

## CLIMATE ACTION COMMITTEE MEETING

Monday, April 6, 2026, 12:30 PM

Select Board Meeting Room, Town House, 22 Monument Square, 2nd Floor

This meeting may also be accessed remotely through the following Zoom link:

<https://us02web.zoom.us/j/89658925084?pwd=dqCN47QKgw07ZKlda071EnKYbbbIfk.1>

Meeting ID: 896 5892 5084

Passcode: 771884

Dial In Toll-Free: 888 475 4499

### Agenda

The Climate Action Committee plans to meet for the purpose of discussing particular ideas previously raised by CAC members for potential inclusion in the update of the Climate Action and Resilience Plan.

1. Kathryn Hopkins: electronic billing
2. Shelly Karlin: municipal carbon budget
3. Fran Cummings: consumption-based emissions inventory
4. Shelly Karlin: ethical banking
5. Fran Cummings: CMLP electrification program; enhanced and formalized roles for CMLP
6. Kathryn Hopkins: goalsetting for forest management and biodiversity targets
7. Fran Cummings: future of GHG reduction goals

Documents relevant to this meeting will be posted when they become available at

<https://concordma.gov/4043/Meeting-Materials>



If you are deaf or hard of hearing, or if you are a person with a disability who requires accommodation, please contact Megan Zammuto, Deputy Town Manager for the Town of Concord at [mzammuto@concordma.gov](mailto:mzammuto@concordma.gov) or 978-318-3006. While every attempt will be made to provide reasonable accommodations, requests should be made with as much advance notice as possible.

**Climate Action Committee  
Parking Lot Ideas**

<b>Author</b>	<b>Idea</b>
Kathryn Hopkins	<p align="center">Renaming or realigning the five elements of the existing plan to include shared governance and accountability</p> <p align="center">Original Proposal:            Climate Resilience &amp; Net Zero            Energy Transition            Nature, Natural Capital &amp; Biodiversity            Sustainable Sourcing            Social &amp; Community Impact            Sustainable Finance            Waste &amp; Circularity</p> <p align="center">Revised Proposal based on discussion at last CAC meeting:            Built Environment            Energy            Governance &amp; Finance            Mobility            Natural Resources            Preparedness            Waste &amp; Circularity</p>
Kathryn Hopkins	Electronic Billing
Kathryn Hopkins	Goalsetting for Forest Management and Biodiversity Targets
Brad Hubbard-Nelson and Fran Cummings	Future acceleration of GHG reduction goals
Fran Cummings	Future consumption-based emissions inventory

Fran Cummings

### Enhanced CMLP Electrification Program

CMLP contributes a key part of the management of the Town's implementation role under the current CAP, not only by decarbonizing the kWh but also by paying various rebates/incentives, tracking measures adopted (eg, HPs, EVs, PV) and doing various kinds of promotion. I propose that in the Update, CMLP's current role be more explicitly supported by assigning a more formal role and budget and metrics. (Note: this could involve making an explicit organizational "charge" for CMLP to encourage, support and manage the full electrification in Town (for heating, transportation, etc), but it is probably sufficient to put the right language in the Update itself.)

For example, during the February CAC meeting, Laura Scott said that "this year CMLP will review what is spent on rebates to align with Climate Action Plan". Going forward, CMLP should be assigned explicit responsibility to (continue to) track the rebates and their impact on adoption of each measure — and then propose each year the increases or decreases that would be required to stay or get on track to meet adoption and GHG targets for these measures as established in the CAP Update. This might be understood to be what is already being done, but it should be written up in the 5-year Update.

More generally, the Update should include a financial plan that would (among other elements) forecast the Town-wide incremental capital investment needed in the electrification measures (across all building and vehicle types) to meet the 2030 and later GHG goals, and CMLP should be assigned a role in this financial plan. CMLP's role could include making low-interest long-term loans to electric customers (along with existing incentives) to eliminate or mitigate financial barriers to the up-front costs of electrification (including such related components

