

This document was compiled on January 14, 2020 by Kate Hanley as a summary of feedback from CAAB.

The purpose of the original document was to collect feedback on draft fact sheets for each **plan element** (buildings, energy, mobility, natural resources/land use, and community). The fact sheets will serve as the introductions to each chapter of the final climate action and resilience plan, and can also serve as stand-alone resources about the plan elements.

Each fact sheet is designed to define the plan element, outline the goal, highlight past achievements, and identify metrics of success. In the final climate action and resilience plan, the fact sheets will be followed by a list of priority **actions** and an implementation **blueprint** for each action.

The draft fact sheets provided to CAAB also included a list of sample **actions**. Feedback from CAAB included suggestions of additional actions. A comprehensive list of potential actions is being collected and includes actions not listed in this document.

Please note: the terms and definitions on this page were replicated in each section of the original document. For simplicity, combined feedback is provided here.

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. ~~is our roadmap to take action to address the impacts of climate change on our community and reduce our greenhouse gas emissions 80% by 2050. This Climate Action and Resilience Plan is focused on actions that can be taken over the next ten years to ensure we are on a path to a more sustainable future.~~

IMPORTANT DEFINITIONS

Sustainable: A sustainable Concord is a community that thrives while reducing our contribution to climate change by eliminating greenhouse gas emissions

Resilient: A resilient Concord is one that is prepared to minimize the impacts of climate change on our residents, economy, infrastructure, and natural environment

Sustainable Concord Vision

Concord is a thriving community with a wealth of resilient natural and historical resources and a model for carbon free living.

Comment [KH1]: Comment about the phrasing of the vision. Recommendation to instead use sustainable and resilient definitions (green box below) as vision.

Comment [KH2]: Question about how Concord is or can be a model of carbon free living?



Buildings

Our Goal for Concord's Buildings

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

What does this section include?

- ✓ Energy efficiency
- ✓ Water efficiency
- ✓ Weatherization
- ✓ Electrification of heating and cooling systems
- ✓ Building codes and standards
- ✓ Energy benchmarking
- ✓ Building upgrade incentives
- ✓ Healthier indoor air quality
- ✓ Sustainable building materials

Buildings Achievements:

- 104 homeowners installed air source heat pumps using CMLP rebates in 2018 and 2019
- 246 air conditioner and heat pump rebates since 2013
- Low flow toilets installed in the Visitor's Center
- LED lighting installed in library, police department, and fire department, Town House, and other town buildings

Sample Potential Actions

- Develop a strategy, time line, goals and enact programs and strategies to drive replacement of fossil fuel-fired space and water heating systems with high efficiency electric heat pump and similar technologies in existing residential homes and commercial buildings. Transition to electric heating and cooling and improve energy efficiency in existing buildings.
- Ensure the Concord Municipal Light Plant offers a comprehensive set of cost-effective energy efficiency incentives and measures that meet or exceed those offered by Massachusetts investor-owned utilities.
- Expand incentives for heat pumps for space and water heating, both purchase and operation.
- Adopt policies or programs to require Explore local net-zero energy or net-zero emissions or fossil-fuel free standard for new buildings and major renovation projects.
- Mandate the inclusion of energy performance information in real estate transactions.
- Create a combination of requirements and incentives for developers to adopt more resilience construction and development processes.
- Require energy benchmarking with phased performance targets for large commercial and multi-family buildings.
- Create strong incentives for deep energy efficiency building retrofits in the residential and commercial sector.
- Ensure efficient buildings and retrofits support healthy indoor air quality

Comment [KH3]: Comments on achievements box:

- Suggestion to clearly label achievements as completed actions in final plan so they are not confused with goals.
- Suggestion to put numbers into context, for example # of rebates as a % of total homes

Comment [KH4]: Question about whether this is focused on municipal or community-wide buildings. Answer: Community-wide

Comment [KH5]: Multiple comments on whether we should include "affordable" as a goal as it may be unrealistic or out of scope.

Comment [KH6]: Question about definition of weatherization. Answer: Measures like insulation and air-sealing to improve the building envelope.

Comment [KH7]: Multiple comments that CMLP should do more than meet or exceed rebate programs. Concord should also offer programs involving innovative outreach, marketing, and technical assistance, etc.

Comment [KH8]: Question about how to define this.

