator/ Director of HR\*  
Todd Korchin | Director of Public Works  
Stephen Harte | WEAC Vice Chair\*  
Kate La Croix | WEAC Chair\*  
Stephen Locke | Operations Manager - Dedham-Westwood Water District  
Steven Lund | Interim Chief - Fire Department  
Jim McCarthy | Director of Facilities  
Lizzy McGovern | Library Director  
Tony Mullin | School Committee Chair  
Jared Orsini | Health Director  
Mike Perkins | Building Commissioner  
Dottie Powers | Town Clerk  
Steven Olanoff | Planning Board Associate Member\*  
Brendan Ryan | Assistant Director of Public Works  
Danielle Sutton | Director of Human Services  
Tal Zaslavski | GIS Specialist

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# Executive Summary



We are living in an ever-warming climate with increased severity in weather. The changes to the environment, caused mainly by human interference, have made it imperative that plans are enacted to address the effects. Many standard practices are not sustainable long-term, including, most significantly, the burning of fossil fuels as the primary source for heating buildings and water, powering vehicles, equipment, and industrial processes, and generating electricity. The accumulation of greenhouse gases (GHGs) in our atmosphere, principally from burning fossil fuels, is causing the Earth to warm rapidly and has disrupted the relatively stable climate that humans depend upon. Billions of tons of carbon dioxide (CO<sub>2</sub>) are released into the atmosphere from coal, oil, and gas. As a result, climate-related disasters have become more common and more powerful as the Earth warms.

Climate change-related natural and human-caused disasters are a significant force that has begun to impact Westwood and are a focus of resiliency planning. Westwood may not be directly affected by sea level rise like coastal communities, but the Town is expected to experience

- more extreme weather events, more inland flooding due to intense precipitation,
- higher average temperatures (i.e., more cooling degree days)
- more summer days over 90 degrees, and

In March 2024, the U.N. weather agency issued a “red alert” about the climate emergency. New data from the World Meteorological Organization showed that 2023 was the warmest year on record and that 2024 maybe even hotter. Celeste Saulo, the secretary-general of the WMO, stated:

**“2023 set new records for every single climate indicator. This annual report shows that the climate crisis is the defining challenge that humanity faces. It is closely intertwined with the inequality crisis, as witnessed by growing food insecurity, population displacement and biodiversity loss.”**

It is of utmost importance that we strive to leave the environment as a place for the next generation to thrive. The Climate Action, Resiliency, and Sustainability Plan, or CRS Plan for short, will synthesis reports and strive for a better, brighter future through analysis, recommendations and actions steps. Westwood - A Better, Brighter Future is our campaign for a just and sustainable future – our Town government is stepping up to lead by example! We established a Climate Action Taskforce to advise our Town Planner to collect and analyze data, complete a series of community assessments, engage Town staff, residents, and other key stakeholders and complete the CRS Plan) for the Town of Westwood. We'll build on our Town's excellent climate, energy work, investment, and commitment to progress as we take collective action for a just and sustainable future.



## Key Takeaways

### 1 High Concern for the Effects of Climate Change

Over two-thirds (68%) of survey respondents said that they were “very concerned” about the harmful effects of climate change. It seems that every year there is another report citing the very real effects of climate change and environmental degradation. Whether that be yearly and monthly temperature records being broken or major weather related anomalies.

### 2 Streamline Current Climate & Energy Efforts

The town has been working on climate change preparedness and resilience creating plans, initiatives, and taking on projects. However, not unlike other municipalities, the efforts have often been siloed. Better efforts to communicate across departments, boards and committees should be taken. This plan being the start of said effort.

### 3 Reduce Commercial & Residential GHG Emissions

A 2017 MAPC Green House Gas inventory found that the MAJORITY of town’s emissions, 92.4%, came from: Residential Buildings: 35% Passenger Vehicles: 32.1% Commercial/Industrial Buildings: 25.3%. In order to achieve Net Zero emissions by 2060 it is imperative actions are taken to reduce emissions in the aforementioned sectors.

### 4 Update GHG Inventory

While it is beneficial to have the 2017 data, there were some metrics that were not accounted for. Moreover, seven years later it would be prudent to perform another GHG inventory to get a better picture of how we achieve an 85% reduction by 2040 and Net Zero by 2060.

### 5 Maintain Momentum & Seek Funding Opportunities

There are several plans and programs the Town has completed and is actively a part of such as the Green Communities Program, Municipal Vulnerability Preparedness Program, and the Hazard Mitigation Plan. We can use ensure we reach the goals set forth in those plans and the associated grant opportunities for implementation. However, there are many other regional, state, federal, and private sector funding opportunities out there that this plan’s action steps can benefit from.



# Overview



To start developing the CRS plan, several sources were reviewed in preparation of this working document. The Commonwealth of Massachusetts Clean Energy and Climate Plan for 2050 was as an outline for what chapters and topics in said chapters to address. Westwood has already taken many key steps in planning and preparing for our changing climate. The following plans and reports were reviewed for relevant key points:

- Conservation Land Management Plan 2023,
- Natural Hazard Mitigation Plan 2022,
- Comprehensive Plan 2020,
- MVP Community Resilience Program 2020, and the
- Open Space & Recreation Plan 2019.



The biggest contributor and the document that initiated this Plan is Westwood's Comprehensive Plan 2020, which includes areas covered by the CRS Plan in the Sustainability and Resiliency sections.

In the same vein, the Comprehensive Plan's Resiliency section calls for a combined Climate Action Resiliency and Hazard Mitigation Plan that identifies existing gaps, solutions, and implementation strategies. The Open Space and Recreation Plan echoes this and recommends the Town monitor and adopt best practices in sustainability and resiliency to climate change. This Plan brings this to fruition by reviewing the Town's GHG inventory and exploring five key areas.

## RESILIENCY PLANNING & IMPLEMENTATION



## LAND USE & TRANSPORTATION



## SUSTAINABLE BUILDINGS & CLEAN ENERGY USE



## NATURAL & WORKING LANDS



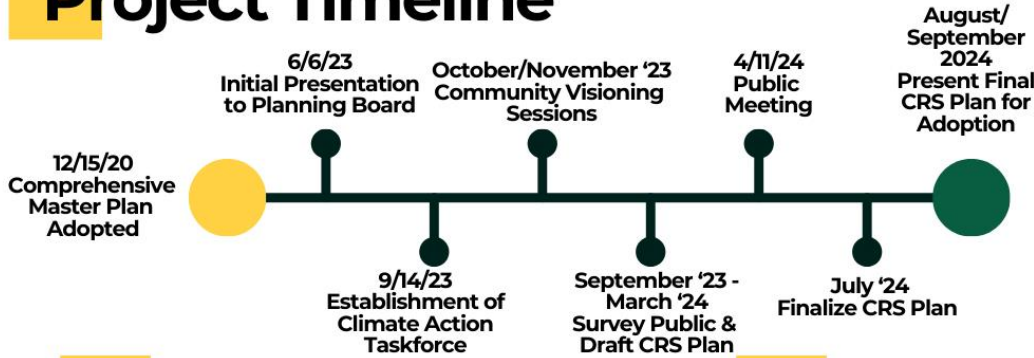
## WATER & WASTE MANAGEMENT



# Overview



## Project Timeline



## Guiding Principles

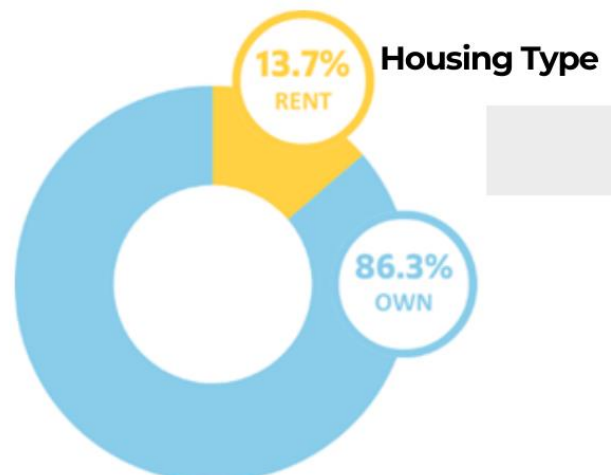
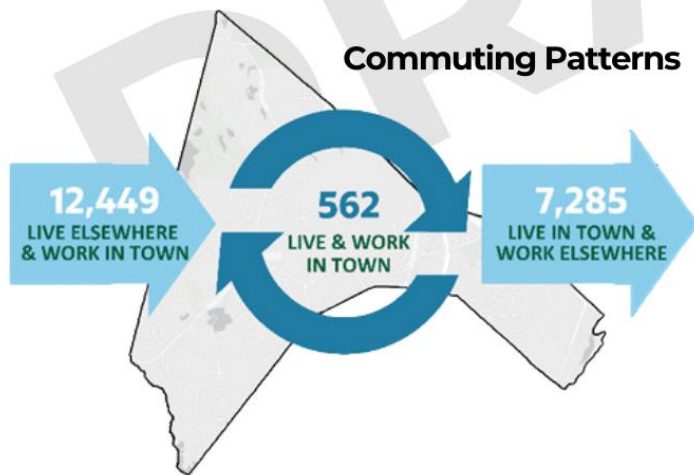
- Promote Comprehensive Climate Action & Resiliency Planning
- Educate the Greater Community Regarding the Urgency Around Climate Change Action
- Promote Greenhouse Gas (GHG) Emissions Reduction
- Promote Clean Renewable Energy Use
- Promote an Equitable, Clean & Healthy Community

## The Sustainable 7 (Goals)

1. Town Synchronization and Public Education
2. Transportation Improvements
3. 85% Townwide GHG Emissions Reduction in 2040
4. Zero Waste Plan & Stormwater Master Plan
5. Improved Resiliency
6. Land Preservation & Rehabilitation
7. Netzero Townwide GHG Emissions Reduction in 2060

## Demographics

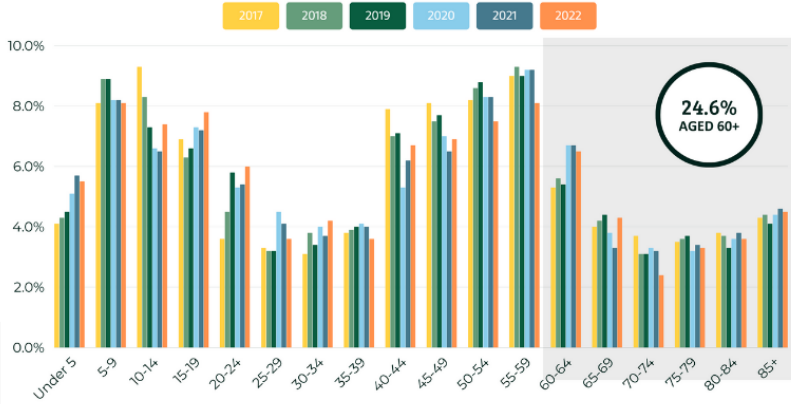
Population: 16,231 | Area: 10.88 mi<sup>2</sup> | Density: 1,494.9/mi<sup>2</sup> .



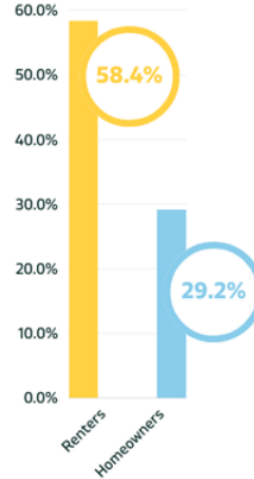


## Demographics

### Age Distribution



### Cost Burdened Households

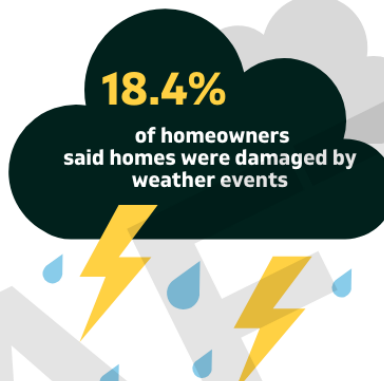
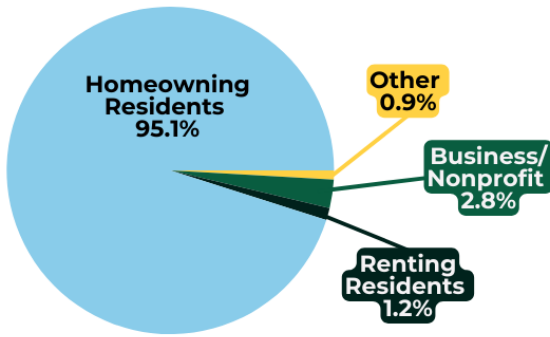


### Socio Economic Status

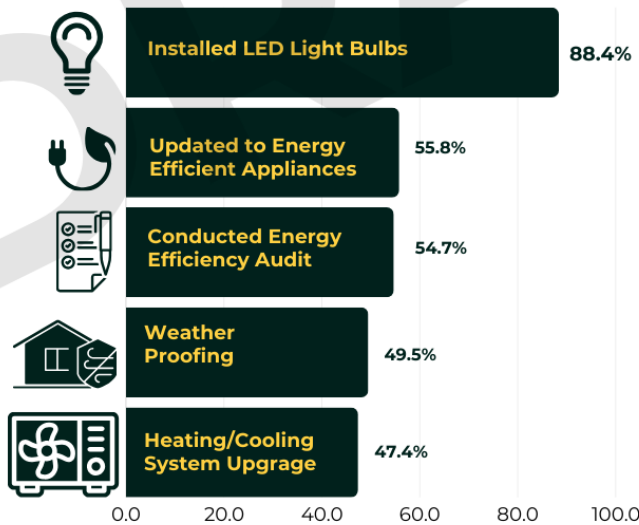


## Survey Results

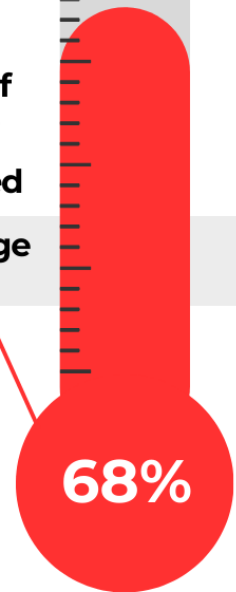
### Survey Respondents



### Energy Efficiency Improvements by Homeowners



### Percentage of respondents that are Very Concerned about Climate Change



# Netzero by 2060



Westwood's Better, Brighter Future includes reaching **net zero\*** emissions by 2060 with:

- electrified vehicles, homes, and appliances;
- supportive efforts for cleaner energy sources to power the electric grid;
- an energy-efficient built environment;
- transit-oriented neighborhoods and business districts;
- complete streets and walkable/bikeable neighborhoods;
- robust, electrified public transit from the MBTA;
- significant use of solar panels; and
- a generous street tree canopy.

The Westwood of the future will have conditions contributing toward a healthy environment, new green job opportunities, reduced energy costs, reduced traffic congestion, improved air quality and improved public health. A 2017 MAPC Green House Gas (GHG) inventory found that Westwood emitted **147,768 MT CO<sub>2</sub>e\*\*** Municipal facilities and activities accounted for 3% of total emissions. The MAJORITY of town's emissions, 92.4%, come from: Residential Buildings: 35% Passenger Vehicles: 32.1% Commercial/Industrial Buildings: 25.3%

## Key Considerations

- 1 Consolidate Clean Energy, Climate & Resiliency Plans & Programs
- 2 Enhance Zoning bylaws to encourage energy efficiency, stormwater management, Low Impact Design
- 3 Establish Zoning Incentives to Encourage Net Zero & LEED Development
- 4 Phase out Internal Combustion Vehicles
- 5 Continue Fleet Electrification and Smart Charging
- 6 Townwide Building Energy Use & CO<sub>2</sub> Emissions Reduction
- 7 Evaluate the Future of Fuels & Seek Alternatives to Fossil
- 8 Codify NWL Sequestration, Emission & Accounting
- 9 Limit NWL Loss
- 10 Establish a Solid Waste Master Plan

**\*\*Net zero** means cutting carbon emissions to a small amount of residual emissions that can be absorbed and durably stored by nature and other carbon dioxide removal measures, leaving zero in the atmosphere." -United Nations (UN)

**\*\*MTCO<sub>2</sub>e or Metric tons of carbon dioxide equivalent** is the unit of measurement in this tool. The unit "CO<sub>2</sub>e" represents an amount of a GHG whose atmospheric impact has been standardized to that of one unit mass of carbon dioxide (CO<sub>2</sub>), based on the global warming potential (GWP) of the gas." -Environmental Protection Agency (EPA)

# Recommended Action Steps

To implement the goals identified previously, action steps to address the climate adaptation, resiliency and sustainability needs of the community were developed. These action steps or strategies are designed to increase and improve climate adaptation, resiliency, and sustainability opportunities in Westwood for all socio-economic groups. These action steps outlined in the following chart should be considered as suggestions and not directives. The chart below includes action steps however some action steps have substeps that can be found in Chapter 4.

Resiliency Planning & Implementation	A.1	Improve Comprehensive Emergency Management Plan & Emergency Planning Committee
	A.2	Review & Improve Emergency Operations & Communications System
	A.3	Develop a Climate Change Adaptation & Resiliency Campaign and Public Education Efforts
	A.4	Consolidate Clean Energy, Climate & Resiliency Plans & Programs
	A.5	Continue to Leverage State & Local Resources to Demonstrate Net Zero Solutions & Work with Surrounding Communities to Achieve Goals
	A.6	Update and Protect Electric Grid
Land Use & Transportation	B.1	Develop a Proactive Land-Use Strategy to Site Housing and Clean Energy
	B.2	Enhance Zoning bylaws to encourage energy efficiency, stormwater management, Low Impact Design
	B.3	Establish Zoning Incentives to Encourage Net Zero & LEED Development
	B.4	Digitize Meeting Packets for Committee/Board Meetings to Reduce Paper Consumption

# Recommended Action Steps

Land Use & Transportation	B.5	Promote Transit-Oriented Development (TOD) in Town Villages
	B.6	Phase out Internal Combustion Vehicles
	B.7	Continue Fleet Electrification and Smart Charging
	B.8	Address Hard-to-Electrify & Other Modes of Transportation
Sustainable Buildings & Clean Energy Use	C.1	Townwide Building Energy Use & CO2 Emissions Reduction
	C.2	Enhance Electric Power Options
	C.3	Evaluate the Future of Fuels & Seek Alternatives to Fossil
Natural & Working Lands	D.1	Identify NWL Conservation
	D.2	Codify NWL Sequestration, Emissions & Accounting
	D.3	Expand NWL Conservation
	D.4	Limit NWL Loss
	D.5	Manage Wetlands, Forests and Farms for Changing Climate
Water & Waste Management	E.1	Continue Water Infrastructure Improvements
	E.2	Continue to Develop Stormwater Master Plan
	E.3	Establish a Solid Waste Master Plan



# Conclusion



This concludes the Climate Action, Resilience, and Sustainability (CRS) Plan. The Plan introduced us to the very real need to take climate action. It can be easy to see that things are out of reach when you think of the needs on a global scale. However, when we drill down to the local level, any step towards giving Westwood a Better, Brighter Future is progress in the fight to stop the harmful effects of climate change and environmental degradation\*.

This Plan opened with our introduction stating our case, demonstrating the actions and plans taken to date. We established a Climate Action Taskforce in this planning process to advise the Planning Division in its drafting and conception. Additionally, we laid out the timeline to achieve this final plan. This was followed by an overview of the plan. This overview looked at our guiding principles, our set of goals called the Sustainable 7, a review of Westwood’s demographics, and a look at the survey results to our general survey released in the fall and winter of 2023. We explored what a net zero Westwood would look like in 2060, what our GHG inventory from 2017 told us and how we move forward to achieve net zero emissions. Finally, we laid out our 25 action steps and associated sub steps. The action steps spanned across five different areas including: Resilience Planning & Implementation, Land Use & Transportation, Sustainable Buildings & Clean Energy, Natural & Working Lands, and Water & Waste Management. There is a quote by Swedish environmental activist, Greta Thunberg, that states:

**We all have a choice. We can create transformational action that will safeguard the living conditions for future generations. Or we can continue with our business as usual and fail.**

The road ahead to remedy the past decades of human caused global warming and climate change may seem daunting but we owe it to ourselves and future generations to make a valiant effort. This CRS plan will hopefully be part of the first steps in the right direction.

If you would like to get updates about this plan visit the town website at the shortened url: [www.tinyurl.com/CRSPanWestwood](http://www.tinyurl.com/CRSPanWestwood) or scan the QR Code



\*“**Environmental Degradation** means the deterioration of the environment through depletion of resources such as air, water and soil; the destruction of ecosystems and the extinction of wildlife. It is defined as any change or disturbance to the environment perceived to be deleterious or undesirable.” -United Nations (UN)

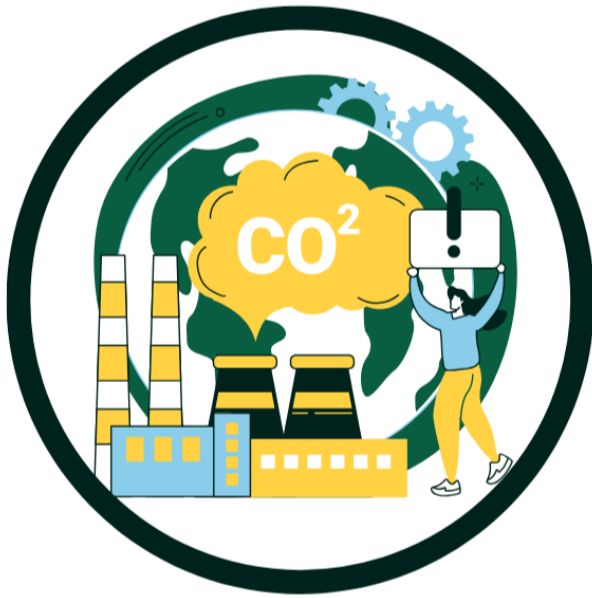
Global Covenant of  
Mayors for Climate &  
Energy (GCoM)



Outreach Sponsor:  
Westwood Wegmans -  
University Station



Draft -  
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# CHAPTER 1: THE PATH TO A CLIMATE ACTION, RESILIENCY & SUSTAINABILITY PLAN

## Westwood – A Better, Brighter Future

We are living in an ever-warming climate with increased severity in weather. The changes to the environment, caused mainly by human interference, have made it imperative that plans are enacted to address the effects. Many standard practices are not sustainable long-term, including, most significantly, the burning of fossil fuels as the primary source for heating buildings and water, powering vehicles, equipment, and industrial processes, and generating electricity. The accumulation of greenhouse gases (GHGs) in our atmosphere, principally from burning fossil fuels, is causing the Earth to warm rapidly and has disrupted the relatively stable climate that humans depend upon. Billions of tons of carbon dioxide (CO<sub>2</sub>) are released into the atmosphere from coal, oil, and gas. As a result, climate-related disasters have become more common and more powerful as the Earth warms. Climate change-related natural and human-caused disasters are a significant force that has begun to impact Westwood and are a focus of resiliency planning. Westwood may not be directly affected by sea level rise like coastal communities, but the Town is expected to experience

- more extreme weather events, more inland flooding due to intense precipitation,
- higher average temperatures (i.e., more cooling degree days) and
- more summer days over 90 degrees.

In March 2024, the U.N. weather agency issued a “red alert” about the climate emergency. Data from the World Meteorological Organization (WMO) showed that 2023 was the warmest year on record and that 2024 maybe even hotter. Celeste Saulo, the secretary-general of the WMO, stated:

“2023 set new records for every single climate indicator. This annual report<sup>1</sup>

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<sup>1</sup> <https://library.wmo.int/records/item/68835-state-of-the-global-climate-2023>

shows that the climate crisis is the defining challenge that humanity faces. It is closely intertwined with the inequality crisis, as witnessed by growing food insecurity, population displacement and biodiversity loss.”<sup>2</sup>

2022 included the hottest August on record<sup>3</sup>. The 2022 summer was the second hottest on record and the same year tied with 2016 for sixth-warmest year since record-keeping began 128 years ago.<sup>4</sup> Westwood experienced periods of dry spells and heavy rainfall, such as a storm in late June 2020 that dumped four (4) inches of rain in 90 minutes. The brief but heavy rain led to flooding, severe damage, and the closure of Norwood Hospital, which served many Westwood residents. Last year, the hospital was demolished.<sup>5</sup> Due to the damages to make way for a new facility. The increased heat is expected to cause health impacts and a higher risk of vector-borne diseases such as Lyme disease, West Nile Virus, and Eastern Equine Encephalitis (EEE). Disruption of critical infrastructure such as water, sewer, energy, transportation, and telecommunication will occur. The severity and pace of climate change depend on the global human response and pose a significant challenge for all communities.

Mitigating the impacts, innovating for new solutions, and ensuring resiliency are all important for the Town of Westwood, the region, and the planet as a whole. Taking cues

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<sup>2</sup>[https://www.democracynow.org/2024/3/20/headlines/un\\_weather\\_agency\\_issues\\_red\\_alert\\_after\\_2023\\_shattered\\_heat\\_records](https://www.democracynow.org/2024/3/20/headlines/un_weather_agency_issues_red_alert_after_2023_shattered_heat_records)

<sup>3</sup> <https://www.wbur.org/news/2022/09/16/hottest-august-2022-massachusetts-climate-change>

<sup>4</sup> <https://www.bostonglobe.com/2023/01/11/science/2022-was-one-massachusetts-hottest-years-record-new-analysis-shows/>

<sup>5</sup> <https://www.wcvb.com/article/norwood-hospital-demolition-two-years-after-flood-jan-28-2022/40448727>

from the Commonwealth, part of this plan aims to reduce GHG emissions and achieve net zero – or no emissions – by 2050.

Conversely, the Northeast and the Rustbelt have been identified as migratory destinations for those escaping more disastrous climate events.<sup>6</sup> And, in many cases, live in an uninsurable location. Equity must be considered in every component of climate planning to ensure that future migratory patterns do not exacerbate inequality.

