

SUSTAINABLE CONCORD

Revolutionary

Resilient

Ready

Sustainable Concord is our roadmap to reduce greenhouse gas emissions 80% by 2050 and to address the impacts of climate change on our community. Meeting this goal requires a Climate Action and Resilience Plan focused on measurable actions. This plan outlines the goals and actions that can be taken over the next ten years to ensure we are on a path to a sustainable future.

Sustainable Concord Vision

Concord is a **sustainable** and **resilient** community.

- **Sustainable:** A sustainable Concord is a community that reduces our contribution to climate change by eliminating greenhouse gas emissions and preserves a high quality of life for future generations.
- **Resilient:** A resilient Concord is one that is prepared to minimize the impacts of climate change on our residents, economy, infrastructure, and natural environment.



Built Environment

Our Goal for Concord's Built Environment

Concord's municipal and community buildings and homes are built and retrofitted to be net-zero carbon, healthy, and resilient.

What does this section include?

- ✓ Energy efficiency/deep energy retrofits
- ✓ Weatherization (insulation, air sealing, etc)
- ✓ Electrification of heating and cooling systems
- ✓ Building codes and standards
- ✓ Energy benchmarking & disclosure
- ✓ Healthy indoor air quality
- ✓ Sustainable building materials
- ✓ Smart development & land use
- ✓ Waste reduction
- ✓ Education/behavior change

Potential Actions

- Establish a benchmarking and disclosure policy requiring large commercial buildings to report on energy use annually.
- Establish a policy for energy performance information to be disclosed in residential real estate transactions.
- Establish financial incentives and provide education resources for deep energy retrofits and electrification of existing buildings and systems.
- Establish HDC-approved guidelines for sustainable improvements to older and historic homes.
- Require new municipal projects to achieve a sustainability rating (LEED, SITES, Envision).
- Adopt a Zero Net Energy policy for all new municipal and school buildings.
- Establish a phased plan for retrofitting existing municipal and school buildings to achieve net zero energy.
- Expand and improve organic waste management (composting) for residents and businesses

Built Environment Achievements:

- 104 homeowners installed air source heat pumps using CMLP rebates in 2018 and 2019
- 246 air conditioner and heat pump rebates used since 2013
- Low flow toilets installed in the Visitor's Center
- Electricity stretch code requirement for building construction and renovations
- LED lighting installed in library, police department, and fire department
- Concord has banned water bottles, plastic bags and polystyrene

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- Improve overall waste diversion and recycling rates through policy and program changes
- Establish policies and incentives for new buildings to install high-efficiency electric heating and cooling systems.
- Establish policies for new development to achieve Zero Net Energy or Zero Net Carbon.
- Develop a comprehensive energy efficiency/zero net energy education program for developers, contractors and builders.
- Develop sustainable building design standards for new construction that prioritize healthy indoor air, sustainable building materials, water efficiency, and waste management.
- Establish policies and incentives for developers to use resilient design practices in new construction.
- Update stormwater regulations and create a stormwater utility
- Align zoning bylaws with Concord's sustainability goals
- Identify and implement policies to increase the use of green infrastructure and low impact development

Indicators of Success

Indicators provide the status of the goal area. Each indicator that is used to track progress on this planning process will include baseline metrics as well as targets for 2030.

- Energy use and greenhouse gas emissions from the building sector
- # of home energy audits (and as % of housing stock)
- # of heat pump rebates (and as % of housing stock)
- # of net-zero energy/net-zero carbon buildings
- Gallons per capita per day of water use
- Energy use intensity (EUI) of residential/commercial sector
- On-site generation of renewable energy in residential and commercial sector
- # of all-electric buildings
- % of municipal product purchases with sustainable design attributes
- Geothermal capacity
- Waste diversion rate for residential and commercial sector
- Number of people participating in composting program



Energy

Our Goal for Concord's Energy

100% of Concord's electricity is from renewable sources and our buildings are fueled entirely by clean electricity.

What does it include?

