



SOMERVISION2040

Sustainability • Diversity • Opportunity • Connectivity • Community

CLIMATE FORWARD

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City of Somerville
Mayor Joseph A. Curtatone

AGENDA

- Climate goals and baseline
- Climate action planning process
- Overview of Somerville Climate Forward actions
- How to connect Climate Forward to Somervision
- Discussion

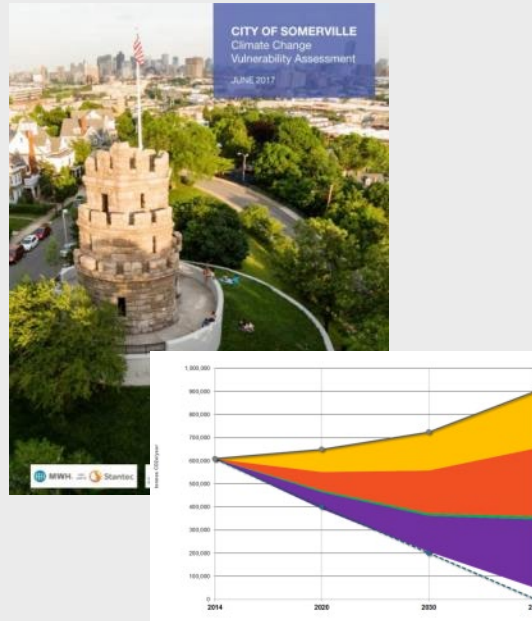


Data-driven climate planning



2016

- Greenhouse Gas Inventories



2017

- Climate Change Vulnerability Assessment
- Carbon Neutrality Pathway



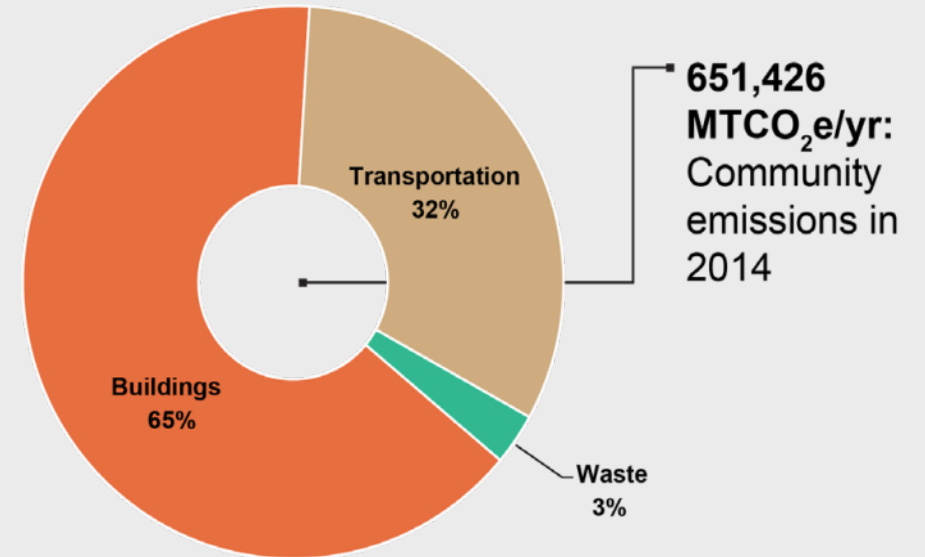
2018

- Somerville Climate Forward



Greenhouse gas emissions in Somerville

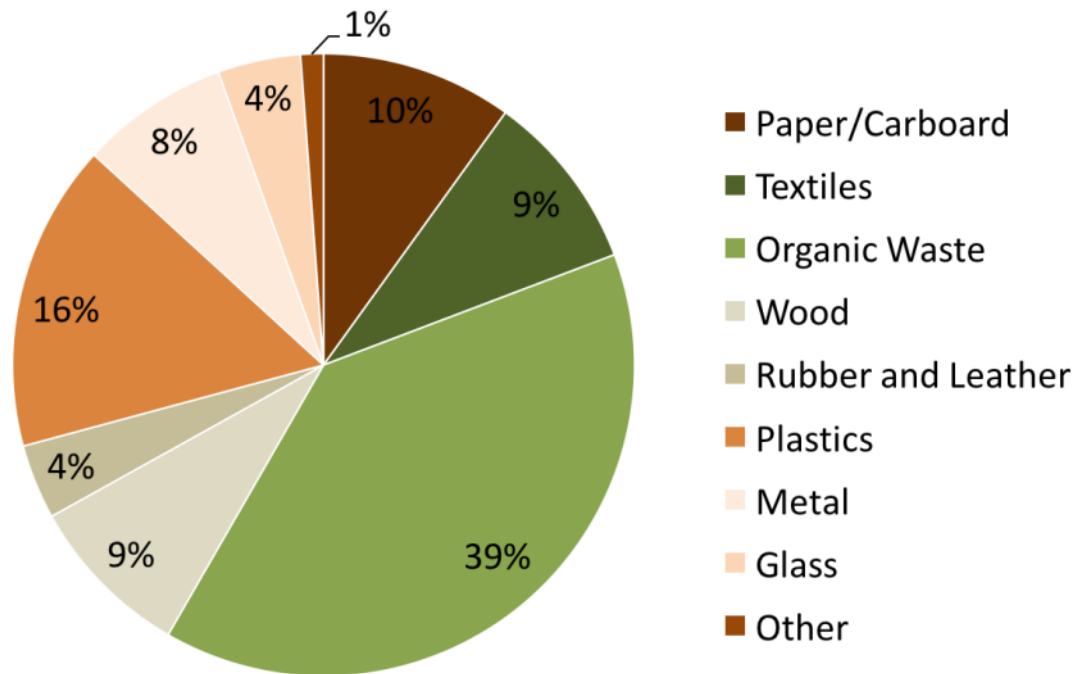
- Most of our emissions come from heating and electricity (building use)
- 50% of building emissions are from the residential sector
- 60% of transportation emissions are from passenger vehicles



