

BE BOLD: A Community Conversation on Climate Change

Alexandra Vecchio
Climate Change Program Director
01/14/20



Agenda

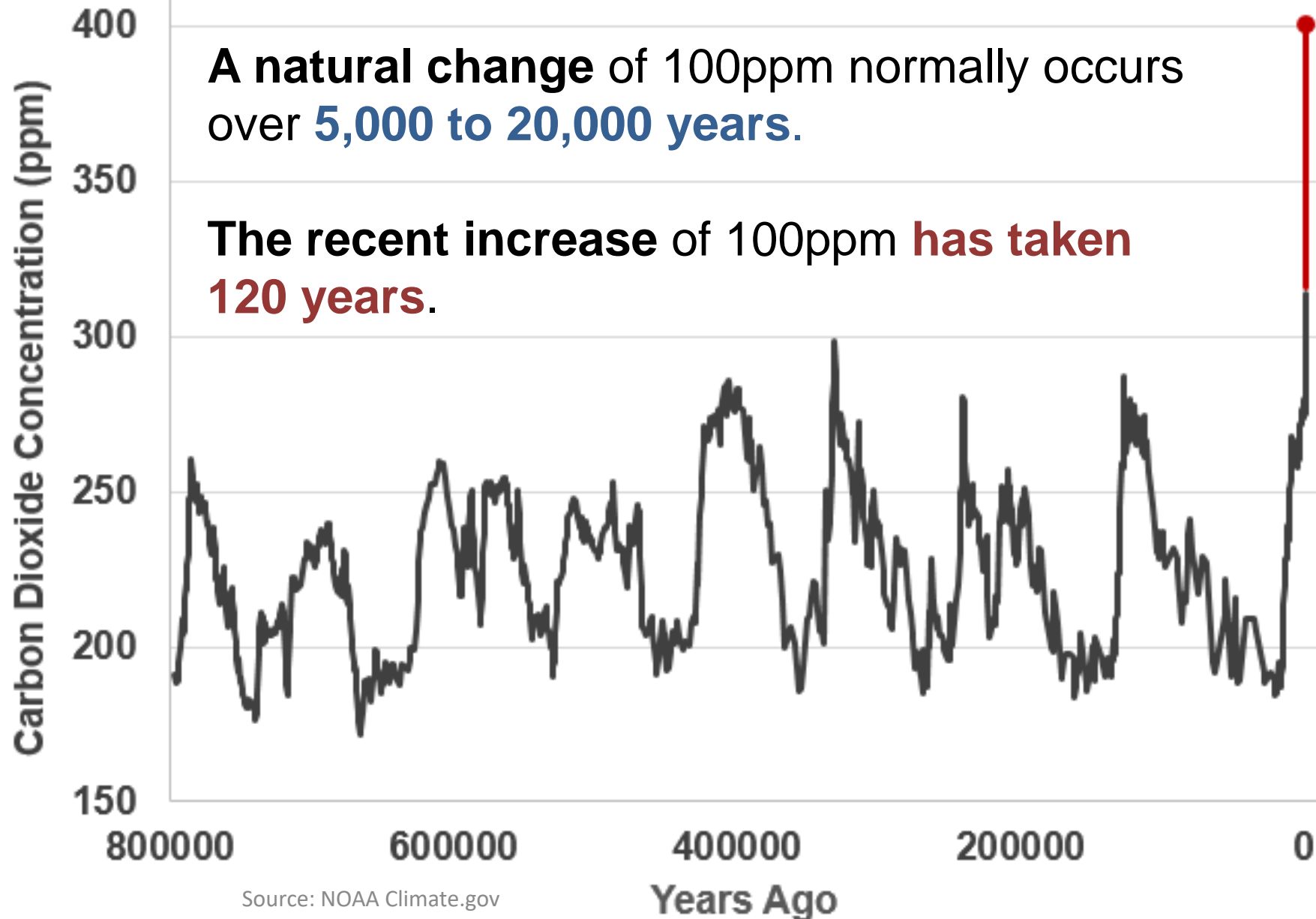
1. Introduction to Climate Communications and Project Drawdown
2. What is the Town of Sudbury doing to address climate change?
3. Solutions Focused Community Conversations
4. Individual Reflection & Commitments
5. Q & A



Climate change:

1. Experts agree.
2. It's real.
3. It's bad.
4. It's us.
5. We can fix it.

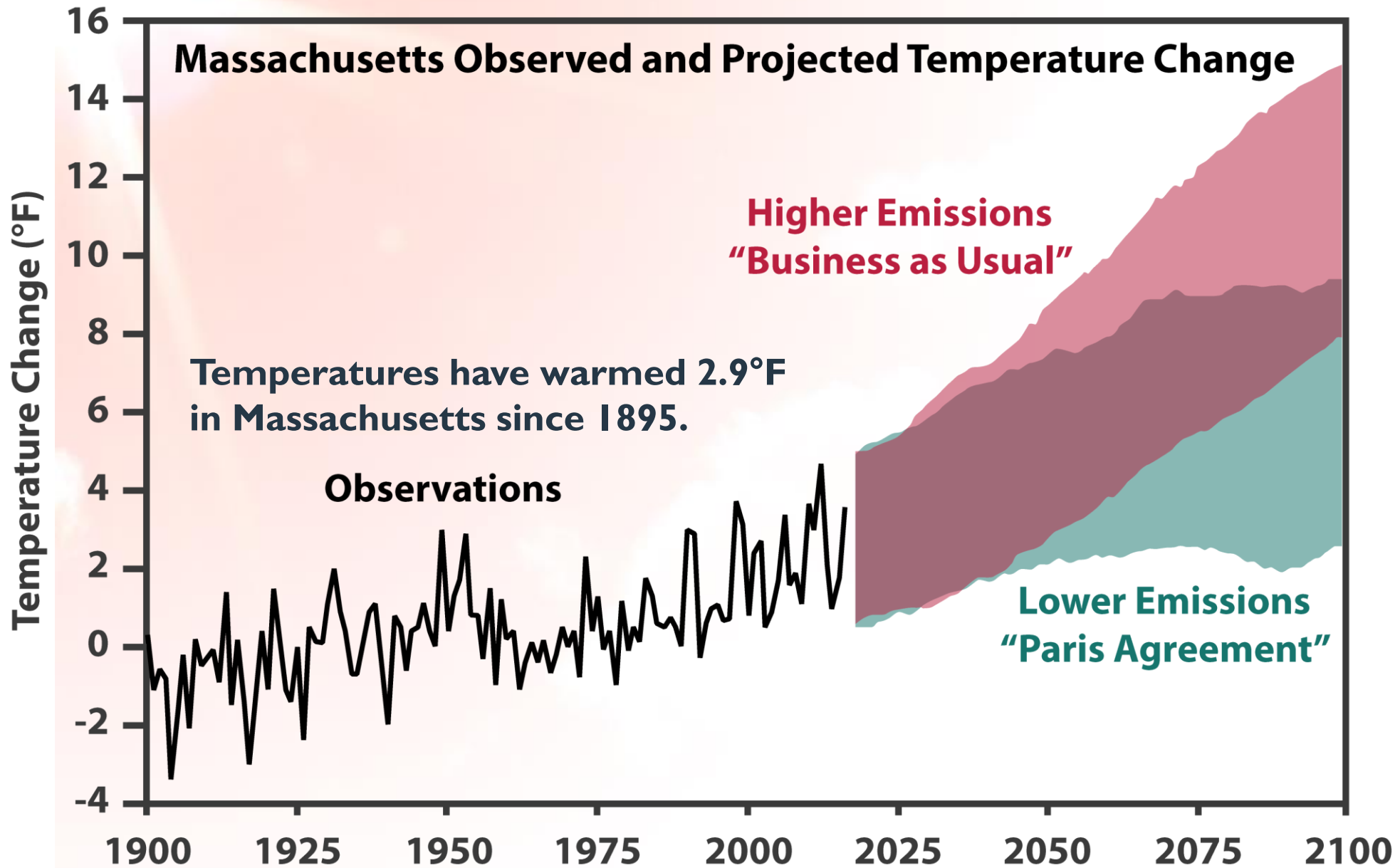
Historic Carbon Dioxide Concentrations 800,000 Years Ago to Present



A natural change of 100ppm normally occurs over **5,000 to 20,000 years**.

The recent increase of 100ppm **has taken 120 years**.

