RESILIENT TOGETHER

APPENDICES

The following pages contain detailed **implementation blueprints for 20 actions** (out of 72 total) from Resilient Together. These documents are roadmaps to help the Cities carry out individual actions. They specify which City departments will lead implementation, key steps and partners, and estimated timeframes and costs. They also suggest external funding and technical resources to support action implementation; considerations for collaboration, engagement, and ensuring equity; and metrics to measure success.

BUILDINGS & DEVELOPMENT

ACTION:

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.

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.

IMPLEMENTATION LEAD: **Salem:** Planning Dept, Sustainability; **Beverly:** Planning Dept, Sustainability

OVERALL PROJECT DURATION: Short

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Engage regional and state planning partners to research existing standards and incentives from other municipalities, such as various forms of zoning incentives and relief for all-electric projects achieving Passive House or LEED certification. Compare with zoning and building code requirements.	SHORT	LOW	› Sustainability/Energy Committees › Other MA communities › Net zero developer and architectural community › Built Environment Plus › Building Depts › Massachusetts Climate Action Network (MCAN) › Metropolitan Area Planning Council (MAPC)
2. Identify and draft language for incentives based on existing standards that are right-sized to building types, with consultant support as needed.	SHORT	LOW	› Sustainability/Energy Committees › Building Depts
3. Solicit feedback from and identify barriers for builders, owners, and developers to implement net zero-ready performance standards, along with feedback on what types of incentives would be effective in overcoming barriers to adopting these standards.	SHORT	LOW	› Sustainability/Energy Committees › Building Depts › Builders and Remodelers Association of Greater Boston (BRAGB) › Urban Land Institute (ULI)
4. Incorporate public and/or developer input into the incentive language.	SHORT	LOW	› Sustainability/Energy Committees › Builders and Remodelers Association of Greater Boston (BRAGB)
5. Convene appropriate municipal stakeholders to adopt incentives and standards.	SHORT	LOW	› Sustainability/Energy Committees › Building Depts › City Councils › Planning Boards

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

BUILDINGS & DEVELOPMENT (CONTINUED)

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.

EXTERNAL FUNDING RESOURCES

- Massachusetts Clean Energy Center (MassCEC)
- Massachusetts Green Communities Division (GCD)
- Massachusetts Smart Growth / Smart Energy Toolkit Modules - District Improvement Financing (DIF)/Tax Increment Financing (TIF)
- Local Initiatives Support Corporation (LISC) Boston Grants

TECHNICAL RESOURCES

- City of Somerville Zoning Ordinance, City of Somerville
- Massachusetts Energy Zero Code (MA E-Z Code), Northeast Energy Efficiency Partnership
- Green Building Requirements and Net Zero Narrative, City of Cambridge
- The Passive House Standard, Passive House Institute US (PHIUS)
- Building Energy Case Study Database, Northeast Sustainable Energy Association (NESEA)
- Built Environment Plus (former USGBC-MA)
- ASHRAE Advanced Energy Design Guide- Achieving Zero Energy series

OPPORTUNITIES FOR COLLABORATION

- Collaborate via information exchange about potential standards and incentives for adoption.
- Host joint meetings with subject matter experts to learn about potential standards like Passive House and MA E-Z Code proposal.

EQUITY CONSIDERATIONS

- Identify cost barriers to implement standards and potential avenues to mitigate these barriers.
- Listen to and balance the needs of community members and small businesses with developer incentives.
- Couple incentives with outreach and education around the benefits of net zero construction
- Ensure the benefits of net zero and net zero ready construction are communicated equitably and to a diverse audience.

MEASURING SUCCESS

- Predicted Site Energy Use Intensity (EUI) of new construction that followed these standards, from energy modeling (kBtu/sf-yr)
- Operational Site Energy Use Intensity (EUI) of new construction under these standards, after construction (kBtu/sf-yr)
- Carbon emissions (predicted or operational) of new construction built to these standards (tons CO_2e)

ENGAGEMENT/ COMMUNICATION CONSIDERATIONS

- Reach out to the development community to understand which incentives are desired and feasible to achieve high-performance building standards. Identify myths or misconceptions about net zero ready construction (e.g., large added first cost, lack of precedent in MA) that need to be clarified.
- Communicate the relative benefits and trade-offs of up-front investment and life-cycle operational savings to potential partners, recognizing that for certain types of development offsetting up-front costs may be more desirable.
- Explore how to right-size the standards and to tailor communication to different stakeholders (e.g., building size thresholds and typologies).

BUILDINGS & DEVELOPMENT

ACTION:

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.

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.

IMPLEMENTATION LEAD: **Salem:** Planning Dept, Sustainability; **Beverly:** Planning Dept, Sustainability

OVERALL PROJECT DURATION: Short

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Identify organizations that could provide training and educational sessions.	SHORT	LOW	› Building Depts › Sustainability/Energy Committees
2. Work with organizations to develop an agenda for events and trainings.	SHORT	LOW	› Building Depts › Sustainability/Energy Committees › Training organizations
3. Create a process for announcing, recording, and disseminating information about events.	SHORT	LOW	› Building Depts › Sustainability/Energy Committees
4. Establish a schedule for hosting the events and deliver according to the schedule.	SHORT	LOW	› Building Depts › Sustainability/Energy Committees

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

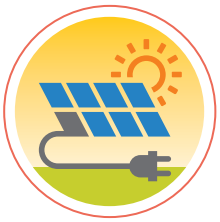
BUILDINGS & DEVELOPMENT (CONTINUED)

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.

EXTERNAL FUNDING RESOURCES	TECHNICAL RESOURCES
› Massachusetts Clean Energy Center (MassCEC) Clean Heating and Cooling Grants for Government and Non-Profits › Mass Save Passive House Training incentives › Sponsorships through suppliers of sustainable building products and materials (could purchase a table at an event to help fund conferences or trainings)	› BuildingEnergy Conferences & Trade Shows, Northeast Sustainable Energy Association (NESEA) › Clean Energy Careers Training & Education Directory, MassCEC › Clean Energy Events, MassCEC › MassCEC YouTube page › The BE+ Exchange, Built Environment Plus ("BE+", formerly USGBC-MA) › Green Energy Consumers Alliance › Historic New England

OPPORTUNITIES FOR COLLABORATION	EQUITY CONSIDERATIONS
› Collaborate on joint educational sessions. › Identify categories for educational opportunities (i.e., historic preservation and energy efficiency/ decarbonization) and collaborate on materials for dissemination.	› Create an inclusive and collaborative process in developing the content of trainings and conferences. › Ensure trainings and learning sessions are geared toward equitable outcomes.

MEASURING SUCCESS	ENGAGEMENT/ COMMUNICATION CONSIDERATIONS
› Number of trainings/educational sessions held › Participation/attendance at sessions › Increased participation in workforce development programs	› Network with and reach out to the groups mentioned in "Technical Resources." › Marketing and outward-facing communication (website, social media, etc.) of training and learning events will be important to ensuring attendance at these events and may require additional resources. › Communicate the benefits of efficient, clean energy systems (e.g., the life cycle benefits of heat pumps and geothermal) to encourage these investments in low emissions systems now.



ENERGY

ACTION:

E-1: Promote residential energy efficiency, renewable energy, and electrification, including through 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, Massachusetts Clean Energy Center (MassCEC), National Grid, and Property Assessed Clean Energy (PACE) financing.

IMPLEMENTATION LEAD: **Salem:** Sustainability; **Beverly:** Sustainability

OVERALL PROJECT DURATION: Short

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Analyze penetration, strengths and weaknesses of existing programs and their implementation in Beverly and Salem.	SHORT	LOW	› Planning Dept (Salem)
2. Identify potential utility and community partners and form a working group.	SHORT	LOW	› Planning Dept (Salem)
3. Provide outreach staff at one or both cities or via a partner to work directly with residents to overcome barriers to participation and facilitate energy assessments/ improvements.	MEDIUM	HIGH	› Planning Dept (Salem) › Working Group
4. Formalize implementation and funding partnerships.	MEDIUM	LOW	› Planning Dept (Salem)
5. Create local financial mechanisms (e.g., incentives, revolving fund) to address the most challenging retrofits or most significant barriers.	SHORT	HIGH	› Planning Dept (Salem) › Finance (Beverly) › Legal (Beverly)

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

ENERGY (CONTINUED)

E-1: Promote residential energy efficiency, renewable energy, and electrification, including through state and utility program offerings.

EXTERNAL FUNDING RESOURCES

- Mass Save
- Green Communities Grants, Massachusetts Department of Energy Resources (DOER)
- AmeriCorps, Corporation for National and Community Service
- Grants, Energy Foundation
- Explore opportunity for on-bill financing of measures via community energy programs

TECHNICAL RESOURCES

- [Model Program] Cambridge Energy Alliance
- [Model Partner] Energy Upgrade Work Parties, The Home Energy Efficiency Team (HEET)
- [Model Program] Green Iowa AmeriCorps
- [Model Program] EmPower Program, Green City Force
- Residential, Massachusetts Clean Energy Center
- Unlocking Solar for Low- and Moderate-Income Residents: A Matrix of Financing Options by Resident, Provider, and Housing Type (2018), National Renewable Energy Laboratory
- Up to the Challenge: Communities Deploy Solar in Underserved Markets (2019), National Renewable Energy Laboratory
- Bringing the Benefits of Energy Efficiency and Renewable Energy to Low-Income Communities: Case Studies and Program Profiles, US EPA

OPPORTUNITIES FOR COLLABORATION

- Cities can jointly partner with National Grid Community Solutions.
- Necessity to educate/incentivize installers at the same time – uninformed installers create unnecessary barriers to residents selecting clean energy technologies. Target both supply (contractors) and demand (residents).
- Education and incentive programs for energy efficiency should be coordinated and potentially centralized across sectors – developers, home builders, residents, businesses. See Measures E-3, E-4, E-6, E-10. Avoid redundancy.
- Consider Residential Energy Disclosure ordinances, like Minneapolis.
- Consider additional Solarize campaigns.