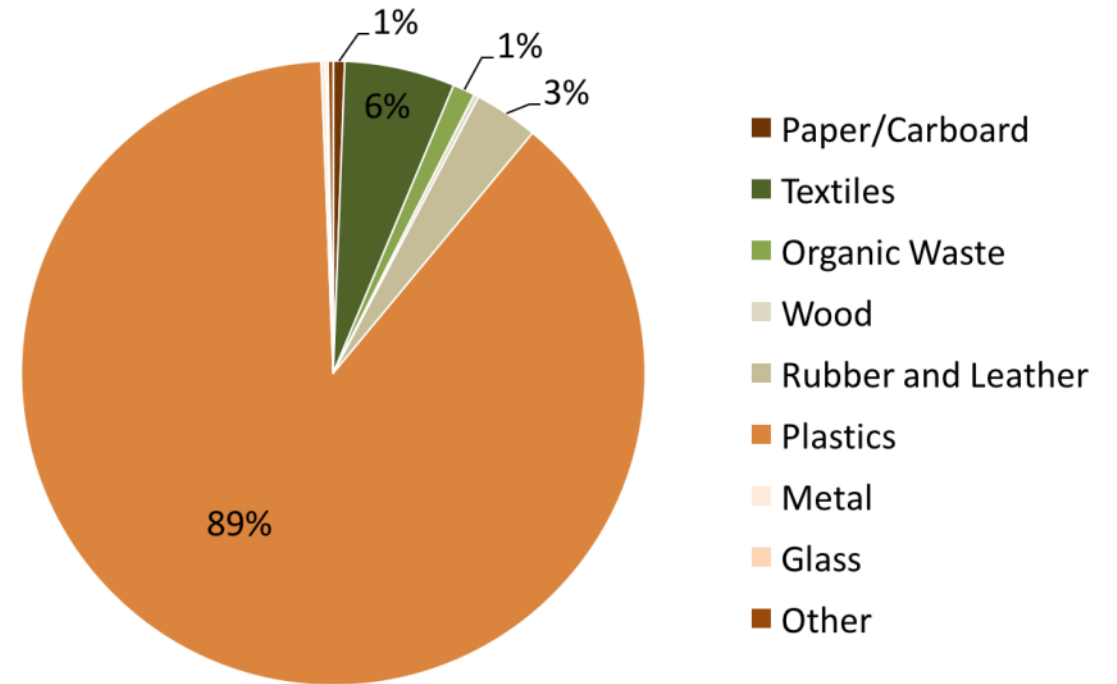
Community-wide GHG Emissions for 2014

Breakdown of waste emissions

Waste by Weight



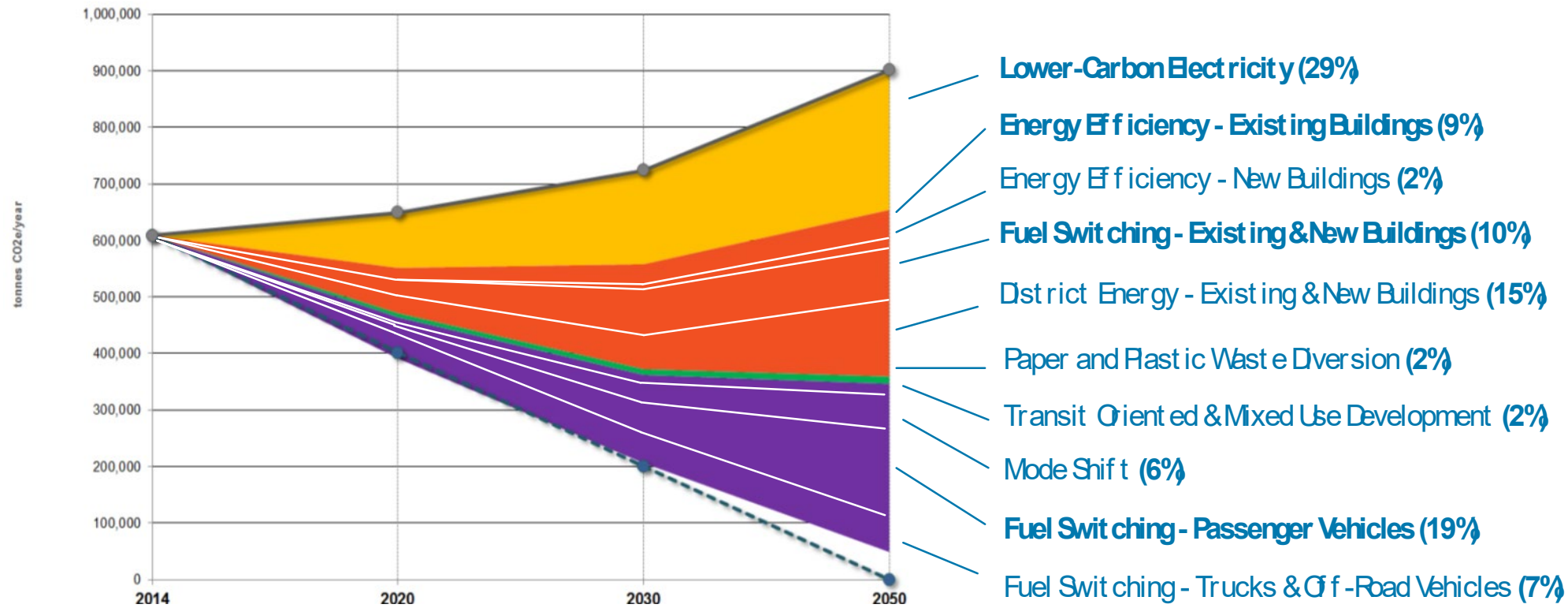
Waste by Emissions







Source: *Advancing Sustainable Materials Management: 2014 Fact Sheet*, US Environmental Protection Agency, November 2016



*Wood, Rubber and Leather, Metal and Glass each contributed less than 1% to total emissions from waste incineration.