As laid out in the Town’s Comprehensive Plan 2020, Westwood has already proven to be a leader in climate adaptation and resiliency. The town has begun to electrify its vehicle fleet with the necessary infrastructure. PV solar has been installed in several schools.

- In 2008, the Select Board established an Environmental Action Committee (WEAC) as an environmental advisory committee.
- In 2012, the Town was designated a Green Community, a state program offering energy efficiency and renewable energy opportunities to municipalities.
- In 2015, the Town adopted a Stormwater Management Bylaw.
- In 2019, WEAC initiated a Community Electricity Aggregation (CEA) purchasing program for the Town to offer all residents and businesses lower group electricity rates and renewable energy options.

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<sup>6</sup> <https://www.gmri.org/projects/a-northeast-safe-and-thriving-for-all-nest/>

As of 2020, the Town’s Energy Manager has implemented over 50 projects valued at over \$2.83 million using \$1.43 million in Green Communities funding and approximately \$500,000 in Eversource incentives. An Indigenous Proverb states: “We do not inherit the Earth from our ancestors; we borrow it from our children.” It is of utmost importance that we strive to leave the environment as a place for the next generation to thrive. The Climate Action, Resiliency, and Sustainability Plan, or CRS Plan for short, will synthesize reports and strive for a better, brighter future through

“We do not inherit the Earth from our ancestors; we borrow it from our children.”

-INDIGENOUS PROVERB

analysis, recommendations, and action steps. Westwood - A Better, Brighter Future is our campaign for a just and sustainable future – our Town government is stepping up to lead by example! We established a Climate Action Taskforce to advise our Town Planner to collect and analyze data, complete a series of community assessments, engage Town staff, residents, and other key stakeholders and complete the CRS Plan) for the Town of Westwood. We’ll build on our Town's excellent climate, energy work, investment, and commitment to progress as we take collective action for a just and sustainable future.

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## Recognition

2023 – Town of Westwood  
Global Covenant of Mayors for  
Climate & Energy



2022 – Jim McCarthy, *Facilities Manager*  
Professional Manager of the Year Award in  
Facilities and Grounds, The American Public  
Works Association (APWA)



2018 – Tom Philbin, *Energy Manager*  
Massachusetts Leading by Example Awards,  
Mass Department of Energy Resources (DOER)





## Project Administration & Organization

The Town updated its Hazard Mitigation Plan in 2022. The Westwood Hazard Mitigation Committee reconvened and added new members to form a new Climate Action Taskforce. The Town Planner organized the Taskforce with input from the Director of Community and economic Development. The Taskforce members are listed below. Team members were asked to participate

throughout the planning process by providing local expertise and reviewing the work for the plan. Town boards, committees, and other outside organizations sought additional direction and input.

- Westwood Select Board
- Westwood Planning Board
- Westwood Conservation Commission
- WEAC
- Dedham-Westwood Water District (DWWD)

Climate Action Taskforce	
<b>Tom Carey</b>   WPS Director of Facilities	<b>Lizzy McGovern</b>   Library Director
<b>Karon Catrone</b>   Conservation Agent, Tree Warden, Staff to Stormwater Authority	<b>Tony Mullin</b>   School Committee Chair
<b>Chris Coleman</b>   Town Administrator	<b>Jared Orsini</b>   Health Director
<b>Karyn Flynn</b>   Zoning & Licensing Agent	<b>Mike Perkins</b>   Building Commissioner
<b>Melinda Garfield</b>   WMC Executive Director	<b>Tom Philbin</b>   Energy Manager
<b>Leslie Greffenius</b>   WEAC Member	<b>Dottie Powers</b>   Town Clerk
<b>Molly Kean</b>   Assistant Town Administrator/Director of HR	<b>Joe Previtera</b>   Westwood Selectboard
<b>Todd Korchin</b>   Director of Public Works	<b>Steven Olanoff</b>   Planning Board Associate Member
<b>Stephen Harte</b>   WEAC Member	<b>Ellen Rollings</b>   Planning Board Chair
<b>Kate La Croix</b>   WEAC Chair	<b>Elijah Romulus</b>   Town Planner
<b>Stephen Locke</b>   Operations Manager - DWWD District	<b>Brendan Ryan</b>   Assistant Director of Public Works
<b>Nora Loughnane</b>   Director of Community & Economic Development	<b>Danielle Sutton</b>   Director of Human Services
<b>Steven Lund</b>   Assistant Chief - Fire Department	<b>Amanda Wolfe</b>   Housing & Land Use Planner
<b>Jim McCarthy</b>   Director of Facilities	<b>Tal Zaslavski</b>   GIS Specialist

The kickoff meeting was held on September 14, 2023, at which the task force discussed the planned timeline, guiding principles, and goals. Moreover, the Task Force reviewed the level of collaboration required, recommendations for the Task Force, and levels of public outreach necessary for the project.

### Taskforce Goals

The goal was to host four (4) meetings with monthly email updates.

1. Kickoff meeting

2. Two (2) Visioning Sessions with members of the public in the fall
3. Meeting to review the initial draft plan
4. Meeting to review the final draft plan before its presentation to the Planning Board

### Community Outreach

The layout for structuring our community outreach approach was taken from the Metropolitan Area Planning Council (MAPC).

## Purpose of Engagement

Why is community input and involvement necessary for the project?

Without the support and participation of the Westwood community, we will have a directive but not a comprehensive plan. We need input from all stakeholders – whether in local government, community organizations, businesses, faith organizations, or the everyday citizen. This plan should be considered a living document that incorporates a look ahead at how we navigate a changing climate and reimagine a cleaner, greener future. This document will explore how to best prepare for humanmade and natural disasters and ways to create a sustainable future inhabitable for the generations to come. To complete this necessary task, it is vital to seek public input.

What does successful engagement look like in the short and long term?

In the short term, successful engagement entailed community feedback via an online survey and community attendance at an in-person Visioning Session. These allow us to better gauge and guide the planning process. The long-term success will be measured by education in public schools regarding the plan, better education of the general public, and a bi-annual or annual review of the Plan for progress checks and improvement opportunities.



Are we looking to inform, engage, or empower?

The outreach plan sought to inform residents about the changing climate, how to best prepare, measures already taken, and goals set for the future. This plan also sought to engage the community in evaluating the level of interest and any concerns and considerations moving forward. Finally, outreach efforts empowered the community in planning and executing ways to address climate change.

## Stakeholders

Key stakeholders included:

- Town staff
- Town board and committee members
- Residents
- Business owners
- Community organization leaders

The most active town stakeholder was WEAC, which advertised and attended events, contributed ideas to the plan, and more. Various businesses got involved by responding to the survey or, in the case of Wegman's at University Station, sponsoring some outreach events with gift cards for food and supplies. Notable nonprofit organizations were also actively involved, such as the Charles River Watershed Association, Neponset Valley Transportation Management Association (TMA), and Neponset River Regional Chamber of Commerce.

Considerations

*Active Citizenry*

Westwood has a strong core group of active citizens primarily mobilized via various Town boards, committees, and word of mouth.

### *Language Barriers*

No language barriers were present, as the vast majority of the community is English-speaking. The most common languages spoken other than English are Farsi and Mandarin. Translation services would have been provided in the event of a language barrier.

### *Perception of Plan*

The project was not contentious, as it was a mandate derived from the 2020 Comprehensive Plan. However, some parts of the Plan, such as a proposed gas leaf blower bylaw, were met with questions on practicality.

### *Trust in Government*

There was not any noticeable government mistrust among residents.

### *Need for Public Education*

Outreach efforts identified a significant need for public education. Various parts of the Plan – for example, reducing the residential carbon footprint or working with the public schools on solid waste management – require a direct and innovative public education campaign.

### *Resources & Opportunities*

The Planning Division budget was utilized to fund any expenses associated with the Plan. Expenses included a printing budget for advertising and distribution material and staff time of the Town Planner primarily, along with the Director of Community and Economic Development, Energy

Manager, Housing and Land Use Planner, and others. A challenge was the amount of staff time dedicated to the project. Typically, this work is contracted out to firms that can focus their efforts. However, the Town opted to do this in-house based on staff experience in energy and climate adaptation planning and planning, policy, and graphic design skills of staff. While this was accomplished, it may have been enhanced with more dedicated staff hours.

Key stakeholders, particularly WEAC and the Planning Board were essential in bolstering this effort. In addition, a team of graduate students from Tufts University’s Urban and Environmental Policy and Planning (UEP) program produced an exploratory report on locating, operating, and funding a microgrid in Town.

### *Challenges*

A challenge was the amount of staff time dedicated to the project. Typically, this work is contracted out to firms that can focus their efforts. However, the Town decided to do this in-house based on the experience in energy and climate adaptation planning and skills such as planning, policy, and graphic design staff. While this was accomplished, it may have been enhanced with more dedicated staff hours.



## Scale of Engagement

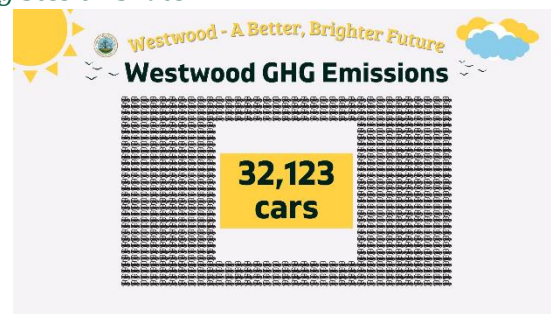
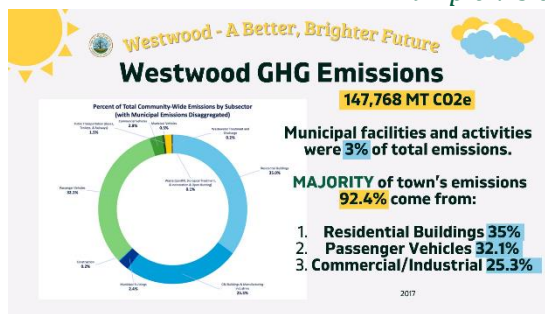
This project sought a moderate scale of public engagement where stakeholders' opinions were considered. This was primarily done through the Climate Action Taskforce, online surveys, two community visioning sessions, and a few public meetings.

## Messaging

The slogan “Westwood – A Better, Brighter Future” helped tailor the message to the

community in imagining and planning climate adaptation and resiliency. The Facts and numbers were presented in a way that may be thought-provoking to engage residents. For example, graphics of Westwood GHG emissions and equating them to things such as a single car's emission helped convey things to Visioning Session attendees.

### Example Visioning Session Slides



## Effective Delivery

There were several different avenues used to spread the word about the CRS Plan and to solicit feedback. Using the established focus areas and guiding principles outlined in Chapter 2, a dedicated page was created on the Town website at [tinyurl.com/CRSplanWestwood](http://tinyurl.com/CRSplanWestwood). The page was regularly updated throughout the process with relevant information and engagement opportunities.



There were press releases sent to and interviews conducted for articles in local news outlets, such as the online Westwood Minute and the print news Westwood Hometown Weekly. Westwood Media Center (WMC) assisted in creating public service announcement videos for the Plan and Community Visioning Sessions, as well as the application to partner with Tufts University. In addition, WMC recorded the first Visioning Session, aired it on the local station, and posted it on their website and YouTube page.

3”x3” square stickers were made to encourage traffic to the official website and generate buzz. Flyers were created to advertise the Community





Visioning Sessions. Facebook posts were made to share info related to the Plan as well.

Word of mouth played a pivotal role. Neponset Valley TMA and Neponset River Regional Chamber of Commerce were essential to increasing business engagement, while Town boards and committees advertised for the survey in public meetings.



## CHAPTER 2: OVERVIEW

To start developing the CRS plan, several sources were reviewed in preparation of this working document. The Commonwealth of Massachusetts Clean Energy and Climate Plan for 2050 was as an outline for what chapters and topics in said chapters to address. Westwood has already taken many key steps in planning and preparing for our changing climate. The following plans and reports were reviewed for relevant key points:

- Conservation Land Management Plan 2023,
- Natural Hazard Mitigation Plan 2022,
- Comprehensive Plan 2020,
- MVP Community Resilience Program 2020, and the
- Open Space & Recreation Plan 2019.

There were other documents used as references in the brainstorming of this document which included but not limited to:

- The City of Boston Climate Action Plan 2019 Update,
- Cambridge Climate Action Plan 2018,
- The City of Newton's Five-Year Climate Action Plan: A Living Plan for 2020-2025, and
- All In Shrewsbury Climate Action and Resiliency Plan.

The biggest contributor and the document that initiated this Plan is Westwood's Comprehensive Plan 2020, which includes areas covered by the CRS Plan in the Sustainability and Resiliency sections.



## Comprehensive Plan 2020 Sustainability & Resiliency Components

- Energy use audit of Town buildings, equipment, and vehicles
- CO<sub>2</sub> reduction goals & action steps:
  - Energy conservation/efficiency
  - Energy purchasing with a goal of 100% renewable
  - Net zero energy standards for new Town buildings
  - Promotion of residential solar
  - Phase out of fossil fuel use
- Policies that the Town purchases & uses supplies in a greener way
- Sustainable transportation – EVs, charging stations, & shuttle bus service
- Electric & battery powered equipment
- Walking & biking infrastructure
- Improved water conservation & pollution prevention
- Community education on sustainability
- Preservation, replacement, & planting of trees
- Path to zero waste through reduction, recycling, & composting
- Replacement of fertilizers, herbicides, & pesticides with less toxic/natural substitutes

In the same vein, the Comprehensive Plan’s Resiliency section calls for a combined Climate Action Resiliency and Hazard Mitigation Plan that identifies existing gaps, solutions, and implementation strategies. The Open Space and Recreation Plan echoes this and recommends the Town monitor and adopt best practices in sustainability and resiliency to climate change. This Plan brings this to fruition by reviewing the Town’s GHG inventory and exploring five key areas.

- Resiliency Planning & Implementation
- Land Use & Transportation
- Sustainable Buildings & Clean Energy Use
- Natural & Working Lands
- Water & Waste Management

## Guiding Principles

Five guiding principles adopted by the Climate Action Taskforce for the CRS Plan, in part, reflect the directives of the Comprehensive Plan.

-  **Promote Comprehensive Climate Action & Resiliency Planning**
-  **Educate the greater community regarding the urgency around climate change action**
-  **Promote Greenhouse Gas (GHG) emissions reduction**
-  **Promote clean renewable energy use**
-  **Promote an equitable, clean & healthy community**

## The Sustainable 7

The Plan identifies seven main goals with associated action steps and sub-steps outlined later in Chapters 3 and 4.

- 1 Town Synchronization and Public Education**
- 2 Transportation Improvements**
- 3 85% Townwide GHG Emissions Reduction in 2040**
- 4 Zero Waste Plan & Stormwater Master Plan**
- 5 Improved Resiliency**
- 6 Land Preservation & Rehabilitation**
- 7 Netzero Townwide GHG Emissions Reduction in 2060**



See the Policy Summary, Survey Results, Public Comments, and key resources in the Appendices.

## Survey

Two surveys were launched in October 2023 to gather community input. The first survey was a comprehensive one primarily focused on adults, while the latter focused on youth. The full survey results can be found in Appendix C. There was a strong push to get feedback, as discussed in the previous chapter. Reaching the younger population is difficult in the process and will be revisited as the plan is finalized and onwards.

### General Survey

#### General Demographics

The survey results breached the century mark, with **107 respondents**. However, more respondents would have helped in getting a better reflection of the Town's population of 16,231 as of the 2022 American Community Survey (ACS).

The 10-to-15-minute survey was initially split up in three key segments: residents, business owners/nonprofit organizations, and persons who identified as other – such as frequent visitors, those who work in town, etc. Of the resident group it was further split to owners, renters, or other.

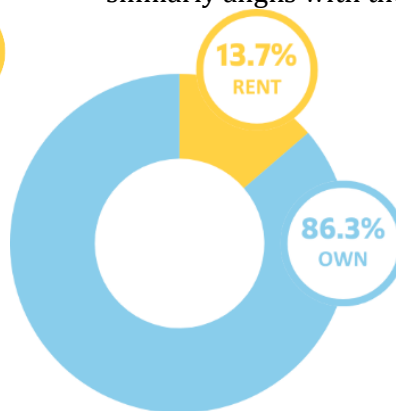


The large majority of respondents were homeowners. According to the 2022 ACS, the majority of housing units are owner-occupied, while nearly 14% are renter-occupied in Westwood. Consequently, the high percentage of homeowner respondents is unsurprising. However, more input from renters would have been beneficial in

addressing equity since they tend have less autonomy over housing.

Of the 98 respondents that indicated how long they have lived in Westwood, 60% have lived in Westwood for 20 years or more while only 18% having lived here for 10 years or less. Similarly, the majority of respondents – or 32% - that answered the age range question indicated they were 65 or older. For comparison, the 2022 ACS estimates 18.1% of the population in Westwood is in this age group. This could suggest that many of the respondents may not be impacted by some of the long-term effects of climate change and underlines the importance of the youth survey. However, given Westwood's aging population, it also suggests increased vulnerability.

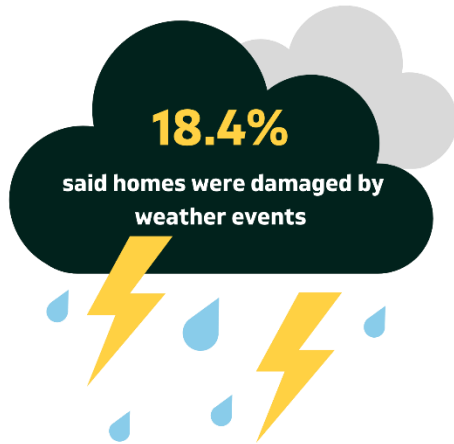
The demographic makeup of the respondents relative to racial identity aligned with demographic trends in Westwood. Despite this alignment, increased participation from black, indigenous, people of color (BIPOC) communities would have been insightful for equity reasons. 79% of the 97 respondents that answered the race question identified as white alone, which aligns with the 2022 ACS estimate of 78.8%. Only 2% of respondents identified as Hispanic or Latino, which similarly aligns with the 2022 ACS estimate of 3.7%.



Of the 96 respondents that knew their estimated household income and were willing to disclose it, most earned more than \$150,000 annually. While the 2022 ACS

estimates only 13.9% of households earn this much, it aligns with the higher volume of homeowners than renters that responded.

### Natural Disasters and Hazards



Increased frequency and severity of storms have impacted Westwood. 18.4% of homeowner respondents reported damage to their home. The majority of responses included:

Events	Damage
Heavy Rain Events	Blackouts
Nor'easters	Flooding
High Winds	Fallen Trees
Blizzards	Damage To Homes & Infrastructure

Flooding from flash flood in 2020; Every winter we have power outages due to fallen trees/branches in our neighborhood when we get a bad ice/snow storm.

### Climate Change and Energy Use

Some respondents have made changes or adopted practices in their lives to respond to climate change in the home, such as:

- composting,
- recycling,
- installing solar panels,
- owning electric vehicles

- energy efficient appliances,
- as well as switching to more efficient heating and cooling systems.

Most homeowners indicated they have boilers (hot water/steam), central air conditioning, and furnaces (forced air) for heating and cooling, half of which indicated they may or will install an all-electric option (e.g., ductless mini-split, ducted air source heat pump, geothermal heat pump, etc.). Since nearly three-quarters of respondents live in a home that was built prior to 1980, this is to be expected. This also suggests a strong willingness to adopt changes in the home. Interestingly, cost was the most cited barrier despite 98% of respondents having heard of the Mass Save Program<sup>4</sup> and 74.5% having used the Program. The high rate of home renovations in Westwood could suggest cost would not be a barrier for many.

While 70.4% said they did not have solar, the remaining either had roof-mounted solar, community shared solar, solar hot water heating, or solar carports. The biggest issue faced by those that have solar was hookup to the electric grid. When asked what barriers prevented homeowners from installing solar, the top responses were cost, tree coverage, and building orientation. While a dense tree canopy is vital, the survey results demonstrate a drawback of it.

Composting, joined Westwood Community Choice Electricity, have two electric vehicles.

Additional comments varied. The majority of the comments were in support of the Plan. While a full list of comments can be found in Appendix [#], the general themes of those supporting the plan included:

- attention to waste and recycling;
- a focus on public transit access;

- the need for Westwood to do more in climate adaptation, resiliency, and sustainability; and
- support of a gas-powered leaf blower ban.

I think this is a good idea but let's not make it political. It should be practical. There is a ton of things we can do to reduce our footprint that are cost effective and make a difference. We should do much more to tie the town into our local trains. Should we run a bus around town to connect High Street to Islington Center to University Ave? There are all sorts of lighting projects that have been done but are there more that we can do. Most are cost effective and subsidized.

### Transportation

Amongst homeowners, almost three-quarters had gas- or diesel-powered vehicles. The remaining quarter had battery electric, another type of hybrid, or plug-in hybrid electric.

Public transit use was low among respondents. For the purposes of the survey, a mile was considered a reasonable proximity to transit stations for people to walk to them and, therefore, not need a car. When asked if respondents live within a mile of public transit – such as the Massachusetts Bay Transportation Authority [MBTA] bus system, commuter rail, or other option – 71.1% said no. Given that the 34E bus only travels down Washington Street in Westwood, respondents were least likely to be located within a mile of a bus station. Proximity, scheduling, and owning a car were the primary reasons against using transit. While a small share of respondents lived in close proximity of transit, 66% of respondents used the MBTA commuter rail at least occasionally. In addition to the two stations in Town - Route 128 and Islington, respondents also indicated using Dedham Corporate, Norwood Central, Norwood Depot,

and Needham Junction to get to Boston, Cambridge, and Connecticut (Amtrak).

While transit access is important to reducing personal vehicle use, so is proximity to amenities. Results were mixed when respondents were asked to indicate which type of amenities were within a mile, with over half citing restaurants and less than half indicating retail and grocery stores respectively. Roughly a quarter indicated they did not have any amenities in proximity. This data suggests proximity to amenities is indeed a barrier to using sustainable transportation alternatives.

With many indicating they were not near transit or amenities, naturally bike and pedestrian travel was limited too. Only 3.1% walk or bike always, but almost 60% partake in either activity at least sometimes. Pedestrian and bike trips were for recreation or to go to the post office, coffee shops, and library. Lack of sidewalks for safety and the length of travel being inconvenient were the most frequent barrier indicated by respondents, which suggests need for more transit-oriented development (TOD) with accessible amenities, housing, and transit.

### Environmental Factors

Habits in the home showed residents are already making an effort toward sustainability. Most respondents indicated they were already composting or had an interest in doing so, while the most common water conservation efforts included: turning off the water during teeth brushing, dishwashing, handwashing, etc.; owning energy efficient dishwashers and washing machines; and limiting or avoiding lawn watering.

Respondents had a desire to see a broader scale of change. Nearly 70% of respondents were very concerned about climate change, while just over 12% were neutral and a little over 19% were not very concerned. Looking



outside the home, the majority of respondents felt more trees were needed on their own property, Town-owned property, and elsewhere in Westwood.

### Youth Survey

The second survey was tailored to youth from 6<sup>th</sup> grade to college-aged. While there was attendance and engagements from some feedback from high schoolers at the community Visioning Sessions, the survey responses were lacking. There will be an effort to re-engage with Westwood Public Schools and Xaverian Brothers High School at a later date to illicit feedback from middle school through college aged persons.

### Ongoing Parallel Planning Efforts

This plan is meant to streamline the various plans that have been developed over the years to ensure that climate action, resiliency and sustainability measures are being met. Maintaining best practices includes, but is not limited to:

- conducting an annual review of mitigation and resilience progress;
- conducting an annual review of progress towards Comprehensive Plan implementation actions, Open Space and Recreation recommendations, HMP mitigation strategy and MVP priority recommendations; and
- submitting all required documentation to applicable state agencies (e.g. MVP, EOEEA, etc.) to ensure continued compliance with the respective programs and plans.

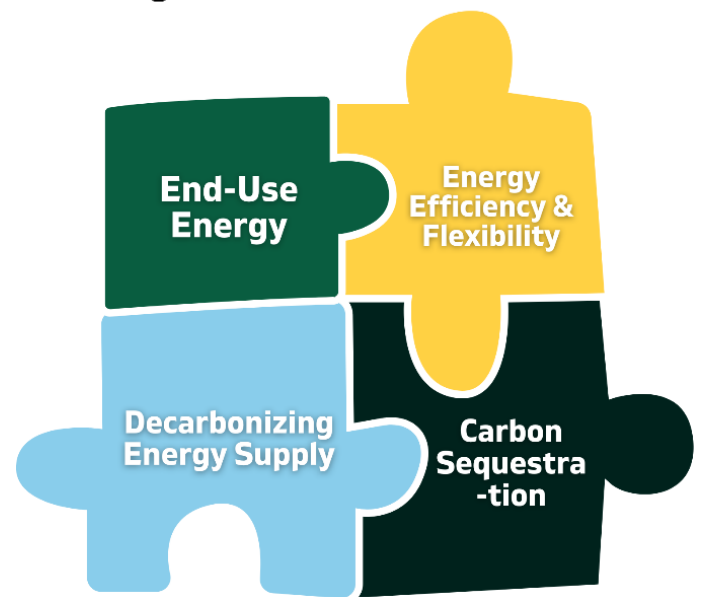
### Envisioning Westwood in 2060

The Commonwealth’s 2050 plan listed a set of four (4) priorities in their 2050 plan. While these may not be shared or even achievable priorities given the difference in resources for a municipality versus the Commonwealth, they are worth examining as a starting point.

### Commonwealth 2050 Priorities

- 1.Reduce emissions from energy “end-uses,” such as vehicle transportation or building heating, via electrification or fossil-free alternatives.
- 2.Maximize the efficiency and flexibility of energy use to ensure electric grid reliability and cost-effective decarbonization.
- 3.The electricity supply must transition to low-emitting sources.
- 4.Finally, in a 2060 future where some emissions are likely to remain, Massachusetts must balance residual GHG emissions with carbon sequestration approaches.

