Warrant Article 16

To see if the Town will vote to raise and appropriate a sum of money necessary to hire consultants to provide advice and analysis to the Getting to Net Zero Task Force and Town staff, determine whether the money shall be provided by the tax levy, by transfer from available funds or by any combination of these methods, or to act in any other manner in relation thereto.

(Inserted by the Board of Selectmen at the request of the Sustainable Lexington Committee)

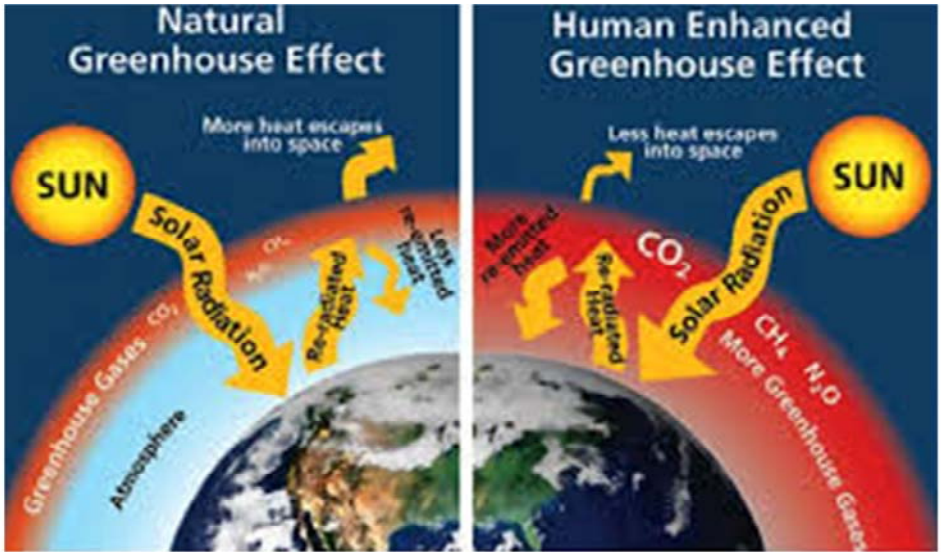
All we do for our children will mean very little if we allow the planet, their only home, to be destroyed by climate change.

Rebecca Woodward, Mothers Out Front

All we do for our children will count very little if we if we fail to leave them a sustainable planet.

My name is Lisa Fitzgibbons. I live with my family at 59 York St., Lexington.

I am a member of Mothers Out Front, an organization committed to ensuring a livable future for our children in the face of climate change.