Pathway to Carbon Neutrality

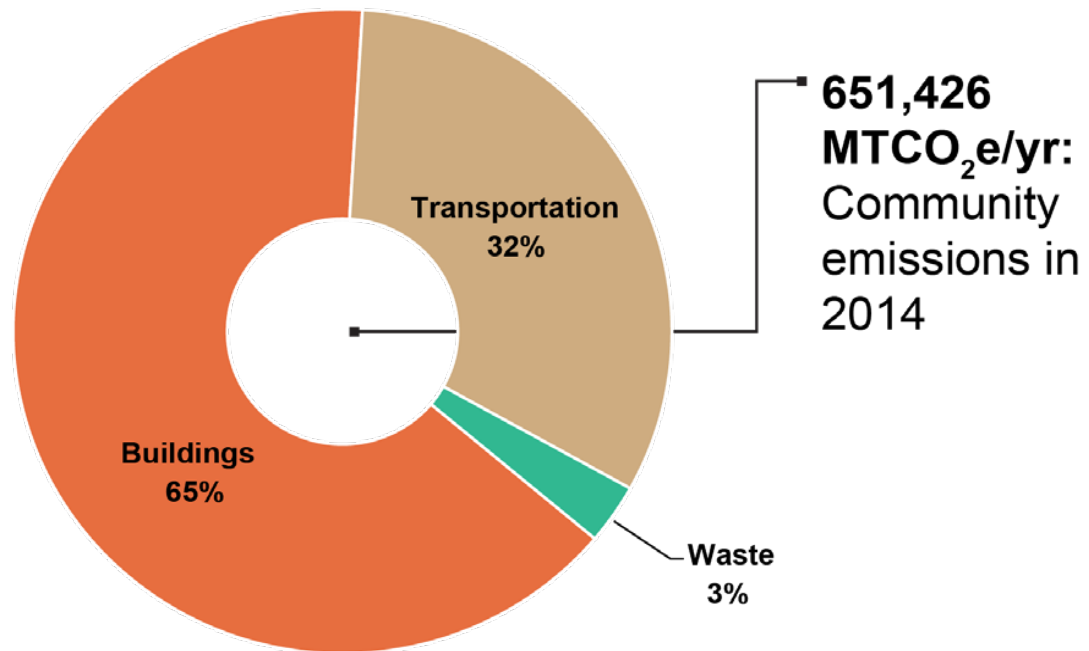


Legend:

-  Private Building Energy
-  Electricity Generation
-  Solid Waste
-  Transportation

-  Baseline Forecast
-  Target Trajectory

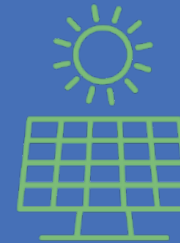
Pathway to Carbon Neutrality



How can Somerville be carbon neutral by 2050?



Energy Efficiency

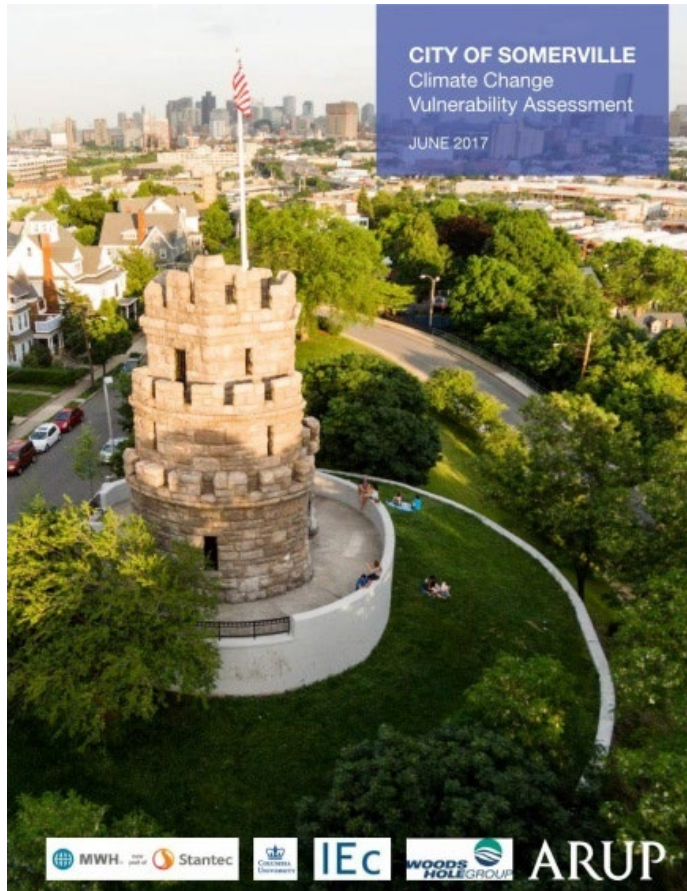


Carbon-Free Electricity



Switch Off of Fossil Fuels

How will climate change impact Somerville?