EQUITY CONSIDERATIONS

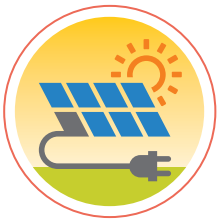
- Enlist community members, neighborhood groups, church groups, and other local volunteers to support their neighbors in participating.
- Provide dedicated staff support to reduce barriers to program participation often experienced by low-income and senior households (e.g., helping to schedule contractor quotes and understand results, helping to complete rebate paperwork, helping to access income verification). Staff should understand documentation, process, and requirements of each program.
- Ensure additional outreach and resources for target audiences or particularly challenging or important retrofits (e.g., low-income neighborhoods, Spanish-speakers, historic homes, homes with fuel oil).
- Address financial gaps that prevent low-income households from participating in energy programs (e.g., up-front capital).

MEASURING SUCCESS

- Number of energy assessments and completed projects through Mass Save and National Grid programs
- Number of residents reached by education or outreach efforts
- Number of each kind of action or measure installed as a result of efforts

ENGAGEMENT/ COMMUNICATION CONSIDERATIONS

- Consider surveys/interviews/focus groups with Mass Save program participants and non-participants to identify common barriers or success factors.
- Educate through tabling at locations residents frequent, such as grocery stores, hardware stores, and libraries.
- Consider ways to widely distribute Climate Action Toolkit for Residents (e.g., printed at libraries, distributed electronically through partners).
- Neighborhood energy savings competitions have been successful in other communities.



ENERGY

ACTION:

E-4: 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.

IMPLEMENTATION LEAD: **Salem:** Sustainability; **Beverly:** Sustainability

OVERALL PROJECT DURATION: Medium

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Identify potential stakeholders and form working group. This could be the same working group established for Action E-3.	SHORT	LOW	› Planning Depts
2. Analyze existing education/training programs and, if programs are satisfactory, identify and engage training partners.	SHORT	LOW	› Planning Depts › Working Group
3. Assess intervention points where education could be most useful (e.g., building permit applications, home sales, business permit renewals).	SHORT	LOW	› Planning Depts › Inspectional Services (Beverly) › Assessor's Office (Beverly) › Working Group
4. Implement trainings in a phased sector-by-sector approach—developing trainings if a suitable partner cannot be identified.	MEDIUM	MEDIUM	› Planning Depts › Working Group › Training partner

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

ENERGY (CONTINUED)

E-4: Host existing and establish new training programs for businesses and homeowners on renewable energy and energy storage options.

EXTERNAL FUNDING RESOURCES

- National Grid
- Mass Save
- Municipal Vulnerability Preparedness (MVP) Action Grant, EEA
- Green Communities Grants, Department of Energy Resources (DOER)
- AmeriCorps, Corporation for National and Community Service
- Grants, Energy Foundation
- EmPower Massachusetts, Massachusetts Clean Energy Center

TECHNICAL RESOURCES

- National Community Solar Partnership, US Department of Energy
- Community Solar Program Design Models (2018), Smart Electric Power Alliance
- [Model Program] Solar For All, DC Department of Energy & Environment
- Solarize Massachusetts, Massachusetts Clean Energy Center
- Solar United Neighbors
- Solar + Storage, Solar United Neighbors

OPPORTUNITIES FOR COLLABORATION

- Include Fire Departments and Inspectional Services in planning trainings.
- Education and incentive programs for energy efficiency should be coordinated and potentially centralized across sectors – developers, home builders, residents, businesses. See Measures E-1, E-2, E-3, E-6, E-10. Avoid redundancy.
- Ensure city (and county) barriers are reduced as much as possible (e.g., fire code, firefighter training, building/fire/health inspector training building code, building permit applications, building permit fees). Consider pursuing SolSmart designation.

EQUITY CONSIDERATIONS

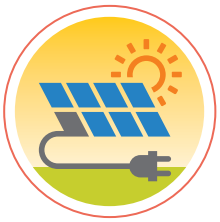
- Ensure training is available in Spanish and other languages to reach households and small business owners that prefer technical and financial information delivered in their first languages.
- Pair education with financial incentives for small businesses, low-income households, non-profits, and buildings in vulnerable or underinvested areas.
- Address barriers for commercial and residential tenants with customized training for landlords.

MEASURING SUCCESS

- Number of home and business owners participating in training
- Number renewable energy projects installed by training attendees
- kW capacity of renewables installed by those receiving education
- kWh capacity of energy storage installed by those receiving education

ENGAGEMENT/ COMMUNICATION CONSIDERATIONS

- Include calculations on payback, cost savings, tax credits and incentives for each sector in trainings.
- Invite current renewable energy/battery storage owners to play a role in delivering trainings.
- Create a referral/incentive/coaching program to have current renewables/storage owners deliver information and build awareness among their neighbors and networks.
- Create branded yard signs for activities under a coordinated clean energy program.
- Consider additional Solarize campaigns.
- Evaluate historic district guidelines for incorporation of solar/storage technologies.
- Create multi-year education programs that keep momentum and capacity growing (a limitation of most short-term Solarize campaigns).



ENERGY

ACTION:

E-10: 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.

IMPLEMENTATION LEAD: **Salem:** Schools/Economic Development;
Beverly: Schools/Economic Development

OVERALL PROJECT DURATION: Long

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Convene vocational/trade schools and programs, trade unions, commercial and residential construction companies, K-12 education, and clean energy experts to identify existing programs and workforce needs.	SHORT	LOW	› Planning Depts › Mayor's Office (Salem)
2. Perform SWOT analysis on existing network of programs. Assess potential partners. Review curricula, recruitment, and job placement.	SHORT	LOW	› Planning Depts
3. Form a working group with relevant organizations and create a work plan that outlines curriculum requirements, certifications to be awarded, incentives to be provided, minority recruitment approaches, and job placement requirements.	SHORT	HIGH	› Planning Depts › Working Group
4. Develop recruitment pipelines and partnerships, particularly targeting populations underrepresented in the construction trades.	MEDIUM	MEDIUM	› Planning Depts › Working Group
5. Implement incentives for employers for hosting job shadowing, internships and apprenticeships, and hiring.	MEDIUM	HIGH	› Planning Depts › Working Group

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

ENERGY (CONTINUED)

E-10: Coordinate with local institutions to provide vocational training programs for clean energy careers.

EXTERNAL FUNDING RESOURCES

- Skills Capital Grants (for educational institutions)
- AmeriCorps, Corporation for National and Community Service
- Grants and Programs, US Department of Education – Office of Career, Technical, and Adult Education
- Available Funding, Commonwealth Corporation

TECHNICAL RESOURCES

- Clean Energy Careers, Massachusetts Clean Energy Center (MassCEC)
- Partners, Mass Save[Model Program] GRID Alternatives
- Building Operator Certification, Northwest Energy Efficiency Council
- Workforce Development, The Solar Foundation
- Solar Training Network,
- [Model Program] Green Iowa AmeriCorps
- [Model Program] EmPower Program, Green City Force
- Green Ribbon Schools, US Dept of Education.
- Green Ribbon Schools, Massachusetts Department of Education
- [Model Program] Boston Green Academy
- [Model Program] Madison Park Technical Vocational High School

OPPORTUNITIES FOR COLLABORATION

- Regional training programs are necessary because building trades operate and grow in a regional marketplace.

Potential working group members or partners:

- Salem Public Schools
- Essex Technical High School
- Northshore Regional Vocational School District
- Northshore Education Consortium/Topsfield Vocational Academy
- YouthBuild North Shore
- Change is Simple
- Morgan Memorial Goodwill Industries/MassHire
- Northeast Center for Tradeswomen's Equity
- Building Pathways Boston
- Professional Women in Construction Boston
- National Association of Women in Construction – Boston Chapter
- Constructing MA
- North Shore Community College
- Other educators identified via MassCEC Training & Education Directory

EQUITY CONSIDERATIONS

- Ensure engagement with and additional support for minorities, women, veterans, and formerly incarcerated individuals across the entire career development pipeline.
- Incorporate climate and resource education into curricula for trades like plumbing, insulation, carpentry, and roofing.
- Third-party resources have a variety of funders and influences and should be carefully reviewed by educators and energy experts to ensure the educational materials align with Resilient Together guiding principles and energy goals.

MEASURING SUCCESS

- Number of students receiving certificates, completing trainings, or associate degrees in clean energy fields
- Establishment of new or improved pathway programs at existing vocational schools
- Establishment of a hands-on clean energy curriculum in K-8 schools

ENGAGEMENT/ COMMUNICATION CONSIDERATIONS

- Start with energy, environment, and climate literacy for K-12 students in both schools and community center/community partner after-school and enrichment programs.
- Training should include whole-building concepts like LEED or Living Buildings Challenge, ENERGY STAR, Passive Haus, or net zero.
- Include training and incentives for existing tradespeople and companies to expand their traditional expertise with clean energy skills, technologies, and customer benefits.
- Normalize and celebrate skilled trades-based career paths. Feature minorities and women in trades. Create mentorship and guest speaker opportunities.