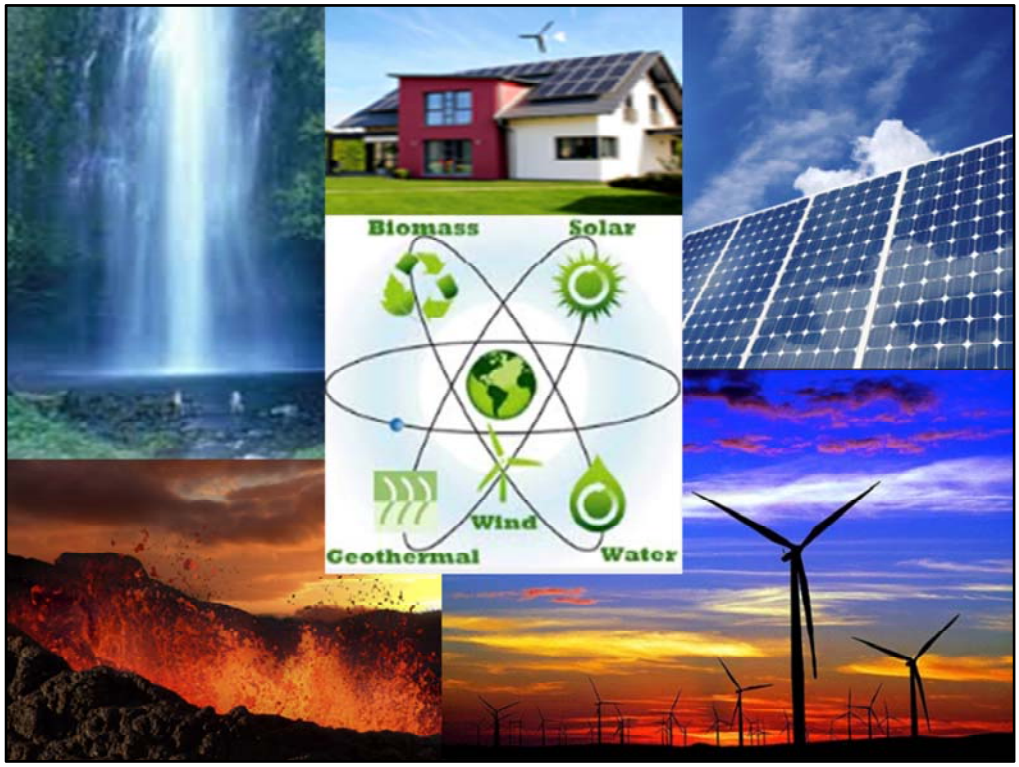


Climate change accelerated by humans is happening **faster than predicted.**

We have already raised the average earth's surface temperature 1 degree centigrade and we are **destabilizing** the climate.

The World Health Organization has named Climate Change the **leading threat to health** in this century.

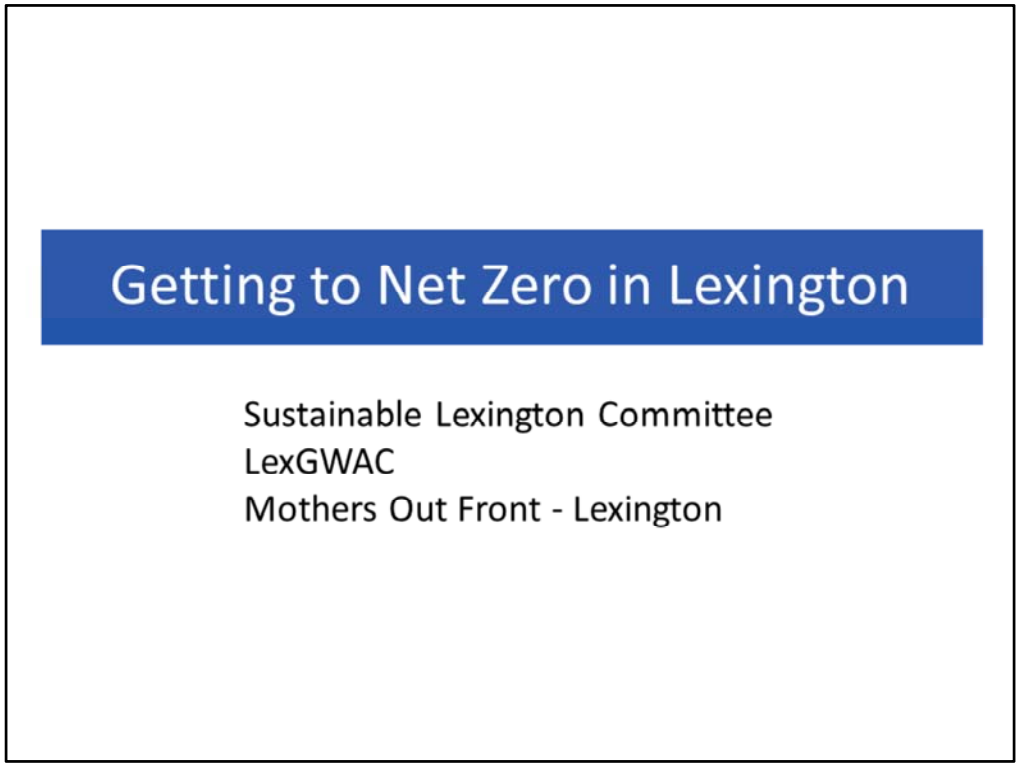
The United Nations, the EPA, and the National Institute of Health concur.



We urgently need to **curb** our GHG emissions and **transition** to a clean energy economy.

This transition requires **action at every level of government.**

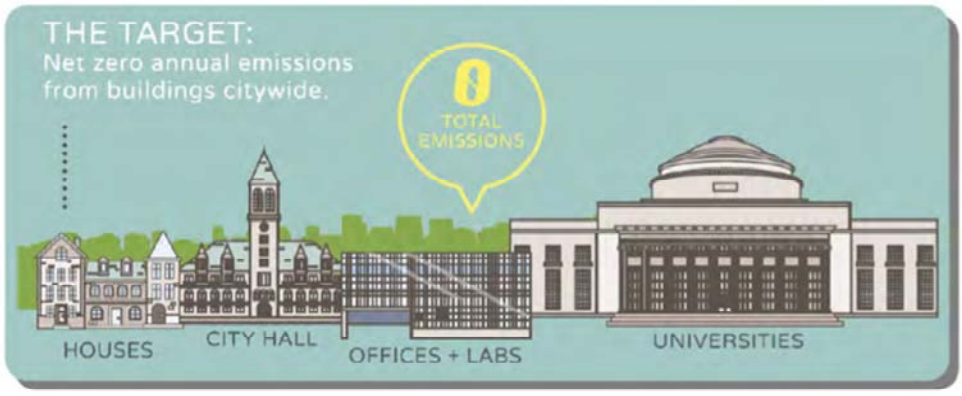
I'm here tonight to discuss local action that Lexington can take.



