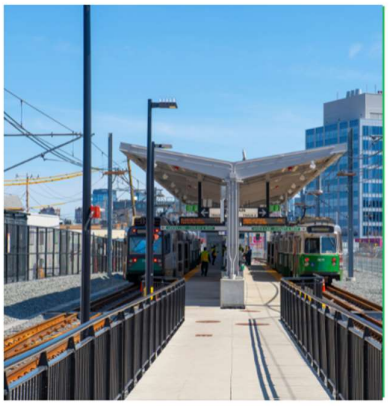
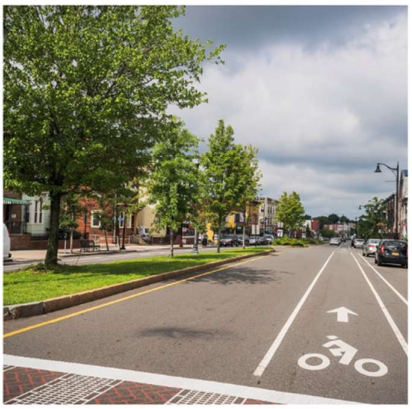


CLIMATE FORWARD

2022 ANNUAL PROGRESS REPORT

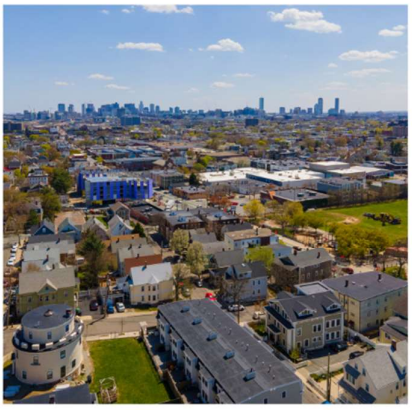
SOMERVILLE OFFICE OF SUSTAINABILITY AND ENVIRONMENT



CITY OF SOMERVILLE, MA

SustainaVille

ClimateForward



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THE PLAN AT A GLANCE

Climate Forward (CF), Somerville's first climate action plan, details 13 priority action items for the City to address over a 5-10-year period to set the city on a path towards resiliency and emissions reduction. 2022 marks the fourth year since CF was released. This report details the progress the city made in 2022 on each of its 13 action items. For each of the 13 action items, CF prioritizes reducing Somerville's contribution to climate change (mitigation), preparing Somerville for the inevitable effects of climate change (resilience), and fairly distributing the opportunities created by climate action and alleviating unequal burdens of climate change (equity). These priorities guided action across a wide range of City departments in 2022 and will continue to do so as Somerville moves toward a cleaner, safer, and more equitable future. To see the full plan, visit somervillema.gov/climateforward, and direct any questions to the Mayor's Office of Sustainability and Environment at 617-625-6600 ext. 2425 or ose@somervillema.gov.

Each year, the City publishes an update on progress toward the goals laid out in CF. In addition, the annual update details current priorities related to CF. Any action that was listed as a priority in last year's report is marked by the following symbol: 📋

BUILDINGS

Net-Zero and Resilient New Buildings Standards:

Progress in 2022:

- The Office of Sustainability and Environment participated in 14 pre-submittal meetings for LEED certifiable and Phius projects. 22 properties in Somerville are in the process of developing Phius units. 15 of the Phius projects are expected to produce a total of 760 units, with 161 of those units being designated affordable market rate units. In addition, 50 certifiable LEED Gold and Platinum buildings are in development.
- The City hired its first Sustainability Planner. This planner is tasked with managing the development review process for new construction and major renovations and coordinating with implementing departments.

Plans for 2023 and beyond:

- Transition all permitting online to CitizenServe, which will provide an improved platform for administering sustainability and resiliency permitting and data collection.
- Continue tracking SomerVision implementation.

Improved Energy Performance in Existing Buildings

Progress in 2022:

- The City issued at least 260 building permits for weatherization and insulation upgrades to existing buildings.
- The City issued at least 31 permits for ductless air source heat pumps. As both an efficient and renewable thermal appliance, heat pumps can lower a building's carbon footprint.
- A new full-time position was created to grow Somerville's residential building decarbonization efforts.