INFRASTRUCTURE

ACTION:

I-2: 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.

IMPLEMENTATION LEAD: **Salem:** Public Services; **Beverly:** Public Services, Engineering Dept.

OVERALL PROJECT DURATION: Long

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Review previously completed vulnerability assessments, coastal resilience plans, and hazard mitigation plans with a focus on identifying critical infrastructure vulnerabilities and knowledge gaps.	SHORT	LOW	› Planning Depts › Engineering Dept (Salem)
2. Develop and convene a joint working group to discuss shared utilities and infrastructure with a focus on critical interconnections. Develop a GIS data sharing agreement that enables collaborative mapping of critical infrastructure interconnections. Conduct a joint GIS analysis using this shared data to identify priority vulnerability areas.	SHORT	LOW	› Planning Depts › Engineering Dept (Salem) › Salem/Beverly Water Supply Board › South Essex Sewerage District
3. Utilize video inspections of critical infrastructure and pipes to assess baseline conditions of priority interconnections. Use these inspections to proactively identify vulnerabilities and develop a plan for replacement or maintenance needs.	MEDIUM	HIGH	› Engineering Dept (Salem) › External consultants › Purchasing/Procurement
4. Analyze baseline infrastructure conditions against Resilient MA, Woods Hole Group, and NOAA Atlas 13 climate change projections for understanding future vulnerabilities.	MEDIUM	MEDIUM	› Sustainability › Engineering Dept (Salem) › GIS & Maps (Salem) › Colleges and universities › External consultants
5. Review vulnerabilities and criticality and convene a working group meeting to discuss priority upgrades between both cities. Incorporate into capital planning.	MEDIUM	LOW	› Sustainability › Planning Depts › Engineering Dept (Salem) › Salem/Beverly Water Supply Board › South Essex Sewerage District

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

INFRASTRUCTURE (CONTINUED)

I-2: Analyze all infrastructure for vulnerability, evaluate for criticality, rank for priority upgrades, and incorporate into asset management and capital planning.

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS		
	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
6. Apply for funding to implement priority upgrades.	LONG	HIGH	› Finance › Purchasing/Procurement › Engineering Dept (Salem) › Grants Director (Beverly)
7. Regularly convene the working group to establish a formalized mechanism for communication, monitoring, and collaboration on all upgrades.	LONG/ ONGOING	MEDIUM/ HIGH	› Salem/Beverly Water Supply Board › South Essex Sewerage District

EXTERNAL FUNDING RESOURCES

- Municipal Vulnerability Preparedness (MVP) Action Grant, EEA
- Building Resilient Infrastructure and Communities (BRIC) Grant Program, Federal Emergency Management Agency (FEMA)

TECHNICAL RESOURCES

- Beverly Hazard Mitigation Plan (2018), City of Salem
- Beverly Municipal Vulnerability Preparedness Study (2019), City of Beverly
- Beverly Coastal Resiliency Study (2017), City of Beverly
- Salem Hazard Mitigation Plan (2020), City of Salem
- City of Salem Climate Change Vulnerability Assessment & Adaptation Plan (2014), City of Salem

OPPORTUNITIES FOR COLLABORATION

- Identify mutual priorities for critical upgrades to the South Essex Sewerage District and the Salem/Beverly Water Supply board.
- Build trust and partnerships by convening a working group that meets regularly to discuss priority projects.
- Establish data sharing agreements for GIS to inform ongoing work and priorities.
- Establish formalized communication systems to discuss asset management, operations, and maintenance.
- Apply for grants together (both Cities).

EQUITY CONSIDERATIONS

- Consider environmental justice communities and historically under-resourced neighborhoods in assessment and prioritization of upgrades.

MEASURING SUCCESS

- Asset analysis completed (%)
- Dollars spent
- Miles of utility improvements implemented
- Reduction in gallons of stormwater managed
- Square feet / acres of green infrastructure
- Number of GI facilities
- Frequency of flooding events (days/year)
- Dollars spent on capital plans
- Maintenance schedules met

ENGAGEMENT/ COMMUNICATION CONSIDERATIONS

- Outline information that should be communicated publicly vs internally.

INFRASTRUCTURE

ACTION:

I-3: 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.

IMPLEMENTATION LEAD: **Salem:** Mayor's Office; **Beverly:** Mayor's Office

OVERALL PROJECT DURATION: Medium

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Convene staff from both cities to review and discuss opportunities for stormwater fees. For example, Beverly should share lessons learned from the Sewer Enterprise Fund, discuss opportunities for improvement, and brainstorm strategies for a similar or expanded product in Salem.	SHORT	LOW	› Engineering Depts › Finance Depts › Finance Committees › Planning Depts
2. Review existing data on impervious surfaces in both cities to understand baselines and set a goal for impervious surface reduction targets.	SHORT	LOW	› Finance Committees › GIS & Maps (Salem) › Engineering Depts
3. Consider hiring an external consultant to conduct a study to analyze different pricing strategies and revenue generation potential, with the goal of building public support and justification for new fees.	SHORT	MEDIUM	› Finance Depts › Purchasing/Procurement › Engineering Depts › Colleges and universities › Grants Director (Beverly)
4. Create political will for this item through a public outreach campaign about the importance of raising additional funds to finance infrastructural improvements, and the benefits of reducing impervious surfaces throughout both cities such as improved water quality. Focus especially on engaging the business community through public private partnerships and outreach to homeowners' associations and on coordinating with other GI initiatives such as BD-1, BD-3, I-4, I-5, I-6, NR-7, NR-8, NR-9.	MEDIUM	MEDIUM	› Sustainability › Chambers of Commerce › City Councils › Elected officials › Finance Dept (Salem) › Conservation Commissions › HOAs › Additional partners, as appropriate
5. Write a new/revised stormwater fee ordinance to be shared by both cities to incentivize private sector adoption of green infrastructure BMPs, reduce impervious surfaces and raise needed funds for public projects, auditing, and infrastructure maintenance.	MEDIUM	LOW	› Stormwater Professional (Beverly) › Engineering Depts › Finance, for review › Legal, for review

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

INFRASTRUCTURE (CONTINUED)

I-3: Explore financing strategies like stormwater fees to generate needed revenue for infrastructure financing.

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS		
	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
6. Bring the stormwater fee to City Council for Approval.	MEDIUM	LOW	› City Councils

EXTERNAL FUNDING RESOURCES

- › Municipal Vulnerability Preparedness (MVP) Action Grant, EEA
- › Consider combining resources to conduct joint study or financing internally
- › Partnerships with local colleges and universities to have students conduct financial feasibility analysis

TECHNICAL RESOURCES

- › Braintree Stormwater Utility Fee Fact Sheet
- › Braintree Stormwater Enterprise Fee
- › Milton Stormwater Bylaw
- › Bellingham Stormwater Utility Fee Regulations

OPPORTUNITIES FOR COLLABORATION

- › Partner to draft and pass a standardized stormwater fee across both municipalities to incentivize collaboration on operating and maintaining shared stormwater and sewer infrastructure.

EQUITY CONSIDERATIONS

- › Convene a meeting with landlords to discuss the importance of the fee and protect renters from being unfairly burdened by potential cost increases.

MEASURING SUCCESS

- › Percentage of impervious surface area across both cities (done by satellite imagery analysis)
- › Square feet of impervious surface converted to pervious areas
- › Dollars of revenues generated
- › Miles of utility improvements implemented.
- › Reduction in gallons of stormwater managed

ENGAGEMENT/ COMMUNICATION CONSIDERATIONS

- › Work with HOAs and businesses early in the process to discuss the benefits and importance of impervious surface reduction to build support for the fee.
- › Highlight the ways in which reducing impervious surfaces improves water quality, reduces burdens on infrastructure, and improves the community through beautification, reduction of urban heat island effect, and decreased flooding.
- › Conduct all outreach on stormwater fees in multiple languages other than English.

INFRASTRUCTURE

ACTION:

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.

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.

IMPLEMENTATION LEAD: **Salem:** Public Services; **Beverly:** Public Services

OVERALL PROJECT DURATION: Short

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Convene a working group to review existing best practices for resilient infrastructure design, operations, and maintenance guidelines, such as those referenced in the Technical Resources element.	SHORT	LOW	› Sustainability › Engineering Depts
2. Develop a clear understanding of baseline and future conditions and needs based on the vulnerability analysis recommended in I-2 and the hydrologic model recommended in I-9.	SHORT	LOW	› Engineering Depts › GIS & Maps (Salem) › Planning Depts › South Essex Sewerage District › Salem/Beverly Water Supply Board
3. Conduct an internal audit of current infrastructure design guidelines for infrastructure and analyze which standards must be reviewed to improve resilience.	SHORT	MEDIUM	› South Essex Sewerage District › Salem/Beverly Water Supply Board › Engineering Depts
4. Draft infrastructure design guidelines with a focus on reducing emissions, improving resilience to future climate conditions, and ensuring sustainable operations and maintenance of all City assets.	MEDIUM	MEDIUM	› Engineering Depts › South Essex Sewerage District › Salem/Beverly Water Supply Board › Sustainability
5. Adopt selected design guidelines into departmental protocols and procedures, including procurement.	MEDIUM	LOW	› City Councils (as necessary) › Engineering Depts › Purchasing / Procurement
6. Provide education, outreach, and local job training and employment opportunities for public and private sector staff based on updated guidelines.	MEDIUM	MEDIUM	› Chambers of Commerce › Sustainability › Engineering Depts

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

INFRASTRUCTURE (CONTINUED)

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.

