City of Colton

2025 Local Hazard Mitigation Plan

Public Review Draft, August 2025

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CHAPTER 1 – INTRODUCTION

Plan Purpose and Authority

A *hazard event* is an emergency created by a natural or human-caused event that has the potential to cause harm. These events can lead to injuries or death, affect the overall health and safety of a community, damage or destroy public and private property, harm ecosystems, and disrupt key services. Although the hazard event often gets the most attention, it is only part of a larger emergency management cycle.

Emergency planners and responders can take steps during the cycle's response, recovery, mitigation, and preparedness phases to minimize the harm caused by a disaster. The City of Colton 2025 Local Hazard Mitigation Plan (LHMP, "the Plan") focuses on optimizing the mitigation phase of the process.

Hazard mitigation is "any sustained action taken to reduce or eliminate long-term risk to people and property from natural or human-caused hazards and their effects."[1] This mitigation involves making a community more resilient so that when hazard events do ultimately occur, the community suffers less damage and can recover more quickly and effectively. Mitigation differs from preparedness, which involves advanced planning for how best to respond when a disaster occurs or is imminent. For example, a policy to make homes structurally stronger so they suffer minor damage during an earthquake is a mitigation action, while fully equipping emergency shelters to accommodate people who lose their homes in an earthquake is a preparedness action. Some activities may qualify as both.

The Emergency Management Cycle

Resiliency is the "capacity of any entity—an individual, a community, an organization, or a natural system—to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience."[2]

Like other communities, the City of Colton ("the City") could suffer severe harm from hazard events. Although large disasters may cause widespread devastation, minor disasters can have more substantial effects. The City cannot make itself completely immune to hazard events, but this LHMP can help make the community a safer place to live, work, and play. This LHMP provides a comprehensive assessment of the City's threats from natural and human-caused

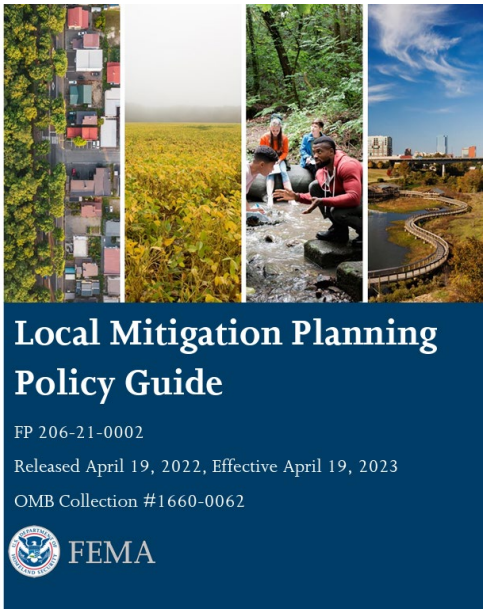
[1] California Governor's Office of Emergency Services (Cal OES). 2023. State Hazard Mitigation Plan. https://www.caloes.ca.gov/office-of-the-director/operations/recovery-directorate/hazard-mitigation/state-mitigation-planning/.

[2] Rodin, J. (2015). *The resilience dividend: Managing disruption, avoiding disaster, and growing stronger in an unpredictable world*. Profile Books.

hazard events and a coordinated strategy to reduce these threats. It identifies resources and information to help community members, City staff, and local officials understand local threats and make informed decisions. The LHMP can also support increased coordination and collaboration between the City, other public agencies, local employers, service providers, community members, and other key stakeholders.

Federal Authority

The City is not required to prepare an LHMP, but state and federal regulations encourage it. The federal Robert T. Stafford Disaster Relief and Emergency Act, amended by the Disaster Management Act of 2000, creates a federal framework for local hazard mitigation planning. It states that jurisdictions that wish to be eligible for federal hazard mitigation grant funding must prepare a hazard mitigation plan that meets a particular set of guidelines and submit this Plan to the Federal Emergency Management Agency (FEMA) for review and approval. These guidelines are outlined in the Code of Federal Regulations, Title 44, Part 201, and discussed in greater detail in FEMA's Local Mitigation Plan Review Tool.



FEMA's Local Mitigation Planning Policy Guide

This guide provides the official policy and interpretation of the applicable statutes and mitigation planning regulation in 44 Code of Federal Regulations.

State Authority

California Government Code Sections 8685.9 and 65302.6

The California Disaster Assistance Act (CDAA) Section 8686 limits the State of California's share of disaster relief funds paid out to local governments to 75 percent of the funds not paid for by federal disaster relief efforts. California Government Code Section 8685.9 (also known as Assembly Bill 2140) adds a caveat: If a jurisdiction has adopted a valid hazard mitigation plan consistent with the Disaster Management Act of 2000 and has incorporated the hazard mitigation plan into the jurisdiction's General Plan, the state may cover over 75 percent of the remaining disaster relief costs.

All cities and counties in California must prepare a General Plan, including a Safety Element that addresses various hazard conditions and other public safety issues. The Safety Element may be a stand-alone chapter or incorporated into another section, as the community wishes. California Government Code Section 65302.6 indicates that a community may adopt an LHMP into its Safety Element if the LHMP meets applicable state requirements. This allows communities to use the LHMP to satisfy state requirements for Safety Elements. As the General Plan is an overarching long-term plan for community growth and development, incorporating the LHMP into it creates a stronger mechanism for implementing the LHMP.

California Government Code Section 65302 (g)(4)

California Government Code Section 65302 (g)(4), also known as Senate Bill (SB) 379, requires the Safety Element of a community's General Plan to address the hazards created or exacerbated by climate change. The Safety Element must identify how climate change is expected to affect hazard conditions in the community and include measures to adapt and be more resilient to these anticipated changes.

Because the LHMP can be incorporated into the Safety Element, including these items in the LHMP can satisfy the state requirement. SB 379 requires that climate change be addressed in the Safety Element when the LHMP is updated after January 1, 2017, for communities that already have an LHMP or by January 1, 2022, for communities without an LHMP.

This LHMP is consistent with current standards and regulations, as outlined by the California Office of Emergency Services (Cal OES) and FEMA. It uses the best available science, and its mitigation actions/strategies reflect best practices and community values. It meets the requirements of current state and federal guidelines and makes the City eligible for all appropriate benefits under state and federal law and practices. Note that while FEMA is responsible for reviewing and certifying this LHMP, and Cal OES is responsible for conducting a preliminary review, it does not grant FEMA or Cal OES an increased role in the governance of the City or authorize either agency to take any specific action in the community.

Plan Organization and Use

The Colton LHMP is both a reference document and an action plan. It has information and resources to educate readers and decision-makers about hazard events and related issues and a comprehensive strategy that the City and community members can follow to improve resilience in the City. It is divided into the following chapters:

- **Chapter 1: Introduction.** This chapter describes the Plan's background, its goals and objectives, and the process used in its development.
- **Chapter 2: Community Profile.** This chapter discusses Colton’s history, physical setting, land use, demographics, and other important community characteristics.
- **Chapter 3: Hazard Assessment.** This chapter identifies and describes the hazards that threaten Colton and discusses past and future events and the effects of climate change.
- **Chapter 4: Vulnerability Assessment.** This chapter describes each hazard's threat to Colton’s key facilities and community members, including socially vulnerable individuals.
- **Chapter 5: Mitigation Strategy.** This chapter lists the mitigation actions to reduce Colton’s vulnerability to hazard events and provides an overview of the community's existing capabilities to improve hazard resilience.
- **Chapter 6: Plan Maintenance.** This chapter summarizes implementing, monitoring, and updating the LHMP and opportunities for continued public involvement.

Previous Colton LHMP

This is an update to the City of Colton's 2019 LHMP. This update, once approved and adopted by the City Council, will reinstate the City's eligibility to apply for FEMA grants for hazard mitigation projects and monetary relief during emergency situations. The content from the previous Plan has been included in this document and updated accordingly. As for the integration of the previous Plan into other planning mechanisms, the only thing the City was able to integrate from the previous Plan was the hiring of an emergency manager. Key modifications in this Plan focus on expanding the risk assessment (understanding potential losses and vulnerable populations) within **Chapter 4** and revised and modified mitigation strategies and actions within **Chapter 5**.

Key updated elements from the previous Colton LHMP include the following:

- Updated demographic information for Colton residents
- Updated hazard categories
- Descriptions of recent hazard events
- An updated threat assessment that incorporates recent data
- Updates to the Capabilities Assessment to reflect the most recent framework
- New and revised hazard mitigation actions to better meet the current priorities of the City

Previous Plan Integration

As this is an update to Colton's LHMP, the City will be looking to integrate this document into other planning documents and processes. To ensure this future integration occurs, **Chapter 6** of this Plan includes additional guidance on how to best integrate the LHMP into the General Plan Safety Element, Emergency Operations Plan, and other planning mechanisms used by the City.

Plan Goals

The overarching intent of this updated LHMP is to increase resiliency to hazard events in Colton. This LHMP has six distinct goals to achieve this purpose:

1) Save lives and reduce injuries among Colton community members and visitors.
2) Avoid damage to public and private property and to environmental systems.
3) Preserve key government functions and other critical services.
4) Integrate hazard mitigation activities into City policies.
5) Maintain the City's eligibility for increased hazard mitigation and disaster recovery funding.
6) Support compliance with state laws that require addressing specific hazards and other items, including the effects of climate change.

Planning Process

State and federal guidance for LHMPs does not require that jurisdictions follow a standardized planning process. FEMA encourages communities to create a planning process that reflects local values, goals, and characteristics. FEMA does suggest a General Planning process that follows the steps identified below:

The planning process used to create this Plan for the City of Colton is described as follows:

Hazard Mitigation Planning Team

The City established a Hazard Mitigation Planning Team (HMPT). The HMPT comprises representatives from key City departments and stakeholders from local and regional agencies and companies that are key to hazard mitigation activities. **Table 1-1** identifies the members who were invited and/or attended HMPT meetings.

TABLE 1. COLTON HAZARD MITIGATION PLANNING TEAM (HMPT)		
Name	**Title**	**Department**
Corrie Kates	Building Official	Building and Safety Division
Ray Bruno	Fire Chief	City of Colton Fire Department
Justin Weems	Deputy Fire Chief	City of Colton Fire Department
Jon Boggs	Battalion Chief/Fire Marshall	City of Colton Fire Department
Rob Wilson	Lieutenant	Colton Police Department
Joey Armendarez	Instructor/Colton Fire Dept Captain	Community Emergency Response Team
Deb Farrar	Director	Community Services Department
Sid Jain	Finance Manager, Purchasing and Customer Services	Finance Division
Regina Hawkins	Senior Human Resources Specialist	Human Resources Department
Brandt Bahling	Senior Risk Management Analyst	Human Resources Department
Victor Ortiz	Assistant Public Works Director/City Engineer	Public Works and Utilities Department
Bassam Alzammar	Supervisor	Public Works and Utilities Department

Members from other organizations:

- Chad Moxley, Cal FIRE (Battalion Chief)
- Nicholas Novelich, Caltrans (Emergency Operations)
- John Reddick, Arrowhead Regional Medical Center (Maintenance Supervisor)
- John Sachs, Colton Joint Unified School District (Security/Safety Emergency Manager)
- Scott Smith, Arrowhead Regional Medical Center (Emergency Manager)

The Planning Team held two meetings throughout the Plan update development process to lay out the Plan's methods and approach, draft, and review content, make revisions, and engage members of the public.

- **HMPT Meeting #1 (August 19, 2024):** The Planning Team members confirmed the project goals and responsibilities. They revised the community engagement and outreach strategy, confirmed and prioritized the hazards to be included in the Plan, and identified critical facilities for the threat assessment.
- **HMPT Meeting #2 (October 9, 2024):** Members discussed the results of the hazards assessment and mapping that showed the areas facing an elevated risk. The HMPT also reviewed the hazard prioritization results. The team reviewed the risk assessment results to identify the populations and assets that may face greater harm in a hazard event and discussed potential hazard mitigation actions to address vulnerabilities.

Invitations and materials for meetings were provided via email. **Appendix A** contains copies of invitations, meeting agendas, sign-in sheets, and other relevant materials distributed for these meetings.

Public Engagement

Under FEMA guidelines, local hazard mitigation planning processes should create opportunities for the public to be involved in Plan development—at a minimum, during the initial drafting stage and Plan approval. Due to the policy changes in the post-COVID-19 pandemic world, some in-person public workshops and meetings were replaced with virtual workshops, meetings, and discussion groups. The HMPT developed a community engagement and outreach strategy to guide all public engagement activities. To ensure all residents were aware of the project, City staff conducted the following activities:

- City social media: posts via Instagram, Facebook
- City of Colton Fire Department social media: posts via Instagram and Facebook
- LHMP City webpage (see below)
- English and Spanish flyers at City facilities
- Promotion at City Meetings/Events (see below)
- Promotion at City Facilities (City Hall, etc.) with signage on Plan review content and QR codes for the Hazard Mitigation Survey were posted at the front desk.
- Information shared with businesses via the Chamber of Commerce

Stakeholder Engagement

As part of the plan update process the City invited stakeholders to review and comment on the Public Review Draft of the LHMP. These stakeholders included neighboring jurisdictions, medical centers, utility providers, the local school district, railroads, and County agencies. Information regarding this engagement opportunity can also be located in **Appendix B** of the document. All jurisdictions and stakeholders were invited via email and/or direct communication via telephone from the HMPT project manager, the City of Colton's Fire Department Deputy Chief. The following is a list of those stakeholders invited to participate in the plan development process and review.

- Arrowhead Regional Medical Center
- BNSF Railway (formerly Burlington Northern and Santa Fe Railway)
- California Department of Forestry (Cal FIRE)
- City of Grand Terrace
- City of Loma Linda
- City of San Bernardino
- Colton Joint Unified School District
- County of San Bernardino
- Jerry L. Pettis Memorial Veterans' Hospital
- Kinder Morgan
- Loma Linda Medical Center
- SoCal Gas Company
- Southern California Edison
- Union Pacific Railroad

Vulnerable Populations Outreach

Signage was posted at all City facilities with information on both the Public Review LHMP and the Hazard Mitigation Survey. Having the signage and information on the LHMP and feedback survey posted at the Gonzalez Community Center was a focus that ensured this portion of the community was made aware of the Plan and the City's request for feedback. It was important that the City didn't solely rely on online sources to publicize LHMP process and plan.

Future Outreach Opportunities

Recognizing that other vulnerable populations may exist in the City, this Plan focuses on these populations. Opportunities to share information such as the annual Colton Birthday Celebration, the Halloween Festival, Winter Wonderland, and the National Night Out, become great opportunities for outreach. Continued outreach occurs during the implementation of the Plan and future updates, will continue to refer to this resource to help identify vulnerable populations and key issues affecting their vulnerability.

