

Resilient SLO: Baseline Conditions Report



City of San Luis Obispo
990 Palm Street
San Luis Obispo, CA 93401

Resilient SLO: Baseline Conditions Report

Prepared for:

City of San Luis Obispo
990 Palm Street
San Luis Obispo, CA 93401

Prepared by:

Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

Authors

Ascent: Masury Lynch, Angie Xiong, Kai Lord-Farmer,
and Honey Walters

Fehr & Peers: Marshall Ballard,
Charlie Coles, and Taylor Whitaker

cbec: Chris Bowles, Luke Tillmann,
and Michael Founds

January 2021

TABLE OF CONTENTS

Section	Page
LIST OF ABBREVIATIONS	III
1 INTRODUCTION	1-1
1.1 Resilient SLO Community Priorities Survey	1-2
2 EXISTING HAZARDS ASSESSMENT.....	2-5
2.1 Local and Regional Plans.....	2-5
2.2 Planning Resources	2-7
2.3 Existing Hazards Assessment.....	2-8
3 SENSITIVE INFRASTRUCTURE, POPULATIONS, AND FUNCTIONS.....	3-1
3.1 Transportation System and Built Environment	3-1
3.2 Socioeconomic Trends and Vulnerable Populations.....	3-13
3.3 Community and Economic Functions	3-13
4 REPORT FINDINGS AND NEXT STEPS	4-1
5 REFERENCES.....	5-1

Appendices

Appendix A - CAL FIRE Hazard Severity Zone Maps

Appendix B - Resilient SLO Community Priorities Survey

Figures

Figure 1-2 Resilient SLO Planning Process.....	1-1
Figure 1-2 City Resident’s Climate Concern by Age.....	1-3
Figure 2-1 Waterways and Floodplain Areas in the City of San Luis Obispo with Critical Facilities.....	2-10
Figure 2-2 City Resident’s Flooding Concern and Impact.....	2-14
Figure 2-3 City Average Annual Temperature from 1928 to 2018 (Cal Poly Weather Station).....	2-15
Figure 2-4 Urban Heat Island Effect and Tree Cover in the City.....	2-17
Figure 2-5 City Resident’s Extreme Heat Concern and Impact.....	2-18
Figure 2-6 Wildfire Hazard Severity Zones In and Surrounding the City of San Luis Obispo with Critical Facilities	2-20
Figure 2-7 Wildfire Perimeters for Wildfires within 10 Miles of the City of San Luis Obispo (1900–2020)	2-21
Figure 2-8 City Resident’s Wildfire and Wildfire Smoke Concern and Impact	2-23
Figure 3-1 Major Roadways in San Luis Obispo by Traffic Volume.....	3-2
Figure 3-2 Existing and Proposed Bikeways	3-4
Figure 3-3 Pedestrian Infrastructure within San Luis Obispo.....	3-5
Figure 3-4 Public Transit Routes within San Luis Obispo.....	3-6
Figure 3-5 Commuting Characteristics by Mode in the City and County.....	3-7
Figure 3-6 Transportation Infrastructure and Facilities and Flood Zones.....	3-9
Figure 3-7 Low-Income Communities as Defined under Assembly Bill 1550	3-15

Tables

Table 3-1	Annual Average Daily Traffic and Level of Service of Highway Segments in San Luis Obispo	3-1
Table 3-2	Critical Facilities and Infrastructure in the City of San Luis Obispo.....	3-10
Table 3-3	Critical Facilities Located in 100-Year and 500-Year Flood Zones.....	3-12
Table 3-4	Critical Facilities Located in Very High or High Fire Hazard Severity Zones	3-12
Table 3-3	City Demographics by Sex, Race, and Age	3-13
Table 3-4	Housing Cost Characteristics.....	3-14
Table 3-5	Gross Rent as a Percentage of Monthly Household Income	3-14
Table 3-6	Health Insurance Coverage.....	3-17
Table 3-7	Languages Spoken by City Residents	3-17
Table 3-8	Employment by Economic Sector in the City of San Luis Obispo for 2018	3-15

LIST OF ABBREVIATIONS

°F	Fahrenheit
CALFIRE	Department of Forestry and Fire Protection
Cal Poly	California Polytechnic State University at San Luis Obispo
CDC	Center for Disease Control and Prevention
COVID-19	2019 coronavirus disease
County	County of San Luis Obispo
City	City of San Luis Obispo
FEMA	Federal Emergency Management Agency
GHG	greenhouse gas
GIS	geographic information system
HASLO	Housing Authority of San Luis Obispo
HMP	San Luis Obispo County Multi-Jurisdictional Hazard Mitigation Plan
HPI	California Healthy Places Index
IPCC	Intergovernmental Panel on Climate Change
Report	Baseline Conditions Report
RTA	San Luis Obispo Regional Transit Authority
SR	State Route
USACE	US Army Corps of Engineers
UWMP	Urban Water Management Plan
WUI	wildland-urban interface
WRRF	Water Resource Recovery Facility

This page intentionally left blank.