- [Ensure retrofits include water efficiency updates and monitoring](#)
- [Increase incentives to support energy storage adoption by residential and commercial customers to support resilience and smooth peak demand and generation loads](#)
- [Consider the sustainability of materials used in construction and renovation and require recycling or reuse of demolition debris](#)
- [Incentivize the reuse or repurpose of old homes instead of tear-down](#)
- [Require new buildings of a certain size to be LEED certified or use LEED practices](#)
- [Require a GHG or carbon footprint analysis be included in permitting documentation, with a goal of net zero](#)
- [Require large commercial and/or multifamily buildings and homes to perform energy upgrades achieving deep energy savings by a certain date or at certain trigger events \(e.g., time of sale, change of occupancy\)](#)
- [Consider zoning changes that would discourage construction of large single-family homes](#)

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 buildings
- [Gallons per capita per day of water use](#)
- [Electricity usage per square foot of residential/commercial sector](#)
- [On-site generation of renewable energy in residential and commercial sector](#)
- [Energy storage in residential and commercial sector](#)
- [# of all-electric buildings](#)



Energy

Our Goal for Concord's Energy

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

What does it include?

- ✓ Energy supply
- ✓ Energy storage
- ✓ Renewable energy
- ✓ Grid ~~electrification~~ modernization

Sample Potential Actions

- Prioritize local power purchase agreements (PPAs) for renewable energy.
- Optimize and ~~future-proof~~ strengthen the resilience of the electric grid with battery storage and renewables.
- Re-design electricity rates (time of-use rates and fixed charges) to promote use of renewable energy, electrification, and off-peak energy use.
- Employ smart meters town wide.
- Encourage commercial and institutions to install energy storage systems.
- Consider adopting a carbon tax on fossil fuel energy sources to support investment in renewable energy and energy efficiency
- Establish local incentives (e.g., solar rebates) and/or a bulk purchasing program (e.g., Solarize, community solar program) for on-site renewable energy at a scale catalyzing major new local investment.
- Power municipal operations from renewable energy via on-site installation or off-site procurement.
- Engage in state public utility commission (or equivalent agency) proceedings to advocate for significant renewable energy (e.g., via state RPS, net metering tariffs) and building energy efficiency standards and funding.

Energy Achievements:

- 54% of Concord's electricity was from renewable sources in 2018
- Greenhouse gas emissions inventory completed in 2008 and updated in 2016
- Over 350 homes with rooftop solar panels (add % of homes)
- 3.5 MW of solar capacity installed in 2018
- Expedited permitting for renewable energy facilities
- Solar rebates available through Concord Municipal Light Plant
- Nearly \$500 million invested in energy efficiency and renewable energy rebates

Comment [KH9]: Recommendation to narrow the focus of this section to sourcing 100% renewable energy and transitioning away from natural gas. All other actions related to transportation move to mobility section and buildings move to buildings section.

Comment [KH10]: Suggestion that the acquisition of renewable supply needs to involve developing new sources of renewables, not just buying from existing renewable suppliers.

Comment [KH11]: Question about whether we should specify PPAs as financing mechanisms continue to evolve.

Comment [KH12]: Questions about what "future-proof" means.

Comment [KH13]: Need to do more than encourage. The town or CSMLP should adopt specific policies that drive these behaviors in a way that avoid adding costs and transferring financial burden to vulnerable populations.

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.

- % carbon-free electricity
- % of municipal energy use covered by renewable energy
- % 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](#)
- [% of buildings that are all-electric](#)
- [EVs and heat pumps are integrated into town's electricity system in ways that reduce costs and increase reliability](#)



Mobility

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

Sample Potential Actions

- Expand affordable low-carbon and carbon-free transportation options.
- Establish a central transportation planning function within Town government.
- Expand and improve bicycle and pedestrian facilities, connectivity, convenience, and/or safety in a manner that significantly increases the percent of trips taken by walking or biking. Increase pedestrian and biker safety by adding and improving bike lanes and sidewalks.
- Continue developing the local/regional trail network for transportation and nature-based recreation.
- Promote-Incentivize adoption of electric vehicles and support EV infrastructure.
- Work with employers to encourage telecommuting, flexible hours, or working at co-working spaces to reduce emissions from commuting to work.
- Require and encourage EV adoption through local codes, infrastructure planning, incentives and promotion.
- Make public transit investments that significantly enhance coverage, service quality, frequency, and/or speed (e.g., bond for major transit infrastructure to transition to electric vehicles).

Mobility Achievements:

- 400+ electric vehicles registered in Concord
- 5 hybrid vehicles in police fleet
- 5 7 public electric vehicle charging stations, with 2 more in the construction phase
- Concord deployed one of the nation’s first electric school buses deployed and still in operation in Concord
- Concord Public Works and Concord Municipal Light Plant installed using a fleet fuel management system to monitor fuel consumption, vehicle efficiency, and vehicle maintenance
- Complete Streets policy adopted to increase safety and accessibility of streets to multimodal transportation options

Comment [KH14]: Question about how co-working reduces community emissions.

