



BEVERLY & SALEM RESILIENT TOGETHER

CLIMATE ACTION & RESILIENCE PLAN | 2021

Our Bridge to a Stronger Tomorrow



PROJECT BACKGROUND

Shared Past

2009

SALEM

Energy Efficiency & Conservation Strategy

2010

SALEM

Green Community designation by Massachusetts Department of Energy Resources (DOER)

2011

BEVERLY

Green Community designation by DOER

SALEM

Hazard Mitigation Plan update



2014

Salem Climate Change Vulnerability Assessment & Action Plan and Infrastructure Vulnerability Assessment & Prioritization



2015

BEVERLY

Bicycle Network and Pedestrian Plan

Incentivized curbside compost pick-up service

SALEM

Open Space & Recreation Plan

City-wide streetlight LED retrofit

2016

BEVERLY

Open Space & Recreation Plan update (adopted in 2008)

SALEM

100% renewable energy commitment

Community Food Assessment

Opt-Out Green Municipal Aggregation (GMA)

Shared Past

2017

BEVERLY

Coastal Resilience Plan and Infrastructure Vulnerability Assessment

BEVERLY/SALEM

U.S. Climate Mayors member

SALEM

Municipal Vulnerability Preparedness (MVP) Community designation

2018

BEVERLY

C40 Deadline (2020 Commitment to develop Climate Action Plan)

Natural Hazard Mitigation Plan (second update, adopted 2006)

City-wide streetlight LED retrofit

Deadline 2020 commitment to joining Cities Race to Zero

BEVERLY/SALEM

Plastic Bag Ban

SALEM

Bicycle Master Plan

Municipal Street Tree Assessment Project

1 MW solar array on schools

Launched bikeshare program

2019

BEVERLY

MVP Community designation and report

SALEM

Imagine Salem

Solarize North Shore Program

2020

BEVERLY

100% renewable energy commitment

First electric school bus in service

4.9 MW solar array with community solar built on former City landfill

Cities Race to Zero commitment

SALEM

Downtown tree planting project funded by MVP program

Hazard Mitigation Plan Update

2021

BEVERLY

PlanBeverly, the City's Comprehensive Master Plan

SALEM

Greening the Gateway Cities program to plant 2,000 trees



Shared Present

SHARED WATERWAYS



SIMILAR DEMOGRAPHICS

BEVERLY

POPULATION

41,885

AREA

22.6 SQ. MILES

SALEM

POPULATION

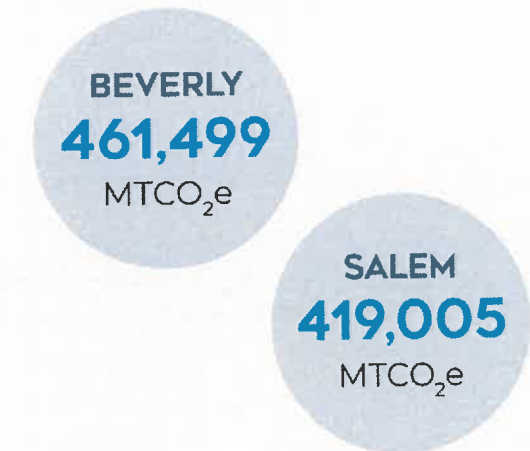
43,252

AREA

18.3 SQ. MILES

SIMILAR CARBON FOOTPRINT

2018 Baseline GHG Emissions

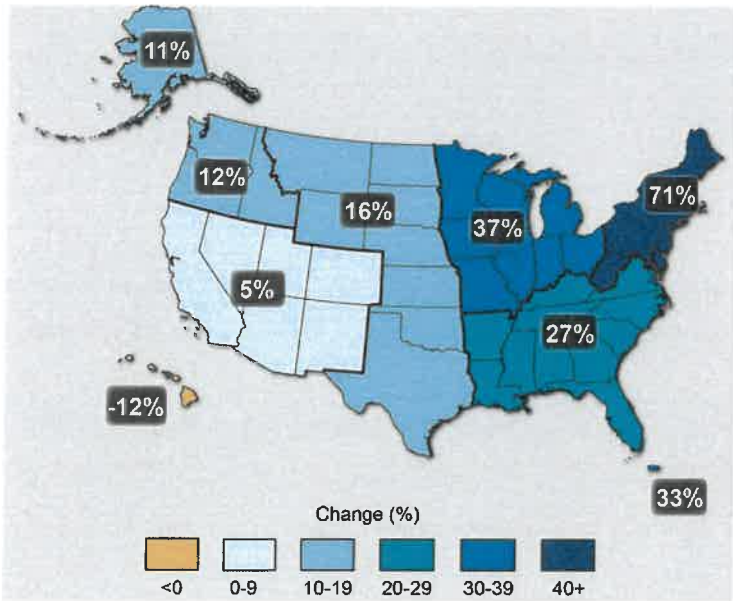


Shared Future

CLIMATE CHANGE TRENDS & PROJECTIONS

EXTREME STORMS

Observed Change in Very Heavy Precipitation



what we have already seen:



INCREASE IN RAINFALL FROM HEAVY STORM EVENTS

what we can expect to see:



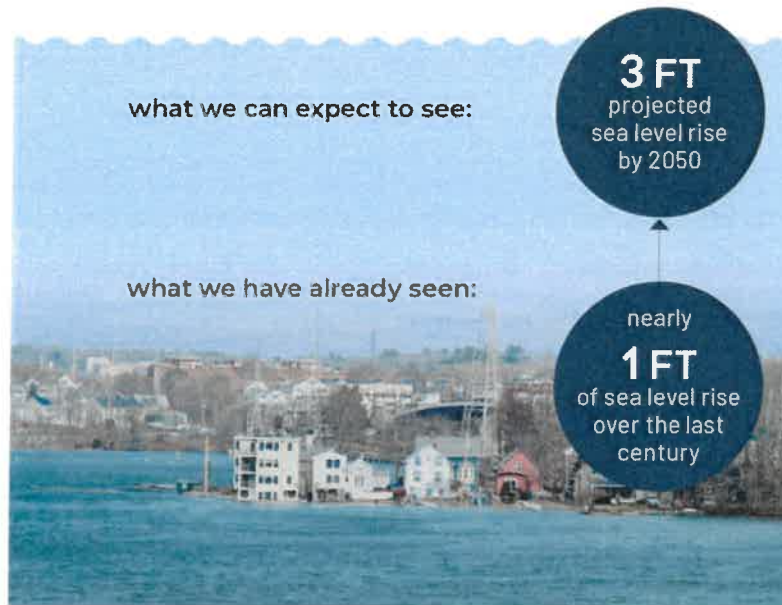
INCREASE IN RAINFALL PER YEAR, MOSTLY IN WINTER



Shared Future

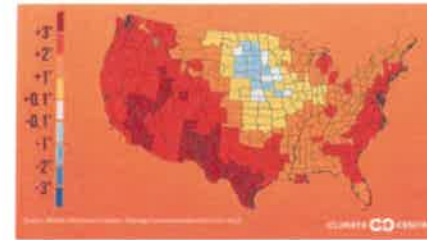
CLIMATE CHANGE TRENDS & PROJECTIONS

SEA LEVEL RISE



HEAT WAVES

SUMMER WARMING SINCE 1970 (°F)

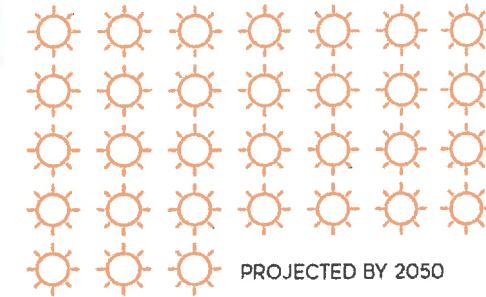


what we have already seen:



7
days annually
over 90°

what we can expect to see:



up to **31**
more days
over 90°



Shared Vision

The Cities of Beverly and Salem, through the collective action of Resilient Together, will embrace both short-term and long-term solutions that reduce greenhouse gas emissions to achieve carbon neutrality by mid-century while ensuring that our communities are resilient to the impacts of climate change.

In doing so, Beverly and Salem will remain inclusive and thriving communities, attractive and accessible to diverse families and businesses, for generations to come.