Community Meetings and Events/Public Engagement Opportunities

The City regularly conducts community meetings and events intended to provide useful information to participants/attendees. During the planning process, three outreach meetings and events were held, during which City staff discussed the Plan and process currently underway and provided opportunities for feedback. Over 500 people attended these meetings and events. The following information provides dates for each meeting:

- Colton Youth Basketball League: The Gonzalez Community Center (April, May 2025) - approximately 700 people attended throughout the program.
- Monthly City Council Meetings
- Virtual Stakeholder Meeting with HMPT members and stakeholders (June 25, 2025)

Online Engagement

The City conducted a variety of online engagement activities that support the hazard mitigation planning process. The following are key activities conducted:

LHMP Project Webpage

The City created a page on the City's website dedicated to the Local Hazard Mitigation Plan development to reach a broad audience and increase public engagement and participation. The webpage is a simple, one-stop location for community members to learn about the LHMP. The webpage explains what an LHMP is, why the City should have one, how it is developed, and how the public can participate in the planning process, including a link to the LHMP survey (see below). The webpage can be found at www.coltonca.gov/820/Local-Hazard-Mitigation.

Online Survey

The City released an online survey to community members to gather feedback on the planning process and hazards of concern. The City of Colton and the Colton Fire Department advertised the survey on their social media channels and on the City website. Flyers were also posted at City facilities in both English and Spanish and at community events and meetings.

At the time of the Public Review Draft release, the City had received a total of 19 responses from community members and stakeholders during the survey period. Due to the small number of survey responses, the City recognizes that the method by which the survey was shared may not have been the most effective means to engage with the community. Future outreach will look to identify additional strategies to improve survey response. Based upon those survey responses, the following information was gathered and shared with the HMPT:

- Nearly 53% of respondents live in Colton, with an additional 21% that both live and work in Colton.
- Approximately 53% of respondents have been impacted by a natural hazard in their residence.
- The top three hazards of concern for respondents include: Severe Weather (including Extreme Heat, Severe Wind, and Severe Winter Weather [approximately 58%]); Seismic Hazards (including Fault Rupture, Seismic Shaking, and Liquefaction [approximately 53%]); and Human-caused Hazards (including Infrastructure Failure, Hazardous Materials Release, and Terrorism [approximately 53%]). These responses confirmed that the concerns identified by City staff during the planning process were similar to those of the residents who responded.
- Approximately 79% of respondents are very or somewhat concerned that climate change will create new or worsen existing hazard conditions.
- 26% of respondents are familiar with the special needs of their neighbors in the event of a disaster situation (special needs may include limited mobility, severe medical conditions, and memory impairments).
- Approximately 21% of respondents are members of the Colton Community Emergency Response Team (CERT). 27% of respondents indicated that they are not members of the CERT Team, but would like to learn more about CERT.

As part of the outreach strategy, a QR code was created that could be used on promotional materials and handouts at fairs and booths used by City staff at community events. This QR code provided quick access to the City's Online Survey.

The results from the survey were provided to the HMPT. The data was then analyzed, reviewed, and incorporated by the HMPT within the LHMP content. The data provided by the survey presented unique local insight into hazard concerns and assessed the overall opinion and perception of the public when it comes to the hazards that affect Colton. The full hazard mitigation survey results and copies of all materials used for public outreach, are provided within **Appendix B** of the LHMP, including the survey questions and answers.

Social Media Outreach

The City promoted and provided information on both the Hazard Mitigation Survey and the LHMP Public Review Draft on multiple social media platforms.

- City of Colton Instagram account with 4,161 followers. These posts had 2,201 views and reached some 1,343 followers.

- City of Colton Community Services Department Group Facebook account with 6,800 followers. These posts had 521 views and reached some 424 followers.
- City of Colton Fire Facebook account with 7,400 followers. These posts had 1,190 views, reached 863 followers, and included multiple shares.

Public Review Draft

On August 11, 2025, the City distributed the Public Review Draft of the Plan to the residents and businesses of Colton for a 30-day public review period. The City's LHMP website (https://www.ci.colton.ca.us/820/Local-Hazard-Mitigation) hosted public electronic copies of the Plan. Hardcopy versions of the Plan were made available at the following locations:

- **DEVELOPMENT SERVICES DEPARTMENT,** 659 N. La Cadena Drive, Colton, CA 92324
- **FRANK A. GONZALES CENTER,** 670 Colton Avenue, Colton, CA 92324
- **PETER S. LUQUE COMMUNITY CENTER,** 292 East "O" Street, Colton, CA 92324

The City received (X) number of comments (to be updated upon completion) during this review period.

Plan Revision and Adoption

On Month, Day, Year (to be updated upon completion) the City submitted the Plan to Cal OES to initiate that agency's review process.

Plan Resources

The City referred to several plans, studies, technical reports, datasets, and other resources to prepare the Plan's hazard assessment, mapping, threat assessment, and other components. **Table 2** provides some of the HMPT's primary resources to prepare this Plan.

TABLE 2. KEY RESOURCES FOR PLAN DEVELOPMENT		
Section	**Key Resources Reviewed**	**Data Incorporated from Resource**
Multiple	• California Department of Water Resources • City of Colton 2019 Hazard Mitigation Plan • City of Colton Climate Action Plan • City of Colton General Plan • City of Colton reports • FEMA Local Hazard Mitigation Plan Guidance • National Oceanic and Atmospheric Administration • National Weather Service • San Bernardino Valley Municipal Water District • San Bernardino Valley Water Control District • US Census Bureau	• Science and background information on various hazard conditions • General data about hazard mitigation plans • Records of past disaster events in and around Colton and San Bernardino County • Projected climate conditions in and around Colton • Information on the history and current demographics and characteristics of Colton
Community Profile	• California Energy Commission • Western Regional Climate Center	• Information about utility services in Colton • Current climate conditions in and around Colton
Hazard Assessment		
Drought	• Safeguarding California • US Drought Monitor	• History of drought events • Current and projected future drought conditions
Flood	• San Bernardino County Flood Control District • FEMA Map Service Center	• Records of past floods in and around Colton • Locations of flood hazard zones in Colton
Human-Caused Hazards	• California Department of Toxic Substances Control • California Office of Emergency Services spill release reports • Global Terrorism Database • State Water Resources Control Board • US Environmental Protection Agency	• Locations and status of hazardous material facilities • Historic records of terrorism and hazardous material releases
Seismic Hazards	• Southern California Earthquake Data Center • U.S. Geological Survey (USGS) Earthquake Archive • USGS ShakeMap scenarios • USGS Third Uniform California Earthquake Rupture Forecast	• Locations of fault zones and seismic hazard areas • Records of past seismic events • Future seismic event scenarios
Wildfires	• California Department of Forestry and Fire Prevention	• Records of past fire events • Locations of fire zones in and around Colton
Note: Sections not individually identified in this table relied primarily on sources identified in multiple sections.		

CHAPTER 2 –

COMMUNITY PROFILE

The Community Profile section of the LHMP describes Colton, including information about the community's physical setting, history, economy and demographics, current and future land uses, and key infrastructure. The Community Profile helps establish the baseline conditions in Colton, which informs the development of the hazard mitigation strategies and actions in **Chapter 5**.

Setting and Location

Colton is located approximately 55 miles east of downtown Los Angeles in the San Bernardino Valley region, in southwestern San Bernardino County. It is bordered by the City of San Bernardino to the north, the City of Loma Linda to the east, the cities of Riverside and Grand Terrace and the unincorporated community of Highgroveto the south, and the City of Rialto to the west. Colton is part of the wider Inland Empire region of California.

The Santa Ana River runs through Colton, and two railroad lines divide the City into four parts. The community is predominately flat, with an average elevation of 1,000 feet above sea level. The La Loma Hills in southwest Colton rise to a height of over 1,400 feet. The Box Springs Mountains, which include southeast Colton, reach a height of over 2,400 feet.

The planning area for this LHMP is the city limits of Colton and unincorporated areas that are considered part of Colton's sphere of influence (SOI). These unincorporated areas are:

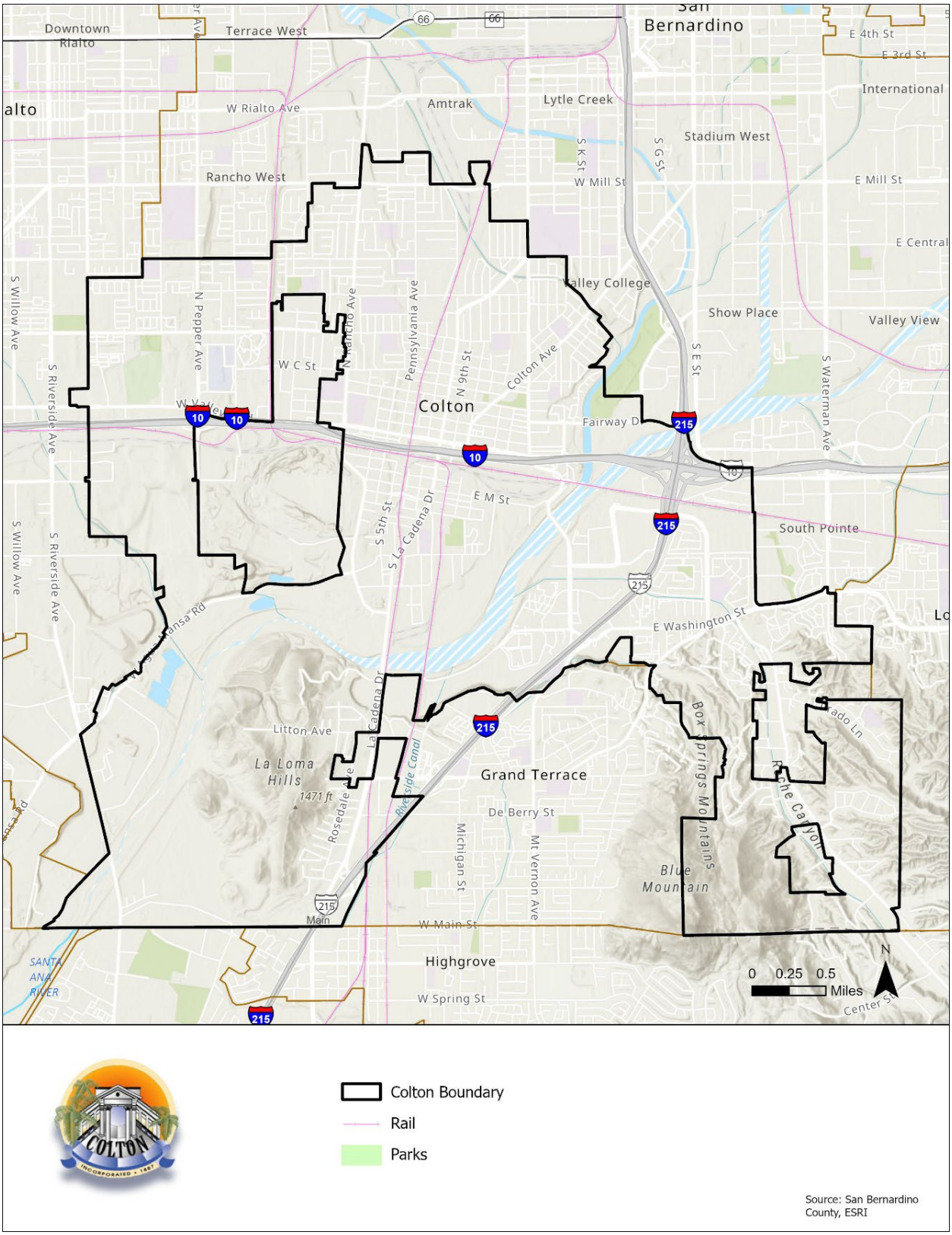
- Slover Mountain and the Cypress Avenue area north of Interstate 10.
- An unincorporated area between Colton and Grand Terrace, near Washington Street and Bluff Road.
- The unincorporated area surrounded by Colton on all sides, roughly bordered by Fern Lane, Dark Canyon Road, and Reche Canyon Road.
- The unincorporated area along Reche Canyon Road bordered mostly by Colton, roughly between Placid Lane and Malibu Court.

Figure 1 shows the location of Colton and its SOI.

Colton has a warm, Mediterranean-type climate, meaning that winters are mild and summers are dry. Precipitation levels are moderately low, and virtually all precipitation occurs in the winter. According to the nearest weather station, Colton has an average maximum temperature of approximately 80 degrees, an average minimum temperature of approximately 48 degrees, and average precipitation of approximately 16 inches. July and August are the hottest months, with average high temperatures of over 96 degrees and average low temperatures close to 60 degrees. The coldest months are December and January, with maximum temperatures below 68 degrees and low temperatures approximately 38 to 39 degrees. Precipitation levels are highest from January to March.[3]

[3] *San Bernardino F S 226, California*. SAN BERNARDINO F S 226, CALIFORNIA - Climate Summary. (n.d.). https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7723

FIGURE 1. COLTON OVERVIEW BASE MAP



History

The Tongva (Gabrielino) and Iviatim (Cahuilla) peoples originally settled in the area that is now Colton. A third group, the Taaqtam (Serrano), lived nearby.[4] The Tongva were among one of the most populous groups of Native Americans in Southern California, numbering 5,000 or more at the time of European contact, and they lived in villages throughout the wider Los Angeles region. The Iviatim numbered an estimated 2,500 people at one time, covering the San Bernardino Mountains and much of the western Mojave Desert.[5]

The Spanish became the first Europeans to permanently settle California, establishing a series of missions beginning in 1769. The San Bernardino Valley came under the area administered by Mission San Gabriel Arcángel, constructed in 1771 approximately 45 miles west of modern-day Colton. Mexico (including California) secularized the missions after it achieved independence from Spain in 1821, and the new nation granted large portions of land to prominent individuals. A grant called Rancho Jurupa included part of what is now southern Colton, and modern-day eastern Colton was included in the Rancho San Bernardino grant.[6] The western half of Colton was not included in any land grant.

After California became part of the United States, the area that is now Colton continued to be used for farming until the 1870s, when the Southern Pacific Railroad was extended into the area on the way to downtown Los Angeles. Five men from the Slover Mountain Colony Association purchased 2,000 acres of land and began to lay out a settlement, named “Colton” after Southern Pacific Railroad executive David R. Colton. The railroad entered Colton in 1875, and the community incorporated in 1877.[7]

Railroad activity quickly expanded following incorporation as the citrus groves that were common in the area began to be developed. The proximity of the railroads made Colton attractive to industrial activity, which continues in the community to this day. Construction of Interstate 10 through the City helped attract more transportation industries, along with extensive development of residential subdivisions.[8]

Demographics

The US Census 2022 American Community Survey 5-Year estimates Colton’s population to be 53,959 as of 2022, making it one of the less populous of the 14 cities in the San Bernardino Valley (only Montclair, Loma Linda, and Grand Terrace have fewer people).[9]

Table 3 identifies the basic demographics for Colton and San Bernardino County. Compared to all of San Bernardino County, Colton residents are slightly younger, have a lower median income, and are more likely to rent their homes.

