



HEALTH & ENVIRONMENT COMMITTEE

COMMITTEE MEETING

~ MINUTES ~

Friday, October 28, 2022

9:00 AM

Remote Meeting

The Health and Environment Committee will conduct a public meeting to discuss and amend the draft Net Zero Action Plan update, and next steps in implementing and updating the City’s NetZero Action Plan including setting SMART goals for action items, accelerating timelines in line with the Climate Protection Action Committee review and the Climate Crisis Working Group discussion and any other issues related to the Plan

Attendee Name	Present	Absent	Late	Arrived
Patricia Nolan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Burhan Azeem	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Dennis J. Carlone	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Marc C. McGovern	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quinton Zondervan	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

A public meeting of the Cambridge City Council’s Health and Environment Committee was held remotely on October 28, 2022. The meeting was called to order at 9:00am by the Chair, Councillor Nolan. Pursuant to Chapter 20 of the Acts of 2022 adopted by the Massachusetts General Assembly and approved by the Governor, the public meeting was hybrid, allowing participation remote via Zoom.

Deputy City Clerk Crane called the roll.

- Councillor Nolan – Present/Remote
- Councillor Azeem – Absent
- Councillor Carlone – Present/Remote
- Councillor McGovern – Present/Remote
- Councillor Zondervan – Absent

Present – 3 Absent - 2. Quorum established

Also present at the meeting were City staff Susanne Rasmussen, Seth Federspiel, Kathy Watkins, Iram Farooq, Ellen Katz, Stacey Cooper and Owen O’Riordan.

The Chair, Councillor Nolan noted that the focus of the meeting is to discuss the Net Zero Action plan, which is the guiding climate plan across the City. She stated that City staff will give updates about the Net Zero Action Plan which have taken place over the last few months. Councillor Nolan reminded members that the intention of the meeting was to have the Net Zero Action Plan be reviewed and to review changes to date, based on the feedback from the Climate Protection Action Committee [CPAC] which wrote an extensive letter on the NZAP and whose charge is to review and monitor the NZAP. Plus the Climate Crisis Working Group and the Health and Environment Committee of the City Council both proposed changes, notably an acceleration of the timelines, and specificity of outcomes. The agenda for this meeting is to accept any changes that have been proposed to date, propose any additional changes, and the

hope and expectation at the end of the meeting to forward the summary and review of the meeting to the full City Council with a favorable recommendation for adoption and to become an action plan for the City. The Chair noted that the NZAP is a document the city staff uses and the City Council sees as a blueprint for achieving climate goals and coordinating much of the work of the city in the area of sustainability and addressing the climate crisis.

The Chair, Councillor Nolan noted that Councillor Zondervan has joined the meeting remotely.

The Chair, Councillor Nolan made a presentation titled “Cambridge City Council Health Environment Committee meeting October 28, 2022 on NZAP”. A copy of this presentation is attached as ATTACHMENT A. Councillor Nolan went over and summarized the presentation to members and attendees. The presentation reminded the Committee that the reason for the NZAP and for the input to date to accelerate the timeline is that the five year review of the first NZAP found essentially no progress in reducing emissions, despite many programs and actions over five years of effort. The key will be how to have the next five year plan be more impactful and effective. After the presentation, Susanne Rasmussen made comments about the action plan and the steps and changes being taken by the workforce.

Seth Federspiel, Climate Program Manager, City of Cambridge made a presentation titled “City of Cambridge Net Zero Action Plan – 5 Year Update”. A copy of this presentation is attached as ATTACHMENT B. They provided the committee with a status update on the Net Zero Action Plan and what the task force has achieved. They also noted ideas on what future action plan and goals should look like. The presentation noted which changes had been made in response to input to date including steps with an accelerated timeline and setting specific “SMART” goals for many of the items. It was explained that some areas whose timelines were not accelerated or did not have SMART goals would be monitored and started and goals set once more data was collected.

The Chair, Councillor Nolan, commented that no one had signed up for public comment and asked if any attendee wanted to speak.

Margery Davies, attendee, and member of the NZAP Task Force made comments thanking the Committee for their hard work. They spoke about the need to accelerate, the importance of BUEDO, and the positive steps of accelerating efforts and setting goals presented with today’s presentation.

The Chair, Councillor Nolan opened discussion to attendees and members of the Committee.

Councillor Zondervan thanked The Chair and City staff for their presentations and updates. He had some questions and remarks regarding the presentation made by Seth Federspiel to which Susanne Rasmussen, Seth Federspiel, and Councillor Nolan responded. Many of Councillor Zondervan’s remarks focused on a request to further accelerate some actions, which the committee and Chair endorsed.

Councillor Carlone thanked the Chair and City staff for their hard work and detailed approach to the Net Zero Action Plan and how complex the moves will be to make the Action Plan possible.

Seth Federspiel, Susanne Rasmussen, and Councillor Nolan responded to questions regarding certain points made during the presentation from CDD.

The Chair, Councillor Nolan made comments summarizing and highlighting discussions that took place during the meeting.

Sarah Rasmussen briefly spoke about the PACE Program.

Councillor Zondervan made a motion to move forward to the City Council the NZAP report after it is further amended based on the discussion and suggestions made during the Committee meeting with a favorable recommendation.

Deputy City Clerk Crane called the roll.

The Chair, Councillor Nolan – Yes

Councillor Azeem – Absent

Councillor Carlone – Yes

Councillor McGovern – Yes

Councillor Zondervan – Yes

Yes – 4 Absent – 1. Motion passed.

A motion to adjourn was made by The Chair, Councillor Nolan.

Deputy City Clerk Crane called the roll

The Chair, Councillor Nolan – Yes

Councillor Azeem – Absent

Councillor Carlone – Yes

Councillor McGovern – Yes

Councillor Zondervan – Yes

Yes – 4 Absent – 1. Motion to adjourn passed at 10:59 a.m.

Attachment A: Presentation titled “Cambridge City Council Health “Environment Committee meeting October 28, 2022 on NZAP”.

Attachment B: Presentation titled “City of Cambridge Net Zero Action Plan – 5 Year Update”.

Clerk’s Note: The City of Cambridge/22 City View records every City Council meeting and every City Council Committee meeting. This is a permanent record.

The video for this meeting can be viewed at:

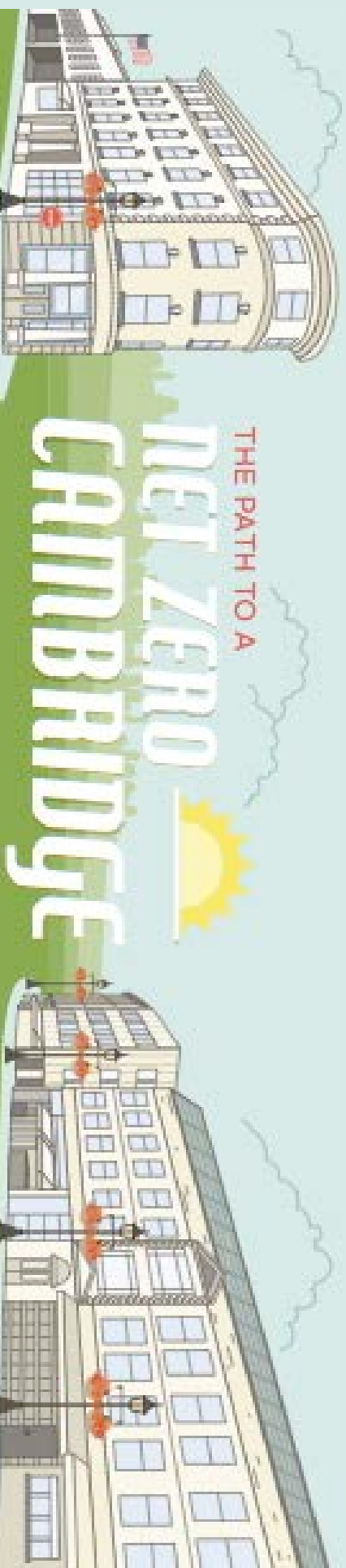
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City of Cambridge

Net Zero Action Plan – 5 Year Update

Health and Environment Committee

October 28, 2022



Agenda

1. **5-year Review Background**
2. **Net Zero Task Force Process**
3. **Updated NZAP Actions**
4. **NZAP Update Feedback**
5. **NZAP Update Implementation and Next Steps**



THE PATH TO A
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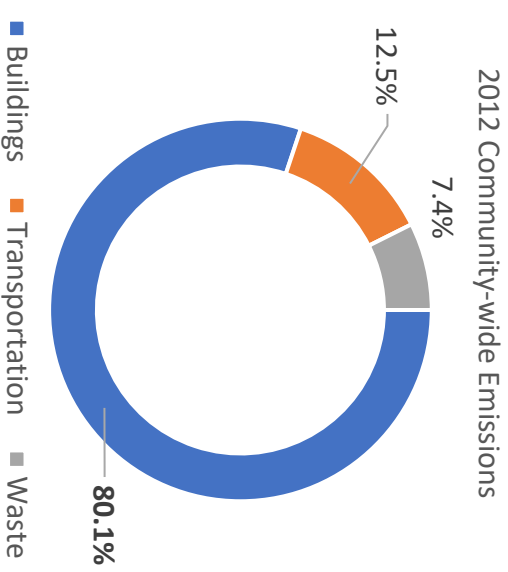
NZAP 5-Year Review Background

Net Zero Action Plan 5-Year Review

- The Net Zero Action Plan (NZAP) was adopted by the City Council in 2015 following an 18-month stakeholder process to identify a phased set of actions to reduce greenhouse gas emissions from new and existing buildings and develop a renewable energy supply strategy for Cambridge buildings.
- As part of the original NZAP, the Task Force proposed that the whole suite of actions be reviewed every five years to allow for the overall strategy to adjust based on changing economics, technology, and stakeholder needs.