Beverly and Salem have committed to:

REDUCING GHGS

50%

by 2030

**EXCEEDING THE
COMMONWEALTH'S
GOAL TO ACHIEVE**

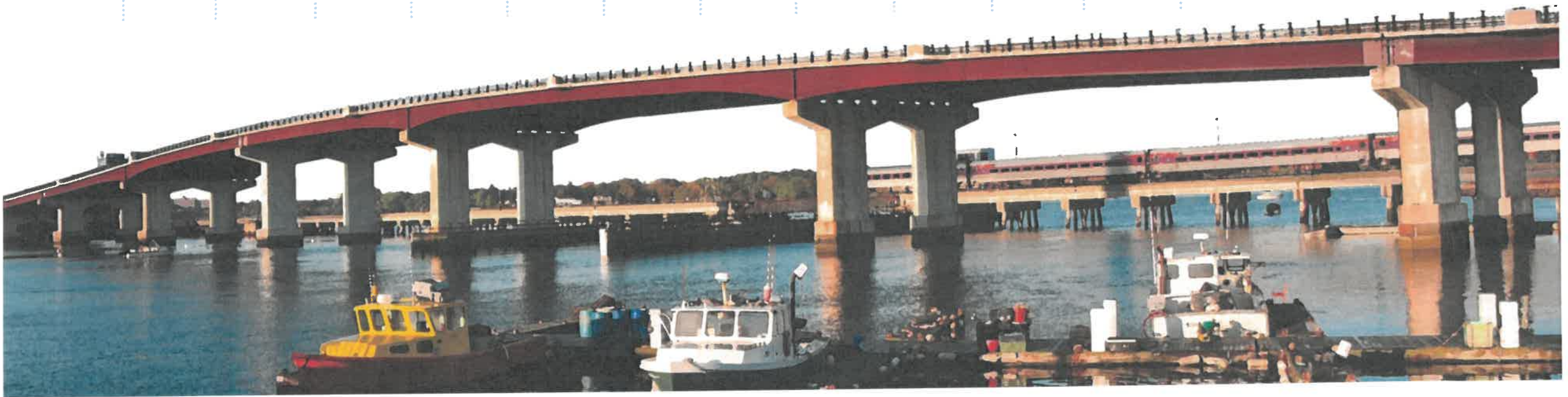
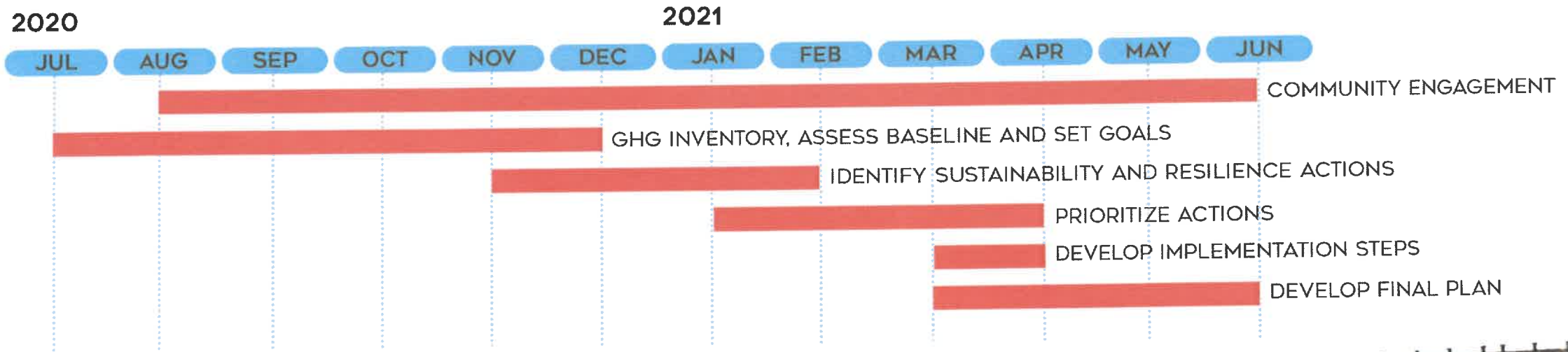
**CARBON
NEUTRALITY**

by 2050



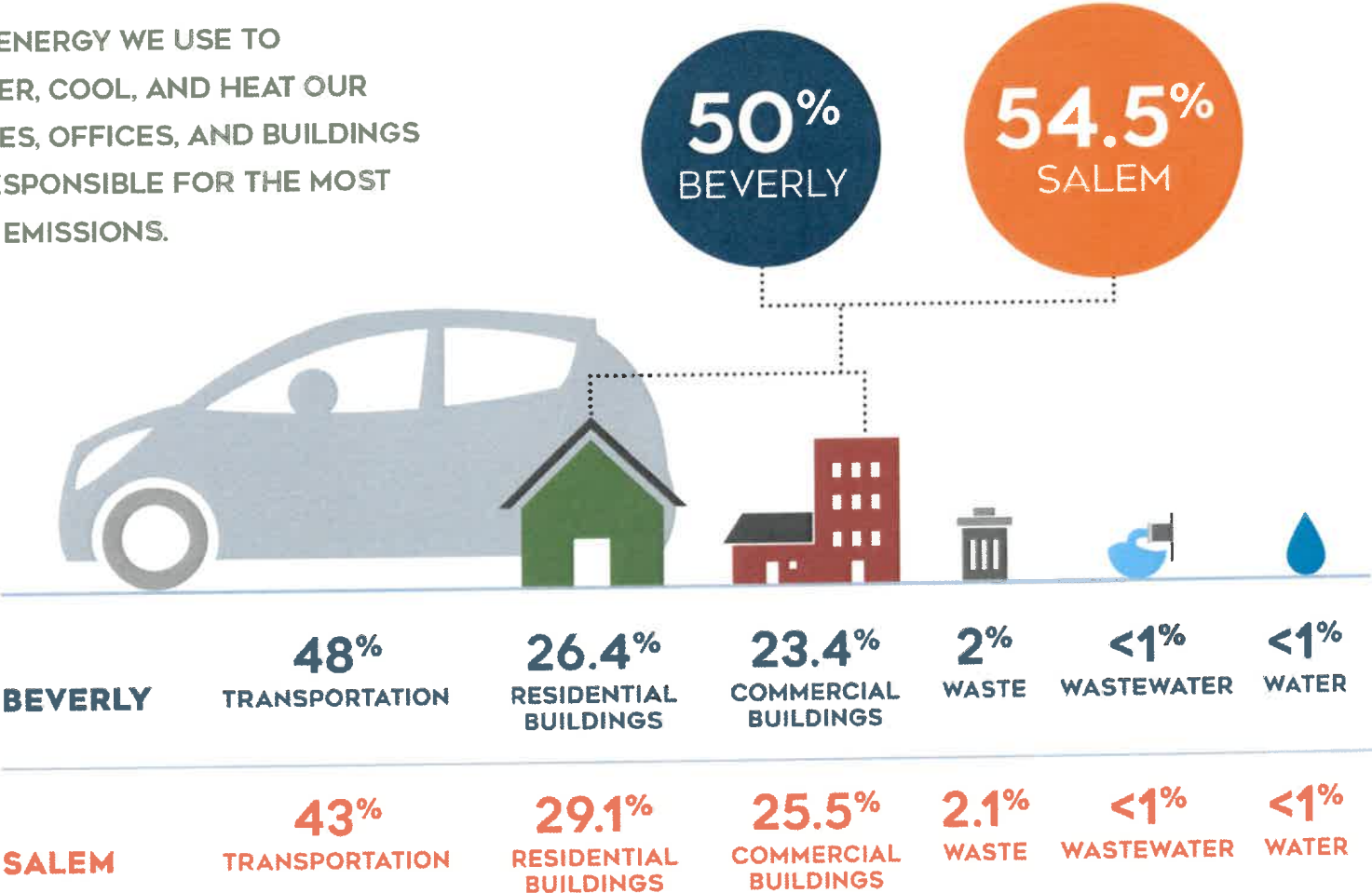
PROCESS OVERVIEW

Resilient Together Planning Process



GHG Inventory & Forecast

THE ENERGY WE USE TO POWER, COOL, AND HEAT OUR HOMES, OFFICES, AND BUILDINGS IS RESPONSIBLE FOR THE MOST GHG EMISSIONS.



Business-As-Usual Scenario 2018-2050

MISCELLANEOUS

WASTE

OTHER TRANSPORTATION

ON-ROAD ELECTRICITY

ON-ROAD FOSSIL FUELS

OTHER HEATING FUELS

BUILDING ELECTRICITY

NATURAL GAS



**RESILIENT
TOGETHER**
OUR BRIDGE TO A STRONGER TOMORROW

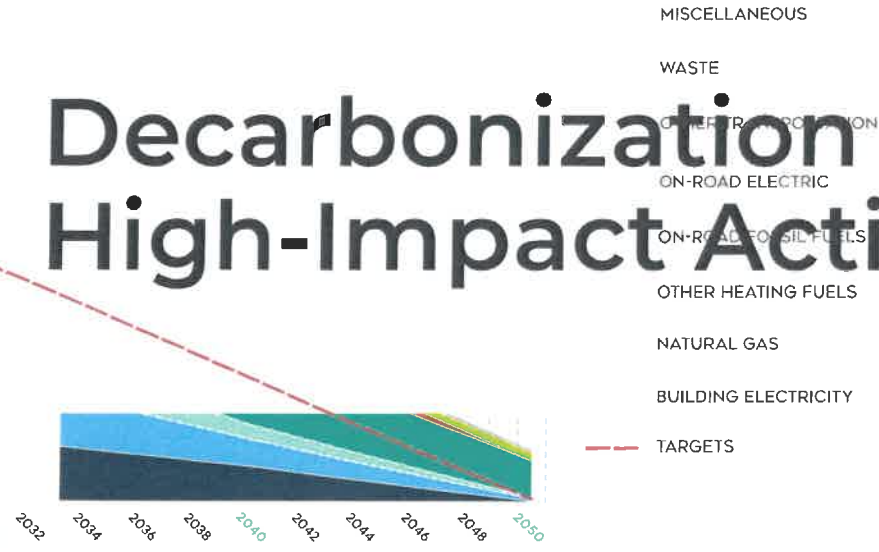
While this chart illustrates the deep impact of high impact actions on the direct source of GHGs in our communities, our targets are even more ambitious.

Reaching 100% clean electricity by 2030 would bring us in line with the target for that year. As we update this plan in the years ahead, we will pursue new technologies and standards (e.g., for equipment, vehicles) in order to expand the options we have for closing the gap to zero emissions by 2050 or sooner.



