

**ONE CLIMATE FUTURE**  
 Charting a Course for  
 Portland and South Portland

# Climate Change Impacts on Portland and South Portland

Sea level rise, storm surges, more extreme weather, higher air and water temperatures, and ocean acidification are all hazards that will make our infrastructure, environment, economy, and communities more vulnerable. As part of *One Climate Future*, we have used a range of information — including local climate models, environmental and economic research, and residents’ experiences — to better understand the risks our cities will face.

## Key Climate Vulnerabilities



### Building and Property Damage

Sea level rise and more extreme storms will damage buildings and decrease property values if we don’t increase the resilience of existing buildings and new development.



### Exposure to Hazardous Waste

Without proactive preparedness, sea level rise and more extreme storms could increase our exposure to toxins from hazardous waste sites along the coast, posing a risk to human and environmental health.



### More Power Outages

Extreme storms increase the likelihood of power outages, which can disrupt transportation, communication, and water systems, and create short- and long-term economic losses for businesses.



### Public Health Challenges

Heat-related illnesses, diseases carried by ticks, poor air quality, and emotional stress are some of the public health challenges our region will increasingly face as our climate changes.



### Transportation Closures

Sea level rise and storm surge are expected to increasingly flood roads, including portions of I-295. A category 2 hurricane could cut off access to bridges between the two cities.



### Strain on Social Services

Climate hazards will increase the need for social services. At the same time, climate hazards can make essential services inaccessible to vulnerable populations during weather-related emergencies.



### Stormwater and Sewer System Risks

Portions of the cities’ sewer and stormwater systems along the coast are vulnerable to storms and sea level rise that may lead to pipe damage, saltwater infiltration, and failure of electrical pumping equipment.



### Food System Vulnerability

International droughts, floods, and new pests will impact global food systems and potentially increase food prices here in Maine. Climate hazards locally will likely compromise food distribution and food access.



### Ecosystem Impacts

Climate change will affect freshwater, marine, and land ecosystems by allowing new invasive species and pests to thrive. Sea level rise and more stormwater runoff can further degrade sensitive tidal ecosystems.



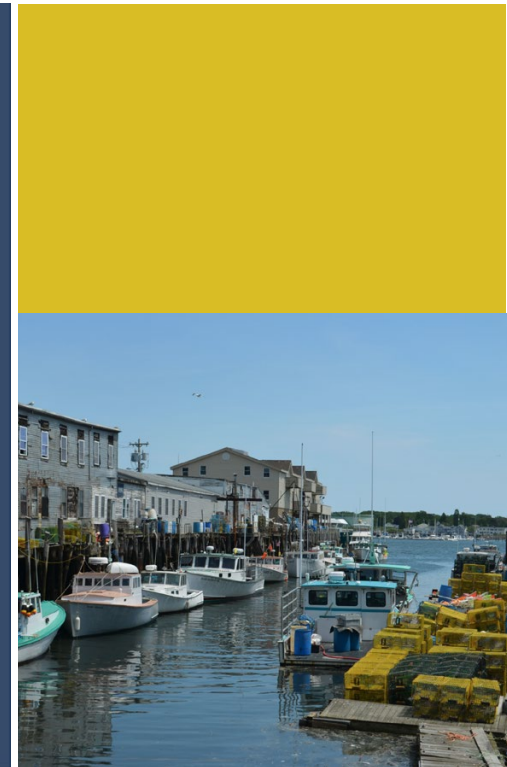
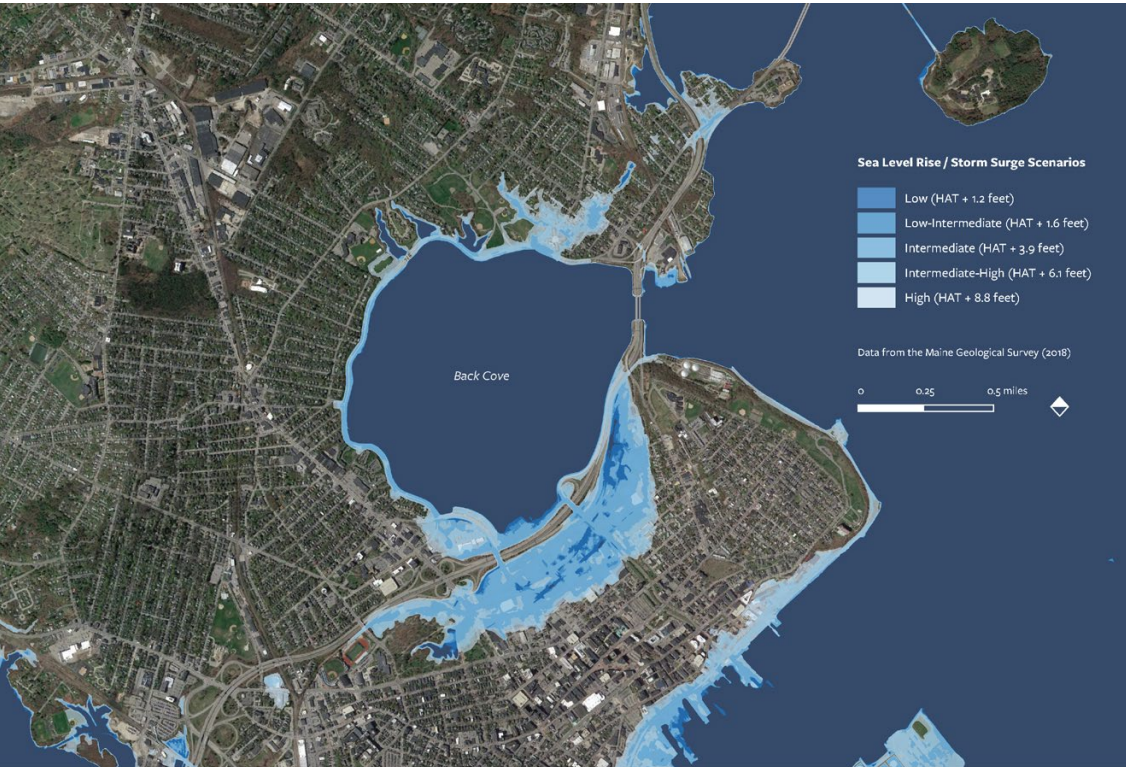
### Greater Social Inequity

Residents facing poverty, a disability, or other forms of marginalization will experience disproportionate harm from climate change. Climate adaptation planning and implementation must address these inequities to ensure that benefits are shared equitably among our communities.



# Portland and South Portland are taking action together to reduce our vulnerabilities to climate change.

The maps show five sea level rise scenarios for the year 2100. If we continue to increase the rate at which we are burning fossil fuels (oil, natural gas, and gasoline/diesel) in our homes, businesses, and cars and fail to minimize our waste, it is likely we could see the “Intermediate” scenario shown in the maps below as early as 2050.



Sea level rise scenarios are noted in feet above the highest astronomical tide (HAT). Data source: Maine Geological Survey Sea Level Rise/Storm Surge Data (2018).