Why Net Zero Buildings?

- 80% of greenhouse gas emissions in Cambridge are from building construction and operations. Since the original NZAP was issued in 2015, more than 8 million square feet of buildings have been added. If the city can get to net zero in the building sector, we will have made major progress toward achieving our carbon neutral commitment.



Net Zero Action Plan Principles:

- Supports **climate goals** and **healthy economic** strategies
- Uses **science, market, and data-driven** analysis to inform decision making
- Support an openness to **new ideas** when circumstances change
- Commitment to allowing the principle of **offsets**
- Commitment to **measuring and monitoring** impact over time
- Ensures consultation is comprehensive and **engages affected stakeholders**
- Commitment to developing informative and **replicable models**
- **NEW:** Commitment to implementing the Net Zero Action Plan through a **racial equity and social justice lens**



Science, Technology, Policy and Equity Lens:

Science



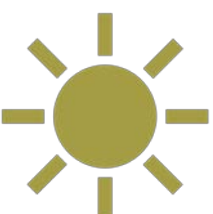
What science-based GHG reductions must be achieved to mitigate the impacts of climate change and maintain a healthy environment for Cambridge residents

Policy



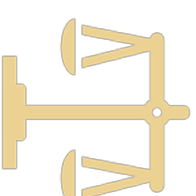
What Federal, State and Local Policies have changed that support our effort to reach the goals (e.g. building energy codes)

Technology



What enabling technologies have emerged since the 2015 NZAP efforts that may affect our strategy

Equity

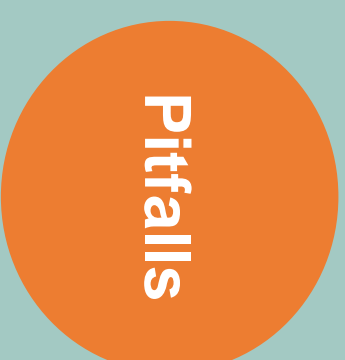


We must recognize the social equity implications of policy choices and use an equity assessment framework to help guide our process



Equity

- New lens for our current work
- Cambridge recognizes the social equity implications of such consequential policy choices.



- We used Applied Economics Clinic's equity assessment framework to help guide our process



Equity (continued)

- The proposed Net Zero Actions entail potential equity benefits and pitfalls and, in some cases, are equity neutral.
- Potential **equity benefits** include:
 - Improved indoor comfort and air quality,
 - Lower energy bills,
 - Increased access to financing and funding,
 - Enhanced energy reliability, and
 - Increased resident engagement, awareness, and participation.
- Potential **equity pitfalls** include:
 - Housing cost and rental cost increases,
 - Energy cost increases,
 - Inequitable program participation, and
 - Inequitable distribution of benefits and burdens.
- Potential **equity pitfalls can be avoided** by incorporating specific policy language that targets equity and builds in flexibility so that policies can be adjusted if inequitable impacts arise.

Equity Assessment Framework

Equity Checklist

The checklist provides a method to ensure a robust treatment of climate and social equity.

Dimensions

Social equity cuts across many dimensions, each of which requires consideration.

Pitfalls

Each equity dimension has common equity pitfalls that should be acknowledged, addressed, and intentionally mitigated should they arise.

Community Co-benefits Considered

Government and Policy Development	Economic	Environmental
<ul style="list-style-type: none"> • Leadership by example • Promotes Collaboration • Facilitates Public Participation • Enhances Policy Evaluation • Enhanced data availability and access 	<ul style="list-style-type: none"> • Employment Growth • Enhanced Economic Competitiveness • Reduction in Operation Costs • Reduction in Cost of Public Infrastructure • Decreased Energy Costs 	<ul style="list-style-type: none"> • Reduction in Water Use • Less Materials Use Impacts • Reduction in Waste • Lowers air pollution from generation assets • Life-cycle Carbon Emissions Reductions
Health and Wellbeing	Climate Resilience	Access and Engagement
<ul style="list-style-type: none"> • Promotes Healthy Lifestyle for Residents • Lowers Combustible Gases in Buildings • Improves Community Aesthetics • Improved Building Comfort/IAQ 	<ul style="list-style-type: none"> • Increased Energy Security • Provides opp. for hardening infrastructure • Provides opp. for improved building resilience • Reduces Risk for Vulnerable Populations 	<ul style="list-style-type: none"> • Improved Access to Public Space • Improved Access to Public Transit • Improved Access to Employment/Training • Engagement of Local Women/Minority Owned Businesses



Net Zero Task Force Process

Net Zero Task Force

- A key element ensuring the continued forward-thinking of the Net Zero Action Plan (NZAP) is the plan's mandate that a detailed review of the whole suite of actions by a stakeholder Task Force. For this review, Task Force members included eight Residents/Advocates, eight Institutions/Property Owners/Developers, and nine Subject Matter Experts – a total of 25 Task Force members

Residents

David Adamian,
CEO of Greener U

Gaurab Basu,
Physician

Peter Crawley,
CPAC Representative

Margery Davies,
Mother Out Front Representative

Henrietta Davis,
Former Mayor of Cambridge

Jan Devereux,
Former Vice Mayor/Representative of Green
Cambridge

Adam Gould,
Representative of Youth Climate Activists

Kolin Loveless,
Representative from Neighborhood Nine

Institutions, Property Owners and Developers

Jane Carbone,
Director of Development for Homeowners Rehab

Deborah Donovan,
VP of Env, Health and Safety at Takeda

Tom Evans,
Executive Director, Cambridge Redevelopment Authority

Heather Henriksen,
Managing Director of the Harvard Univ. Office of
Sustainability

Eli Herman,
Construction Manager for Akelius Real Estate

Rick Malmstrom,
Executive Director of Sustainable Operations for Alexandria
Real Estate