RESILIENT TOGETHER
OUR BRIDGE TO A STRONGER TOMORROW

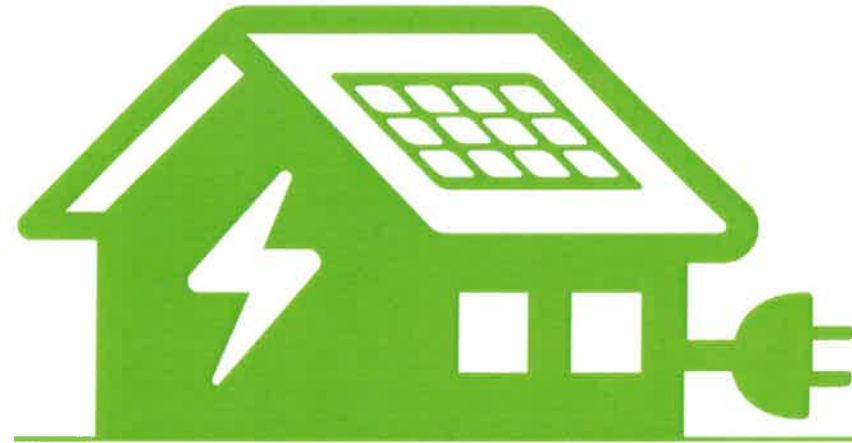
Decarbonization Scenario with High-Impact Actions: 2018-2050



BY 2050:

BEVERLY
10,287

SALEM
10,323



Number of homes to electrify by
2050 to meet carbon neutrality goals

Engaging the Community



725
HOURS



1,000+
SURVEY
RESPONSES



19
PERSONAL
TESTIMONIALS



6
PRESENTATIONS





3 GOALS OF ENGAGEMENT

- BUILD LOCAL CAPACITY
- INFORMING THE PLAN
- EQUITABLE ENGAGEMENT

50,000+
TOTAL REACH

The summary box features a target icon at the top, a group of seven stylized human figures in green, and three grey rounded rectangles containing the engagement goals. Below the goals are five small downward-pointing arrows. A large orange arrow points from the bottom of the central diagram to the bottom of this summary box.

“

We are prioritizing education and information sharing to increase awareness of climate impact and its relation to migration. We understand climate change impacts most those who are vulnerable and have less capacity/resources to adapt; this means the communities where many of us migrated from, places many of us call home. We want to empower community members with information and tools to influence positive changes both, in their home countries and their host country.

ELSABEL RICON, WELCOMING IMMIGRANTS NETWORK



“

Resilient Together will...provide Workforce development for the jobs of the future.

NAISHA TATIS, RECENT GRADUATE OF BEVERLY HIGH SCHOOL



“

I grow my own food, support local farms regularly, and recycle and repurpose items in order to decrease what will end up going into landfills. I also support organizations like Mill City Grows, the Food Project, and Salem Y Greenspace. Urban farming is essential to ensure food access for all, especially those neighbors living in food deserts.

KATELYN ADAMS
ASSISTANT DIRECTOR, DEPARTMENT,
CENTER FOR CIVIC ENGAGEMENT,
SALEM STATE UNIVERSITY



“

Resilient Together will ensure that we remain inclusive and thriving communities for all.

JENNI ESPINAL AND CENEIDA CUETO SILVESTRE - SALEM RESIDENTS



“

My interest has been to reduce municipal reliance on fossil fuels by formally introducing relevant issues into the municipal dialogue. [Through this, I've] advocated for a high performance new high school.

FRED HOPPS, BEVERLY CLEAN ENERGY ADVISORY COMMITTEE AND RESILIENT TOGETHER AMBASSADOR

“

By working with you, and every member of our community, we will be RESILIENT TOGETHER.

MALCOM TOLOUSE
BEVERLY RESIDENT



“

I want to take action instead of just complaining. I am in my 20's and my generation is stuck dealing with a climate crisis that was caused by previous generations. I want collective action to work together.

LIZABETH DAVIS, SALEM STATE UNIVERSITY STUDENT AND RESILIENT TOGETHER AMBASSADOR





**THE RESILIENT
TOGETHER PLAN**

FOCUS AREAS



**BUILDINGS &
DEVELOPMENT**



**NATURAL
RESOURCES**



**PUBLIC HEALTH
& SAFETY**



SOLID WASTE



MOBILITY



ENERGY



INFRASTRUCTURE

SIX GUIDING PRINCIPLES



**COMMUNITY
RESILIENCE**



**ECONOMIC
VITALITY**



**GHG EMISSIONS
REDUCTIONS**



**RESTORATION &
TRANSFORMATION**



HEALTH



EQUITY



BUILDINGS AND DEVELOPMENT

GOALS

- ▶ The Cities lead by example through adoption of smart, clean, net zero technology in existing and new municipal buildings.
- ▶ All new buildings and major renovations are designed, constructed, and maintained for maximum lifespan, resource efficiency, GHG reduction, and climate resilience.
- ▶ Walkability, connectivity, and social interaction are emphasized through equitable transit-oriented development.
- ▶ Development prioritizes adaptive reuse, brownfield redevelopment, and resilience to protect and restore community historic, cultural, and land assets.
- ▶ The Cities are a model of sustainable, resilient building management focused on excellence in long-term operations and maintenance.



BUILDINGS AND DEVELOPMENT

ACTIONS

BD-1

Encourage and incentivize property owner participation in deep energy retrofits

BD-2

Develop energy performance and electrification standards and incentives for new construction and major renovations to encourage progress toward net zero carbon emissions in buildings

BD-3

Establish requirements for new commercial and multi-family residential properties to include electric vehicle charging infrastructure, eco-roofs, and bike-ped amenities

BD-4

Adopt the state net zero energy building code

BD-5

Host, promote, and invest in trainings and collaborative learning for municipal staff, boards/ commissions, and building industry partners to support energy efficiency and decarbonization practices, from design to ongoing maintenance

BD-6

Establish overlay zoning district(s) that establish minimum flood resilience design standards for new construction and existing buildings

BD-7

Implement energy efficiency upgrades, renewables, and resilience improvements in all municipal properties

BD-8

Commission a vulnerability assessment of historic buildings

BD-9

Develop a public education and outreach program about flood protection strategies, Community Rating System, and flood insurance, including the National Flood Insurance Program (NFIP) and Risk Rating 2.0 updates



BUILDINGS AND DEVELOPMENT

SHORT= 1-2 YEARS MEDIUM= 3-5 YEARS LONG=5+ YEARS

\$= EXISTING RESOURCES OR <\$10K \$\$= <\$100K \$\$\$= \$100K OR MORE

ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
BD-1	Program/ Education	Encourage and incentivize property owner participation in deep energy retrofits.	Reduce barriers for participation in, and actively recruit, homeowners and business owners for deep energy retrofits (over 40% energy use reduction) that are compatible with historic fabric. Clarify incentives and document retrofits through case studies.	Planning Depts, Sustainability	Medium	\$\$
BD-2	Standards/ Guidelines	Develop energy performance and electrification standards and incentives for new construction and major renovations to encourage progress toward net zero carbon emissions in buildings.	The Cities will develop incentives for new construction and major renovations that achieve net zero and net zero ready performance standards, such as Passive House. These standards and incentives will encourage highly efficient, sustainable buildings, not only in advance of the Cities' adoption of a forthcoming net zero stretch code, but also in the medium- and long-term, should provisions such as full electrification be missing from the new stretch code.	Planning Depts. Sustainability	Short	\$\$
BD-3	Policy	Establish requirements for new commercial and multi-family residential properties to include electric vehicle charging infrastructure, eco-roofs, and bike-ped amenities.	The Cities will require electric vehicle charging infrastructure and bike-ped amenities in new commercial and multi-family (5+ units) developments, which will promote the use of EVs and alternative modes of transportation for residents and employees. An eco-roof policy will require the integration of solar-installed or solar-ready roofs, green roofs, or white roofs, which will promote a range of benefits from reducing carbon emissions to mitigating urban heat islands and stormwater runoff.	Planning Dept, Sustainability	Short	\$\$
BD-4	Policy	Adopt the state net zero energy building code.	The building energy code is a critical tool in making advancements toward net zero and net zero-ready new buildings, but in Massachusetts, the base code and stretch code amendments are established at the state level. The Cities will play their part in adopting the zero-energy stretch code to improve occupant health, cut carbon emissions, and make buildings more operationally efficient. The Cities will create development incentives to encourage net zero energy and net zero ready new construction in the near term.	Planning Depts, Sustainability	Medium	\$
BD-5	Training/ Education	Host, promote, and invest in trainings and collaborative learning for municipal staff, boards/commissions, and building industry partners to support energy efficiency and decarbonization practices, from design to ongoing maintenance.	The Cities will seek, promote, and invest in learning opportunities in conjunction with industry leaders (developers, contractors, etc.) to advance the awareness and adoption of energy efficient and clean energy building design, construction, and maintenance. The Cities will incorporate asset management best practices into trainings and focus on workforce development to bolster a proactive maintenance driven culture.	Planning Depts, Sustainability	Short	\$\$