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[4] DWR (California Department of Water Resources). 2023. California Indian Tribal Homelands and Trust Land Map [map]. https://water.ca.gov/about/tribal-policy

[5] Kroeber, A. L. 1925. Handbook of the Indians of California. United States Government Printing Office, Washington D.C.

[6] San Bernardino County. 2016. “Ranchos of San Bernardino County.” https://www.sbcounty.gov/ARC/Main/Archives/Rancho.aspx

[7] History of Colton. History of Colton | Colton, CA - Official Website. (n.d.). https://www.coltonca.gov/98/History-of-Colton

[8] *History of Colton*. History of Colton | Colton, CA - Official Website. (n.d.). https://www.coltonca.gov/98/History-of-Colton

[9] US Census Bureau 2022: ACS 5-Year

Table 3. Basic Demographics—Colton & San Bernardino County		
Demographic	**Colton**	**San Bernardino County**
Total Population	53,959	2,195,611
Percent of children who are less than 10 years old	12.6%	13.6%
Percent of residents who are senior citizens (65+)	11.6%	11.9%
Median Age	29.6	33.9
Total households	18,122	749,701
Median household income	$66,725	$79,091
Percent of rental households	48.5%	37.2%
Source: U.S. Census Bureau, 2022 American Community Survey (ACS) – Colton and San Bernardino County		

A majority of residents identify as Hispanic or Latino in both Colton and San Bernardino County. However, Hispanic or Latino residents make up a much larger share of Colton residents than San Bernardino County residents. The second largest group identifies as white in both Colton and San Bernardino County. Table 4 shows the racial and ethnic composition in Colton and San Bernardino County.

Table 4. Detailed Racial/Ethnic Breakdown—Colton & San Bernardino County				
Race or Ethnicity	**Colton**		**San Bernardino County**	
	Population	**Percentage**	**Population**	**Percentage**
White	3,322	67.4%	975,461	44.7%
Black	121	2.5%	171,762	7.9%
American Indian and Alaskan Native	445	9.0%	25467	1.2%
Asian	60	1.2%	169,063	7.8%
Native Hawaiian and Other Pacific Islander	12	0.2%	7,333	0.3%
Some Other Race Alone	415	8.4%	484,024	22.2%
Two or more races	556	11.8%	347,453	15.9%
Hispanic or Latino (of any race) *	1,255	25.5%	1,200,147	55.0%
Total	**4,931**	**100%**	**2,180,563**	**100%**
* The US Census Bureau does not currently count persons who identify as Latino/Latina as a separate racial or ethnic category. Persons who identify as Hispanic or Latino are already included in the other racial or ethnic categories Note: Percentage values are rounded to the nearest tenth decimal. Source: U.S. Census Bureau, 2022 American Community Survey (ACS) – Colton and San Bernardino County				

Colton and San Bernardino County have similar levels of educational attainment, although the County does have a larger percentage of residents with an associate's degree or a college degree. Approximately 24 percent of Colton residents do not have a high school diploma, and approximately 25 percent have a college degree. Table 5 shows the educational attainment in Colton and San Bernardino County.

Table 5. Educational Attainment of Residents 25+ Years of Age				
Educational Attainment	**Colton**		**San Bernardino County**	
	Number	**Percentage**	**Number**	**Percentage**
Less than 9th grade	3,676	10.6%	117,765	8.5%
9th grade to 12th grade (no diploma)	4,617	13.4%	140,623	10.1%
High school graduate or equivalent	10,798	31.3%	378,034	27.2%
Some college (no degree)	6,874	19.9%	323,816	23.3%
Associate's degree	2,498	7.2%	117,124	8.4%
Bachelor's degree	3,817	11.1%	201,183	14.5%
Graduate or professional degree	2,241	6.5%	110,197	8.5%
Total	**34,521**	**100%**	**1,388,742**	**100%**

Source: U.S. Census Bureau, 2022 American Community Survey (ACS) – Colton and San Bernardino County.
Data does not include people living outside of Colton's city limits but within the sphere of influence.

Slightly over half of Colton residents speak a language other than English at home, and most of these residents (approximately 45 percent of Colton's total population) speak Spanish. Approximately 2 percent of Colton's residents speak Tagalog or another Pacific Island language. [10]

For the Colton residents who do not speak English at home, approximately 35.6 percent say they speak English "less than very well." Overall, approximately 17.5 percent of Colton residents say they do not speak English well. Table 6 shows English proficiency in Colton and San Bernardino County.

Table 6. English Proficiency and Languages Spoken at Home Among Residents Aged 5+ Years						
Languages	**Colton**			**San Bernardino County**		
	Number of speakers	**Speak English "less than very well"**	**% not fluent in English**	**Number of speakers**	**Speak English "less than very well"**	**% not fluent in English**
English only	24,313	–	–	1,153,879	–	–
Spanish	24,340	8,643	35.5%	723,044	237,418	32.8%
Indo-European*	613	171	27.9%	29,093	7,283	25.0%
Asian and Pacific Islander*	1,008	299	29.7%	109,024	50,873	46.7%
All other languages	526	319	60.6%	20,594	6,700	32.5%
Total	**50,800**	**9,432**	**35.6 %**	**2,035,634**	**302,274**	**34.3%****

*Census data does not break down the specific languages for languages spoken in these regions.
**Due to these figures only being a percentage of the overall number of speakers, they will not add up to 100%.
Source: U.S. Census Bureau, 2022 American Community Survey (ACS) – Colton and San Bernardino County

[10] US Census Bureau ACS: 2022 5-Year Estimates

Economy and Commute Patterns

Colton has a history of industrial and transportation-related economic activities, and while jobs in these industries remain, they are not as dominant as they used to be. Approximately a third of jobs in Colton are in healthcare and social assistance. Educational services is the second-largest employer class, followed by warehouse and transportation, logistics, retail trade, and manufacturing. With a total employment base of 25,237 jobs for employees, the top 3 employers in the City include Arrowhead Regional Medical Center, Colton Joint Unified School District, and the Wal-Mart Distribution Center. The list of the largest employers in the community, shown in Table 7, reflects this increasingly diverse economy. Table 8 displays the top five cities of origin for Colton's workforce, the largest number coming from San Bernardino and Riverside. Table 9 displays the average distance that Colton's workforce commutes to the City; the majority travel less than ten miles to work every day.

TABLE 7. EMPLOYMENT BY INDUSTRY IN COLTON

Industry	Number of Jobs	Percentage of Total City Employment
Arrowhead Regional Medical Center	Health Care	3,877
Colton Joint Unified School District	Education	2,302
Wal-Mart Distribution Center	Warehouse/Transportation	926
Lineage Logistics	Logistics	555
Ashley Furniture	Manufacturing/Retail	409
Wal Mart Supercenter	Retail	290
City of Colton	Government	287
Reche Canyon Rehabilitation & Health Center	Health Care	264
Chino Valley Ranchers	Agriculture/Distribution	195
Stater Bros Market (2 Locations)	Groceries/Retail	171
Total (Top 10 employers)	**9,276**	**36.67%**

Source: City of Colton, 2023.

TABLE 8. TOP FIVE CITIES-OF-ORIGIN FOR COLTON'S WORKFORCE (2021)

City of Origin	Number of Employees	Percentage
San Bernardino	3,310	13.1%
Riverside	1,722	6.8%
Colton	1,468	5.8%
Ontario	1,294	5.1%
Rialto	1,272	5.0%
Total	**9,066**	**35.9%**

Source: https://onthemap.ces.census.gov/

Table 9. Work Commute Distances for Colton Residents (2021)		
Work Destination	**Number of Employees**	**Percentage**
Less than 10 miles	11,003	43.6%
10 to 24 miles	6,349	25.2%
25 to 50 miles	4,095	16.2%
Greater than 50 miles	3,790	15.0%
Total	**25,237**	**100%**
Source: https://onthemap.ces.census.gov/		

Although there are close to as many jobs in Colton as there are employed residents, commuting is very high in the community. Approximately 92 percent of Colton residents commute to other cities for work, primarily to San Bernardino, Riverside, Ontario, and other Inland Empire communities. Similarly, approximately 94 percent of people employed in Colton commute from other cities, mostly from San Bernardino, Riverside, Ontario, Rialto and other communities in the region. The highest concentrations of jobs in the community are at the Arrowhead Regional Medical Center in northwest Colton and in the Cooley Ranch neighborhood near the junction of Interstates 10 and 215. [11]

Existing Land Use

The land-use patterns in Colton are diverse and reflect a wide range of residential and nonresidential activities. Low-density, single-family homes occupy most residential land in Colton, although townhomes, condominiums, and apartments exist near the downtown. A range of commercial land uses exist downtown, around the Cooley Ranch neighborhood, and along the La Cadena Drive and Mount Vernon Avenue corridors. Industrial facilities are common in Colton, mostly below Interstate 10, although some exist in northern Colton along the BNSF railway line. The Santa Ana River floodplain, along with many of the hilly areas in southern Colton, is a protected open space. [12]

Development Trends

A number of development projects are currently under construction or pending in Colton. As of the latest 2021-2029 Housing Element, these residential development projects total approximately 526 units approved and pending approval. This is only a portion of the state-required residential units allocated to the City. Approximately 1 million square feet of commercial space, and approximately 9.9 million square feet of industrial or office space, are under construction or pending. These developments also include 413 new hotel rooms, enough school space to accommodate 2,200 students, and a 122.7-acre business park. Development of this Plan has taken this new development into account and is helping City staff make better land-use planning decisions as these projects continue through the entitlement process. As a result, the City has realized no additional risk from these developments since preparation of the previous LHMP.

[11] US Census Bureau OntheMap 2022

[12] Colton General Plan Land Use Map 2023

Infrastructure Assessment

Colton's key infrastructure networks (energy, water/wastewater, and transportation) are critical to the community's health, safety, and welfare. Damage to these networks can deprive community members of key services and may also cause additional hazard events, such as a downed power line that starts a wildfire.

Electricity

The City of Colton operates its own municipal electrical utility, supplying electricity to residents and businesses within the city limits as well as to unincorporated islands that lie within the community's boundaries. Colton Electric Utility owns and operates its own power plant, five substations, three solar power facilities, and the entire electrical infrastructure, including the transmission and distribution lines within the City boundaries.

Electricity is delivered to Colton through a series of high-capacity power lines called transmission lines, which convey electricity (usually over large distances) from power plants. Transmission lines connect to facilities called substations, which convert the electricity to a lower voltage and distribute it to individual customers. Several major transmission lines run through Colton, mostly in the southern part of the community. The presence of multiple transmission lines and substations throughout Colton provide redundancy against major power outages, although a significant hazard event that causes damage to multiple facilities could still result in a widespread loss of electrical service throughout the community. The utility serves approximately 16,818 residential customers and 3,399 commercial and industrial customers, with a peak load of 93 megawatts (93 million watts).

Natural Gas

Southern California Gas Company (SoCalGas), an investor-owned corporation, provides natural gas services in Colton. One major natural gas pipeline, owned by SoCalGas, runs through northern Colton along Mill Street.[13] Damage to this pipeline could reduce access to natural gas service in Colton and create the risk of a gas leak, which in turn could cause a further hazard due to the highly flammable and potentially explosive nature of natural gas. Various facilities, including three in the City of San Bernardino, help to keep natural gas running smoothly through these pipelines.[14]

Water and Wastewater

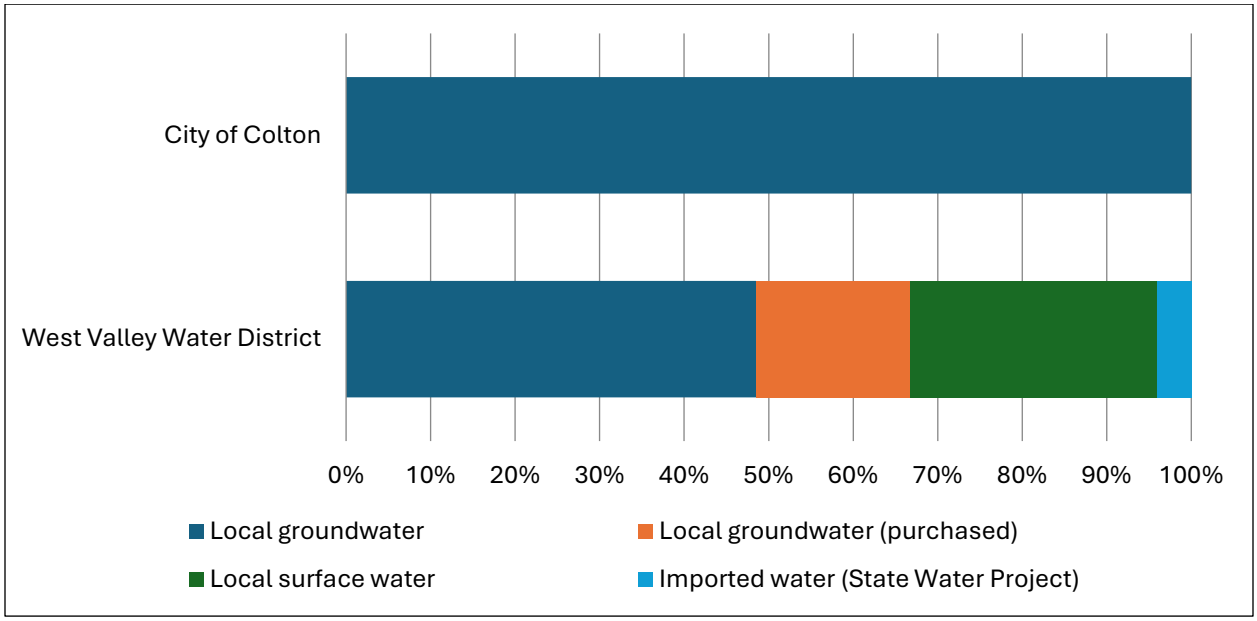
Colton is served by two water providers. The City of Colton operates a municipal water agency that services approximately 90 percent of the City; another public agency, the West Valley Water District (WVWD), provides water service to the area west of Pepper Avenue. The City of Colton receives its water entirely from local groundwater basins. The WVWD serves parts of four cities in the region as well as unincorporated areas of San Bernardino County. It receives most of its water from local groundwater basins but also purchases water from three other sources: water from the Sierra Nevada and delivered by the State Water Project; water from Lytle Creek near

[13] CEC. Natural Gas Pipeline: California natural gas pipeline [data table]. https://cecgis-caenergy.opendata.arcgis.com/

[14] CEC. 2018d. Natural Gas Station: California natural gas station [data table]. https://cecgis-caenergy.opendata.arcgis.com/.