	<p>as insulation, panel upgrades and solar energy); this could follow the model of a “pay as you save” (PAYS) program, and should be coordinated to supplement (not replace) incentives and loans from MassSave and the state “Climate Bank”. CMLP should develop a 5-year budget for technical and program management and other costs associated with implementing the accelerated transition to electrification, including engaging an experienced program management contractor such as ENE or Abode of Concord to enable short-term scale-up without long-term staffing commitments. CMLP would provide input to the overall Town-wide plan based on these transition investments as well as the power supply and delivery implications of various electrification strategies, given the new time of use rates and other factors.</p> <p>Finally, since one of the best electrification options for decarbonization is the use of ground-source heat pumps, especially in districts, CMLP could play a role in design, development and/or ownership of such assets or facilitation of partnerships (including with National Grid).</p> <p>The potential roles for CMLP overlap the existing CAP elements related to buildings and mobility and energy, and could be located within a new section such as Leadership, Governance and Finance.</p>
Shelly Karlin	<p>Adopt a municipal carbon budget</p> <p><a href="https://www.c40knowledgehub.org/s/article/Oslo-s-Climate-Budget?language=en_US">https://www.c40knowledgehub.org/s/article/Oslo-s-Climate-Budget?language=en_US</a></p>
Shelly Karlin	<p>Ensure municipal accounts are not held by the worst offending banks</p>

<https://www.ethicalconsumer.org/money-finance/banks-climate-change-environmental-crisis>

# Concord Municipal Carbon Budget Framework

**Objective:** To integrate greenhouse gas (GHG) reduction directly into town purchasing and operations using a financially driven, low-friction model that requires minimal staff time and inherently rewards green choices.

## The Core Philosophy: Carbon as a Line Item

Instead of asking department heads (e.g., Public Works, Police, Facilities) to calculate complex emissions data, the town translates carbon into a standard financial metric. This aligns the town's climate goals with standard municipal budgeting processes, making the financially smart choice automatically the climate-friendly choice.

## Mechanism 1: The Carbon Surcharge Menu (Capital Planning)

To influence upfront purchasing decisions without creating bureaucratic hurdles, the town utilizes a "Shadow Price or Carbon Surcharge" for carbon during the annual budget request cycle.

- **The Cheat Sheet:** The Sustainability Office creates a simple, standardized menu assigning a fixed "Carbon Surcharge" dollar amount to the 10–15 most common capital purchases (e.g., gas cruisers, heavy trucks, gas boilers).
- **The Budget Form:** When requesting a capital purchase, department heads add the item's standard Carbon Surcharge to the base price to calculate the **Total Evaluated Cost**.
- **The Result:** During Finance Committee reviews, greener alternatives (like EVs or heat pumps) frequently win the bid because their Total Evaluated Cost is lower, even if their upfront sticker price is slightly higher. Staff do zero math; they simply pull a number from the menu.

## Mechanism 2: The Shared Savings Dividend (Operational Incentive)

To motivate departments to actively seek out and utilize green technology, the town implements a revenue-sharing model that turns energy efficiency into a departmental asset.

- **The Baseline:** When a department installs a green asset, the town records the expected annual operating cost of the standard fossil-fuel alternative.
- **The Split:** At the end of the fiscal year, the town calculates the actual utility/fuel savings generated by the green asset.
- **The Reward:** The savings are split 50/50. Half returns to the General Fund to benefit taxpayers. The other half is deposited directly into the department's discretionary budget.

for the following year to fund quality-of-life improvements, equipment upgrades, or training.

## Implementation Strategy (The "No-Math" Approach)

1. **Set the Price:** The Select Board establishes the town's official Shadow Price for carbon (e.g., \$100 per ton).
  2. **Publish the Menu:** The Sustainability Office calculates the standardized surcharges based on the Concord Municipal Light Plant (CMLP) grid mix and standard asset lifespans, publishing it as an official reference sheet.
  3. **Update the Forms:** The Finance Department adds a "Carbon Surcharge" and "Total Evaluated Cost" line to existing capital request paperwork.
  4. **Automate the Audit:** The town leverages existing CMLP utility data and WEX fuel-card software to automatically track operational savings for the dividend payout, requiring no extra reporting from frontline staff.
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### An [Example](#) using Chevrolet Blazer purchases in Chula Vista, California, Nov. 2025