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
7. Apply for funding and develop public-private partnerships with utility providers to ensure resilient upgrades.	LONG	HIGH	› Engineering Depts › Grants Director (Beverly) › South Essex Sewerage District › Salem/Beverly Water Supply Board › Chambers of Commerce

EXTERNAL FUNDING RESOURCES

- Municipal Vulnerability Preparedness (MVP) Action Grant, EEA
- MassWorks Infrastructure Grant Program
- Massachusetts Clean Water State Revolving Fund (CWSRF)
- Building Resilient Infrastructure and Communities (BRIC) Grant Program, Federal Emergency Management Agency (FEMA)

TECHNICAL RESOURCES

- Draft Massachusetts Climate Resilience Design Standards & Guidelines (2020), Massachusetts Executive Office of Energy and Environmental Affairs (EEA) and Massachusetts Emergency Management Agency (MEMA)
- MBTA Flood Resilience Design Directive (2019), MassDOT.
- How to build a resilient and sustainable infrastructure (2018), ICF
- Climate-Resilient Infrastructure: Adaptive Design and Risk Management (2018), Committee on Adaptation to a Changing Climate, American Society of Civil Engineers
- Flood Resistant Design and Construction (2015), American Society of Civil Engineers
- Climate Resilient Design Standards and Guidelines for Protection of Public Rights of Way (2018), Boston Public Works Department
- Climate Resilient Design Standards and Guidelines for Protection of Public Rights of Way. Appendix B: General Design Considerations (2018), Boston Public Works Department
- Climate Ready DC Resilient Design Guidelines (2020), District of Columbia Department of Energy & Environment

OPPORTUNITIES FOR COLLABORATION

- Adopt standardized design guidelines across both jurisdictions.

EQUITY CONSIDERATIONS

- Ensure that environmental justice communities have equitable access to resilient infrastructure planning and upgrades.

MEASURING SUCCESS

- Resilient Infrastructure Design guidelines adopted
- Reduced maintenance and repair costs for infrastructure

ENGAGEMENT/ COMMUNICATION CONSIDERATIONS

- Consider how infrastructure upgrades and repairs may affect historical properties.
- Develop informational materials about the resiliency and sustainability design parameters selected and why, to help the community understand the importance of infrastructural upgrades.

MOBILITY

ACTION:

M-2: Collaborate with transit (e.g., MBTA, bus, and 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.

IMPLEMENTATION LEAD: **Salem:** Traffic & Parking Dept.; **Beverly:** Planning Dept.

OVERALL PROJECT DURATION: Medium

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Identify gaps in the current transit system and establish a roadmap to engage the community, operators, and neighboring communities.	SHORT	LOW	› Planning Dept (Salem) › Traffic & Parking Commission (Salem)
2. Engage other North Shore communities to gauge interest in joint efforts and identify shared interests and opportunities.	SHORT	LOW	› Planning Dept (Salem) › Traffic & Parking Commission (Salem) › North Shore communities
3. Conduct a community engagement process to survey needs and usage.	SHORT	MEDIUM	› Planning Dept (Salem) › NSTMA › Traffic & Parking Commission (Salem)
4. Engage operators to gain a preliminary understanding of their internal planning efforts and operations.	SHORT	LOW	› CATA › NSTMA › MBTA › MassDOT › Transportation Network Companies (TNCs) › Planning Dept (Salem) › Traffic & Parking Commission (Salem)
5. Commission a feasibility study to propose scheduling and service modifications.	SHORT	MEDIUM	› Planning Dept (Salem) › Traffic & Parking Commission (Salem)
6. Identify funding sources and develop a strategic plan for phased implementation.	MEDIUM	HIGH	› Planning Dept (Salem) › Grants Director (Beverly) › Traffic & Parking Commission (Salem)

TIMEFRAME: SHORT: 1-2 YEARS MEDIUM: 3-5 YEARS LONG: >5 YEARS **COST:** LOW: <$10K MEDIUM: <$100K HIGH: >100K

MOBILITY (CONTINUED)

M-2: Collaborate with transit (e.g., MBTA, bus, and shuttle providers) to prioritize improvements to public transportation operations, including route efficiency, expanded service, last-mile options, shelter/shading improvements, and enhanced affordability.

EXTERNAL FUNDING RESOURCES

- Earmarks, Federal Highway
- Community Connections Regional Grant, Boston Region Metropolitan Planning Organization (MPO)
- Accelerating Innovative Mobility (AIM), Federal Transit Administration (FTA)
- MAPC and MassDevelopment Transportation Partnership Grants Program
- Flexible Funding Programs - Surface Transportation Block Grant Program - 23 USC 133, FTA
- Grants for Buses and Bus Facilities Formula Program - 5339(a), FTA
- Grants for Buses and Bus Facilities Program, FTA
- Suburban Subsidy Program, Federal Transit Authority
- Integrated Mobility Innovation (IMI), FTA
- Low or No Emission Vehicle Program - 5339(c), FTA

TECHNICAL RESOURCES

- Transit Studies, Boston Region Metropolitan Planning Organization (MPO)
- Destination 2040 – The Long-Range Transportation Plan for the Boston Region (2019), Boston Region MPO
- Report 140: A Guide for Planning and Operating Flexible Public Transportation Services (2010), TRB Transit Cooperative Research Program (TCRP)
- GoBoston 2030 (2017), City of Boston
- MBTA Capital Investment Plan

OPPORTUNITIES FOR COLLABORATION

- Determine advantages of applying jointly and/or with other North Shore communities for Federal Highway Funds made available through earmarks.
- Partner with private rideshare providers, such as Via.
- Partner with private electric micro-transit operators, such as Circuit.

EQUITY CONSIDERATIONS

- Consider pricing structure for new and existing services as they relate to the aging population, kids, and those on social services.
- Consider the Title 6 Policy for public process.
- Consider the potential for market free alternatives for mobility.
- Ensure existing and planned routes, schedules, and stops are equitably distributed with respect to transit catchment areas.

MEASURING SUCCESS

- Increase in general ridership (number of riders)
- Increase in ridership utilizing a connection between modes or services (number of riders)
- Increase in transit catchment area radius (miles)
- Decrease in transit time for specific travel itineraries (minutes/hours)

ENGAGEMENT/ COMMUNICATION CONSIDERATIONS

- Develop links on the Cities' websites to inform the public about planning efforts and service changes and solicit input.
- Improve signage at all transit stops and consider material to raise awareness of planning efforts and last-mile options such as bike share locations.
- Leverage outreach and communications for other actions promoting bicycle use and improved pedestrian infrastructure to raise awareness of improved connectivity.
- Conduct polling at transit stops and bike share locations.

MOBILITY

ACTION:

M-3: 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.

IMPLEMENTATION LEAD: **Salem:** Sustainability; **Beverly:** Sustainability

OVERALL PROJECT DURATION: Short

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Review existing practices for public awareness campaigns and composition of city contacts aiding in awareness campaigns. Meet with city staff who have led awareness campaigns and determine best practices for the EV campaign.	SHORT	LOW	› Mayor's Offices › Sustainability/Energy Committees › Traffic & Parking Department (Salem) › Traffic & Parking Commission (Salem) › Planning Depts › Engineering Dept (Beverly) › Public Services (Beverly) › Health (Salem)
2. Develop a strategic framework to support funding and administration of the campaign. Identify potential nonprofits, private companies, universities, and other city or state departments that would aid in administering the campaign or have had experience organizing similar campaigns.	SHORT	LOW	› Planning Depts › National Grid › MassCEC › Clean Energy Advisory Committee (Beverly)
3. Informed by potential funding sources and partnering opportunities, identify the methods for communication to the general public: digital presence and resources, public events and meetings, institutional partnerships, signage.	SHORT	LOW	› Mayor's Office (Salem) › Traffic & Parking Department (Salem) › Traffic & Parking Commission (Salem) › Local news › Planning Depts › Social media platforms
4. Craft a body of coordinated outreach materials that can be deployed in different contexts, using in-house resources or outsourced consultants.	SHORT	MEDIUM	› Mayor's Office (Salem) › Traffic & Parking Department (Salem) › Traffic & Parking Commission (Salem) › Consultant Team › Planning Depts › Volunteer graphic designers

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

MOBILITY (CONTINUED)

M-3: Create a public awareness campaign for electric vehicles (EV) and available charging stations locally and throughout the region.

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
5. Create a detailed plan for dissemination of materials and implement.	**SHORT**	**LOW**	› Planning Depts › Traffic & Parking Department (Salem) › Traffic & Parking Commission (Salem) › Office of the Mayor (Beverly) › Consultant team › National Grid › MassCEC › Clean Energy Advisory Committee (Beverly)

EXTERNAL FUNDING RESOURCES

- National Grid
- Workplace & Fleet Charging, MassEVIP
- Public Access Charging (PAC) Program, MassEVIP
- Multi-Unit Dwelling and Educational Campus Charging Program, MassEVIP
- Possible private sector funding: Fedex, Nissan
- FAST Act, Federal Transit Administration

TECHNICAL RESOURCES

- Electric Vehicle Deployment, Municipal Best Practices Study (2015), City of Atlanta
- Electric Vehicles resources, City of Cambridge
- Green Energy Consumers Alliance
- Electric Vehicle Charging Information, MassDEP
- Electric Vehicle Charging Station Locations, Alternative Fuels Data Center, US Department of Energy
- Strategic Planning to Implement Publicly Available EV Charging Stations: A Guide for Businesses and Policymakers (2015), C2ES, NASEO, US Department of Energy Clean Cities

OPPORTUNITIES FOR COLLABORATION

- Reach out to engage neighboring municipalities to encourage a regional approach to educating residents about EV charging stations.
- Leverage a regional approach to increase grant eligibility.
- Coordinate outreach with other green initiatives.
- Work with neighborhood associations and established nonprofit networks to share outreach opportunities.