### 4 Key Pieces to Decarbonization



Our priorities will be ever clearer as we develop this plan and reach out to the public to get a better idea of Westwood’s vision.

### Vision for Environmental Equity

Ultimately a resilient Westwood is a place where the most marginalized communities have the opportunity for a safe and secure future. Environmental justice (EJ) is rooted in the principle that all people deserve protection from a polluted environment and the ability to live and enjoy a clean, healthy

environment, regardless of race, color, income, class, disability, gender identity, sexual orientation, national origin, ethnicity or ancestry, religious beliefs, or English language proficiency. Achieving this justice requires:

1. Meaningful involvement of all people concerning the advancement, application, and enforcement of environmental laws/regulations, and policies, including climate change policies; and
2. Equitable distribution of energy and environmental benefits and environmental burdens.

“Ultimately a resilient Westwood is a place where the most marginalized communities have the opportunity for a safe and secure future.”

While Westwood does not have any designated EJ communities – which is determined based on census block group data, equity is still a primary consideration.

### Housing & Equity

Climate and housing are closely intertwined and affect everyone. An equitable climate plan promotes a household’s ability to build resilience and adaptivity regardless of socioeconomic status, housing type, and other demographic factors. To accomplish this, it is vital to recognize vulnerabilities. Each measure should factor in equity concerns,

including how different standards will pose barriers for people in all types of housing and in the development of new housing.

**5%**  
LIVING IN  
POVERTY

**\$192,887**  
MEDIAN  
HOUSEHOLD  
INCOME

**22.4%**  
BIPOC

### Socioeconomic Status

While the median household income in Westwood is significantly higher than many communities at nearly \$200,000 annually, economic hardship extends beyond the 5% of households living in poverty, according to the

2022 ACS. Lower-income and BIPOC communities are more probable to be cost-burdened or severely cost-burdened, meaning they pay more than 30% to 50% of their income on housing, respectively. In addition to creating financial difficulty to afford everyday necessities, this limits a

household’s ability to ensure safety in a climate emergency and repair or rebuild afterward. Low- and moderate-income households also tend to pay a higher percentage of their household

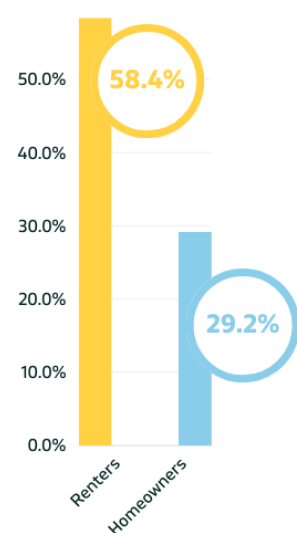
income on energy.<sup>7</sup>

### Housing Type

Economic barriers are especially challenging for renters that often have little to no control over the repair and rebuild process. While the majority of Westwood residents own their home, more than double the percentage of renters are paying at least 30% of their household income on housing than owners.

Due to the high cost of rent, renters have a limited ability to save up for emergencies, afford housing alternatives during repair, or to buy a home. Homeowners are more likely to have stable and often lower housing costs since they are not subject to rent increases and have

Cost Burdened Households



<sup>7</sup> <https://www.mass.gov/news/governor-healey-announces-creation-of-massachusetts-community-climate-bank-nations-first-green-bank-dedicated-to-affordable-housing>

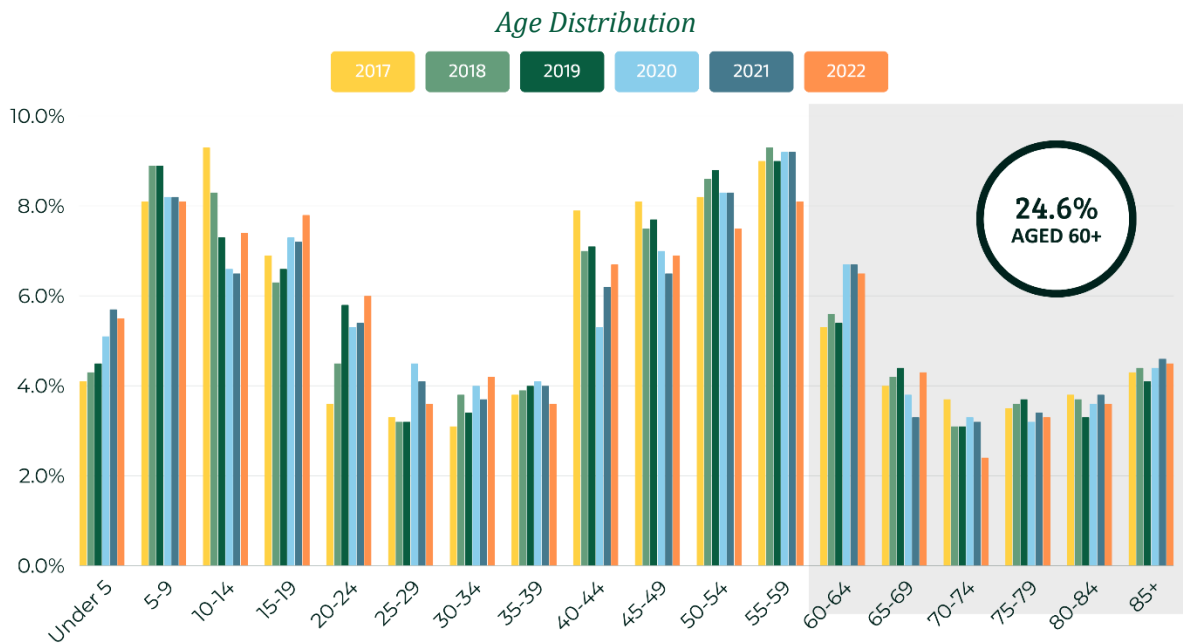
greater agency in protecting themselves than renters. Renters have reduced access to energy discount programs, with the responsibility and choice to make energy improvements often left to the property owner even though the renter usually bears the cost through utility bills.

*Seniors*

Westwood’s 2019 Housing Production Plan noted the population in Westwood is aging faster than the rest of the state. According to the 2022 ACS, about a quarter of the population is aged 60 years or older, while the median age is 42.7. Seniors are vulnerable for several reasons. Seniors are more likely to have health conditions that may worsen their

condition during or increase vulnerability to climate events. Climate emergencies pose an increased risk for seniors with limited mobility to evacuate, endure, or rebuild. It also poses an increased risk for homebound residents that may be dependent on difficult-to-transport medical equipment or have limited ability to evacuate in an emergency.

The aging population also emphasizes the need for a diverse housing stock that meets the demands of young adults with and without children. Housing production reduces demand and lowers the cost of housing for families, which in turn maximizes their ability to build resiliency and adaptability.



*Distribution Of Housing*

Given the relationship between economic barriers and climate, it is important to be mindful of the distribution of affordable – or income-restricted – housing in flood-prone areas. Two existing developments and one development underway from our Subsidized Housing Inventory (SHI) are in high-risk FEMA Flood Hazard Zones A and/or AE: Westwood Place condominiums, Gables at University Station, and the future project at 22 Everett Street. In zones A and AE, there is

a one percent annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage because they are in low-lying areas with close proximity to bodies of water. Westwood Place and Gables are near the Neponset River and wetlands, while 22 Everett Street is intersected by Purgatory Brook and South Brook. There are fifteen (15) additional SHI properties, including multi-family development, within 0.25 miles of these high-risk flood zones. However, since a large portion of the developable land near



transit is in flood-prone areas, this is unavoidable while also meeting housing needs. This underpins the importance of resilient construction measures to protect any residents or even businesses in these areas. Economic and informational resources for building climate resilience and adaptability is essential.

#### *Other Considerations*

Housing density affects emissions. Sprawl – or the development of single-family and other low-density buildings on large lots – requires greater resources for the Town and residents. Transit-oriented development (TOD), which is development located within close proximity of public transit or walkable neighborhoods, reduces traffic impacts and the associated emissions. Moreover, higher density housing maximizes the creation of housing opportunities while minimizing the development of land.

Home values are not required to factor in flood risk nor are sellers required to disclose past flooding and known flood risks in Massachusetts. As a result, home values may be overinflated in flood-prone areas. This could lead to a drop in property taxes after a flood, affecting homeowners and Town

resources. Moreover, increased heating and cooling costs during extreme temperatures increase utility costs for both renters and owners.

## Climate Science, Sustainability and Resilience Partnerships

In the drafting of this Plan Westwood has tapped into not only our own local experts and practitioners, but also our wider academic and professional networks. Some examples of this include the consultation of Executive Director Nina Schlegel of the Climate Justice Center giving insight into parts of the Plan regarding federal resources, Green New Deal initiatives, and more. Another example is the Tufts University Urban and Environmental Policy and Planning (UEP) program partnering with the Town. The programs Field Projects course sent a team of four graduate students: Joseph De Larauze, Honey Gala, Sara Shahbazi, and Colleen Shortell, advised by their professor Kari Hewitt. This team delivered an exploratory report on microgrids to see how the Town could benefit and add resiliency in the face of a changing climate.



## CHAPTER 3: NETZERO EMISSIONS BY 2060

Town of Westwood | Population: 16,231 | Area: 10.88 sq. mi. | Density: 1,494.9/sq. mi.<sup>8</sup>

Westwood's Better, Brighter Future includes reaching net-zero emissions by 2060 with:

- electrified vehicles, homes, and appliances;
- supportive efforts for cleaner energy sources to power the electric grid;
- an energy-efficient built environment;
- transit-oriented neighborhoods and business districts;
- complete streets and walkable/bikeable neighborhoods;
- robust, electrified public transit from the MBTA;
- significant use of solar panels; and
- a generous street tree canopy.

The Westwood of the future will have conditions contributing toward a healthy environment, new green job opportunities, reduced energy costs, reduced traffic congestion, improved air quality and improved public health.

“Net zero means cutting carbon emissions to a small amount of residual emissions that can be absorbed and durably stored by nature and other carbon dioxide removal measures, leaving zero in the atmosphere.”

-United Nations<sup>9</sup>

After becoming a Green Community in 2012, the Town had set a municipal energy reduction goal of 20% of the 2012 baseline by 2017<sup>10</sup> and is developing a new energy reduction goal for 2020.

Westwood has not yet reached the 20% reduction rate based on the hard data, however this does

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<sup>8</sup> US Census QuickFacts Westwood town, Norfolk County, Massachusetts

<https://www.census.gov/quickfacts/fact/table/westwoodtownnorfolkcountymassachusetts/PST045223>

<sup>9</sup> United Nations Climate Action <https://www.un.org/en/climatechange/net-zero-coalition>

<sup>10</sup> Green Communities Division <https://www.mass.gov/orgs/green-communities-division>

not account for decommissioning of older buildings while bringing online newer ones with more capacity and function. A better energy reduction accounting system would help paint a better picture. Additionally, the Town was unable to track its oil consumption in accordance with energy reduction tracking through 2015. Working with our energy partners and Massachusetts Department of Energy Resources, we continue to strive towards a cleaner, greener future.

In 2023, Town of Westwood’s Select Board committed to the Global Covenant of Mayors for Climate & Energy (GCoM). This has several requirements, including:

- A proclamation, which was approved by the Select Board on August 28, 2023;
- A GHG emissions inventory, the last of which was performed by the Metropolitan Area Planning Council (MAPC) in 2017;
- An assessment climate risks and vulnerabilities of your city, which was satisfied through our 2020 Comprehensive Plan and Hazard Mitigation Plan, 2023;
- Ambitious climate mitigation, resilience, and energy targets, which is satisfied through this CRS Plan; and
- Full climate action plans, which is also satisfied through this CRS Plan.

Reaching net zero by 2060 is an ambitious goal that Westwood will strive toward. This will only be achievable by working in tandem with all stakeholders in the Town, including residents, municipal departments, nonprofits/civic groups, and the business sector.

## GHG Emissions Inventory & Energy Use Report

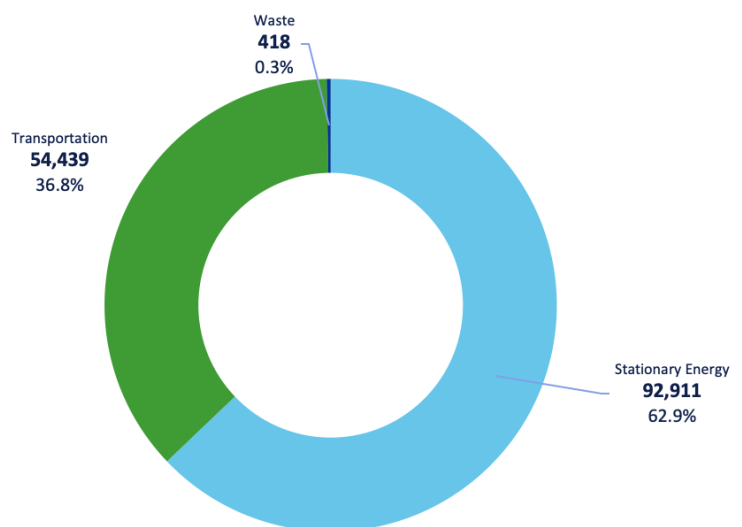
In 2017, the Town contracted the MAPC to conduct a community wide GHG inventory, which revealed that the Town released 147,768 MT CO<sub>2</sub>e annually. This was broken

down into three (3) categories with respective subcategories.

### GHG Emission Inventory Categories

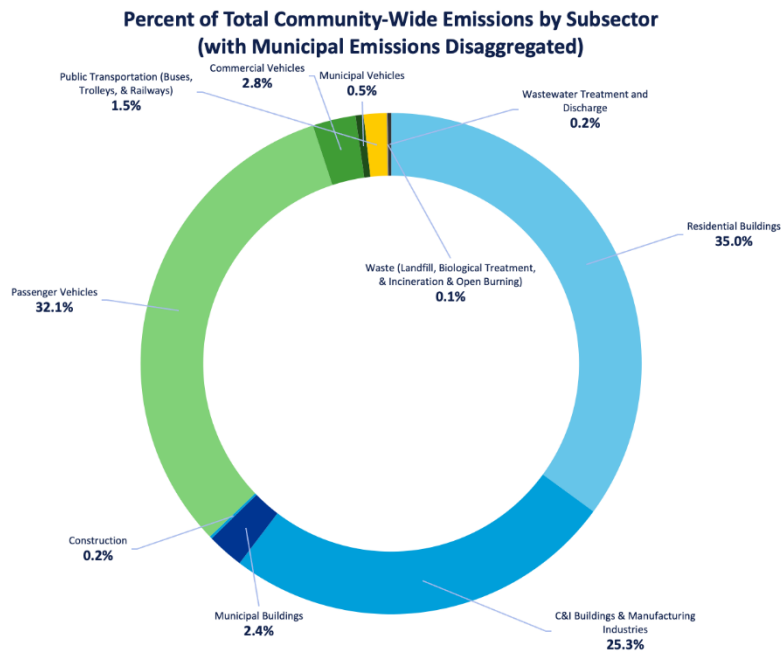
1. **Stationary Energy | 92,911 MT CO<sub>2</sub>e**  
Residential, commercial, industrial, & manufacturing buildings  
Equipment – boilers, generators, & construction and landscaping equipment
2. **Transportation | 54,439 MT CO<sub>2</sub>e**  
On-road vehicles – passenger and commercial trips taken within Town  
Trips of public light and heavy railways within Town
3. **Waste | 418 MT CO<sub>2</sub>e**  
Municipal solid waste disposed in landfills or by incineration, composting, & anaerobic digestion  
Process and fugitive emissions from treating wastewater

**Community-wide Emissions (MT CO<sub>2</sub>e) by Sector**



### Key Takeaways

- Residential buildings – including single-family development – are the largest



source of emissions in Town, followed by passenger vehicles.

- The majority of residential building emissions came from fuel oil, followed by natural gas and electricity.
- Notably, the disaggregated data showed that municipal facilities and activities accounted for about 3% of total emissions.

### Data Sources & Limitations

Data was extrapolated from the Annual Report required of the Town as a Green Communities. The Local Greenhouse Gas Inventory Tool<sup>11</sup> from the Environmental Protection Agency (EPA) was used for data collection and dissemination.

There were some limitations to the 2017 inventory that resulted in exclusions that should be highlighted. At the time, Westwood's Council on Aging (COA) had a shuttle service that was roughly 25 years old, but had not keep records of its annual gasoline consumption. MAPC recommended that the COA begin collecting this data so that

<sup>11</sup> Source:

<https://www.epa.gov/statelocalenergy/local-greenhouse-gas-inventory-tool>

it is available for any future iterations of the GHG inventory. Additionally, oil consumption data from the COA for 2017 was not available. Westwood Department of Public Works (DPW) provided vehicle data, which includes total gas and diesel consumption, but was not recorded with the Commonwealth's energy management tool MassEnergyInsight (MEI). MAPC recommended the data be added to MEI. A follow up inventory is an opportunity to

address these gaps.

### Key Considerations

While the Plan in whole will contribute to the commitment in reducing Westwood's carbon footprint, the following action steps identified in Chapter 4 will move us closer to net-zero emissions.

1. Consolidate Clean Energy, Climate & Resiliency Plans & Programs
2. Enhance Zoning bylaws to encourage energy efficiency, stormwater management, Low Impact Design
3. Establish Zoning Incentives to Encourage Net Zero & LEED Development
4. Phase out Internal Combustion Vehicles
5. Continue Fleet Electrification and Smart Charging
6. Townwide Building Energy Use & CO<sub>2</sub> Emissions Reduction
7. Evaluate the Future of Fuels & Seek Alternatives to Fossil
8. Codify NWL Sequestration, Emission & Accounting
9. Limit NWL loss
10. Establish a Solid Waste Master Plan



## Carbon Sequestration Options

Carbon dioxide is the most commonly produced GHG. U.S. Geological Survey states: “Carbon sequestration is the process of capturing and storing atmospheric carbon dioxide. It is one method of reducing the amount of CO<sub>2</sub> in the atmosphere with the goal of mitigating the extent of global climate change.”<sup>12</sup> The natural environment plays a critical role in carbon sequestration. In June 2023, Westwood’s Conservation Commission and Conservation Agent contracted BETA Group, Inc. to produce a Conservation Land Management Plan. Additionally, a tree canopy is being considered to propose at a future Town Meeting. These measures provide options to carbon sequestration through the town’s natural and working lands (NWLs). These measures and more are explained in Chapter 4D: Natural & Working Lands.

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<sup>12</sup> USGS What is carbon sequestration?  
<https://www.usgs.gov/faqs/what-carbon-sequestration>



## CHAPTER 4: RECOMMENDED ACTION STEPS

To implement the goals identified previously, action steps to address the climate adaptation, resiliency and sustainability needs of the community have been developed. These action steps or strategies are designed to increase and improve climate adaptation, resiliency, and sustainability opportunities in Westwood for all socio-economic groups. These action steps outlined in the following chapters should be considered as suggestions and not directives. Below is an outline of the following chapters.

- There are five **focus areas** (in dark green ■):
  - Resiliency Planning & Implementation
  - Land Use & Transportation
  - Sustainable Buildings & Clean Energy Use
  - Natural & Working Lands
  - Water & Waste Management
- Each focus area has specific **action steps** (in pastel green ■ with the - Letter.Number-Notation. For example, A.1).
- Some of the action steps have **sub-steps** (in light green ■ with the - Letter.Number.Number-Notation. For example, A.1.1).

Key	Action Steps	Deadline	Responsible Entities
<b>RESILIENCY PLANNING &amp; IMPLEMENTATION</b>			
<b>A.1</b>	<b>Improve Comprehensive Emergency Management Plan &amp; Emergency Planning Committee</b>		
A.1.1	Purchase & Install Generators at the Main Library & Islington Branch/Wentworth Hall to Serve as Heating/Cooling Centers		
A.1.2	Provide CPR & Defibrillator Training to Town Staff		
<b>A.2</b>	<b>Review &amp; Improve Emergency Operations &amp; Communications System</b>		
A.2.1	Update the I-Net System		
<b>A.3</b>	<b>Develop a Climate Change Adaptation &amp; Resiliency Campaign and Public Education Efforts</b>		
A.3.1	Provide Community Education Focused on Sustainability		
<b>A.4</b>	<b>Consolidate Clean Energy, Climate &amp; Resiliency Plans &amp; Programs</b>		
<b>A.5</b>	<b>Continue to Leverage State &amp; Local Resources to Demonstrate Net Zero Solutions &amp; Work with Surrounding Communities to Achieve Goals</b>		
<b>A.6</b>	<b>Update &amp; Protect Electric Grid</b>		
A.6.1	Consider Implementing Microgrids		
<b>LAND USE &amp; TRANSPORTATION</b>			
<b>B.1</b>	<b>Develop a Proactive Land-Use Strategy to Site Housing &amp; Clean Energy</b>		

B.1.1	Strengthen Environmental Reviews for Environmental Impact & Design Review Applications		
<b>B.2</b>	<b>Enhance Zoning bylaws to Encourage Energy Efficiency, Stormwater Management, &amp; Low Impact Design</b>		
<b>B.3</b>	<b>Establish Zoning Incentives to Encourage Net Zero &amp; LEED Development</b>		
B.3.1	Develop a Voluntary Westwood Green Certification Program for Businesses & Organizations		
<b>B.4</b>	<b>Digitize Meeting Packets for Committee/Board Meetings to Reduce Paper Consumption</b>		
<b>B.5</b>	<b>Promote Transit-Oriented Development (TOD) in Town Villages</b>		
<b>B.6</b>	<b>Phase out Internal Combustion Vehicles</b>		
B6.1	Decrease Gas-Powered Vehicle Use to Reduce Traffic & Emissions		
B6.2	Improve Islington Station Parking & Access		
B6.3	Expand Micro-transit Access & Service to Serve Local Mobility Needs		
B6.4	Campaign for the Return of the Rt. 109 Bus or Comparable Service		
B6.5	Require Carshare Parking		
<b>B.7</b>	<b>Continue Fleet Electrification &amp; Smart Charging</b>		
<b>B.8</b>	<b>Address Hard-to-Electrify &amp; Other Modes of Transportation</b>		
B.8.1	Facilitate Walking, Biking & Carpooling to Work or School		
B.8.2	Implement Directional Signage on Washington Street to Highlight Nearby Transit Options		



B.8.3	Expand Cycling Routes & Connect to Routes in Different Municipalities		
B.8.4	Conduct a Roadway Inventory & Prioritize Complete Streets		
B.8.5	Change Culture Around Sidewalks & Shared Use Paths		

### SUSTAINABLE BUILDINGS & CLEAN ENERGY USE

<b>C.1</b>	<b>Townwide Building Energy Use &amp; CO<sub>2</sub> Emissions Reduction</b>		
C.1.1	Decarbonize/Energy Use Reduction in Residential Homes		
C.1.2	Develop Townwide Building Emissions Reduction Bylaw		
C.1.3	Renegotiate the Community Aggregation Program		
<b>C.2</b>	<b>Enhance Electric Power Options</b>		
C.2.1	Support Solar Power		
<b>C.3</b>	<b>Evaluate the Future of Fuels &amp; Seek Alternatives to Fossil</b>		
C.3.1	Enact a Gas Leaf Blower Bylaw		

### NATURAL & WORKING LANDS

<b>D.1</b>	<b>Identify NWL Conservation</b>		
<b>D.2</b>	<b>Codify NWL Sequestration, Emission, &amp; Accounting</b>		
D.2.1	Preservation, Replacement, & Planting of Trees		

D.2.2	Replacement of Fertilizers, Herbicides, & Pesticides with Less Toxic & Natural Substitutes		
<b>D.3</b>	<b>Expand NWL Conservation</b>		
<b>D.4</b>	<b>Limit NWL Loss</b>		
<b>D.5</b>	<b>Manage Wetlands, Forests &amp; Farms for Changing Climate</b>		
<b>WATER &amp; WASTE MANAGEMENT</b>			
<b>E.1</b>	<b>Continue Water Infrastructure Improvements</b>		
E.1.1	Inventory of Lead Pipes in Westwood		
E.1.2	Inventory & Improve Culverts Across Town		
<b>E.2</b>	<b>Continue to Develop Stormwater Master Plan</b>		
E.2.1	Procedures for Improved Water Conservation & Pollution Prevention		
<b>E.3</b>	<b>Establish a Solid Waste Master Plan</b>		
E.3.1	Enact Policies for Greener Projects		
E.3.2	Increased Public Education on Recycling		

# Goals and Action Steps Matrix

Focus Area		Action Steps	The Sustainable 7: Goals						
			Town Synchronization & Public Education	Transportation Improvements	85% Townwide GHG Emissions Reduction in 2040	Zero Waste Plan & Stormwater Master Plan	Improved Resiliency	Land Preservation & Rehabilitation	Net-zero Townwide GHG Emissions Reduction in 2060
Resiliency Planning & Implementation	A.1	Comprehensive Emergency Management Plan & Emergency Planning Committee	X				X		
	A.2	Review & Improve Emergency Operations & Communications System					X		
	A.3	Develop a Climate Change Adaptation & Resiliency Campaign & Public Education Efforts	X		X		X		X
	A.4	Consolidation of Clean Energy, Climate, & Resiliency Plans & Programs	X		X		X		X
	A.5	Climate Leadership: Continue to Leverage State and Local Resources to Demonstrate Net Zero Solutions and Work with Surrounding Communities to Achieve Goals			X		X		X
	A.6	Updating & Protecting Electric Grid					X		
Land Use & Transportation	B.1	Develop a Proactive Land-Use Strategy to Site Housing & Clean Energy	X		X		X		
	B.2	Zoning bylaws to Encourage Energy Efficiency, Stormwater Management, & Low Impact Design	X		X	X	X	X	X
	B.3	Zoning Incentives to Encourage Net Zero & LEED Development	X		X		X		X
	B.4	Transportation		X	X				X

Sustainable Buildings & Clean Energy Use	C.1	Buildings			X		X		X
	C.2	Build a Robust & Diverse Clean Energy Workforce to Meet the Plan Goals	X		X		X		X
	C.3	Electric Power			X		X		X
	C.4	The Future of Fuels - Alternatives to Fossil	X	X	X				X
Natural & Working Lands	D.1	Identify NWL Conservation			X			X	X
	D.2	Codify NWL Sequestration, Emission, & Accounting			X			X	X
	D.3	Expand NWL Conservation			X			X	X
	D.4	Limit NWL Loss			X			X	X
	D.5	Manage Wetlands, Forests & Farms for Changing Climate	X		X			X	X
Water & Waste Management	E.1	Inventory of Lead Pipes in Westwood				X	X		
	E.2	Develop Stormwater Master Plan	X			X	X		
	E.3	Establish a Solid Waste Master Plan	X		X	X	X		X





# CHAPTER 4A: RESILIENCY PLANNING & IMPLEMENTATION

On October 23, 2023 the Town’s Select Board adopted a final Hazard Mitigation Plan (HMP) that encases many of the needs, concerns and priorities related to natural disaster prevention and emergency preparedness. This chapter expands and augments the HMP. A subcommittee on this matter was established and provided some input, noting certain past and current projects relative to the CRS Plan, as well as recommendations for future plans.