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ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
BD-6	Zoning	Establish overlay zoning district(s) that establish minimum flood resilience design standards for new construction and existing buildings.	The Cities will create zoning overlay districts for areas at risk of coastal flooding to promote climate readiness for new and existing buildings.	Planning Depts	Medium	\$\$
BD-7	Capital Improvement	Implement energy efficiency upgrades, renewables, and resilience improvements in all municipal properties.	The Cities will evaluate public buildings for energy efficiency and resilience upgrades, implement upgrades, and produce case studies and communicate best practices to community members and other municipalities.	Public Services, Schools	Medium	\$
BD-8	Research/ Assessment + Standards/ Guidelines	Commission a vulnerability assessment of historic buildings.	The Cities will facilitate vulnerability assessments for historic buildings to understand the climate risks and resilience-building opportunities.	Planning Depts	Medium	\$\$
BD-9	Training/ Education	Develop a public education and outreach program about flood protection strategies, Community Rating System, and flood insurance, including the National Flood Insurance Program (NFIP) and Risk Rating 2.0 updates.	The Cities will devote resources to raising awareness about coastal flood vulnerabilities to buildings and the measures building owners can take to make their properties more resilient. Consider strategies to facilitate managed retreat or relocation.	Engineering Depts, Planning Depts, Sustainability	Medium	\$



ENERGY

GOALS

- ▶ Regional clean energy will supply 100% of municipal asset operations by 2030 and 100% of community energy by 2040.
- ▶ Renewable energy is accessible to all residents and businesses.
- ▶ Our energy supply is reliable, efficient, safe, and resilient to climate-related disruptions.
- ▶ Clean energy, electrification, and energy storage technology adoption provide new and inclusive workforce development opportunities for our communities.
- ▶ All critical facilities have redundant systems to ensure utilities are supplied for the duration of projected future storm events.
- ▶ The Cities support policies, regulations, and infrastructure that increasingly enable electrification of buildings and transportation.



ENERGY

ACTIONS

E-1

Promote residential energy efficiency, renewable energy, and electrification, facilitating participation in state and utility program offerings

E-2

Identify potential locations for district-scale geothermal microgrids and encourage, support, and incentivize this practice for large developments

E-3

Develop an education campaign for local businesses on opportunities for energy demand reduction, such as demand response programs and other utility incentives. This education campaign could shift focus, as needed, over time

E-4

Host existing and establish new training programs for businesses and homeowners on renewable energy and energy storage options

E-5

Incorporate clean energy education and climate change education into the school curriculum

E-6

Promote clean alternatives to electrification for difficult-to-electrify properties

E-7

Evaluate critical municipal facilities to increase energy efficiency and redundancy, exploring opportunities for cleaner and more secure back-up power options, as technologically feasible

E-8

Advocate for large-scale offshore wind projects and explore feasibility of Cities as anchor institutions for State projects

E-9

Establish progressively higher percentage requirements for New England region renewable energy projects for standard option green municipal aggregation (GMA) programs and promote "plus" options for 100% regional renewable energy

E-10

Coordinate with local institutions to provide vocational training programs for clean energy careers

E-11

Partner with utilities to address gas leaks in supply infrastructure by replacing all cast iron pipe



ENERGY

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ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
E-1	Advocacy/Engagement	Promote residential energy efficiency, renewable energy, and electrification, facilitating participation in state and utility program offerings.	Coordinating communications is crucial to the success of residential adoption of energy upgrades. The Cities will launch a coordinated, branded program to promote residential energy efficiency, renewable energy (inclusive of wind, solar, solar hot water, and geothermal technologies), and electrification. As part of this program, the Cities will facilitate participation among homeowners, landlords, and tenants in state and utility program offerings such as Mass Save, MassCEC, National Grid, and PACE.	Sustainability Depts	Short	\$\$\$
E-2	Research/Assessment	Identify potential locations for district-scale geothermal microgrids and encourage, support, and incentivize this practice for large developments.	The Cities will evaluate potential locations for district-scale geothermal microgrids, targeting campuses and larger facilities in public and private sectors. They will identify technical, logistical and financial barriers to implementing microgrids. The Cities will encourage and incentivize geothermal microgrids in large redevelopments and subdivisions.	Engineering Depts	Short	\$\$
E-3	Training/Education	Develop an education campaign for local businesses on opportunities for energy demand reduction, such as demand response programs and other utility incentives. This education campaign could shift focus, as needed, over time.	The Cities will develop a campaign to educate local businesses on energy demand reduction opportunities. They will provide information on energy management technologies and strategies and the costs and benefits. They will also provide information on utility demand response programs and incentives.	Planning Depts	Short	\$
E-4	Training/Education	Host existing and establish new training programs for businesses and homeowners on renewable energy and energy storage options.	The adoption of clean energy technologies and available programs by residents is critical to achieving community energy goals. The Cities will ensure that business owners and homeowners understand renewable energy and energy storage technologies and available programs and incentives. They will facilitate or host programs or develop and deliver new programs. The Cities will support residential and commercial tenants to access these technologies by ensuring training of commercial and residential landlords as well as training tenants on community solar options.	Sustainability Depts	Medium	\$\$
E-5	Training/Education	Incorporate clean energy education and climate change education into the school curriculum.	Climate change education for all ages can ensure that the next generation is informed and prepared to meet the challenges of climate disruption. The Cities will work with public and private schools, community centers, and enrichment/after-school programs to incorporate age-appropriate clean energy and climate change education into curricula for K-12.	Schools	Short	\$



ENERGY

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ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
E-6	Advocacy/Engagement	Promote clean alternatives to electrification for difficult-to-electrify properties.	The Cities will identify technology alternatives to electrification that can be used in properties requiring cost-prohibitive infrastructure changes. They will create technology demonstration projects. The Cities will also identify applicable incentives.	Planning Depts	Medium	\$\$\$
E-7	Capital Improvement	Evaluate critical municipal facilities to increase energy efficiency and redundancy, exploring opportunities for cleaner and more secure back-up power options, as technologically feasible.	The Cities will identify critical municipal facilities and complete an investment-grade audit to identify energy efficiency and redundancy. They will revisit cleaner and more secure emergency back-up power options as an alternative to diesel generators, as technologically and financially feasible.	Engineering Depts	Short	\$\$
E-8	Advocacy/Engagement	Advocate for large-scale offshore wind projects and explore feasibility of Cities as anchor institutions for State projects.	Partnerships and advocacy are valuable strategies to accelerate clean energy projects in the region. The Cities will work with legislators, advocacy groups, and private sector developers to encourage offshore wind and seek to proactively develop/attract businesses that support offshore wind manufacturing, construction, maintenance and related activities.	Building Depts	Short	\$\$
E-9	Policy	Establish progressively higher percentage requirements for New England region renewable energy projects for standard option green municipal aggregation (GMA) programs and promote "plus" options for 100% regional renewable energy.	Sourcing local, renewable energy is a way to reduce emissions while supporting the local energy economy. The Cities will establish progressively higher percentage requirements for New England region renewable energy projects for standard option green municipal aggregation (GMA) programs. They will promote "plus" options for 100% Class I Renewable Energy Credits (RECs) from New England to grow the regional renewable energy economy.	Planning Depts	Medium	\$\$
E-10	Training/Education	Coordinate with local institutions to provide vocational training programs for clean energy careers.	Supporting clean energy careers is an important action to strengthen the local energy economy and create opportunities for sustainable technical jobs. The Cities will promote and support regional vocational training and continuing education programs, such as for green construction, electrical technicians, and manufacturing. They will identify the need for additional programming, recruiting, and incentives; support for special populations; and employer recruiting and incentives. They will create clear and celebrated career pathways from kindergarten through job placement.	Schools, Economic Development	Long	\$\$\$
E-11	Capital Improvement	Partner with utilities to address gas leaks in supply infrastructure by replacing all cast iron pipe.	The Cities will motivate gas utilities to perform gas leak detection and mapping throughout its local and regional distribution infrastructure. They will incentivize utility replacement of cast iron gas pipes, which are responsible for the majority of leaks. The Cities will evaluate permitting requirements to encourage leak reduction.	Engineering Depts	Medium	\$\$



INFRASTRUCTURE

GOALS

- ▶ The Cities' infrastructure assets are designed, constructed, and maintained to optimize integrated systems for efficiency, resilience, and to minimize failure
- ▶ Wastewater, drinking water, and stormwater infrastructure are designed and constructed for water conservation and resilience to projected climate conditions.
- ▶ Infrastructure upgrades are equitably distributed throughout the Cities and prioritized based on greatest need.
- ▶ Major infrastructure is planned, designed, and constructed with consideration of long-term maintenance and life cycle costs, benefits, and emissions.
- ▶ The Cities actively pursue green and nature-based solutions for infrastructure upgrades.



INFRASTRUCTURE

ACTIONS

I-1

Implement a computerized maintenance management system (CMMS) to assess public asset conditions, streamline data collection, and estimate asset replacement values

I-2

Analyze all infrastructure for vulnerability, evaluate for criticality, rank for priority upgrades, and incorporate into asset management and capital planning.