On behalf of Sustainable Lexington, LexGWAC, and Mothers Out Front, I have the privilege of presenting Getting to Net Zero Emissions

Net Zero Emissions

Our goal is to reduce net annual greenhouse gas emissions from the community of buildings in Lexington until a complete transition to renewable energy sources is possible.

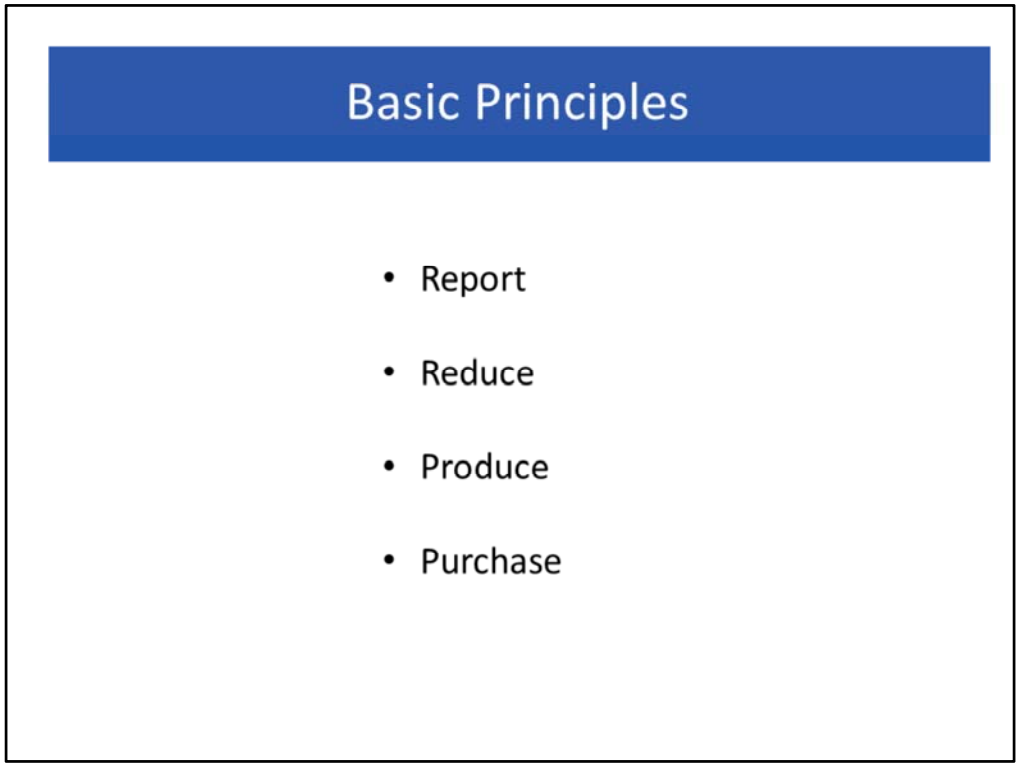


So, what can Lexington do to help mitigate climate change? We can **take responsibility for the GHG emissions we generate.**

And, we can **tackle the biggest single source** of those emissions: our buildings

What we're proposing for Lexington is a goal of Net Zero emissions from our buildings.