Ben Myers,
VP of Sustainability for Boston Properties

Julie Newman,
Director of the MIT Office for Sustainability

Subject Matter Experts

Lauren Baumann,
VP of New Ecology

David Bisson,
Business Development Manager for Resonant Energy

Andrea Love,
Resident and Green Building Design Expert with Payette
Architects

Chris Leary,
VP at Jacobs Architects

Paul Lyons,
Resident and CEO of Zapotec Energy

Steve Miller,
Energy Efficiency Consultant for Eversource

Gabe Shapiro,
Co-founder All-in-Energy

Tom Sieniewicz,
Resident and member of Planning Board

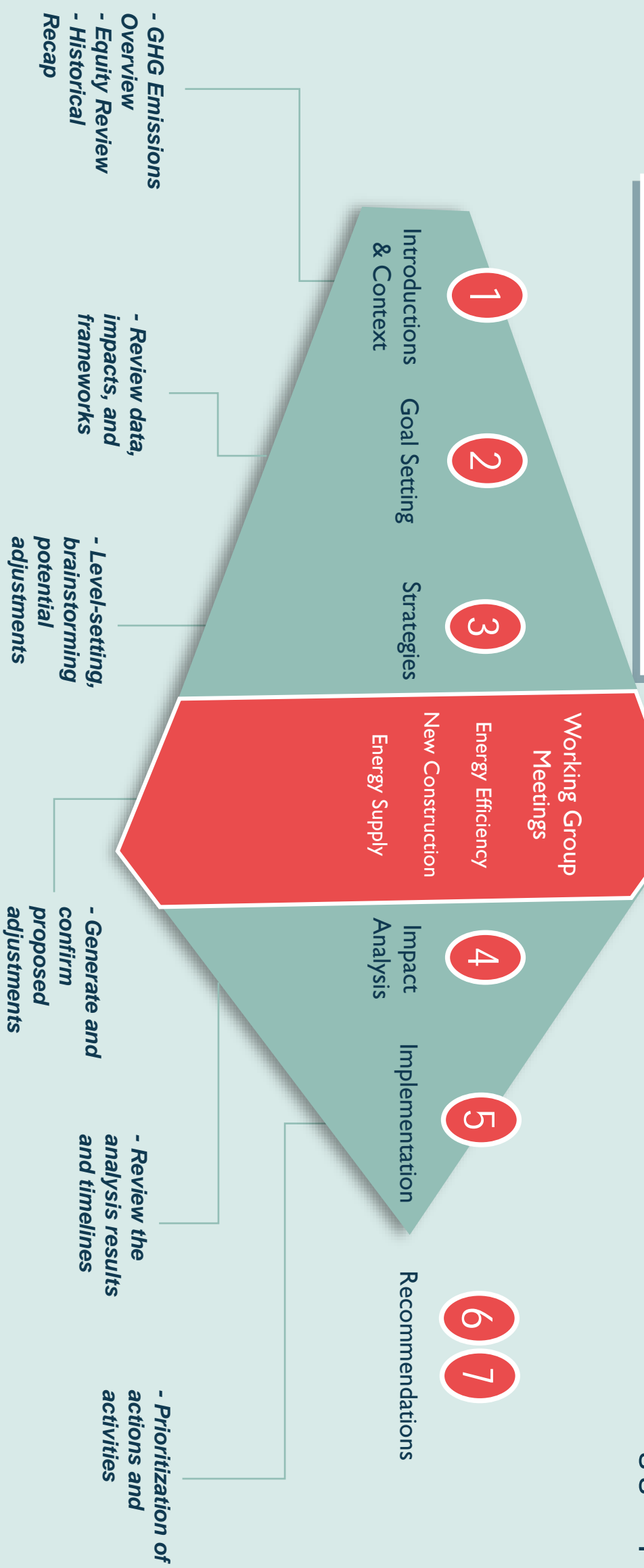
Jen Stevenson Zepeda,
Director of Research and Operations for Climable

TASK FORCE OBJECTIVES

- Explore and update strategy as appropriate including actions, targets, and timeline for achieving net zero emissions.
- Provide recommendations outlining short-term (1-2 years), medium-term (3-5 years) and longer-term actions (6-10 years).
- Provide input on design and implementation for each action including regulations to consider, planning measures, incentives, and initiatives.
- Provide feedback on the projected impacts of each action.
- Agree on an ongoing communication, reporting and accountability strategy.

TASK FORCE MEETING STRUCTURE

- 7 Full Task Force Meetings held
- 2 sessions for each working group



Updated NZAP Actions

Recommended NZAP Adjustments to Actions

2015 NZAP	Recommended Adjustments for the 2021 NZAP Update
Action 1 Energy Efficiency	Action Area 1: Energy Efficiency in Existing Buildings
1.1.1 Custom Retrofit Program	Action 1.1 Custom Retrofit Program for Residential (up to 50 units) and Small Commercial
1.1.2 Additional BEUDO Requirements	Action 1.2 BEUDO Requirements
1.1.3 Upgrades at Time of Renovation	Action 1.2.1 BEUDO Performance Requirements
1.1.4 Operation and Maintenance Plans for New Const.	Action 1.2.2 BEUDO Resource Hub
Action 2 Net Zero New Construction	Action 1.3 Upgrades at Transaction Points
2.1 Net Zero New Construction	Action Area 2: Net Zero New Construction
2.2 Net Zero Incentives	Action 2.1 Net Zero Requirements for New Construction
2.2.1 Market-based Incentives	Action 2.2 Address Embodied Carbon through Green Building Requirements *NEW*
2.2.2 Height and FAR Bonus	Action 2.3 Net Zero Requirements for Municipal Buildings
2.3 Increase Green Building Requirements	Action Area 3: Low Carbon Energy Supply
2.4 Net Zero New Construction for Municipal Buildings	Action 3.1 Carbon Free Thermal Energy
2.5 Removal of Barriers to Increased Insulation	Action 3.2 On-site Renewable Electricity Access
Action 3 Energy Supply	3.2.1 Rooftop Solar Requirement
3.1 Low Carbon Energy Supply	3.2.2 Community Solar Access *NEW*
3.2 Rooftop Solar Ready Requirement	Action 3.3 Off-site Renewable Electricity Access *NEW*
3.3 Develop a MOU with Local Utilities	Action Area 4: Financing and Capacity Building
Action 4 Investigate Local Carbon Fund	Action 4.1 Local Carbon Fund and Community Aggregation
Action 5 Engagement and Capacity Building	
5.1 Communications Strategy	
5.2 Develop Ongoing Capacity to Manage the NZAP	
5.3 Net Zero Lab Standards	

Updated net zero action plan

Action Area 1: Energy Efficiency in Existing Buildings

- Action 1.1: Custom Retrofit Program for Residential and Small Commercial Buildings
- Action 1.2: BEUDO Requirements
- Action 1.3: Upgrades at Transaction Points

Action Area 2: Net Zero New Construction

- Action 2.1: Net Zero Requirements for New Construction
- Action 2.2: Address Embodied Carbon through Green Building Requirements *NEW*
- Action 2.3: Net Zero Requirements for Municipal Buildings

Action Area 3: Low Carbon Energy Supply

- Action 3.1: Carbon Free Thermal Energy
- Action 3.2: On-Site Renewable Energy Access
- Action 3.3: Off-Site Renewable Energy Access *NEW*

Action Area 4: Financing and Capacity Building

- Action 4.1: Local Carbon Fund (Enhanced Community Aggregation Program)

Existing Buildings

Action 1.2.1: BEUDO Performance Requirements

Action 1.3: Upgrades at Transaction Points

Action 1.2.2: BEUDO Resource Hub

Action 1.1: Custom Retrofit Program

New Buildings

Action 2.1: Net Zero New Construction

Action 2.2: Embodied Carbon

Energy Supply

Action 3.2.1: Rooftop Solar Requirement

Action 3.2.2: Community Solar Access

Action 3.1: Carbon Free Thermal Energy

Action 3.3: Off-Site RE Access

Enabling Actions

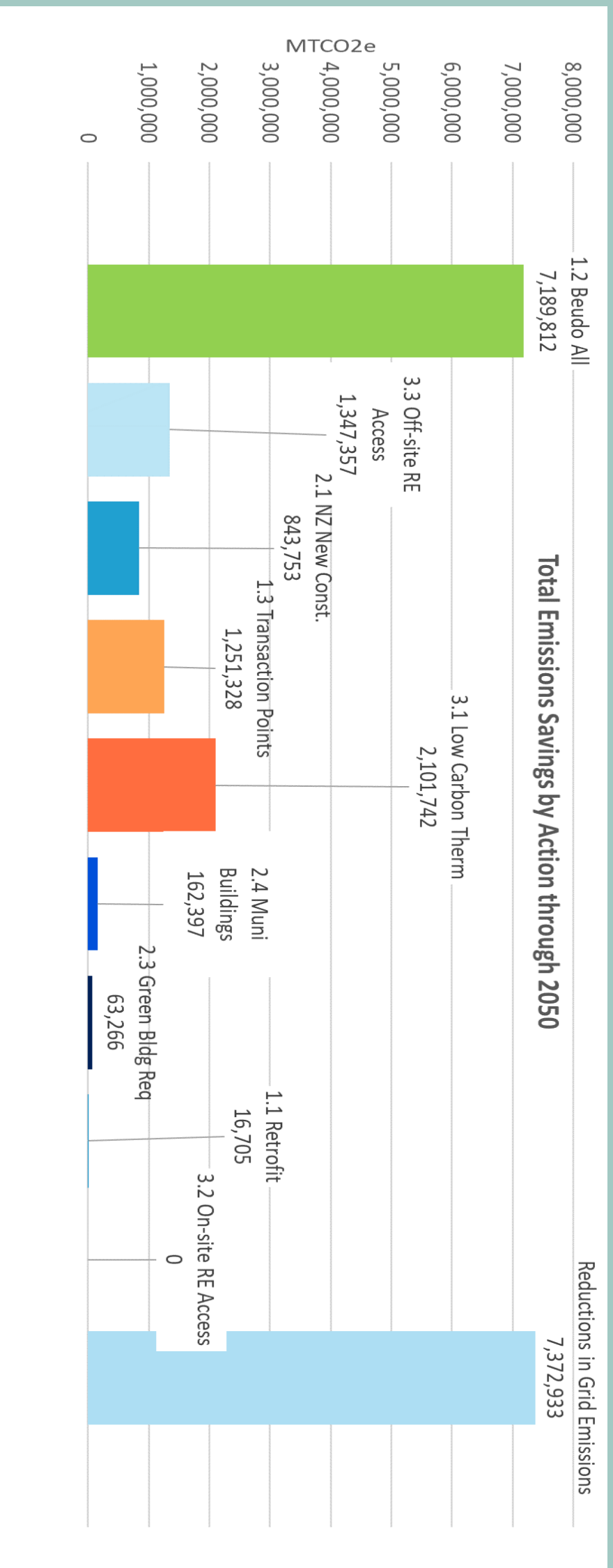
Action 4: Local Carbon Fund

Net Zero Action Plan - Action Map



Projected Emissions Reductions by Action

A combination of actions led by BEUDO performance standards, together with improvements to the state electrical grid, is required to meet the medium and long-term science-based GHG reduction targets



