

# Coming Soon: New Funding for Improving Existing School Facilities



**November 8, 2024**



# Today's speakers

**Joanne Bissetta**, Green Communities /  
Department of Energy Resources

**Kim Cullinane**, Eversource

**Tom Chase**, Massachusetts Clean Energy  
Center

**Mary Pichetti**, Massachusetts School  
Building Authority

**Amanda Formica**, National Grid

with moderators:

**Matt Connolly**, Office of Climate  
Innovation and Resilience

**Sara Ross**, UndauntedK12

# Why do school facilities matter?

**Educational  
model**

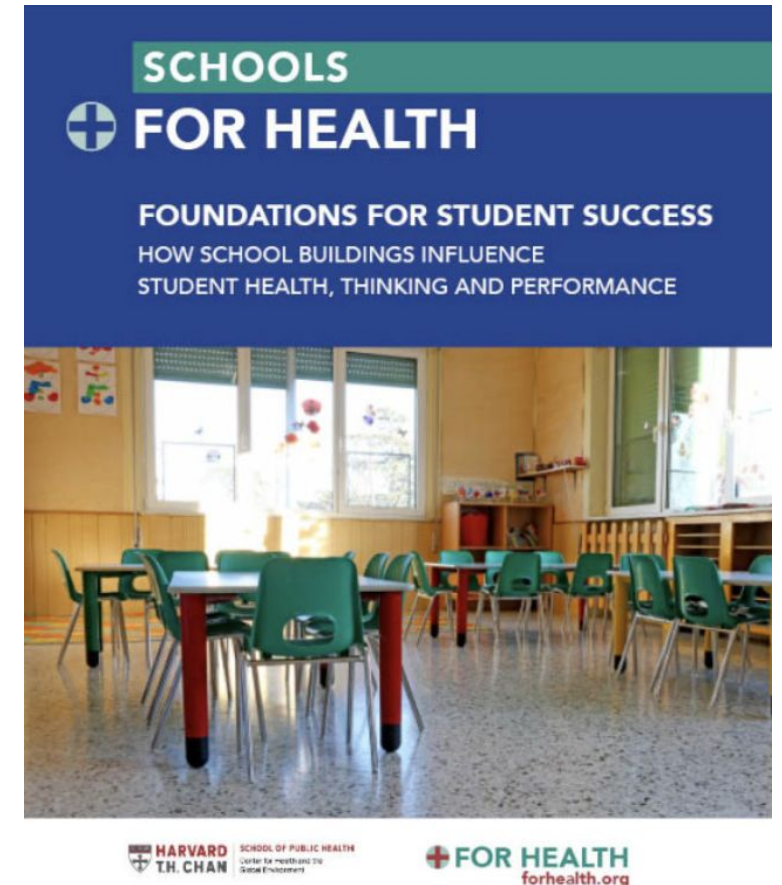
**Pressure on  
operating  