1 INTRODUCTION

This Baseline Conditions Report (Report) has been developed as part of Resilient SLO, a planning process undertaken by the City of San Luis Obispo (City) to better understand the local impacts of climate change and incorporate climate adaptation and resilience strategies into the City's General Plan Safety Element, consistent with requirements in Senate Bill 379. Senate Bill 379 requires communities in California to incorporate strategies to mitigate the impacts of climate change in their general plan safety element and plays an important role in helping the City become more resilient to the current and future effects of climate change. Resilience refers to the capacity of individuals, communities, institutions, businesses, and systems to survive, adapt, and thrive in the face of chronic stresses and acute shocks (APA 2017). The Report has been developed to understand the City's current climate-related hazards and provide a baseline for key characteristics of the community that are likely to be affected by climate change. The Report serves as the first step in the development of the City's comprehensive climate change vulnerability assessment and provides a historical frame of reference to understand how climate change will affect the City. Figure 1-1 illustrates the four main steps of the Resilient SLO planning process. This report serves as the culmination of work complete in Step 1 of the process.



Figure 1-2 Resilient SLO Planning Process

The City has adopted its *Climate Action Plan for Community Recovery*, which focuses on reducing greenhouse gas (GHG) emissions produced from community activities. The plan sets an ambitious target of carbon neutrality by 2035, adopts sector-specific goals, and identifies concrete actions to chart a path toward achieving those goals. The City's efforts are consistent with other jurisdictions that are demonstrating leadership in reducing GHG emissions and sharing successes and lessons learned with other communities in support of widespread climate action at the speed and scale required to stabilize the increase in global temperature caused by climate change at or below 2 Celsius (C)2C.

While the City continues to reduce local emissions, it is important to recognize that warming due to anthropogenic activities from the pre-industrial period to the present will persist for centuries to millennia and continue to cause further long-term changes in the climate system. As stated by the Intergovernmental Panel on Climate Change (IPCC), human activities that generate GHG emissions are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels with increases likely reaching 1.5°C (2.7 between 2030 and 2052) if emissions continue to increase at the current rate (IPCC 2018). Trends, beginning in the 1950s, in the intensity and frequency of

climate and weather extremes have been detected when only 0.5°C of global warming occurred. These weather extremes including long-term drought, extreme heat events, increased wildfire risk, and extreme storm events are anticipated to increase in intensity and frequency as the average global temperature increases to between 1.5 and 2°C. Due to past and ongoing emissions at their current rate, estimated anthropogenic global warming is projected to increase at a rate of 0.2°C (likely between 0.1°C and 0.3°C) per decade due to past and ongoing emissions (IPCC 2018). As a result, the City must begin to prepare for the impacts of climate change, despite future trends in local and global GHG emissions.