* Note that projected savings are representative of the relative magnitude of each action, but are not intended to be precise

NZAP Update Feedback

**5-Year Review Feedback from Council and
Climate Committee (CPAC)**

- **Clarify categorization of activities in Gantt chart, especially policy action required by Council**
- **Accelerate action**
- **Establish SMART goals and tracking mechanisms to ensure accountability**
- **Investigate mechanisms to provide more financial support to buildings**
- **Ensure sufficient resources are available for successful NZAP implementation**



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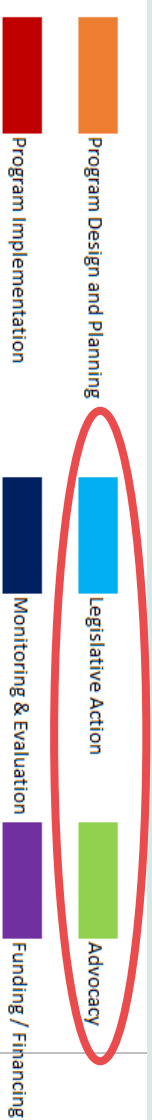
5-Year Review Feedback from Council and Climate Committee

➤ Clarify categorization of activities in Gantt chart, especially policy action required by Council

Cambridge Net Zero Action Plan

Implementation Timeline

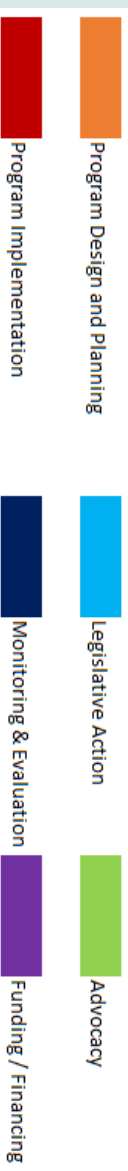
Updated: October, 2022



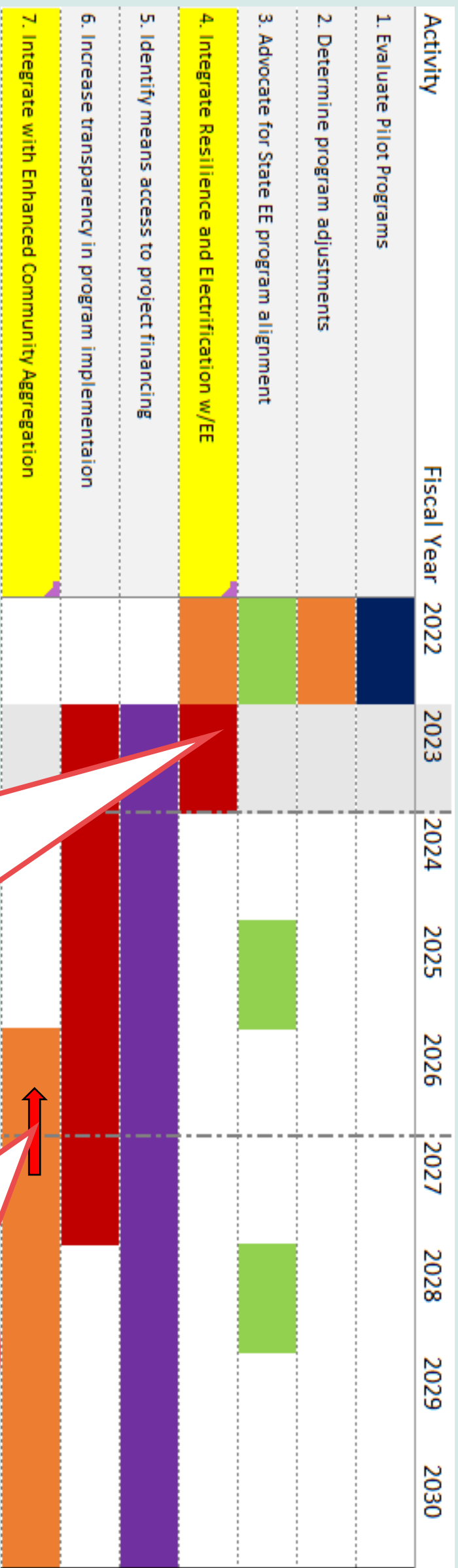
Action Area	Action	Activity	Short Term		Medium Term			Long Term			
			2022	2023	2024	2025	2026	2027	2028	2029	2030
Action Area 1 - Energy Efficiency	Action 1.1 Retrofits for Residential and Small Commercial	1. Evaluate pilot Programs	Program Design and Planning								
	Action 1.1 Retrofits for Residential and Small Commercial	2. Determine program adjustments	Program Design and Planning								
	Action 1.1 Retrofits for Residential and Small Commercial	3. Advocate for State EE program alignment	Program Design and Planning			Advocacy					
	Action 1.1 Retrofits for Residential and Small Commercial	4. Integrate Resilience and Electrification w/EE	Program Design and Planning	Program Implementation							
	Action 1.1 Retrofits for Residential and Small Commercial	5. Identify means access to project financing	Program Design and Planning	Program Implementation							
	Action 1.1 Retrofits for Residential and Small Commercial	6. Increase transparency in program implementation	Program Design and Planning	Program Implementation							
	Action 1.1 Retrofits for Residential and Small Commercial	7. Integrate with Enhanced Community Aggregation	Program Design and Planning	Program Implementation							
Action Area 1 - Energy Efficiency	Action 1.2.1 BEUDO Performance Requirements	1. Enact performance requirement	Program Design and Planning	Program Implementation							
	Action 1.2.1 BEUDO Performance Requirements	2. Establish necessary stakeholder sub-committees	Program Design and Planning	Program Implementation							



Accelerate action and establish SMART goals



➤ Action 1.1: Retrofits for Residential and Small Commercial



SMART goals:

- 750 units engaged in program per year
- 10 buildings retrofit through financing pilot
- Develop retrofit tracking approach to set conversion targets by end of 2023

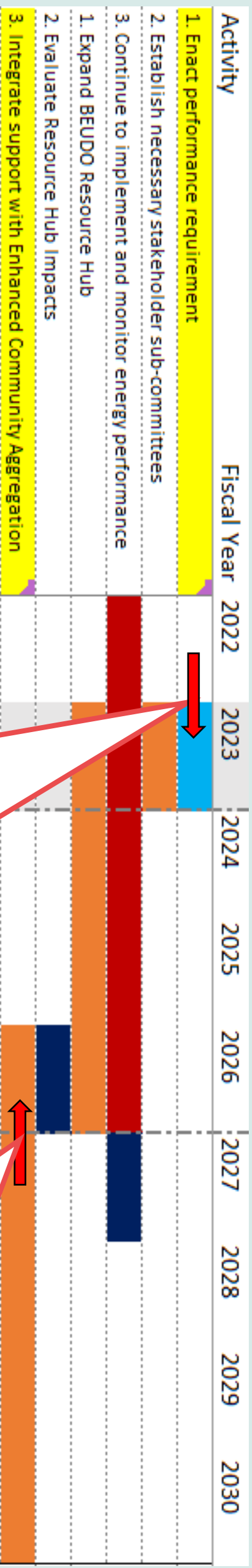
This is already in progress as a new program; no legislative input needed