budgets**

**Student  
health,  
thinking &  
performance**

**Regulatory  
environment**

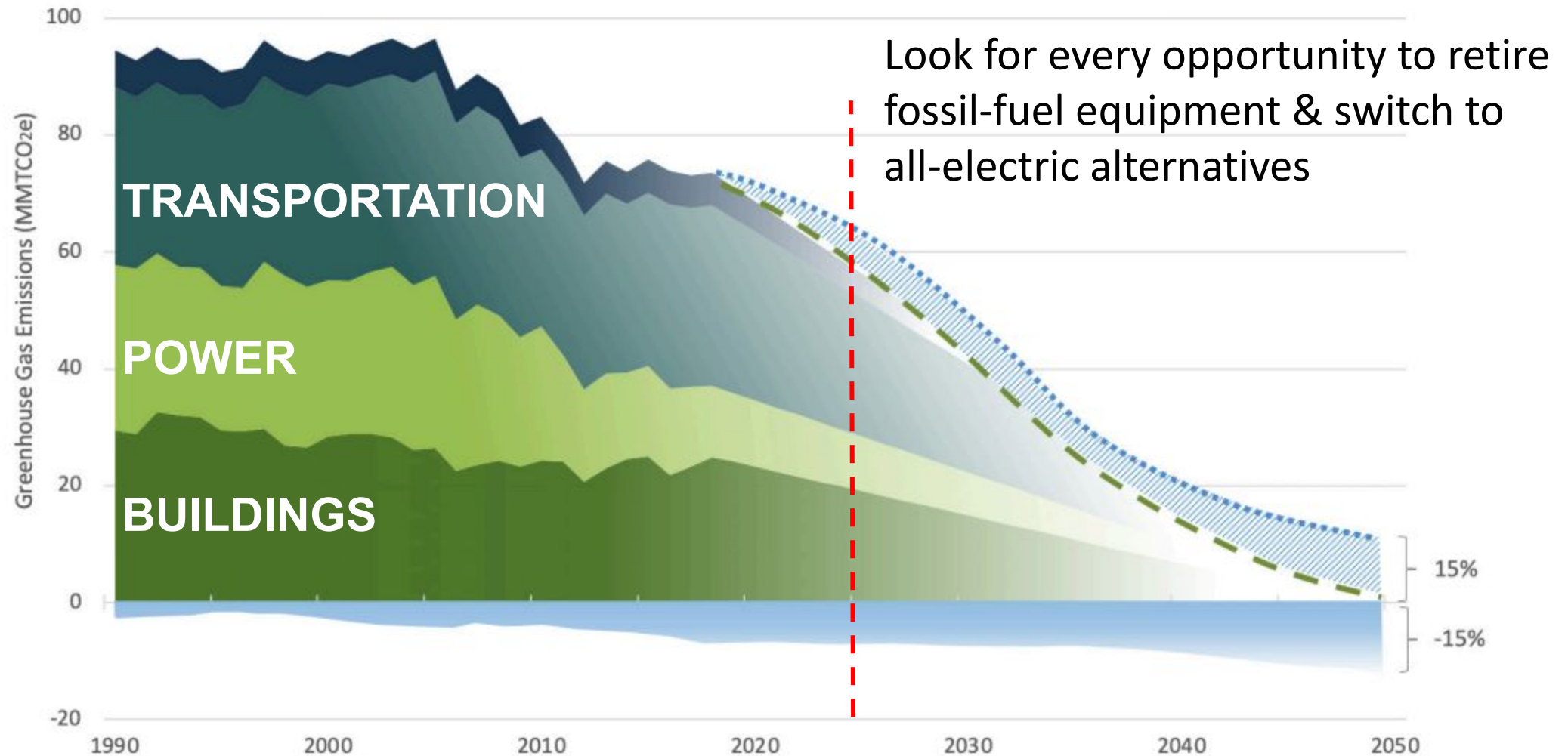
**Educator &  
staff relations**

**Youth mental  
health crisis**



<https://schools.forhealth.org/>

# State law requires that we reduce greenhouse gas emissions



# Climate-smart investments can help you respond effectively

Educational  
model

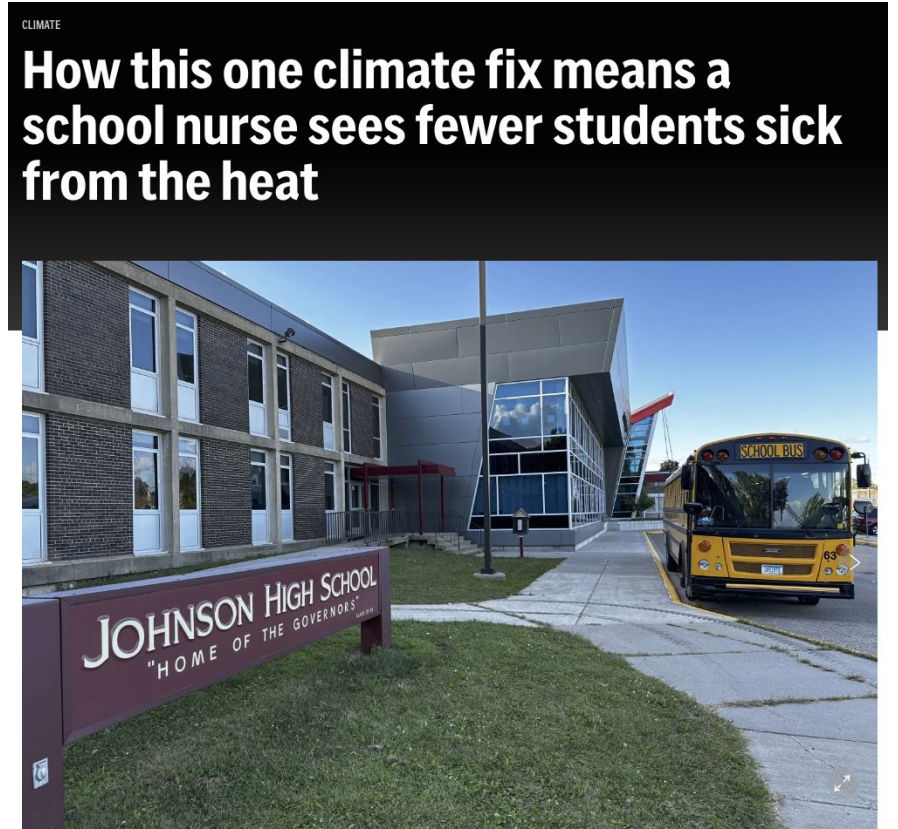
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1 of 9 | A school bus sits outside Johnson Senior High School in St. Paul, Minn. Sept. 6, 2024. (AP Photo/Markus Christ)