San Bernardino; and groundwater purchased from the San Bernardino Valley Municipal Water District. **Figure 2** shows the sources of water from both agencies.

FIGURE 2. WATER SOURCES IN COLTON



Source: SBVMWD 2020

Most of the water used in Colton (all the water supplied by the City and approximately 96 percent of the water supplied by WVWD) comes from local groundwater basins. Groundwater basins are generally more resilient than other sources of water, but damage to wells and local pipelines may affect water service. Underground aquifers may also run dry or recede from lump intakes when users overdraw the aquifers over a long period, such as during a drought.

Water from local surface water bodies is vulnerable to similar types of disruption. Imported water from the State Water Project has to travel many hundreds of miles through an extensive network of pipes, aqueducts, reservoirs, and pumping stations. This expands the opportunities for a hazard event to disrupt imported water service.

In the event of a catastrophic water shortage, the City is able to purchase water from surrounding agencies so it can continue to provide some level of service (substantial water use regulations will likely be implemented). The WVWD has a sufficient supply to meet residential demand even during single or consecutive dry years. The WVWD is also able to procure water from surrounding agencies through emergency connections.[15]

The City provides wastewater service in Colton, which also provides wastewater service for Grand Terrace and nearby unincorporated areas. Colton owns and operates the sewer lines that collect wastewater, the pump stations that convey it, and a wastewater treatment plant on South Rancho Avenue. The treated wastewater is pumped to a facility in San Bernardino, where it is treated further before being discharged into the Santa Ana River.[16] Damage to the City-

[15] Integrated Regional Urban Water Management Plan, West Valley Water District, 2020

[16] Integrated Regional Urban Water Management Plan, West Valley Water District, 2020

owned sewer system or treatment facilities could reduce treatment capacity or cause a leak, which could potentially create a human or environmental health hazard.

Transportation

There are two major freeways in Colton.

- Interstate 10 runs east-west through the middle of the City, with four lanes in each direction. To the west, Interstate 10 runs through the San Gabriel Valley and downtown Los Angeles before ending in Santa Monica. To the east, the freeway runs toward Redlands, Palm Springs and the Coachella Valley, and eventually to Arizona and states beyond.
- Interstate 215 runs north-south through southeast Colton, with five lanes in each direction. To the south, Interstate 215 connects to Interstate 15 near Temecula, providing access to the San Diego region. To the north, it connects to Interstate 15 north of San Bernardino, eventually running north to Victorville, Barstow, and Nevada and states beyond.

Other prominent freeways in the region include Interstate 15, State Route 60, State Route 91, and State Route 210. Key east-west surface streets include Valley Boulevard and San Bernardino Avenue/Olive Street. Major north-south surface streets include Pepper Avenue, Rancho Avenue, La Cadena Drive, and Mount Vernon Avenue. **Figure 3** (page **24**) shows the major evacuation routes in Colton.

During an emergency, most Colton residents have multiple potential evacuation routes. This would help to expedite an evacuation, although if the need to evacuate occurs during peak commute times, congestion on the freeways could interfere with an effective evacuation. The Reche Canyon neighborhood is of greater concern, as Reche Canyon Road is the only route in and out of this area. If this road is blocked or otherwise inaccessible, evacuations would likely be constrained and could be impossible by car.

Public transit in Colton is primarily provided by Omnitrans, the regional agency that provides bus service throughout the San Bernardino Valley. There are seven Omnitrans bus routes that serve stops in Colton, connecting to key hubs in surrounding communities.[17] The Victor Valley Transit Authority provides a bus route that stops at the Arrowhead Regional Medical Center and connects San Bernardino Valley communities to the Victor Valley and Barstow areas.[18]

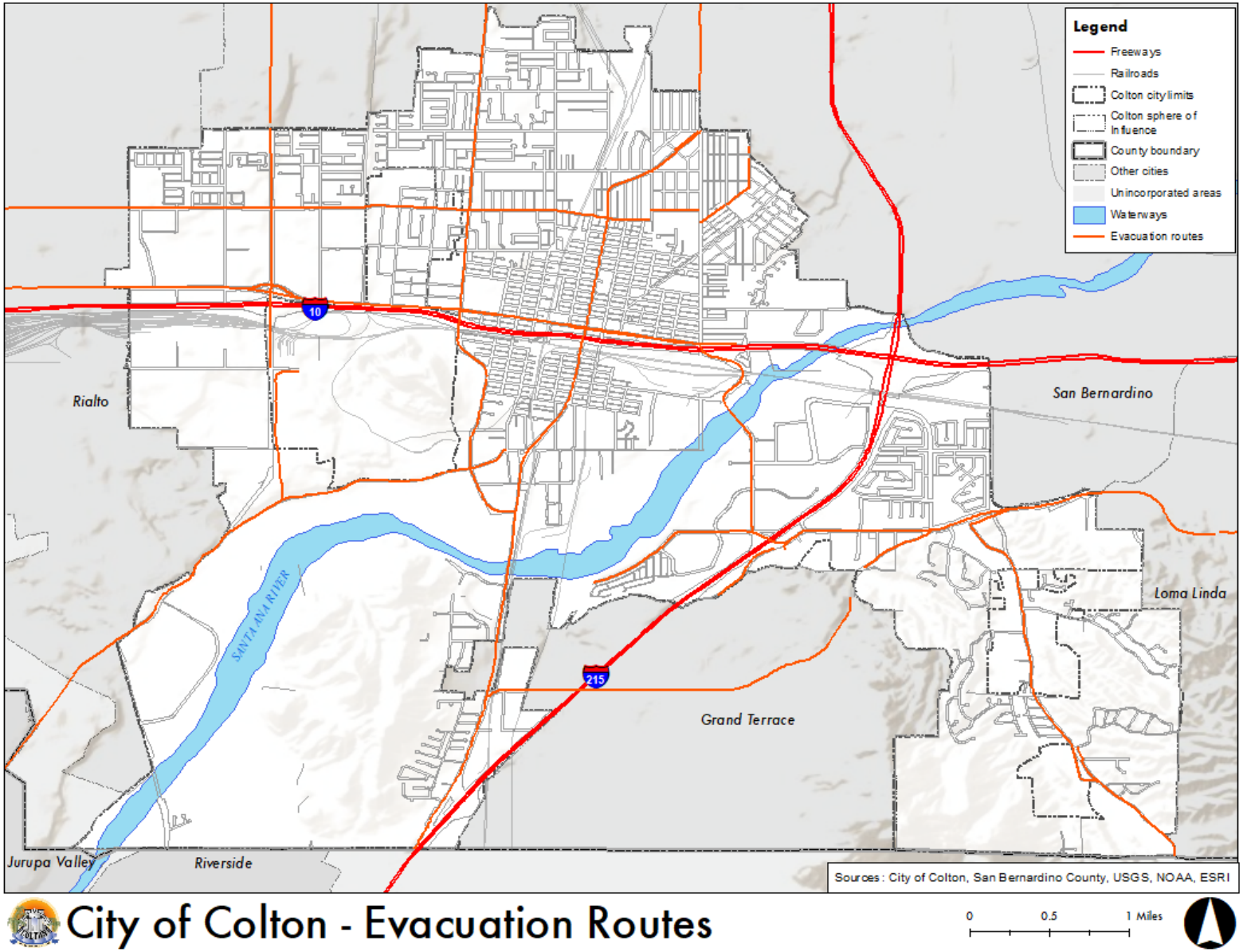
Railroads were instrumental to the establishment of Colton, and they remain an important presence in the community. There are two major rail lines in Colton: the east-west Union Pacific railroad running along Interstate 10, and the north-south BNSF railroad running parallel to La Cadena Drive. Smaller spur lines connect industrial facilities throughout Colton to the main rail lines. Union Pacific operates a rail yard in west Colton, and BNSF operates one north of the community in San Bernardino. Metrolink commuter trains and long-distance Amtrak trains run through Colton but do not stop. The nearest passenger train stations are in San Bernardino, Rialto, and Riverside.

[17] Omnitrans 2025 https://omnitrans.org/

[18] Victor Valley Transit 2025 https://vvta.org/

There is no airport in Colton. Currently the nearest airports with commercial service are Ontario International Airport, approximately 16 miles west of Colton, and San Bernardino International Airport, located approximately 4 miles northeast of Colton.

FIGURE 3. COLTON EVACUATION ROUTES



CHAPTER 3 – RISK ASSESSMENT

Risk assessment is the process of measuring the potential impact to life, property, and the economy resulting from natural hazards. The intent of the risk assessment is to identify—as much as practicable, given existing, available data—the qualitative and quantitative vulnerabilities of a community. The results of the risk assessment provide a foundation on which to develop and prioritize mitigation actions to reduce damage from natural hazards through improved preparedness and response times and better allocation of resources to areas of greatest vulnerability.

This risk assessment section evaluates the potential loss from each hazard by assessing the vulnerability of buildings, infrastructure, and people to its effects. It identifies the characteristics and potential consequences of hazards, how much of the community a hazard could affect, and its impact on the community's population and assets. The risk assessment approach consists of two components:

- **Hazard Identification:** Identification and screening of hazards.
- **Hazard Profiles:** Review of historical occurrences and assessment of the potential for future events.

Hazard Identification

Hazard Screening Criteria

FEMA guidance identifies several hazards that communities should consider addressing in their hazard mitigation plans. The California Multi-Hazard Mitigation Plan (MHMP) contains additional hazards that may be worth including. Regional hazard plans and records of past disasters are other potential sources for hazards to consider. The Planning Team reviewed an extensive list of hazards before deciding which ones to include in this LHMP. **Table 10** shows the hazards considered by the Planning Team, and why they were or were not included. The table also shows what source proposed the hazard for consideration, and whether it has been the subject of a disaster declaration in San Bernardino County.

Table 10. Hazard Evaluation for Colton LHMP

Hazard	Source of Recommendation	Federal Disaster?*	Included in LHMP?	Reason for Inclusion or Exclusion
Agricultural pests	California MHMP	No	No	There is no major agricultural activity in Colton.
Air pollution	California MHMP	No	No	Air pollution is a state and regional issue addressed through plans and regulations administered by the South Coast Air Quality Management District and the California Air Resources Board.

TABLE 10. HAZARD EVALUATION FOR COLTON LHMP				
Hazard	**Source of Recommendation**	**Federal Disaster?***	**Included in LHMP?**	**Reason for Inclusion or Exclusion**
Avalanche	FEMA guidance	No	No	Avalanches do not occur in Colton.
Climate change	California MHMP Regional plans	No	Yes (as a component of other hazards)	Climate change can affect the frequency, intensity, and/or location of different hazards. It is not a standalone hazard and will be discussed as a complicating factor in other hazards rather than as a distinct event.
Coastal flooding and storms	California MHMP	Yes	No	Colton is not a coastal city.
Dam failure	California MHMP FEMA guidance Regional plans	No	Yes	Colton lies within the inundation zone for dams.
Disease and pest management	California MHMP	No	No	The Planning Team did not consider the LHMP to be the appropriate place to address disease and pest management hazards.
Drought	California MHMP	Yes	Yes	Droughts are a recurring and potentially severe hazard in Colton.
Earthquake (fault rupture, liquefaction, and seismic shaking)	California MHMP FEMA guidance Regional plans	Yes	Yes	Colton is in a seismically active area and has been impacted by earthquakes in the past.
Energy shortage	California MHMP	No	No	The Planning Team did not consider the LHMP to be the appropriate place to discuss energy shortages.
Erosion	California MHMP FEMA guidance	Yes	No	Erosion in Colton is not sufficient to be considered a hazard.
Expansive soil	FEMA guidance	No	No	There is no known expansive soil in Colton.
Extreme cold	California MHMP FEMA guidance	Yes	No	Temperatures in Colton do not typically become cold enough to pose a threat to the community.
Extreme heat	California MHMP FEMA guidance	No	Yes	Extreme heat events are a recurring hazard in Colton.
Flood	California MHMP FEMA guidance Regional plans	Yes	Yes	Floods are an occasional hazard in Colton.
Fracking	California MHMP	No	No	Fracking does not occur in Colton.
Hail	FEMA guidance	No	No	The Planning Team found that hail severe enough to constitute a hazard in Colton is too rare to be included in this Plan.

TABLE 10. HAZARD EVALUATION FOR COLTON LHMP				
Hazard	**Source of Recommendation**	**Federal Disaster?***	**Included in LHMP?**	**Reason for Inclusion or Exclusion**
Hazardous materials release	California MHMP	No	Yes	Hazardous material facilities are present in Colton, and there is a risk of a hazardous materials release in the community.
Hurricane	California MHMP FEMA guidance	Yes	No	Hurricanes are too rare in Colton to be included in this Plan.
Infrastructure failure	California MHMP	No	Yes	Infrastructure failure may occur in Colton and pose a threat to the community.
Landslide	California MHMP FEMA guidance	Yes	Yes	Landslides have occurred in the past in Colton.
Levee failure	California MHMP	No	No	Levee failures are not a sufficient hazard to be addressed separately in this Plan. They may be discussed generally under infrastructure failure.
Lightning	FEMA guidance	No	No	Lightning is not a sufficient hazard to be addressed in this Plan.
Metal theft	California MHMP	No	No	The Planning Team did not consider this a sufficient threat in Colton.
Methane-containing soil	Regional plans	No	No	There are no known methane-containing soils in Colton.
Nuclear hazard	California MHMP	No	No	There are no known sources of nuclear material that could plausibly create a risk of a nuclear hazard in Colton.
Power Outage	California MHMP	No	Yes	The City has been affected by power outage events in the past.
Sea level rise	California MHMP FEMA guidance	No	No	Colton is not a coastal community and so is not susceptible to sea level rise.
Severe wind	FEMA guidance	Yes	Yes	Severe winds occur in Colton and may pose a threat to the community.
Severe winter weather	FEMA guidance	Yes	Yes	While this term typically refers to blizzards, ice storms, and related hazards, the Planning Team uses it for intense rainstorms that occur occasionally and may pose a threat to Colton.
Storm surge	FEMA guidance	No	No	Storm surge is a coastal hazard, and Colton is not a coastal community.
Subsidence	FEMA guidance	No	Yes	Subsidence has occurred in the past in Colton.