Plans for 2023 and Beyond:

- Advertise for new residential building decarbonization position.
- Apply for grants to analyze and facilitate retrofits in existing buildings.

Municipal Building Energy Performance & Efficiency

Progress in 2022:

- City operations saw a 16% reduction in oil use and a 4.3% increase in natural gas use, contributing to a 4.3% overall reduction in the carbon footprint of municipal operations.
- Municipal solar energy output was 535.4% higher between July 1, 2021, and June 30, 2022, than the previous fiscal year thanks to the solar array installed on the East Somerville Community School.
- The City began developing a municipal electric vehicle purchasing policy through a cross-departmental collaboration. This policy will prioritize purchasing electric vehicles for the municipal fleet, further reducing the City's greenhouse gas emissions.
- The City signed an agreement to purchase over 30% of municipal electricity needs from a local solar farm in Massachusetts at a reduced rate.

Plans for 2023 and Beyond:

- The City is planning projects in city-owned buildings to replace fossil fuels with high-efficiency electric systems.

- Building electrification and control system modernization projects are in development for the Healey School and West Somerville Neighborhood School.
- Somerville's involvement in the Eversource Demand Response program, designed to better manage peak electrical demand, will be expanded to include six additional schools. Schools enrolled in the Demand Response program include Argenziano, Capuano, East Somerville Community School, Healey, Kennedy, Winter Hill, and the High School.
- Continue developing an electric vehicle purchasing policy focused on electric and low-emitting vehicles.
- Continue developing the solar array on Somerville High School.
- Work towards adding more solar assets to increase the City's renewable energy portfolio.
- Finalize grant-funded electric battery feasibility study.
- Continue implementing Green Communities funded projects at Somerville Public Schools.

MOBILITY

Equitable Low-Carbon Mobility

Progress in 2022:

- The City prioritized dedicated bus lanes and transit infrastructure, with progress made on extending existing bus lanes and enhancing them with physical traffic-calming infrastructure.
- The City issued 11 permits for new EV charging stations.
- On average, the 14 bus routes in Somerville had 21,000 trips per week, or 1,092,000 trips total.
- Progress continued creating safe and accessible biking infrastructure. Somerville has approximately 17 miles of unprotected bike lanes, seven miles of protected bike lanes, and four miles of off-street path, for a total of 28 miles.
- The Somerville Blue Bike network saw 200,000 trips in 2022.

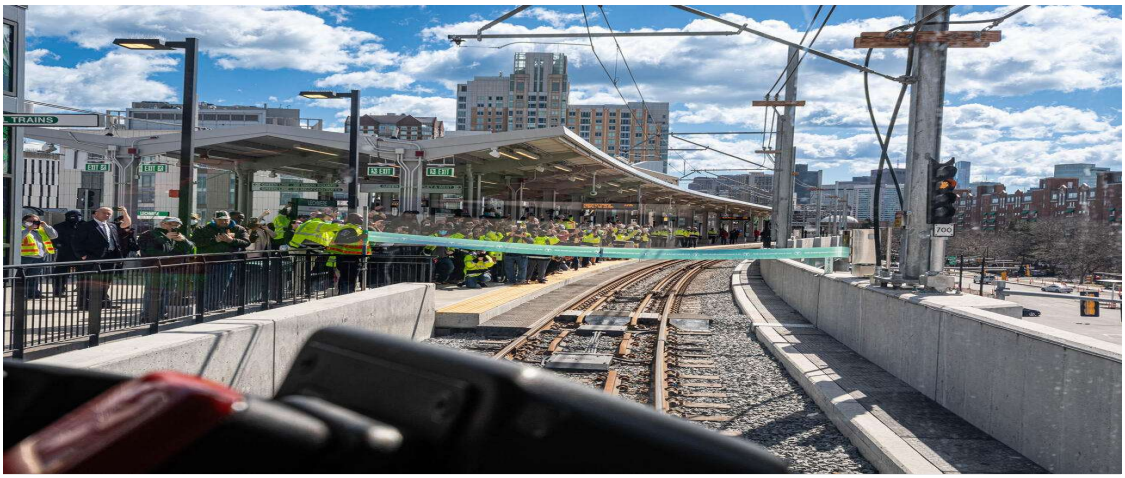
Plans for 2023 and Beyond:

- The East Broadway bus lane will be completed and protected bike facilities will be constructed on Holland St. and College Ave.
- Pedestrian and transit infrastructure will be constructed in East Somerville and protected bike lanes will be built in Assembly Square.
- Continue the transit pass programs for low-income populations and students.
- The City is finalizing the first citywide Bicycle Network Plan. The plan will feature a network to designate corridors for various bicycle infrastructure, such as protected bicycle lanes on roads and lanes next to sidewalks. The plan connects gaps in the current network and will be a guide for future improvements.
- Expand the network of community electric vehicle charging stations by creating a city-wide electric vehicle station siting strategy plan to improve access to charging stations for electric vehicle users across the community.

PROJECT HIGHLIGHT: THE GREEN LINE EXTENSION

A Green Line trolly breaks a ribbon at Lechmere station during the grand opening of the MBTA's Green Line Extension on March 21, 2022, in Cambridge, MA. Staff Photo by Nancy Lane

The Green Line Extension (GLX) project extended the MBTA Green Line to Union Square in Somerville and College Avenue in Medford. As part of the project, six new stations were constructed, including stops in Union Square, Gilman Square, Magoun Square, Ball Square, College Avenue, and the relocated Lechmere Station.



Workers celebrate the Green Line Extension's opening to Union Square in March 2022.

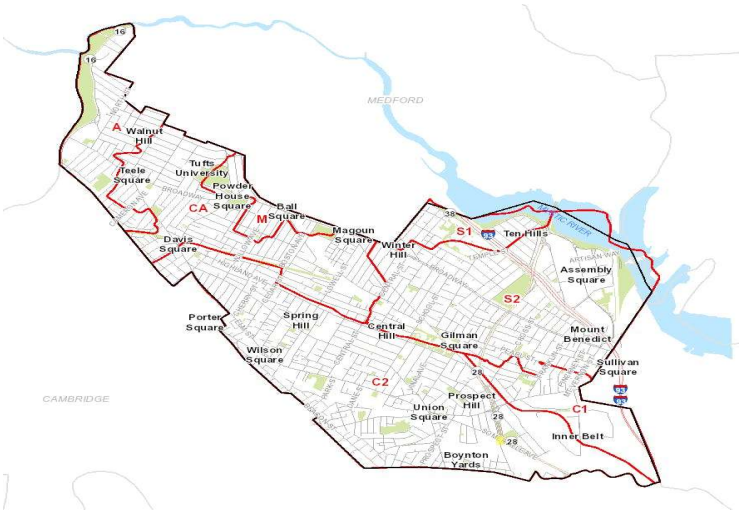
The GLX project is expected to provide significant benefits to Somerville, including improved transit access, reduced congestion, and increased economic development. The project is also expected to contribute to the reduction of greenhouse gas emissions and improve the overall sustainability of the transportation system in the Greater Boston area.

ENVIRONMENT

Stormwater Management

PROJECT HIGHLIGHT: CITYWIDE DRAINAGE AND WATER QUALITY MASTER PLAN

The Citywide Drainage and Water Quality Master Plan, finalized in November 2022, prioritizes a collection of infrastructure projects that will reduce flooding, improve water quality, and mitigate combined sewer overflows. The plan is based on a detailed study of the city's topography, hydrology, infrastructure, and land use patterns. It considers climate change projections and potential hazards such as flooding, sea-level rise, and extreme precipitation events.



Maps of sewer shed areas in Somerville.

The proposed infrastructure projects in the plan include the implementation of green infrastructure, such as bioswales, rain gardens, and permeable pavements, to manage stormwater runoff, enhance water quality, and reduce flooding risks. The plan also proposes gray infrastructure like underground storage chambers and larger pipes. The benefits of this plan include improved water quality, enhanced public health and safety, increased resilience, and reduced frequency and severity of flooding.

Plans for 2023 and Beyond:

The next steps are to start implementing projects that are ranked as high priority. Design for each will begin in 2023.

