

# BEVERLY AND SALEM CLIMATE ACTION & RESILIENCE PLAN



## CLIMATE SUMMARY FACT SHEET

From more frequent flooding and heat waves to rising sea levels, Beverly and Salem are already experiencing the impacts of climate change with more on the way. The choices we make about how we use energy in our homes and offices (“buildings”) and how we get around town (“transportation”) are just some of the pieces of our local climate change puzzle.

### GREENHOUSE GAS (GHG) EMISSIONS BY SECTOR<sup>1</sup>

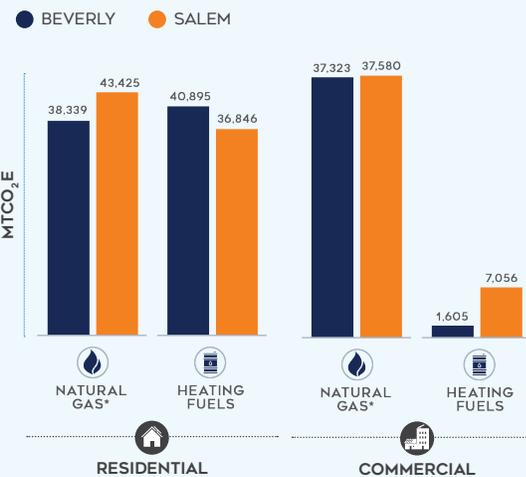
Climate change is caused by increased levels of greenhouse gases (GHGs) in our atmosphere which trap heat and disrupt our climate’s natural cycle. When we use fossil fuels like coal, natural gas, and oil to power our homes, businesses and vehicles, we add to the already high levels of GHGs in the atmosphere. As a part of building [Resilient Together](#), we assessed GHG emission sources to identify targeted solutions to reduce these GHGs. **The results indicated total GHG emissions in 2018 for Beverly were 461,499 metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>e) and 419,005 MTCO<sub>2</sub>e for Salem.**

In addition to the emissions accounted for here, the choices we make as consumers create additional emissions outside of our two cities, from the food, clothing, and all the other goods we consume. As we develop this plan, we will look for opportunities where we can reduce GHGs beyond our boundaries as well as within them.

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



### Heating Our Buildings



\*includes leakage

There are many opportunities to reduce the emissions each of us generates on a daily basis. As our electricity grid continues to get cleaner with solar and wind sources, it will be essential for us to reduce the amount of oil and natural gas we use to heat our homes and businesses. As you can see above, both heating sources are significant emitters of GHGs. The best way to eliminate these emissions is to convert homes and buildings to run 100% on clean electricity, while also promoting efficiency measures like insulation.



### Personal Vehicles

95% of transportation emissions in Beverly and Salem are generated by driving our gasoline vehicles to work, school, and around town.

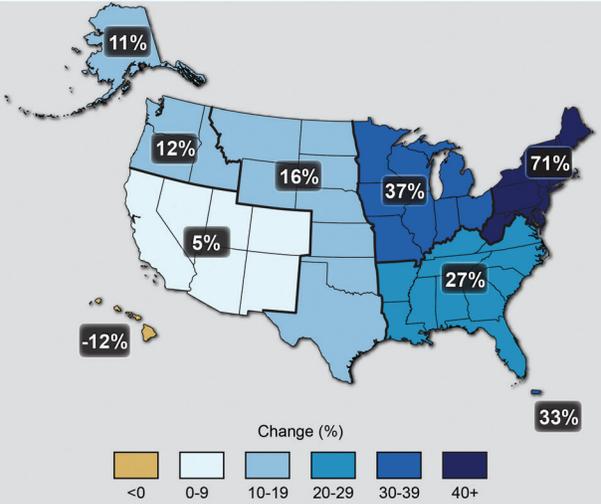
<sup>1</sup> Beverly and Salem Community and Municipal 2020 Greenhouse Gas Emissions Inventory Results Summary. (2020). Boston, MA: Kim Lundgren Associates.



Like most Massachusetts communities, Beverly and Salem are already experiencing the harmful impacts of climate change in the form of more frequent and severe storms, flooding, sea level rise, and extreme heat. Through [Resilient Together](#), we are working to both reduce the emissions that cause climate change while also preparing our community for changes now and in the future.

## EXTREME STORMS

### Observed Change in Very Heavy Precipitation<sup>2</sup>



Nor'easters, ice storms, blizzards, hurricanes, and heavy rain events lead to downed trees, power outages, property damage, school and business closures, and flooding (both inland and coastal). Between 1958-2012, the Northeast has seen the largest increase in the amount of precipitation falling in extreme events.

### what we have already seen:<sup>3</sup>



**INCREASE IN RAINFALL FROM HEAVY STORM EVENTS**

### what we can expect to see:

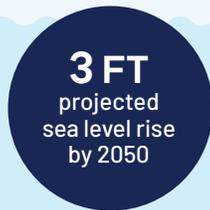


**INCREASE IN RAINFALL PER YEAR, MOSTLY IN WINTER**

## SEA LEVEL RISE<sup>4</sup>

Sea level rise has the potential to increase coastal flooding during storm events, and eventually permanently inundate low-lying areas in Beverly and Salem.

### what we can expect to see:



### what we have already seen:



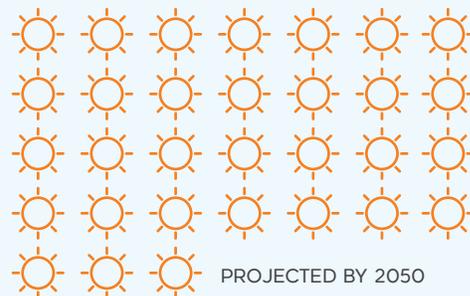
## HEAT WAVES<sup>5</sup>

Heat waves put a heavy strain on electricity grids and increase heat-related illnesses, making it unsafe to be outside working or in homes without access to cooling.

### what we have already seen:

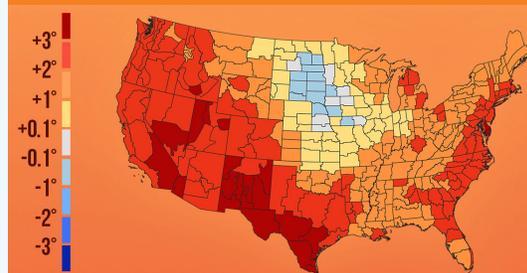


### what we can expect to see:



5 NOAA National Centers for Environmental Information - State Climate Summaries

## SUMMER WARMING SINCE 1970 (°F)<sup>6</sup>



6 Strauss, B. (2014, May 13). What Does U.S. Look Like With 10 Feet of Sea Level Rise? Retrieved October 29, 2020, from <https://www.climatecentral.org/news/us-with-10-feet-of-sea-level-rise-17428>

2 U.S. Climate Resilience Toolkit. (n.d.). Retrieved October 29, 2020, from <https://toolkit.climate.gov/image/762>

3 National Oceanographic and Atmospheric Association. Storm Events Database. 2016

4 Climate Change: Global Sea Level: NOAA Climate.gov. (2020, August 14)

FOR MORE INFORMATION, VISIT  
**RESILIENT-TOGETHER.ORG**