TABLE 10. HAZARD EVALUATION FOR COLTON LHMP				
Hazard	**Source of Recommendation**	**Federal Disaster?***	**Included in LHMP?**	**Reason for Inclusion or Exclusion**
Terrorism	California MHMP	No	Yes	Since terrorism may happen anywhere, the Planning Team determined it should be addressed in the Plan.
Thunderstorm	California MHMP Regional plans	No	No	While thunderstorms may occasionally occur in Colton, the threat posed by these events is adequately addressed by other hazards.
Tornado	California MHMP FEMA guidance	No	No	There is some risk of tornadoes in Colton, but the threat posed by these events is adequately addressed by other hazards.
Transportation crashes	California MHMP	No	No	The Planning Team determined that this Plan is not the appropriate location to address transportation crashes.
Tsunami	California MHMP FEMA guidance	No	No	Tsunamis are a coastal hazard, and Colton is not a coastal community.
Volcano	California MHMP	No	No	There are no volcanoes near enough to Colton to reasonably pose a risk to the community.
Wildfire	California MHMP FEMA guidance Regional plans	Yes	Yes	Significant wildfires have occurred in the past in Colton.
* Federal disasters are declared at the county level. A disaster declared for San Bernardino County did not necessarily cause any harm to Colton.				

The Hazard Mitigation Planning Team combined some hazards into a single category to streamline the list:

- Dam failure will be discussed as part of flooding.
- Landslides and subsidence will be combined into a single hazard, called “geologic hazards.”
- Infrastructure failure, hazardous material release, terrorism, and power outage will be combined into a single hazard, called “human-caused hazards.”
- Extreme heat, severe wind, and severe winter weather will be combined into a single hazard, called “severe weather.”

Additionally, the HMPT has renamed “earthquakes” to “seismic hazards” to better reflect the threat posed by factors other than ground shaking.

After hazard evaluation and the organizational changes were made by the HMPT, this Plan discusses eight broad hazard types with their respective sub-categories depicted in **Table 11**, including climate change, which is discussed in each hazard profile.

Table 11. Hazard Categories and Sub-Categories	
Hazard Category	**Sub-Categories**
Drought	
Flooding	Dam Failure
Geologic Hazards	Landslide, Subsidence
Human-caused Hazards	Infrastructure Failure, Hazardous Materials Release, Terrorism, Power Outage
Seismic Hazards	Fault Rupture, Liquefaction, Seismic Shaking
Severe Weather	Extreme Heat, Severe Wind, Severe Winter Weather
Wildfire	

Hazard Scoring and Prioritization

The HMPT followed FEMA guidance for hazard mitigation plans and prioritized each of the eight hazards and their respective subcategories. In the initial step, it assigned a score of 1 to 4 for each of the hazards for the following criteria:

- **Probability:** The likelihood that the hazard will occur in Colton in the future.
- **Magnitude/Severity:** The severity of the direct damage of the hazard to Colton.
- **Warning Time:** The time the City has before a disaster event/hazard impacts Colton.
- **Duration:** The time that the disaster event will affect Colton.

The HMPT assigned a weighting value to each criterion, giving a higher weight to the criteria deemed more important and multiplied the score for each criterion by weighing the factor in determining the overall score for each criterion. FEMA recommended these weighting values:

- **Probability:** 2.0
- **Location:** 0.8
- **Maximum Probable Extent (Primary Impact):** 0.7
- **Secondary Impacts:** 0.5

After calculating the total impact score for each hazard (sum of the location, maximum probable extent, and the secondary impact), FEMA guidance recommends multiplying the total impact score by the overall probability to determine the final score for each hazard. A final score between 0 and 12 is considered a low-threat hazard, 12.1 to 42 is a medium-threat hazard, and a score above 42 is considered a high-threat hazard. This final score determines the prioritization of the hazards. **Table 12** depicts the criteria for scoring each hazard previously discussed, including probability, location, primary impact, and secondary impacts.

In compliance with the Disaster Mitigation Act (and as further specified by Interim Final Rule 44 CFR Section 206.401(c)(2)(i)), this LHMP addresses, in substantial detail, the primary hazards facing the City. Lower-priority hazards are addressed at a lesser level of detail due to their relatively reduced impacts, as identified in the hazard assessment discussion. **Table 13** (page **31**) shows each hazard's criterion scores, final score, and threat level based on the above prioritization process.

TABLE 12. CRITERION SCORING				
Category	**Description**	**Score**	**Weighting Factor**	
Probability	Unlikely	Extremely rare with no documented history of occurrences or events. Annual probability of less than 0.001	1	**2.0**
	Possible	Extremely rare with no documented history of occurrences or events. Annual probability of between 0.01 and 0.001	2	
	Likely	Occasional occurrence with at least two or more documented historic events. Annual probability of between 0.1 and 0.01	3	
	Highly Likely	Frequent events with a well-documented history of occurrence. Annual probability of greater than 0.1	4	
Location	Negligible	The impact zone is a small part of the planning area (a few structures).	1	**0.8**
	Limited	The impact zone is a limited part of the planning area (a neighborhood or city block).	2	
	Significant	The impact zone is a significant part of the planning area (a multiple blocks or neighborhoods; a district).	3	
	Extensive	The impact zone covers much of the planning area (multiple districts).	4	
Maximum Probable Extent (Primary Impact)	Negligible	Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure). Injuries or illnesses are treatable with first aid and there are no deaths	1	**0.7**
	Limited	Slight property damages (greater than 5% and less than 25% of critical and non-critical facilities and infrastructures). Injuries and illnesses do not result in permanent disability and there are no deaths	2	
	Critical	Moderate property damages (greater than 25% and less than 50% of critical and non-critical facilities and infrastructures). Injuries or illnesses result in permanent disability and at least one death	3	
	Catastrophic	Severe property damages (greater than 50% of critical and non-critical facilities and infrastructure). Injuries or illnesses result in permanent disability and multiple deaths	4	
Secondary Impacts	Negligible	No loss of function, downtime, and/or evacuations. Shutdown of critical facilities for less than 24 hours. Negligible quality of life lost	4	**0.5**
	Limited	Minimal loss of function, downtime, and/or evacuations. Shutdown of critical facilities for more than 1 day and less than 1 week. Limited quality of life lost	3	
	Moderate	Some loss of function, downtime, and/or evacuations. Shutdown of critical facilities for more than 1 week and less than 1 month. Moderate quality of life lost	2	
	High	Major loss of function, downtime, and/or evacuations. Shutdown of critical facilities for more than 1 month. Significant quality of life lost	1	

Table 13. Colton Hazard Scores and Threat Levels						
Hazard	Probability (2.0)	Impact (2.0)			Final Score	Threat Level
		Location (0.8)	Primary Impact (0.7)	Secondary Impact (0.5)		
Drought	4 (Highly likely)	4 (Extensive)	3 (Severe)	3 (Moderate)	54.4	High
Flooding	2 (Occasional)	2 (Limited)	3 (Severe)	3 (Moderate)	20.8	Medium
Geologic hazards	3 (Likely)	2 (Limited)	2 (Moderate)	2 (Limited)	24.0	Medium
Human-caused hazards	2 (Occasional)	3 (Significant)	3 (Severe)	3 (Moderate)	24.0	Medium
Seismic hazards	4 (Highly likely)	4 (Extensive)	4 (Extreme)	4 (High)	64.0	High
Severe weather	3 (Likely)	4 (Extensive)	4 (Extreme)	4 (High)	48.0	High
Wildfire	4 (Highly likely)	3 (Significant)	3 (Severe)	3 (Moderate)	48.0	High

Hazard Profiles

Drought

Description

Drought is a long period of time with precipitation levels that are significantly below normal. Most commonly, this makes less water available for natural environments, causing plants to dry out and making them more susceptible to pests or diseases. An abundance of dry plant matter may also increase the risk of wildfires or cause fires to be more intense. Agricultural areas, particularly those that do not rely on irrigation, can suffer during drought conditions.

In more severe instances, droughts can affect urban areas. A significant-enough drought can lead to water shortages that may force local water suppliers to institute mandatory restrictions on nonessential water use. In extreme cases, there may not be enough water to meet basic health and hygienic needs, requiring communities to find alternative water supplies. Since many communities receive their water from distant sources, such as the Sierra Nevada or Colorado River, it is common in California to experience “long-distance droughts,” where precipitation levels may be normal in the community itself, but low precipitation at the source of the community’s water may result in water shortages.

Droughts can also, counterintuitively, cause an increase in flooding. Soil that has been dried out by drought conditions is harder and less able to absorb water. When the precipitation eventually does occur, more water remains on the surface rather than being absorbed, increasing the amount of runoff and potentially exacerbating flooding events. Dry soil also does not bind together as well as moister soils, which can increase the potential for landslides or erosion.

Location and Extent

Droughts are large-scale events, and so drought risks and conditions are generally equal across all of Colton, although the impacts to natural lands are generally different than impacts to urban areas.

There are many ways to measure drought conditions. One of the most common and easy to understand is the US Drought Monitor Classification Scheme, which combines multiple scales into a single descriptive index. Table 14 shows the U.S. Drought Monitor Classification Scheme.

TABLE 14. U.S. DROUGHT MONITOR CLASSIFICATION SCHEME

Category	Description	Possible Impacts
D0*	Abnormally Dry	Slower growth of crops and pastures
D1	Moderate Drought	Some damage to crops and pastures. Water bodies and wells are low. Some water shortages may occur or may be imminent. Voluntary water use restrictions can be requested.
D2	Severe Drought	Likely crop and pasture losses. Water shortages are common, and water restrictions can be imposed.
D3	Extreme Drought	Major crop and pasture losses. Widespread water shortages and restrictions.
D4	Exceptional Drought	Exceptional and widespread crop and pasture losses. Emergency water shortages develop.

Source: US Drought Monitor
* D0 areas are those under "drought watch," but not technically in a drought. They are potentially heading into drought conditions or recovering from drought but are not yet back to normal.

Past Events

Droughts are a regular feature of California's climate, although with varying lengths, intensities, and frequencies. They have occurred many times in the state's recorded history and have frequently led to changes to California's economy, infrastructure, or policies.

- One of the earliest recorded droughts, the "Great Drought" of 1863–1864, followed the largest flood in California's recorded history and devastated the state's cattle industry, finishing off the rancho system in Southern California.
- Another series of droughts from 1928 to 1935, known as the "Dust Bowl Droughts," caused significant harm to California's agriculture and led to the creation of the federal Central Valley Project to enable a reliable source of water for Central Valley farmers.
- Further droughts from 1947 to 1950 and from 1959 to 1960 helped encourage the creation of the State Water Project, which imports water from the Sierra Nevada to communities throughout the state, including Colton.
- A drought from 1976 to 1977 created emergency-level conditions across most of California and resulted in strong water conservation practices that continue to this day.
- A drought from 1987 to 1992 caused significant statewide impacts, particularly to small rural communities and the timber industry, and led to stronger water conservation landscape standards.

- The statewide 2007 to 2009 drought caused further impacts and helped spur regulation for groundwater basins.[19] [20] [21]

The most severe drought in California's recorded history (and considered the most severe in the past 1,200 years) occurred from 2012 to 2017.[22] At its peak, virtually all of California experienced D2 (severe drought) conditions, and close to 60 percent of California was classified in D4 (exceptional drought) conditions. Colton experienced D3 (extreme drought) conditions from July 2014 to January of 2017. Governor Brown declared a statewide emergency, and water conservation standards were strengthened throughout the state. The drought ended with the wet winter of 2016–2017, although a number of water conservation policies enacted during the drought remained in force. Although the winter of 2016–2017 officially ended one of California's most recent significant droughts, a single wet year was not enough to make up for five dry years. The 2017–2018 winter also saw less precipitation than normal across the state.[23] This moderate drought was again abated in late 2018 and early 2019 in the winter season when heavy rains ended any existing drought conditions.

By the end of 2020, however, California was once again experiencing drought throughout the state, with the majority of the state in D2 (Severe Drought) and D3 (Extreme Drought) conditions, with some areas even falling into the D4 (Exceptional Drought) category. A series of atmospheric rivers that swept through California from December 2022 to March 2023, bringing more than 78 trillion gallons of water, eliminated the drought for most of the state. As of July 2025, much of California is currently experiencing drought conditions. The majority of San Bernardino County is experiencing D1 (Moderate Drought) and D2 (Severe Drought) conditions, though some western sections of the county are in D3 (Extreme Drought) conditions. **Figure 4** (page **34**) shows the drought conditions in California including San Bernardino County and Colton as of July 22nd, 2025.[24]

Risk of Future Events

Drought events are almost certain to continue to occur in Colton, given the history of past drought events in the community and statewide. As most of Colton's water supply comes from local groundwater basins, the community is somewhat resilient to drought because groundwater supplies are built up over an extended period of time (a process called *recharge*), and intermittent droughts do not substantially interrupt this process. However, frequent and prolonged droughts can slow recharge, and excessive groundwater pumping can deplete supplies rather than allowing them to recover naturally. Additionally, the small amount of Colton's water that comes from local supplies or is imported is more vulnerable to droughts, as a period of dry years can substantially reduce the amount of water available from these supplies.