I-3

Explore financing strategies like stormwater fees to generate needed revenue for infrastructure financing

I-4

Develop and adopt sustainable and resilient design guidelines for all new site development and infrastructure projects, as well as upgrades/maintenance to existing infrastructure

I-5

Implement an education and training program for municipal staff (including DPS/DPW, planning staff, administration) on best practices for operations and maintenance of green infrastructure. Make information from these trainings available to the public

I-6

Create incentives for businesses and residents to convert impervious surfaces to pervious areas

I-7

Implement resilience upgrades for critical infrastructure assets vulnerable to coastal flooding

I-8

Establish a long-term strategy for public shoreline stabilization structures with an emphasis on nature-based solutions and naturalizing the coastline

I-9

Conduct a detailed hydrologic and hydraulic model of the cities to understand flood risks

I-10

Assess vulnerability of telecommunications infrastructure and develop strategy to improve resilience



INFRASTRUCTURE

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ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
I-1	Technology/ Software	Implement a computerized maintenance management system (CMMS) to assess public asset conditions, streamline data collection, and estimate asset replacement values, considering, as appropriate, life cycle assessment.	A comprehensive computerized maintenance management system (CMMS) is a functional way to plan, implement, operate, and maintain infrastructure systems. The Cities will streamline their infrastructure systems in order to most efficiently and effectively identify operations and maintenance projects, protocols, and prioritization for infrastructure financing and repairs. The CMMS system should be linked to and inform the capital plan.	Engineering Depts	Short	\$\$\$
I-2	Research/ Assessment	Analyze all infrastructure for vulnerability, evaluate for criticality, rank for priority upgrades, and incorporate into asset management and capital planning.	Beverly and Salem share a significant amount of critical infrastructure, including utilities through the South Essex Sewerage District and the Salem/Beverly Water Supply Board, road infrastructure, and bridges. The Cities will work to thoroughly analyze their own assets as well as work together to analyze their mutual interdependencies and foster collaborative action, whenever possible, to ensure the resilience of critical assets in both communities simultaneously.	Public Services, Engineering Depts	Long	\$\$\$
I-3	Policy	Explore financing strategies like stormwater fees to generate needed revenue for infrastructure financing.	Stormwater infrastructure planning, design, and maintenance is expensive. With increasing climate risks, generating the needed revenue to pay for critical improvements to increase the stormwater system's resilience is imperative. The Cities will build local autonomy, reduce burdens on the stormwater system, decrease urban heat island effect, and improve water quality by generating revenue through stormwater fees calculated by impervious surface area on private properties or other means as determined practicable.	Mayor's Office	Medium	\$\$
I-4	Standards/ Guidelines	Develop and adopt sustainable and resilient design guidelines for all new site development and infrastructure projects, as well as upgrades/maintenance to existing infrastructure.	The Cities will adopt sustainable and resilient site development and infrastructure design guidelines that incorporate climate projections for Massachusetts for at least 2070 and focus on resilient and sustainable design, operations, and maintenance best practices. The Cities will work to ensure all infrastructure meets updated standards as determined by their life cycle replacement timeline.	Public Services	Short	\$\$



INFRASTRUCTURE

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ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
I-5	Training/ Education	Implement an education and training program for municipal staff (including DPS/DPW, planning staff, administration) on best practices for operations and maintenance of green infrastructure. Make information from these trainings available to the public.	Green infrastructure is a highly effective way for cities and their communities to increase their resilience and adapt to climate change. While green infrastructure has been around for some time, it has not been widely used, and new information is constantly becoming available to improve standards and define best practices. The Cities will take the opportunity to provide public and private education and training to inform all developers, engineers, contractors, and residents and stakeholders on the benefits of, and stormwater regulation for green infrastructure implementation.	Engineering Depts	Long	\$\$
I-6	Policy	Create incentives for businesses and residents to convert impervious surfaces to pervious areas.	Many public assets such as roads, sidewalks, and public buildings have impervious surfaces, but impervious areas are often found on private property. The Cities will create incentives for private property owners to convert impervious surfaces to pervious areas, which will improve water quality, reduce the burden on city stormwater infrastructure, and improve quality of life for everyone in the community.	City Councils, Planning Depts	Long	\$\$\$
I-7	Capital Improvement	Implement resilience upgrades for critical infrastructure assets vulnerable to coastal flooding.	The Cities have identified critical infrastructure plans through their Hazard Mitigation Plans, but additional steps are needed to identify and implement resilience upgrades to reduce vulnerabilities based on climate projections.	Engineering Depts	Long	\$\$\$
I-8	Policy	Establish a long term strategy for public shoreline stabilization structures with an emphasis on nature-based solutions and naturalizing the coast line.	As sea levels rise and storm surge threats intensify, coastal cities like Beverly and Salem must take dramatic action to protect their shorelines. Increasingly, nature-based solutions that restore coastal habitats like wetlands are shown to have powerful results for stabilization while providing other benefits like habitat creation and water quality improvements. The Cities will work to review public properties located on the coast and consider alternatives to grey infrastructure stabilization solutions.	Engineering Depts	Long	\$\$
I-9	Research/ Assessment	Conduct a detailed hydrologic and hydraulic model of the cities to understand flood risks.	In order to better understand their vulnerability to flooding, sea level rise, and storm surge, the Cities will commission a detailed hydrologic and hydraulic study and model that can inform future resilience actions.	Engineering Depts	Medium	\$\$\$
I-10	Research/ Assessment	Assess vulnerability of telecommunications infrastructure and develop strategy to improve resilience.	Telecommunications infrastructure is increasingly the lifeline of local economies. It also keeps people connected and our emergency operations up and running. The Cities will review local telecommunications infrastructure and work with telecom providers to improve the resilience of systems to the impacts of climate change, including extreme weather.	Engineering Depts, Police, Fire, IT	Medium	\$\$



MOBILITY

GOALS

- ▶ The Cities' municipal fleets are 100% zero-emissions by 2030, as technologically feasible.
- ▶ All community members have access to a variety of safe, no- and low-carbon transportation choices.
- ▶ The Cities encourage regional shifts to efficient, resilient, and reliable public transportation systems.
- ▶ Our transportation infrastructure is designed and upgraded for resilience to extreme heat, storms, and flooding.
- ▶ The Cities' roadways, paths, and sidewalks prioritize the needs of users of all ages and physical abilities to create a universally designed mobility system.



MOBILITY

ACTIONS

M-1

Coordinate efforts with transit and other shuttle providers to prioritize improvements to public transportation operations, including route efficiency, expanded service, last-mile options, shelter/shading improvements, and enhanced affordability

M-2

Create a public awareness campaign for electric vehicles (EV) and available charging stations locally and throughout the region

M-3

Enhance and increase awareness of multi-modal connectivity and accessibility options through educational events and enhanced wayfinding

M-4

Provide bicycle parking, including electric bicycle parking outlets, where feasible, at public parks, schools, and other major activity centers

M-5

Expand Salem bikeshare into a regional bike share program for Salem, Beverly, and neighboring communities

M-6

Provide EV charging stations at public parking facilities and on- and off-street locations

M-7

Conduct a local multimodal and micromobility connectivity study that identifies options for additional bike lanes and other bike/ped connectivity, accessibility, and safety improvements

M-8

Introduce procurement policies for City-owned vehicles and contracted service vehicles that require low- or zero-carbon options

M-9

Evaluate and prioritize roadway spending to accommodate all users and encourage pedestrian connectivity and safety

M-10

Assess transportation network elements for flood risk and other resilience concerns, and implement elevation/protection improvements as needed

M-11

Advocate for transformational transit electrification and provision of regional rail on the Newburyport/Rockport commuter rail line, and expansions (additional stations, lines, and intraregional connections)



MOBILITY

SHORT= 1-2 YEARS MEDIUM= 3-5 YEARS LONG=5+ YEARS

\$= EXISTING RESOURCES OR <\$10K \$\$= <\$100K \$\$\$= \$100K OR MORE

ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
M-1	Advocacy/Engagement	Coordinate efforts with transit and other shuttle providers to prioritize improvements to public transportation operations, including route efficiency, expanded service, last-mile options, shelter/shading improvements, and enhanced affordability.	Public transportation networks are a critical ingredient in the Cities' overall goal of reducing automobile dependence. Through partnerships with regional shuttle providers (CATA, NSTMA, MBTA, MassDOT, etc.), as well as with private businesses, the Cities will optimize, prioritize, and coordinate the various local and regional public transportation networks to improve multi-modal choices and service in Beverly and Salem. As more varied modes of transportation are promoted through this plan, a well-coordinated system of shuttles, buses, and trains can play an important role in supporting a broader network of mobility options.	Beverly: Planning Dept Salem: Traffic & Parking Dept	Long	\$\$\$
M-2	Advocacy/Engagement	Create a public awareness campaign for electric vehicles (EV) and available charging stations locally and throughout the region.	Through a public awareness campaign, the Cities will amplify the growth of EV use by promoting awareness of charging stations and by reducing the perceived "barriers to entry" for residents considering switching from gas to electric. The campaign is imagined to be both informational as well as promotional and will target residents who may be less aware of the financial and environmental benefits of EV's and the growing infrastructure that supports them.	Sustainability	Short	\$
M-3	Advocacy/Engagement	Enhance and increase awareness of multi-modal connectivity and accessibility options through educational events and enhanced wayfinding.	The Cities will leverage other mobility actions by taking steps to educate the public on transportation options. Measures include educational and promotional events, as well as a signage program to increase awareness about EV charging stations, bike share locations, and public transportation schedules and locations. It is important that the educational events and signage communicate the connectivity between alternative forms of mobility.	Beverly: Planning Salem: Traffic & Parking Dept	Short	\$
M-4	Capital Improvement	Provide bicycle parking, including electric bicycle parking outlets, where feasible, at public parks, schools, and other major activity centers.	This action seeks to leverage those areas under control by the Cities for expanding bicycle infrastructure related to parking, sharing, and charging. An increase in bicycle infrastructure will aid in an increase in ridership among all abilities.	Beverly: Public Services Salem: Traffic & Parking Dept	Medium	\$\$
M-5	Capital Improvement	Expand Salem bikeshare into a regional bike share program for Salem, Beverly, and neighboring communities.	Bicycle share programs work best at scale. While Salem is beginning to update their bikeshare program, Beverly and surrounding communities will assess the feasibility of a regional program. The feasibility study will include data collection on ridership and funding opportunities.	Beverly: Planning Salem: Traffic & Parking Dept	Medium	\$\$



