

1. Introduction and Methodology

The Solano County Climate Vulnerability Annex includes detailed Climate Vulnerability Assessment (CVA), conducted for each climate change-related vulnerability identified by the County, with additional CVAs conducted for each participating jurisdiction as an appendix to each annex. The CVA builds off the detailed climate vulnerability assessment in the County's hazard mitigation plan, Volume 1. This appendix provides a more detailed CVA and can be used in conjunction with hazard mitigation planning documents or as a reference for the General Plan Safety Element.

Jurisdictions considered whether specific vulnerability descriptions identified for each prioritized hazard, also called areas of concern or problem statements, contained a nexus with climate change. An area of concern has a climate nexus if climate change is worsening or predicted to worsen impacts of the hazard to the population or asset in question.

If the area of concern had a nexus with climate change, each jurisdiction then assessed both the impact of climate change to the area of concern and the jurisdiction's capacity to adapt to the predicted future impact, also known as "adaptive capacity." Adaptive capacity is a community or region's existing ability to moderate climate change impacts. Assessing adaptive capacity includes analysis of policies, plans, programs, funding, and staffing capacity. (Cal. Adaptation Planning Guide, 2020, p. 94)

Jurisdictions evaluated potential climate change impacts and jurisdictional adaptive capacity according to the matrix in Figure 1-1, where impacts range from low to high, and adaptive capacity ranges from high to low. These rankings are qualitative, and incorporate jurisdictional feedback, existing studies and resources, and an understanding of population demographics and vulnerabilities (see Vol. 1, Section 4.3).

The impact and adaptive capacity ranking combine to give the climate change vulnerability score. The scoring is then used to prioritize mitigation actions based on vulnerability to climate change. This assessment is completed as a part of the overall MJHMP; jurisdictions may want to complete a more detailed Climate Vulnerability Assessment as part of in-depth climate adaptation planning

POTENTIAL IMPACTS	HIGH	3	4	5 HIGHER RISK
	MEDIUM	2	3	4
	LOW	1 LOWER RISK	2	3
		HIGH	MEDIUM	LOW
ADAPTIVE CAPACITY				

CLASSIFICATIONS DEFINED

ADAPTIVE CAPACITY

- HIGH** The population or asset has **high capacity** to manage climate impact; **minimal to no changes** are required.
- MEDIUM** The population or asset has **some capacity** to manage climate impact; **some changes** would be required.
- LOW** The population or asset **lacks capacity** to manage climate impact; **major changes** would be required.

POTENTIAL IMPACTS

- LOW** Impact is **unlikely based** on projected exposure; would result in **minor consequences** to public health, safety, and/or other metrics of concern.
- MEDIUM** Impact is **somewhat likely** based on projected exposure; would result in **some consequences** to public health, safety, and/or other metrics of concern.
- HIGH** Impact is **highly likely** based on projected exposure; would result in **substantial consequences** to public health, safety, and/or other metrics of concern.

CLIMATE CHANGE VULNERABILITY SCORING

Source: CalOES Adaptation Planning Guide, 2020

Figure 1-1. Climate Change Vulnerability Scoring Matrix

2. Climate Vulnerability Assessment

The following table captures the County of Solano’s vulnerabilities with a climate nexus identified in the Solano County 2021 Multi-Jurisdictional Hazard Mitigation Plan. The table summarizes the climate vulnerability score based on the impact to the community and the adaptive capacity to respond to the specific vulnerability.

Table 2-1: Climate Vulnerability Scoring

Problem No.	Problem Description	Impact Score	Adaptive Capacity Score	Climate Change Vulnerability Score	Related Mitigation Actions
ps-CC-SC-174	Climate Change/ Sea Level Rise predicted to increase flooding, inundate some critical infrastructure including bridges, hazmat storage areas, and a police station.	High	Medium	4	ma-FL-SC-19, ma-FL-SC-21, ma-FL-SC-24
ps-CC-SC-175	Droughts are likely to become more frequent and persistent.	Medium	High	2	ma-DR-SC-162, ma-DR-SC-163
ps-CC-SC-176	Intense rainfall events, periodically ones with larger than historical runoff, will continue to affect Solano County	Medium	Medium	3	ma-FL-SC-25, ma-FL-SC-26, ma-FL-SC-173, ma-FL-SC-174
ps-CC-SC-177	Wildfires will continue, with projections for a longer wildfire season, increased frequency, and expansion of the area susceptible to fire	High	High	3	ma-WF-SC-34, ma-WF-SC-37, ma-WF-SC-40

Problem No.	Problem Description	Impact Score	Adaptive Capacity Score	Climate Change Vulnerability Score	Related Mitigation Actions
ps-CC-SC-178	Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in Solano County which are likely to increase the risk of mortality and morbidity due to heat-related illness and exacerbation of existing chronic health conditions	High	Medium	4	ma-EW-SC-170, ma-EW-SC-171
ps-DR-SC-179	Residents who rely on groundwater and small water systems may be extraordinarily impacts by future drought.	Medium	Low	4	ma-DR-SC-201, ma-DR-SC-202