- The Morrison Ave Linear Storage Greater Davis Square Area Sewer Separation project involves building stormwater storage along Morrison Ave, Winslow Ave, Grove Street, and the Somerville Community Path. It also includes upsizing combined sewers, sanitary sewers, and stormwater pipes, rehabilitating pipes and manholes, and redirecting catch basins to new stormwater pipes. The hydraulic model predicts a reduction of 0.72 MG in combined sewer overflow (CSO) discharge for the largest storm in the typical year and a 1.50 MG reduction in flooding for the 2030 10-year 24-hour design storm.
- The New Mystic River Outfall, Foss Park Area Sewer Separation project involves constructing a new stormwater outfall pipe on Fellsway West, crossing Mystic Ave and I-93, and discharging into the Mystic River. It includes sewer separation in the Winter Hill area, redirecting storm drainage from Ten Hills and Winter Hills to the new outfall pipe, rehabilitating pipes and manholes, and redirecting catch basins. The hydraulic model predicts a reduction of 2.01 MG in CSO discharge for the largest storm in the typical year and a 1.20 MG reduction in flooding for the 2030 10-year 24-hour design storm.

Expanded Tree Canopy

Progress in 2022:

- Between July 1, 2021 and June 30, 2022, the goal of planting 350 new trees was exceeded by planting 637 trees, including both park trees and street trees.
- Efforts were made to proactively maintain the health of the trees through programs such as the Parks Tree Health Program and the Young Tree Training Program.
- The City removed 239 high- and moderate- risk trees.
- The City planted more native plants, to create habitat for native pollinators and wildlife and restore native ecosystems.
- The Somerville Pollinator Action Plan Advisory Committee was formed to create the first of its kind Pollinator Action Plan. The Pollinator Action Plan will guide Somerville to support, protect, and maintain urban pollinator ecosystems.

Plans for 2023 and Beyond:

- Continue citywide planting efforts to meet the goal of planting 350 trees per year.
- Maintain existing trees, including pruning, public engagement, and developing guidance and training for community stewardship of trees.

Reduced Consumption and Waste

Progress in 2022:

- Inspectional Services Department (ISD) created a new permitting process for Fats, Oils, and Grease (FOGS) management in food establishments.
- The City began conducting Somerville's first consumption-based emissions inventory (CBEI). A CBEI is an estimate of the greenhouse gas emissions associated with the goods and services used by all residents of a geographic area. It is equivalent to a personal household carbon footprint estimate, except calculated for all households in Somerville. The results will be used to inform the updated Climate Forward plan and city priorities. It is believed Somerville will be the first community in Massachusetts to complete a CBEI.
- The City piloted an organic waste disposal program at select schools.
- Secured funding for Somerville's first Zero Waste Plan.

Plans for 2023 and Beyond:

- Increase community buy-in for FOGS permitting by actively engaging with residents and businesses, highlighting the positive impact that FOGS management has on water quality and infrastructure.
- The City will evaluate the results of the pilot school organize waste disposal program and determine next steps.
- Develop the Zero Waste Plan.

COMMUNITY

Healthy and Resilient Community

Progress in 2022:

- For warm days, the City developed a draft plan for cooling centers. The City also strategized for how to create more engaging cooling centers and piloted opening the libraries on Sundays in the summer.
- Health and Human Services established a warming center for the unhoused and developed internal health and safety policies for City staff who work outdoors.
- The City assessed the number of seniors living in non-air conditioning (AC) units and coordinated with the Somerville Housing Authority to explore the feasibility of providing AC units. This assessment considered the cost to seniors and identified potential funding sources. Through this assessment, the City established a long-term goal of ensuring a community room with AC is accessible to all seniors.
- The City participated in the Charles River Watershed Association Climate Compact, Metro Mayors Coalition Climate Task Force, Resilient Mystic Collaborative, and Urban Sustainability Directors Network.
- Staff contributed to the newly released Metro Mayor's Coalition Climate Task Force Keeping Metro Boston Cool: A Regional Heat Preparedness and Heat Adaptation Plan.
- The Hazard Mitigation Plan was updated in 2021 and approved by the City Council, MEMA, and FEMA in 2022. For the first time, the plan highlighted climate change impacts in all areas. FEMA called the plan a best practice for Region 1.