- ✓ Energy conservation
- ✓ Energy storage
- ✓ Renewable energy
- ✓ Grid modernization
- ✓ Energy financing

Potential Actions

- Enact Property Assessed Clean Energy (PACE) or on-bill financing for energy upgrades.
- Re-design electricity rates to further support energy conservation, peak load management, electrification, and renewable energy generation.
- Adopt a local carbon tax on fossil fuels to fund energy efficiency and renewable energy programs.
- Maintain and promote incentives for businesses/homeowners to invest in renewable energy.
- Advocate for significant renewable energy (e.g., via state RPS, net metering tariffs) and building energy efficiency standards and funding at the state level.
- Explore opportunities for microgrids and/or energy storage for critical facilities in Concord.
- Explore options for investing in utility-scale energy storage and incentives for commercial/institutional energy storage.
- Enable electric vehicle-to-grid electricity.

Energy Achievements:

- 54% of Concord's electricity was carbon-free in 2018
- Concord has its own municipal light plant (CMLP)
- CMLP offers rebates on energy efficient lighting and appliances, PV systems, and home weatherization
- Concord has 5 large-scale commercial and utility-scale arrays in town, totaling 7.57 MW

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- Continue to deploy smart meters town-wide to facilitate time-of-use pricing and energy conservation.
- Explore potential for waste-to-energy options in the wastewater treatment processes.
- Supply all municipal energy from on-site renewable energy installations.
- Shift CMLP's electricity supply to non-emitting resources with RECs or certificates for associated environmental attributes retired with a target of achieving 100% from non-emitting resources by 2030 with measurable phased interim benchmarks to track progress.
- Design and implement a community solar program.

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- % carbon-free electricity
- % of municipal energy use covered by renewable energy
- Total MW capacity of renewable generation installations in Concord
- % reductions in community and municipal greenhouse gas emissions due to renewable energy use
- Watt hours of energy storage
- # of natural gas, oil, and propane heating systems replaced with renewable electricity



Our Goal for Concord's Mobility Choices

Everyone has access to zero carbon transportation options to commute and get around Concord.

What does it include?

- ✓ Low-carbon and carbon-free transportation
- ✓ Electric vehicles
- ✓ Public transportation
- ✓ Town connectivity
- ✓ Bicycle and pedestrian infrastructure
- ✓ Municipal fleet

Potential Actions

- Require new development to be EV-ready (prepared for electric vehicle charging).
- Continue to promote and provide incentives for adoption of electric vehicles among residents, businesses, and visitors.
- Provide resources, support and incentives for electric vehicle charging.
- Develop a long-term plan for electrifying school and municipal vehicle fleets.
- Work with employers to encourage telecommuting, flexible hours, or working at co-working spaces to reduce emissions from commuting to work
- Establish a central transportation planning function within Town government tasked with transportation demand management, encouraging low-carbon transportation options, and developing a long-term transportation plan
- Promote and facilitate increased use of public transportation among residents, commuters, and visitors by improving first/last mile options (ways to access transit stops)
- Collaborate with schools to incentivize low-carbon commuting options to school through student education, improved bike storage, and incentives
- Advocate to MBTA to make public transit investments that significantly enhance coverage,

Mobility Achievements:

- 400+ electric vehicles registered in Concord
- 6+ hybrid vehicles in municipal fleet
- 5+ electric vehicles in town fleet
- 9 public electric vehicle charging stations
- One of the nation's first electric school buses deployed and still in operation in Concord
- Concord Public Works and Concord Municipal Light Plant using a fleet fuel management system to monitor fuel consumption, vehicle efficiency, and vehicle maintenance
- Complete Streets policy to increase safety and accessibility of streets to multimodal transportation options

SUSTAINABLE CONCORD

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service quality, frequency, and/or greenhouse gas reductions through electrification

- Prioritize a set of financially sustainable infrastructure projects (such as dedicated/protected bike lanes, road marking, safe sidewalks, pedestrian bridges, etc.) that will improve connections between key bicycling and walking paths and sidewalks.
- Continue developing the local/regional trail network for transportation as well as nature-based recreation.
- Encourage large employers and commercial property owners to add bicycle parking facilities and electric vehicle charging stations to their properties to encourage low-carbon transportation by their employees.
- Create and promote a town mobility map that includes all pedestrian and bike paths and bike racks

Indicators of Success

Indicators provide the status of the goal area. Each indicator that is used to track progress on this planning process will include baseline metrics as well as targets for 2030.

- % reduction in greenhouse gas emissions from the transportation sector
- # of registered electric vehicles
- # of public electric vehicle charging stations
- Miles of bike lanes and paths
- Miles of sidewalks
- % of commuters who drive alone to work
- Community vehicle miles traveled (VMT)
- # of private charging stations
- # of grants received for this goal
- % of commuters who walk
- % of commuters who bike
- % gasoline vehicles reduced
- % diesel vehicles reduced



Natural Resources

Our Goal for Concord's Natural Resources

Concord's natural resources are enhanced and supported to provide resilience benefits to the community and to maximize biodiversity and carbon sequestration.