Expected years of life: 7

Life expected miles: 100,000

**Capital Cost: EV Chevrolet Blazer, Police Cruiser \$96,000**

**Total Evaluated Cost: \$96,000**

**Capital Cost: Gas Chevrolet Blazer, Police Cruiser \$88,000**

(capital cost + carbon surcharge) \$88,000 +\$3,270 = \$91,270

- Carbon Surcharge or Shadow price: 30 mpg (3,333 gal/lifetime) at 19.6lbs CO<sub>2</sub>/gal gas= 32.7 tons CO<sub>2</sub>  
32.7 tons at \$100/ton=\$3,270.00

**Total Evaluated Cost: \$91,270**

### Operational Costs

EV:

- Fuel Cost: [(CMLP kWh residential rate)/(1/3 kWh/mile)]\*100,000mi/lifetime=\$7,403.67
- Oil Change Cost: 0

Gas:

- Fuel Cost: ( \$4/gal)\*(3,333 gal/lifetime)=\$13,332

- Oil Change Cost:  $(\$80 \times 2 \text{ changes per year}) \times 7 \text{ years} = \$1120$

**Shared Savings Dividend:** [(difference in total lifetime fuel and oil change costs)/(expected life in years)]+oil change savings/yr;

- **With a 50|50 Annual Shared Savings Dividend split, the Town and Police Department would each receive \$503.45 in savings.**

In this example, the EV option has a higher Total Evaluated Cost, but a lower lifetime cost after fuel and oil change expenses are considered

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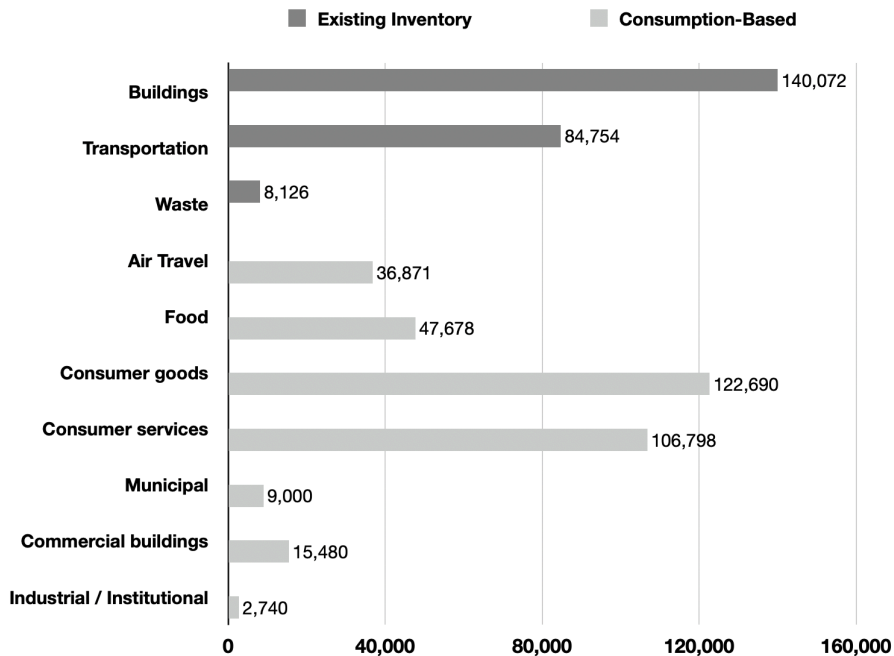
*2024 Guidance Note on Shadow Price of Carbon in Economic Analysis*

<https://documents1.worldbank.org/curated/en/099553203142424068/pdf/IDU1c94753bb1819e14c781831215580060675b1.pdf>

## Items proposed by Fran — 3/31/26 draft

### Consumption-based emissions inventory

I would like the Update to commit us to do a consumption-based emissions inventory at some time in the future. For an explanation: CBEI, <https://www.c40knowledgehub.org/s/article/Estimating-consumption-based-greenhouse-gas-emissions-at-the-city-scale>. Here's what the results might show on a community-wide basis: additional consumption-based emissions of 340,000 tons/year (MT CO<sub>2</sub>e), increasing our GHG by 2.5 times from about 240,000 tons to about 570,000 tons. In other words, we've only been counting about 40% of the real emissions for which we are actually responsible on a global



basis. The first 3 bars in this chart are from the existing Plan: We could on schedule an analysis and report for 2027 or 2028, to be followed by a public information campaign on options for Concord residents to reduce their GHG emissions that occur outside of town, such as from manufacturing of products they buy or from growing the animals or other sources of food they eat.