HEAT

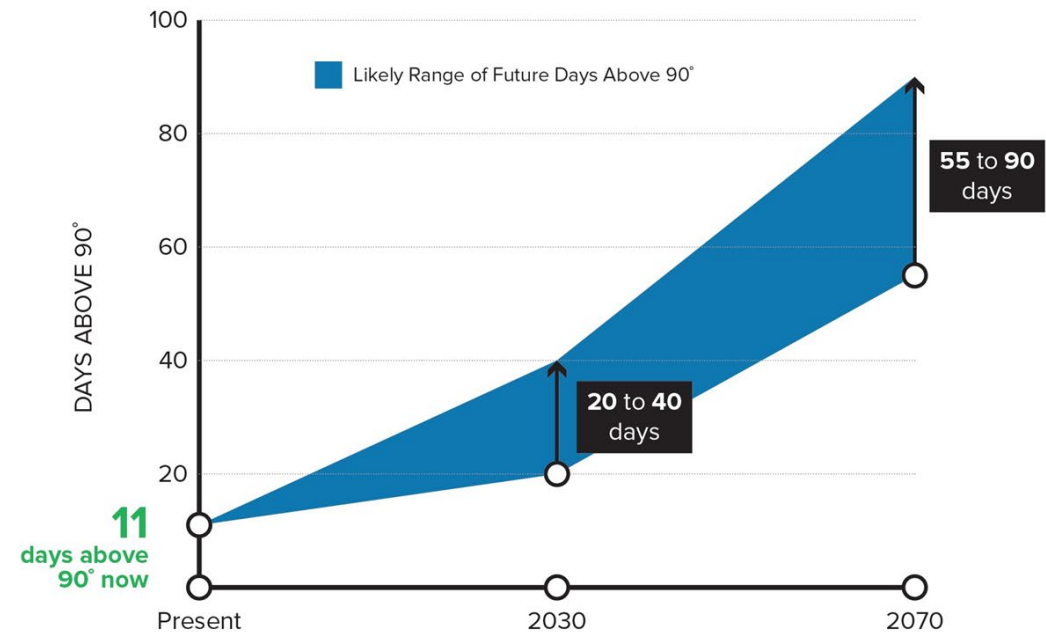
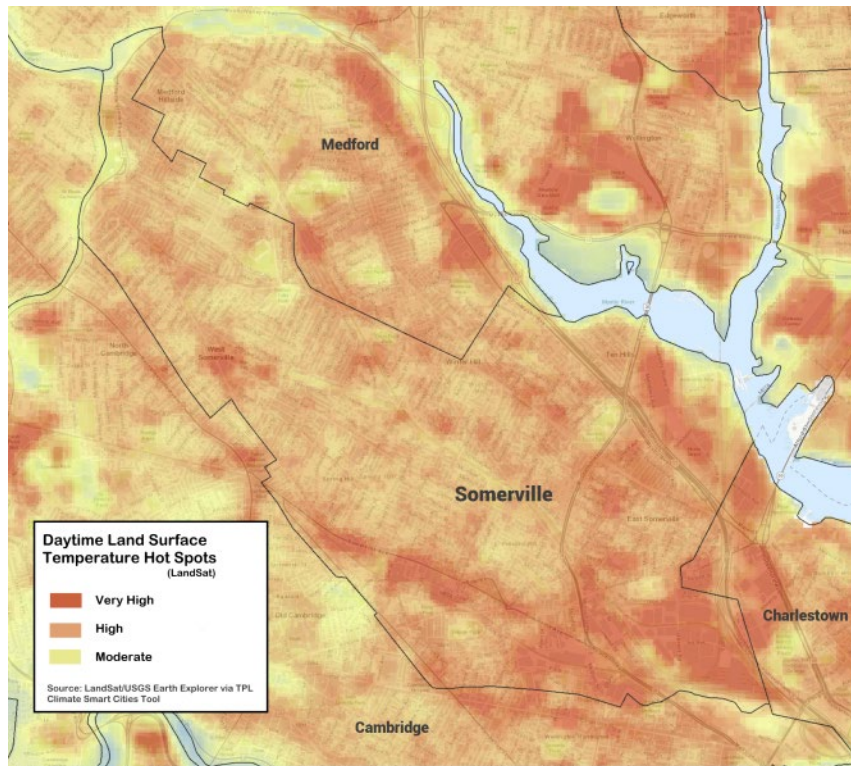