## Existing Efforts

Study identifying critical facilities and generator status
Increased training for public safety officials
Collaboration with Eversource on tree trimming to reduce outages due to fallen trees and limbs during severe weather events
Contracted Beaver Solutions as part of the Beaver Management Plan, which ensures the placement of beaver deceiver devices, yearly inspections, and any necessary repairs and is monitored by DPW and checked bi-annually by Beaver Solutions
Town Administrator, Assistant Town Administrator, Fire Chief, and Human Services Director have begun working on establishing a team to review and update the Town’s Emergency Preparedness procedures
Facilities Division used ARPA funds to add cameras and security features to municipal buildings to enhance security
Townwide radio infrastructure study in 2023 to assess the need for upgrades , which are projected to cost \$4.3 million
ARPA funds authorized to conduct Town and school-wide facilities study assessing the needs of all municipal and school buildings on November 13, 2023

## A.1 Improve Comprehensive Emergency Management Plan & Emergency Planning Committee

This plan should include sections on disaster/storm management, hazardous materials, and more. It should also thoroughly lay out strategies for how information is communicated and to whom in an emergency.

- Expand the Emergency Planning Committee to include Human Services, local businesses, and community organizations.
- Complete review and update of the Town's Emergency Preparedness procedures.

*Timeframe:* Years 1-3

*Responsible Entities:*

### A.1.1 Purchase & Install Generators at the Main Library/Wentworth Hall for a Heating/Cooling Center

Westwood High School is designated as the Town's Emergency Shelter. Other options should be added. Residents are also regularly directed to the Library during periods of extreme heat or cold. Still, the facility does not have a generator to remain operational if they lose power.

- Purchase generators for additional Town buildings (Library, Wentworth Hall, etc.) to provide additional non-school space that could be used as a respite area or designated emergency shelter.

*Timeframe:* Years 1-3

*Responsible Entities:* Town Administrator  
Department, Department of Public Works,  
Select Board

### A.1.2 Provide CPR/Defibrillator Training to Town Staff

This is simple training that can lead to life saving measures for a co-worker, bystander, or loved one. What may seem scary or impossible without the proper training can be taught to staff to ensure that someone has the skillset to make a difference if the situation presents itself.

*Timeframe:* Years 1-3

*Responsible Entities:*

## A.2 Review & Improve Emergency Operations & Communications System

- Continue to review and improve the Town's emergency operations and communications system.
- Build a mutual aid network of social, behavioral health, housing, and medical services – along with business and community partners – for emergency situations.

## Mutual Aid

Mutual aid is centered around sharing resources. The concept has been around for generations, but increased in popularity during the COVID-19 pandemic. It can be a formal or informal effort among community members and businesses, operate on a variety of scales, and be geared toward a wide range of purposes. Examples include:

- Delivering groceries to homebound residents
- Checking in on neighbors
- Hosting a free yoga class
- Sharing information about repair funding



The Living Library<sup>13</sup> at Westwood Public Library is a form of mutual aid, in which patrons can access gardening seeds, plants, supplies, and information and bring in items to share with others in turn.

- Expand the capacity of the Health Division, Police Department, and Fire Department to strengthen health, wellness, and disaster preparedness through community engagement.
- Support programs that empower at-risk individuals to protect their health and wellbeing.
- Develop a list of local volunteers to assist in the event of an emergency and establish “neighbors helping neighbors” groups.
- Aid households in creating a disaster kit to provide the ability to shelter in place for up to 72 hours.
- Proactively reach out to residential facilities for seniors, assisted living, and persons with disabilities to prepare evacuation and emergency response plans.
- Strengthen and promote access to public health and social services in partnership

<sup>13</sup> <https://www.westwoodlibrary.org/services/living-library/>

with local healthcare organizations, Human Services Department (Youth and Family Services and Library), and Health Division.

- Evaluate the hydrant system in Town to ensure proper coverage and develop a plan to add hydrants in areas with coverage gaps. This would provide a reliable water source regardless of location in the event of a fire.

*Timeframe:* Years 1-5 *Responsible Entities:* EXAMPLE, Planning Board, Zoning Board of Appeals

### A.2.1 Update the I-Net System

Institutional Network, or I-Net, refers to the separate cable communications network, owned and operated by the Licensee, for municipal use. They connect Town buildings to enable the sharing of resources. The I-Net system currently housed in Fire Station 1 is the backbone of the Town’s IT infrastructure and is starting to show its age. When Fire Station 1 is demolished and rebuilt, the I-Net must be moved. Emergency communications were prioritized over preventative and restorative measures because they are crucial to the function of the Town.

- Upgrade the I-Net system when it is transferred to the new Fire Station 1.

*Timeframe:* Years 1-5 | *Responsible Entities:* EXAMPLE, Planning Board, Zoning Board of Appeals

### A.3 Develop a Climate Change Adaptation & Resiliency Campaign and Public Education Efforts

- Create both a one-page print and online resource. Said resources can have priority action steps, ways to get involved, and benchmarks. Town bodies, such as WEAC

the Climate Action Taskforce, all departments, boards, and committees, will have access.

- Westwood Media Center can help partner on getting the message out.

*Timeframe:* Years 1-3 | *Responsible Entities:* EXAMPLE, Planning Board, Zoning Board of Appeals

### A.3.1 Provide Community Education Focused on Sustainability

Public education inspires community-based, or grassroots, change that is more effective than top-down policy. Informing the public of the risks of hazards and the benefits of mitigation actions creates a more environmentally conscious public, which is the ultimate goal. Education should include how stormwater impacts flooding and pollution, stormwater utilities, what homeowners can do to reduce impacts, how climate change affects stormwater, and what the Town does and spends to address these problems. The information can include examples from other communities.

- Build awareness of the importance of resiliency planning among residents, students, and Town officials and personnel of the urgency to combat climate change.
- Partner with schools and extracurricular programs to educate children and residents about healthy lifestyle choices, such as food, exercise, hygiene, and mental health to improve the overall health of the community.
- Expand community risk reduction program (Neighbors Helping Neighbors) to provide information on brushfires.
- Provide education to the community on the 72-on-you program (emergency preparedness). Provide education to the community on more environmentally friendly landscaping strategies.

Public education can have a direct effect on actions.

*Timeframe:* Years 1-5

*Responsible Entities:* EXAMPLE, Planning Board, Zoning Board of Appeals

## A.4 Consolidate Clean Energy, Climate & Resiliency Plans & Programs

This CRS Plan is the beginning of the consolidation effort drawing from several plans:

- 2023 Green Communities Annual Report
- 2020 Comprehensive Plan
- 2019 Open Space and Recreation Plan
- 2022 Hazard Mitigation Plan
- 2019 Municipal Vulnerability Preparedness Plan
- 2023 Conservation Land Management Plan

This CRS Plan can be used as a means to inventory all Town documents related to climate action, resiliency and sustainability to track progress and identify any overlaps and opportunities for partnerships. The CRS Plan should have an annual or bi-annual review of accomplishments and unmet needs.

*Timeframe:* Years 1-3

*Responsible Entities:* EXAMPLE, Planning Board, Zoning Board of Appeals

## A.5 Continue to Leverage State and Local Resources to Demonstrate Net Zero Solutions and Work with Surrounding Communities to Achieve Goals

There are countless resources and funding opportunities related to climate change and

sustainability. But the Town currently has limited capacity to leverage these resources.

- Consider the creation of a sustainability manager or sustainability planner position.
- Collaborate with the Charles River and Neponset River Watershed Associations to promote the continued improvement of water quality in the Charles and Neponset Rivers.
- Partner with neighboring municipalities to collaborate on environmental actions.

*Timeframe:* Years 1-3

*Responsible Entities:*

## A.6 Updating and Protecting Electric Grid

- Relocate power lines underground to prevent storm-related power outages, which allows for more street trees.

Underground power was prioritized because the Martha Jones School often loses power during events due to fallen trees or branches on the power lines. While it is a priority to resolve a power outage anywhere in town, losing power at the school is at a greater risk of being disruptive to more people – including students and their caregivers, families, teachers, and staff.

*Timeframe:* Years 1-3

*Responsible Entities:*

### A.6.1 Consider Implementing Microgrids

A microgrid is a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid. In the fall of 2023 the Town Planner applied for and was selected to partner with the Tufts University's Urban & Environmental Policy & Planning Department, Tufts UEP. This partnership comprised of working with a team of

graduate students in the Spring 2024 semester. The project was called "Considering Microgrids to Give Westwood a Better, Brighter Future. The Town Planner and Housing & Land Use Planner guided the students along the process, which included a presentation at a public meeting held on April 11, 2024.

Findings in the report included the following:

- Implementation of microgrids is constrained by factors such as regulatory restrictions imposed by utility, high upfront costs, and the size of energy generation and storage resource required to provide full resilience to the building(s) served.
- A combination of renewable and non-renewable energy resources may be required to balance physical resilience of the microgrid with renewable energy goals.
- Conducting robust community engagement efforts is crucial to ensuring that the needs of community residents is centered and that the project move forward with implementation.

A copy of the full report can be found on the Town website<sup>14</sup>

*Timeframe:* Years 5-7

*Responsible Entities:*

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<sup>14</sup>

<https://www.townhall.westwood.ma.us/home/showpublisheddocument/31601/63853095223790000>





## CHAPTER 4B: LAND USE & TRANSPORTATION





The Department of Community and Economic Development (DCED) is the Town entity that manages land use functions, which includes zoning, permitting, and economic development. Within the Department are several divisions including: Building, Planning, Health, Zoning, Licensing, Conservation, Licensing, Housing, and Historic Preservation. A Land Use Committee (LUC), comprised of staff from various related divisions and departments, has been established as an informal forum for applicants to discuss potential development projects and assist in the coordinated review of these projects by the various town boards and commissions. Applicants wishing to appear before the LUC contact DCED at least one week prior to the meeting they wish to attend. The Town has several ways in which it currently considers climate action, sustainability, and resilience through zoning and permitting including:

**Environmental Impact  
Design Review (EIDR)**  
Planning Board

**Earth Material Movement  
(EMM) Approvals**  
Planning Board

**Stretch  
Code**  
Building Permits

The majority of Westwood land is already built out or dedicated for preservation. This means the Town must carefully consider how to redevelop land for growth. Transportation interplays with land use by mutually affecting how people move and interact with the built and natural environment. Transportation in Westwood includes:

MBTA Services				
	<b>34E Bus to Orange Line</b> Washington Street stops connect to Orange Line subway	<b>Franklin/Foxboro Commuter Rail</b> Islington Station	<b>Providence/Stoughton Commuter Rail &amp; Amtrak</b> Route 128 Station	<b>The RIDE</b> on-demand service for persons with disabilities
Local Services	<b>COA Shuttle</b> on-demand service for seniors run by the Westwood Council on Aging		<b>University Avenue Shuttle</b> Neponset Valley Transportation Management Association (TMA)	

## Land Use

### Zoning & Permitting

The Town currently has a few mechanisms in place that already follow the guiding principles and goals of this Plan. The Planning Division in particular, through the Town of Westwood’s Zoning Bylaws, mandates certain standards for site plan reviews considered by the Planning Board for approval in §7.3 Environmental Impact and Design Review (EIDR)<sup>15</sup>. EIDRs have several requirements.

#### §7.3.7 Stormwater Drainage

§7.3.7.1.6 includes the direction of flow and means of ultimate disposal. Stormwater drainage runoff calculations used for the drainage system design shall be prepared by a Registered Professional Engineer and must support the sizing of all drainage structures and pipes. Further, the must demonstrate compliance with the Massachusetts Department of Environmental Protection (Mass DEP) standards. §7.3.7.1.7 requires compliance with provisions for sanitary sewerage and water supply, including fire protection measures.

#### §7.3.8 Environmental Impact & Design Standards

This section sets 21 standards, many of which are environmental related:

- Preservation of Landscape
- Relation of Buildings to Environment,
- Open Space
- Traffic Impact and Alternative Means of Transportation
- Stormwater Drainage and Erosion Control
- Safety
- Microclimate
- Energy Efficiency
- Detrimental Effects (pollution, fire, etc.)
- Air Quality
- Plants & Animals
- Solid Waste
- Water Quality

#### §7.1 Earth Material Movement

Similarly, §7.1 Earth Material Movement (EMM)<sup>16</sup> sets mandates and standards for the movement of earth material. Unless otherwise exempt, any projects that result in the import or export of 200 cubic yards or more of earth material, changes in the grade of five (5) or more feet, or slopes in excess of 15% must receive an EMM approval. EMM is defined as the export, import and/or regrading of soil, loam, sand, gravel, topsoil, borrow, rock, sod peat, humus, clay, stone or other earth material or similar material by means of vehicles and machinery, to, from, or on land within the Town. As related to the environment, the decision considers whether or not the project will affect public health, safety, neighboring land, and both natural and

<sup>15</sup>

<https://www.townhall.westwood.ma.us/home/showpublisheddocument/28232/63817679598020000>

<sup>16</sup>

<https://www.townhall.westwood.ma.us/home/showpublisheddocument/28232/63817679598020000>

engineered drainage patterns of surface and groundwater.

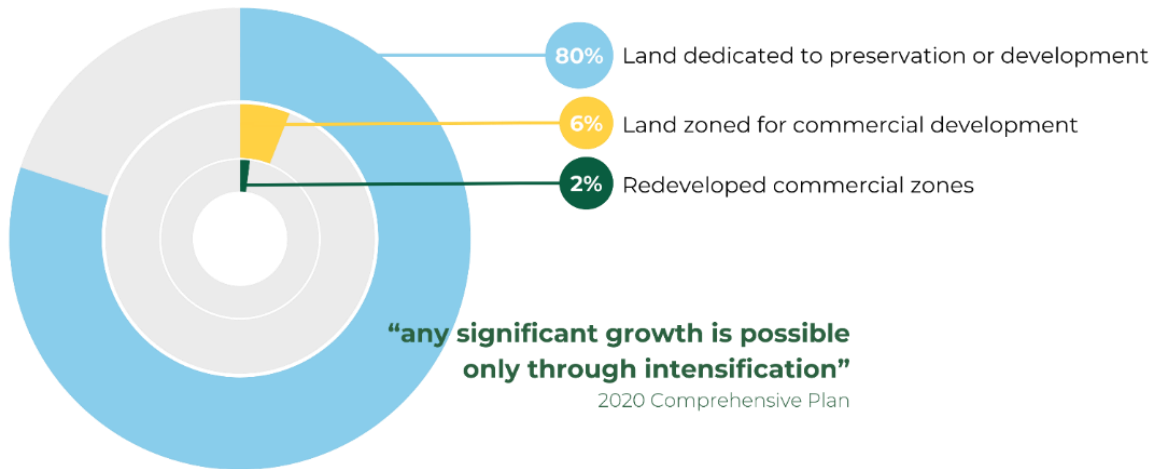
The Building Division received the most applications in the DCED at over 900 last year and has the most impact on how the interior of buildings and structures throughout the Town are developed. DOER states: the Stretch Code, which emphasizes energy performance, is designed to result in cost-effective construction that is more energy efficient than that built to the "base" energy code. The Stretch Code is typically updated every few years, with the most recent updates taking effect in 2023<sup>17</sup>.

### Economic Development

When it comes to economic development, the Town has been engaged in finding ways to redevelop existing commercial zones to allow for a more efficient use of land resources. As outlined in the Town's 2020 Comprehensive Plan, 80% of the Town's 7,155-acre land area is committed through development or preservation and any significant growth is possible only through intensification of current developed land. While roughly 6% of this land is zoned commercially, the vast majority has not been redeveloped to maximize the fiscal receipt. Continued redevelopment of these commercial areas is essential to increasing our economic return and meeting community needs while preserving the rural nature of the Town.

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<sup>17</sup> <https://www.mass.gov/info-details/building-energy-code>



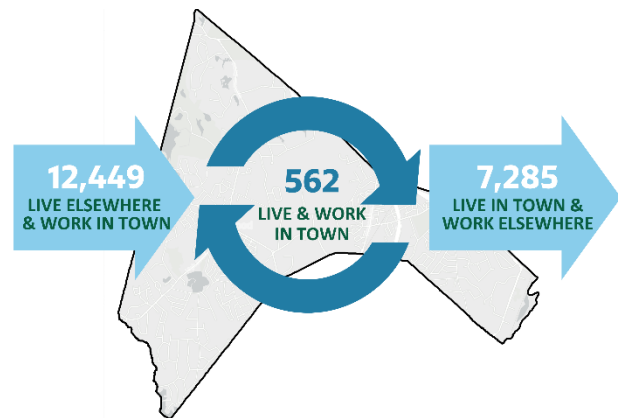
## Transportation

The Town of Westwood has several modes of public transit to facilitate the flow of people, goods, and services. The **MBTA 34E bus** travels along Washington Street in Westwood from Walpole to Forest Hills, where riders can access the orange line commuter rail to south station & Amtrak. The Town has access to three different services between the two **MBTA Commuter Rail stations**: the Providence/Stoughton and Franklin/Foxboro MBTA commuter rail lines and the Amtrak system. Dedham Corporate Station also provides access to the Franklin/Foxboro line just outside the boundary of Westwood.

A couple of services are tailored to provide an equitable transit experience. The **Council on Aging (COA)** operates a shuttle service on weekdays for seniors ages 60 years or older by appointment. Seniors are limited to 12 rides per month. Rides for medical appointments are prioritized over non-medical appointments and there is a suggested donation. **The Ride**, a service operated by the MBTA, provides transportation by appointment to those with a disability that prevents them from using other MBTA services.

## Commuting Patterns

Transit plays a pivotal role in the economy of Westwood and climate. Since a significant source of emissions comes from personal vehicle travel, it’s important to analyze commuting patterns. While limited data exists about vehicle miles traveled on the municipal level and what portion of it is from EVs versus gas-powered vehicles, patterns can be surmised using employer data from the U.S. Census Bureau’s OnTheMap<sup>18</sup> tool. For the purpose of inclusivity, all jobs were included in the calculation.

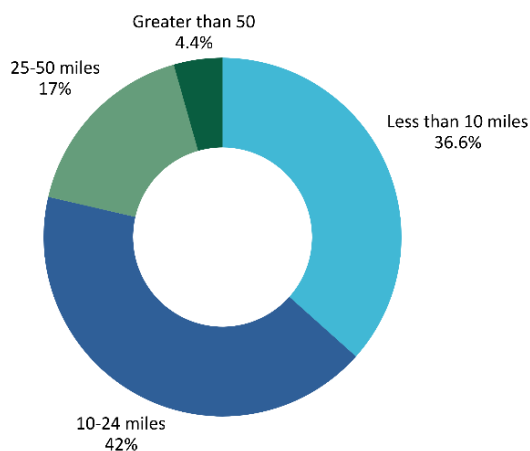


The data suggests Westwood residents are primarily leaving Westwood for work, while

<sup>18</sup> <https://onthemap.ces.census.gov/>

many people are entering Westwood for work. The majority of employed Westwood residents are traveling 10 to 24 miles to work, while the most frequent direction is northeast toward Boston.

Commuting Distances of Westwood Residents



The caveat to this data is that it’s based on 2021 employer information, not actual destinations. The rise in remote work since the COVID-19 pandemic implies that many employees may not actually be commuting. Moreover, we don’t know what portion of these workers are using public transit or carpooling, as MBTA ridership data for Westwood stations is limited. Regardless, it is suggested that a great deal of GHG emissions are likely from personal vehicle travel.

### The Role of Public Transit & Pedestrian Access

Consequently, public transit is essential in offsetting emissions, while also mitigating traffic. While the conversion to EVs is vital, so

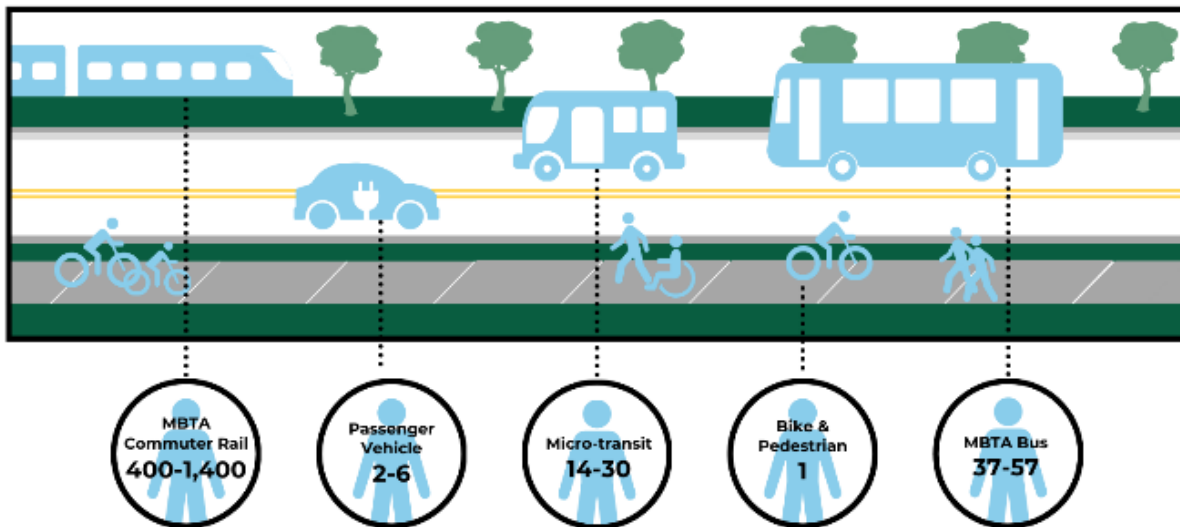
is the reduction in personal vehicle travel. While EVs do not produce tailpipe emissions, the heavier weight of the batteries leads to increase particulate pollution from the wearing of the tires. Moreover, they take up the most space per person when comparing different modes of travel.

Gaps in transit can be mitigated by increasing pedestrian and bike mobility. The most significant gaps in transit are the High Street area and last-mile service to stations. For example, Xaverian Brothers High School students, who come from throughout the Greater Boston area daily, often take advantage of the Islington Station service but have to cross the often high traffic sections of Washington Street and Clapboardtree Street. To help close the last-mile gap on University Avenue, the **Neponset Valley Transportation Management Association (Neponset Valley TMA)** has shuttle services for select University Avenue businesses and office buildings. 101 Station Drive, Eversource, and Citizens have opted into the micro-transit service that connects these sites to the Route 128 Station. It is free to tenants and employees of Eversource, 101 Station Drive, and Citizens and is scheduled to coordinate with the Providence/Stoughton Commuter Rail schedule. Similarly, **Moderna**, though located in Norwood, operates its own shuttle service for employees and visitors. Routes include one to their Cambridge campus, around the Norwood campus, and to Route 128 and Norwood Depot stations – giving employees access to two different MBTA commuter rail lines and Amtrak.



## REDUCING TRAFFIC & GHG EMISSIONS

Capacity estimates are based on seats and exclude standing room.



In 2023, the Westwood Planning Division applied for a MassDOT Regional Transit Innovation Grant to pilot a turnkey micro-transit service with the hope this pilot could lead to fixed routes in and around the Town.

The following are proposed action steps.

### B.1 Develop a Proactive Land-Use Strategy to Site Housing and Clean Energy

#### B.1.1 Strengthen Environmental Reviews for Environmental Impact and Design Review Applications

This can include prompts about what mitigating measures will be taken in the project to get the applicant thinking about these things but not necessarily requiring everything recognizing resource limitations that can apply in projects. In May 2022, the Planning Board proposed amendments to the Zoning Bylaw related to allow for a more streamlined approval process for solar facilities, including the installation of ground mounted solar panels. These amendments, which were adopted by Town Meeting, established design and performance standards which balance the need for

renewable energy with neighborhood concerns.

There are other considerations such as revising the Zoning Bylaw to create zoning incentives for buildings and developments that are net zero, LEED certified, or otherwise sustainable. Additionally, encourage use of Open Space Residential Development for new residential developments.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

### B.2 Enhance Zoning Bylaws to Encourage Energy Efficiency, Stormwater Management, Low Impact Design

In May 2022, the Planning Board proposed amendments to the Zoning Bylaw to strengthen Environmental Impact Design Reviews by the Planning Board to encourage greater energy efficiency, on-site stormwater treatment, Low Impact Design (LID), open space preservation, and tree plantings.

- Review the Wetlands Protection Bylaw and the Stormwater Bylaw to better address climate change issues and enable the Town to meet federal and state

requirements for stormwater quality. Consider a stormwater utility to fund stormwater system improvements.