<http://bit.ly/40CU45S>

# State leader roundtable

What is your big idea?  
What have you learned?  
What is your “why”?

# State leader roundtable

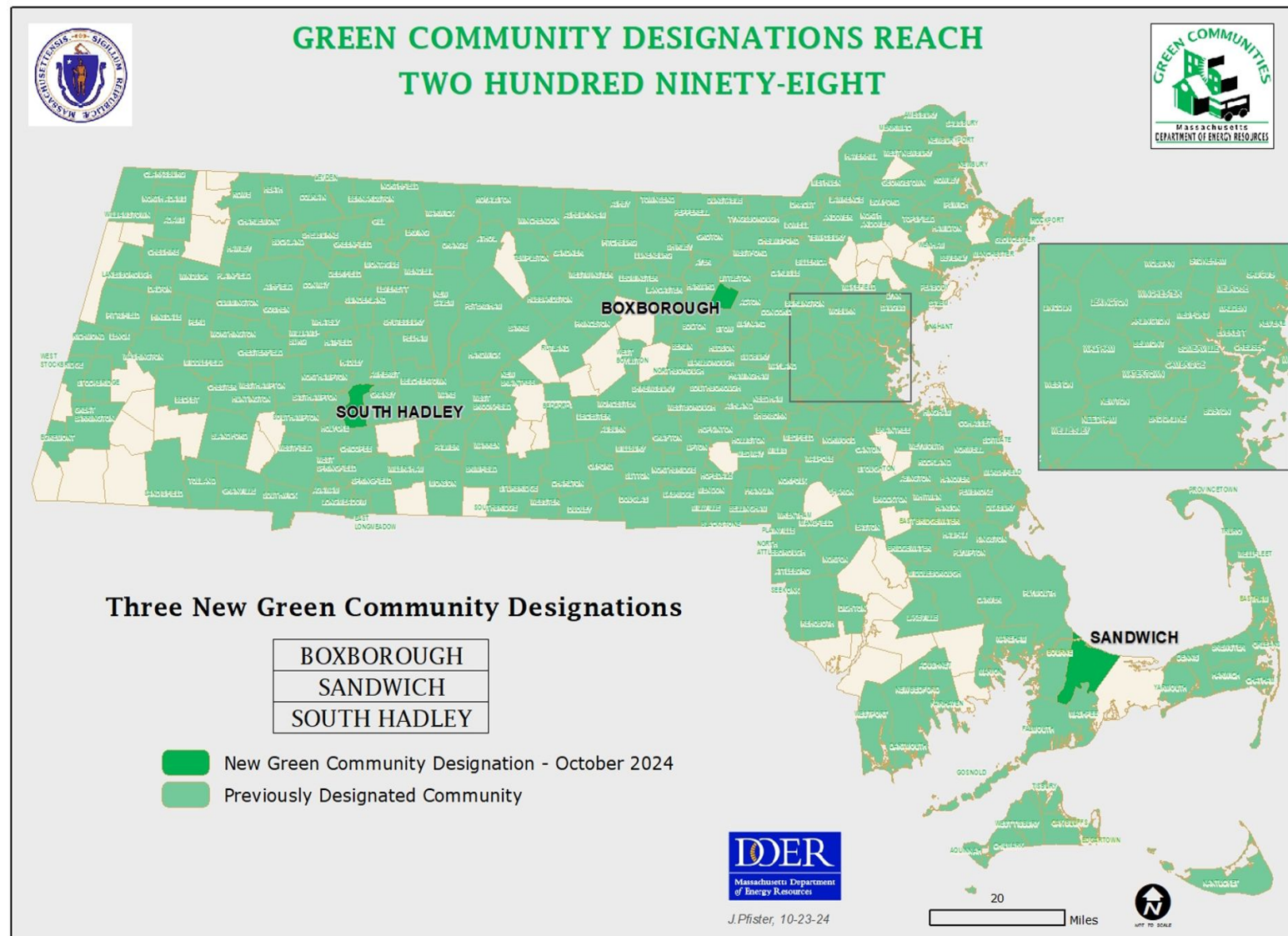
What is your big idea?  
What have you learned?  
What is your “why”?