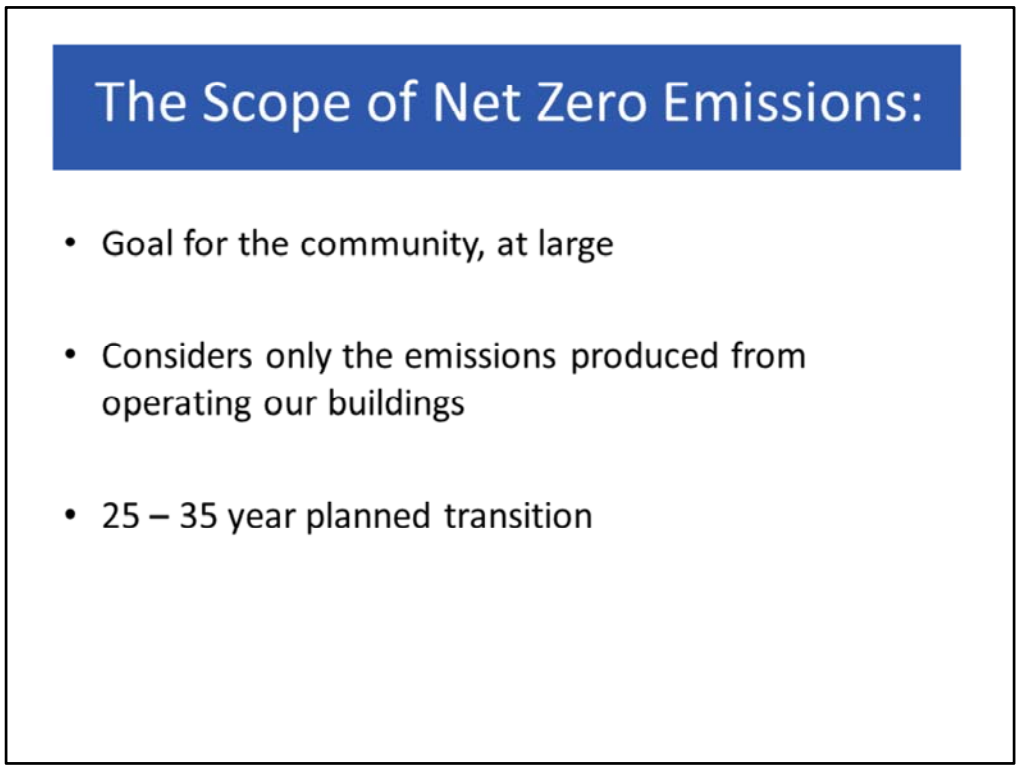
That means that we will **work to reduce** our **net annual GHG emissions** from the **community of buildings** in our town **until** a complete **transition to renewable energy** sources is possible.



- **Communities target net zero through these principles. They**
  - **Report building emissions**
  - **Reduce emissions via energy efficiency improvements and conservation measures**
  - **Produce renewable energy, on an off-site**
  - **Purchase renewable energy from third party suppliers**

  and, only if necessary,
  - **Purchase offsets or credits** for **any remaining CO2**

- Achieving net zero emissions for our buildings would mean that the community of Lexington's buildings would add no net greenhouse gas emissions to the atmosphere.
- **Anything less than net zero is fueling a climate crisis that will be catastrophic for the planet.**



In terms of **Scope**, this is a goal for the **community, at large**.
- Not every building or home needs to achieve net zero,
- Nor does every building need to generate all the energy that it consumes.

This goal **considers only the GHG emissions produced from operating our buildings** -
- Not the emissions used to construct those buildings.

We are allowing for a 25-35 year planned transition addressing the easiest targets first, allowing more time for the challenging ones.

Why Net Zero Emissions for Lexington?

- Moral obligation to future generations
- Action at all levels of government required

Source: http://cor.europa.eu/en/documentation/brochures/Documents/EU_cities and regions leading the way against climate change/COP21.pdf

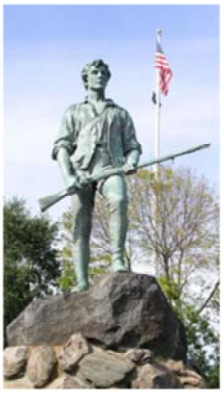
Why pursue a Net Zero Emissions Goal for Lexington?

We have a **moral obligation to future generations to leave a livable planet**. This **urgently requires** reducing our GHG emissions.

Addressing climate change will demand action at all levels of government. 70% of all climate change mitigation measures and 90% of all adaptation measures are implemented at the LOCAL level. Lexington can and should take responsibility for reducing the GHG emissions that we generate.

Why Net Zero Emissions for Lexington?

- Town's commitment to addressing Climate Change.
- Significant impact on our emissions.
- Focus on our entire building stock
- Essential element to meeting 80% emission reduction goals by 2050.
- Lexington's legacy as a regional and national leader.



Getting to Net Zero is a **Natural next step** in our town's **commitment to addressing** Climate Change.

In 2013, TM adopted **our Climate Change Warrant Article** to develop a comprehensive climate action plan, to reduce our **emissions** and to **consider climate change in all our town decisions and planning.**

A Net Zero goal puts teeth in this commitment.

A Net Zero goal will have a **Significan**t impact on our emissions because it **tackles the biggest source** of those emissions – our buildings.

It **Focuses** us on the **performance** of our **entire building stock**, not just municipal and school buildings which account for **2%** of our emissions today.