[19] California Governor's Office of Emergency Services (Cal OES). 2023. State Hazard Mitigation Plan. https://www.caloes.ca.gov/office-of-the-director/operations/recovery-directorate/hazard-mitigation/state-mitigation-planning/

[20] Kotin, A., and Marion, D. 2014. "A History of Drought: Learning from the Past, Looking to the Future." http://calclimateag.org/a-history-of-drought-learning-from-the-past-looking-to-the-future/

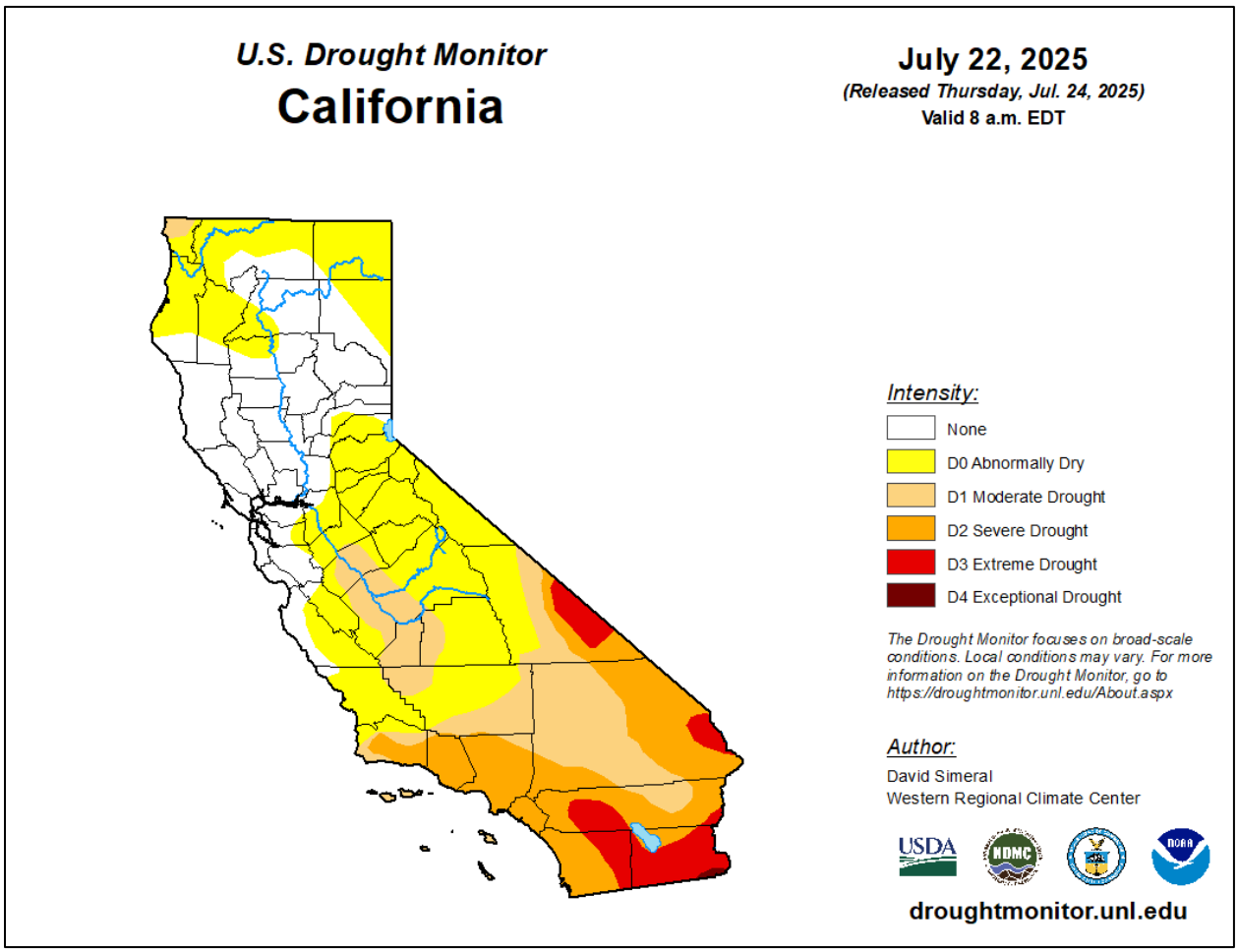
[21] *California's most significant droughts: Comparing historical and recent conditions*. California Water Library. (n.d.). https://cawaterlibrary.net/document/californias-most-significant-droughts-comparing-historical-and-recent-conditions/

[22] Griffin, D., and Anchukaitis, K. J. 2014. "How unusual is the 2012-2014 California drought?" Geophysical Research Letters, 41(24). Pages 9017-2023.

[23] NOAA (National Oceanic and Atmospheric Administration). 2018. "Climate Station Precipitation Summary – California Nevada River Forecast Center." https://www.cnrfc.noaa.gov/awipsProducts/RNOWRKCLI.php.

[24] US Drought Monitor. 2025. "Map Archive: US Drought Monitor, California, July 22, 2025." https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?CA

FIGURE 4. CALIFORNIA DROUGHT CONDITIONS



Climate Change Considerations

Climate change is anticipated to abate drought in certain situations but, on the other hand, could also intensify and exacerbate it in other cases. In some cases, climate change-intensified weather patterns, like ENSO, may bring more rain to California and Colton, which could abate drought conditions for the State's affected parts. In other cases, climate change may also prolong the La Niña phase of ENSO, leading to longer dry periods with no precipitation in California.

Due to climate change, droughts are expected to become more frequent and intense in San Bernardino County and, more broadly, throughout California by mid-century. Scientific studies indicate:

- Climate change is projected to drive more frequent historically warm temperatures, reduced precipitation and snowpack, abnormally dry soils, and, in turn, drought conditions.
- Modeling studies attribute more frequent coincident warm and dry years and more severe drought conditions in Southern California due to climate change.
- The incidence of extremely dry years (those occurring in 1 out of every 100 years over the historical period) could triple by the end of the century.

- The likelihood of long-duration droughts in San Bernardino County would increase significantly, with some studies showing a more than 80% chance of multidecadal drought by the end of the century.[25]

Climate change is also expected to increase the average temperature and cause more frequent and prolonged heat waves in California and Colton. During these events, water supplies may be diverted for cooling functions in the City. Hotter temperatures may also lead to increased surface water evaporation, which could contribute to greater water consumption. If a drought were to occur during a future heatwave, it could place water supplies under strain.

From a regional perspective, warmer overall temperatures in California are anticipated to reduce statewide water supplies. Much of California's water comes from melted snow in the High Sierras, where mountain snowpack acts as a natural reservoir. As the average temperature grows warmer with climate change, the precipitation that now falls as snow is expected to shift toward rain. Precipitation as rain will not flow into reservoirs and aqueducts the same way snowmelt does. The natural water reservoirs created by the snowpack stay intact as the initial snowpack runoff begins in the early spring and ends in early to late summer, depending on the level of the snowpack.[26] The runoff from the snowpack can be managed due to the slow pace at which the snow melts; however, when rain occurs in place of snowfall, there is no significant way to collect the water and retain it because it falls much faster. As less snow falls, the amount of melted water from the snowpack in the Sierra Nevada will decrease, reducing the water flowing into the reservoirs and aqueducts that supply Southern California. If regional and local water agencies do not account for increased groundwater withdrawal, Colton and the San Bernardino County region could experience greater dependence on imported water.

FLOODING

Description

Floods are a common hazard in many parts of California, including Colton. Flooding occurs when an area becomes inundated with more water than it can drain in a specified period. This can range from a small, confined area, such as a grassy field in a park that floods for a few hours after a rainstorm, to whole city sections, such as streets becoming impassable because of floodwaters. When floods are small, they may only represent a minor inconvenience as some recreational pathways and curb cuts become flooded. These smaller instances of flooding where water collects into a pool of standing water are referred to as *ponding*. On the other hand, larger flood events can hamper a city's operations. For example, if multiple streets flood simultaneously, the results could prevent emergency workers from reaching people who need assistance. Flooding also has the destructive potential to damage critical infrastructure. For instance, unprotected electronic equipment can short-circuit if it is inundated by floodwaters. This could lead to outages in street lighting, traffic signals, and even city and government computer systems.

[25] San Bernardino County Vulnerability Assessment. https://wrcog.us/DocumentCenter/View/7477/San-Bernardino-County-Vulnerability-Assessment

[26] NASA. ("World of Change: Snowpack in the Sierra Nevada." https://earthobservatory.nasa.gov/world-of-change/SierraNevada#:~:text=The%20snowpack%20on%20the%20Sierra%20Nevada%20has%20generally%20peaked%20and,reservoirs%20while%20recharging%20the%20groundwater.

Flooding has the potential to occur from multiple sources. In Southern California, the primary cause of flooding is usually heavy rain occurring during the winter storm season. Most precipitation in California arrives either via atmospheric rivers or the ENSO cycle. *Atmospheric rivers* are channels of moist air located high in the atmosphere. The *El Niño Southern Oscillation (ENSO) cycle* is a regional meteorological phenomenon in the southern Pacific Ocean consisting of ocean water and air temperature variations. These variations give rise to two distinct phases: El Niño, the warm and wet phase, and La Niña, the dry and cold phase. When the El Niño phase is active, California will likely receive higher-than-normal precipitation levels. These higher-than-normal levels of rainfall can quickly overwhelm the capacity of certain sections of land to drain the precipitation before the rainwater begins to pool effectively. Floods that develop very quickly, known as *flash floods*, are especially dangerous because there may be little warning that one is occurring, but floods can also build over a much longer period.

One subset of a flood event is caused by the partial or complete failure of a piece of infrastructure that transports or stores water, such as a dam, pipeline, levee, or storage tank. Of particular concern to Colton is the risk of dam failure. When a dam fails, some or all of the water impounded by the dam is released in what resembles a flash flood. Dam failures can be caused by geologic or seismic events, such as an earthquake or landslide. Heavy precipitation or high stream flows can erode a dam or surrounding rock, weakening it and making it more prone to collapse. Dams may also be poorly located, designed, built, or maintained, increasing the risk of failure. Floods from dam failure are discussed in this section, and floods associated with other types of infrastructure failures are discussed in the "**Human Caused Hazards**" section.

Floods are dangerous for several reasons. The floodwaters themselves can be deep enough for people to drown in and may move fast enough to sweep people away. Moving water can damage buildings with its own force (in extreme cases, it may move entire structures) or by carrying large debris that damages objects it collides with. Water can cause extensive damage to personal property when it gets into buildings, ruining building materials, furniture, electronics, and numerous other items, and may introduce hazardous materials or mold into the structures. Both standing and moving water can be a barrier to movement, isolating people and hindering evacuation, rescue, or relief efforts.

Floods are often described in years, such as a 100-year or 500-year flood. This refers to the average chance of an event occurring in any given year. For example, a *100-year flood* is one of such magnitude that it has a 1 percent chance (one in 100) of occurring in any year, and a *500-year flood* is one that has a 0.2 percent chance (one in 500) of occurring in any year. The greater the number of years used to describe the flood, the more intense it is. The statewide floods that struck California over the winter of 1861–1862, turning the Central Valley into a giant lake up to 300 miles long, were estimated at a 500- to 1,000-year event.[27] The number of years used to describe a flood is a long-term average, not a precise length of time between events. There may be multiple 100-year floods within a few years, or even in the same year.

Flood-prone areas are known as *flood plains* and are designated by the severity of the flood event that causes inundation there. For example, an area that is flooded by a 100-year flood is called the 100-year flood plain. Flood plains are defined by FEMA in the 100-year flood plain

[27] USGS (United States Geological Survey). 2011. Overview of the ARkstorm Scenario. https://pubs.usgs.gov/of/2010/1312/of2010-1312_text.pdf.

(the “special flood hazard zone”), the area within the 500-year flood plain but outside of the 100-year plain (the “moderate flood hazard area”), and the area outside of the 500-year flood plain (the “minimum flood hazard area”). Within these three categories are a number of more specialized categories. Table 15 shows these detailed flood plain categories.

TABLE 15. FEMA FLOODPLAIN ZONES

Zone	Description
A	Within a 100-year flood plain, but the water height of the 100-year flood is not known.
A1-30 or AE	Within a 100-year flood plain and the water height of the 100-year flood is known.
AO	Within a 100-year flood plain, and the water height of the 100-year flood is between one and three feet but not specifically known.
A99	Within a 100-year flood plain, protected by flood protection infrastructure such as dams or levees.
AH	Within a 100-year flood plain, and the water height of the 100-year flood is between one and three feet and is specifically known.
AR	Within a 100-year flood plain, protected by flood protection infrastructure that is not currently effective, but is being rebuilt to provide protection.
V	Within a 100-year flood plain for coastal floods, but the water height is not known.
V1-30 or VE	Within a 100-year flood plain for coastal floods and the water height is known.
VO	Within a 100-year flood plain for shallow coastal floods with a height between one and three feet.
B	Within a 500-year flood plain or within a 100-year flood plain with a water height less than one foot (found on older maps).
C	Outside of the 500-year flood plain (found on older maps).
X	Outside of the 500-year flood plain (found on newer maps).
X500	Within a 500-year flood plain or within a 100-year flood plain with a water height less than one foot (found on newer maps).
D	Within an area with a potential and undetermined flood hazard.
M	Within an area at risk of mudslides from a 100-year flood event.
N	Within an area at risk of mudslides from a 500-year flood event.
P	Within an area at risk of mudslides from a potential and undetermined flood event.
E	Within an area at risk of erosion from a 100-year flood event.

Location and Extent

In Colton, the 100-year flood plain covers the Santa Ana River, Reche Canyon Creek, and Warm Creek channels, along with several areas on either side of these channels. Notably, large areas of the Agua Mansa Industrial Corridor situated just north of the Santa Ana River and parts of the Reche Canyon Mobile Estates mobile home park are within the 100-year flood plain. There are isolated patches of 100-year flood plain at the N Street Underpass and around the intersection of Pennsylvania Avenue and Valley Boulevard. Areas outside of the 100-year flood plain on either side of the Santa Ana River and Reche Canyon Creek are within the 500-year flood plain, including much of the Cooley Ranch neighborhood and parts of downtown. Some parts of the

500-year flood plain are protected by levees, including the area south of the Santa Ana River near Pellisier Road and a residential area near Garcia Elementary School. **Figure 5** (page **39**) shows the flood-prone areas in Colton, although localized flooding may occur outside of these mapped areas.

There are no dams in Colton, although the City does face an inundation risk from the failure of the Seven Oaks Dam and Cactus Basin #3. Seven Oaks Dam located approximately 12 miles east of Colton on the Santa Ana River. The U.S. Army Corps of Engineers built the dam in 2000; it is operated jointly by the San Bernardino County Flood Control District and the Orange County Flood Control District. It stands 550 feet tall and is used mostly for flood control purposes. The dam allows the Santa Ana River to flow normally most of the time, only impounding water as necessary to protect Colton and other downstream communities from floods. It can hold 145,600 acre-feet of water, or approximately 47 billion gallons.[28]

The other dam of concern in Colton is the Cactus Basin #3 located in the neighboring city of Rialto, is an earth dam completed in 2017. Designed to create temporary holding capacity for storm runoff, it has a storage capacity of 528.4 acre-feet, approximately 172 million gallons of water. It is part of a larger flood control system designed to protect residences, businesses, and public infrastructure adjacent to the Cactus Channel and Rialto Channel in the cities of Rialto and Colton.[29]

The hazard zone for failure of the Seven Oaks Dam covers the Santa Ana River floodway and areas on either side. It includes the Cooley Ranch neighborhood as well as large sections of land on the north bank of the Santa Ana River. The actual area affected by any failure of Seven Oaks Dam would depend on the nature of the failure and the amount of water impounded by the dam at the time. The inundation hazard zone for the Cactus Basin #3 is located along the western border of the City, following South Riverside Ave along the border between Colton and Rialto. The inundation zone extends into the City following Interstate 10 (I-10) at W Valley Blvd east to Pepper Ave with other small pockets north and south of the I-10. **Figure 6** (page **40**) shows the areas of Colton within the maximum extent of the dam failure zones.