How can you help?



# Green Communities & Climate Leader Communities

- **298 of 351** Cities/Towns are Green Communities
- **91%** of the population lives in a Green Community
- **\$184M+** grants awarded since 2010
- **\$42M** Leveraged in MassSave Incentives
- **\$29M** Annual Energy Cost Savings
- **70K** Annual tons GHG reduced





# Climate Leaders Communities – The Next Iteration



Builds on success for Green Communities program



Aligns resources for municipalities with EEA energy and climate goals



Enhances engagement and forward progress with municipalities



Encourages adoption of climate/clean energy policies and programs

## Pre-construction

- Feasibility studies
- Pre-electrification work
- Test wells
- Procurement documents

## Equipment and installation

- Quick-win: Solar on newly constructed all-electric schools

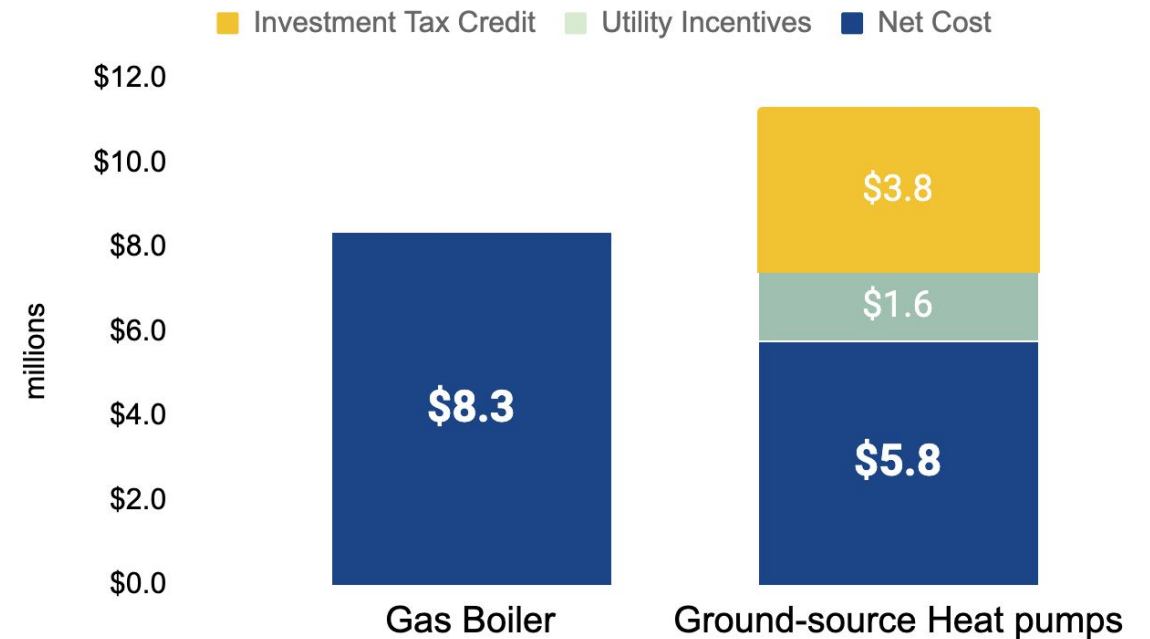
**Coordinate with your town's energy or sustainability manager or committee**