MOBILITY

SHORT= 1-2 YEARS MEDIUM= 3-5 YEARS LONG=5+ YEARS

\$= EXISTING RESOURCES OR <\$10K \$\$= <\$100K \$\$\$= \$100K OR MORE

ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
M-6	Capital Improvement	Provide EV charging stations at public parking facilities and on- and off-street locations.	The Cities will expand and diversify locations available for EV charging. Increased EV use and ownership are tied to the perception of the availability of charging stations. The Cities can build off of their publicly owned parking lots and streets to implement a number of high visibility options.	Beverly: Public Services Salem: Traffic & Parking Dept	Long	\$\$\$
M-7	Research/Assessment	Conduct a local multimodal and micromobility connectivity study that identifies options for additional bike lanes and other bike/ped connectivity, accessibility, and safety improvements.	The Cities will focus on the critical analysis and planning for the long-term implementation of bike infrastructure. The study will identify not only opportunities for new bike lanes, but will analyze their potential impact on supporting multimodal travel more broadly and refined metrics for defining goals and success.	Beverly: Planning Salem: Traffic & Parking Dept	Short	\$
M-8	Policy	Introduce procurement policies for City-owned vehicles and contracted service vehicles that require low- or zero-carbon options.	This action seeks to reduce the carbon footprint of both City-owned vehicles and City contracted vehicle-related services. As the number of auto-makers developing electric vehicles increases, the Cities will have greater opportunities to modify their procurement policies in favor of hybrid and electric vehicles.	Purchasing	Short	\$
M-9	Capital Improvement	Evaluate and prioritize roadway spending to accommodate all users and encourage pedestrian connectivity and safety.	In prioritizing pedestrian safety and accessibility, the Cities will be supporting a foundational element in the overall plan to promote multi-modal transportation. Visible signs of pedestrian safety improvements not only provide greater levels of security, comfort and access, but also serve as an ongoing way to promote the Cities' commitment to reducing their carbon footprint. The action will result in city-specific and equitable strategies for long term prioritization and budgeting.	Beverly: Engineering, Public Services, Planning Salem: Engineering, Sustainability	Long	\$\$\$
M-10	Research/Assessment	Assess transportation network elements for flood risk and other resilience concerns, and implement elevation/protection improvements as needed.	Coordinate with MassDOT efforts to understand how transportation assets are vulnerable to sea level rise, storm surge, extreme heat, and increased precipitation. Understanding and preparing to address future risks will make both Cities more financially sustainable.	Beverly: Planning, Engineering Salem: Traffic & Parking Dept	Medium	\$\$
M-11	Advocacy/Engagement	Advocate for transformational transit electrification and provision of regional rail on the Newburyport/ Rockport commuter rail line, and expansions (additional stations, lines, and intraregional connections).	Beverly and Salem both benefit from regional rail. Encouraging the electrification of the system would result in improved energy efficiency, lower emissions, and lower operating costs.	Beverly: Planning, Mayor's Office; Salem: Traffic & Parking Dept	Long	\$



NATURAL RESOURCES

GOALS

- ▶ The Cities protect and enhance existing natural assets to reduce urban heat islands and preserve ecosystem functions.
- ▶ Climate change impacts are a high-level consideration for the planning of all parks, open spaces, forests, and wetlands.
- ▶ All residents, businesses, and visitors have increased access to and are active stewards of our natural resources.
- ▶ Our harbor and waterfront areas are connected to our neighborhoods and downtown, with enhanced resilience to flooding and sea level rise.



NATURAL RESOURCES

ACTIONS

NR-1

Encourage sustainable landscaping practices through incentives, education, and volunteer opportunities

NR-2

Launch an awareness campaign on local natural resources and recreation options, to cultivate respect and a sense of stewardship for the environment

NR-3

Create a municipal planting policy that requires non-invasive species that are well suited for anticipated climate changes

NR-4

Educate private landowners, engineers, and developers on flood management through wetland restoration, wide buffer zones, and maintenance driven best management practices

NR-5

Update wetlands ordinances and/or Floodplain Overlay District Ordinance to protect future flood zones and establish wider flood zone buffers

NR-6

Analyze opportunities for open space preservation, enhancement, and acquisition of private parcels with high natural and recreational values

NR-7

Create an inventory, planting, and management plan of all City trees that prioritizes increased tree coverage in high-heat areas and planting of native species

NR-8

Research, and find opportunities to install, alternatives to impervious surfaces and hardscapes in the city

NR-9

Use green infrastructure and Low Impact Development (LID) in public open spaces and on other municipal properties

NR-10

Create a public education program about water conservation and water quality protection to reduce per capita consumption



NATURAL RESOURCES

SHORT= 1-2 YEARS MEDIUM= 3-5 YEARS LONG=5+ YEARS

\$= EXISTING RESOURCES OR <\$10K \$\$= <\$100K \$\$\$= \$100K OR MORE

ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
NR-1	Training/ Education	Encourage sustainable landscaping practices through incentives, education, and volunteer opportunities.	Landscaping practices can consume large amounts of water and use chemicals that lead to negative water quality impacts. The Cities will minimize these harmful environmental impacts by encouraging sustainable landscaping practices through partnerships with existing organizations that promote green practices and community-led gardening initiatives.	Planning Depts, Public Services	Medium	\$\$
NR-2	Advocacy/ Engagement	Launch an awareness campaign on local natural resources and recreation options, to cultivate respect and a sense of stewardship for the environment.	An appreciation for nature—and all of its many benefits—goes a long way in building a commitment to protecting it. Through events, media, and other programming, and working closely with partners, the Cities will further publicize their existing natural resources and recreation option with a focus on stewardship and regeneration.	Parks & Recreation	Short	\$
NR-3	Policy	Create a municipal planting policy that requires non-invasive species that are well suited for anticipated climate changes.	An invasive species is any organism that is not native to a particular area. They tend to reproduce quickly, harming native species and decreasing the area's biodiversity. To combat this issue, the Cities will establish a planting policy for municipal properties that requires non-invasive species that will continue to thrive despite a changing climate.	Public Services, Parks & Recreation	Short	\$
NR-4	Training/ Education	Educate private landowners, engineers, and developers on flood management through wetland restoration, wide buffer zones, and maintenance driven best management practices.	Climate change is bringing more intense storm events and higher risk of flooding, and this action seeks to minimize property damage and pollution of waterways caused by harmful runoff. After updating wetlands ordinances, the Cities will work with private landowners, developers, and contractors to promote flood management best practices including design, construction, operations, and long term maintenance.	Planning, Engineering Depts	Short	\$\$
NR-5	Zoning	Update wetlands ordinances and/or Floodplain Overlay District Ordinance to protect future flood zones and establish wider flood zone buffers.	Climate change is bringing more intense storm events and higher risk of flooding, which can lead to property damage and pollution of waterways caused by harmful runoff. The Cities will examine and update their respective wetlands and floodplain ordinances to ensure future flood zones are protected. Establishing wider flood zone buffers will be a core component of accounting for growing areas of flood risk.	Planning, Building Depts	Medium	\$\$\$
NR-6	Research/ Assessment	Analyze opportunities for open space preservation, enhancement, and acquisition of private parcels with high natural and recreational values.	Open space provides numerous ecological, public health, and climate mitigation benefits, including habitat protection, air filtration, natural cooling capabilities, and flood mitigation. To ensure we continue to reap these benefits, the Cities will explore opportunities for additional open space preservation (e.g., conservation restrictions), and park development with an emphasis on flood-prone areas and private lands with high natural value (i.e. wildlife habitat, potential for passive outdoor recreation, coastal flooding protection). The Cities will explore funds to purchase such properties or restrictions. The Cities will also explore transformative opportunities, such as naturalization or "undevelopment" for community gardens, pocket parks, etc.	Planning Depts	Long	\$\$\$



NATURAL RESOURCES

SHORT= 1-2 YEARS MEDIUM= 3-5 YEARS LONG=5+ YEARS

\$= EXISTING RESOURCES OR <\$10K \$\$= <\$100K \$\$\$= \$100K OR MORE

ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
NR-7	Standards/ Guidelines	Create an inventory, planting, and management plan of all City trees that prioritizes increased tree coverage in high-heat areas and planting of native species.	Trees provide benefits—such as air filtration, cooling capacity, carbon sequestration, and increased stormwater infiltration—that are critical as we face the impacts of a changing climate. An inventory and management plan of all City trees will allow us to maintain and enhance those benefits by prioritizing tree coverage in areas prone to high-heat and prioritizing native species that are better equipped for the changing climate. The management plan should consider issues such as how to address trees nearing their expected life span and mechanisms for replacement of damaged trees on private lands.	Tree Wardens	Medium	\$\$
NR-8	Research/ Assessment	Research, and find opportunities to install, alternatives to impervious surfaces and hardscapes in the city.	Impervious surfaces and hardscapes, such as parking lots, roads, and sidewalks, reduce an area's ability to absorb stormwater, leading to harmful runoff into waterways and increased flood risk. The Cities will research alternatives to traditional impervious surfaces and find opportunities to install such alternatives, especially in flood-prone areas.	Engineering, Public Service Depts	Medium	\$\$\$
NR-9	Capital Improvement	Use green infrastructure and Low Impact Development (LID) in public open spaces and on other municipal properties.	Green infrastructure is a cost-effective, nature-based approach to managing stormwater that provides additional community benefits, such as water purification and biodiversity. The Cities plan to lead by example by prioritizing green infrastructure and low impact development in public open spaces and other municipal properties. Green infrastructure, in appropriate areas, could include creative solutions such as space for food production and gardening.	Engineering, Public Services Depts	Long	\$\$\$
NR-10	Training/ Education	Create a public education program about water conservation and water quality protection to reduce per capita consumption.	Climate change is changing Massachusetts' precipitation cycles, leading to more frequent and extreme drought conditions. More extreme storms can also lead to harmful runoff that degrades water quality. The Cities will spearhead an education program for residents about water conservation and water quality protection as it relates to the Salem-Beverly water supply and nearby water resources. The program could also expand efforts to distribute water saving fixtures. The Cities will collaborate with the Salem-Beverly Water Board to manage water use and set per capita consumption targets.	Engineering Depts	Short	\$



