



Resilient Watertown: Proposed Goals, Strategies, and Actions

The following goals, strategies and actions were developed based on a review of existing data, the greenhouse gas (GHG) emissions inventory and pathways analysis, meetings of the Resilient Watertown Stakeholder Advisory Group, and input from the community. This round of feedback is open until October 8th. Please email feedback to resilient@watertown-ma.gov.

Definitions

The table below defines terms that we are using throughout this document and throughout the Watertown climate and energy planning process. Indicators and targets are still being created and are not included in this draft.

Term	Definition	Example
Plan Elements	Core topics your Climate & Energy Plan will focus on	Buildings & Energy
Goal	WHAT you want to accomplish presented as a broad statement	By 2050, 100% of existing homes and commercial buildings will be fossil fuel free
Strategy	HOW you will accomplish your goal presented as a general approach	Electrify existing buildings running on fossil fuels
Mechanism	The tool type that will be utilized to develop appropriate actions to address the strategy	Education
Action	The specific activity that will be undertaken. Implementation blueprints will be developed to outline the key steps to implement the action.	Develop a targeted campaign to encourage the transition to heat pumps in homes
Indicator	A metric that will be tracked to ensure goals are met	# of residential buildings electrified each year
Target	The specific measurement for an indicator to reach to meet the goals	3,830 residential units will be electrified by 2030

Relevant components of this document will appear as follows:

PLAN ELEMENT

Description. Summary of what the plan element entails.

Rationale

- Summary of the data supporting the inclusion of the particular set of goals, strategies, and actions.

Goals, Strategies, & Actions

Goal Statement

- Strategy
 - **Action** (many of the actions will eventually include sub-steps that must be taken to achieve that action. Not all of them are defined yet so they are not listed here. For



more information on discreet sub-steps that have been suggested so far please reference the Working Group materials in the Resilient Watertown [Google Drive.](#))

Cross-Cutting Strategies

Because of the interconnected nature of climate change, there will likely be multiple cross-cutting strategies defined in the plan that apply to more than one Plan Element. This section will likely grow as the planning process moves forward.

- Create an overarching Resilient Watertown Outreach and Education Campaign with toolkits targeted to individuals about what they can do to reduce impervious surfaces- roads, rooftops, etc. throughout Watertown, plant more trees, change their commuting habits, composting, working together with neighbors, and more.
- Develop assistance mechanisms and resources for renters and landlords (will be developed based on outcome of renter and landlord focus groups being held Fall 2021)

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BUILDINGS & ENERGY

Description: Invest in smart infrastructure and programs that reduce energy and water consumption and increase clean energy use, preserve valuable historic neighborhood character, provide diverse affordable housing, and promote vibrancy of the Town.

Rationale

- The Watertown Town Council has stated that the Town shall have "the goal of ending town-wide greenhouse gas emissions as quickly as possible and before the Commonwealth of Massachusetts target of 2050."
- As of 2019, Buildings represent 56% of those emissions.
- Eliminating the direct use of fossil fuels in Watertown buildings is required to meet our targets.
- To reach the Town's GHG reduction target:
 - Electricity sources must be 100% renewable by 2050 and meet benchmark years:
 - 50% by 2030
 - 75% by 2040
 - All new construction must be all electric by 2025
 - All existing buildings in Watertown must be electrified at the following rate:
 - 10% by 2025
 - 40% by 2030
 - 100% by 2050
- Regulation is the only option to guarantee that new fossil fuel dependent uses are not undermining the Town's effort to decarbonize.
- The most effective way to reduce emissions from existing buildings is through incentives and education/outreach.
- Massachusetts already has a number of financial and technical assistance programs to support this transition.
- Large Buildings make up a significant portion of commercial real estate in Watertown.

Building Square Feet	Count	Percent of Count	Total Square Feet	Percent of Square Feet
100k+	16	3%	5,113,994	49%
50-100k	18	4%	1,416,292	14%
25-50k	39	8%	1,432,222	14%
10-25k	67	13%	10,57,754	10%
5-10k	95	19%	658,102	6%
Under 5k	276	54%	666,746	6%
Sum	511	100%	10,345,114	100%

*Excluded Buildings owned by the Town, Watertown Housing Authority, and buildings that are primarily parking structures



Goals, Strategies, & Actions

By 2050, Watertown's buildings are efficient, resilient, and carbon neutral

- Require the highest standards for efficiency and carbon neutrality for new construction and major renovations
 - *Create a net zero, resource-efficient building standard*
 - *Enact fees for residential gas hookups to promote electrification*
 - *Promote workforce development and training programs for net zero construction*
 - *Work with municipalities in the region to eliminate fossil fuels (e.g., identifying mechanisms like home rule petition, etc.)*
- Electrify existing buildings running on fossil fuels
 - *Support development of geo-microgrid pilot programs*
 - *Develop and implement a targeted outreach campaign focused on promoting heat pumps for residential homes on oil heat (with future phases targeting natural gas)*
 - *Incentivize the transition to heat pumps through HEAT Smart or other program*
- Enhance and actively promote deep retrofit and aggressive conservation programs
 - *Enact a Building Energy Use Disclosure Ordinance – initially for large properties (commercial buildings above 5,000 sq.ft., residential buildings >10 units) – that supports a transition to net zero by 2050*
 - *Expand resources available to the Energy Manager's Office to provide technical assistance for clean energy, energy efficiency, and financing activities (e.g., home energy guidance, collaborating on retrofits of Watertown Housing Authority properties, etc.)*
 - *Upgrade major existing municipal facilities to achieve net zero energy performance*