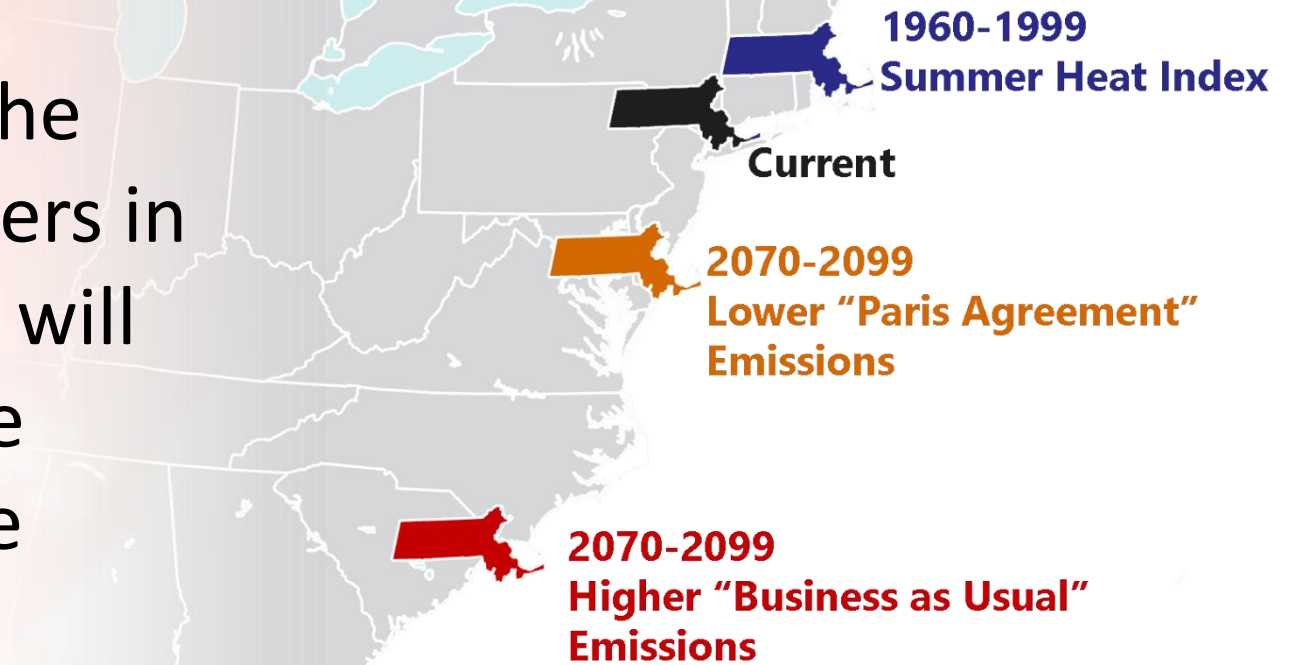
Source: NOAA Climate.gov



If we don't reduce emissions, temperatures could rise 10°F or more by 2100.

Migrating Massachusetts

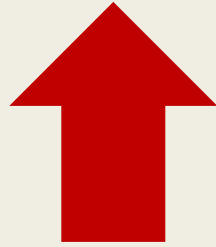
By the end of the century, summers in Massachusetts will “feel” more like summers in the South.



**How Summer Temperatures Will Feel
Depending on Future Greenhouse Gas Emissions**

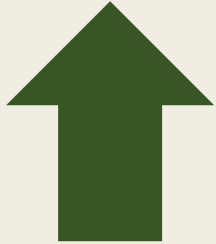
Future Climate Changes in MA

Temperature:



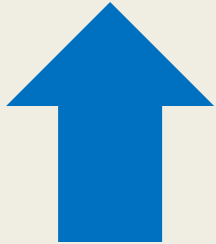
3 to 11°F
by 2100

Growing Season:



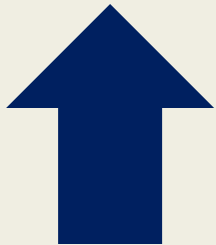
5 weeks
by 2100

Sea Level Rise:



3 to 7'
by 2100

Strong Storms:



47%
by 2100

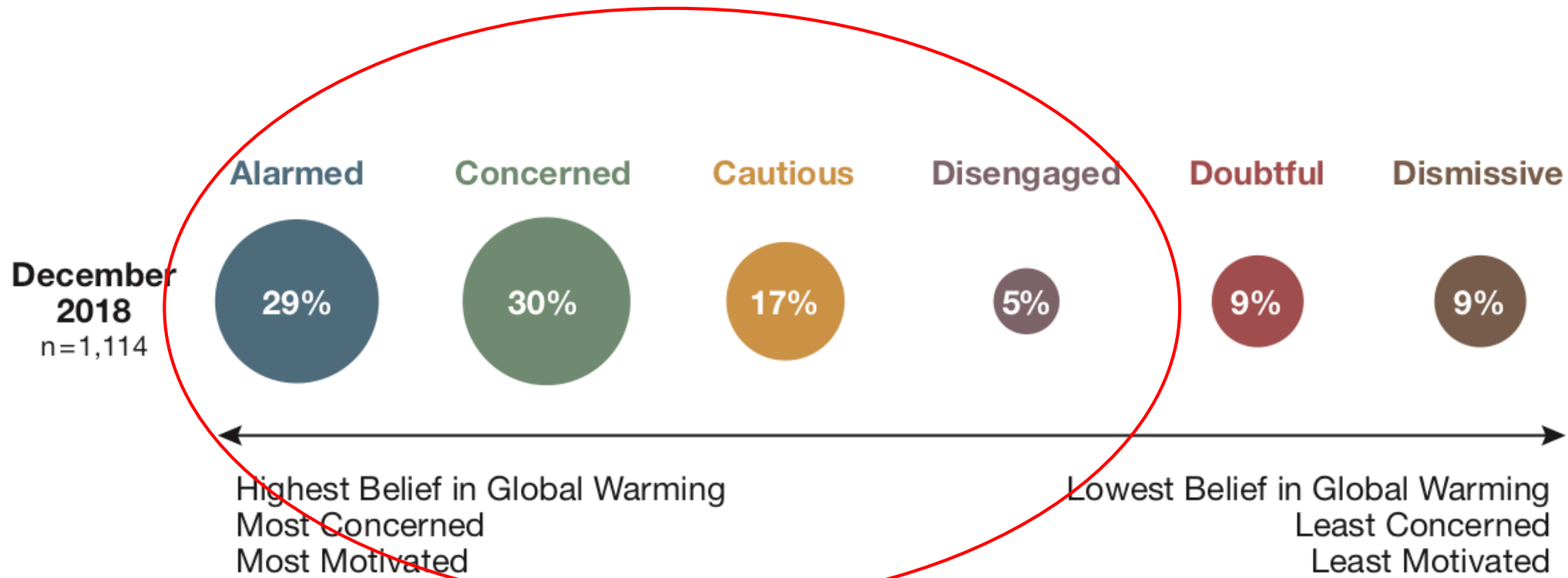


David L. Ryan/The Boston Globe via Getty

Ok, that sounds alarming....