[28] San Bernardino County. “Seven Oaks Dam.” https://dpw.sbcounty.gov/flood-control/seven-oaks-dam/

[29] Pyun, Y. (n.d.). Cactus Basin #3 in San Bernardino County, CA. The Daily News Leader. https://data.newsleader.com/dam/california/san-bernardino-county/cactus-basin-3/ca10374/

FIGURE 5. FLOOD HAZARD ZONES

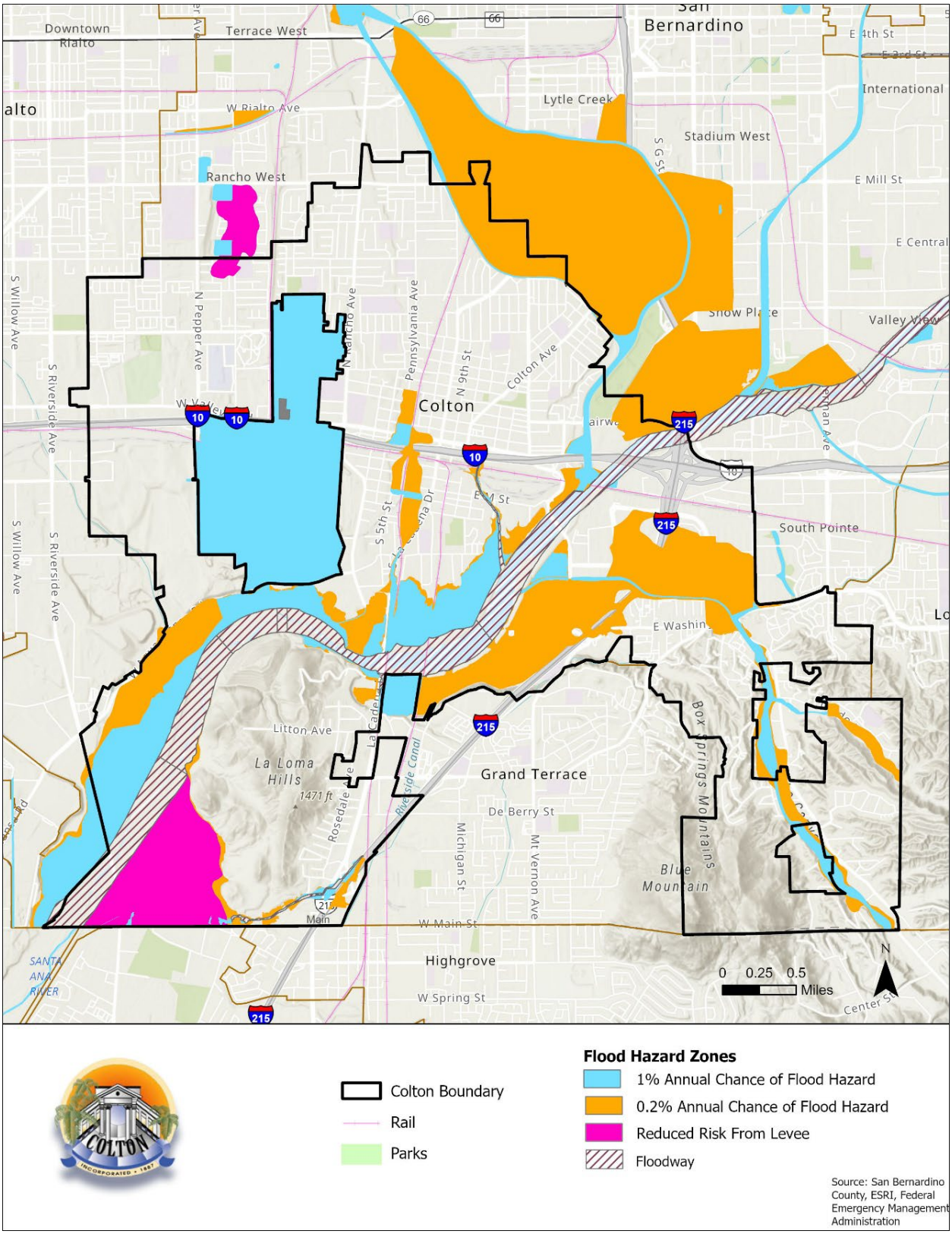
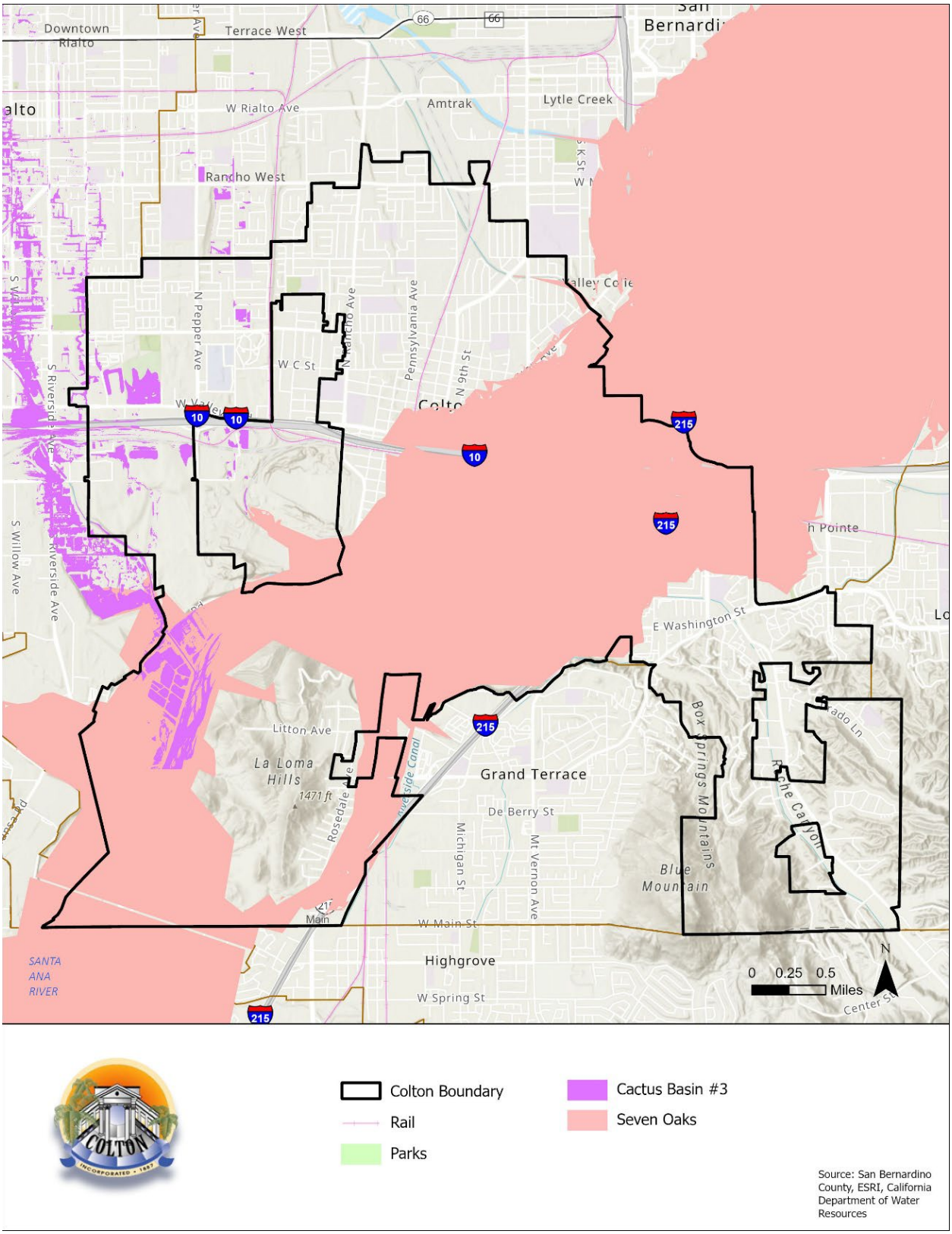


FIGURE 6. DAM INUNDATION ZONES



Past Events

Colton's location on the Santa Ana River has historically placed it at greater risk from flooding. There are records of flood events dating as far back as 1769. Notable early floods include those over the winter of 1861–1862, which caused widespread devastation throughout California. Records from the time reported up to 50 feet of water in the Santa Ana River channel near Agua Mansa.[30] The construction of the Seven Oaks Dam upriver in 2000 has helped to control flood events, if not prevent them entirely. There have been several flood events in Colton since the community was first developed.

- During the winter of 1883–1884, record rainfall in the San Bernardino Valley caused extensive damage to the new railroad tracks in and around Colton and altered the mouth of the Santa Ana River by three miles.
- A storm in February of 1891 caused over 4.5 inches of rainfall in the area in a single day, resulting in widespread damage throughout the San Bernardino Valley.
- Heavy rainfall in 1894 caused flooding around the Santa Ana River in Colton and destroyed railways in the area.
- Storms in January of 1909 flooded the Santa Ana River and other regional water bodies. Railroads in Colton reported damage.
- A heavy storm around New Years in 1910 created over 4.2 inches of rainfall around San Bernardino, leaving the Santa Ana River at its highest peak in 20 years. Colton was isolated, and a train traveling through the community from Los Angeles fell into the Santa Ana River.
- Storms in early 1914 flooded railroads, roadways, and orchards throughout the San Bernardino Valley area, including in Colton.
- Multiple storms in January of 1916 left cities isolated and destroyed numerous buildings, bridges, and roadways. An estimated 50 people died throughout southern California.
- Heavy rainfall over the winter of 1921–1922 caused flooding along the Santa Ana River, destroying railways, bridges, and roads.
- A major storm in early 1938 caused flooding throughout Southern California, including along the Santa Ana River. Fourteen people died in San Bernardino County, and the damage total is estimated at $12 million (approximately $266 million in 2024 values). Statewide, 210 people were reported dead or missing, and over 1,500 homes were destroyed. Flooding from this storm helped build support for flood control infrastructure in the region.
- In January of 1943, 150 families in San Bernardino and Colton had to evacuate due to an intense storm. Several roads and bridges in the area were damaged.
- Storms in December of 1965 caused flooding in the San Bernardino Mountains and the communities below them. In Colton, two boys fell into the Santa Ana River and had to be rescued.

[30] San Bernardino County. "Flood History." https://dpw.sbcounty.gov/flood-control/history/#:~:text=The%20flood%20of%201825%20is,of%201884%20approaches%20this%20category.

- Floods in early 1969 resulted in substantial damage throughout San Bernardino County, including in and around Colton. Statewide, damages came to $300 million (over $2.5 billion in 2024).
- A strong storm in March of 1970 killed one person and caused extensive flooding all over the northern Inland Empire region. A series of storms later in the year caused more widespread flooding and washed out a number of roads.
- A series of storms in January of 1993 caused the Santa Ana River to overtop its banks, leading to widespread flooding in nearby communities.
- Storms in December of 2010 caused flooding throughout Colton, particularly in the Reche Creek neighborhood. Roads and bridges were also affected. [31]
- A storm in December of 2021 caused flooding and mudslides throughout Colton. Police had to issue citations to motorists that were going around barriers and traffic signs. [32]
- In August of 2023, Tropical Storm Hillary brought heavy rains throughout San Bernardino County and Colton. According to the City, flooding caused the closure of roads, including Valley St. and Sperry Dr.
- In December of 2023, a powerful winter storm fueled by an atmospheric river brought very heavy rainfall of 5" to 14" across Southern California. Numerous flash floods and mud and debris flows were reported across the region, including Colton. [33]
- February of 2024 brought major storms to the region. In Colton, Valley Blvd. was closed due to flooding from Grand Ave to Hermosa Ave, and Cypress Avenue was blocked from Valley to H St.

Colton has never experienced a dam failure event, although there have been four substantial dam failure events in the state's history.

- In 1916, heavy rainfall caused multiple dam failures in San Diego County, killing over 20 people. [34]
- In 1928, the St. Francis Dam on the Los Angeles Aqueduct experienced a sudden and catastrophic failure, causing a flood that killed at least 430 people, if not more. [35]
- In 1963, the Baldwin Hills Dam in a West Los Angeles neighborhood collapsed, killing five people and destroying 277 homes. [36]

[31] Colton, City of. 2011. City of Colton Hazard Mitigation Plan. http://ca-colton.civicplus.com/DocumentCenter/View/3138.; San Bernardino County. "Flood History." https://dpw.sbcounty.gov/flood-control/history/#:~:text=The%20flood%20of%201825%20is,of%201884%20approaches%20this%20category.; NWS (National Weather Service). 2017 (Updated March 2025). A History of Significant Weather Events in Southern California Organized by Weather Type. https://www.weather.gov/media/sgx/documents/weatherhistory.pdf

[32] Colton Police Dept. https://www.facebook.com/watch/?v=917197245823533

[33] Weather.Gov2024 - A History of Significant Weather Events in Southern California Organized by Weather Type

[34] McGlashan, H. D., and Ebert, F. C. 1918. Southern California Floods of January, 2016. https://pubs.usgs.gov/wsp/0426/report.pdf.

[35] Association of State Dam Safety Officials (ASDSO). 2018a. "Case Study: St. Francis Dam (California, 1928)." https://damfailures.org/case-study/st-francis-dam-california-1928/.

[36] ASDSO. 2018b. "Case Study: Baldwin Hills Dam (California, 1963)." https://damfailures.org/case-study/baldwin-hills-dam-california-1963/.

- The 1971 San Fernando (Sylmar) Earthquake damaged the Lower San Fernando Dam so seriously that it was near to failure. Over 80,000 people had evacuate from an 11-square-mile area below the dam, and dam operators had to drain 15 million tons of water from the reservoir. The U.S. Army Corps of Engineers built a new dam in 1975-6 to supplement the Lower San Fernando Dam, which was also upgraded.[37]

More recently, in February of 2017, intense rainfall caused damage to the spillways at Oroville Dam in northern California. Although the dam itself was not threatened, collapse of the eroding spillways could have released billions of gallons of water. Approximately 188,000 people were evacuated, although ultimately there was no loss of life or damage beyond the dam itself and associated infrastructure.[38]

Risk of Future Events

The community has an extensive history of flood events. While flood control infrastructure and drainage systems have helped to reduce the intensity of floods, they are not always able to fully contain floodwaters. Floods do not occur at regular times in most of California, including Colton. Flood events may occur in multiple successive years, or there may be decades between one flood and the next. However, all indications are that, eventually, Colton will experience another major flood event.