Plans for 2023 and Beyond:

- Expand extreme weather notifications and communications to include flash flooding and other weather events beyond extreme heat and cold.
- Continue working to provide AC units to seniors living in non-AC units and expand the community rooms with AC.

Pathway to 100% Renewable Electricity

Progress in 2022:

- The City received 88 electrical permit requests for solar-related work.
- The City's Community Choice Electricity (CCE) contract was renewed. The contract renewal doubled the percentage of renewable energy from regional sources in the Local Green option.
  - As of December 2022, a total of 24,918 electricity accounts were enrolled in the CCE program. 22.4 million kWh in extra renewable energy was purchased through the Local Green option, which is equivalent to 3,089 homes' electricity use for one year.
  - At the end of 2022, there were 1,063 accounts enrolled in the 100% Local Green option, representing one-fifth of all voluntary renewable energy purchased by the program. These customers collectively purchased 4.8 million kWh extra renewable energy, which is equivalent to 656 homes' electricity use for one year.
  - CCE participants saved $9.4 million across all product offerings compared to Eversource Basic Service rate. Future savings cannot be guaranteed due to Basic Service rate changes every six (6) months for residential and commercial customers and every three (3) months for industrial customers.

Plans for 2023 and Beyond:

- Work with the Commission on Energy Use and Climate Change to increase participation and increase enrollment in the 100% Green option.

Culture of Climate Action

A Climate Ambassador draws their climate origin story - what motivated them to get involved with environmentalism and local climate action.

Progress in 2022:

- Prepared for the return of Climate Ambassadors.
- Hosted inaugural class of Mayor's Somerville Youth Climate Crew, part of the Mayor's summer jobs program.
- Hosted a three-part speaker series around the theme of ecoanxiety and sustainability at the West Branch Library.

Plans for 2023 and Beyond:

- Host the fourth cohort of Climate Ambassadors.
- Apply for Municipal Vulnerability Preparedness funding.
- Bring back Sustainaville Week, the first of the post-pandemic era.

LEADERSHIP

City Government Leading by Example & State advocacy for carbon neutrality

Progress in 2022:

- Somerville received an A-rating from CDP for global climate leadership, the highest ranking for cities.
- The City conducted the 2020 greenhouse gas inventory, the first post-pandemic inventory year.
- The State released draft language for the Stretch Energy Code and a new third-tier energy code called the Specialized Energy Code. Mayor Ballantyne provided comments and advocated for the building code to provide municipalities with a pathway to require net-zero design in new construction, alterations, additions, and renovations.
- Somerville was the first community to file a Home Rule Petition to join the Fossil Fuel Free Demonstration Pilot Program after it was signed into law in August 2022.

Plans for 2023 and Beyond:

- Analyze and adapt City processes and procedures to implement the updates to the statewide Stretch Energy Code.
- Request the City Council adopt the Specialized Energy Code.
- Apply for the Fossil Fuel Free Demonstration Program.

Regional Collaboration for Coastal Resilience

Progress in 2022:

- The Resilient Mystic Collaborative (RMC), comprising 20 municipalities, has been working since 2018 to address extreme heat, flooding, and social vulnerability.
  - In 2022, the RMC released a regional vulnerability assessment of the Lower Mystic River Watershed.
    - The RMC is working with state and federal dollars to protect 10 flood pathways, some of which directly impact Somerville. Mayor Ballantyne hosted a press conference featuring members of local, state, and federal delegations to celebrate $23 million in funding secured and bonded to support continued action for three projects along the Mystic River addressing coastal resiliency: the Amelia Earhart Dam, Draw 7 Park, and the Island End River.
    - The RMC was awarded $556,000 to hold professionally facilitated discussions between lower Mystic municipalities and developers to optimize

Mayor Ballantyne, members of the public, and attendees from all levels of government gather at Draw 7 park for the Resilient Mystic Collaborative press conference, October 2022.

development and identify how to maximize the opportunity for resilient development. Somerville is participating in the project.

Plans for 2023 and Beyond:

- The City will continue to collaborate on regional grants and advocate for funding to design and implement coastal flooding interventions along specific areas of concern.