EQUITY CONSIDERATIONS

- Map current and future charging station locations and cross reference against income and racial data to ensure there is equal distribution and access.
- Track the balance of funding allocated to the promotion of private vehicle charging stations vs. EV buses to ensure that the distribution of resources reflects the needs of the majority of the population.
- Create outreach methods that are inclusive with respect to language fluency and digital literacy.
- Prior to tax season: provide educational material across the City that explains tax credits (Two-Wheeled Plug-in Electric Drive Motor Vehicle Credit), including possible collaboration with tax preparation assistance programs.

MEASURING SUCCESS

- Number of residents who own EVs
- Number and usage of charging stations
- Number of visits to website or online portal
- Number of times online campaign is reshared or “liked”
- Number of times campaign emails are opened

ENGAGEMENT/ COMMUNICATION CONSIDERATIONS

- Use special day events like Earth day to showcase EVs (both public transit options and private vehicles) and charging stations with information booths.
- Start a social media campaign to spread awareness of different types of EVs and the benefits for the environment.

MOBILITY

ACTION:

M-1: Evaluate and prioritize roadway spending to accommodate all users and encourage pedestrian and cyclist 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.

IMPLEMENTATION LEAD: **Salem:** Engineering Dept, Planning Dept;
Beverly: Engineering Dept, Public Services, Sustainability

OVERALL PROJECT DURATION: Long

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Write RFP and hire a consultant team to conduct a safe streets study to collect data and determine what areas have sufficient pedestrian amenities, what areas are in need of pedestrian amenities, and where pedestrian injuries/fatalities occur.	SHORT	MEDIUM	› Traffic & Parking Dept (Salem) › Parking & Traffic Commission (Beverly) › MAPC › Planning Dept (Beverly) › Purchasing (Beverly)
2. Create a safe streets campaign to raise awareness of safety related issues.	SHORT	MEDIUM	› Planning Dept (Beverly) › Traffic & Parking Dept (Salem) › Parking & Traffic Commission (Beverly) › Office of the Mayor (Beverly)
3. In conjunction with the safe streets campaign, the Cities will complete community outreach to ground-truth data and determine where residents feel the least safe while walking.	SHORT	MEDIUM	› Traffic & Parking Dept (Salem) › Planning Dept (Beverly) › Office of the Mayor (Beverly)
4. Organize a community day of action to implement tactical/ low-cost improvements (signs and lines) to address safety concerns while waiting for funding for long term solutions.	SHORT	LOW	› Traffic & Parking Dept (Salem) › Beverly Bike Committee › Bicycling Advisory Committee (Salem) › NSTMA › Planning Dept (Beverly) › Office of the Mayor (Beverly) › Police Dept (Beverly)
5. Evaluate current roadway spending and determine if there are opportunities to reallocate current spending to areas of concern.	SHORT	MEDIUM	› Traffic & Parking Dept (Salem) › Planning Dept (Beverly) › Office of the Mayor (Beverly) › Budget Director (Beverly)
6. Seek out grant and alternative funding opportunities and develop a strategic plan to improve pedestrian safety.	MEDIUM	HIGH	› Traffic & Parking Dept (Salem) › Planning Dept (Beverly) › Grants Director (Beverly) › MAPC

TIMEFRAME: SHORT: 1-2 YEARS MEDIUM: 3-5 YEARS LONG: >5 YEARS **COST:** LOW: <$10K MEDIUM: <$100K HIGH: >100K

MOBILITY (CONTINUED)

M-1: Evaluate and prioritize roadway spending to accommodate all users and encourage pedestrian and cyclist connectivity and safety.

EXTERNAL FUNDING RESOURCES	TECHNICAL RESOURCES
› Complete Streets Funding, MassDOT › Chapter 90 › Community Development Block Grant Entitlement Program › Municipal Road Safety (MRS) Grant, Office of Grants and Research's Highway Safety Division	› Complete Streets Grant in Beverly (Winter Street to Abbott Street): Use as a case study, determine what worked and what could be improved for the next grant cycle › NYC Safe Routes for Seniors campaign › Review Aging in Place research › Vision Zero Boston

OPPORTUNITIES FOR COLLABORATION	EQUITY CONSIDERATIONS
› Share resource allocation and budgeting for public works spending between the Cities to identify possible points of alignment in the search for additional outside funding and grants.	› Consider adjacent neighborhoods and populations served when prioritizing locations for improvement. › Analyze current sidewalk conditions and walkability for underserved neighborhoods. › Determine if safety aspects disproportionately affect particular neighborhoods or populations.

MEASURING SUCCESS	ENGAGEMENT/ COMMUNICATION CONSIDERATIONS
› Quantity and quality of improved sidewalks › Pedestrian counts › Number of capital projects and additional funding	› Complete community outreach first to determine which areas are of most concern for the community, then address those areas first. › Invite the public to participate in pedestrian/bike/car counts. › Engage students in pedestrian safety campaigns similar to MassDOTs Safe Streets Smart Trips High School Video Contest.

NATURAL RESOURCES

ACTION:

NR-7: 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.

IMPLEMENTATION LEAD: **Beverly:** Planning Dept/Public Services; **Salem:** Planning Dept/Public Services

OVERALL PROJECT DURATION: Medium

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Convene a working group of existing gardening groups, landscapers, and other stakeholders in both cities to strategize how to maximize local impact of and education on sustainable landscaping practices.	SHORT	LOW	› Greenscapes › Mack Park Food Farm › Salem Community Gardens › Salem Garden Club › Sustainability (Beverly) › Stormwater Committee (Beverly) › Conservation Commission (Beverly) › Open Space & Recreation Committee (Beverly) › Beverly Community Farm Stand › North Shore Garden Club › Schools › Sustainable Landscapers
2. Develop sustainable landscaping guidelines for capital projects and private property.	MEDIUM	LOW	› Parks & Recreation › Sustainability › Building Dept (Salem) › Stormwater Committee (Beverly) › Conservation Commission (Beverly) › Open Space & Recreation Committee (Beverly)
3. Create incentives for homeowners and businesses to implement low-impact landscaping on private property.	MEDIUM	MEDIUM	› Parks & Recreation › Building Dept (Salem) › Sustainability › Stormwater Committee (Beverly) › Conservation Commission (Beverly) › Open Space & Recreation Committee (Beverly)
4. Create public programming featuring local experts to provide education on sustainable landscaping to landscape architects, developers, City staff, residents, schools, and community groups.	MEDIUM	LOW	› Greenscapes › North Shore Garden Club › Osborne Organics › Sustainable Landscapers › Local colleges/universities › Stormwater Committee (Beverly) › Conservation Commission (Beverly) › Open Space & Recreation Committee (Beverly)

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

NATURAL RESOURCES (CONTINUED)

NR-7: Encourage sustainable landscaping practices through incentives, education, and volunteer opportunities.

EXTERNAL FUNDING RESOURCES	TECHNICAL RESOURCES
› Municipal Vulnerability Preparedness (MVP) Program Action Grant, EEA › Community Grants, Toxic Use Reduction Institute › Massachusetts Agriculture in the Classroom	› Low Impact Development Toolkit, Greenscapes › Tough Plants for Tough Spots, Native Plant Trust › Creating a Pollinator Garden for Native Specialist Bees of New York and the Northeast, Cornell University › Sustainable Concord Landscape Handbook (2019), Town of Concord › Ecological Landscape Alliance (ELA) › Grow Native Massachusetts › Massachusetts Horticultural Society

OPPORTUNITIES FOR COLLABORATION	EQUITY CONSIDERATIONS
› Beverly and Salem both have many existing community gardening groups that can build knowledge together. › Bringing in outside experts and speakers to events for both cities can convene like-minded residents and inspire collective action. › Public-private partnerships provide many opportunities to expand sustainable landscaping practices across both cities. › Local schools and colleges provide opportunities to engage students in community-led education work and programs.	› Some neighborhoods, such as The Point in Salem, have limited green space. New gardening and open space amenities should be prioritized in those areas. › Community gardens and food farms can increase access to fresh produce for low-income households. › Grants to local food-oriented non-profits (e.g., Root) can increase capacity and programmatic support. › Some groups, such as seniors, may be interested in introducing sustainable landscaping practices on their property, but may need assistance with implementation.

MEASURING SUCCESS	ENGAGEMENT/ COMMUNICATION CONSIDERATIONS
› Number of people who attend public events › Number of community gardens › Area of lawn removed or replaced with sustainable ground cover (acres) › Reduction of pesticide/herbicide use › Water quality metrics › Increase in native species and pollinator plantings › Percent of open space › Percent of population within 10-minutes (walking) of a park/open space	› Partner with existing community organizations (e.g., Massachusetts Farm to School) to reach their networks. › Collaborate closely with landscape architects and landscaping companies to reach their customers.