### CMLP electrification program; enhanced and formalized roles for CMLP

Clearly we would need to engage CMLP if folks think this has value as a starting point for discussion with them.

CMLP contributes a key part of the management of the Town's implementation role under the current CAP, not only by decarbonizing the kWh but also by paying various rebates/incentives, tracking measures adopted (eg, HPs, EVs, PV) and doing various kinds of promotion. I propose that in the Update, CMLP's current role be more explicitly supported by assigning a more formal role and budget and metrics. (Note: this could involve making an explicit organizational "charge"

for CMLP to encourage, support and manage the full electrification in Town (for heating, transportation, etc), but it is probably sufficient to put the right language in the Update itself.)

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More generally, the Update should include a financial plan that would (among other elements) forecast the Town-wide incremental capital investment needed in the electrification measures (across all building and vehicle types) to meet the 2030 and later GHG goals, and CMLP should be assigned a role in this financial plan. CMLP’s role could include making low-interest long-term loans to electric customers (along with existing incentives) to eliminate or mitigate financial barriers to the up-front costs of electrification (including such related components as insulation, panel upgrades and solar energy); this could follow the model of a “pay as you save” (PAYS) program, and should be coordinated to supplement (not replace) incentives and loans from MassSave and the state “Climate Bank”. CMLP should develop a 5-year budget for technical and program management and other costs associated with implementing the accelerated transition to electrification, including engaging an experienced program management contractor such as ENE or Abode of Concord to enable short-term scale-up without long-term staffing commitments. CMLP would provide input to the overall Town-wide plan based on these transition investments as well as the power supply and delivery implications of various electrification strategies, given the new time of use rates and other factors.

Finally, since one of the best electrification options for decarbonization is the use of ground-source heat pumps, especially in districts, CMLP could play a role in design, development and/or ownership of such assets or facilitation of partnerships (including with National Grid).

The potential roles for CMLP overlap the existing CAP elements related to buildings and mobility and energy, and could be located within a new section such as Leadership, Governance and Financing.

### **Future acceleration of GHG reduction goals**

The RFP and W&S proposed Scope of Work (SOW) assume that the 5-year Update will not alter the GHG reduction goals from the 2020 Plan, other than to reflect the tighter connection to the State Limits required in the Town Meeting’s Emergency declaration (from 2024 I think ). As I observed in the Brainstorm, I’m not sure it was “revolutionary” to set goals that are no more ambitious than the rest of the state. The current goals do not reflect for me a “Climate Emergency”, even though I acknowledge that a 50% reduction by 2030 will be challenging to achieve, so I think an explicit CAC discussion of GHG goals is called for.

So here’s what I would like to propose about the goals: I’m OK with sticking with the 50x30 goal and the existing state Limits for each 5-year period for the time being, but I’d like introduce a new or more formal process to track not only our annual progress toward those GHG goals for Concord, but also the global progress toward an alignment with the Paris goal of 1.5 degrees, so each reporting of our metrics would include a key global metric for the same time period. For

example, we could access each annual update of the remaining global “carbon budget” to stay within 1.5 degrees, from <https://globalcarbonbudget.org/key-targets-2025/>. As of January 2026, this budget for a 50% chance of limiting global warming to 1.5°C or 1.7°C is estimated to allow for emissions of 170 or 525 billion tons of CO<sub>2</sub>, respectively, and with today’s emission levels, we have roughly 4 or 12 years remaining for these thresholds. Here are 3 metrics we could track, with the source for each:

- Current temperature anomaly as of Feb-2026: **1.4 degrees C** (<https://apps.climate.copernicus.eu/global-temperature-trend-monitor/>);
- Global emissions for 12 months ending Jan-2026: **61 gigatons CO<sub>2</sub>e** (<https://climatetrace.org/data>);
- Years remaining for 1.5 degrees at current emissions: **4 years** (<https://globalcarbonbudget.org/key-targets-2025/>).

In terms of the carbon budget, we could specify in the 2026 Update that, if that budget falls to less than one year, from about 4 years as of 2025, that will trigger a pre-agreed enhancement or acceleration or reconsideration of the 2030 or future GHG goals for Concord. Or we could establish an explicit carbon budget for Concord, for both community-wide and municipal emissions, linked to the global budget. Then we could track this local carbon budget along with our other metrics. We could also agree in advance to tighten our local budget over time as the global budget is consumed.