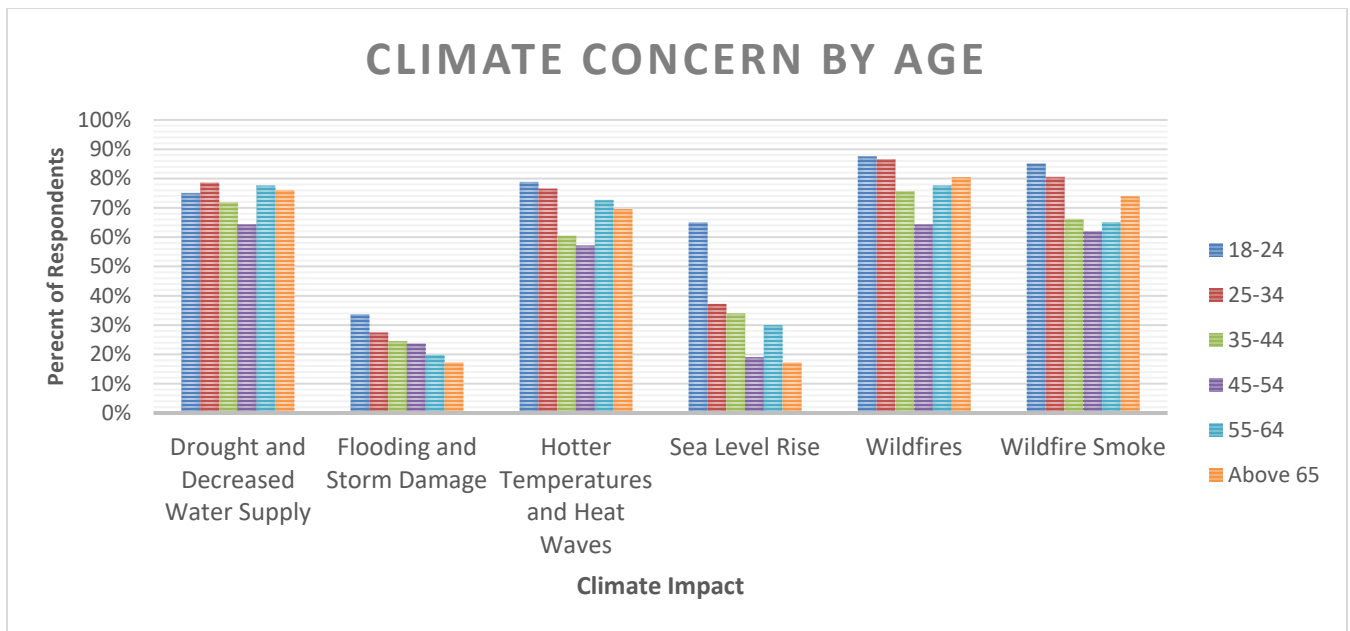
Because climate impacts and their severity will vary throughout the state, local resilience and adaptation planning focuses on understanding the anticipated regional and local climate impacts. The first step in this process is to assess existing hazards and sensitivities that may be affected by climate change. This Report focuses on identifying the City's historic and current exposure to climate-related hazards, as well as determining community assets (i.e., infrastructure, functions, and populations) that are likely to be affected. The document is organized into two sections:

- ▶ **Existing Hazards Assessment**—This section summarizes local and regional plans and resources and evaluates existing hazards that may be exacerbated by climate change. In the City, these climate hazards include flooding, extreme heat, and wildfire, as well as their secondary effects. This section also includes a brief discussion of the current COVID-19 pandemic. The existing climate hazards described in this section serve as a baseline against which to assess future climate conditions and the magnitude of changes that are projected to occur through the 21st century.
- ▶ **Sensitive Infrastructure, Populations, and Community Functions**—This section discusses the City's transportation system, critical facilities and infrastructure, socioeconomic trends and vulnerable populations, and community and economic functions that could be affected by climate change. To help explain how climate change may affect the City in the future, this section also describes how the City's community assets have been affected by climate-related hazards in the past. In addition, this section identifies specific populations in the City that are disproportionately affected by existing hazards and may be disproportionately affected by future climate hazards.

1.1 RESILIENT SLO COMMUNITY PRIORITIES SURVEY

As part of the development of this report, a community priorities survey was developed to gather input on overall community priorities regarding climate-related hazards, concerns related to climate change impacts, experience with past hazard events and response efforts, and priorities for local action. The survey, consisting of 19 questions, was open from August 31, 2020 – October 11, 2020 and had 328 responses. The survey results will be used to inform the vulnerability assessment and hazards report, as the next step in the Resilient SLO planning process, as well as the future community engagement and education activities. Highlights from the survey results have been included in this Report to help better understand the community's priorities regarding climate-related hazards.

As part of the survey, participants were asked what climate-related impact they were most concerned about. Figure 1-2 illustrates the responses to this question by age group. As shown in Figure 1-2, respondents were most concerned about wildfires and associated poor air quality events. Leading up to and during the survey response period, the City experienced poor air quality from several wildfires in the surrounding region, which may have influenced survey results. The large majority of respondents were also concerned about drought, increasing temperatures, and heat wave events and much less concerned about flooding and sea level rise. Survey results for this question also highlight that respondents in the 18-24 year old age cohort were the most concerned about almost all climate issues. To explore the full results of the community priorities survey, please refer to Appendix A of this report.



Sources: Resilient SLO Community Priorities Survey

Figure 1-2 City Resident’s Climate Concern by Age

This page intentionally left blank.