Accelerated to align with launch of Local Carbon Fund



Accelerate action and establish SMART goals

➤ Action 1.2: BEUDO Performance Requirements and Resource Hub



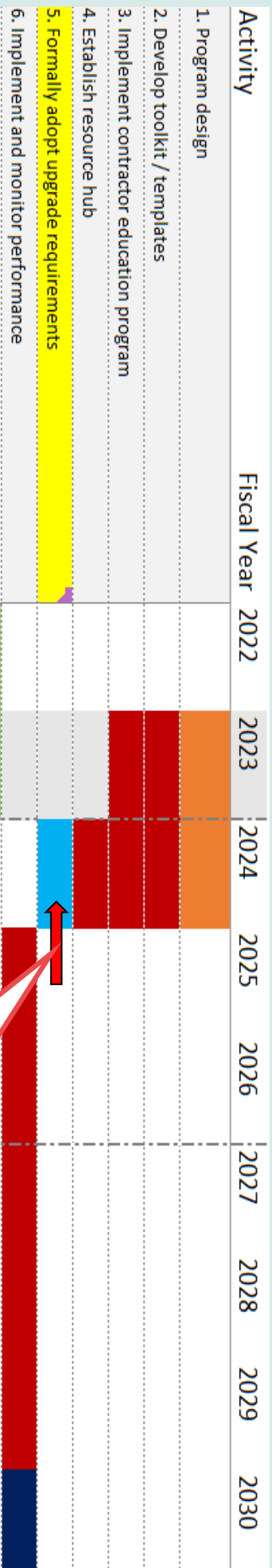
BEUDO amendments behind schedule as they continue through City Council process

Accelerated to align with launch of Local Carbon Fund

- SMART goals:**
- BEUDO buildings achieve required annual emissions reductions
 - Resource Hub fully established by end of 2023

Accelerate action and establish SMART goals

➤ Action I.3: Upgrades at Transaction Points

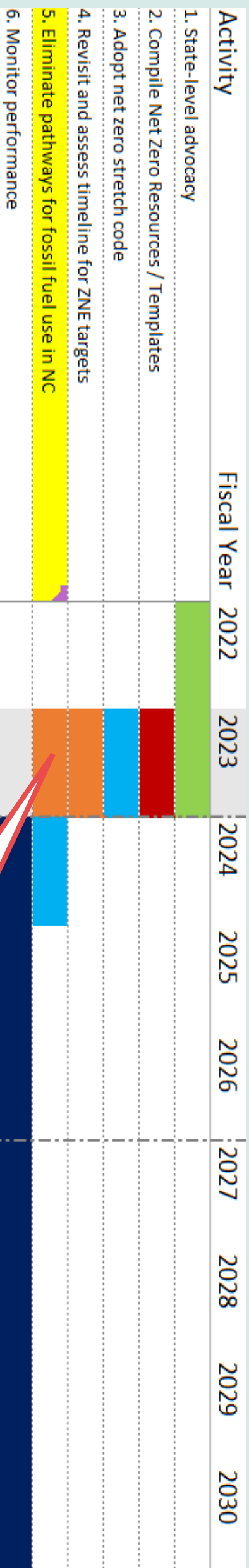


- SMART goals:**
- Adopt transaction-based requirements by June 2024
 - Advance tools, education, and resource hub as requirements are developed

Accelerate by one year to better complement BEUDO requirements for larger buildings

Accelerate action and establish SMART goals

➤ Action 2.1: New Zero Requirements for New Construction



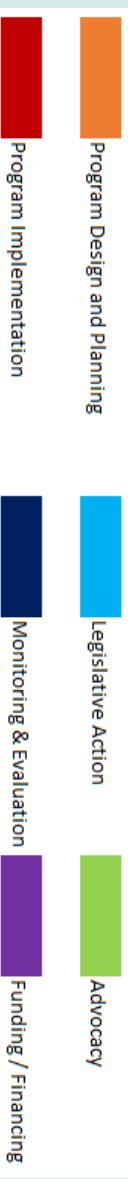
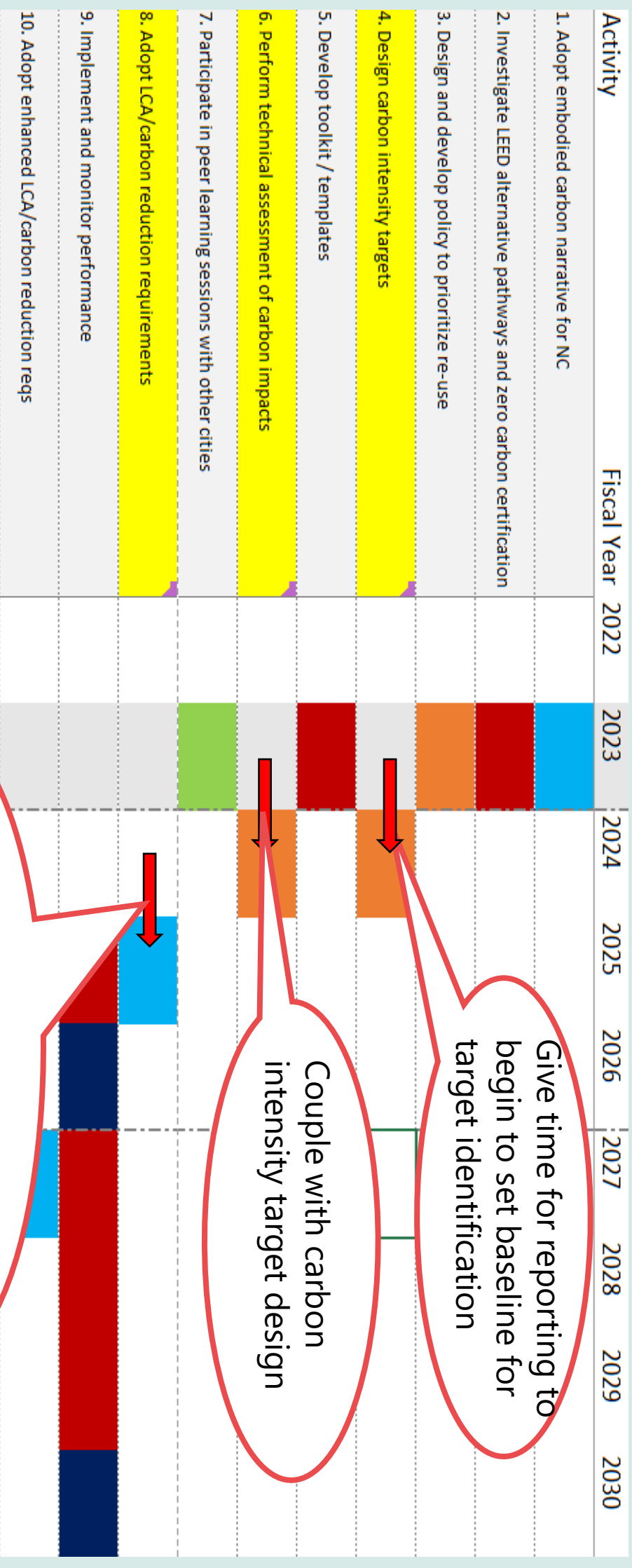
Plan in FY23 based on state pilot program guidance

SMART goals:

- Adopt Net Zero Stretch Code by early 2023
- Adopt Fossil Fuel Free pilot by summer 2023
- Prepare resources to support developers for when updates take effect

Accelerate action and establish SMART goals

➤ Action 2.2: Address Embodied Carbon through Green Building Requirements



Give time for reporting to begin to set baseline for target identification

Couple with carbon intensity target design

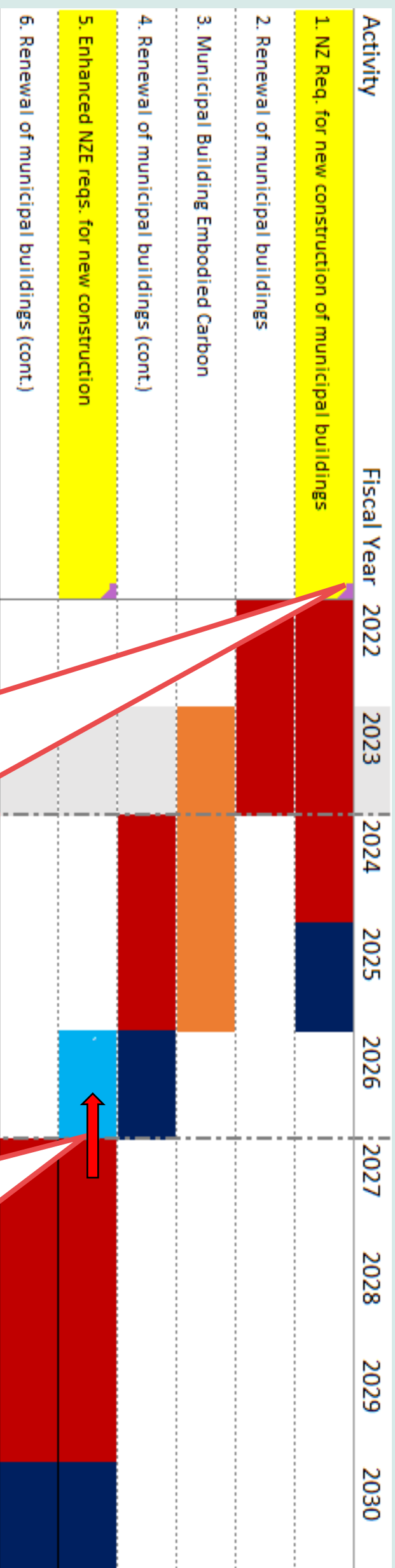
Shorten process and delay to allow for development of targets based on lessons learned from reporting