Working with such carbon budget numbers is not within W&S’s scope, so this would be stated in the Update as a future Action with analysis to be initiated in, say, the first 6 months of the implementation period. Perhaps such a carbon-budget policy could be presented to the Select Board and/or Town Meeting as soon as Spring 2027. An important part of this would be to adopt a catchy name for this policy or Action, preferably with a good acronym, such as “Contingent Emergency Goal Acceleration” or whatnot. I have not determined whether any other government body has adopted such a policy in their Climate Action Plan.

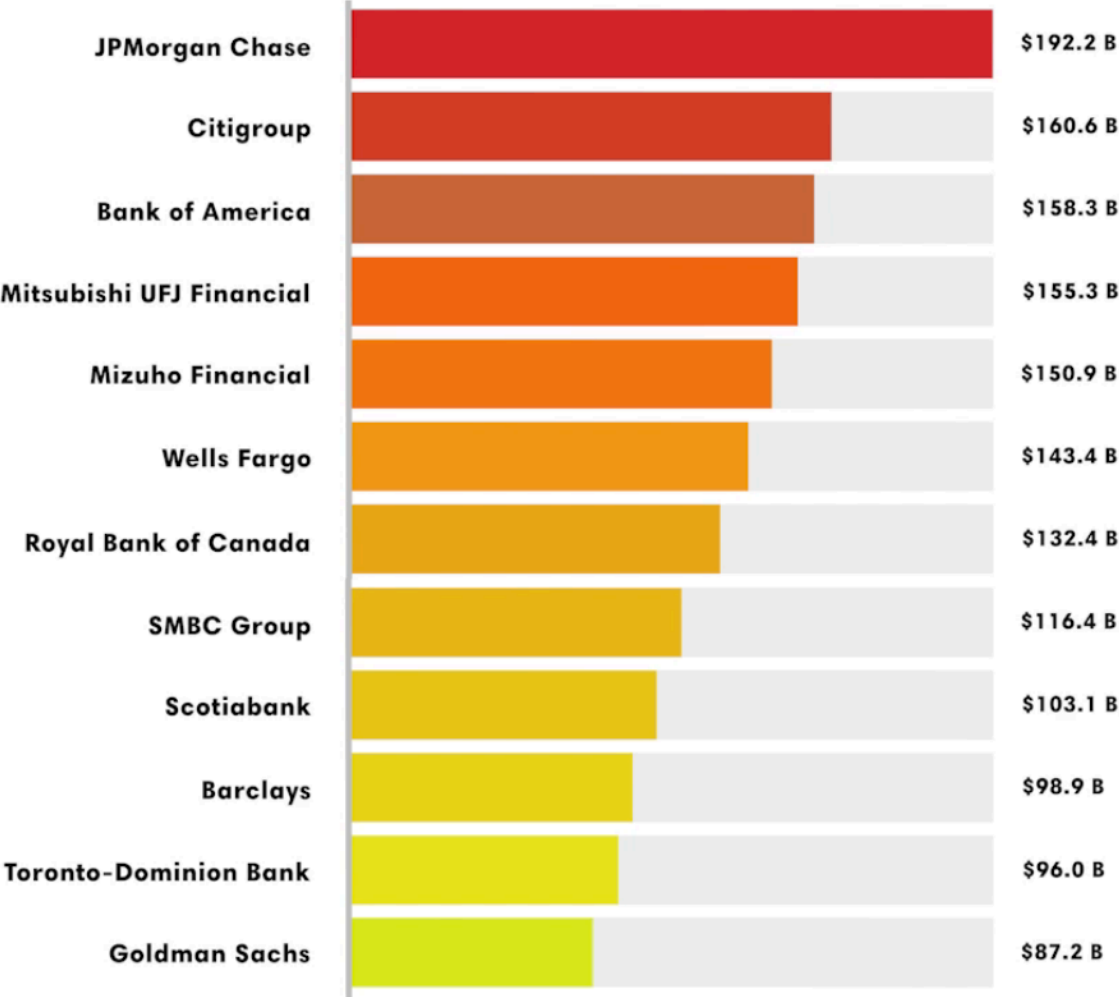
### **Chief Climate Officer**

I’d like to explore a new Action in the Update to assign or develop a new Town position modeled after Boston and other cities’ Chief Climate Officer (which could be vested in an existing employee such as Assistant Town Manager), with explicit authority to track the performance metrics in the Climate Plan and enforce compliance, exercise oversight over energy and climate-related purchases and investments, and oversee the climate work of CMLP and others. (Brian Swett was appointed as the City of Boston’s first Chief Climate Officer in 2024, and Cambridge has also hired a Chief Climate Officer, Julie Wormser.)