NATURAL RESOURCES

ACTION:

NR-4: 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.

IMPLEMENTATION LEAD: **Salem:** Planning Dept/Engineering Dept;
Beverly: Planning Dept/Engineering Dept

OVERALL PROJECT DURATION: Short

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Update the information, guidance, and permitting forms for private landowners on City websites to reflect the strengthened wetlands ordinances (see Action NR-5).	SHORT	LOW	› Mayor's Offices › Planning Boards › Conservation Commission (Beverly)
2. Develop an informational guide for private landowners on wetlands protection and flood management.	SHORT	LOW	› Sustainability › Sustainability, Energy, and Resilience Committee (Salem) › Trustees of Reservations › Mass Audubon
3. Identify critical wetlands on private property and conduct outreach to landowners to share the informational guide.	SHORT	LOW	› GIS & Maps (Salem) › Sustainability, Energy, and Resilience Committee (Salem) › Planning Board (Salem) › Sustainability (Beverly) › Conservation Committee (Beverly) › Open Space & Recreation Committee (Beverly)
4. Establish mechanisms and funding for increased monitoring and auditing of wetlands protection ordinances.	SHORT	MEDIUM	› Building Depts › Planning Board (Salem) › Conservation Committee (Beverly)

TIMEFRAME: SHORT: 1-2 YEARS MEDIUM: 3-5 YEARS LONG: >5 YEARS **COST:** LOW: <$10K MEDIUM: <$100K HIGH: >100K

NATURAL RESOURCES (CONTINUED)

NR-4: Educate private landowners, engineers, and developers on flood management through wetland restoration, wide buffer zones, and maintenance driven best management practices.

EXTERNAL FUNDING RESOURCES	TECHNICAL RESOURCES
› Massachusetts Environmental Trust grants	› Wetlands Conservancy Program, Massachusetts Department of Environmental Protection

OPPORTUNITIES FOR COLLABORATION	EQUITY CONSIDERATIONS
› Strong ordinances across both cities can provide more robust outcomes. › Cities can shift more responsibility to private property owners and developers so they can focus on auditing and enforcement. › The Cities can jointly conduct outreach to the Trustees of Reservations and Mass Audubon to develop strategies for wetlands protection. › The Cities can jointly collaborate with local colleges and universities on demonstration projects.	› Consider the additional costs of complying with wetlands regulations and explore funding opportunities and low-cost solutions for private landowners to increase compliance. › Use multiple modes of communication (e.g., online notices, hard copy mailings, email newsletters) to ensure information reaches all relevant landowners.

MEASURING SUCCESS	ENGAGEMENT/ COMMUNICATION CONSIDERATIONS
› Number of landowners engaged › Water quality metrics › Wetlands restored/protected (acres per year) › Rate of compliance with ordinance (percentage)	› Create public education campaign around relationship between wetlands and water quality issues to increase compliance. › Install informational placards around critical wetlands areas. › Work with developers to share additional compliance requirements. › Send out informational brochure with utility bills and through City newsletters.

NATURAL RESOURCES

ACTION:

NR-5: Update wetlands ordinances and/or Floodplain Overlay District Ordinance to protect future flood zones.

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.

IMPLEMENTATION LEAD: **Salem:** Planning Dept/Building Dept; **Beverly:** Planning/Building Dept

OVERALL PROJECT DURATION: Medium

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Convene the Salem and Beverly Conservation Commissions to research municipal wetland regulations in other Massachusetts communities to understand how they are integrating climate resilience to provide protection beyond the State Wetland Protection Act requirements.	SHORT	LOW	› Engineering Depts › Conservation Commissions › Sustainability, Energy, & Resilience Committee (Salem) › Sustainability (Beverly) › Wetlands Buffer Zone Policy Working Group Members (Salem)
2. Design and implement strengthened wetland protection ordinances in both cities that take into account future flood risk projections and create wider buffers accordingly.	SHORT	LOW	› Planning Boards › Engineering (GIS) (Beverly) › GIS & Maps (Salem) › Wetlands Buffer Zone Policy Working Group Members (Salem)
3. Establish mechanisms and funding for increased monitoring and auditing of wetlands protection ordinances.	MEDIUM	HIGH	› Building Depts › Planning Boards › Conservation Commission (Beverly)

TIMEFRAME: SHORT: 1-2 YEARS MEDIUM: 3-5 YEARS LONG: >5 YEARS **COST:** LOW: <$10K MEDIUM: <$100K HIGH: >100K

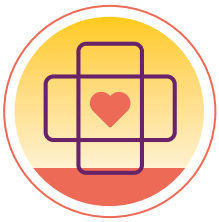
NATURAL RESOURCES (CONTINUED)

NR-5: Update wetlands ordinances and/or Floodplain Overlay District Ordinance to protect future flood zones.

EXTERNAL FUNDING RESOURCES	TECHNICAL RESOURCES
› Massachusetts Environmental Trust grants	› Regulations for Wetlands Protection (2018), Town of Arlington › Protecting Wetlands in Massachusetts, Mass.gov › Wetlands Protection Act (2017), Commonwealth of Massachusetts

OPPORTUNITIES FOR COLLABORATION	EQUITY CONSIDERATIONS
› Salem has the opportunity to learn from the Beverly Conservation Commission for advice on updating wetland regulations. › The Cities should proactively support their conservation commissions in implementation of updated regulations.	› Evaluate what populations will be most impacted by increased flooding risk and include protective provisions in the ordinance. › Consider locations of existing affordable housing and potential impacts of flooding and/or ordinance regulations. › Conservation easements around wetlands may provide opportunities for tax breaks and encourage the protection of floodable areas.

MEASURING SUCCESS	ENGAGEMENT/ COMMUNICATION CONSIDERATIONS
› Adoption of updated wetland ordinance › Wetlands restored/protected (acres per year) › Rate of compliance with ordinance (percentage) › Water quality metrics	› Host a training for developers about the implications of the updated ordinances. › Tackle issues unique to upland wetlands (e.g., silting) to ensure regulations accommodate these challenges rather than introducing potential harm.



PUBLIC HEALTH & SAFETY

ACTION:

PHS-2: 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.

IMPLEMENTATION LEAD: **Salem:** Health; **Beverly:** Health

OVERALL PROJECT DURATION: Short

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Review resources from the Urban Sustainability Directors Network to understand the range of activities and benefits associated with Resilience Hubs.	SHORT	LOW	› Public Services › Emergency Management › Sustainability Energy, & Resiliency Committee (Salem) › Parks & Recreation (Salem)
2. Perform research and connect with community partners/members to understand existing services and facilities supporting resilience, as well as areas of greatest need. Resilience Hubs are ideally locations that community members already rely on, but that may be under-resourced.	SHORT	LOW	› Civic/Neighborhood associations › Faith institutions › North Shore CDC › Social Justice Committees › School › Emergency Management › Housing Authorities › Social services organizations
3. Select a pilot site in which to develop a Resilience Hub as well as the services to be provided based on needs identified in Step 2.	SHORT	LOW	› Civic/Neighborhood associations › Faith institutions › North Shore CDC › Social Justice Committees › School › Emergency Management › Housing Authorities › Social services organizations
4. Seek funding to develop the pilot Resilience Hub(s).	SHORT	LOW	› Clean Energy Advisory Committee (Beverly) › Grants Director (Beverly)
5. Hire nonprofit or community partner(s)/ consultants to lead, shape, and implement the effort.	MEDIUM	MEDIUM	› Nonprofit or community partner(s) leading pilot hub development
6. Expand resilience hubs to additional key locations, based on lessons learned from pilot project.	LONG	HIGH	› Sustainability/Energy Committee

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

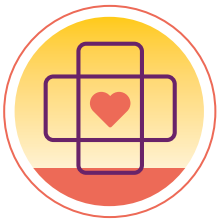
PUBLIC HEALTH & SAFETY (CONTINUED)

PHS-2: Develop neighborhood resilience hubs to coordinate and maintain resident well-being as climate impacts intensify.

EXTERNAL FUNDING RESOURCES	TECHNICAL RESOURCES
› Municipality Vulnerability Preparedness (MVP) Program Action Grant, EEA	› Resilience Hubs, Urban Sustainability Directors Network (USDN) › Draft Guide to Developing Resilience Hubs (2019), USDN › Resilience Hubs: Shifting Power to Communities and Increasing Community Capacity (2018), USDN › Climate Resilience Hubs, Communities Responding to Extreme Weather

OPPORTUNITIES FOR COLLABORATION	EQUITY CONSIDERATIONS
› Consider developing a joint pilot Resilience Hub to pool resources.	› Leverage hubs to build leadership and bring money and resources into historically marginalized communities. Prioritize these communities' needs, interests, and location for the pilot project. › Sites and hub leaders should be locations, organizations, and individuals that community members already trust. › Pay community partners whose time is being requested as part of the Resilience Hubs effort. Consider full or part-time hires to run the hubs.

MEASURING SUCCESS	ENGAGEMENT/ COMMUNICATION CONSIDERATIONS
› Number of residents with access to resources both for daily use as well as in the event of an emergency	› Build upon Resilient Together outreach via equity partners and neighborhood/faith leaders to continue existing relationships. › Tap into ongoing, community-led initiatives as part of efforts to solicit feedback on needs (to best reach target communities as well as avoid engagement burnout).