What should I do?





“Deniers” vs “Believers”

Effective Climate Action

- Requires *productive* public discourse and civic engagement
- 72% of Americans understand climate change is happening now
- Yet, 65% of Americans discuss climate change only occasionally or never
- Practice makes perfect – time to join the discussion

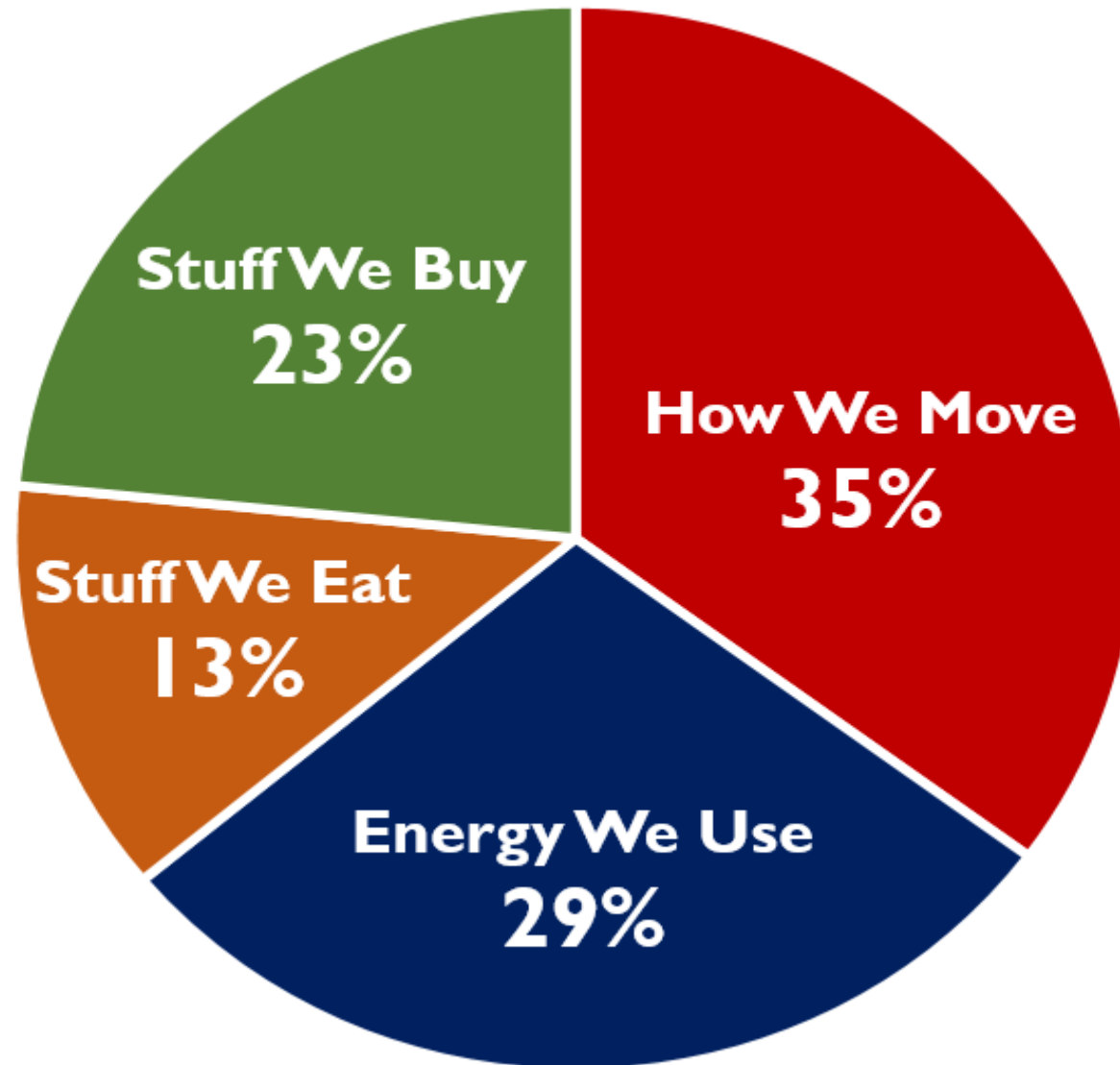
Your Voice Is Needed

Climate Communications 101

1. Find common ground and **meet people where they are** on climate change
2. Emphasize how climate change affects us **here and now**, in our everyday lives. Stay **place-based** and **local**.
3. Focus on how climate change engagement ultimately makes their **lives and livelihoods better**
4. Creatively empower people to take **meaningful and purposeful action** on climate change
5. “Smarten Up” climate change communications to **match the demands of the audience** you are trying to reach



SOURCES OF THE AVERAGE MASSACHUSETTS RESIDENT'S CARBON EMISSIONS



Estimates based on data from the State of Massachusetts and emissions categories from the Union of Concerned Scientists.