By 2050, 100% of electricity is sourced from renewables

- Accelerate the transition to renewable energy town-wide
 - *Expand and strengthen the existing commercial building solar ordinance*
 - *Promote commercial PACE and other innovative financing programs*
 - *Develop and implement a targeted outreach campaign focused on recruiting for Watertown Electricity Choice program and installing rooftop solar*



INFRASTRUCTURE & WASTE MANAGEMENT

Description: Maintain a sustainable level of resource consumption and ensure that the infrastructure that supports resource distribution is mitigating and enhancing resilience to climate change.

Rationale

- Reducing, reusing, and recycling products and materials minimizes raw natural resources used and saves money.
 - Commercial private haul is estimated to be 71% of Watertown's solid waste
 - Most of the energy contained in solid waste that is incinerated is from plastic, effectively a fossil fuel.
- Climate change will disrupt the services and infrastructure that keep Watertown running, including critical assets and waste services.
 - Infrastructure assets have long life cycles and should be designed to mitigate and enhance resilience to climate change in order to ensure safety and efficiency.
 - Infrastructure was ranked as the top concern from the MVP Core Team during the MVP planning process.
 - Community members are concerned about damage to infrastructure from climate impacts, sewage back-ups, and storm drain maintenance.
 - Several dams in and/or up-stream from Watertown are classified as high risk.

Goals, Strategies, & Actions

By 2050, Watertown has achieved a net zero waste community status

- Transition community perception and action around consumption and disposal practices
 - *Create a bulk purchasing network for compostable and environmentally friendly goods among the commercial and industrial sectors*
 - *Design and implement an education and outreach campaign focused on reducing waste sent to the incinerator the impacts of our current consumption-waste pattern, particularly single use plastics*
 - *Provide incentives for and educate residents about organics recycling*
 - *Establish an environmentally preferable purchasing policy (EPP) that focuses on reducing consumption, particularly of single use items within municipal government*
 - *Investigate opportunities to pursue a circular economy in Watertown or within the Metro Boston region (plastic item bans, grey water recycling, etc.)*



By 2050, Watertown's infrastructure is well maintained and resilient to the impacts of climate change

- Systematically integrate climate change projections into the design of all new and upgraded infrastructure projects
 - *Require that all major new infrastructure and upgrades incorporate resilient design guidelines, such as Envision™, that take climate impacts into account.*
 - *Review and enhance current infrastructure maintenance systems and protocols to align with the needs of a changing climate.*
 - *Advocate with partners for the safe removal of the Watertown Dam*
- Ensure a smart and redundant energy infrastructure
 - *Investigate local back-up power and battery options in coordination with utilities*
 - *Ensure redundancy of critical energy infrastructure and assets*

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NATURAL RESOURCES

Description: Preserve and enhance our open spaces, tree cover, habitats, and water resources through smart management practices.

Rationale

- Pervious surfaces filter and absorb stormwater, protect water quality, and mitigate urban heat island, both of increasing concern in Watertown as climate change impacts such as extreme storms and heat intensify.
 - As of 2016, 57% of the community is impervious surface.
 - Participants in an August 2021 survey of Watertown residents indicated high support (4.62 out of 5) for greener stormwater practices, like installing porous pavers and rain gardens that provide habitat, flood protection, and cleaner air and water.
- Native plants, when carefully selected, can require less inputs such as water and fertilizer, and invasive and non-native plants can harm ecosystems already threatened by changing climates.
- Suburban tree canopy can sequester approximately 4.5 MTCO₂e per acre every year, in addition to providing important health/wellness and heat reduction benefits.
 - Watertown's trees, in particular, hold significant carbon storage capability:
 - Total carbon storage in Watertown trees is estimated to be 60,718 MTCO₂e
 - Each year trees in Watertown sequester an additional 2,397 MTCO₂e.
 - To be able to count as a true carbon "offset," additional sequestration would need to come from "afforestation," or a net gain in tree canopy area above what currently exists.