- Promote the Open Space Residential Development (OSRD) bylaw as well as Low Impact Development and narrower road widths.
- Encourage or require drought tolerant landscape design for all new development and redevelopment by requiring or providing incentives for xeriscaping (using drought-tolerant practices).
- Engage WEAC and other Town groups to increase public awareness and participation in the early design stage review of sustainability elements for municipal construction projects.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

## B.3 Establish Zoning Incentives to Encourage Net Zero & LEED Development

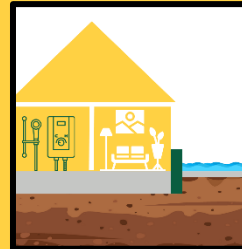
While the Stretch Code already encourages green building, the Zoning Bylaw could be strengthened to hold projects to a higher green standard.

- Consider revising the Zoning Bylaw to create zoning incentives for buildings and developments that are net zero, LEED certified, or otherwise developed in a sustainable way.
- Encourage applicants to determine what LEED certification they would achieve if they pursued it.
- Establish net zero energy standards for new Town buildings.
- Establish net zero energy standards for new Town buildings.
- Evaluate expanding resilience measures into the Zoning Bylaw for commercial and multi-family residential development,

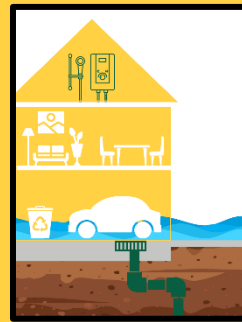
such as wet or dry floodproofing, to promote resilience in flood-prone areas.

### Wet & Dry Floodproofing

Wet floodproofing Wet and dry flood proofing can be used in tandem with one another.



Dry floodproofing involves keeping the water out by sealing, installing floodgates, or other preventative measures. This method generally works with lower levels of flooding since the water applies pressure.



Wet floodproofing allows the water in with minimal damage. Utilities are usually placed on upper levels, while ground-floor and basement levels are built with waterproof materials (e.g. concrete) and only contain things that can tolerate water until it recedes.

### B.3.1 Develop a Voluntary Westwood Green Certification Program for Businesses & Organizations

Local green certification programs allow businesses to voluntarily opt into adopting specific sustainable measures of a municipality's choosing. It recognizes businesses for their efforts and provides examples for other businesses to replicate. Recipients will often receive a sticker or sign that they can display in their window and on their website indicating they have achieved this certification. It's important the requirements are carefully thought out, accessible to all types of businesses and organizations, and not just greenwashing – the practice of claiming to be sustainable without effective methodology. Similar to

green labels on products, the green certification program can increase the appeal of the business to customers. Awards could be distributed annually near Earth Day by publicly sharing the specific measures awarded businesses have implemented to qualify.

- Explore the logistics of developing a local certification program.
- Develop parameters to achieve certification.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

## B.4 Digitize Meeting Packets for Committee/Board Meetings to Reduce Paper Consumption.

All DCED divisions switched to online permitting in 2017 using OpenGov, which helped reduce the amount of paper waste in permitting applications. To give an idea of how much paper this would be, the divisions combined received in excess of 1,500 applications in 2023. Each application can range from a dozen documents to hundreds for larger projects.

Each board or committee usually develops a meeting packet of all relevant materials to each meeting. While many meeting packets are now digital as well, some are not. The Town should take an

- Assess how various departments manage permitting and meeting materials and shift to a digital format where possible.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

## B.5 Promote Transit-Oriented Development (TOD) in Town Villages

A MAPC study in 2012 identified a set of principles for TOD in which this action steps references.

“Research across the U.S. has identified a set of common characteristics of TOD that are correlated with better transportation performance, greater economic return, and improved social equity.

- A diversity of land uses, including employment and common destinations
- Higher levels of density appropriate to the community context
- A mix of housing options and dedicated housing affordability
- Intermodal connectivity (pedestrian and bicycle connections, other transit)
- Green infrastructure and open space
- Low parking requirements and alternatives to car ownership (e.g., Zipcar)
- High quality urban design and sense of place”<sup>19</sup>

The Town should further seek compact, walkable districts with everyday amenities located within close proximity of public transit to reduce emissions and enable smart growth, while best preserving the suburban/rural aesthetic.

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*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

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<sup>19</sup> <https://www.mapc.org/wp-content/uploads/2020/02/MAPC-TOD-Report-FINAL-web-reduced-size.pdf>

## B.6 Phase out Internal Combustion Vehicles in Town

In 2023 the European Union voted to ban the sale of new combustion vehicles by 2035<sup>20</sup>. The Biden Administration unveiled a new rule by the EPA in March 2024 that would make sure that a majority of new passenger vehicles sales would be all electric or hybrid by 2032 in the United States<sup>21</sup>. While the Town of Westwood prepares for a brighter, better future there are a list of recommendations that would move towards the goal of phasing our combustion vehicles or reduce the dependency.

- Decrease Gas-Powered Vehicle Use to Reduce Traffic and Emissions,
- Improve Islington Station parking and access,
- Expand Micro-transit Access and Service to Serve Local Mobility Needs,
- Campaign for the Return of the Rt. 109 Bus,
- Require EV Carshare Parking,
- Continue Fleet Electrification and Smart Charging, and
- Address Hard-to-Electrify & Other Modes of Transportation

*Timeframe:* Years #  
*Responsible Entities:* EXAMPLE

### B.6.1 Decrease Gas-Powered Vehicle Use to Reduce Traffic and Emissions

#### Types of EVs

All vehicles that do not produce tailpipe emissions are zero emission vehicles (ZEVs). There can be heavy-duty and light-duty ZEVs.

<sup>20</sup>

<https://europe.autonews.com/environmentemissions/europes-2035-ban-combustion-cars-approved-lawmakers>

<sup>21</sup> <https://www.nytimes.com/2024/03/20/climate/biden-phase-out-gas-cars.html>



*BATTERY ELECTRIC VEHICLES (BEVs)*  
 ZEV that runs solely on battery



*PLUG IN HYBRID ELECTRIC VEHICLES (PHEVs)*  
 Can run on internal combustion engine or battery; no emissions when running on battery



*ZERO EMISSION MOTORCYCLE (ZEM)*  
 Runs solely on battery

#### Municipal Fleet

Being a Green Community means the Town tracks its vehicle fleet and this information can advise how best to electrify the Town fleet. MassEVIP Fleets is a MassDEP rolling grant program aimed at making “EVs more widely available across Massachusetts. The program provides incentives for public entities to buy or lease EVs. Maximum funding amounts depend on vehicle type and means of acquisition.”<sup>22</sup>

Acquisition Type	Max Available Funding per Vehicle
BVEV Purchase	\$7,500
BVEV Lease	\$5,000
PHEV Purchase	\$5,000
PHEV Lease	\$3,000
ZEM Purchase	\$750

#### Personal Vehicles

Buying a new vehicle can be expensive. However, the Massachusetts Department of Energy’s grant program known as the Massachusetts Offers Rebates for Electric Vehicles (MOR-EV) provides up to \$3,500 in rebates to purchase or lease a new ZEV, with additional rebate options for income-eligible

<sup>22</sup> <https://www.mass.gov/how-to/apply-for-massevip-fleets-incentives>

recipients seeking a new or pre-owned vehicle.<sup>23</sup>

- Encourage residents searching for a new car to transition to BEVs or PHEVs by educating about EV incentives.

### Reducing Personal Vehicle Use

While switching to EVs is essential for passenger and commercial vehicles to reduce CO<sub>2</sub> emissions, it does not reduce traffic while also increasing pollution of microparticles. EVs are heavier due to the weight of the battery, which causes increased wear on tires. This wear and tear comes in the form of microparticles in the air. The microparticles can be breathed in by pedestrians, which is averse to the pedestrian goals.

Batteries also have a limited lifespan. Every manufacturer has different projections for how long its batteries will last, but the U.S. Department of Energy has made its own predictions. According to the DoE, "predictive modeling by the National Renewable Energy Laboratory indicates that today's batteries may last 12 to 15 years in moderate climates," while those who live in "extreme climates" can expect those numbers to be in the eight- to 12-year range.<sup>24</sup> For context, the average vehicle on American roads right now is more than 12 years old.<sup>25</sup>

- Add public transit, bike, and pedestrian information to new resident packets, which can also be digitized for ease of access and reduction of paper waste.
- Minimize traffic cutting through residential neighborhoods and non-arterial roads.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

<sup>23</sup> <https://afdc.energy.gov/laws/all?state=MA>

<sup>24</sup> <https://afdc.energy.gov/fuels/electricity-benefits>

<sup>25</sup> <https://www.edmunds.com/electric-car/articles/how-long-do-electric-car-batteries-last.html>

## B.6.2 Improve Islington Station parking and access

Islington Station is just outside the Islington Center Redevelopment, but has limited infrastructure. The official address is located via Carroll Avenue rather than Grafton Avenue, the latter of which is connected to Islington Center and more commonly used. The Grafton Avenue side in particular would benefit from increased parking, easier drop-off and pickup flow, bike storage, better lighting, and adaptations to make it ADA accessible. Neither side is ADA accessible at this point in time. In addition, there are no sidewalks or lights on Grafton Avenue for anyone that wants to walk or bike from Islington. Poor station infrastructure can discourage ridership.

- Petition the MBTA to invest in Islington Station improvements.
- Explore bike and pedestrian improvements from Islington Center to the Grafton Avenue side of Islington to make it safer and more accessible.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

## B.6.3 Expand Micro-transit Access and Service to Serve Local Mobility Needs

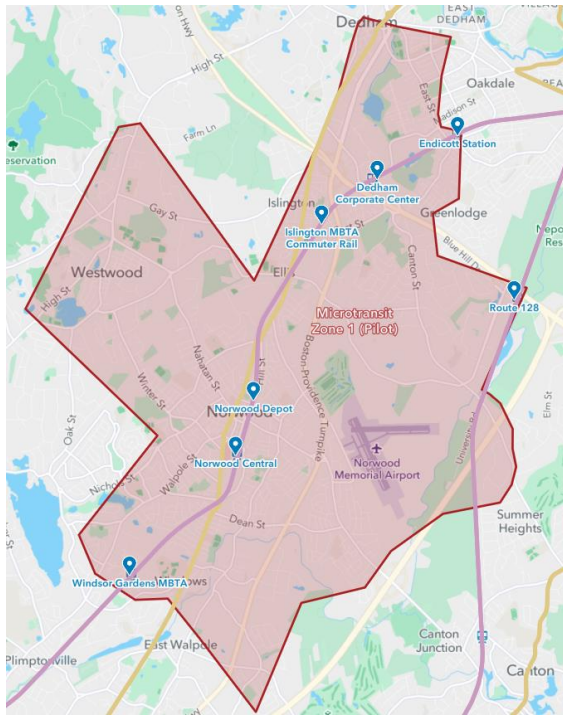
In January 2024, the Westwood Planning Division applied for a MassDOT Regional Transit Innovation Grant to pilot a turnkey micro-transit service. While Westwood led the grant application, the proposed service would be in close partnership with Dedham, Canton, Norwood, and the Neponset Valley TMA if the Town is a grant recipient. The proposed service would have on-demand shuttles open to anyone in the service area in order to increase regional connectivity and fill transit gaps, such as trips to transit stations, places of work, schools, community services, and housing. In order to be accessible to all, the intention is to set a low rider fee comparable to that of other transit



services in the area and have a wait time of roughly 15 minutes. The service will be operated by Via, the same company that runs the Salem Skipper and other local micro-transit services.

- If the pilot is funded, grow beyond the grant-funded one-year pilot and add fixed routes in the future.
- Explore additional funding opportunities in lieu of the MassDOT grant if not funded or to supplement the service if the pilot is funded.

Proposed Micro-transit Service Area<sup>26</sup>



*Timeframe:* Years #  
*Responsible Entities:* EXAMPLE

### B.6.4 Campaign for the Return of the Rt. 109 Bus

Bus service existed in Westwood long before the MBTA 34E bus.

<sup>26</sup>

<https://platform.remix.com/project/48dac5c0/zone/5v2rtbm6?latlng=42.20192,-71.18081,12.136&sidebarCollapsed=true>

### High Street Transit History<sup>27</sup>

**1963** | After decades of service, Johnson Bus Lines ends Boston-Milford via Westwood, Millis, Medway, and Medfield service

**1964** | Short Line takes over Boston-Milford service (renamed Bonanza in 1971)

**1966** | Most trips begin using Route 128 and the Massachusetts Turnpike between Boston and Westwood

**Oct 1968** | Gray Line takes over the route from Short Line

**Dec 1972** | Overland Stages takes over discontinued Gray Line route

**Aug 1973** | Plymouth & Brockton (P&B)/Brush Hill takes over the route and discontinues service to Holliston, Woonsocket, Franklin, Bellingham, and local routing through Dedham and West Roxbury

**1974** | All Westwood trips are operating via Pond Street after previously alternating between Pond Street and High Street

In the 1970s, some peak-period trips were operating from Boston to Milford express (without stops) via I495 and Massachusetts Turnpike

**Apr 1977** | Experimental restoration of service to Bellingham

**July 1978** | Saturday service ends

**Dec 1978** | Bellingham restoration experiment abandoned

**1984** | Express trips from Boston to Milford end

**Feb 1984** | Route transferred from P&B to Brush Hill ownership

**Sep 1987** | Route was down to two rush-hour round trips per day, MBTA subsidy received

**Aug 1999** | Route reduced to one trip in each direction

**July 2003** | Route discontinued after MBTA subsidy ends due to low ridership

Based on community input at the Visioning Sessions held in the fall of 2023, there is

<sup>27</sup> <http://roster.transithistory.org/MBTARouteHistory.pdf>

interest from the community in getting the Rt. 109 (High Street) bus back online. DCED also shares in that interest. Since many local businesses and town institutions reside on High Street, restoring public transit in the would increase connectivity and accessibility of Town services and boost economic development. In 2023, the MBTA concluded a planning phase of their Bus Network Redesign<sup>28</sup> which did not include the Rt. 109 corridor.

- Consider a High Street corridor study to determine the potential for adding the bus line and lobby the MBTA alongside Neponset Valley TMA and other neighboring communities that would benefit.

*Timeframe:* Years #  
*Responsible Entities:* EXAMPLE

### B.6.5 Require EV Carshare Parking

Carshare services create on-demand access to passenger vehicles to reduce the need for personal vehicles. Similar to rideshare or bikeshares, the cars can be accessed in public locations via an app at any time. Carsharing enables people to opt against owning a car of their own, but still have access to a personal vehicle for circumstances in which public transit is not conducive. Carshare services typically account for fuel/charging, insurance options, maintenance, cleaning, and other considerations. Some services offer discounted memberships businesses and can sometimes be customized to the community needs. Special consideration should be given to increasing access for those less likely to afford owning a car.

- Consider requiring businesses and developers to have carshare

parking, such as ZipCar, at their locations. The service should entail a fleet of EVs instead of gas-powered vehicles to align with the Town’s climate goals.

## B.7 Continue Fleet Electrification and Smart Charging

The Town has already made significant progress in electrification under the direction of the Energy Manager.

In addition, the sustainability amendments to the Zoning Bylaw adopted by Town Meeting in May 2023 added a requirement for new non-residential parking lots to provide a minimum of one EV charging station per 25 parking spaces.

- Inventory the public and private charging stations in Westwood and assess for areas lacking charging infrastructure.
- Identify policies and incentives to expand the public and private EV charging infrastructure.

*Timeframe:* Years #  
*Responsible Entities:* EXAMPLE

## EV Chargers

Year	Location	Quantity	Status
2016	Carby Street Municipal Office Building	2	In service
2023	Wentworth Hall	2	In service
2024	Pine Hill Elementary School	4	In service
2024	Police Station	4	Under construction
	Westwood High School	4	Planning stage
	Westwood Public Library	4	Planning stage
	Council on Aging	4	Planning stage

<sup>28</sup> <https://www.mbta.com/projects/bus-network-redesign>

## B.8 Address Hard-to-Electrify & Other Modes of Transportation

### Rail

The MBTA Commuter Rail currently runs on diesel, but the MBTA is planning to electrify in the next decade while also improving the service. Senate bill 2217 known as An Act Relative to Setting Deadlines to Electrify the MBTA Commuter Rail is currently under consideration by the state legislature.<sup>29</sup> If passed, it would set a deadline for all commuter rail line upgrade for the end of 2035.

### Greater Regional Connectivity

The East-West Rail is a long-desired project to connect eastern MA with central and western MA via rail. The project would connect the major cities in Massachusetts: Pittsfield, Springfield, Worcester, and Boston. The commuter has been expanded to the Compass Rail, which would build upon existing services in the four compass directions from Springfield to New York, Connecticut, and Vermont.<sup>30</sup> This would give a reliable alternative to personal vehicles for people across the Commonwealth and ease the commuting burden for those unable to live closer to their employer due to housing costs.

- Explore connectivity options to the East-West Rail from Westwood.

The East-West Passenger Trail Study Final Report completed in 2021 by MassDOT presents several scenarios that would allow one to travel across the Commonwealth in

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<sup>29</sup> <https://malegislature.gov/Bills/193/S2217>

<sup>30</sup> chrome-extension://efainbmnibpcajpcglclefindmkaj/https://www.mass.gov/doc/compass-rail-passenger-rail-for-the-commonwealth-presentation-to-the-board-on-october-18-2023/download

two to four hours.<sup>31</sup> The study was met with some criticism from transit watchdogs and elected officials for it proposed diesel powered trains as opposed to a more climate conscious and efficient electrified high-speed rail system.<sup>32 33</sup>

- Westwood residents can lobby their local and congressional officials to support this project, especially electrification of the rails.

### B.8.1 Facilitate Walking, Biking and Carpooling to Work or School.

- Expand sidewalk network near schools, Town villages, and transit stops.
- Accept private streets so students have access to buses.
- Encourage school bus ridership in lieu of parent/guardian drop-off to reduce traffic around schools.
- Develop a bike bus program to schools.

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<sup>31</sup> <https://www.mass.gov/doc/chapter-1-executive-summary-0/download>

<sup>32</sup> <https://drive.google.com/file/d/1Mi4RjUN5Is4beISU5IGDqT4PmhPvhs2G/view>

<sup>33</sup> <https://commonwealthbeacon.org/transportation/moulton-s-ambitious-expensive-and-enthalling-transportation-vision/>

## Bike Buses<sup>34</sup>



Made famous in the U.S. by a physical education teacher in Portland, Oregon, bike buses are an adult-led group of students cycling to school as a group (see image). Students join the “bus” as it goes by. Locally, Cambridge has experimented with the concept. Examples around the globe have seen numerous benefits:

- Improved behavior in school
- Decreased absenteeism
- Reduced traffic congestion & GHG emissions
- Increased pedestrian & bike safety
- Convenience
- Increased physical activity
- Strengthened community connections

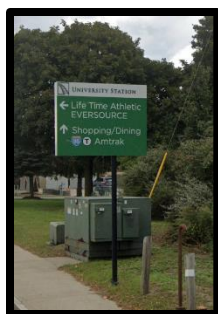
Bike buses are also an equity tool by allowing students that may not have access to a bus or a parent/guardian available to drive to safely get to school.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

### B.8.2 Implement Directional Signage to Transit on Washington Street

As part of the University Station development, directional signage was installed to direct people to transit, offices, shopping, and dining. The signs serve as a clear neighborhood identifier, while also drawing attention to the many amenities people can



<sup>34</sup> <https://www.wired.com/story/how-to-start-a-bike-bus/>

access. A similar pedestrian-oriented version in Islington Center would highlight the neighborhood and encourage sustainable transportation practices. Pedestrian-oriented signage is oriented the direction most street signs would go so that pedestrians can see it from the sidewalk and at a reasonable height. It can also feature information geared toward people using the sidewalk, such as the time and distance to each destination or a QR code to more transit information.

- Install directional signage in Islington Center to the often-overlooked Islington Station, 34E bus stops, bike storage, parking, EV charging, and parking while designed in a manner that is consistent with the Islington Station Redevelopment.



*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

### B.8.3 Expand Cycling Routes and Connect to Routes in Different Municipalities

There are many types of bicycle infrastructure. Sharrows, which is when the cyclist and cars share the same lane, may be appropriate for low-traffic roads, greater bike safety can be achieved through cycle tracks. Similarly, bike lanes, which is when the cyclists and drivers are in separate lines denoted by a painted line, are also

appropriate for quieter roads and provide more safety than sharrows. Cycle tracks, which are separated bike lanes, are proven to be safer due to the barrier from vehicle lanes – which can be in the form of trees, walls, fences, flex-posts, street parking, or other separation beyond a painted line.

- Introduce cycle tracks on busier roads and connected to existing routes.
- Introduce bike lanes on moderately busy roads.
- Inventory nearby bike infrastructure to identify connection points.

*Timeframe:* Years #  
*Responsible Entities:* EXAMPLE

### B.8.4 Conduct a Roadway Inventory and Prioritize Complete Streets.

Apply a planning perspective to street design. A traffic engineer typically examines a road from vehicle efficiency, which usually entails getting as many vehicles through as quickly and safely as possible. A planning perspective focuses on traffic calming for pedestrian and bike safety and efficiency. If the goal is to reduce emissions and traffic, the street must be structured in a way that allows the flow of vehicles while giving priority to allowing pedestrians and cyclists using a more sustainable means of transportation to travel on and cross the street if necessary. When people feel safer, they are more likely to walk or cycle.

- Inventory street infrastructure.
- Identify areas that pose the higher risk of pedestrians and cyclists to improve.

### Example Complete Streets & Traffic Calming

- ADA accessibility
- Public space to sit/interact e.g. benches
- Cycle tracks
- Minimal required pedestrian and bike crossings with traffic
- Buildings sited closer to the street
- Signage
- Trees
- Speed humps
- Narrow travel lanes
- Alternative surface treatments at crossings/intersections (e.g. stamped asphalt)
- Sidewalk and street lighting
- Planted barriers
- Cross signals
- Parklets or benches

*Timeframe:* Years #  
*Responsible Entities:* EXAMPLE

### B.8.5 Change Culture Around Sidewalks and Shared Use Paths

The Community Visioning Sessions revealed a desire for pedestrian and bike safety. Essential state funding for projects can come with requirements or an approach that may not perfectly align with community goals or aesthetics. The Town can request modifications or waivers tailored to Westwood, such as meandering shared use paths with ample trees that blend with the landscape better than straight paths. (e.g., Concord, Lincoln).

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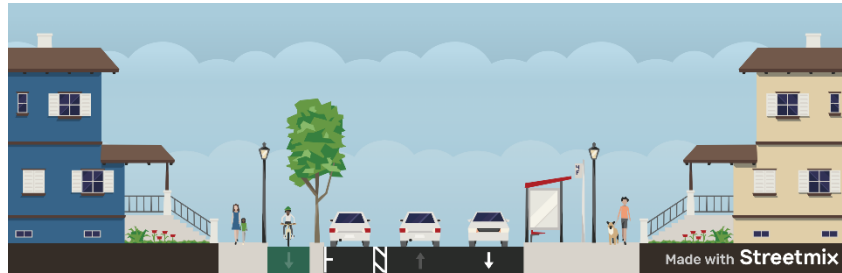
*Timeframe:* Years #  
*Responsible Entities:* EXAMPLE



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## Examples of Complete Streets

Note: Examples are not based on any specific location and simply serve as a visual of various ways to improve pedestrian and bicycle safety.





## CHAPTER 4C: SUSTAINABLE BUILDINGS & CLEAN ENERGY USE

The Town of Westwood had taken many steps in the right direction such as becoming a Green Community in 2013, being a part of the Municipal Vulnerability Preparedness program since 2019, and recently updating our Hazard Mitigation Plan in 2022. Sustainable buildings speak to energy efficiency, climate preparedness, and resiliency of buildings. This includes municipal, commercial, industrial, and residential buildings across Town. Clean energy use speaks to the ability to reduce the need for fossil fuels in powering our buildings, being more efficient in the use of fossil fuels when needed, and finding greener, cleaner alternatives – such as solar power. Since becoming a green community, the town of Westwood has received almost \$2 million in grant funding to support close to 50 different energy efficiency projects on the Town’s municipal buildings. The new Pine Hill School, which opened in February 2024, is a state leader as a nearly net zero building with its innovative energy and efficiency measures. Some features presented at a School Committee meeting in September 2023<sup>35</sup> include:



<sup>35</sup> [https://www.westwood.k12.ma.us/userfiles/files/SC%20-%202023\\_09\\_14%20Pine%20Hill%20Presentation.pdf](https://www.westwood.k12.ma.us/userfiles/files/SC%20-%202023_09_14%20Pine%20Hill%20Presentation.pdf)

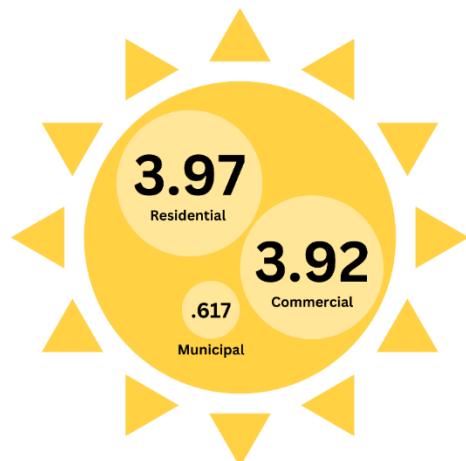
- LEED v.4 Gold Certified
- Super insulated thermal envelope (Passive House standards for air infiltration)
- Geothermal wells for heating and cooling
- Fossil fuel free (all electric)
- Roof-mounted solar panels (expected to provide up to 70% of the power with the remaining expected through renewable energy certificates)

### Green Community Projects 2013-2019

	# of Projects	Total Cost	Grant Funding & Energy Rebates	Cost to Town
2013	1	\$138,000.00	\$138,000.00	\$0.00
2014	7	\$184,831.00	\$166,171.00	\$18,660.00
2015	8	\$761,290.00	\$373,184.00	\$388,106.00
2016	7	\$348,984.00	\$307,703.00	\$41,281.00
2017	9	\$371,372.00	\$235,609.00	\$197,263.00
2018	9	\$437,419.00	\$323,226.00	\$114,193.00
2019	4	\$367,941.00	\$211,292.00	\$156,649.00
2020	1	---	\$100,000.00	---
2022	2	---	\$90,000.00	---
<b>Total</b>	<b>48</b>	<b>\$2,609,837.00</b>	<b>\$1,945,185.00</b>	<b>\$916,152.00</b>

### Solar

Solar power has been growing over the last decade in both the public and private sectors, including here in Westwood. All public and private solar systems in the Town totals approximately 8.5 MW, and 10.49 MW once all anticipated municipal projects are complete.