Mitigation: Actions taken to prevent or reduce GHG emissions



Adaptation: Actions taken to help communities and ecosystems cope with actual/expected effects of climate change

Conserve available open space providing ecosystem services



Integrate concepts into new development at neighborhood scales



Restore resilience in urban areas at site specific scale

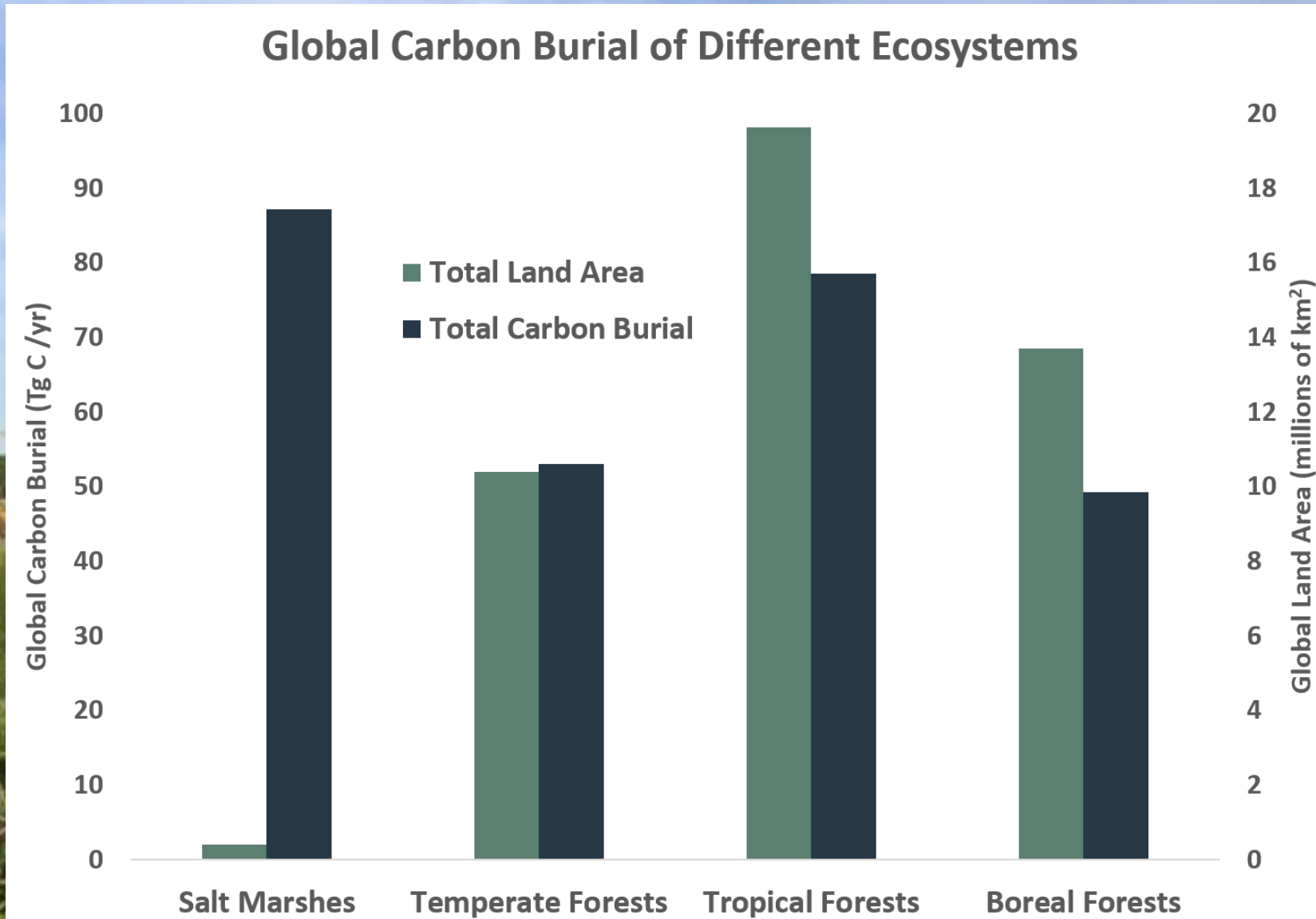


There are real solutions that already exist

**One of the best climate change actions is
preserving natural areas.**



Salt Marshes as a Solution



Data Source: McLeod et al. 2011

Every year, urban forests in the 15 communities of MetroWest Boston

BU Urban Climate Initiative

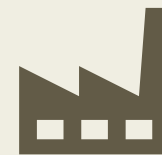
Source: Hong-Hanh et al. 2018

Remove
7.5 million
pounds of air
pollutants



Help avoid
527 million gal.
of stormwater
runoff, worth
\$4.7 million

Store
962,000 tons
of carbon, worth
\$125 million



The image features a series of high-voltage power transmission towers, also known as pylons, silhouetted against a vibrant sunset sky. The towers are arranged in a line, receding into the distance, creating a sense of depth. The sky is a mix of orange, yellow, and blue, with some light clouds. The overall mood is serene and industrial.