# Fully Decarbonized New Buildings/Major Renovations are Good Investments

Path 1 Projects	Project Count	Square Footage
K-12 Schools*	37	6,269,562
Public Safety	6	168,736
Library	8	252,377
Office	2	114,280
College or University	5	610,200
Other	18	1,295,641
<b>Total</b>	<b>76</b>	<b>8,710,796</b>

**\*23 Path 1 K-12 schools are planning to use ground source heat pump technology**

Massachusetts - New School Construction Project



UndauntedK12:

<https://www.undauntedk12.org/massachusetts/our-schools-cant-afford-fossil-fuels-lets-spread-the-word>

# What School Districts are Doing Now

With New Buildings & Major Renovations

## Eliminating fossil fuels from building designs

- Electric heating/hot water and electric kitchen equipment

## Setting energy budgets and designing/building and operating at those levels

- Set and maintain an Energy Use Intensity (EUI) target of 25 or less

## Planning for battery storage and load management

- Energy load reduction, load shifting

## Adding solar panels

- Roof/parking canopy – own or Power Purchase Agreement

## Designing to reduce embodied carbon

- Choose low-carbon concrete, steel, insulation, glass, gypsum board





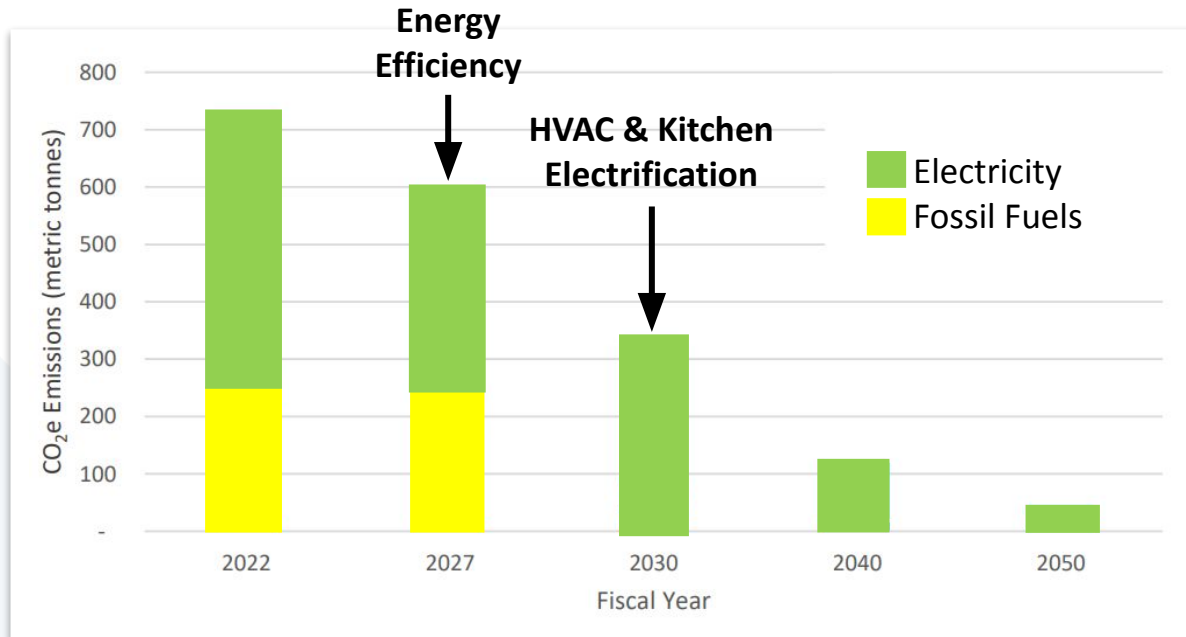
# Green School Works Decarbonization Planning