SMART goals:

- Adopt carbon reporting requirements for special permit buildings by June 2023

Accelerate action and establish SMART goals

➤ Action 2.3: Net Zero Requirements for Municipal Buildings



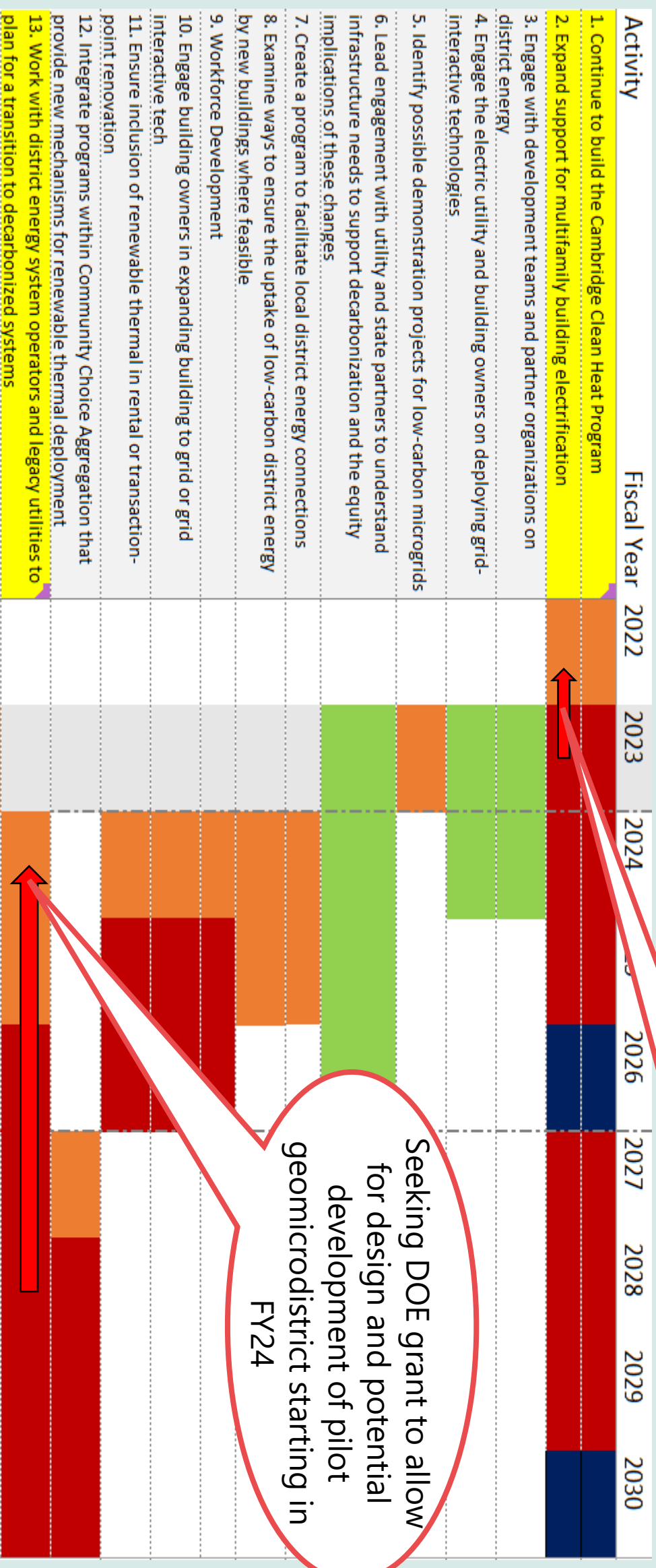
Continue implementation of existing policy

Accelerate enhanced requirements including embodied carbon

- SMART goals:**
- All new/major renovation municipal buildings are net zero
 - Update 2030 GHG reduction goal for municipal buildings

Accelerate action and establish SMART goals

➤ Action 3.1: Carbon Free Energy Supply



These are already in progress and new decarbonization program will be launched in FY23

Seeking DOE grant to allow for design and potential development of pilot geomicrodistrict starting in FY24



Accelerate action and establish SMART goals

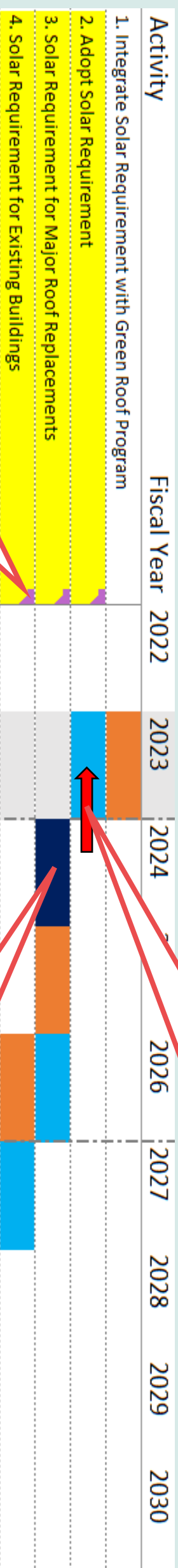
➤ **Action 3.1: Carbon Free Energy Supply**

SMART goals:

- **Complete feasibility study for pilot geomicrodistrict by June 2024**
- **If feasible, install pilot serving at least 500 units plus two public buildings in 2025**
- **Establish fossil fuel free conversion rate targets for buildings by end of 2023**

Accelerate action and establish SMART goals

➤ Action 3.2.1: Rooftop Solar Requirement



Consider overlap with Activity 3

Accelerating as requested; will need to align with state code changes

Add evaluation based on new construction solar requirement

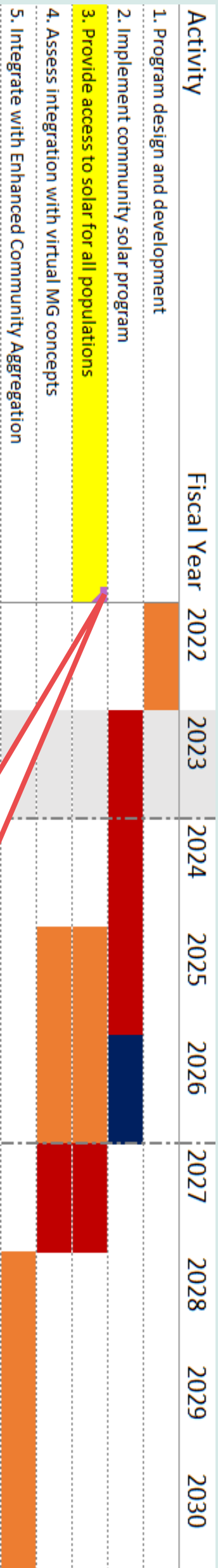
SMART goals:

- Achieve 55MW of solar in Cambridge and City properties by 2030
- Adopt a solar installation requirement for new construction by June 2023



Accelerate action and establish SMART goals

➤ Action 3.2.2: Community Solar Access



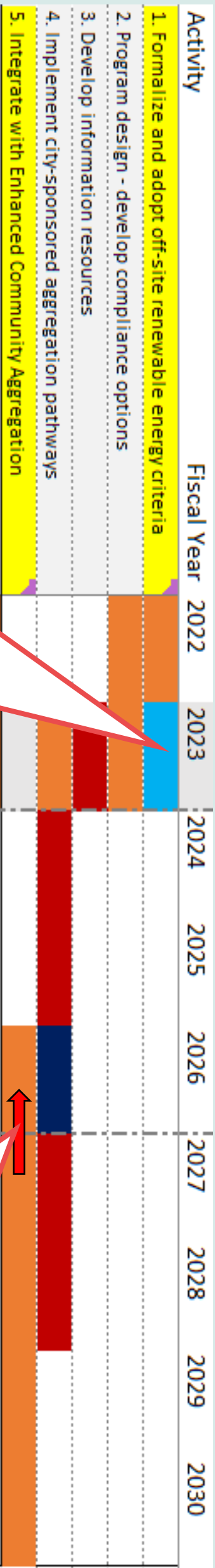
SMART goals:

- Launch community solar program in 2023
- Install 5.5 MW of community solar in Cambridge by 2030

Community solar program is intended to provide access for all populations, so recommend deleting as separate activity