PUBLIC HEALTH & SAFETY

ACTION:

PHS-1: 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.

IMPLEMENTATION LEAD: **Salem:** Engineering, Sustainability; **Beverly:** Engineering, Sustainability

OVERALL PROJECT DURATION: Medium

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Reference existing heat maps to understand the geographic and demographic distribution of urban heat islands. Develop additional/more granular analyses, as necessary.	SHORT	LOW	› GIS & Maps (Salem) › Local universities
2. Review current municipal and citywide cooling initiatives and heat event preparation protocols to understand gaps and areas for improvement.	SHORT	LOW	› Mayor's Offices › Public Services (Beverly) › Health › Library › Schools › Parks & Recreation › Social Justice Committees › Councils on Aging/Senior Centers › LifeBridge › Beverly Bootstraps › Additional community partners, as appropriate
3. Conduct outreach to community members to understand how they currently cool down and what the Cities could do to better support them. Outreach could take the form of surveys, interviews, and community events. Use this step as an opportunity to continue education around heat impacts and strategies and identify opportunities for new initiatives and partnerships.	SHORT	LOW	› Mayor's Offices › Health › Library › Schools › Parks & Recreation › Sustainability, Energy, & Resiliency Committee (Salem) › Social Justice Committees › Councils on Aging/Senior Centers › LifeBridge
4. Designate clear lines of communication and responsibilities during extreme heat events, including by appointing liaisons or ambassadors to various community organizations, as necessary. Document and distribute all protocols.	SHORT	LOW	› Mayor's Offices › Health › Library › Schools › Parks & Recreation › Sustainability, Energy, & Resiliency Committee › Social Justice Committees › Councils on Aging/Senior Centers

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

PUBLIC HEALTH & SAFETY (CONTINUED)

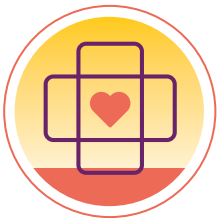
PHS-1: Expand the "cooling capacity" of Beverly and Salem through investments in heat-reducing infrastructure and materials, as well as cooling initiatives.

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
5. Seek and allocate additional funds for initiatives, equipment, and personnel based on review of existing initiatives and community outreach.	MEDIUM	LOW	› Health › Finance › Purchasing › Community partners › Grants Director (Beverly)
6. Coordinate efforts to introduce green building incentives/standards (BD-2, BD-3), resilient infrastructure standards (I-4, I-5, I-6), and tree-planting and green infrastructure (NR-7, NR-8, NR-9).	MEDIUM	LOW	› Parks & Recreation › Sustainability, Energy, & Resiliency Committee › Conservation Commissions › Planning Depts › Public Services › Building Depts

EXTERNAL FUNDING RESOURCES	TECHNICAL RESOURCES
› Commonwealth Places, Massachusetts Development Finance Agency › Community Health Center Grant Program, MassDevelopment › Urban and Community Forestry Challenge Grants, Massachusetts Department of Conservation & Recreation	› Extreme Heat Resources, Metropolitan Area Planning Council (MAPC) › Climate Vulnerability in Greater Boston: Vulnerability Map - Vulnerability to Extreme Heat, MAPC › Keeping Your Cool: How Communities Can Reduce the Heat Island Effect, US EPA › Beat the Heat Toolkit, City of Philadelphia

OPPORTUNITIES FOR COLLABORATION	EQUITY CONSIDERATIONS
› Coordinate educational efforts, particularly around the benefits of shared cooling resources. and infrastructure (e.g., the Waterfront, parks) › Leverage partnerships in both Cities to share and jointly advertise cooling locations.	› Ensure that initiatives target neighborhoods and populations most vulnerable to extreme heat (e.g., communities of color, low-income communities, the elderly, individuals experiencing homelessness). › Work with partners such as Beverly Bootstraps and LifeBridge to integrate support services for individuals experiencing homelessness into planning efforts around cooling capacity (e.g., central location for community meals, showers, cooling/ warming).

MEASURING SUCCESS	ENGAGEMENT/ COMMUNICATION CONSIDERATIONS
› Land surface temperature › Impervious surface (percent of total land area) › Open space (percent of total land area) › Number of community members with access to cooling centers	› Enhance public education around where cooling and respite areas already exist around both cities (e.g., the waterfront, Veteran's Park in Salem). › Engage and educate potential partners with sites to use for cooling locations to combat stigma (particularly around homeless populations) and anticipate any key logistical challenges and pushback.



PUBLIC HEALTH & SAFETY

ACTION:

PHS-6: 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.

IMPLEMENTATION LEAD: **Salem/Beverly:** Health, Sustainability, & Planning Depts

OVERALL PROJECT DURATION: Medium

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Convene local organizations involved in community farming to understand key challenges and opportunities for enhancement/expansion of ongoing efforts. Issue a survey to capture feedback from additional organizations not in attendance.	SHORT	LOW	› Planning Dept (Salem) › Sustainability (Salem) › Salem Public Schools: Farm to Schools group › Local farmers/gardening groups (Salem Food for All, Salem Community Gardens, Mack Park Food Farm, Maitland Mountain Farm, etc.) › The Food Project › Local universities › Local private schools
2. Based on outreach, connect community farming organizations with existing technical and training opportunities in the region.	SHORT	LOW	› Planning Dept (Salem) › Sustainability (Salem)
3. Based on outreach and best practices, evaluate and amend zoning ordinances to facilitate and reduce barriers to urban farming.	SHORT	LOW	› Planning Dept (Salem) › Sustainability (Salem) › City Councils
4. Publicize grant opportunities for ongoing gardens and urban farming projects. Support these teams (as possible) to apply for project specific funding	SHORT	LOW	› Mayor's Offices › Community project teams › Grants Director (Beverly)
5. Partner with local universities and research institutions to develop innovative urban farming pilot project teams (e.g., for hydroponics, ocean farming, etc.). Seek funding in collaboration with partners.	SHORT	LOW	› Community/ academic project teams › Grants Director (Beverly)

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

PUBLIC HEALTH & SAFETY (CONTINUED)

PHS-6: Support municipal and community gardens, and urban farming.

EXTERNAL FUNDING RESOURCES	TECHNICAL RESOURCES
› Urban Agriculture Program, Massachusetts Department of Agricultural Resources (MDAR) › Climate Smart Agriculture Program, MDAR › Matching Enterprise Grants for Agriculture, MDAR › Food Ventures Grant Program, MDAR › New England Grassroots Environment Fund Grant Programs › MAPC (for rezoning efforts)	› Urban Agriculture Resources, MDAR › Urban Farming Institute › New Entry Sustainable Farming Project › Massachusetts Division of Agricultural Conservation and Technical Assistance (DACTA) programs and services

OPPORTUNITIES FOR COLLABORATION	EQUITY CONSIDERATIONS
› Host a community forum to learn from the successes of local farms and food distribution partnerships in both communities (e.g., Mack Park, Beverly Bootstraps' seasonal mobile market, Freight Farm at Salem High School).	› Ensure that the location of community gardens enhances access for low-income communities and communities with limited access to fresh and healthy foods. › Prioritize initiatives that emphasize community leadership and learning and development opportunities for residents and local youth, particularly those in low-income neighborhoods.

MEASURING SUCCESS	ENGAGEMENT/ COMMUNICATION CONSIDERATIONS
› Number of residents with access to fresh, local food options › New square footage used/permitted for farming purposes › Number of acres of farm › Percent of locally produced food	› Leverage local farmers markets as a site of connection and collaboration. › Engage students at public schools around farming, building on the success of efforts at Salem High School's technical track for farming. › Explore local and regional partnerships with organizations such as Beverly Bootstraps, Boston Area Gleaners, and Greater Boston Food Bank (organizations to collaborate with to supply/take food).

SOLID WASTE

ACTION:

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.

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.

IMPLEMENTATION LEAD: **Salem:** Waste Reduction Coordinator; **Beverly:** Sustainability

OVERALL PROJECT DURATION: Short

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Inventory existing educational materials around waste reduction, reuse, and recycling.	SHORT	LOW	› Recycling Committee (Salem) › Sustainability (Salem) › Engineering (Beverly) › Sustainability Director (Beverly)
2. Schedule regular recycling audits with waste hauler and record data to understand current waste and recycling practices, challenges, and opportunities for source reduction. Review available waste data to determine opportunities to target source reduction for specific waste streams and neighborhoods	SHORT	LOW	› Recycling Committee (Salem) › Salem Chamber of Commerce › Sustainability (Salem) › Engineering (Beverly) › Sustainability Director (Beverly) › Neighborhood leaders › Community partners (e.g., Beverly Bootstraps, Mack Park Food Farm) › Waste Management › JRM Hauling & Recycling › Black Earth Compost
3. Based on results of data review, revise and/or develop new educational materials.	SHORT	MEDIUM	› Recycling Committee (Salem) › Sustainability (Salem) › Sustainability Director (Beverly) › Engineering (Beverly)
4. Develop calendar for phased launch of education campaign.	SHORT	LOW	› Recycling Committee (Salem) › Sustainability (Salem) › Sustainability Director (Beverly) › Engineering (Beverly)
5. Implement education campaign. Track metrics developed through action SW-5 to measure the success of the campaign.	SHORT	LOW	› Recycling/Waste Committees › Sustainability (Salem) › Sustainability Director (Beverly) › Engineering (Beverly)

TIMEFRAME: SHORT: 1-2 YEARS MEDIUM: 3-5 YEARS LONG: >5 YEARS **COST:** LOW: <$10K MEDIUM: <$100K HIGH: >100K

SOLID WASTE (CONTINUED)

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.