PUBLIC HEALTH & SAFETY

GOALS

- ▶ The Cities' municipal operations are prepared to recover quickly from climate impacts, maintaining service to our community.
- ▶ All community members have close access to fresh, healthy, affordable food, with increased generation of food from local sources.
- ▶ All community members have access to resources and services that promote physical, mental, and emotional well-being.
- ▶ The Cities have in place coordinated response and communications plans to protect residents and visitors in the event of natural disasters or public health crises.



PUBLIC HEALTH & SAFETY

ACTIONS

PHS-1

Work with businesses/industry to improve response to extreme weather events and minimize operational downtime

PHS-2

Develop neighborhood resilience hubs to coordinate and maintain resident well-being as climate impacts intensify

PHS-3

Ensure that Wi-Fi is accessible throughout Beverly and Salem, particularly in limited-access and low-income neighborhoods

PHS-4

Expand the "cooling capacity" of Beverly and Salem through investments in heat-reducing infrastructure and materials, as well as cooling initiatives

PHS-5

Assess gaps or restrictions in zoning codes to overcome any land use restrictions to healthier food options

PHS-6

Support municipal and community gardens and urban farming

PHS-7

Develop a pest and vector-borne disease management and communications plan

PHS-8

Launch a multi-lingual, multi-media education/awareness campaign around public health and safety risks associated with climate change, and support household-level emergency planning and preparedness efforts, particularly in vulnerable communities

PHS-9

Make citywide emergency communications and notification systems accessible to all residents for a range of climate-events

PHS-10

Identify all hazardous material storage locations at risk from flooding and assess flood protection options



PUBLIC HEALTH & SAFETY

SHORT= 1-2 YEARS MEDIUM= 3-5 YEARS LONG=5+ YEARS

\$= EXISTING RESOURCES OR <\$10K \$\$\$= \$100K OR MORE

ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
PHS-1	Advocacy/ Engagement	Work with businesses/industry to improve response to extreme weather events and minimize operational downtime.	The Cities will work to understand the experiences of local businesses and industry with past extreme weather events while also educating around and planning for climate impacts. Small and minority-owned businesses will be a focus of outreach. This work can integrate into City efforts to expand and support their broader emergency planning and outreach efforts.	Fire, Public Services	Long	\$\$
PHS-2	Advocacy/ Engagement	Develop neighborhood resilience hubs to coordinate and maintain resident well-being as climate impacts intensify.	The Cities will work with local partners to establish hubs that feature services (e.g., emergency communications, shelter), programming (e.g., preparedness trainings), and infrastructure (e.g., back-up, renewable power) to support communities for daily use, as well as leading up to, during, and following emergencies.	Health	Short	\$\$\$
PHS-3	Capital Improvement	Ensure that Wi-Fi is accessible throughout Beverly and Salem, particularly in limited-access and low-income neighborhoods.	In partnership with internet providers, the Cities can work to expand infrastructure and introduce tiered pricing or free options for communities struggling to access WiFi. A particular focus should be placed on infrastructure and enhanced access, beyond existing hot spots, for families with school-aged children, particularly in light of remote learning (which schools may continue to rely on in the case of school closures, even following the COVID-19 pandemic)	Public Services	Medium	\$\$\$
PHS-4	Capital Improvement	Expand the "cooling capacity" of Beverly and Salem through investments in heat-reducing infrastructure and materials, as well as cooling initiatives.	Investments in heat-reducing infrastructure and materials could include replacing pavement with vegetation, green infrastructure, or cool paving materials; and installing green and reflective roofs. The Cities will work to increase the number and geographic distribution of shade structures and trees, respite areas, water fountains, cooling centers, and splash pads in parks. In light of the anticipated increase in extreme heat events due to climate change, the Cities will also expand educational efforts in advance of major heat events and distribution of water and other supplies during these events.	Sustainability, Engineering Depts	Medium	\$\$\$
PHS-5	Zoning	Assess gaps or restrictions in zoning codes to overcome any land use restrictions to healthier food options.	Zoning codes in Beverly and Salem may currently prohibit urban farming or other land development to support urban agriculture. A full review of policies to determine any prohibitive provisions, as well as opportunities for creative solutions (e.g., fruit-bearing street trees) could support enhanced access to fresh and locally-grown foods.	Planning Depts	Short: 1-2 years	\$
PHS-6	Advocacy/ Engagement/ Zoning	Support municipal and community gardens and urban farming.	In addition to more traditional models of community gardens, the Cities will support community gardens that enhance local professional development opportunities, regenerate unused spaces/ infrastructure (e.g., vacant lots, accessory structures, shipping containers), and employ innovative techniques or technologies (e.g., hydroponics, ocean farming). Support could come in the form of technical resources, personnel, zoning amendments, and/or grant-writing and funding support.	Health, Sustainability, Planning Depts	Medium	\$\$



PUBLIC HEALTH & SAFETY

SHORT= 1-2 YEARS MEDIUM= 3-5 YEARS LONG=5+ YEARS

\$= EXISTING RESOURCES OR <\$10K \$\$= <\$100K \$\$\$= \$100K OR MORE

ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
PHS-7	Training/ Education	Develop a pest and vector-borne disease management and communications plan.	This action will address the increased risks of vector-borne diseases such as Lyme, West Nile virus, and EEE virus due to warming temperatures and increased temperature extremes in the region. It will also address the shifting populations of insect pests and decreased efficacy of tools to manage insect pests resulting in potential damage to crops and food security. Management efforts will consist of prevention as well as organized response to potential outbreaks, coupled with a comprehensive public information campaign to involve residents in management efforts.	Health	Medium	\$\$
PHS-8	Training/ Education	Launch a multi-lingual, multi-media education/awareness campaign around public health and safety risks associated with climate change, and support household-level emergency planning and preparedness efforts, particularly in vulnerable communities.	This two-part action will involve 1) unified and consistent messaging from the municipalities around climate change risks that impact aspects of life ranging from mental health to physical safety; and 2) efforts to develop and advertise financial and technical support for specific residential planning and preparedness activities. For both aspects of this action, emphasis will be placed on publicizing existing resources and information, using City resources to fill any gaps, and ensuring that all efforts are not just accessible to, but also actively serve, low-income communities, communities of color, immigrant communities, and other communities who will be most impacted by climate change.	Health, Engineering Depts, Sustainability	Medium	\$\$
PHS-9	Training/ Education	Make citywide emergency communications and notification systems accessible to all residents for a range of climate-events.	Both Beverly and Salem have emergency communications systems, but not all residents are aware of these systems or best served by them. The systems can be enhanced to include multilingual, audio-visual in-person, phone, email, text, and social media alerts. Furthermore, the Cities should plan to accommodate increased use of- and traffic on- these systems for the full extent of climate impacts (e.g., poor air quality and extreme heat in addition to storms or flooding) that the region is expecting to see.	Emergency Management, Public Services	Short	\$
PHS-10	Research/ Assessment	Identify all hazardous material storage locations at risk from flooding and assess flood protection options.	The Cities will ensure that flood maps are up-to-date with the most recent climate projections (FEMA maps use historical data). An inventory of all hazardous material storage locations mapped against these flood locations would then reveal any vulnerabilities at specific sites requiring further protections ranging from barriers, to elevation, to relocation of storage sites.	Fire, Engineering	Short	\$\$\$



SOLID WASTE

GOALS

- ▶ The Cities will develop waste reduction and management policies and programs that include resource recovery and use of sustainable materials as well as reduction of waste stream toxicity.
- ▶ Beverly and Salem achieve 30% reduction in waste disposal by 2030 and 90% reduction by 2050.
- ▶ Community members are educated and responsible consumers who minimize waste generation and maximize productive reuse.
- ▶ All major capital improvement projects are evaluated with a life cycle assessment.