Tom Chase, Program Director



# MassCEC School Decarbonization Planning & Green School Works

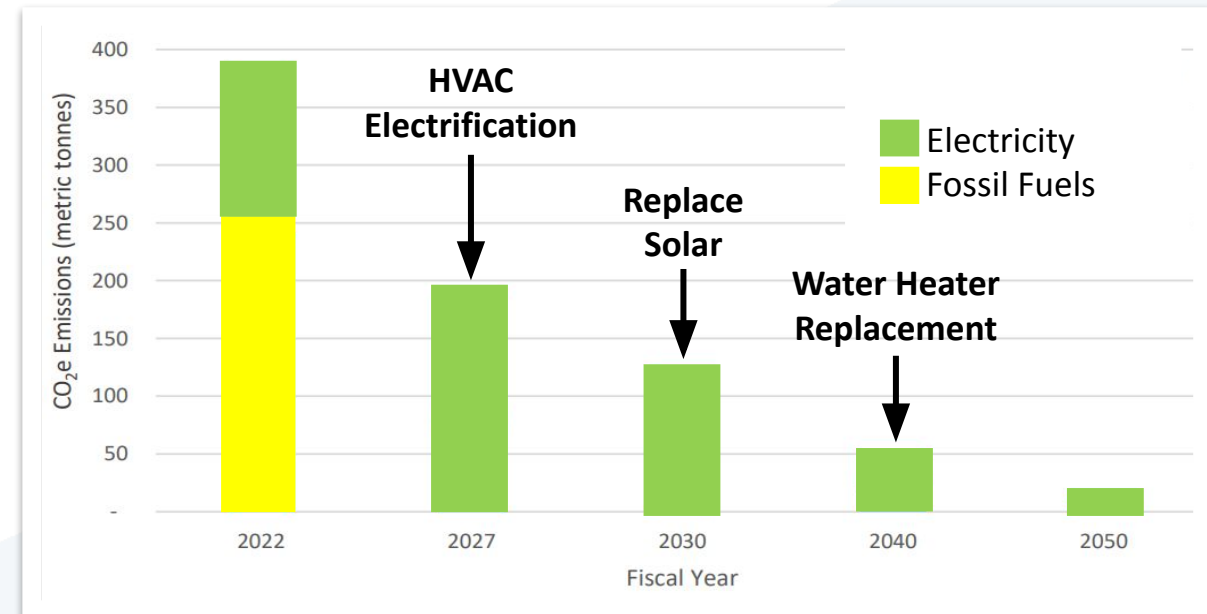
## Building 1 – High School



### Building characteristics:

- Large building
- Large electrical load, with oil & gas HVAC

## Building 2 – Elementary School



### Building characteristics:

- Small building
- Fossil fuel use, existing solar

# Why do we care so much about HVAC systems?



## HVAC Choices for Student Health and Learning

What Policymakers, School Leaders, and Advocates Need to Know



Photo by Allison Shelley/The Verbatim Agency for EDCimages

Report / January 2023

Legacy  
technology



**Make heat by  
burning fossil  
fuels**



Modern  
technology



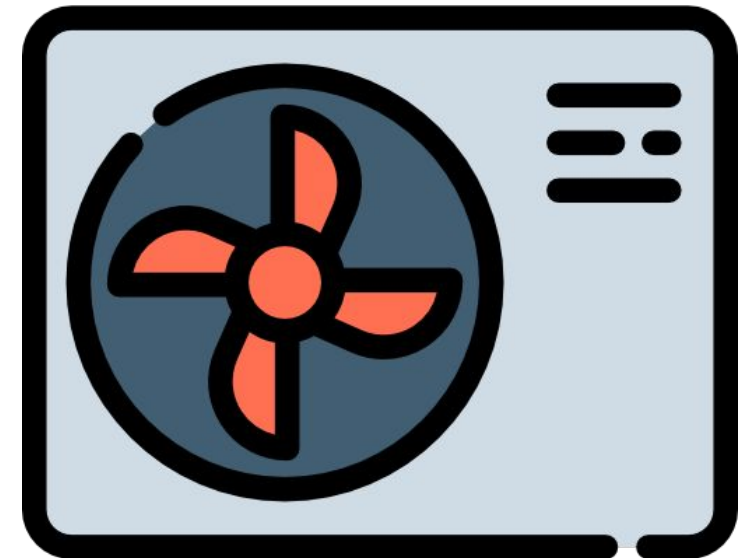
**Move heat that  
already exists to heat  
*and cool* spaces**





# MASC M.A.S.S. Joint Conference

11/8/2024





# Accelerated Repair Program Heat Pump Update

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## **#1) Planning Phase – July 2024 to August 2024**

- Develop school/building typologies - COMPLETE

## **#2) Site Visit Phase – September 2024 to November 2024**

- Conduct 15-20 site visits
- Finalize recommendations for 2025 Statement of Interest (“SOI”) heat pump questions.