Lexington's **emissions have been flat** for the last several years. **"Business as usual"** will **not** allow us to **meet** our **Global Warming Solutions Act**

target of **80% GHG emissions reduction by 2050.**

By taking **responsibility** for reducing our emissions, Lexington **charts a path towards sustainability** and a livable future for our children that other town's can and will **emulate.**

The Opportunity for Lexington

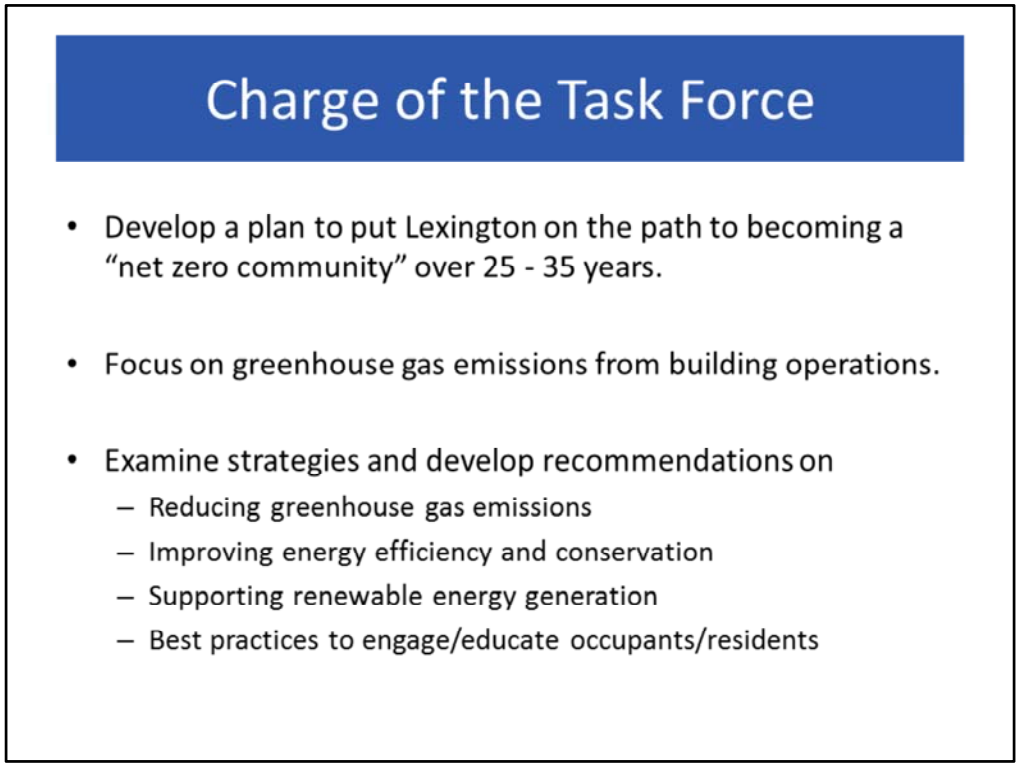
- Greener buildings = healthier buildings
- Dramatically lower total life cycle cost
- High performance buildings = competitive advantage and differentiator
- Planned major capital investments over the next 5 years

Furthermore, green buildings are **healthier buildings** with **indoor air quality** that **increases productivity and comfort.**

And, they have **lower operating and total lifecycle costs.**

Higher performing buildings can translate into a **competitive advantage** and a **differentiator** for the owners and the town.

Moreover, **Lexington's planned investment in its schools and municipal buildings** over the next five years could **benefit** from this work.



So how do we get started on a path to net zero emissions? We establish a net zero emissions task force.

The **charter** of this task force is to **explore dramatically lowering Lexington's emissions from our built environment over the next 25 – 35 years**.

The **scope** includes **all buildings – municipal, commercial, and residential.**

This task force would examine strategies and develop recommendations to

- **Reduce emissions**
- **Improve energy efficiency and conservation** on **new and existing** buildings
- Support **renewable energy generations**, both **on and off site**
- Identify **Best practices** to engage users and influence resident/occupant behavior

Governance

- Ad hoc, town task force
- Members approved by Board of Selectmen
- Term: 12 – 18 months
- Report out to the Board of Selectmen

