



Climate Vulnerability Assessment Highlights

January 2021

Climate change is a global issue with local impacts. In order to prepare for its effects, we need to understand Salem's climate vulnerabilities. As part of the Salem Climate Action Plan, Verdis Group completed research on Salem's vulnerabilities due to anticipated climate change.

This document highlights those vulnerabilities.

Projected Climate Change Impacts* for Salem



Warming Temperatures

- Average high summer temperature will increase seven degrees, from 79°F (1990s) to 86°F (2050s).
- Days with temperatures greater than or equal to 90°F will increase by 26 days, from 7 days (1990s) to 33 days (2050s).
- Growing season will lengthen by 88 days, from 227 days (1990s) to 295 days (2050s).



Increased Risk of Wildfire

Extreme wildfire danger days will increase by 9 days, from 11 per year (1990s) to 20 per year (2050s).

Source: Hegewisch, K.C., Abatzoglou, J.T., 'Future Climate Dashboard' web tool. Climate Toolbox accessed on October 2, 2020.



Changing Precipitation Patterns

Water availability will change from 3 inches (1990s) to a deficit of -0.7 inches (2050s).

**Information used to determine the projected climate change impacts is based on Representative Concentration Pathway 8.5 (RCP8.5), which is a high-emissions warming scenario.*

Projected Climate Risks and Vulnerabilities for Salem



Warming Temperatures

- More days with a heat index at or over 90°F (extreme heat days) will likely lead to more people experiencing heat-related illnesses, especially for those who work outside (e.g., farmworkers, construction workers, and field staff), who are elderly, medically fragile, or who are unsheltered.
- Increased need for shelters during heat, cold, or air quality events.
- Fewer chilling hours may have negative effects on some flowering fruit and nut crops.



Increased Risk of Wildfire

- Extremely large, intense wildfires will become more likely under hotter and drier climate scenarios.
- Poor to hazardous air quality resulting from wildfires could greatly impact unsheltered populations, people with underlying health issues such as asthma, diabetes and obesity, and other sensitive populations such as children and the elderly.
- Increased risk of wildfires may lead to an increased number of emergency evacuation events that could greatly impact transportation networks, housing, and vulnerable populations such as low-income and limited-English speaking households.



Changing Precipitation Patterns

- Hotter and drier conditions may cause more frequent droughts placing more strain on water resources. Residents could experience water curtailment or water quality issues.
- Unpredictable precipitation patterns may lead to flood events in areas beyond the historical high-risk zone resulting in more people being affected by flooding.
- Flooding damages homes, vehicles, and infrastructure such as bridges. Residents can suffer psychological stress and physical effects, such as respiratory illness from mold.
- Intense precipitation may lead to increased landslides in landslide-prone areas.

Elevated Risk of Overlapping Events

Salem noted vulnerabilities are addressed above as single events. However, if a drought were to occur during an extreme weather event like a heatwave or wildfire, the impacts to the community would be magnified.

Project Population Growth

Salem is projected to add nearly 60,000 people to its population through 2035, increasing the population to 269,274. (according to Our Salem). This growth, combined with the changing climate, may lead to more people affecting climate change as well as being affected by climate change.