The public schools have a

combined 1,097 kW of potential solar electricity production across five schools alone. Three additional systems totaling in 964 kW are coming online. The Westwood High School canopy system was approved by the Planning Board in July 2023 for construction before the 2024-2025 school year. There are three additional systems totaling in 530 kW being considered at the new Fire Station, Deerfield Elementary School, and the Police Station garage. If all

### Solar

Location	Type	Power	Status
Westwood High School	Rooftop	186 kW	Operational
Martha Jones Elementary School	Rooftop	151 kW	Operational
Downey School	Rooftop	181 kW	Operational
Thurston Middle School	Rooftop	99 kW	Operational
Pine Hill Elementary School	Rooftop	480 kW	Operational
Westwood High School	Parking Canopies	668 kW	Installation summer 2024
Council on Aging	Parking Canopies	300 kW	Planning stage
Fire Station	Rooftop	200 kW	Planning stage
Deerfield School	Rooftop	150 kW	Planning stage
Police Station	Parking Canopies	180 kW	Planning stage

systems are built, the Town would have 2.59 mW of solar generating potential.

The Building Division tracks solar panel installations through OpenGov. Currently, 363 residential single and two-family homes have systems equal to a combined solar potential of 3.97MW. This averages approximately a 10.9 kW system per home. For comparison, 11 commercial properties have systems equal to a combined 3.92mW or an average 356kW per system, demonstrating the profound energy production potential of installing solar panels on large commercial buildings. In total, there are a documented 7.89 mW of potential solar energy generated by residential and commercial properties across town.

Multiple case studies, including one in Connecticut, have found that neighbors are more likely to install solar when their neighbors install solar. The closer it is from the time the solar was installed, the greater likelihood there is that neighbors will install solar too.<sup>36</sup>

### Stretch Code & Specialized Code

Since 2009, Massachusetts has updated its Stretch Code every few years. Mass.gov states: “The difference between the base code that aligns with the International Energy Conservation Code (IECC) and the Stretch Code is that the former flatter measures energy efficiency. Since then, the DOER established the Municipal Opt-in Specialized code. The Specialized Code is geared toward GHG emission targets from the Commonwealth”.<sup>37</sup>

<sup>36</sup>

[https://resources.environment.yale.edu/gillingham/Bolling%20erGillingham\\_PeerEffectsSolar.pdf?\\_gl=1\\*dnyu3h\\*\\_ga\\*MTUwNDU4NzYwMCA4xNzExNDcxOTc2\\*\\_ga\\_THKV4HP9QY\\*MTUwNDU4NzYwMCA4xNzExNDcxOTc2\\*\\_ga\\_MTK3MTk3Ni4wLjAuMA](https://resources.environment.yale.edu/gillingham/Bolling%20erGillingham_PeerEffectsSolar.pdf?_gl=1*dnyu3h*_ga*MTUwNDU4NzYwMCA4xNzExNDcxOTc2*_ga_THKV4HP9QY*MTUwNDU4NzYwMCA4xNzExNDcxOTc2*_ga_MTK3MTk3Ni4wLjAuMA).

<sup>37</sup> <https://www.mass.gov/info-details/building-energy-code>

## C.1 Townwide Building Energy Use & Emissions Reduction

While the Town has made remarkable progress, further action is required to meet GHG emission reduction goals.

- Explore programs to promote and incentivize energy efficiency, energy conservation, and renewable energy use by Town residents.
- Continue energy conservation and strive to expand the use of renewable energy in Town facilities and operations.
- Establish net zero energy standards for new Town buildings. Continue to actively pursue opportunities through the Green Communities program for grants to support energy efficiency initiatives.
- The Town currently performs an annual energy use audit as required for being a green community, however the Town should consider a comprehensive energy use audit of all Town buildings to identify and prioritize improvements every five years by an independent contractor.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

### C.1.1 Decarbonize/Energy Use Reduction in Residential Homes

While the majority of survey respondents had heard of Mass Save or taken advantage of the program, many may not be aware of the full range of programming they offer for both renters and owners:

- No-cost Home Energy Assessments
- Decarbonization consultations of heating systems
- ConnectedSolutions that lower bills and allow households to earn incentives for low usage during peak periods
- 0% interest financing

- Income-based assistance for income-qualified households
- Information on building energy-efficient new construction or additions<sup>38</sup>

Governor Healey launched the Massachusetts Community Climate Bank (MCCB) in June 2023.<sup>39</sup> As the first green bank dedicated to affordable housing, it will initially focus on decarbonizing new construction, retrofits, mortgage products, and other clean energy projects for housing for EJ communities and low- and moderate-income households using a \$50 million starting fund.<sup>40</sup>

Information about these programs can be disseminated on multiple platforms.

- Provide information to new build and addition applicants on energy efficiency.
- Expand upon information for renters and homeowners on the Town website, in Town distribution materials, and WMC.
- Host public information sessions on energy efficiency programs.

*Timeframe:* Years #  
*Responsible Entities:* EXAMPLE

### C.1.2 Townwide Building Emissions Reduction Bylaw

Boston has adopted an emissions ordinance called Building Emissions Reductions Disclosure Ordinance (BERDO). The ordinance is aimed at achieving net zero emissions in residential buildings with at least 15 units and non-residential buildings at least 20,000 square feet in size by reducing emission standards for all existing

<sup>38</sup> <https://www.masssave.com/residential/programs-and/services>

<sup>39</sup> <https://www.mass.gov/news/governor-healey-announces-creation-of-massachusetts-community-climate-bank-nations-first-green-bank-dedicated-to-affordable-housing>

<sup>40</sup> <https://www.masshousing.com/en/emass-community-climate-bank>

development over the course of the next 26 years.<sup>41</sup> Establishing a minimum size ensures smaller businesses and property owners are not forced to take on unfeasible costs. Careful consideration should also be given to multi-family housing, as an ordinance could drive up costs for renters in an already expensive housing market.

- Consider adopting something like Boston’s BERDO for larger developments in an equitable manner.

*Timeframe:* Years #  
*Responsible Entities:* EXAMPLE

### C.1.3 Renegotiate the Community Aggregation Program

After receiving Town Meeting approval in May 2019, the **Westwood Community Choice Electricity (CCE)**<sup>42</sup> program was announced in January 2023 before officially launching in March 2023. The program allows renters, owners, and businesses to opt into a package of their choice in which your electricity is at least partially from a renewable source but still provided, billed, and repaired by Eversource.

The Program offers a standard product rate that has 10% more renewable energy certificates (RECs) than required by state law (known as MA Class I RECs). Even with these extra renewable energy certificates, the standard product rate is nearly 35% lower than the current Eversource Residential Basic Service electricity rate of 25.649 ¢ per kilowatt-hour (kWh) for the 21-month period, March 2023 through December 2024. Future savings under the Westwood Community Choice Electricity Program compared to Eversource Residential Basic

<sup>41</sup> <https://www.boston.gov/departments/environment/building-emissions-reduction-and-disclosure>

<sup>42</sup> <https://westwoodcce.com/>

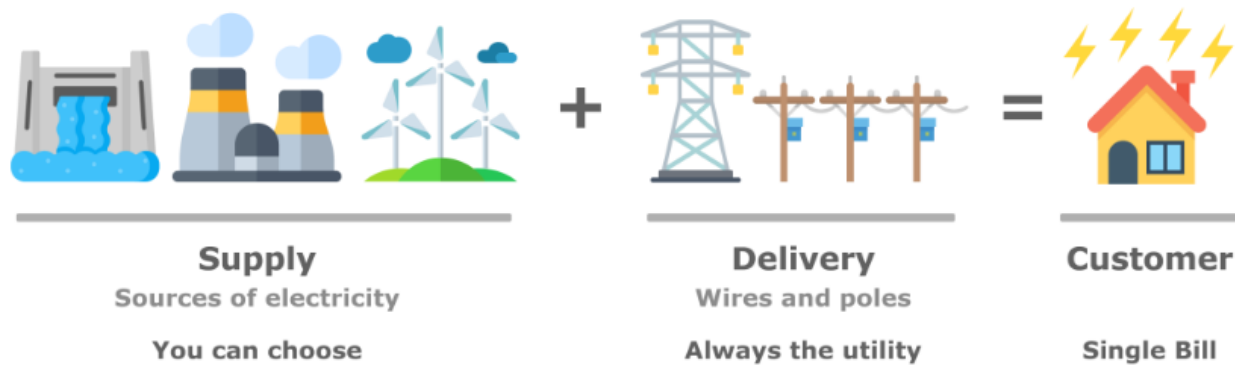


Service are not guaranteed because utility basic service rates change every six months for residential and small business accounts, and every three months for large business accounts.

The Program also offers two optional rates - a 100% renewable energy rate that includes renewable energy certificates equal to 100% of a customer's metered consumption, and a

rate with only the minimum amount of renewable energy certificates required by state law. The electricity rates are fixed over the 21-month term of the electric supply agreement, from March 2023 through December 2024. The Community Aggregation Program locked in through 2027. At the time, \$0.099/kwh cheaper than Eversource at \$0.26/kwh or National Grid at \$0.34/kwh

	Westwood Community Choice Electricity (CCE)			Eversource Basic Service
	Westwood Standard	Westwood Plus	Westwood Basic	Residential
				
<b>Rates</b>	16.710 ¢/kWh	17.850 ¢/kWh	16.310 ¢/kWh	16.078 ¢/kWh
<b>Fixed for 21 Months</b>	✓	✓	✓	
<b>Extra Renewables from New England</b>	✓	✓		
<b>100% Renewable Energy</b>		✓		
<b>Renewable Energy</b>	Adds 10% voluntary renewable energy (MA Class I RECs)	Adds voluntary renewable energy (MA Class I RECs) to total 100%	Meets renewable energy standards	Meets renewable energy standards
<b>Duration</b>	March 2023 - December 2024			July - December 2023
	Details			



This initiative by the Town has been a beneficial, which is why the biggest concern is the end of program in 2027. The question is if and how to renegotiate with Eversource and being proactive in identifying if this is the best approach. Considerations would be reaching out to other communities in a bid to keep prices competitive and low.

*Timeframe:* Years #  
*Responsible Entities:* EXAMPLE

## C.2 Encourage Electrification

A 2023 report by the Massachusetts Attorney General’s Office found that over a six-year study period (July 2015 to June 2021), Massachusetts consumers in the individual residential electric supply market paid \$525 million more than they would have paid if they had received electric supply from their electric distribution company.<sup>43</sup>

- Explore programs to incentivize the transition to electricity to phase out commercial and residential natural gas, oil, and propane use.
- Maintain and look to enhance features of the Town LED streetlight network to reduce lighting during late-night hours and save energy.

<sup>43</sup> <https://www.mass.gov/doc/consumers-continue-to-lose-big-the-2023-update-to-an-analysis-of-the-individual-residential-electric-supply-market-in-massachusetts/download>

*Timeframe:* Years #  
*Responsible Entities:* EXAMPLE

### C.2.1 Support Solar Power

The National Community Solar Partnership (NCSP) is another resource to consider. The program is a joint effort of government, policy, utilities, nonprofits, and for-profits to “expand access to affordable community solar to every American household and enable communities to realize other benefits, such as increased resilience and workforce development.” The end goal is to increase community solar power generation from 3GW to 20 GW to power five million households and one billion dollars – or 20% - in energy savings by 2025.<sup>44</sup>

- Continue to explore opportunities for the installation of roof solar panels and consider adding solar carports in parking lots on municipal and school property.
- Building upon the Building Division tracking, maintain an updated list of the solar capacity across all sectors and consider ways to negotiate the solar generation in mass for better electric rates townwide.

<sup>44</sup> <https://www.energy.gov/communitysolar/about-national-community-solar-partnership>

## C.3 The Future of Fuels – Alternatives to Fossil

Looking to a future moving away from fossil fuel consumption is a calculated and labor-intensive task. Westwood could benefit from collaborating with the Office of State and Community Energy Programs (SCEP), which provides technical assistance and investments “to catalyze local economic development and create jobs, reduce energy costs, and avoid pollution.”<sup>45</sup>

- Collaborate with SCEP to leverage newer sources for renewable energy.
- Explore the use and implementation of anaerobic digesters.
- Actively pursue opportunities through the Green Communities program for grants to support energy efficiency initiatives.
- Develop emissions accounting for alternative fuels.

*Timeframe:* Years #

### C.3.1 Gas Leaf Blower Bylaw

Large tracts of grass-covered land and a significant tree canopy require significant leaf blower use to maintain. In a reprinted article from Mark Nevitt, the University of Pennsylvania Kleinman Center for Energy Policy writes, “In 2011, engineers at the car company Edmunds estimated that driving a Ford F-150 Raptor truck from Texas to Alaska would emit the same amount of air pollution as a mere half-hour of yard work with a two-stroke, gas-powered leaf blower.”<sup>46</sup> The emissions are greater for larger leaf blowers often used by commercial lawn servicers.

<sup>45</sup> <https://www.energy.gov/scep/office-state-and-community-energy-programs>

<sup>46</sup> <https://kleinmanenergy.com.UPenn.edu/news-insights/think-globally-on-climate-act-locally-on-leaf-blowers/>

- Enact a landscape maintenance equipment bylaw similar to those of Brighton or Lexington.
- Consider a full phase out of gas-powered leaf blowers.

This phased bylaw could entail:

- Within four years of the bylaw, the use of gas-powered leaf blowers by commercial landscapers will not be allowed, with the exception of wheeled leaf blowers powered by four-stroke engines on lots larger than one acre.
- Within five years of the bylaw, the use of gas-powered leaf blowers by residents will not be allowed.

Input from small-business owners should be gathered while developing the bylaw to ensure the bylaw does not place undue burden on them. The bylaw would require purchasing battery-powered equipment. In order to ensure enough battery power for the entire lawn, businesses may have to purchase multiple batteries or employ more people to complete the job in a time effective manner. To avoid undue burden on low-income households, information should be made available to the community on discount and rebate programs for equipment.

## Lexington Landscaping Equipment Bylaw<sup>47</sup>



Lexington’s bylaw sets rules for when lawn mowers, hedge trimmers, weed whackers, leaf blowers, and other landscaping equipment can be used to curtail noise and phases out the use of gas-powered leaf blowers.

	RESIDENTS	LANDSCAPERS
<b>ALLOWABLE SEASONS</b>	Spring (March 15-May 31)	Fall (September 15-December 30)
<b>ALLOWABLE TIMES</b>	Weekdays 7 a.m. – 8 p.m.  Weekends & Legal Holidays 9 a.m. – 5 p.m.	Weekdays 7 a.m. – 6 p.m.  Weekends 9 a.m. – 5 p.m.
<b>GAS-POWERED LEAF BLOWER BAN</b>	March 15, 2026	March 15, 2025*

*\*Exception for four-stroke engine wheeled leaf blowers on lots greater than one acre*

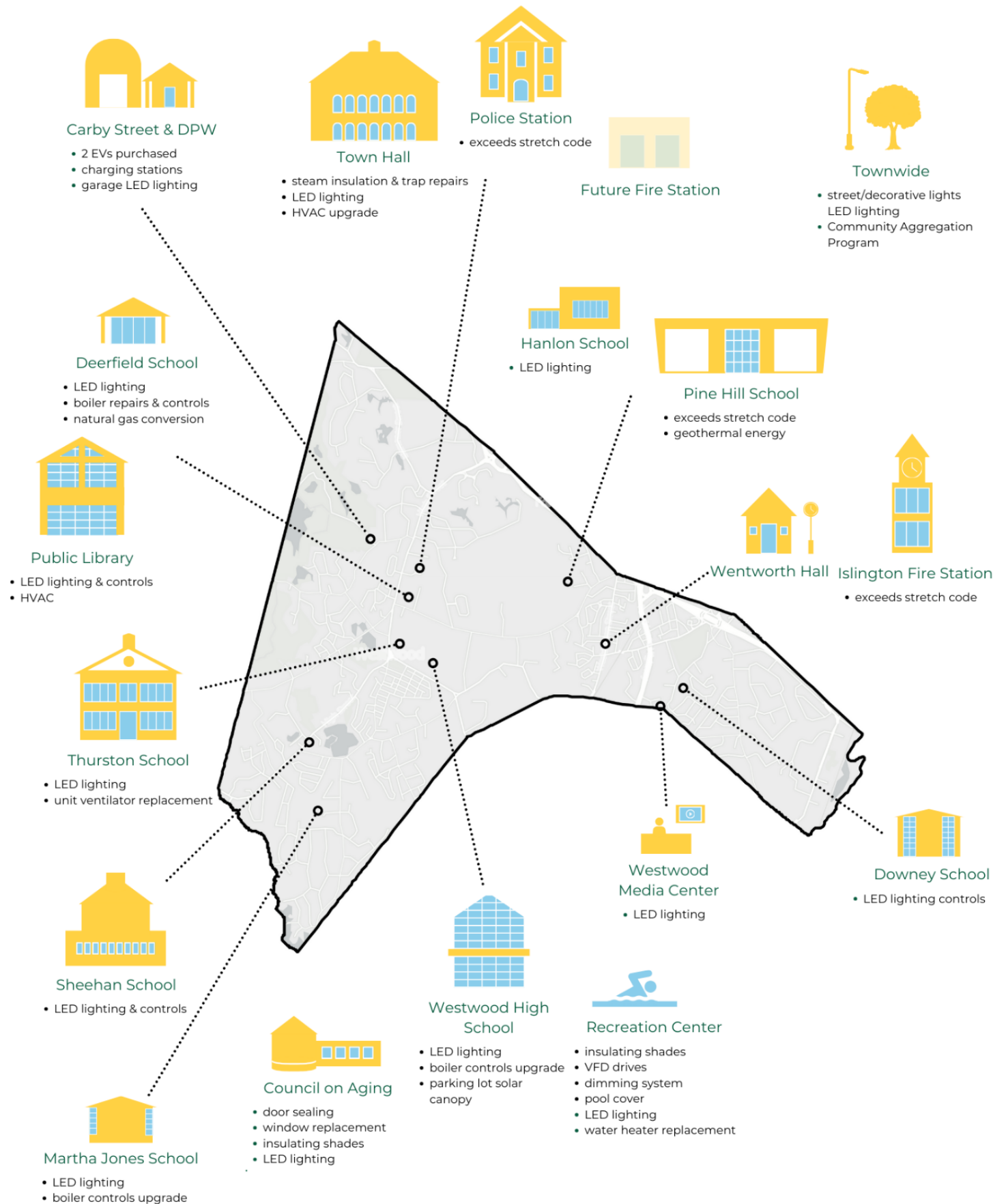
*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

<sup>47</sup> <https://www.lexingtonma.gov/1694/Landscape-Maintenance-Equipment-Bylaw-FA>

# Over a Decade of Greening Westwood

2013-2024







## CHAPTER 4D: NATURAL & WORKING LANDS

Natural and working lands (NWLs) and the ecosystem services they provide must continue to be protected as Westwood pursues actions to achieve net zero by 2060. Carbon sequestration from the growth of trees and the accumulation of organic matter in healthy soils and wetlands provide valuable and cost-effective removal and storage of CO<sub>2</sub>, as well as many other valuable ecosystem services. While usually functioning as a carbon sink, NWLs can be a source of GHG emissions when disturbed, cleared, or developed. This section details the Town's ambitious action steps to protect and enhance in-town NWL carbon sequestration building and expanding upon current Town operations.

### D.1 Identify NWL Conservation

The Town has extensive protected and recreational open space, but there lacks a consolidated resource highlighting all of these publicly-owned and publicly-accessible privately-owned areas.

- Identify and map the main carbon sinks in the Town.
- Plan to preserve and/or enhance the top three identified areas.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

### D.2 Codify NWL Sequestration, Emissions & Accounting

Promote the Town's open space and conservation land to serve as focal points of

community interaction and to encourage use and protection.

- Create an app with information about open space/conservation areas in Westwood that would:
  - identify location, parking, and entry points;
  - list activities encouraged or prohibited in each area;
  - Include the annotated maps indicating trails, natural habitats, native plants, and special features for each area; and
  - identify topographic or other physical challenges for each area.
- Update Town websites with expanded information about open space/conservation land. Update maps of

Town-owned and privately-owned open space land to:

- indicate natural resource and habitat areas;
- note historic/scenic vista areas;
- identify all publicly-owned and publicly-accessible privately-owned open space land.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

### D.2.1 Preservation, replacement, and planting of trees.

- Create and establish a Tree Bank<sup>48</sup>. The Town of Wellesley has a comprehensive Tree Bylaw that established a Tree Bank. The language of said bylaw reads:

“There is hereby established a Town Tree Bank (“Tree Bank”) which shall be held by the Town Treasurer in an account administered by the Department of Public Works - Park & Tree Division in accordance with applicable provisions of the General Laws. Any contributions collected shall be deposited in said Tree Bank, and shall be used solely for the purpose of buying, planting and maintaining trees in the Town.”

- Require developers and property owners who remove trees to plant replant replacements of a certain size/age in place of the removed tree or donate the same to the town to be planted in an alternate location.
- Establish guidelines for developers and property owners in selecting appropriate tree species and sizes for various applications. The guidelines should factor

in growth patterns, native species, tolerances, and use (e.g. screening, ornamental, etc.).

- Explore opportunities for a public-private partnership to develop a municipal or intermunicipal nursery program to provide healthy adolescent trees for replanting, and to provide education to residents about climate resilient species.
- Create an inventory of trees on Town-owned land to monitor quantity, dimensions, environmental benefit, species, and more.

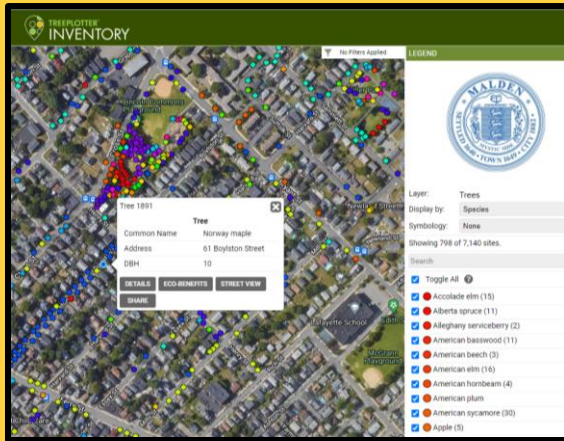
The survey reflected a desire for more trees, but also identified the tree canopy as a barrier to solar. The Tree Bank should factor in placement, growth patterns, and dimensions to balance these factors.

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48

[https://wellesleyma.gov/DocumentCenter/View/561/Section-510\\_Tree-Protection--Preservation?bidId=](https://wellesleyma.gov/DocumentCenter/View/561/Section-510_Tree-Protection--Preservation?bidId=)

## Malden Tree Inventory & Guidelines



The City of Malden has an interactive Treeplotter™ Inventory (see image above) detailing every single tree on Town-owned land. The tool tracks every detail, from the diameter at breast height (DBH) to the monetary benefit of carbon sequestered, for each individual tree.<sup>49</sup>

Species Name	Common Name	Characteristics
<i>Aesculus glabra</i>	Ohio Buckeye	Reserve for large areas. Can be messy with little ornamental value. Primary host of Asian Longhorned Beetle.
<i>Aesculus hippocastanum</i>	Horsechestnut	Double white flowers and fruitless. Prune in spring, avoid extremely dry conditions. Leaf scorch, leaf blight and powdery mildew can be a problem. Primary host of Asian Longhorned Beetle.
<i>Amelanchier arborea</i>	Downy Serviceberry	Not suitable under high stress conditions. Good tree form. Strong fall color.

The City also has a Tree List and Planting Guidelines (see image above) with recommendations for specific species depending on the size, shape, use, tolerances, and more – in addition to instructions on how to best plant and care for trees. There is even a worksheet to help people determine which tree is best for their circumstance.<sup>50</sup>

**Timeframe:** Years #  
**Responsible Entities:** EXAMPLE

<sup>49</sup> <https://pg-cloud.com/MaldenMA/>  
<sup>50</sup> <https://www.cityofmalden.org/DocumentCenter/View/6615/City-of-Malden-Tree-Guidelines-PDF>

## D.2.2 Replacement of Fertilizers, Herbicides, and Pesticides with Less Toxic and Natural Substitutes.

A 2016 study cited that chemical pesticide exposure through skin contact, ingestion, or inhalation have been associated with negative “dermatological, gastrointestinal, neurological, carcinogenic, respiratory, reproductive, and endocrine effects” depending on the baseline health of the individual and extent of exposure. The same study highlighted that high levels of exposure have even led to hospital or death. As a result, some have already been phased out in the agricultural sector.<sup>51</sup> Towns in the south shore, Cape Cod, and the islands, such as Orleans<sup>52</sup> and Nantucket<sup>53</sup>, have recently enacted partial bans on the use of these harmful fertilizers, leaving exemptions for agriculture.

- Consider enacting a fertilizer, herbicide, and pesticide bylaw.
- Educate residents and businesses on natural lawn care alternatives.

**Timeframe:** Years #  
**Responsible Entities:** EXAMPLE

## D.3 Expand NWL Conservation

While Westwood has significant open space and conservation land, it could be maximized for public use, resilience, and environmental protection by acquiring or protecting land that is:

- contiguous to existing protected land and with high value due to natural resources,

<sup>51</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4947579/>  
<sup>52</sup> <https://www.capecodtimes.com/story/news/local/2022/10/19/orleans-voters-ok-fertilizer-ban-4-votes/10530049002/>  
<sup>53</sup> <https://nantucketcurrent.com/news/nantucket-voters-endorse-island-wide-ban-on-fertilizer>

- wildlife habitat, water supply protection, or flood control;
- providing connectivity to an open space network;
- in areas with limited open space;
- vulnerable to natural hazards; or
- currently functioning a resilience protection (e.g. natural flood control area).