EXTERNAL FUNDING RESOURCES	TECHNICAL RESOURCES
› Sustainable Materials Recovery Program (SMRP) Municipal Grants, MassDEP › SMRP Municipal Technical Assistance Grants, MassDEP › Green Team program (for school engagement), MassDEP	› MassDEP Recycling IQ Kit, MassDEP › How & Where to Recycle, MassDEP › Smart Recycling Guide, Recycle Smart › RecyclingWorks Massachusetts › WasteWise, US EPA › Waste Management Hierarchy, US EPA

OPPORTUNITIES FOR COLLABORATION	EQUITY CONSIDERATIONS
› Consider leveraging the Resilient Together brand and momentum to coordinate the campaign and share educational materials. › Share best practices for waste reduction education and engagement in each city.	› Ensure materials are multi-lingual (appropriate to languages spoken in each city). › Rely on graphics that appeal to different ages and cultural/linguistic populations. › Targeted outreach to environmental justice communities (e.g., door knocking, mailers, community events).

MEASURING SUCCESS	ENGAGEMENT/ COMMUNICATION CONSIDERATIONS
› Recycling contamination rate › Recycling/compost diversion rate (percent) › Number of households participating in composting program › Total municipal solid waste generated (tons)	› Emphasize ongoing sharing economy efforts in both cities (e.g., through Buy Nothing Project and Freecycle), as well as non-profit organization pickups (Big Brother Big Sister Foundation donations). › Seek partnerships with local groups and piggyback off ongoing events (e.g., Salem Mamas Tuesday Clothing Swaps). › Use a range of communication platforms (e.g., fliers in targeted locations, community/organizational meetings, social media). › Explore partnerships with recycling organizations such as TerraCycle to support diversion of difficult-to-recycle waste streams.

SOLID WASTE

ACTION:

SW-6: 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.

IMPLEMENTATION LEAD: **Salem:** Waste Reduction Coordinator; **Beverly:** Engineering Dept., Sustainability

OVERALL PROJECT DURATION: Medium

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Evaluate cost, scope, and limitations of various compost program options(e.g., vendors, City-procured mandatory pick-up).	SHORT	LOW	› Recycling/Waste Committees › Schools
2. Develop a phased compost program roll-out plan that accounts for factors (socioeconomic, cultural) impacting likelihood of and timeframe for adoption.	SHORT	LOW	› Recycling/Waste Committees › Sustainability (Salem)
3. Expand opt-in, paid, and incentive programs (e.g., private compost services, Beverly's discount on trash pick-up). Launch a recruitment campaign (in conjunction with SW-1) targeting those most likely to take up composting.	SHORT	LOW	› Recycling/Waste Committees › Compost service provider(s)
4. Expand composting drop-off sites. This step could occur simultaneously with step #3.	SHORT	MEDIUM	› Recycling/Waste Committees › Mack Park Food Farm and other relevant farm partners › Compost services providers
5. Provide curbside compost pick-up services for residents and mandate participation. Provide targeted support for low-income and rental communities.	MEDIUM	HIGH	› City Councils › Mayor's Offices › Recycling/Waste Committees

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

SOLID WASTE (CONTINUED)

SW-6: Expand curbside composting, support and educate residents on food waste reduction and home composting, and provide residents access to drop-off composting.

EXTERNAL FUNDING RESOURCES	TECHNICAL RESOURCES
› Sustainable Materials Recovery Program (SMRP) Municipal Grants, MassDEP › SMRP Municipal Technical Assistance Grants, MassDEP	› Composting Site Technical Assistance, RecyclingWorks Massachusetts › Municipal Curbside Compostables Collection: What Works and Why (2014), Judith A. Layzer and Alexis Schulman › Managing and Transforming Waste Streams – A Tool for Communities, US EPA

OPPORTUNITIES FOR COLLABORATION	EQUITY CONSIDERATIONS
› Consider leveraging the Resilient Together brand and momentum to share educational materials. › Share best practices for compost management and engagement in each city.	› Provide financial and technical assistance to rental and low-income communities, including free/subsidized biodegradable bags, tiered payment structures (for fee-based systems), and free technical assistance. › Provide a range of composting options, including drop-off and curbside options. › Ensure that drop-off locations are convenient for tenants limited from opting in to curbside pick-up. › Develop multi-lingual resources to support non-English-speaking communities.

MEASURING SUCCESS	ENGAGEMENT/ COMMUNICATION CONSIDERATIONS
› Number of households participating in composting program › Total compost generated (tons)	› Focus on education to overcome the “yuck factor” (e.g., tips for reducing smells, critters, etc.).

SOLID WASTE

ACTION:

SW-10: Require significant municipal and community events to achieve 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.

IMPLEMENTATION LEAD: **Salem:** Waste Reduction Coordinator; **Beverly:** Sustainability

OVERALL PROJECT DURATION: Long

	PLANNING CONSIDERATIONS		
IMPLEMENTATION STEPS	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
1. Conduct research on best practices for implementing city-wide, zero-waste event requirements and compile policies, model programs, and case studies from other municipalities.	SHORT	LOW	› Sustainability (Salem) › Recycling/Waste Committees › Engineering Dept (Beverly)
2. Engage local businesses and other key organizations that are likely to be impacted by or that could support city-wide zero-waste event requirements. In particular: › Identify event organizers and conference locations (e.g., universities, hotels) to form a pilot/co-op to purchase products in bulk, test zero-waste guidelines, verify costs of net-zero events, and share lessons learned. › Engage food service/restaurant supply companies that serve Beverly and Salem about sustainable products they carry (or could carry) to obtain information on volume or non-profit discounts.	SHORT	LOW	› Recycling/Waste Committees › Sustainability (Salem) › Chambers of Commerce › Salem/Beverly Main Streets › Local restaurants/food trucks › Local food service/restaurant supply companies › Key event organizers and conference centers
3. Plan and execute a pilot zero-waste event, in partnership with pilot/co-op participants identified in step 2. Widely publicize the event and provide recognition for the non-public pilot participants. Following the event, evaluate key lessons learned for future events.	SHORT	LOW	› Sustainability (Salem) › Recycling/Waste Committees › Engineering Dept (Beverly) › Facilities Director (Salem) › Mayor's Office (Salem) › Potential pilot/co-op participants
4. Based on lessons learned from pilot event, develop accompanying guidance and tools and hold trainings for staff and vendors/ contractors that support City events.			› Sustainability (Salem) › Recycling/Waste Committees › Engineering Dept (Beverly) › Facilities Director › Mayor's Office

TIMEFRAME: **SHORT:** 1-2 YEARS **MEDIUM:** 3-5 YEARS **LONG:** >5 YEARS **COST:** **LOW:** <$10K **MEDIUM:** <$100K **HIGH:** >100K

SOLID WASTE (CONTINUED)

SW-10: Require significant municipal and community events to achieve zero waste. Develop and distribute guidance.

IMPLEMENTATION STEPS	PLANNING CONSIDERATIONS		
	TIMEFRAME	COST ESTIMATE	KEY PARTNERS
5. Draft ordinance modifying permitting process and require zero-waste event requirements. Develop accompanying guidance.	SHORT	LOW	› Recycling/Waste Committees › Sustainability (Salem) › Engineering Dept (Beverly) › Sustainability, Energy, & Resiliency Committee (Salem) › City Solicitor (Salem) › City Councils › Mayor's Offices
6. Announce city-wide zero-waste event requirements with trial period for all events seeking a City permit and a timeframe for launch. Distribute zero waste event guidance.	MEDIUM	LOW	› Recycling/Waste Committees › Engineering Dept (Beverly) › Sustainability (Salem) › City Councils › Mayor's Offices
7. Formalize city-wide zero-waste event mandate.	MEDIUM	LOW	› City Councils › Mayor's Offices

EXTERNAL FUNDING RESOURCES	TECHNICAL RESOURCES
› Sustainable Materials Recovery Program (SMRP) Municipal Grants, MassDEP › SMRP Municipal Technical Assistance Grants, MassDEP	› Tips for Waste Reduction at Workplace Events, RecyclingWorks Massachusetts › Municipal Waste Reduction Toolkit: Hosting Community Reuse Events, MassDEP › Zero Waste Checklist for Events, City of San Francisco › Zero Waste Event Organizers Guide, Tufts University

OPPORTUNITIES FOR COLLABORATION	EQUITY CONSIDERATIONS
› Create case studies from zero waste measures at pilot events in both Cities. › Develop guidance collaboratively and share technical resources (e.g., quotes and product recommendations).	› Provide logistical and/or financial support for rental equipment (e.g., for tablecloths, napkins, catering equipment, etc.). › Bulk purchase materials such as compostable cutlery and offer options for event-holders to purchase them at a discount.

MEASURING SUCCESS	ENGAGEMENT/ COMMUNICATION CONSIDERATIONS
› Number of zero waste events held › Recycling/compost diversion rate (percent) › Total municipal solid waste generated (tons)	› Provide educational materials at time of permit application. › Coordinate with area food waste and recycling vendors to ensure guidelines align with their needs and capacities. › Consider non-profits that hold large events, such as universities, that could be a good host of a bulk supplies purchase program. › Target engagement for smaller suppliers at events (e.g., small restaurants, pop-up vendors, food trucks).