Green the Grid: Community Choice Aggregation

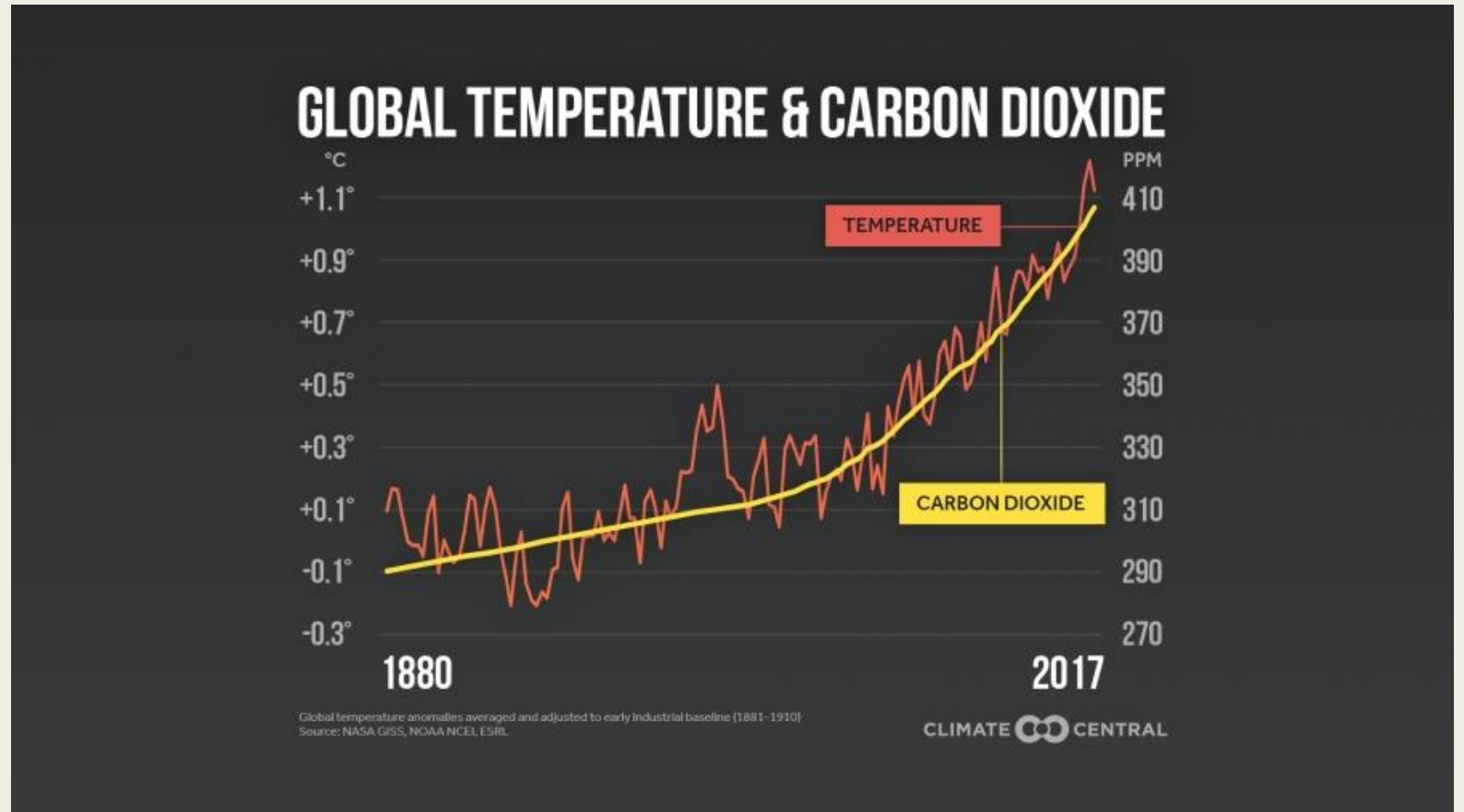
Municipalities can buy renewable energy in bulk to serve consumers in their city or town

EDUCATING GIRLS / ELIMINATING FOOD
WASTE / LOW FLOW HYDRO / SHARING
ECONOMY / SOLAR MICROGRIDS / FUEL
CELLS / GREENROOFS / LIVING BUILDINGS
/ DYNAMIC SKINS / AIR HEAT PUMPS /
KITE SAILS / ROTATIONAL GRAZING /
SMART GRID/SMART METERS / SOLAR
FARMS / TIDAL ENERGY / WIND TURBINES
/ CONGESTION PRICING / GREYWATER
SYSTEMS / HIGH SPEED RAIL / VERTICAL
FARMING / AFFORESTATION / AVOIDED
DEFORESTATION / BIOCHAR / BIOLOGICAL AGRICULTURE / CARBON FARMING
/ NO-TILL FARMING / PASTURE CROPPING / BIKING / REFORESTATION /
DEMAND RESPONSE / LOW-FLOW FIXTURES / SOLAR HOT WATER
/ SOLAR PV / CHILD HEALTHCARE / FAMILY PLANNING /
PYROLYSIS / ENERGY STORAGE / WHITEROOFES /
ALGAE BIOFUELS / CAR EFFICIENCY / AGRO
FORESTRY / CENTRATED SOLAR /
RECYCLING TRUCK BUILDING /
INTEGRATED SOLAR /
REFORESTATION /
BIOMASS
HEAT

DRAWDOWN

The Concept: Drawdown

The term "Drawdown" refers to the point in which the **global concentration of greenhouse gases peak and then go down continually** on a year-to-year basis



Drawdown Solutions

Ranked by the potential to avoid or sequester the amount of GHG's in the atmosphere from 2020-2050.