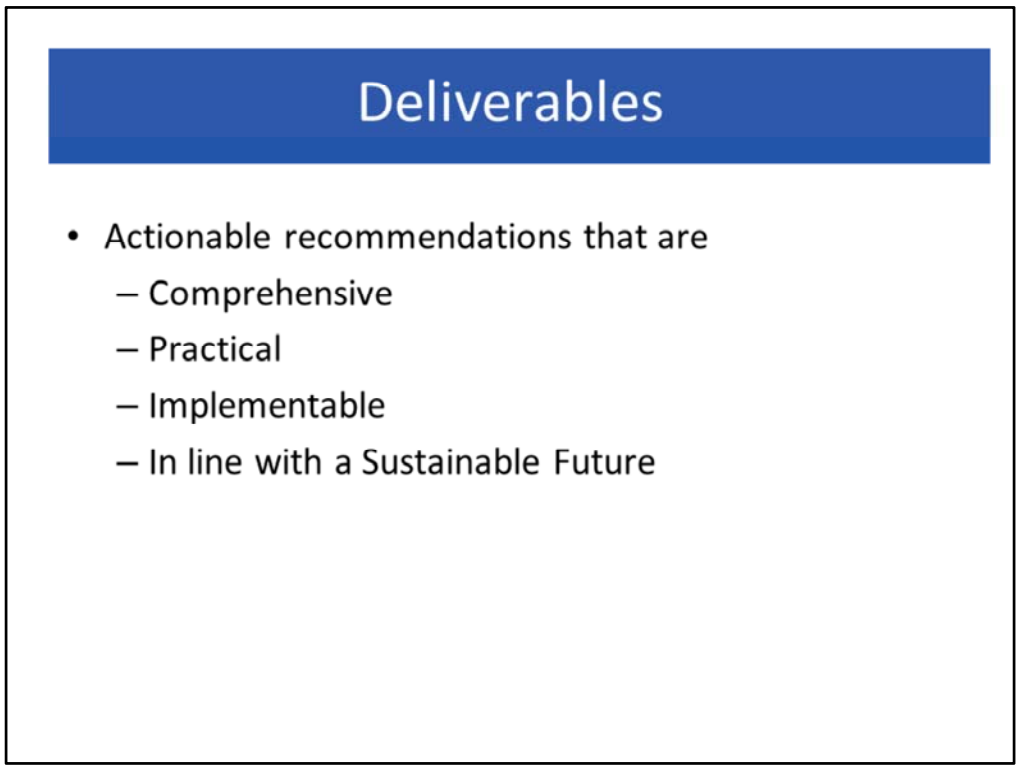
How would this task force work?

This will be an **ad hoc, community task force**.

Members will be approved by the BOS

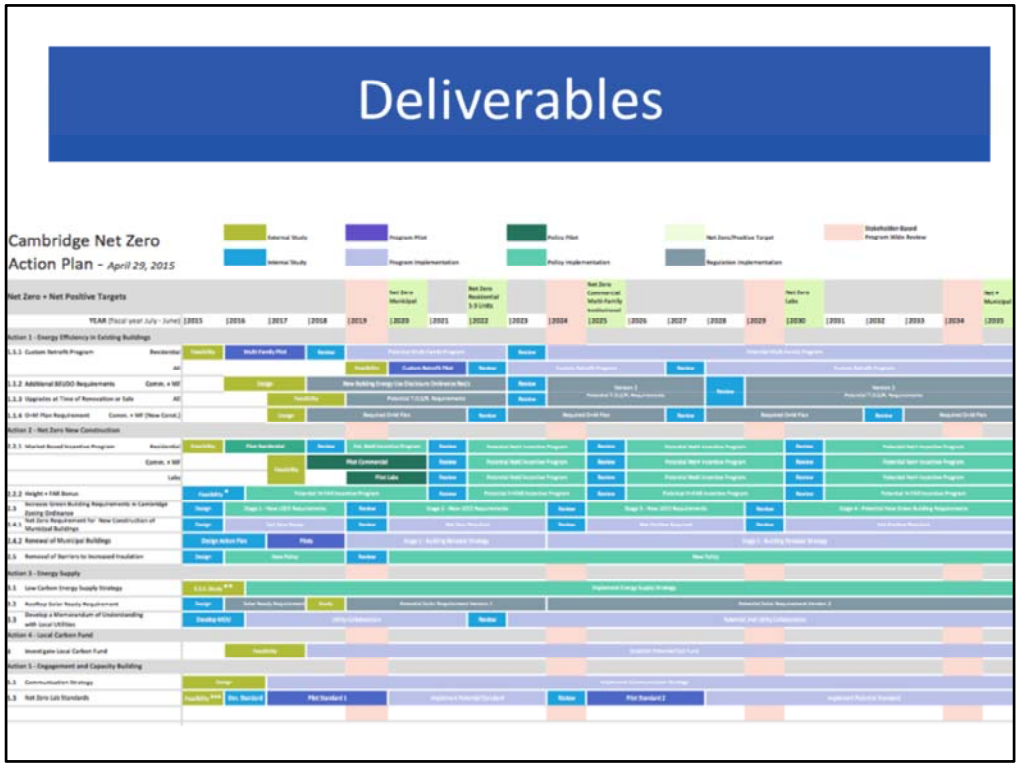
And will report out to the BOS

Term: 12- 18 months



This group would be responsible for delivering **actionable recommendations** that are