PRECIPITATION

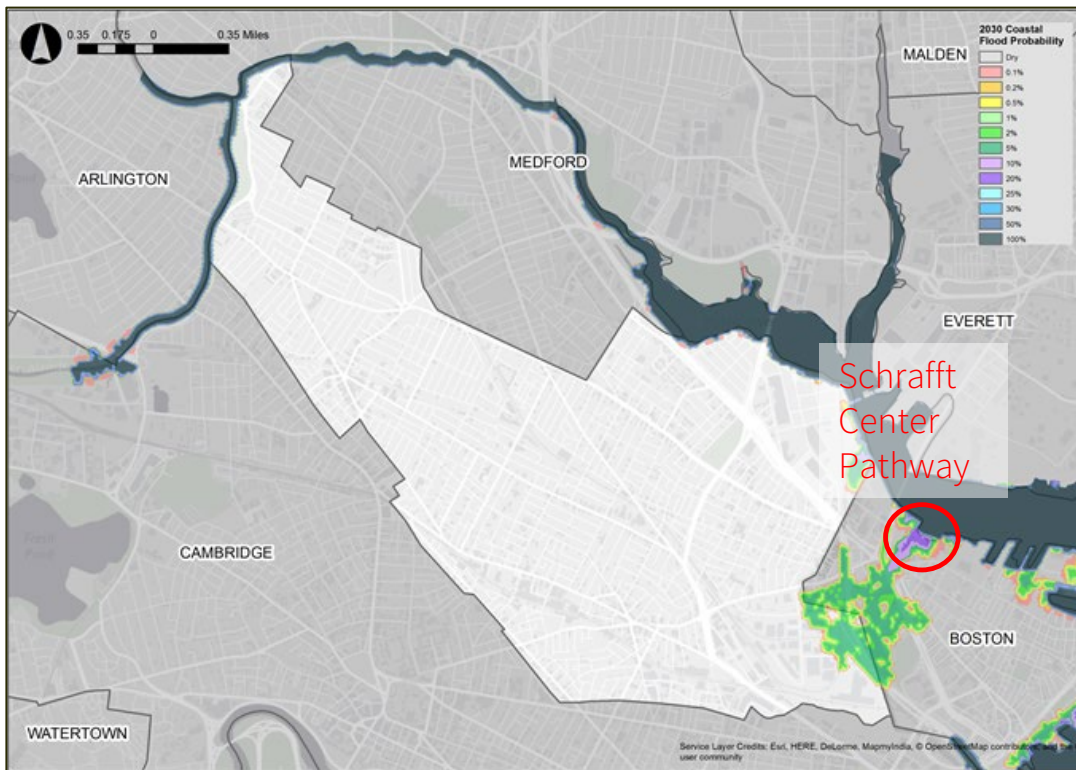


COASTAL
FLOODING

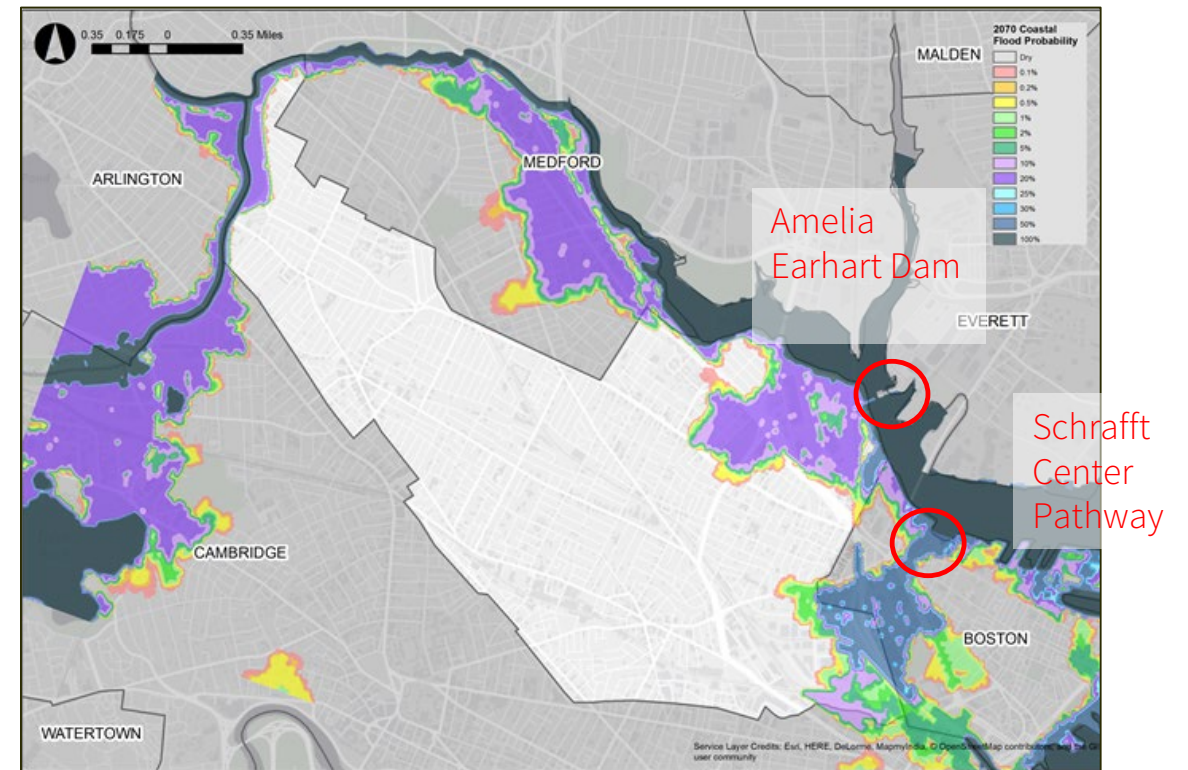
CURRENT LAND SURFACE TEMPERATURE AND PROJECTED DAYS ABOVE 90 DEGREES



2030 AND 2070 COASTAL FLOODING PROBABILITY

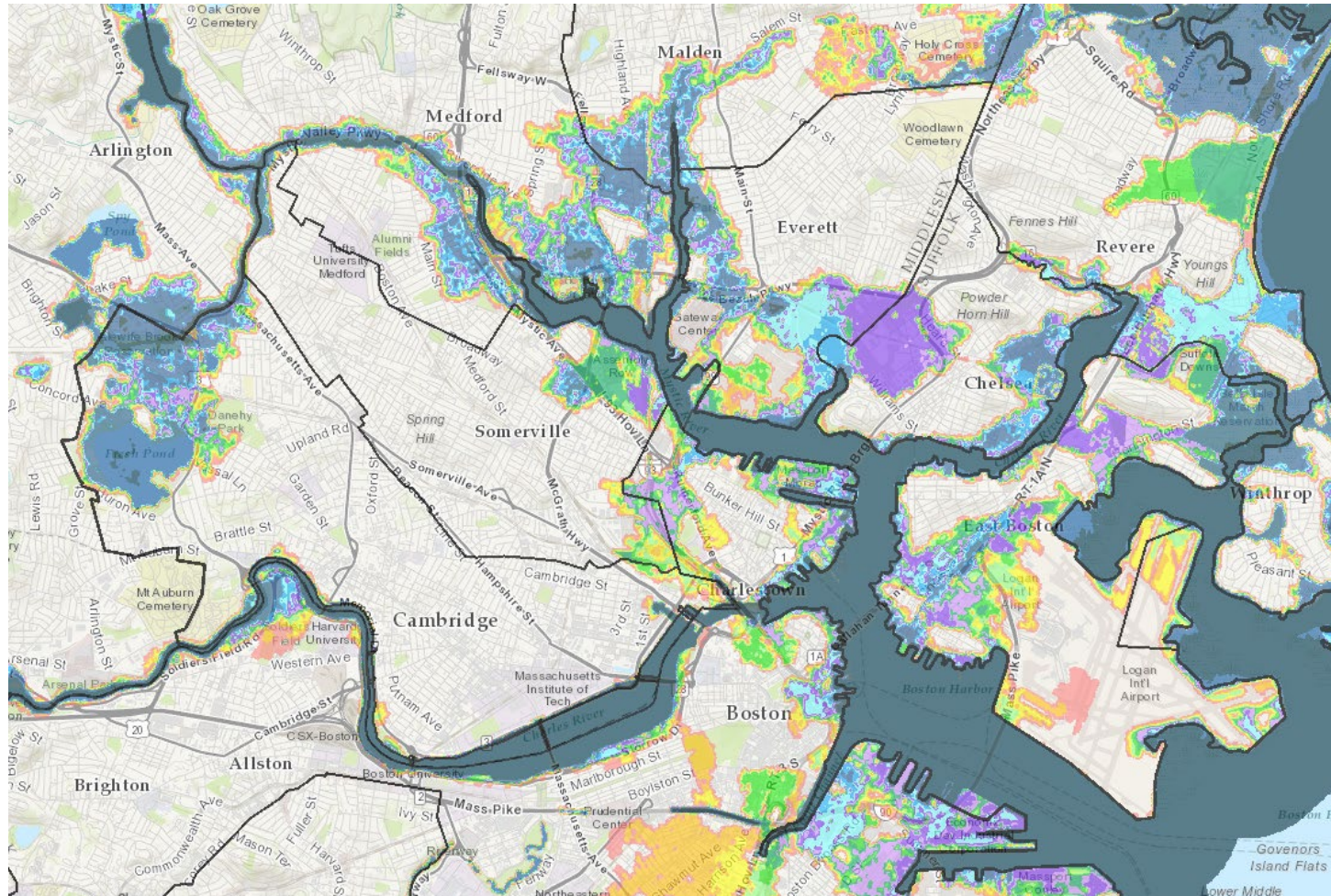


2030 Coastal Flood Probability

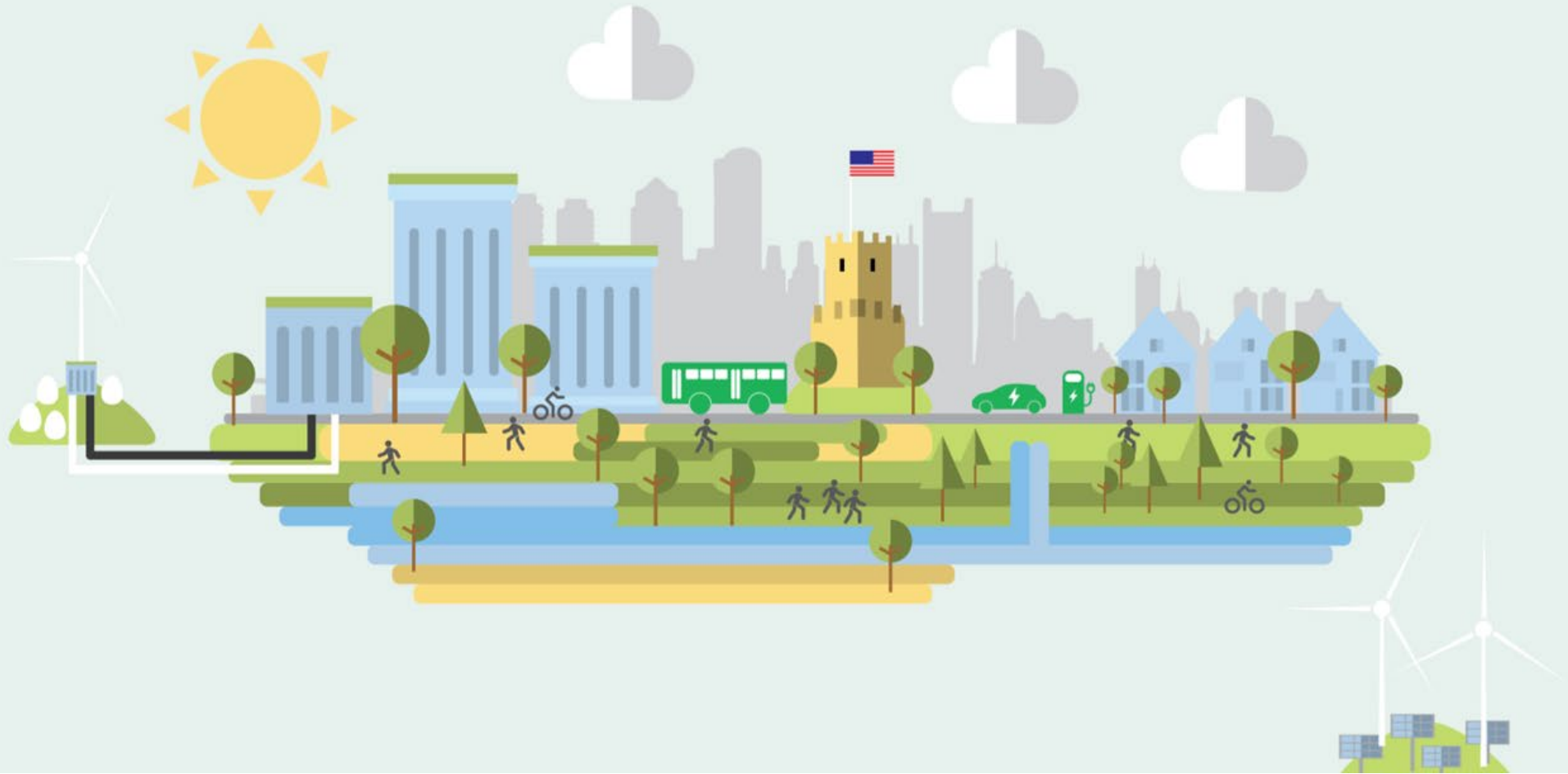


2070 Coastal Flood Probability

COASTAL FLOODING IN THE REGION WILL IMPACT SOMERVILLE BEYOND WHAT HAPPENS IN OUR BORDERS



2070 100 year flood. Source:
Trust for Public Land



SOMERVILLE CLIMATE FORWARD IS THE PLAN FOR HOW WE WILL COLLECTIVELY TAKE ACTION ON CLIMATE CHANGE IN SOMERVILLE OVER THE NEXT 5 YEARS.