These acquisitions and protections can be achieved by:

- acquiring conservation restrictions when more appropriate than land acquisition;
- continuing to encourage donations of open space by landowners; and
- continuing Open Space Protection and Land Acquisition as specified in the 2019 Westwood OSRP.

The Community Preservation Act or CPA is one way in which the Town can act on preservation. CPA site states: “The Community Preservation Act (CPA)<sup>54</sup> is a smart growth tool that helps communities preserve open space and historic sites, create affordable housing, and develop outdoor recreational facilities. CPA also helps strengthen the state and local economies by expanding housing opportunities and construction jobs for the Commonwealth's workforce, and by supporting the tourism industry through preservation of the Commonwealth’s historic and natural resources. CPA allows communities to create a local Community Preservation Fund for open space protection, historic preservation, affordable housing and outdoor recreation. Community preservation monies are raised locally through the imposition of a surcharge of not more than 3% of the tax levy against real property, and municipalities must adopt CPA by ballot referendum. To date, 196 municipalities in the state have adopted CPA.”

<sup>54</sup> <https://www.communitypreservation.org/about>

- Explore other possible funding sources, such as the CPA. Investigate the feasibility of adopting the CPA as one potential future funding source for acquisition, development and/or management of open space and recreation properties;
- Analyze potential revenue impacts of each option.
- Estimate typical impacts on taxpayers of each option for different assessment levels.
- Identify potential open space and recreation projects that could be funded with CPA funds.
- Collaborate with affordable housing and historic preservation advocates to identify potential needs and/or projects in those areas.
- Confirm recent and projected State matching funds.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

## D.4 Limit NWL Loss

The sustainability amendments to the Zoning Bylaw, adopted by Town Meeting in May 2023, include provisions to discourage use of non-native species by nonresidential and multifamily residential property owners and encourage the removal and proper disposal of invasive plants in the Planning Board review process.

- Supplement these requirements with public education to encourage to single-family and two-family property owners to voluntarily follow these guidelines.

Native plantings bolster the ecosystem in areas dedicated to development, while further protections can ensure the existing land is not lost.

- Ensure the perpetuity of Town conservation land by properly recording

the deeds to state the conservation purpose of the land.

- Collaborate with the Westwood Land Trust and other conservation organizations to protect and expand open space.
- Prepare Conservation Land Management Plans for each conservation area that:
  - provide detailed description and assessment of each property;
  - define purpose and uses;
  - establish the maintenance practices required, allowed, and restricted;
  - create policies for grass mowing and tree cutting, and invasive species, disease, and pest control; and
  - identify handicap accessibility, corresponding maintenance required, and desired accessibility improvements; and
  - assign responsibilities and timing for implementing all aspects of the plan.

Land management requires resources, particularly in ongoing maintenance.

- Identify which maintenance tasks can be consistently addressed through voluntary stewardship, which should be undertaken by the Department of Public Works, and which will require outside services.
- Identify funding sources for sustained maintenance of each conservation area and pilot projects.
- Sponsor or encourage cable access shows featuring open space land in collaboration with Westwood Media Center.

- Use the Westwood Community Trails Program to organize volunteer trail work and cleanups of conservation areas.
- Establish partnerships with volunteer organizations, such as Girls Scouts, Boy Scouts, and “Friends of” groups to assist in the stewardship of conservation areas.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

## D.5 Manage Wetlands, Forests and Farms for Changing Climate

Wetlands play a crucial role in carbon sequestration and stormwater storage. They also present unique challenges for the community that require careful management.

- Review the Wetlands Protection Bylaw and the Stormwater Bylaw to better address climate change issues and enable the Town to meet federal and state requirements for stormwater quality.
- Consider a stormwater utility to fund stormwater system improvements.

In 2020, was a major EEE outbreak which cancelled outdoor events. This increased the need for treatment and additional precaution, as it posed serious health risks to residents – particularly to children and the elderly. Westwood, like many other communities in the region were unprepared for this outbreak. Therefore, past public outreach efforts received comments which emphasized pretreatment and preparedness.

*Timeframe:* Years #












*Responsible Entities:* EXAMPLE





# CHAPTER 4E: WATER & WASTE MANAGEMENT

Water and waste management are some of the most important parts of how a town can maintain a healthy population. This includes stormwater, water and sewer utilities, and the disposal of items. These functions are split between Westwood DPW, DWWD, and private partners.

Function	Service
 Water	DWWD
 Sewer	DPW
 Stormwater Drainage	DPW for public land property owners for private land
 Trash & Recycling	DPW weekly pickup & bins, barrels, overflow bags provided
 Bulk & White Items	DPW curbside pickup of one item weekly DPW collection days biannually
 Mattresses, Box Springs, & Textiles	Green Team Junk Removal pickup upon request
 Household Hazardous Waste	DPW collection day annually
 Yard Waste	DPW bag pickup on select dates South Ridge Farm Nursery drop-off
 Compost	DPW sells bins South Ridge Farm Nursery drop-off
 Sharps	Health Division
 Medication	Police Department drop-off

## E.1 Continue Water Infrastructure Improvements

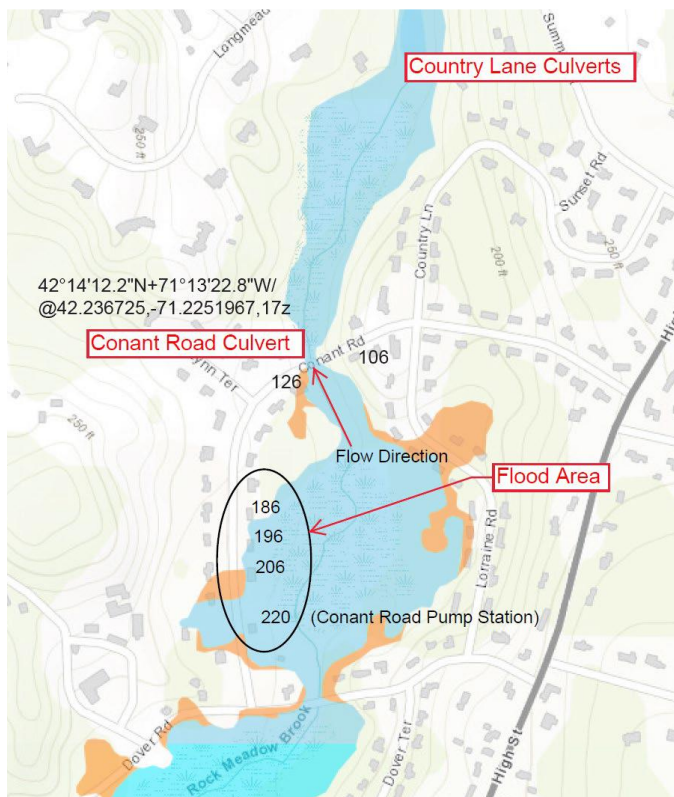
The Town has aging drainage infrastructure. As is the case in most of eastern MA towns, the drainage system was never designed to handle the amount and frequency of stormwater the area now receives due to climate change.

The Town engineering consultant has completed evaluation of three local flooding issues and developed schematic designs to estimate costs for improvement.

- In collaboration with the DWWD, plan and make upgrades to the Town's 100+ year flood event water infrastructure system.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE



### E.1.1 Inventory of Lead Pipes in Westwood

DWWD has received a \$907,400 State Revolving Fund Grant (SRF) from the MassDEP and the Massachusetts Clean Water Trust (the Trust) to support creating a lead water service line inventory project that complies with the Lead and Copper Rule Revisions regulatory requirements<sup>55</sup>.

- Inventory water service lines for lead.
- Conduct a hydrologic study to identify weaknesses leading to flooding.

#### Underground Water Storage



Flood-prone communities, such as Cambridge, have begun constructing underground stormwater storage tanks that essentially look like giant underground pools. These are larger than the typical stormwater retention system already installed in most projects. They can be placed below buildings or parking lots and compensate when the existing drainage system is overloaded. Once the amount of water in the drainage system drops to a manageable level, the storage tank will automatically begin to empty.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

### E.1.2 Inventory and Improve Culverts Across Town

A culvert allows bodies of water to connect or pass through a barrier, such as a road. These are typically made of concrete and can experience wear over time, particularly if

<sup>55</sup> Source: <https://www.epa.gov/ground-water-and-drinking-water/revised-lead-and-copper-rule>

precipitation events increase in frequency and intensity.

The Conant Road area is subject to the flooding from Rock Meadow Brook that was once periodic, but is now frequent and consistent. The area is already seeing impacts of climate change with increased volumes of rainfall causing long-term flooding in areas that the FEMA flood insurance rate maps (FIRM) indicate infrequent flooding potential. The Project Locus Plan shown below and included in shows that the area being flooded frequently and continuously only should have a one percent annual chance of flooding. However, residents and the Town have observed water levels encroaching increasingly onto adjacent properties, including the Conant Road Wastewater Pump Station.

Workshop participants at the Town's 2020 MVP Community Resilience Program plan noted Conant Road as a major point of concern. The Conant Road culvert was noted in the plan as a concern for being undersized, at the end of its useful life, and within an area of beaver damming. The plan called out both the Conant Road culvert and Waste Water Pump Station as prioritized actions. As discussed above, the pump station was noted to address flooding issues, beaver control, backup power, backup pumps, and bypass connections.

- Inventory and improve culverts across town. The Conant Road culvert is one in particular.

### Brook Street Culvert Replacement<sup>56</sup>



The Conservation Commission approved the replacement of the culvert connecting Pettee and Willet Pond in Town. The culvert protects the road from erosion, while small boats – such as canoes and kayaks – can comfortably pass between the two ponds.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

## E.2 Develop Stormwater Master Plan

The HMP and MVP indicated flood risk is one of the greatest vulnerabilities of the Town. A thorough study and implementation of recommendations – regarding culvert sizing, overall hydrology, floodplains, street drainage capacity, and dam investigations – could help prevent serious flooding and dam failures from taking place, as well as help with invasive beaver and mosquito populations.

A stormwater master plan allows the Town to have a holistic view of any stormwater problem. A study allows research to determine the best method, whether it is increasing flood storage, installing L.I.D. measures, or upsizing a culvert to address a flooding issue. Plan recommendations may include expanding the capacity of catch

<sup>56</sup> <https://www.beta-inc.com/project/brook-street-culvert-inspection-and-replacement-2/>

basins as the next step in preventing flooding from occurring.

- Continue and complete the stormwater drainage master plan currently underway and prioritize implementation of recommended solutions.
- Continue to broaden public education around stormwater to broaden awareness and build community support for municipal investment in stormwater infrastructure improvements.

The plan can make recommendations for:

- Expanding capacity of catch basins
- Improving culverts
- Addressing low-lying roads and areas

In 2023, Town Meeting adopted a stormwater bylaw amendment that required the use of NOAA Atlas 14 rainfall data and compliance to MS4 requirements. However, wetlands regulations could be updated to better account for climate change. This action will help protect and enhance wetlands' natural mitigation features of preventing flooding in other areas.

- Revise Westwood Wetlands bylaw and regulations used to enforce the bylaw to apply updated rainfall requirements and require all development plans be designed to NOAA Atlas 14.

A stormwater fee is a tool to encourage impervious surfaces that do not allow runoff to pass through. It operates like a utility fee by billing property owners a rate calculated based on how much impervious surface, such as the house or building footprint and paved driveways, is on the property. Those funds are in turn used to maintain the stormwater drainage system in Town. If implemented, careful consideration should be given to ensuring this fee does not disproportionately affect the affordability of housing for underserved populations.

- Consider adopting a stormwater fee for needed upgrades.

## Beavers

The beaver population has increased dramatically in recent years and have been damming up multiple rivers in Westwood, exacerbating climate change-induced flooding. The Town has been working to solve this problem in a way which will not harm the beaver population while maintaining the natural flow of the river, but have yet to come to a comprehensive solution. The Town has contracted Beaver Solutions as part of their Beaver Management Plan. The plan ensures placement of beaver deceiver devices, yearly inspections, and any necessary repairs. Devices are monitored yearly by DPW staff and checked bi-annually in conjunction with Beaver Solutions. This action is meant to help homeowners understand how various actions help and hurt those efforts.

- Develop and disseminate public educational materials about managing beaver dams.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

### E.2.1 Procedures for Improved Water Conservation and Pollution Prevention

With flooding, comes pollution. Runoff can contain harmful substances from acid rain, fertilizers, dumpsters, and other pollution sources.

- Continue to partner with the DWWD and Neponset River Watershed Association to maintain the community's drinking water supply and protect aquatic habitat through conservation and reduction or elimination of chemical fertilizers, herbicides, and pesticides described in goal D.2.2.
- Develop a stormwater master plan in order to organize and prioritize the

different parts of the expansive stormwater system.

The climate change paradox is that it can simultaneously increase precipitation and drought occurrence. Already, DWWD implements lawn watering restrictions when the water supply gets low during the summer months in particular. The larger the lot, the greater the amount of watering it requires if grass is used. Grass is not native to North America and is resource-intensive to care for.

- Encourage planting of drought-tolerant native plants to decrease the need for watering.
- Partner with the Westwood Public Library's Living Library program to empower property owners to plant wild flowers or other low-maintenance alternatives to grass.
- Provide public announcements to homeowners and businesses on water use reduction strategies in partnership with WMC.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

### E.3 Establish a Solid Waste Master Plan

A solid waste master plan sets targets and goals to reduce waste by a certain percentage by a certain year. Massachusetts<sup>57</sup> for example set a reduction goal statewide by 30% (from 5.7 million tons in 2018 to 4 million tons in 2030) over the next decade. It sets a long-term goal of achieving a 90% reduction in disposal to 570,000 tons by 2050.

- Update the Westwood Comprehensive Emergency Management Plan to include

sections on disaster/storm debris management, hazardous materials response, and more.

Solid waste is a growing concern for MA. Much of our solid waste is sent to other states and only some of it is recycled. In 2022, the Commonwealth banned mattresses, box springs, and textiles from the landfill unless they are soiled. This spurred an organized effort from MassDEP Municipal Coordinators to encourage public-private partnerships to reduce waste. This saves the Town money while also lowering our GHG emissions. Examples of waste reduction initiatives through public-private partnerships include:

- Used book collection – books are donated or recycled
- Clothing & textile collection – usable items are donated, unusable items are recycled for cash
- Swap Shops – exchange furniture and household goods
- Compost drop-off
- Thrift store – sell usable items dropped-off to generate funds for further recycling programs

Programs like these require a physical space to bring the items. Towns with limited resources or land area have developed joint transfer stations to increase the capacity.

- Determine the feasibility of establishing a Town or regional transfer station.

<sup>57</sup> <https://www.mass.gov/guides/solid-waste-master-plan>



## Wachusett Watershed Regional Recycling Center<sup>58</sup>



The nonprofit Wachusett Earthday operates a regional transfer station for any municipalities that wish to join in the area. Currently, seven municipalities have partnered. The operation sells usable items, such as paint, appliances, hobby supplies, and more, and donates items to local furniture banks. They also host special collection days for items that require a more specialized disposal.

Solid Waste Master Plans can also enable policies to reduce waste production.

- Lower the threshold on commercial organic/food waste to facilities generating more than one-half ton of these materials per week.

*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

### E.3.1 Enact Policies for Greener, More Efficient Products

- Provide recycling receptacles at all fields, playgrounds, and other public buildings and facilities, and in appropriate commercial areas.
- Enact policies for municipal buildings to use greener products, with fewer single use, less plastic, more recycled and recyclable content.

*Timeframe:* Years #

<sup>58</sup> <https://wachusettearthday.org/>

*Responsible Entities:* EXAMPLE

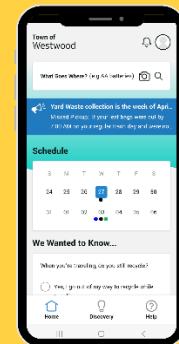
### E.3.2 Increased Public Education on Recycling

An audit by the Town’s contractor for trash and recycling pick-up revealed that the Town’s recycling contamination rate increased from nine percent to 17%, which would result in additions costs if the high volume continues in six months.<sup>59</sup>

- Perform education, outreach, and enforcement for proper recycling through existing resources or consider hiring a recycling coordinator.
- Provide recycling receptacles at all fields, playgrounds, and other public buildings and facilities, and in appropriate commercial areas.

### Recycle Coach<sup>60</sup>

Westwood DPW encourages the community to download the Recycle Coach app, which provides guidance on how to dispose or recycle various items and provides important updates about collection days and special pickups.



*Timeframe:* Years #

*Responsible Entities:* EXAMPLE

<sup>59</sup> [https://westwoodminute.town.news/g/westwood-ma/n/229219/westwood-dpw-launches-resident-education-campaign-hopes-avoiding-fee?utm\\_source=dnl&utm\\_medium=email&utm\\_campaign=newsletter](https://westwoodminute.town.news/g/westwood-ma/n/229219/westwood-dpw-launches-resident-education-campaign-hopes-avoiding-fee?utm_source=dnl&utm_medium=email&utm_campaign=newsletter)

<sup>60</sup>

<https://www.townhall.westwood.ma.us/departments/public-works/recycling-waste-management/recyclopedia>



## CHAPTER 5: CONCLUSION

This concludes the Climate Action, Resilience, and Sustainability (CRS) Plan. The Plan introduced us to the very real need to take climate action. It can be easy to see that things are out of reach when you think of the needs on a global scale. However, when we drill down to the local level, any step towards giving Westwood a Better, Brighter Future is progress in the fight to stop the harmful effects of climate change and environmental degradation.

“Environmental Degradation means the deterioration of the environment through depletion of resources such as air, water and soil; the destruction of ecosystems and the extinction of wildlife. It is defined as any change or disturbance to the environment perceived to be deleterious or undesirable.”

-United Nations (UN)

This Plan opened with our introduction stating our case, demonstrating the actions and plans taken to date. We established a Climate Action Taskforce in this planning process to advise the Planning Division in its drafting and conception. Additionally, we laid out the timeline to achieve this final plan. This was followed by an overview of the plan. This overview looked at our guiding principles, our set of goals called the Sustainable 7, a review of Westwood’s demographics, and a look at the survey results to our general survey released in the fall and winter of 2023. We explored what a net zero Westwood would look like in 2060, what our GHG inventory from 2017 told us and how we move forward to achieve net zero emissions. Finally, we laid out our 25 action steps and 28 associated sub steps. The action steps spanned across five different areas including: Resilience Planning & Implementation, Land Use & Transportation, Sustainable Buildings & Clean Energy, Natural & Working Lands, and Water & Waste Management. There is a quote by Swedish environmental activist, Greta Thunburg, that states:

“We all have a choice. We can create transformational action that will safeguard the living conditions for future generations. Or we can continue with our business as usual and fail.”

The road ahead to remedy the past decades of human caused global warming and climate change may seem daunting but we owe it to ourselves and future generations to make a valiant effort. This CRS plan will hopefully be part of the first steps in the right direction. If you would like to get updates about this plan visit the Town website at [tinyurl.com/CRSPlanWestwood](http://tinyurl.com/CRSPlanWestwood) or scan the QR Code.



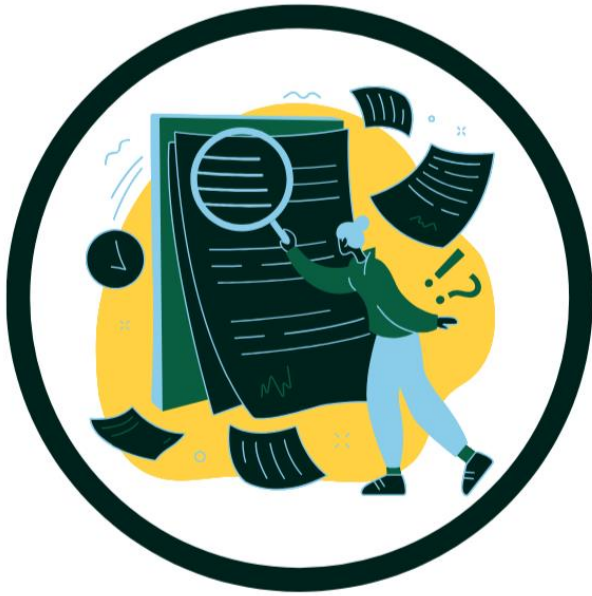
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We're committed to the  
Global Covenant of  
Mayors for Climate &  
Energy (GCoM)



Outreach Sponsor:  
Westwood Wegmans -  
University Station





# APPENDIX

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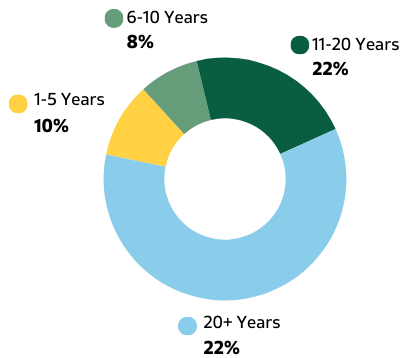
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## Appendix B: Survey Results (Expanded)

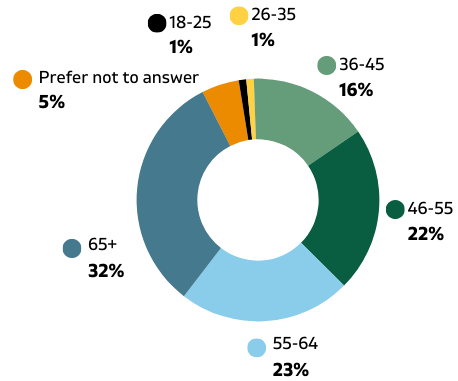
- 107 total respondents

### General Demographics

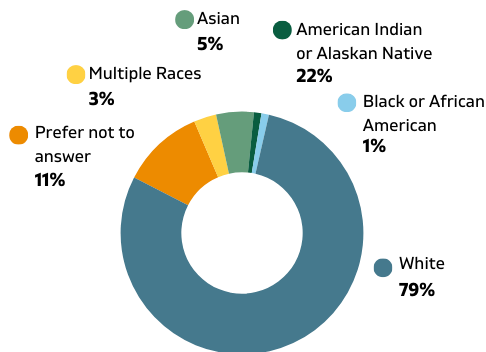
How long have you lived in Westwood?



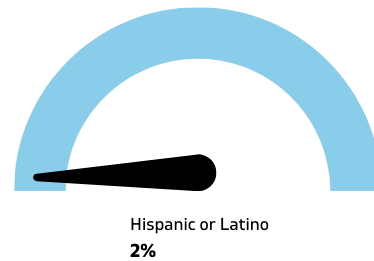
What is your age? 102 Responses



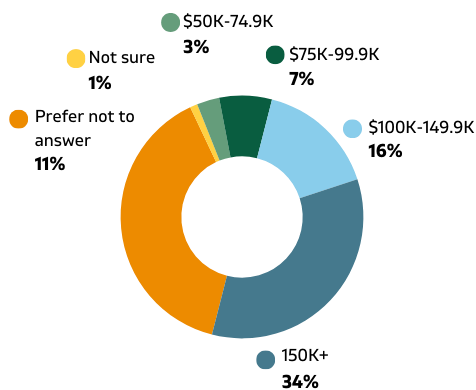
What is your race? 97 Responses



Are you of Hispanic or Latino origin? 97 Responses



What is your household income? 96 Responses



## Renters

### Natural Disasters and Hazards

Events	Damage
Heavy Rain Events	Blackouts
Nor'easters	Flooding
High Winds	Fallen Trees
Blizzards	Damage To Homes & Infrastructure

### Climate Change and Energy Use

When asked about successful climate actions implemented in the home or lifestyle, the comments varied. The majority of responses cited composting, recycling, installing solar panels, owning electric vehicles and energy efficient appliances, as well as switching to more efficient heating and cooling systems. The top three heating and cooling systems homeowners listed as having in their home were boilers (hot water/steam), central air conditioning, and furnaces (forced air). When asked if planning to install an all-electric option (e.g., ductless mini-split, ducted air source heat pump, geothermal heat pump, etc.) to their current heating or cooling system, over 50% said yes or maybe (28.4%-yes, 33.7%-maybe, 37.4%-no). When asked if they would not or might not replace your heating or cooling system with an all-electric system, 67% cited cost as a barrier. 98% indicated they had heard of the Mass Save Program<sup>4</sup>, while 74.5% said they have used the program.

While 70.4% said they did not have solar, the remaining either had roof mounted solar, community shared solar, solar hot water heating, or solar carports. The biggest issue faced by those that have solar was hookup to the electric grid. When asked what barriers prevented homeowners from installing solar, the top responses were cost, tree coverage, and building orientation.

Additional comments varied. The majority of the comments were in support of the Plan. The general themes of those supporting the plan included: attention to waste and recycling; a focus on public transit access; the need for Westwood to do more in climate adaptation, resiliency, and sustainability; and support of a gas-powered leaf blower ban. A full list of the comments can be found in the appendix.

### Transportation

Amongst homeowners, 72.4% have gas powered vehicles. The remaining 27.6% have battery electric (14.3%), another type of hybrid (9.2%), plug-in hybrid electric (2%) or diesel (2%).

When asked if respondents live within a mile of public transportation (such as the Massachusetts Bay Transportation Authority [MBTA]) bus system, commuter rail, or other option), 71.1% said no, 10.3% said all, 7.2% said train, and 6.2% said bus. When asked: Do you use the MBTA bus system?

95.9% said no citing proximity being too far, inconvenient schedule, and owning a car. When asked if you used the MBTA Community Rail, 66% said yes, occasionally or yes, and 34% said no. Commuter rail stops cited were Route 128, Islington, Dedham Corporate, Norwood Central, Norwood Depot, Needham Junction. Destinations cited were Boston, Cambridge and Connecticut (Amtrak).