- **Comprehensive**
- **Practical,**
- **Fiscally Responsible**
- And consistent with **a Sustainable Future**



This is the **Action Plan Roadmap** for **Cambridge** based on the work of it's Net Zero Task Force.

While you can't read the detail, it includes on the left a number of **policy, regulation, and program initiatives** in the areas of **energy efficiency, new construction, energy supply, and engagement**.

On the right you see the **timeline for study, pilot, implementation, and review**. We hope to produce something similar for Lexington.

Stakeholders

- Diversity is Key - All Major Stakeholders included

- Business Leaders / Community Leaders
- Large Commercial Property Owners
- Residential Property Owners / Real Estate
- Non-profit Leaders
- Architects / Green Building Engineer – Experts
- Town Committees:
  - School Committee / Parents
  - Planning / Economic Development Representatives
  - Historic Districts / Historical Commission
  - Sustainable Lexington / other Town Committees
- Selectmen / Town Staff

Who sits on this task force?

Representatives from **All Major Stakeholder Segments responsible** for our **buildings** in Lexington**.**

This is a list of Stake holders developed with input from our Selectmen and Sustainable Lexington.

Ideally you want fewer than 20 folks because of the cost of coordination. Cambridge had 15.

This task force, in turn, will have working groups focused on key areas. Cambridge had four working groups focused on

- Energy Supply and Alternatives
- Regulation and Policy
- Financing and Incentives
- Education, Engagement, and Behavioral Change

Task Force Process

- Baseline Research
- Tools and Technical
- Facilitation
- Getting to Zero Action Plan
- Community Engagement
- Adoption
- Implementation

In doing this work, **we have the advantage of following cities, like Cambridge. We would most likely use a process similar to theirs**.

This process involves

- **Baseline research**
    - **Understanding Lexington's building stock and it's emissions.**
- **Tools** and **Technical Support**
    - **Statistical models, Best Practices, Energy Supply Primer**
- **Facilitation** to ensure **buy-in** across stakeholders
- An **Action Plan** with final report and roadmap and timeline
- **Tactics for Community Engagement**
- (Hopefully) **Adoption**
- **Recommendations for Implementation**

We recommend using **consultants** to Help with this process which is why we are requesting funds from town meeting.

Cambridge did this work in 16 months spending $175k

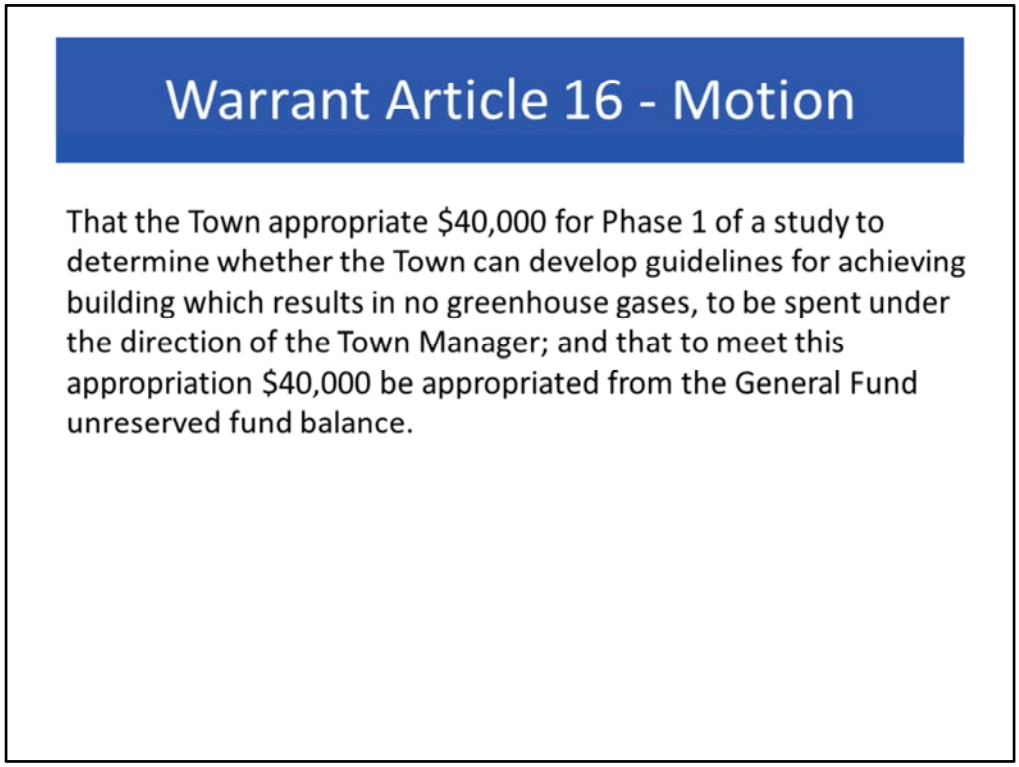
We believe that we could do this work in Lexington in 12 months spending $100k or less.
Respecting budgetary constraints we are asking for $40k this year, with the hope of securing another $40k next year with any remaining necessary funds coming the following year. Given this funding cycle, we believe the task force will work for 12 -18 month over more than one fiscal year.