Accelerate action and establish SMART goals

➤ Action 3.3: Off-site Renewable Electricity Access



Legislative action is through BEUDO performance requirements

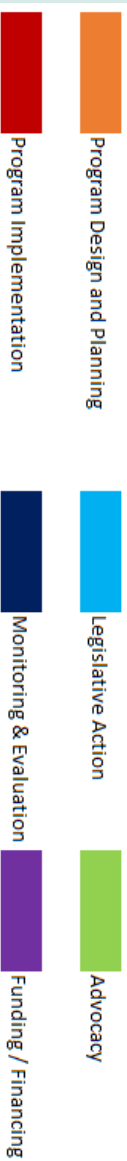
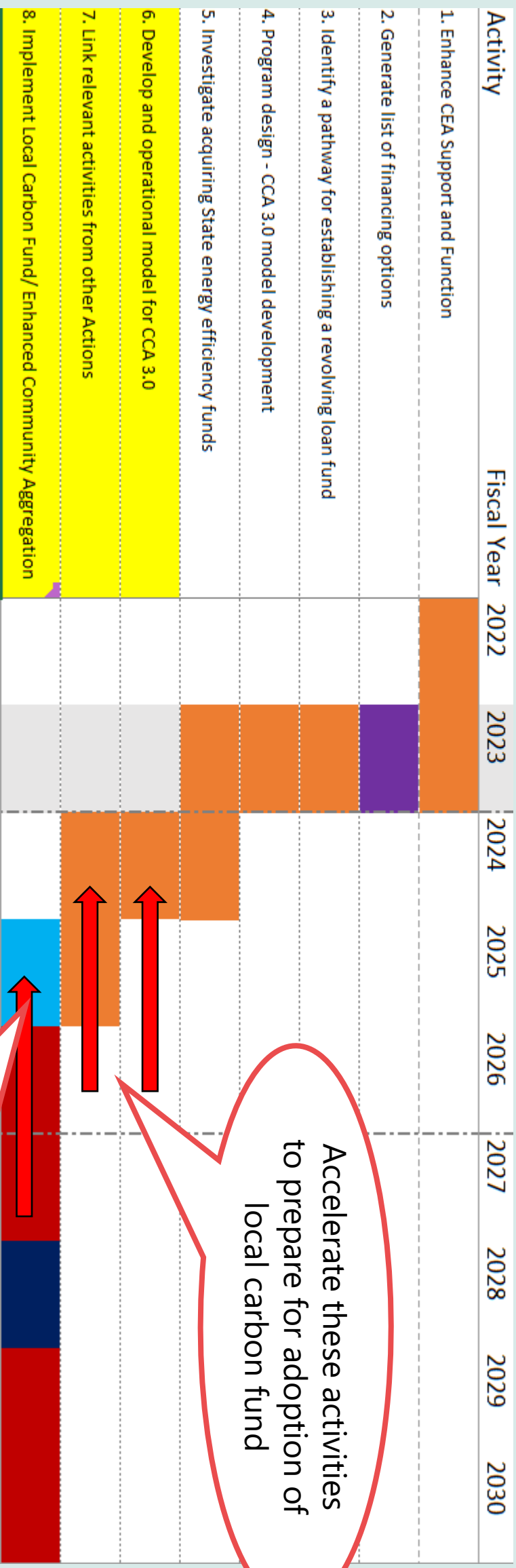
Accelerated to align with launch of Local Carbon Fund

SMART goals:

- Adopt off-site RE criteria through BEUDO in 2023
- Work towards 100% RE for Cambridge Community Electricity aggregation

Accelerate action and establish SMART goals

➤ Action 4.1: Local Carbon Fund/Enhanced Aggregation



Accelerate these activities to prepare for adoption of local carbon fund

Accelerate adoption and implementation of local carbon fund to align with BEUDO compliance

SMART goals:

- Adopt Local Carbon Fund by 2025

Implementation of Updated NZAP

Key Partnerships and Plans

- City staff cannot achieve the Net Zero Emissions goals alone. The City will continue to work with the Net Zero Task Force members, City Council, and other stakeholders to ensure that the residents, institutions, and development community in Cambridge are not only consulted, but central to the implementation and evolution of the project over time. Other key partnerships and plans include:
 - **Cambridge Climate Committee (CPAC)** – CDD staff will ensure that annual progress updates proceed and are reviewed by the Climate Committee to ensure accountability and transparency.
 - **Resilient Cambridge** – The climate adaptation plan resulting from the Climate Change Preparedness and Vulnerability Assessment with a range of recommendations for buildings in Cambridge, including energy resilience
 - **Envision Cambridge** – The citywide plan adopted in 2019 centered on the core values of livability, diversity and equity, economic opportunity, sustainability and resilience, community health and wellbeing, and learning, which includes goals, indicators, and targets for climate and environment
 - **City Council Climate Crisis Working Group Report** – A prioritized list of specific actions the City can take to address the urgent challenge of climate change based on work by a group of community advocates and local and state climate experts over the course of fall 2021

Key State Partnerships and Regulations

- The NZAP Actions should also be assessed in regard to City control and where there is reliance on regional and state actors to achieve the Action goals. Partnerships and advocacy should be established with the appropriate institutions to accomplish the activities of each Action.

For example:

- **Action 1.1: MassSave** provides financial support and technical services for energy efficiency building and infrastructure improvements to Massachusetts residents and businesses
- **Action 2.1: The state building code** regulates energy use in new construction and is established by the Board of Building Regulations and Standards, building off of the International Energy Conservation Code
- **Action 3.1: The Massachusetts Clean Energy Center** provides workforce development and financial support to accelerate the transition away from fossil fuel use
- **Action 3.2: The Department of Energy Resources** regulates incentives such as the Solar Massachusetts Renewable Target based on the Renewable Portfolio Standard adopted by the state legislature
- **Action 3.3: The Renewable Portfolio Standard** adopted by the state legislature governs the amount of renewable electricity which must be purchased by competitive electricity suppliers

Program Tracking and Metrics

- In order to track progress more efficiently, a more robust system for reporting and tracking project-level performance data from all actions will be needed for residents, businesses, and program implementers to access and monitor performance

Example: BEUDO Performance Tracking Metrics

	Metric	Unit of Measurement
NZAP Action 1.2: BEUDO Performance Requirements	Buildings Disclosing Energy Use	Number
	Square Footage of Buildings Disclosing Energy Use	SF
	BEUDO Portfolio Electricity Consumption	kWh
	BEUDO Portfolio Gas Consumption	Therms
	BEUDO Portfolio Emissions	MT GHG
	Buildings Disclosing Energy Use (all years)	Number
	Square Footage of Buildings Disclosing Energy Use (all years)	SF
	BEUDO Portfolio Electricity Consumption (all years)	kWh
BEUDO Portfolio Gas Consumption (all years)	Therms	
BEUDO Portfolio Emissions (all years)	MT GHG	

*See Appendix C of the 2021 NZAP Report for Tracking Metrics for all Actions

Program Tracking and Metrics: NZAP Dashboard and Annual Report



DASHBOARD

NET ZERO ACTION PLAN

NEWS

WHAT YOU CAN DO

Cambridge Net Zero Action Plan

The Path to a Net Zero Cambridge

Next Steps

- Finalize NZAP timeline and goals
- Submit NZAP Update to City Council for adoption
- Fiscal Year 2024 strategic planning
- NZAP implementation and annual reporting
- Next 5-year update beginning in 2025


Thank you!

Seth Federspiel
Cambridge Climate Program Manager
sfederspiel@cambridgema.gov
(617) 349-4674




THE PATH TO A
NET ZERO
CAMBRIDGE





Cambridge City Council
Health & Environment
Committee meeting
October 28, 2022 on
NZAP



Sampling of Climate Initiatives

- **May 1999, the City Council voted to join Cities for Climate Protection (CCP)**
- **Cambridge Climate Protection Plan**
 - Formed in 2002 - CPAC reports show goals have not been met
- **Compact of Mayors for Climate & Energy**
 - Joined in 2015
- **Climate Protection Action Committee [CPAC]**
 - Established 2009 - meets regularly and has asked for stronger actions and some specific changes (ex: BEUDO amendments) with requests largely unanswered
- **Cambridge Compact for a Sustainable Future**
 - Launched in 2013 with goal of having impact. Major effort - Decided to focus on lab emissions - to date little to no progress.
- **Cambridge Energy Alliance**
 - Established in 2007, worked on a range of initiatives, recent review done.
- **Net Zero Action Plan**
 - Established in 2015 - today is first 5 year review

Climate Actions citywide: mostly ineffective: failure to meet goals and missed timelines

Cambridge has been trying to reduce emissions since 2003 and has continuously failed:

- 2002: Reduce GHG emissions in the city 20% below 1990 levels by 2010
- 2003: “...Our greenhouse gas emissions have **continued to increase.**” - 2003 Annual Report
- 2005: “... It appears that emissions have **continued to increase...**” - 2005 Annual Report
- 2006: “... It should be noted that **emissions remain well above 1990 levels.**” - 2006 Annual Report
- 2011: “The plan’s **goal** of reducing greenhouse gas emissions by 20% from 1990 levels by 2010 **was not met...**” - 2011 Annual Report
- **Goals adjusted to account for lack of progress** - baseline changed to 2012.