7 Solution Categories:

Land, Energy, Food, Women & Girls, Buildings & Cities, Transport, Materials

All but two solutions are "No Regret Solutions"

This is due to the economic, social, and health benefits.

DRAWDOWN

100 SOLUTIONS TO REVERSE GLOBAL WARMING BY 2050

RANKED BY IMPACT

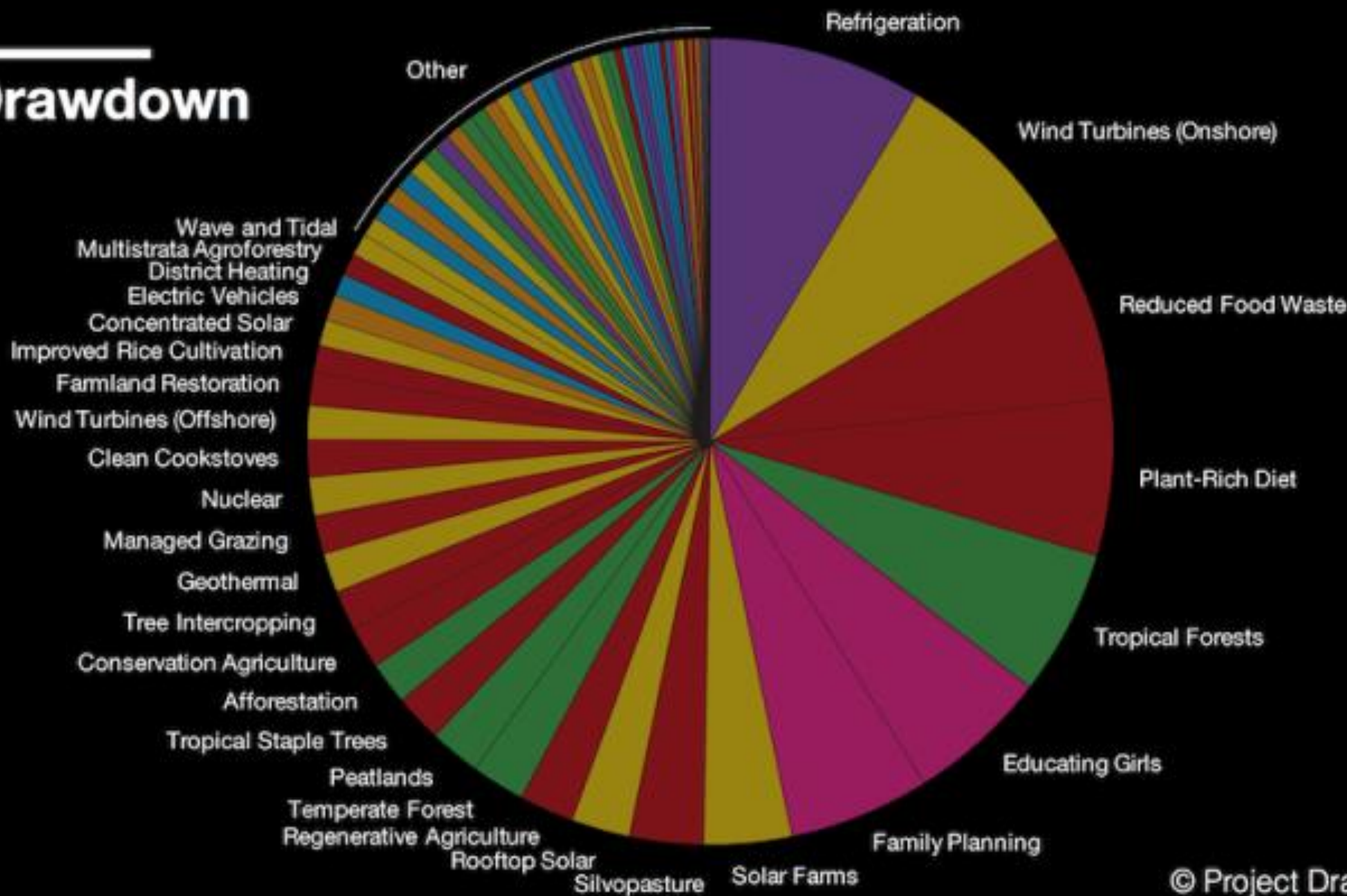
drawdown.org



Solutions by Rank

Rank	Solution	Sector	TOTAL ATMOSPHERIC CO2-EQ REDUCTION (GT)	NET COST (BILLIONS US \$)	SAVINGS (BILLIONS US \$)
1	Refrigerant Management	Materials	89.74	N/A	\$-902.77
2	Wind Turbines (Onshore)	Electricity Generation	84.60	\$1,225.37	\$7,425.00
3	Reduced Food Waste	Food	70.53	N/A	N/A
4	Plant-Rich Diet	Food	66.11	N/A	N/A
5	Tropical Forests	Land Use	61.23	N/A	N/A
6	Educating Girls	Women and Girls	51.48	N/A	N/A
7	Family Planning	Women and Girls	51.48	N/A	N/A
8	Solar Farms	Electricity Generation	36.90	\$-80.60	\$5,023.84
9	Silvopasture	Food	31.19	\$41.59	\$699.37
10	Rooftop Solar	Electricity Generation	24.60	\$453.14	\$3,457.63

Drawdown



#54

Walkable Cities

Key drivers of Walkability:

Demand, density, design, destination, distance, & diversity

Health, economic, social, and aesthetic benefits of walkable cities

GHG Impact:

5 percent of trips currently made by car can be made by foot instead by 2050. That shift could result in 2.9 gigatons of avoided carbon dioxide emissions and reduce costs associated with car ownership by \$3.3 trillion.