Why hire consultants?

Consultants bring **technical and professional expertise and experience** that will **speed us up the learning curve**, reducing the timeframe to an action plan. (Firms that Lexington would consider hiring have helped dozens of cities and towns tackle their GHG emissions.)

Town staff is fully employed and does not have the bandwidth to guide this work.

While Lexington has an enviable base of talented volunteers, these **residents are** likewise **extremely busy**. Expecting them to provide this technical and professional expertise will increase their workload and significantly slow the pace of deliverables.



The Lexington Board of Selectmen, Planning Board, Economic Development Advisory Committee and Sustainable Lexington committee have all unanimously endorsed this article, and the Appropriation Committee has reviewed and recommended adoption of this warrant article.

Sustainable Lexington, LexGWAC, and Mothers Out Front hopes that you'll vote to adopt this warrant article 16 – and put Lexington on the path to Net Zero!

Thank you!

Background Slides

Communities Pursuing Net Zero

- Cambridge, MA
- Somerville, MA
- Austin, TX
- Seattle, WA
- Fort Collins, CO
- Boulder County, CO
- Rochester, MN
- Montpelier, VT
- Palo Alto, CA

These are some of the communities that are pursuing Net Zero. (I think it would be good to mention Concord, MA)

Austin, TX , Seattle, WA, and Fort Collins, CO, all have the goal of achieving Net Zero emissions **community-wide by 2050.**

Our neighbor, **Somerville, MA** has a goal for its community to be carbon neutral by 2050.

Montpelier, VT: aspiring to be the **country's first net zero (state) capital.**

Palo Alto, CA: currently **updating their climate action plan** and beyond considering the goal of carbon neutrality by 2050, they are **considering the "moonshot" goal of achieving net zero by 2025**.

Weighing Costs & Benefits

- Upfront Premium
- (Incentives + Rebates)

- Lower Operating Costs
- Lower Lifecycle Costs
- Healthier Buildings
- Higher Rental Value
- Higher Resale Value
- Faster Resale Rate

If you choose an experienced architect/builder and take advantage of incentives and rebates, **building for deep energy efficiency can be cost equivalent to a conventional build**. **Remodeling to dramatically improve efficiency and potentially to produce energy on-site does cost more** than a conventional remodel.

The **key factors** contributing to this **premium** are

1) The **contractor's experience** with building for energy efficiency, conservation, and energy production.
2) The **depth/degree of energy efficiency and on site production**
3) An **integrative design process** where energy efficiency, conservation, and production goals are considered in the **early stages of design**
4) The **products and materials chosen**

Again, **this premium can be mitigated** by taking advantage of **incentives** and **rebates**.

Any discussion of upfront costs needs to be balanced with **cost benefits**.

Energy Efficient homes have **lower operating costs**. With today's low financing costs, often the savings in operations are greater than the annual interest payments for the renovation. Lower operating costs coupled with **lower maintenance costs** mean that these homes are **cheaper to own; they have lower lifecycle costs.**

These buildings are **healthier** and **more comfortable** for their occupants.

They have **higher rental value**, because **clients value the operating savings and the health and productivity benefits**.

They have **higher resale value** and **faster rates of resale**. **Every $1 spent on energy efficiency is worth $15 - $20 at the time of resale.**

Any true consideration of savings should include **forgoing the carbon cost** of associated with the emissions that would have been generated with a conventional build ($37 - $220 per ton depending on whose calculation you believe.)