Goals, Strategies, & Actions

By 2050, Watertown's natural assets and green space are enhanced, equitably distributed, and delivering full ecosystem benefits

- Enhance forest and open space parcels
 - *Incorporate pocket parks into all neighborhoods lacking green space*
 - *Promote biodiversity improvements to existing and new parks and open space*
 - *Acquire more open space, where possible, and create more open space through development on private property*
 - *Establish natural-habitat corridors along rivers, trails, and utility easement areas*



- Protect, enhance, and diversify the tree canopy
 - *Establish a community outreach program to increase awareness and appreciation of the importance of the urban forest in managing climate change*
 - *Prioritize tree plantings in neighborhoods at high risk for urban heat impacts*
 - *Establish an enforceable tree ordinance focused on preservation, diversification, and equitable distribution of tree canopy on public and private property*
 - *Increase available resources for the DPW Forestry Division*
- Promote regenerative landscaping and maintenance practices
 - *Develop a nature-based landscaping education and outreach plan, including utilizing school gardens and community gardens as demonstration sites*
 - *Update current development regulations to require the use of appropriate native plants for new- and re-development*
- Minimize quantity and improve quality of stormwater runoff
 - *Expand and accelerate existing Green Stormwater Infrastructure (GSI) policies and management programs for public projects*
 - *Promote and/or incentivize the incorporation of green stormwater infrastructure into existing large impervious areas*
 - *Enhance incentives and ongoing education related to individual actions such as rain barrels, planting strips, and de-paving private residential properties*



PUBLIC HEALTH & COMMUNITY PREPAREDNESS

Description: Ensure the well-being, health, and safety of Watertown residents through improved climate change preparedness and response, enhanced communications, and accessible resources for physical, mental, and emotional health.

Rationale

- Only 35% of Middlesex County residents talk about climate change
- Extreme heat is the climate hazard that poses the greatest threat to Watertown
 - Only 31% of households have central air conditioning
 - Only 42% of Middlesex County population believe that they will personally be harmed by a changing climate
- 34% of the 65+ population lives alone
 - This is the group most at risk for loss of life due to extreme weather events
- 48% of the population are renters
 - They are not able to make improvements to their homes
- Many people taking advantage of the Farmer's Market are not food insecure
- Mental health was indicated as the number one concern in various local and regional health assessments
 - Community connectedness and opportunities to volunteer can address this issue
 - Accessible green space and community recreational activities have been proven to provide mental health benefits

Goals, Strategies, & Actions

By 2030, Watertown is a model for community resilience to climate change

- Promote climate literacy through education and training
 - *Launch a climate preparedness educational campaign*
 - *Actively recruit volunteers to participate in the Community Emergency Response Team (CERT) program*
- Acknowledge climate change's impact on and provide resources to enhance overall community health and well being
 - *Complete a Climate Change and Health Vulnerability Assessment and develop Adaptation Guidelines (including issues like vector borne disease, mental health)*
 - *Mitigate existing and prevent new urban heat islands in Watertown*
 - *Continue to enhance access to local food by targeting resources for community gardens and the Farmer's Market for those who are food insecure*



- Provide equitable access to emergency preparedness and response resources
 - *Require all commercial building owners to rebroadcast and post Watertown Alert announcements to building occupants*
 - *Register all Town employees to Watertown Alerts*
 - *Launch a “Sign Up” campaign to ensure equitable access to communication resources*
- Promote overall community connectivity
 - *Establish a network of resilience hubs that provide cooling centers throughout the community*
 - *Enhance the existing Live Well Watertown coalition and its programs to incorporate neighborhood connections to nature and to each other*

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TRANSPORTATION & MOBILITY

Promote non-motorized, shared, and active transportation modes and create a safe, accessible, and connected network for bicycles and pedestrians while practicing smart parking management to reduce congestion, accidents and parking demand.

Rationale

- An August 2021 survey of Watertown residents indicated concerns regarding safety while walking and biking in Watertown and that transportation is not equally accessible to all residents.
- A May 2020 survey of priorities and concerns indicated a 2.76 out of 5 on a scale of agreement where 1 is strongly disagree and 5 is strongly agree for “The local public transportation options meet my needs.”
 - Only 16% of residents take public transit
- Local residents on the road account for nearly 52% of Watertown’s transportation miles
 - In 2019, only 0.7% of the total vehicles registered to Watertown were electric vehicles.
- Nearly 70% of resident workers drive alone to work (2018)
 - Data from the BlueBikes program in Watertown show that the top two destinations to/from Watertown are Boston and Cambridge, respectively. These destinations are also the two top destinations where Watertown residents work, suggesting the interest and ability for transportation via active mobility that can be built upon.

Goals, Strategies, & Actions

By 2050, 80% of all passenger vehicles in Watertown are electric

- Accelerate the shift to electric vehicles (EVs)
 - *Develop and implement an EV Roadmap for Watertown*
 - *Support the development of Multi-Use Parking Arrangements for EV Charging with places of worship and other organizations with large parking lots in residential neighborhoods*
 - *Develop an outreach campaign to those with a vehicle over 10 years old to promote EV purchase*
 - *Increase the availability of charging stations on municipal property*



Low- and zero-carbon multi-modal transportation options are accessible, affordable, and connected throughout Watertown

- Enhance and actively promote zero-carbon mobility options for commuting
 - *Install bike/bus/ped-only infrastructure, especially in densely developed areas*
 - *Collaborate regionally to increase and improve safe interconnected pathways for bicyclists and pedestrians*
 - *Develop outreach campaign and incentives to encourage increased use of transit, bike, and pedestrian travel*
 - *Work with MBTA to improve accessibility of routes, stops, and CharlieCard purchasing stations within Watertown, and electrification of the bus fleet*
 - *Develop publicly accessible transit system that connects to MBTA and other points of interest not accessible by MBTA*

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