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 at apartments, businesses, and homes](#)

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Natural Resources & Land Use

Our Goal for Concord's Natural Resources and Land Use

Concord's natural resources are preserved, enhanced, support biodiversity, and provide resilience benefits to the community. Our land use focuses on connections and non-motorized transportation options to improve health and reduce greenhouse gas emissions.

What does it include?

- ✓ Agriculture
- ✓ Air quality
- ✓ Green infrastructure
- ✓ Low impact development
- ✓ Native/invasive species
- ✓ Open space
- ✓ Tree canopy
- ✓ Water quality
- ✓ Wetlands protection
- ✓ Zoning

Sample Potential Actions

- Identify regulatory tools that increase the use of green infrastructure and low impact development.
- Formalize the urban forestry management plan.
- Protect, maintain, and enhance ecoservice functions of lands around groundwater drinking wells, potential wells, and throughout the community.
- Increase financial resources allocated to maintain and protect current open space and conservation land.
- Explore policy options for smart growth development that is sustainable, affordable, higher-density, and located near transportation hubs.
- Partner with farmers and agricultural community to protect farmland and transition to sustainable and regenerative farming practices.
- [Conduct vulnerability assessment of natural resources most at risk to project climate changes](#)
- [Identify which specific natural resources are most critical to preserve in order to protect the town from the impacts of climate change like flooding, heat, and storms](#)

Natural Resources and Land Use 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

Comment [KH15]: Suggestion that the goal incorporate agriculture.

Comment [KH16]: Comment that under climate change, preservation of natural resources is not the right concept because climate change will alter habitats and ecosystems. The goal should be to identify vulnerable natural systems and try to develop strategies to reduce them so natural systems can continue to provide benefits.

Comment [KH17]: Question about what this means and suggestion to make clearer

Comment [KH18]: General comments on actions:

- Actions need to address ecosystem management more comprehensively to deal with climate change.
- Be mindful of land use policies and decisions driven by aesthetics rather than climate change
- These actions seem to be examples of good natural resource planning. This plan needs to focus on preparing for and adapting to a changing climate.

Comment [KH19]: Suggestion to clarify or edit this to ensure a focus on GHG reductions

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.

- % protected open space
- % of land in agricultural use
- % impervious surface
- % tree canopy coverage
- Water quality metrics

Comment [KH20]: Recommendation to revise this to better capture success, for example % of agricultural lands practicing regenerative agriculture or % of conservation areas above and beyond regulations.

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Community

Comment [KH21]: High-level comment that the Community element should focus more narrowly on actions that support disaster response and adapting to new normal averages, rather than a broad range of topics around waste, etc.

Our Goal for a Resilient Community

Concord's residents, businesses, community services, and infrastructure are prepared for extreme weather events and projected climate impacts.

What does it include?

- ✓ [Housing](#)
- ✓ Solid Waste Management
- ✓ Food Systems
- ✓ Water and Wastewater Management
- ✓ Schools
- ✓ Community Preparedness
- ✓ Infrastructure Resilience
- ✓ Emergency Services

Community Achievements:

- Concord has banned water bottles, plastic bags and polystyrene.
- 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.
- [Concord deployed one of the nation's first electric school buses.](#)

Comment [KH22]: Multiple questions/comments about whether this belongs in the plan.

Sample Potential Actions

- Conduct a threat assessment and security plan for Concord's infrastructure.
- [Expand and improve organic waste management for residents and businesses](#)
- Support agriculture and other local food systems in Concord.
- Understand and communicate the climate impacts of consumption in Concord
- [Prepare businesses for the impacts of climate change through education on emergency preparedness plans and other resiliency measures.](#)
- Develop an [comprehensive-integrated](#) water resource management plan [ensuring resilient systems for health of the public and the environment](#)
- Lead by example with sustainable practices in municipal and school operations
- [Create a culture of climate action](#)
- [Improve overall waste diversion and recycling rates through policy and program changes](#)

Comment [KH23]: Question about whether this is just composting or broader

Comment [KH24]: Question about whether the town has emergency preparedness plans for departments. If not, develop those plans.

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.

- % of affordable housing
- Waste diversion rate for residential and commercial sector
- Number of people participating in composting program
- \$ of insurance claims submitted after a storm event
- % of land in agricultural use
- Number of seniors served by the Council on Aging
- # of Volunteers serving the community working on climate-related activities
- % of municipal product purchases with sustainable design attributes
- % 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 businesses receiving educational materials about climate change and incentives available to mitigate and adapt
- Develop a mandatory high school climate curriculum/course that includes the impact of consumption on a sustainable future

Comment [KH25]: Multiple recommendations to remove

Comment [KH26]: Recommendation to remove this

Comment [KH27]: Question about whether this helps meet goals

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