Bright spot: city met goals, community didn't

The climate roadmap Clean Energy and Climate Plan for 2030 includes a statewide greenhouse gas (GHG) emissions limit of **50% below the 1990 GHG emissions level for the year 2030.**

Cambridge emissions:

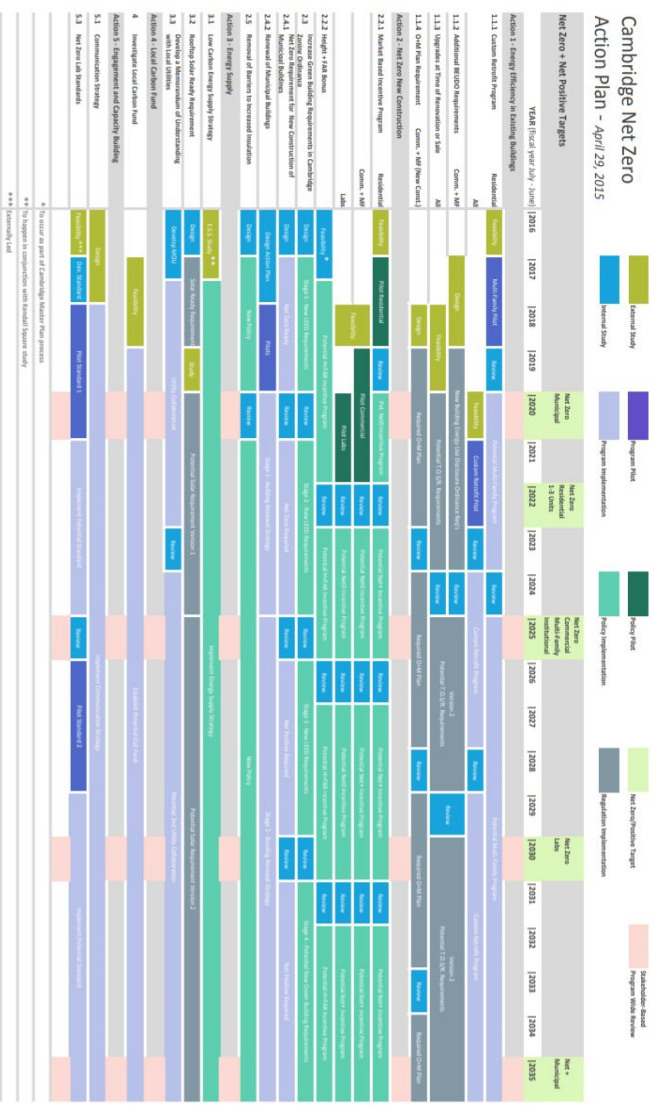
- 1.16 million tons CO₂ in 1990
- 1.46 million metric tons in 2012 and no lower in 2019
- ⇒ to do what the state law mandates, our GHG emissions must equal .58 million tons by 2030 which is **a 60% reduction from today.**
- Not a clear explanation of how Cambridge will exceed the state law and be a climate leader
- Climate goals disappeared from Cambridge website

In 2015, the NZAP adopted and implemented

Strength: set timelines
Weakness: few specific measurable goals, no enforcement of timelines

RESULT: Few deadlines met

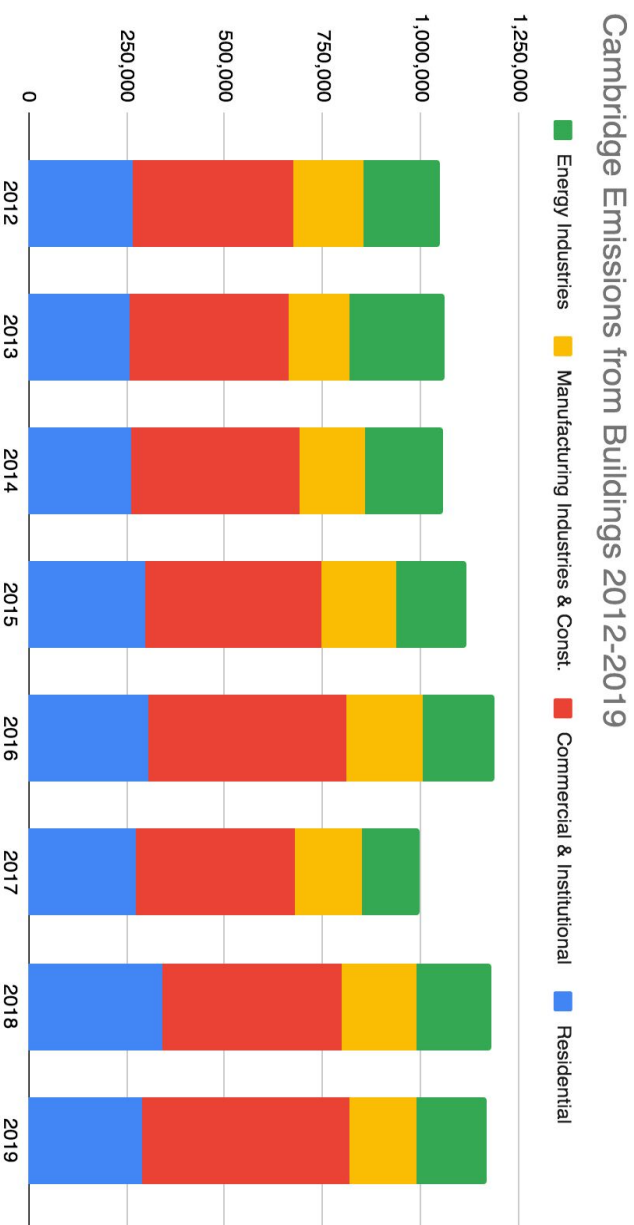
Status: Most steps behind targets by 1-4 years



NZAP 5 year review: Plan was ineffective

Emissions **INCREASED**

From 2012 - 2019,
total emissions
increased
[ex: buildings]

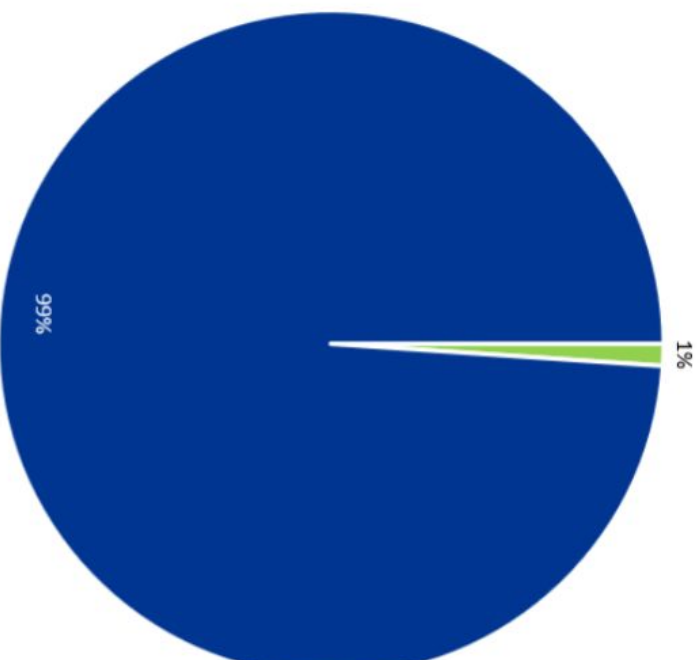


Source: DMV 2021 NZAP update page 10

NZAP 5 year review conclusion: plan was ineffective

Council Goal: Net zero buildings and transportation by 2035 [2017, 2021]

Emissions savings from NZAP actions, 2015 - 2019: MINIMAL leading to a dire warning in report



■ Total Emissions Reductions from NZAP Actions: 12,592 MTCO2e

■ Total Building Sector Emissions (2015): 1,185,294 MTCO2e

NZAP 5 year review conclusion:

“...over the next 10 years, emissions need to be reduced 240,000 – 290,000 MTCO_{2e} just to align with the 2°C Paris Agreement limit—**an almost 20x increase over the initial five-year period.** The city needs to remain aggressive in its approach and find additional ways to cut greenhouse gas emissions. **The next five-year period will be critical.** If the current trend continues and emissions remain flat, meeting the targets set by the Paris Agreement for 2030 will become much more difficult, and significant adjustments in strategy will be needed to achieve carbon neutrality by 2050.”

Summary: We need a commitment to an improved plan

Accelerated timeline

Accountability measures

Resources: time (staff) and funding to achieve goals