# Concord Should Ensure that Town Funds are in Green Banks

Switching banks can be a powerful climate action because where money is kept determines what gets funded – fossil fuels and deforestation, or renewable energy and local food systems. Ensuring Concord's funds are in sustainable, impact-driven financial institutions matters.

A 2025 Banking on Climate Chaos report found that the world's 65 largest banks poured \$7.9 trillion into fossil fuel between 2016 and 2024.



These are financed emissions – emissions that don't come from the bank's offices, but from the industries it lends to and from the carbon-intensive activities banks fund, such as fossil fuel extraction and high-emission industrial operations. By moving funds to a "green bank," capital is directed away from supporting fossil fuel projects.

Green banks avoid investing in fossil fuels and extractive industries and instead prioritize sectors like renewable energy, sustainable agriculture, and community development, among others.

Research by [Project Drawdown](#) illustrates just how powerful these choices can be:

- Moving \$8,000—the median U.S. checking account balance—from a carbon-intensive bank to a climate-responsible bank could reduce indirect emissions twice as much as adopting a vegetarian diet.
- Moving just \$1000 is equivalent to the emissions from a cross-country flight (~½ ton CO<sub>2</sub>).

Aligning Concord's banking with what we believe about climate, food systems, and community resilience is a logical next step in cutting carbon emissions.

**Suggested Actions as Account Holders:**

- Rate Concord's current banking partners.
- If banking partners are carbon intensive, switch municipal accounts to climate responsible bank(s).
- Calculate Financed GHG Savings.

## New Elements/Pillars/Buckets for CARP

### 1) Built Environment

What it targets: Buildings

Core goal: Reduce emissions from buildings while improving climate resilience.

Typical activities

- Energy retrofits (insulation, electrification, heat pumps)
- Net-zero / zero-energy new construction standards
- Municipal building upgrades
- Building codes and zoning updates to require efficiency

This is usually the highest-impact sector

### 2) Energy

What it targets: Electricity supply and fuel sources

Core goal: **Transition to 100% carbon-free electricity and cleaner energy systems.**

Typical activities

- Renewable energy procurement (solar, regional grid sourcing)
- Fuel switching (oil/gas → electric systems)
- Grid modernization and resilience
- Community choice aggregation / power purchasing strategies
- Battery storage and demand management

This is about ***where energy comes from, not just how it's used.***

### 3) Mobility

What it targets: Transportation emissions

Core goal: **Enable zero-carbon transportation options for residents and commuters.**

Typical activities

- Electric vehicle (EV) adoption + charging infrastructure

- Public transit and shuttle improvements
- Bike/pedestrian infrastructure (mode shift)
- Fleet electrification (municipal vehicles)
- Reducing single-occupancy vehicle use

This is the second-largest emissions lever after buildings.

#### **4) Natural Resources**

What it targets: Land, ecosystems, and carbon sinks

Core goal: **Enhance ecosystems for resilience + carbon sequestration.**

Typical activities

- Land conservation and smart land use planning
- Tree planting and urban canopy expansion
- Wetland and watershed protection
- Biodiversity and habitat restoration
- Soil and agricultural practices that store carbon

This is both mitigation (carbon capture) and adaptation (flood/drought buffering).

#### **5) Preparedness (I would rename or add Resilience)**

What it targets: Infrastructure + climate risks

Core goal: **Prepare the town for climate impacts already happening.**

Typical activities

- Flood mitigation and stormwater management
- Heat resilience (cooling centers, shade infrastructure)
- Drought planning and water management
- Hardening critical infrastructure (roads, utilities)
- Emergency response planning for extreme weather

This is adaptation-focused—accepting climate change and reducing harm.