Somerville Climate Forward Focus

- **Reduce** Somerville's contribution to climate change and work towards carbon neutrality (mitigation)
- **Prepare** Somerville for the unavoidable impacts of climate change (adaptation)
- **Fairly distribute** the opportunities created by climate action and work to alleviate the unequal burdens of climate change (equity)



How the plan was developed

- Nine working groups, each met three times
- ~75 working group participants
- Residents and city staff participated
- Regular input from the Commission on Energy Use and Climate Change



How the plan was developed

A four-step approach:

- Research
- Evaluation
- Prioritization
- Development of detailed action plans



CLIMATE FORWARD LONG RANGE GOALS

- **Buildings and Energy** – All Somerville **buildings are net-zero carbon**, healthy, resilient, and affordable. **100%** of Somerville's electricity is from **renewable** sources.
- **Mobility** – Everyone has **accessible and affordable zero-carbon ways to commute and get around** Somerville that are resilient to climate impacts.
- **Environment** – Somerville's environment provides **resilience to climate change and benefits** to all. **Infrastructure is reliable and adaptable**. Everyone in Somerville is a **responsible consumer and minimizes waste** by reducing, reusing, and recycling as much as possible.
- **Community** – All are **prepared for the acute and prolonged stresses** from climate change and are able to meet their basic needs. Everyone is **knowledgeable about climate change** and **empowered and supported to take action**. Somerville has a **sustainable economy** that builds opportunities created by climate change and is resilient to the impacts of climate change.
- **Leadership** – The **City of Somerville is proactive** about preparing for climate change and **leads by example**. Somerville is a **regional leader** that sparks action in other communities and in the Commonwealth.

*Note: these goals have been abbreviated from what is in the plan

Plan at a Glance



1

Net-zero and resilient new building standards

2

Improved energy performance in existing buildings



3

Equitable low -carbon mobility

4

Rapid transition to electric vehicles



5

Stormwater management

6

Expanded tree canopy

7

Reduced consumption and waste



8

Healthy and resilient community

9

Pathway to 100% renewable energy

10

Culture of climate action



11

City government leading by example

12

State advocacy for carbon neutrality

13

Regional collaboration for coastal resilience



SOMERVILLE CLIMATE FORWARD RELEASE CELEBRATION

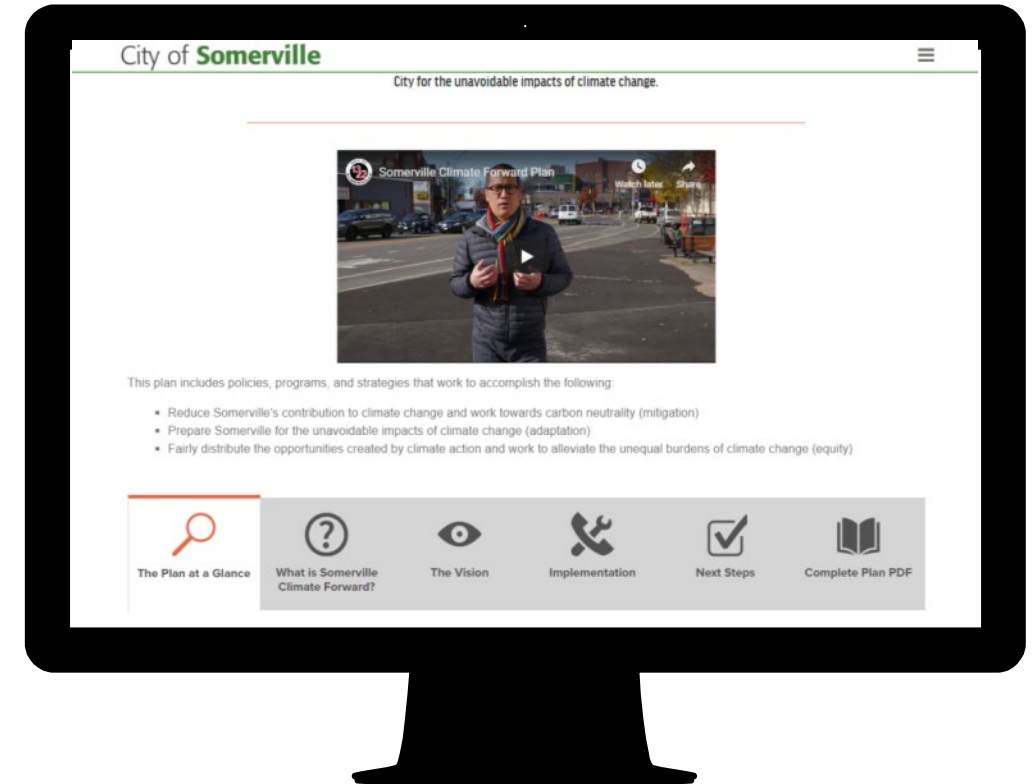
The “Green Carpet” event at Greentown Labs drew nearly 250 people. Attendees could learn about the plan from working group members, take action with local organizations, learn about clean tech startups at Greentown, and make a commitment to climate action by taking their photo on the green carpet.

WE HAVE ALREADY GOTTEN STARTED

- Winter Hill in Motion: Bus priority project on Broadway
- Electric vehicle infrastructure strategy in development
- Launching Climate Forward Ambassadors program
- Urban Forestry Management Plan in development
- Resilient Mystic Collaborative formed
- Planning next round of municipal electricity aggregation
- MVP action grant funded project to improve detail of stormwater model, which will inform communications about flood preparedness
- Initial steps to investigate stormwater enterprise fund and rental license program

The full plan is online

- [Sommervillema.gov/climateforward](https://sommervillema.gov/climateforward)





HOW DOES CLIMATE CHANGE ALTER OUR VISION FOR THE FUTURE?

HOW CAN THE PLANS WORK TOGETHER?

CLIMATE FORWARD

- Data-driven “action” plan - prioritizes actions that have big impact
- Focused on achievable actions today to support long term goal (carbon neutrality by 2050)
- Short-term (5 years)

SOMERVISION

- Visionary – What should Somerville look like in 2040?
- Focused on community values for a wide variety of topics and goals
- SOMERVISION can help define the longer term vision of climate action in Somerville



Example – Electric vehicles

- How should we prioritize electric vehicles along with our other mobility goals?





SOMERVISION2040

Sustainability • Diversity • Opportunity • Connectivity • Community

Thank you for attending!

This presentation will be posted on www.somervision2040.com



City of Somerville
Mayor Joseph A. Curtatone

Next: Breakout Session #3

Sustainable Transit Modes (Union Square)

Bird's Eye View: What's Going on in Your Region?
(Assembly 1)

Wellbeing (Assembly 2)

Starting at 2:45

BUILDINGS

1

Net-zero and resilient new building standards

Explore the feasibility of a local net-zero energy based or net-zero emissions based performance standard.