What does it include?

- ✓ Agricultural Land
- ✓ Carbon Sequestration Opportunities
- ✓ Ecosystem Health
- ✓ Open Space Protection
- ✓ Urban Forest & Tree Canopy
- ✓ Water Conservation & Quality

Potential Actions

- Manage quantity and quality of groundwater and surface water to protect the resilience of the community
- Address the proliferation of non-native species in Concord
- Create policies and programs to increase water efficiency and minimize the use of fresh water for irrigation
- Work with homeowners to promote sustainable landscaping practices
- Assess opportunities and take action to maximize carbon sequestration throughout town
- Conduct a vulnerability assessment of natural resources most at risk to projected climate changes
- Develop forest management plan to enhance forest health on Town conservation land, water supply lands, and forests managed by land trusts and other forest managers
- Develop a drought management plan
- Evaluate options to improve Concord's tree canopy and develop a tree canopy management plan
- Collaborate with abutting towns and the region to work together on the health and continuity of open space networks and ecosystems across town borders
- Prioritize the allocation of resources to protect and enhance open space and conservation lands.

Natural Resources Achievements:

- 30% of Concord's open space is protected from development
- Five wildlife underpasses exist along Route 2
- Tree preservation bylaw
- Ground water protection bylaw
- Wetlands bylaw
- Development of a Sustainable Landscaping Handbook
- Removed five 1-ton truck loads of invasive species in a single day in 2018

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- Partner with farmers and agricultural community to protect farmland
- Partner with agriculture sector to transition to sustainable and regenerative farming practices

Indicators of Success

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- % increase in land that serves as a carbon sink
- % of land in sustainable agriculture
- % pervious surface retained or increased
- % tree canopy coverage
- % increase in water quality
- Reduction in water use by residents/businesses
- % increase in air quality
- % increased wildlife habitat and wildlife corridors
- Maintained forest health
- Maintained stream base flow



Preparedness

Our Goal for Preparedness

Concord's residents, businesses, community services, and infrastructure are prepared for extreme weather events and projected climate impacts and have access to resources to reduce their greenhouse gas emissions.

What does it include?

- ✓ Food Systems
- ✓ Education
- ✓ Community Preparedness
- ✓ Infrastructure Resilience
- ✓ Emergency Services

Potential Actions

- Promote agricultural products as a key component of Concord's economy
- Develop an integrated water resource management plan ensuring resilient systems that contribute to the health of the public and the environment
- Incorporate information about Concord's values and the Town's commitment to sustainability into visitor information and marketing materials for visitors and business recruitment.
- Continue to integrate sustainability goals into town planning, staff and department evaluations and budgeting, etc.
- Implement climate education curriculum in schools
- Conduct a threat assessment and security plan for Concord's infrastructure.
- Prepare businesses and residents for the impacts of climate change through education on emergency preparedness plans and other resiliency measures.
- Secure funding for the implementation of a PREPHub (emergency preparedness hubs that provide critical services) in a central, accessible location

Preparedness Achievements:

- Concord adopted a Farming Bylaw in 2011 to uphold the importance of agriculture in the Town.
- Directly engaged nearly 500 people in the Municipal Vulnerability Preparedness Program.
- The Concord Council of Aging actively supports 40% of the Town's senior population.

Indicators of Success

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- \$ of insurance claims submitted after a storm event
- # of community volunteers working on climate-related activity

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- % of public and private schools actively supporting sustainability programs and activities on their campuses with town support
- % of primary students educated on sustainability topics through school-related programs or activities
- % of Town employees participating in drills/training for preparedness/evacuations
- % of businesses receiving educational materials about climate change and incentives available to mitigate and adapt

Get Involved in Creating a Sustainable Concord!

THERE IS STILL MORE TO DO!

Concord's future depends on our ability to work together to identify and prioritize opportunities to strengthen our community and to be prepared for the impacts of a changing climate. Get involved:



SHARE
your ideas



TALK
with friends & family



ATTEND
events



ENGAGE
with our online tools



STAY UP TO DATE

VISIT concordma.gov/climateplan

& **CONNECT** @ConcordClimate