## **#3) Reporting Phase – November 2024 to March 2025**

## **#4) Final Report Phase – April 2025 to June 2025**

- Summarize the recommended technical and programmatic approach
- Determine scope, schedule, and cost factors to convert existing buildings to heat pumps for heating and cooling.



# 2025 SOI Filing Period Timeline

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- Initial Email Outreach to Superintendents: December 2024
- Anticipated SOI Opening (ARP and Core): January 2025
- Anticipated SOI Closure
  - ARP SOI Closure: March 2025
  - Anticipated Core Program SOI Closure: April 2025
- Staff Review and Visits: April - October 2025
- Anticipated Invitations by MSBA Board: December 2025
- Questions: [heatpumpprogram@massschoolbuildings.org](mailto:heatpumpprogram@massschoolbuildings.org)



# Mass Save School Decarbonization Offer\*



**Municipal Energy Manager competitive grant** for communities without a similar full-time role. **Applications due January 31, 2025.** (National Grid and Eversource)



**Technical Assistance:** Portfolio Planning and Project Planning assistance designed to work together with MassCEC's Green School Works program.



**Enhanced Incentives** for energy efficiency and electrification of school buildings can work together with MassCEC's Green School Works, MSBA heat pump program, DOER Green Communities.



**Staff Training and Teacher Curriculum**, such as training for facilities staff and teacher training and student workshops on energy efficiency and clean energy.

*\* Part of the proposed 2025-2027 Energy Efficiency and Decarbonization Plan and pending approval by the MA Department of Public Utilities.*

# Get Started

Partner with us:

<https://www.masssave.com/en/contact>

Attend a Municipal Energy Manager  
Grant webinar:

11/12: 10am-11am

11/20: 4pm-5pm



# Big ideas

**Yes! Investments in facilities do affect student outcomes**

**Districts are critical participants in public sector climate action**

**“All-electric” new construction makes good financial sense**

**We can “get to zero through time” with planning**

**To move to modern HVAC (heat pumps), we need new learning & programs**

**Every building needs assessment from multiple perspectives**



# What can you do?

1

Define KPIs & goals for healthy, efficient, climate-resilient school facilities

2

Update your facilities & capital plans to incorporate “decarbonization”

3

Adopt a resolution that commits the district to action



UNDAUNTEDK12

School Board  
PARTNERS

## SCHOOL BOARD MEMBER CLIMATE ACTION TOOLKIT

### Introduction

The summer of 2023 — the hottest on record — witnessed heat waves and wildfire smoke that affected students and schools across the country. It is clear that the impacts of climate change are happening now, and many education leaders are increasingly concerned about what the future will hold for students. Climate change threatens to further disrupt learning, exact physical and emotional harm on young people and their families, and widen inequities in our K–12 sector.

Schools play an enormous, if often overlooked, role in the climate crisis. They are the nation’s second-largest form of public infrastructure, to which we devote \$114 billion each year. Schools are also one of the largest public-sector energy consumers, and their nearly half-million diesel buses represent the largest public transit fleet. Annually, school buildings are responsible for 42 million metric tons of carbon pollution.

Although it can seem complicated, there are four key ideas that education leaders should know about climate change:

needs and strengths to inform school efforts to reduce carbon emissions, prepare for climate impacts, and educate students about climate change and climate solutions. The national K12 Climate Action Plan (released in September 2021) provides more information about local climate action plans, as well as policy recommendations for the local, state, and federal levels to support schools and districts in this work. A K–12 climate action plan for a school district should be created in partnership with the superintendent and include student, educator, parent, and community input.

**It’s warming. It’s us. It’s happening now. But we can take action. And school board members can help advance solutions.**

School board members play a critical role in advancing climate solutions that empower young people and their communities by passing resolutions to develop comprehensive climate action plans for their districts. Similar to the climate action plans adopted by city governments, local K–12 climate action plans leverage community



### WHAT IS CLIMATE CHANGE?

Climate change refers to the long-term changes in average weather and climate, regionally and globally. Since the 1800s, human activities have been the main driver of climate change, primarily due to releasing carbon pollution — such as carbon dioxide — by burning fossil fuels like coal, oil, and gas. Our atmosphere acts as a heat-trapping blanket which has created a stable climate for life to thrive. But our greenhouse gas emissions are changing the material of that blanket, trapping more heat, and destabilizing our climate.



# Thank you!

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