Adopt flood and extreme heat resilience standards for new construction.

2

Improved energy performance in existing buildings

Enable a rental energy disclosure requirement through the creation of a rental licensing program.

Continue and expand thermal electrification programs (HeatSmart/ CoolSmart).

MOBILITY

3 Equitable low - carbon mobility

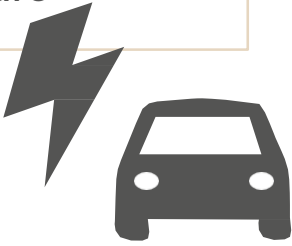
Improve bus reliability and trip times

Improve and expand bicycle infrastructure

Assess parking policy and parking supply to meet low-carbon mobility needs

4 Rapid transition to electric vehicles

Develop electric vehicle charging infrastructure strategy.



5

Stormwater management

Update stormwater management policies and develop design guidelines

Investigate a stormwater enterprise fund to improve stormwater management.

6

Expanded tree canopy

Formalize and implement a modern urban forestry management plan

Develop guidance and training for community stewardship of trees.

7

Reduced consumption and waste

Complete a consumption based greenhouse gas inventory and conduct community outreach on climate impacts of consumption.

ENVIRONMENT

8

Healthy and resilient community

Establish a preparedness education program and an emergency alert system

9

Pathway to 100% renewable energy

Extend the community choice electricity aggregation program and increase share of renewable energy.

10

Culture of climate action

Organize community climate leadership program to educate the public and increase participation in climate programs.



COMMUNITY

11

Leading by example:
City facilities

Set progressive net-zero building standards for new municipal buildings and renewable electricity procurement



12

State advocacy:
working towards carbon neutrality

Advocate for building and energy codes that achieve net-zero energy

Advocate for faster decarbonization of electricity

Advocate for more stringent regulation of utility gas leaks.

13

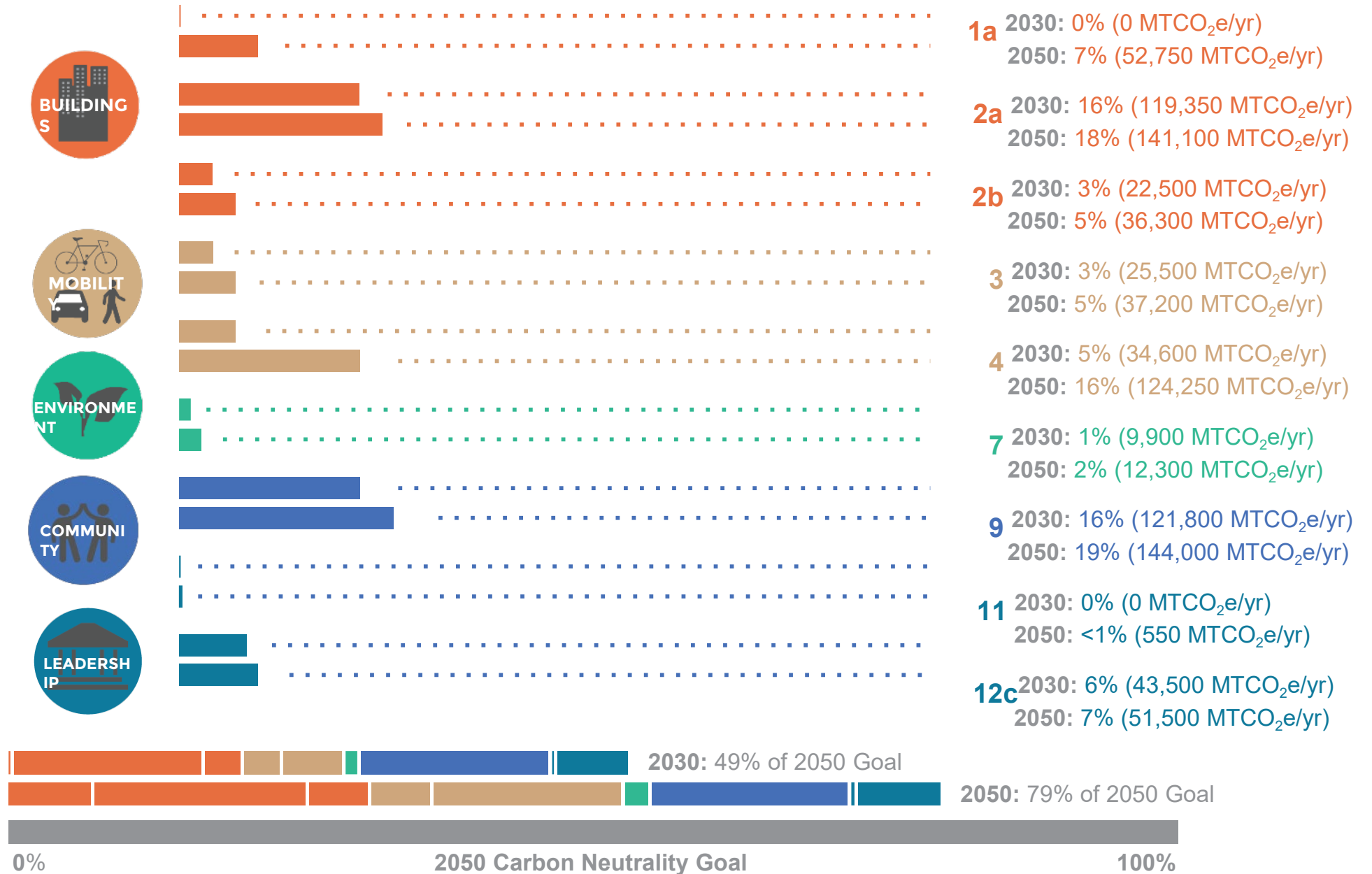
Regional collaboration for coastal resilience

Develop cohesive regional strategy through collaboration

and to push State action. Assess potential intervention options to address flood risk along Mystic River.

LEADERSHIP

GHG Reduction Potential of Priority Actions in Somerville Climate Forward



Breakdown of stationary emissions