Guangzhou, China

Rami Alwan

**Chair of Energy & Sustainability
Committee**

Beth Suedmeyer

**Environmental Planner- Planning &
Community Development Department**

Ask Yourself....

- What issues am I excited about?
- What do I need to know?
- Who do I need to talk to?
- How can I create collective action?

Be patient...but persistent!



Moving from “Me” → “We”

	Community (neighborhoods, schools, institutions, workplaces, public spaces)	City or Town	State / Region
Electricity Generation	Installing rooftop solar at school or work	Community Choice Aggregation	Greening the Grid
Transportation			
Food			
Buildings & Cities			
Land Use			
Materials			



Think, Pair, Share

1. How could this solution be relevant to Sudbury or New England at-large?
2. Do you think this solution is socially, economically, and ecologically practical?
3. Does this solution excite you? Why or why not?
4. Who should be "at the table" if such a solution were to be implemented?
5. Can you think of an example where this solution already exists?





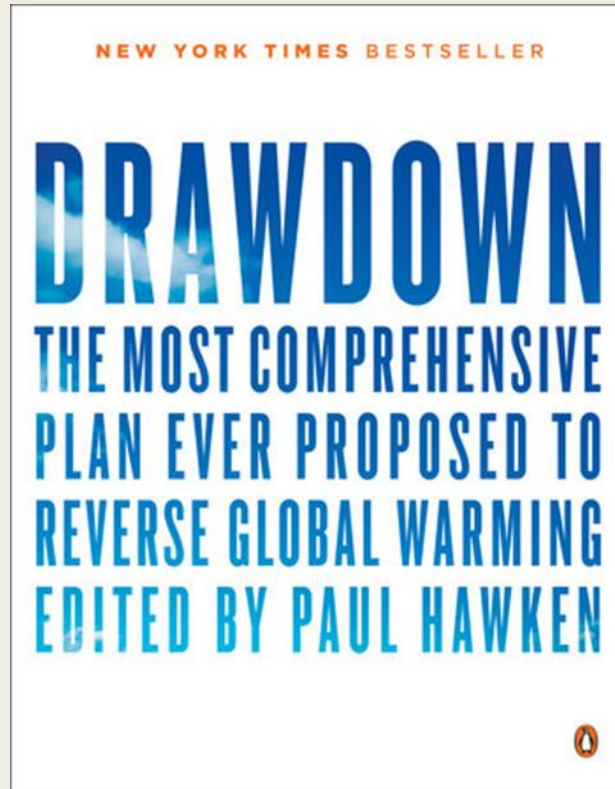
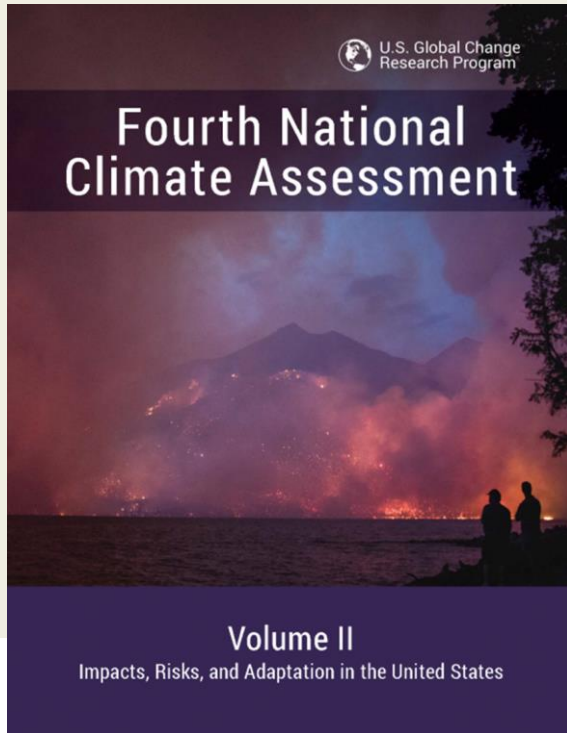
2050: The Future I Imagine

Continuing the Conversation

1. What did you learn that was new?
2. Where should Sudbury go from here?
3. How will you continue to have productive climate conversations?
4. **What are three steps you will take to combat climate change after leaving here tonight?**



Additional Resources



resilient MA

Climate Change Clearinghouse for the Commonwealth



C-CHANGE CENTER FOR CLIMATE, HEALTH, AND THE GLOBAL ENVIRONMENT





“We are all members of a great human orchestra and it is now time to play the Save the World Symphony.

You do not have to play a solo, but you do have to know what instrument you hold and find your place in the score.”

– Sandra Steingraber