*Insert MBTA Train Graphic*

We asked what type of amenities were within one (1) mile of respondents, to check all that apply, and the top three answers were: Restaurants (61.5%), Retail (41.7), and Grocery store (34.4). Over a quarter (26%) said they did not live next to any amenities. When asked: Do you travel around Westwood by bicycling or walking? 37.8% said no, 36.7% said yes, sometimes, 22.4% said yes often, and 3.1% said yes always. When asked why not the most responses included the length of travel being inconvenient and danger due to lack of sidewalks. Those that responded yes said their destinations included recreation walks, the post office, coffee shops, and the library.

### Environmental Factors

When asked: Do you have an interest in composting? Top three responses included 59.8% said yes I am already composting<sup>61</sup>, 19.6% said yes, interested in curbside pickup, 18.6% said yes, interested in backyard composting.

When asked Are there areas where you feel there could be more trees? The majority of responses were yes, located on Town-owned property, elsewhere in Westwood, or on their property.

When asked: Which of the following do you do to conserve water? The top three answers were: Turning off the water during teeth brushing, dish washing, hand washing, etc, owning energy efficient dishwashers and washing machines, and limit or avoid lawn watering.

68.4% of respondents were very concerned about climate change. 12.2% neutral, and 19.4% not very concerned.

### Youth Survey

The second survey was tailored to youth from 6<sup>th</sup> grade to college aged. While there was attendance and engagements from some feedback from high schoolers at the community visioning sessions, the survey responses were lacking. There will be an effort to re-engage with Westwood Public Schools and Xaverian Brothers High School at a later date to illicit feedback from middle school through college aged persons.

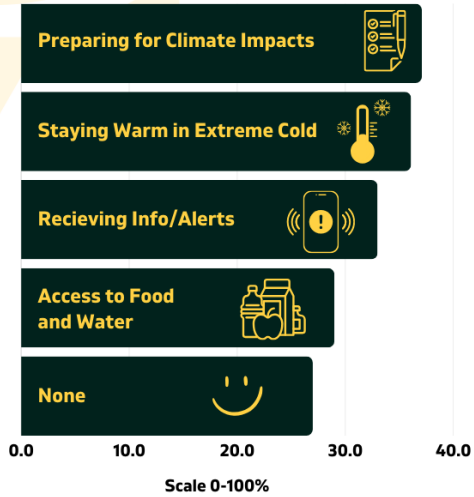
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<sup>61</sup> Many respondents have referred to using Black Earth Compost as a curbside pick up option for composting. More information here: [blackearthcompost.com/residential-curbside-compost-pickup/](http://blackearthcompost.com/residential-curbside-compost-pickup/)

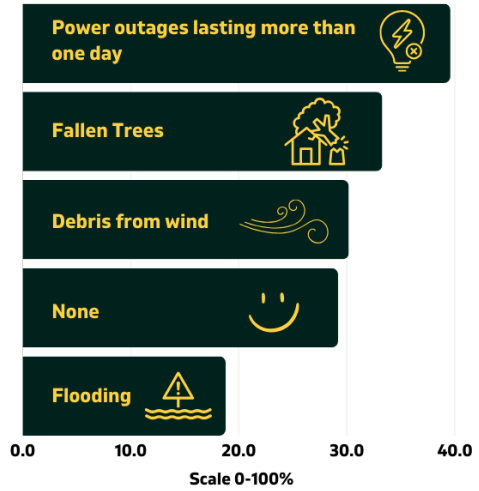


## Survey Results For Homeowners

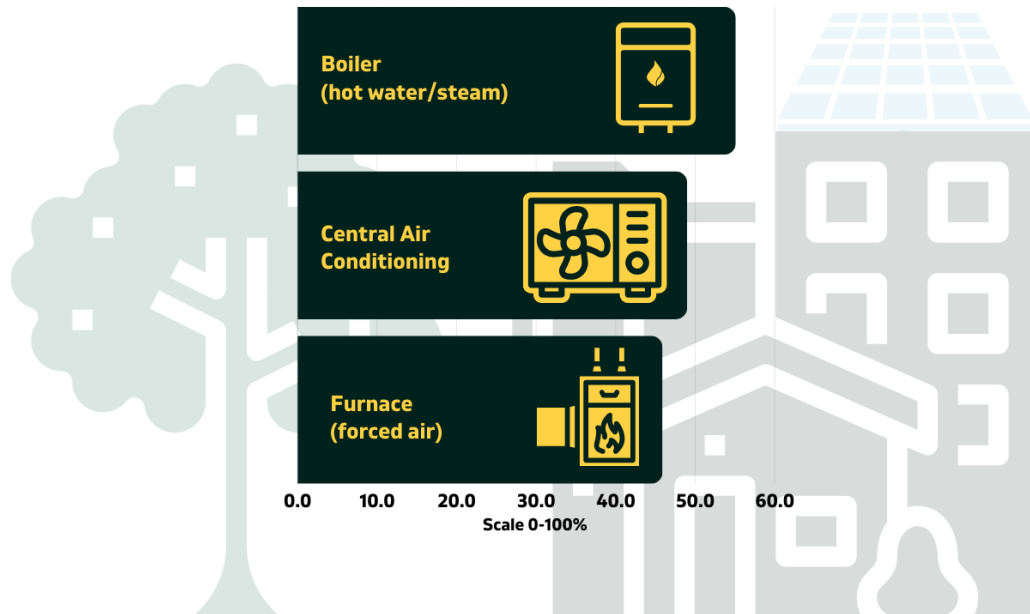
### Home Emergencies Concerning Respondents



### Circumstances Experienced as a Result of a Weather Event



### Types of Heating/Cooling Systems in Homes



## Survey Comments Received

### **Describe the any damage or conditions to your home/type of whether event/ what was damaged**

- Basement flooding due to two large rain events, including hurricane Irene
- Rain/wind storm and a tree fell in our yard
- Winter storm. Tree next door fell on power lines to our house
- Severe rain storm caused leaking in my basement; some winter storms have knocked out power for 1-2 days
- Snow storms, thunder storms
- Power outage was during a snowstorm and debris is during heavy wind.
- Winter blizzard, fallen tree, damaged roof
- mostly wind and water damage
- Basement flooding with heavy rain
- Our basement flooded in June 2020 (the same storm that flooded Norwood Hospital). Luckily it was mostly the unfinished part of the basement, but we did have some water damage to the carpet in the finished part of our basement.
- Hurricane Irene - fallen trees but no home damage; Hurricane Sandy - power loss for several days; lightning storm damage many electronics but did not lose power
- Ice damns with interior water damage in late winter 2015
- It was the result of fallen trees in the neighborhood from a snow storm several years ago
- Hurricane Irene I believe.
- Flooding from flash flood in 2020; Every Winter we have power outages due to fallen trees/branches in our neighborhood when we get a bad ice/snow storm.
- Neighbor's tree fell pulling wires & electrical box from house during heavy rain storm in 2019
- ? Tree fell on house damaging chimney
- 2015 snow season- damage from ice to roof, leaks in ceiling
- Result of snow storms and falling trees and broken branches taking down power lines.
- Tropical storms have felled trees in my yard and neighborhood. The power outages that lasted a few days were due to a tropical storm, and 2 heavy snowstorms.
- Hurricane Irene in 2011; various winter storms for fallen trees & limbs
- Our finished basement flooded 10-15 years ago. We live in a high water table area, and heavy rains saturated the ground and caused water to come up through the basement floor.
- Our basement has French drains and a sump pump but it still floods on occasion with heavy rains which have occurred more often in the last few years. We have had a tree break and come down onto the garden, very near the house.
- Hurricane Irma I think it was. Over 5 years ago
- Normal damage from winter storms. Nothing unusual for New England.
- 2' of water in basement. 100 or 300 year rain event, can't remember. Heating system and damage to personal stuff that was on the floor.
- winter storms, generally
- There have been serious wind storms that have caused concern and downed power lines

- Vinyl siding blew off the side of the house during a wind storm. Lightning storm disabled master circuit breaker so we had no electricity. It also damaged an amplifier and two cable TV boxes that had to be replaced.
- Heavy rain several years ago caused some minor flooding in my basement
- We had a tree fall on our fence due to high winds
- Flooding in basement
- Without air conditioning the house is very hot in summer. Heavy wind has snapped trees which have fallen on the deck of the house.
- Water in basement
- Ordinary storm damage across different seasons.
- Lost power for three days due to winter storm
- Heavy rains and nor'easters
- Wind took down tree and hit house and rain/wind event damaged AC
- Tree fell in back yard
- 1990s power outages with blizzards
- Used wood to heat.
- no recent weather events, however I have sump pumps due to water issues and a generator in case of any outages
- With a power outage the food in the refrigerator and freezer are ruined.
- We lost power for multiple days a few years ago during some late winter snowstorms. When the snow is heavy and wet, it brings down branches or trees that seem to affect my neighborhood's power supply.
- Too many events to list here since 1989. Power loss due to rain, snow, trees down, transformer blew up, car accident - just to name some of the "whys" we have lost power.

**Comments on successful climate actions implemented in the home or lifestyle.**

Participated in demonstrations and pipeline protests, communicate with their legislators, retrofit at our home to be zero carbon, avoid flying, avoid single, use products, etc.

I have taken action to conserve because that is the responsible thing to do to avoid waste, but our actions will not significantly impact climate (despite the popular narrative). Read the book *Tambura* and this (WSJ) article: *How 'Preapproved Narratives' Corrupt Science*

- I follow the Shave the Peak guidance, try to limit personal use of my car, etc. Not very effective overall, especially since I'm a renter.
- Before moving to this energy inefficient apartment complex, in my own home I upgraded insulation, used smart thermostats, composted, and planted trees. I always recycle.
- Have been doing our best to decarbonize our home and decrease our reliance on carbon intensive systems in our neighborhood (about a dozen families in the Pond/Sheehan district of town), town and region (one of us leads a public benefit corp. focused on climate tech, contracted by MassCEC, while the other leads campus sustainability at a university climate justice & sustainability hub; we both advocate for sustainability by participating in committees and meetings with our school district and municipality).

Our household is "flexitarian" (i.e. plant-forward with practically zero red meat), we subscribe to curbside composting (which should be included in our RE taxes like recycling), we barely have daily commutes, we completed the MassSave Home Energy Assessment/audit and opted-up for closed cell spray foam insulation. We are "pro-sumers" who contribute to circular economies, prioritized solar PV and received PTO in April 2023. We opted out of ConnectedSolution with Li-ion battery storage (2x Tesla Powerwalls) during our Tesla Solar PV install due to safety and warranty issues, and hidden costs (they surprised us with an unacceptable \$2,500 charge on install day for a cement pad!). Instead, we made a modest crowd investment in StorEn (<https://www.storen.tech/>) and anticipate installing their first commercial Vanadium Redox Flow Battery in 2024. In parallel, we plan to replace windows in our partially finished basement and to eliminate the need for an oil take by installing cold climate air-source heat pumps (ccASHP, ideally with VRF with next-gen refrigerant like R32). We have also explored geothermal with ground source heat pumps (GSHP), but there are multiple barriers like the fact that we do not have air ducts for a central heat pump. Contractors have told me that ductless mini-splits are not a good option for GSHP since they would have to run multiple lines to each head. Open to other measures (since our house is white, home siding replacement may not be as beneficial) and have been developing a pipeline of innovative directed clean energy projects/programs with our neighbors, teachers, school leaders/district administrators and town WEAC (Community Choice Organics with anaerobic digesters). Our Sheehan neighborhood should seriously consider networked geothermal (like a mini-Framingham's type pilot that utilizes all the embedded thermal energy in our sewer system: <https://www.framinghamma.gov/3416/Geothermal-Pilot-Program>). It was great to

connect more with Tom and Elijah recently. Looking forward to the possibilities all together towards a just and equitable transition!

- Composting, reducing meat consumption, growing food in backyard garden.
- Drive less, carpool or public transportation whenever possible, fly less, keep AC and heating as low as tolerable, try not to waste food, water or electricity, recycle and reuse as much as possible
- Composting, Joined Westwood Community Choice Electricity, have two electric vehicles, member of WEAC
- Participated in demonstrations and pipeline protests, communicate with their legislators, retrofit at our home to be zero carbon, avoid flying, avoid single, use products, etc. etc.
- Very small steps like composting, conserving energy and water, carpooling when possible
- Reduce use of power and water.
- Solar panels, try to reduce consumption and trash
- Recycling composting solar panels
- Reduce water consumption, composting, reduce car usage, recycling
- recycling, upcycling, composting, reusing rain, sump pump water for watering, led lamps, new windows
- Composting, reducing plastic use, going vegan, creating a pollinator habitat in yard, no pesticides or fertilizer on lawn
- I would like to collect rain water and shower water for the garden.
- EV for transportation, LED lights, recycle as much as possible
- Using TerraCycle zero waste boxes to recycle things that would otherwise go into the trash
- We have solar panels, drive a Prius, minimize unnecessary purchases, purchase used items when possible, purchase credits to offset emissions from air travel, minimize meat consumption, minimize plastic use in all ways (packaging, food storage, etc.), minimize food waste, compost, maintain a garden, shop at the farmer's market, etc.
- Used MA Save, installed high-efficiency boiler
- Energy-efficient appliance upgrades, reduced driving, reduced packaging, reduced lawn area, native drought-resistant plantings, vegetable garden, yard composting
- I limit my usage of energy, I buy energy efficient appliances, and improved my home with new windows and doors.
- Rain barrel, Black Earth Composting
- Installed minisplits
- switch to EV car; avoid use of gas-powered leaf blowers; don't use single-use plastics, especially bags; feed the pollinators with native plants and flowers; no use of herbicides or pesticides; organic lawn treatments
- I have taken action to conserve because that is the responsible thing to do to avoid waste, but our actions will not significantly impact climate (despite the popular narrative). Read the book called Tambura and this article: How 'Preapproved Narratives' Corrupt Science <https://www.wsj.com/articles/how-preapproved-narratives-corrupt-science-false-studies-covid-climate-change-5bee0844>
- Avid recyclers and see above steps to conserve water, solar in stall, etc.
- Only turn on light in room I am in, have been Black Earth Compost customer since inception in Westwood. Reducing lawn & replacing with more native pollinator plants; no longer use lawn service with chemicals.



- We recycle, compost, we buy recycled/used clothing and items, we don't travel a lot, we are converting lawn to lawn alternatives and native plants to eliminate dependence on irrigation. We don't use fertilizers or pesticides to protect biodiversity and the ecosystem. Etc etc
- I try to follow suggestion and stay current on any information that is available to manage any usage that I can improve.
- Electric car, buying green from Eversource until we can figure out obtaining solar panels, significantly reducing AC and heat use, much more focused on reducing and reusing goods instead of recycling because a lot of recycling ends up in landfills
- Composting, collecting rain water, mini splits, using shades to keep house cool
- Limit driving/consolidate trips; reduce consumer consumption/packaging; use high efficiency heating/hot water/appliances or rechargeable tools; do not use a leaf blower
- Installing solar panels. Any new cars we have purchased or will purchase will be hybrid.
- We have driven fuel efficient vehicles, > 30 miles per gallon for our lifetimes, we keep heat and AC at the lowest, most energy efficient settings, we take public transportation when possible and we eat almost no meat. we never use herbicides or pesticides, use a hand mower and have mostly perennials to minimize water use. We have 2 hybrids, one 14 years old and the other 7.
- Plug in hybrid vehicle, energy conservation, eat less beef
- Recycle, gardening, use solar
- Significant upgrade to insulation and sealing house. New more efficient furnace. Thermostat controls, LED lighting.
- reduced driving, lower heat and air conditioning, installed more efficient heating system
- Electric and hybrid vehicles, solar powered home, conscientious about resource usage e.g., never watering lawn, using clover instead of grass
- electric car and net positive home
- Recycling, turn off lights in rooms that are not in use, shut off all or most lights when leaving home
- Conservation
- Compost all food waste, converted from paper to cloth napkins
- We built a net positive, super-insulated solar home that burns no oil, gas or wood. We own an electric car. We use an outdoor clothes line to dry our clothes. We have super efficient water saving toilets, faucets, etc. We don't eat beef or pork. I bike to work. I teach my students about climate change and sustainability. I support numerous environmental organizations.
- Installed solar panels and updated with high efficiency appliances
- PV electricity, air source heat pump heating/cooling (got rid of central AC), two EVs and those are our only cars
- Landscaping, smaller lawn, mowing less frequently, rake - no leaf blower
- Recycling pick up and town hazmat and recycling events
- Always working to do more; nothing specific at the moment
- Redid kitchen and installed energy efficient appliances.
- Driving and electric vehicle and plug in hybrid vehicle and then taking the 100% renewable option on the Westwood Community Choice Electric supplier program. Composting with Black Earth Compost. Limiting water lawn in summer and planting a vegetable garden.

Heating the house to 68 degrees in heating season and only using window AC limited to 75 or higher when needed in summer. Have replaced all the windows with energy efficient windows and taken advantage of MassSave programs to insulate the walls and attic of the old house.

- Added solar and battery backup to second home.
- Installation of energy efficient appliances, Composting on a weekly basis, Recycling as much as possible, buying sustainably sourced products where possible, utilizing reusable bags
- energy efficient appliances, additional insulation in attic.
- My home is newer and thus energy efficient and I ride a bicycle instead of driving regularly.
- Heavy emphasis on "reduce, reuse, recycle". Recycle all we can't reuse; donate items we no longer need and are in good condition to charities. Participate (use) in the town's recycling & hazardous waste & household bulk collection events, and the sharps & medication collection programs. Limit fuel consumption and pollution by carefully planning car rides to get the maximum # of errands done on the same route on the same day. Conserve/limit the use of water, gas and electricity at home. Use LED lighting. Use reusable bags for shopping. Practice organic gardening.
- Keep light on where needed , reduce thermostat setting to lowest in the winter and highest in the summer , water as needed, upgrade lighting to led, recycle everything possible
- Conserve/limit use of water, gas, electricity, fuel.
- The conservation efforts I do are not due to "climate change"
- Incorporate multiple places when I travel in the area. Keep temp low in house in winter and high in summer. On an overall focus - I'm vegan. Keep many trees on my property.
- Have 6 large water barrels that collect during the summer (only had to water a few times this summer), the solar panels, etc. as noted above
- more efficient heat/cool and appliances
- Solar panels, geothermal HVAC, recycling, reuse paper, plastic and cloth shopping bags, donate excess textiles, set heat for 67, turn off lights, installed open and closed cell insulation, upgraded doors
- I try and eliminate all plastic use (no plastic water bottles), I compost using Black Earth pick up, I signed up to stop many magazine subscriptions, I wash clothes in cool water and air dry, I buy sustainable products and brands. While reusing is better than recycling, reducing is best! I donate clothes and thrift often to reduce new product production. I own 2 hybrid cars out of 3 and try and be mindful of efficiently making trips. I do not water my lawn, I have an electric mulching mower, I do not use any chemicals on my lawn and I am trying to add areas of native perennials to reduce my lawn size. I also planted clover last year as it's more climate resilient and needs less maintenance. I have a rain barrel to water my plants and do not use any water from the hose.
- Composting, hybrid car, mini splits, insulation, electric mower and blower
- We hand remove weeds, limit our lawn mowing, we compost, we use our mini splits as often as possible instead of our heating system, we have switched to LED bulbs and try and turn off lights. When we are not using them, we burn as few fossil fuel as possible. We plan to install solar onto our roof and get the battery back up at some point, we also want to swap both of our gas powered vehicles for electric.
- Yes but data shows that some of the biggest contributors to climate change are fuel companies therefore I think our efforts on individual resident actions are great and should

continue but larger focus should be placed on how we can impact and limit the usage of fuel collectively (i.e. encourage and incentivize public transportation and hybrid / EV vehicles in a variety of ways)

- LED bulbs and lights; compost
- Have reduced purchases of plastic containers, plastic bags and cleaning supply bottles.
- Installed solar panels. Switched to an EV as our primary vehicle. Set back thermostats to conserve electricity and oil for cooling and heating.

### **Additional Comments from Respondents**

Reducing waste and cost savings are important to me, if sustainability efforts can be focused in those areas I would be onboard. A default shift to everything electric before the infrastructure can support it would be extremely costly to the town. While sustainability is always framed in a positive light, "all actions have equal and opposite reactions". It is important to fully evaluate those reactions and proceed judiciously within the common interest of the town.

Leaf blowers are polluting our air and causing disease for young and old. Easy way to help air quality is to ban gas powered leaf blowers. Gas-powered leaf blowers emit nitrous oxide. The EPA estimates that the impact of one pound of nitrous oxide on warming the atmosphere is almost 300 times that of an equivalent pound of carbon dioxide. Please look into restricting use. Thank you.

- The town needs to wake up to the need to commit resources to land conservation and reducing climate emissions. Westwood is way behind on both. Can't even get the town to help preserve acreage at Hale Reservation. There is no real leadership from the town on this.
- Thank you for conducting this survey and for organizing the community around climate and resilience. I would be glad to know how I can help!

- I was on WEAC for 12 years, and am a longtime recycling professional
- Recycling. There are so many products that should be recyclable [sic] but are not. I wish that manufacturers were required to only make products and packaging that could be recycled.
- great idea! Good luck!
- I'm so glad that a task force has been created and I'm really excited to see the recommended plan next summer. I do hope that the task force works hand-in-hand with the school system to ensure that changes made at the town level are also being implemented at the school district level.
- I would like to see canopy coverage requirements for commercial development/expansion. The commercially-developed parts of Westwood have so few trees a) they are heat islands, and b) the traffic and buildings produce FAR more CO2 than can be absorbed.
- Thank you for providing the survey. Good luck! One suggestion ... update the survey to allow for data input if respondent owns multiple cars
- Thank you so much for investing in a sustainable future!
- So proliferating false information and wasting town resources on unproven initiatives. Please educate yourselves on climate science before taking on expensive and burdensome initiatives.
- we should eliminate gas powered leaf blowers and eventually industrial size lawn mowers
- We don't have the money for as a town, state or country for unproven propaganda.
- There isn't enough attention/awareness given to good stormwater management, handling invasive plant species, rain gardens and cleanliness of local water resources (brooks/ponds). Would like to know more about collecting rainwater.
- I walk daily in Westwood. Leaf blowers are polluting our air and causing disease for young and old. Why in the world do we allow these unchecked in our community? Easy way to help air quality is to ban gas powered leaf blowers. Gas-powered leaf blowers emit nitrous oxide. The EPA estimates that the impact of one pound of nitrous oxide on warming the atmosphere is almost 300 times that of an equivalent pound of carbon dioxide. Please look into restricting use. Thank you.
- We would love to see more public transportation.
- Please don't waste a ton of money on things that aren't going to make a difference. Look at the problems in NJ for ex with wind power that is unaffordable What a waste.
- I think this is a good idea but let's not make it political. It should be practical. There is a ton of things we can do to reduce our footprint that are cost effective and make a difference. EV's are great for around town but they are not a good solution for people who drive a lot. We can meet all the needs and make a difference. We should do much more to tie the town into our local trains. Think about how hard it is to travel to the airport....it is awful so we all take cars or Ubers which is wasteful. Should we run a bus around town to connect High Street to Islington Center to University Ave? There are all sorts of lighting projects that have been done but are there more that we can do. Most are cost effective and subsidized.
- Good luck with study
- The survey should have included questions about degree of support for open space preservation, energy stretch code, and other community investments that would address climate change
- Westwood is well behind other communities with similar resources

- Could we please do something about the bittersweet vines that are strangling and killing trees all over town?
- I'm pretty frustrated with recycling. I'm interested, motivated, and have the time, and yet I still get confused at times about which items are recyclable and which ones are not. The Recycle Coach app helps, but does not cover all items. Would like to see the government mandate companies to only use materials in their products that are accepted for recycling, as there is too much plastic waste being sent to landfills, most of which gets incinerated. Would also like to have a point person/group, so that I could scan a product, send it to them, and get an answer about whether or not the product is recyclable in Westwood. I also think the town could make a You Tube video(s), about recycling and other climate related topics (possibly starring Westwood students). I encourage all Westwood efforts to incorporate students in schools in your CRS mission, since it is their future climate and they have the ability to change their parents' views and actions. Thanks for giving me the opportunity to provide feedback.
- I'm glad the town is finally waking up to the seriousness of climate change. We should adopt a much stricter energy code and ban new natural gas hookups and oil heating systems.
- Conservation is also a part of climate resilience by preserving areas that can store carbon, mitigate flood impacts, etc. I would recommend looking at Westwood on MassWildlife's BioMap ([mass.gov/BioMap](http://mass.gov/BioMap)). There's not a lot of permanently protected areas in Westwood and I think there's room for change there.
- I strongly oppose the town buying or using EVs - they are expensive and unreliable.
- Have lived here since 1992... Are both retired now but always looking ways to do more to help with climate change/the environment
- Town effort to install EV charging stations, purchase and use electric vehicles in future, change leaf blowers, lawn trimmers and lawn mowers used by town departments to electric from current gas units.
- Install and support the installation of more solar panels in town, businesses and residential buildings.
- Nuclear power plant in Westwood. Let's put our money and our values where our mouth is.
- Town needs to provide easy access to recycling currently limited to recycle day- once a year
- Reducing waste and cost savings are important to me, if sustainability efforts can be focused in those areas I would be onboard. A default shift to everything electric before the infrastructure can support it would be extremely costly to the town. While sustainability is always framed in a positive light, "all actions have equal and opposite reactions". It is important to fully evaluate those reactions and proceed judiciously within the common interest of the town.
- We already pay high enough taxes in this town. Please don't add any additional ones for white elephant "sustainability" projects
- Data shows that some of the biggest contributors to climate change are fuel companies therefore I think our efforts on individual resident actions are great and should continue but larger focus should be placed on how we can impact and limit the usage of fuel collectively (i.e. encourage and incentivize public transportation and hybrid / EV vehicles in a variety of ways)
- Bused that used to travel route 109 to Boston should be reinstated

## Appendix D: Climate Visioning Session Live Polling