SOLID WASTE

ACTIONS

SW-1

Implement an educational campaign to encourage residents and businesses to reduce and reuse as the highest priority; and to clarify what can be recycled and how

SW-2

Increase low-cost and publicly accessible collection, reuse, sharing, and recycling opportunities through swap shops, books swaps, community yard sales, repair clinics, shredding events, and collection events for hard-to-recycle waste streams

SW-3

Work with local restaurants and other businesses to reduce packaging and use of single-use polystyrene or plastics for products they sell/deliver, and to ensure that containers and packaging used by businesses are reusable, recyclable, or compostable to the maximum extent possible

SW-4

Develop mandatory recycling ordinance for all waste generators and mandatory recycling regulation for private haulers to ensure recycling/composting in multi-family residences and commercial establishments

SW-5

Measure and track metrics related to waste management and communicate information publicly to encourage improvement

SW-6

Expand curbside composting, support and educate residents on food waste reduction and home composting, and provide residents access to drop-off composting

SW-7

Develop a comprehensive program for all municipal buildings and public schools that prioritizes waste reduction and maximizes opportunities for reuse, recycling, and composting, with a strong educational component to ensure successful implementation

SW-8

Increase dedicated staff time for enforcement of existing waste policies and introduce enforcement mechanisms for new ordinances

SW-9

Expand sustainable purchasing programs within both cities

SW-10

Require significant municipal and community events to achieve (near) zero waste. Develop and distribute guidance



SOLID WASTE

SHORT= 1-2 YEARS MEDIUM= 3-5 YEARS LONG=5+ YEARS

\$= EXISTING RESOURCES OR <\$10K \$\$= <\$100K \$\$\$= \$100K OR MORE

ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
SW-1	Training/ Education	Implement an educational campaign to encourage residents and businesses to reduce and reuse as the highest priority, and to clarify what can be recycled and how.	Mirroring the US EPA's waste management hierarchy, this public educational campaign will prioritize messaging around source reduction and reuse, followed by recycling as a second-best option. Campaign targets (e.g., specific businesses or neighborhoods) will be shaped by data on which materials are the greatest challenges for residents and waste haulers, as well as what waste/recycling streams offer the greatest opportunity for impact. The campaign will also include messaging around the opportunities to minimize waste when purchasing new products – in terms of the recycled content and option to minimize packaging. The Cities will ensure the campaign is multilingual, widespread, and accessible for different age groups and learners.	Beverly: Sustainability Salem: Waste Reduction Coordinator	Short	\$\$
SW-2	Training/ Education	Increase low-cost and publicly accessible collection, reuse, sharing, and recycling opportunities through swap shops, books swaps, community yard sales, repair clinics, shredding events, and collection events for hard-to-recycle waste streams.	The sharing economy offers opportunities both to reduce waste and to build community. The Cities will invest in additional recycling events for specific waste streams that cannot be recycled through curbside pick-up (e.g., polystyrene, rigid plastic, and electronics) while also supporting and promoting existing sharing and reuse opportunities throughout the cities.	Beverly: Engineering, Sustainability Salem: Waste Reduction Coordinator	Medium	\$\$
SW-3	Advocacy/ Engagement	Work with local restaurants and other businesses to reduce packaging and use of single-use polystyrene or plastics for products they sell/deliver, and to ensure that containers and packaging used by businesses are reusable, recyclable or compostable to the maximum extent possible.	Many businesses use excessive and difficult-to-recycle packaging when reusable, compostable, or minimal packaging options are available. Plastics, in particular, lack a consistent recycling market, are a persistent form of litter, and take hundreds of years to decompose when disposed in a landfill. Reduction of packaging and single-use plastics and polystyrene will require collaboration with local businesses to provide 1) education around the value of using alternative containers and packaging; 2) opportunities to voice challenges and actively shape solutions; and 3) financial support (e.g., bulk procurement) for the purchase of alternative packaging options.	Beverly: Sustainability Salem: Waste Reduction Coordinator	Medium	\$
SW-4	Policy	Develop mandatory recycling ordinance for all waste generators and mandatory recycling regulation for private haulers to ensure recycling/composting in multi-family residences and commercial establishments.	Enforcing recycling is difficult in places where the Cities don't manage waste disposal. Despite statewide bans on disposal of many recyclable items such as paper, cardboard, glass and metal cans, and certain plastic bottles, apartment buildings, businesses, and commercial complexes are not required to provide access to recycling or composting options. This presents a significant barrier to the community's waste reduction efforts. Mandatory recycling ordinances can improve access to recycling options for renters, while also pushing private haulers to change their behavior.	Beverly: Sustainability Salem: Waste Reduction Coordinator	Medium	\$



SOLID WASTE

SHORT= 1-2 YEARS MEDIUM= 3-5 YEARS LONG=5+ YEARS

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ID	ACTION TYPE	ACTION	DESCRIPTION	IMPLEMENTATION LEAD	TIMEFRAME	COST
SW-5	Research/ Assessment	Measure and track metrics related to waste management and communicate information publicly to encourage improvement.	Consistent data tracking of diversion rates, contamination rates, and optional program participation (e.g., curbside composting) is critical to understanding the efficacy of solid waste actions as well as targeting areas for improvement. Furthermore, sharing these waste data and metrics will enhance citywide awareness and accountability to achieving waste goals.	Public Services	Medium	\$
SW-6	Training/ Education	Expand curbside composting, support and educate residents on food waste reduction and home composting, and provide residents access to drop-off composting.	Food waste accounts for more than 25 percent of the waste stream in Massachusetts. Impactful strategies to remove food from our waste streams are 1) changing purchasing and consumption behavior, 2) redirecting edible food to people in need through donation, and 3) composting. The Cities will start by expanding voluntary and incentivized programs, with educational components rolled out alongside broader waste reduction and recycling education campaigns as well exploring food share tables. Ultimately, the Cities should introduce mandatory curbside compost pick-up for residents, with appropriate support for low-income and rental communities.	Beverly: Engineering, Sustainability Salem: Waste Reduction Coordinator	Medium	\$\$\$
SW-7	Training/ Education	Develop a comprehensive program for all municipal buildings and public schools that prioritizes waste reduction and maximizes opportunities for reuse, recycling, and composting, with a strong educational component to ensure successful implementation.	This program would require a thorough assessment of the greatest opportunities for reduction (e.g., unnecessary packaging or purchase of single-use materials) and gaps in the current recycling options. By first focusing on municipal facilities, the Cities can demonstrate the feasibility of specific programs and solutions for the broader community. This action can also be developed in coordination with SW-10 (zero waste event guidance).	Beverly: Sustainability Salem: Waste Reduction Coordinator	Medium	\$\$\$
SW-8	Policy	Increase dedicated staff time for enforcement of existing waste policies and introduce enforcement mechanisms for new ordinances.	The Cities will designate new enforcement staff, rather than simply increasing the number of hours that a particular staff member spends enforcing a given waste policy if not already full time. All new waste ordinances will be reviewed to ensure the inclusion of enforcement mechanisms (e.g., fees for noncompliance).	Mayor's Office	Medium	\$\$\$
SW-9	Policy	Expand sustainable purchasing programs within both cities.	Sustainable purchasing programs would build on existing practices in both cities to designate recommendations and/or requirements for procurement of both goods and services. The program could include provisions such as local sourcing, standards around recycled content rates or third-party green product certifications, or toxics reduction standards (e.g., for cleaning products).	Procurement, Purchasing	Short	\$
SW-10	Standards/ Guidelines	Require significant municipal and community events to achieve (near) zero waste. Develop and distribute guidance.	Targeting large events for waste reduction is a visible way to engage the community in zero-waste strategies and education. The Cities can pilot, communicate, and scale zero-waste events that engage members of the community to shape both the process and accompanying guidance for a community-wide zero-waste mandate. The event permitting process could serve as the mechanism for implementation of the community-wide mandate.	Beverly: Sustainability Salem: Waste Reduction Coordinator	Long	\$



RESOURCES

Resources and Tools from the RT Project

- GHG Inventory Summary Report (and methods)
- GHG Forecast and High Impact Action Analysis (and methods)
- Climate Action Toolkit for Residents
- Climate Action Toolkit for Businesses
- Climate Summary One Pager
- 20 Implementation Blueprints for Key Actions
- Implementation Tracking Matrix for All Actions
- Evaluation Framework
- Resilient Together Climate Action and Resilience Plan
- Resilient Together Dashboard





Dashboard



Climate Change in Beverly & Salem →

By 2050, we could see up to 31 more days over 90° per year!

[What's at Stake for Beverly and Salem? →](#)

[Our Community →](#)



GHG Inventory →

In both Cities, emissions from buildings make up over 50% of carbon emissions.

[Our Performance →](#)



Buildings & Development →

Did you know the Waring School in Beverly will be the first independent school in Massachusetts to certify a Passive House building?

[Net Zero Buildings →](#)

[Clean Energy Standards →](#)

[How You Can Help →](#)

Stay Connected Through Our Dashboard!

<https://resilient-together.org/dashboard>

Stay Connected with Resilient Together!

Sign up below to make sure you receive updates on our progress implementing the Resilient Together Plan. Please tell us which community you represent. If you are interested in getting involved, indicate that on the last checkbox and we'll be in touch as opportunities come up.

Subscribe

* indicates required

Email Address *

First Name

Last Name

Which community do you belong to?
 Salem
 Beverly
 Both Equally

Would you like to be involved in Resilient Together?
 Yes! Sign Me Up

Subscribe

Action Implementation Table

Explore the Resilient Together Actions

-  ENERGY 
-  INFRASTRUCTURE 
-  BUILDINGS & DEVELOPMENT 
-  MOBILITY 
-  NATURAL RESOURCES 
-  PUBLIC HEALTH & SAFETY 
-  SOLID WASTE 



CALL TO ACTION



**RESILIENT
TOGETHER**
OUR BRIDGE TO A STRONGER TOMORROW



Check out our Dashboard!

[HTTPS://RESILIENT-TOGETHER.ORG](https://resilient-together.org)



Follow us on
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@ResilientTgthr
@resilient_together_



Contact us!

ResilientTogether20@gmail.com