#### **6) Waste & Circularity**

Core Goal: **Transition Concord to a near-zero waste, circular materials system that minimizes consumption, eliminates landfill dependence, and reduces lifecycle emissions.**

What it targets

- Solid waste (residential + commercial)
- Material consumption patterns
- Product lifecycle emissions (production → disposal)
- Food systems and organic waste

Why it matters - **Traditional climate plans underweight this category, but:**

- Materials and consumption drive embedded (Scope 3) emissions
- Waste systems are a proxy for overconsumption
- Circularity can reduce emissions upstream, not just locally

Types of activities

1) Waste elimination & diversion

- Universal organics collection (composting / anaerobic digestion)
- “Pay-as-you-throw” pricing models to reduce trash
- Construction & demolition (C&D) waste diversion requirement
- Zero-waste events and municipal operations

2) Circular economy infrastructure

- Local reuse, repair, and sharing networks (tool libraries, swap programs)
- Partnerships for material recovery and remanufacturing
- Deconstruction (vs demolition) standards for buildings

3) Sustainable procurement

- Municipal purchasing standards prioritizing:
  - Recycled materials
  - Low-carbon products
  - Reusable systems

- Vendor requirements for minimal packaging and take-back programs

#### 4) Food system transformation

- Food waste prevention programs (schools, businesses)
- Local/regenerative agriculture support
- Compost-to-soil systems that feed back into local land use

#### 5) Behavior + consumption reduction

- Public campaigns focused on buy less / reuse more
- Tracking per capita material footprint, not just trash volume

### 7) Governance, Finance & Education

Core Goal: **Align policy, capital, and community behavior to drive rapid, measurable, and equitable decarbonization across all sectors.**

What it targets

- Decision-making systems (government + institutions)
- Capital flows (public + private investment)
- Knowledge, behavior, and workforce capacity

Why it matters - ***Most climate plans fail here:***

- They define *what* to do, but not how systems will deliver it
- Without governance + finance alignment, implementation stalls

#### A) Governance

Goal: **Embed climate into every decision the town makes**

Types of activities

- Carbon budgeting (annual, sector-based limits)
- Climate impact assessments for:
  - Zoning decisions
  - Capital projects
- Department-level climate KPIs tied to performance reviews

- Public climate dashboard tracking:
  - Emissions
  - Progress vs targets
  - Equity outcomes

## B) Finance

Goal: **Mobilize and direct capital at the scale required for transformation**

Types of activities:

### 1) Public finance tools

- Green municipal bonds for:
  - Retrofits
  - Resilience infrastructure
- Climate capital planning integrated into town budgeting

### 2) Private capital mobilization

- Incentives + structures for:
  - Home electrification financing
  - Solar + storage adoption
- Property-linked financing (PACE-style mechanisms)

### 3) Community investment innovation

- Creation of a local climate investment platform
  - Residents invest directly in local projects
- Exploration of linking:
  - Retirement assets
  - Community infrastructure
- Tracking financed emissions reductions (cutting-edge metric)

### 4) Risk + insurance integration

- Climate risk pricing in:

- Infrastructure decisions
- Land use planning
- Collaboration with insurers to reduce systemic exposure

### C) Education & Behavior

Goal: **Create a climate-literate, action-oriented community where behavior change is measurable and sustained**

Types of activities

#### 1) Formal education

- Climate + sustainability embedded across K–12 curriculum
- Integration of:
  - Financial literacy
  - Climate risk
  - Systems thinking

#### 2) Community engagement

- Town-wide participation programs:
  - Energy challenges
  - Retrofit campaigns
- Behavioral nudges using data (e.g., home energy comparisons)

#### 3) Workforce development

- Training pipelines for:
  - Heat pump installers
  - Energy auditors
  - Green construction jobs
- Partnerships with regional employers

#### 4) Measurable behavior tracking

- Household-level emissions tracking tools

- Participation metrics tied to:
  - Incentives
  - Recognition programs

#### How these two elements change the overall plan

Adding Waste & Circularity and Governance, Finance & Education does two critical things:

#### 1) Expands the boundary of impact

- From: D
  - Direct emissions (buildings, transport)
- To:
  - Consumption-based emissions
  - Capital-driven emissions

#### 2) Solves the implementation gap

- Governance → accountability
- Finance → feasibility
- Education → adoption