It is unknown how severe future flood events could be. The 1938 flood, the most severe since Colton's founding, is considered a 500-year storm and repeat of such an event is plausible.[39] The most severe flood event in California's recorded history, the 1861–1862 winter flood, is considered a 500- to 1,000-year event and is likely the most extreme of reasonably possible future events. If a repeat of this flood happens, scientists estimate that it would cause approximately $1.7 billion of damages in San Bernardino County and take two weeks to restore power and several days to restore communications.[40]

Dams are critical infrastructure pieces with potentially catastrophic consequences if they fail. Dams are heavily engineered to minimize the risk, especially new dams such as Seven Oaks. Additionally, as Seven Oaks Dam only impounds water during flood events, dam failure would likely create a substantial hazard only during or shortly after a flood. There is some risk of Seven Oaks Dam experiencing a failure, but the risk is likely very low.

Climate Change Considerations

Climate change is expected to affect precipitation patterns in California, which are likely to influence future flood events. A recent study found that the number of very intense precipitation days in California is projected to more than double by the end of the century, increasing 117 percent[41] and making it likely that flood events will become more frequent. More flood events

[37] Page, R.A., Boore, D.M., and Yerkes, R.F., 1995, "The Los Angeles Dam story: U.S. Geological Survey Fact Sheet 096–95."

[38] France, J. W., Alvi, I. A., Dickson, P. A., et al. 2018. Independent Forensic Team Report: Oroville Dam Spillway Incident. https://damsafety.org/sites/default/files/files/Independent%20Forensic%20Team%20Report%20Final%2001-05-18.pdf.

[39] Romo, R. 1988. "Flood of Memories: Longtime Valley Residents Recall 1938 Deluge That Took 87 Lives, Did $78 Million in Damage." The Los Angeles Times, February 22.

[40] USGS (United States Geological Survey). 2011. Overview of the ARkstorm Scenario. https://pubs.usgs.gov/of/2010/1312/of2010-1312_text.pdf

[41] Polade, S. D., Gershunov, A., Cayan, D. R., et al. 2017. Precipitation in a warming world: Assessing project hydro-climate changes in California and other Mediterranean climate regions. Scientific Reports

could somewhat increase the risk of dam failure, as it would require Seven Oaks Dam to be used more often and potentially to hold back more water.

The potential increase in intense precipitation days may be due at least in part to expected changes to phenomena called atmospheric rivers (ARs), which are bands of very moist air that can create intense storms. Although only approximately a dozen of these storms occur in an average year, 40 to 50 percent of California's precipitation is caused by AR events.[42] These storms often cause flooding due to their intensity. In Southern California, the number of AR storms is expected to remain constant, although the storms are projected to become 10 to 20 percent more intense on average, increasing the odds that an individual AR storm will cause flooding.[43]

Another potentially contributing factor is the El Niño Southern Oscillation (ENSO, often called El Niño), a natural cycle in the water temperatures and wind in the eastern tropical Pacific Ocean. Conditions change between three states (warm, neutral, and cold) as part of the regular ENSO cycle, which affects precipitation in California. The warm phase (also called El Niño) usually increases precipitation in California, and the cool phase (called La Niña) generally decreases it. Scientists have not yet identified if climate change may affect the ENSO cycle,[44] but there may be significant ramifications for flood events in Colton if there is a connection.[45]

Geologic Hazards

For the purposes of this Plan, the term "geologic hazards" refers to landslides and subsidence. Earthquakes and other hazardous conditions related to seismic activity are discussed under the "seismic hazards" section.

Description

Landslide

A *landslide* occurs when a hillside or slope becomes unstable, and the material of the slope, such as soil and rocks, slides down the side. A landslide may be caused by the shaking of an earthquake, which can decrease the slope's stability or fracture the materials that making it up, causing it to become unstable. Alternatively, moisture-induced landslides occur when the ground soaks up enough water to lose its stability. This usually happens because of a period of long or intense rainfall but leaking water pipes or even overwatering landscapes may cause landslides. In these cases, the sliding material may become so waterlogged that it turns to mud, creating a type of landslide known as a *mudslide* or *mudflow*. Landslides are usually sudden, although some hillsides may slide very slowly over a long period of time.

Landslides typically occur on slopes with loose and fractured materials, and they are more likely to happen on steep slopes than those with shallow rises. Excavation of a slope may trigger a landslide or make one more likely to occur, since excavation can make a hillside weaker.

[42] Dyches, P. 2017. "NASA estimates global reach of atmospheric rivers." https://climate.nasa.gov/news/2645/nasa-estimates-global-reach-of-atmospheric-rivers/.

[43] Oskin, B. 2014. "'Atmospheric Rivers' to Soak California as Climate Warms." https://www.livescience.com/49225-atmospheric-rivers-double-climate-change.html.

[44] Chen, C., Cane, M. A., Wittenberg, A. T., et al. 2016. "ENSO in the CMIP5 Simulations: Life Cycles, Diversity, and Responses to Climate Change." Journal of Climate, 30. Pages 775-801

[45] Keupp, L., Pollinger, F., Paeth, H. 2016. Assessment of future ENSO changes in a CMIP3/CMIP5 multi-model and multi-index framework. International Journal of Climatology, 37(8). Pages 3439-3451

Hillsides that have recently burned in a wildfire are also more likely to experience landslides due to the loss of plant cover—plants help hold a hillside together and allow water to more harmlessly infiltrate the soil—and physical changes to the soil from the intense heat that make it less able to absorb water.[46]

The moving material of a landslide can damage or destroy buildings or structures in its path. People caught in the landslide may be crushed or buried, causing injury or death. A landslide may also cover a roadway or rail line, blocking transportation service until the material can be cleaned up. Due to their fluid nature, mudslides may travel far beyond hilly areas and affect flat terrain.

Subsidence

Subsidence is when the surface of the ground appears to sink. It happens when soils compact or collapse into empty spaces. Subsidence is often caused by the extraction of groundwater or pumping fuels, as these materials help support the weight of the ground above them. When they are pumped out, the soil may be unable to hold itself up and collapses into the empty space, causing the surface to drop with it. Mining activities, natural cave collapses, and seismic activity may also cause soils to subside. Subsidence can occur quickly, although it is more commonly a gradual event that causes damage over a long period of time. *Sinkholes* are a small-scale, rapid form of subsidence.

Subsidence is hazardous to any structure built on or in the subsiding soils. Buildings built on the soil sink with it, sometimes causing the foundations, walls, or floors of the building to crack. This can damage the building or objects inside of it and may make the building structurally unsound and prone to collapse. Roads, railways, utility lines, and other infrastructure on or in the soil can be broken by subsidence, creating gaps in service networks and potentially causing releases of wastewater, natural gas, or other substances that can create further hazards.

Location and Extent

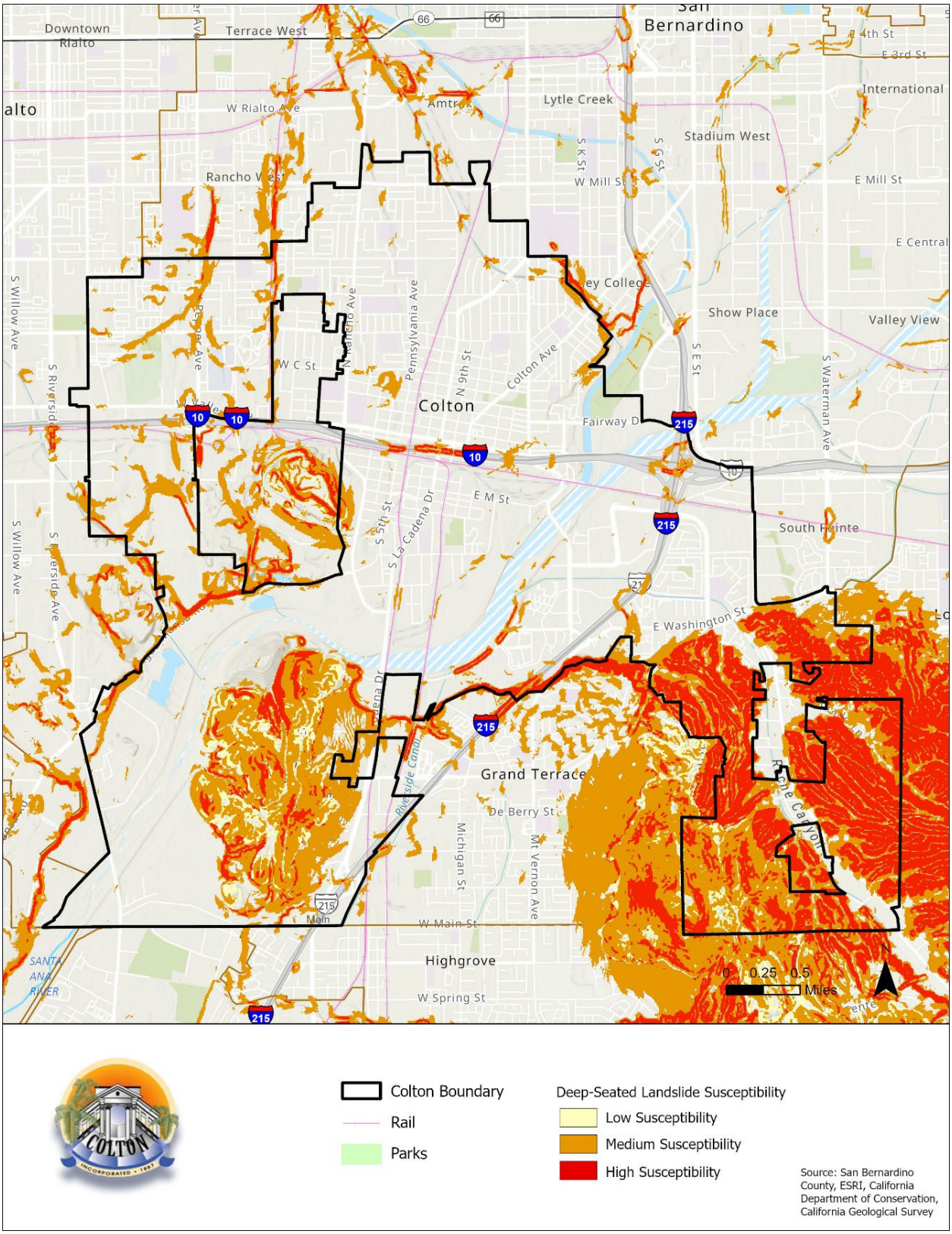
Landslide

In Colton, the areas at the greatest risk of landslides are the hills of the Reche Canyon neighborhood, much of the La Loma Hills, and the slopes of Slover Mountain. There are areas of more limited landslide risk along the southern side of the La Loma Hills, the cliffs along West Agua Mansa Road and the northern border of Grand Terrace, and the slopes above the Santa Ana River near Scenic Drive. **Figure 7** (page **46**) shows the areas in Colton at the greatest risk of landslides.

There is no standard scale for a landslide; they are usually measured by how much material slides during the event. The California Geological Survey has followed a scale of landslide susceptibility that is based on slope steepness and the strength of the underlying rock, with 0 being no susceptibility and 10 being the highest susceptibility. For the purposes of this Plan, an area with a susceptibility of 7 or above is considered a high-risk area.

[46] Gaud, W. S. n.d. “Fire Effect on Soil.” https://www2.nau.edu/gaud/RiodeFlag/slfr.htm

FIGURE 7. LANDSLIDE HAZARD ZONES



Subsidence

All of Colton sits atop the Upper Santa Ana Valley groundwater basin, and specifically the Riverside-Arlington and Rialto-Colton subbasins. Since both subbasins are actively pumped for groundwater, subsidence remains a risk throughout the entire community.

Subsidence is generally measured by the distance that the land has sunk (e.g., in feet or inches) or in the rate of subsidence (e.g., inches per year).

Past Events

Landslide

There is no record of substantial landslides in Colton, although major events have occurred in the region. The most significant landslide took place on December 25, 2003, after a strong storm dropped over two inches of rain on recently burned slopes in the San Bernardino Mountains. A series of mudslides covered parts of San Bernardino and Highland and made it as far as the runways of the closed Norton Air Force Base (now San Bernardino International Airport), depositing 18 feet of mud in the Santa Ana River basin. The mudslides killed 14 people, injured another 10, and caused over $5 million in damage. There have also been multiple landslides in the Waterman Canyon area, approximately seven miles north of downtown Colton.[47]

Subsidence

Subsidence has occurred in Colton, although at relatively low rates. Historical reports identify approximately 2.5 inches of subsidence in northern Colton between 1933 and 1960, and slightly more than 1.0 inch of subsidence near downtown Colton over the same time period.[48] More significant levels of subsidence have been reported elsewhere in the Upper Santa Ana Valley groundwater basin, particularly northeast of Colton in San Bernardino. The most recent subsidence events occurring in the City are the result of sinkholes. Sinkholes are considered a specific type of subsidence where the ground collapses downwards due to the dissolution of underlying rock, often creating a distinct depression.

- On December 30th, 2011, the Mount Vernon Avenue Bridge over Interstate 10 was temporarily closed after a sinkhole about 15 feet deep and eight feet across collapsed in the southbound lane on the bridge. City crews were able to temporarily fill the hole to reopen the road, and several days later it was closed again so crews could make a permanent fix.
- The southern side of the Mount Vernon Avenue Bridge over the Santa Ana River was closed to traffic on August 14th, 2014, after damage from recent rains. Officials said recent rains undermined the footings under the bridge.
- On August 28th, 2017, the Mount Vernon Avenue Bridge was temporarily shut down once again from a sinkhole caused by recent rains and storms from the previous year. The sinkhole and bridge were inspected and determined that the hole—roughly 6 to 10 feet deep and about 15 by 10 feet wide—would not affect the structural integrity of the

[47] NOAA (National Oceanic and Atmospheric Administration). 2025. “Storm Events Database.” https://www.ncdc.noaa.gov/stormevents/.

[48] Fife, D. L., Rodgers, D. A., Chase, G. W., et al. 1976. Special Report 113: Geologic Hazards in Southwestern San Bernardino County, California.

bridge. Crews filled the hole and placed a steel plate over it until more permanent repairs could be made.

- Major storms brought intense rain to the City on February 5th, 2024. Runoff caused part of a side street in one neighborhood to collapse. The owner of a home nearby was told to be prepared to evacuate.

Risk of Future Events

Landslide

Although substantive landslides have not occurred in Colton in recorded history, parts of the community do face an elevated risk from these events. It is likely that landslides will occur in Colton at some time in the future, although past records indicate that these events will be rare. Moisture-induced landslides will likely be somewhat more common than seismically induced ones.

Subsidence

Subsidence remains a possible hazard in Colton, although effective groundwater management has helped to reduce the risk level. Continued effective management is expected to help decrease but not eliminate the risk. The Rialto-Colton subbasin, which sits under north and east Colton, is considered at medium-to-high risk of future subsidence, although it is not currently subsiding. The Riverside-Arlington subbasin, which sits under south and west Colton, is not currently ranked due to a lack of available data.[49] However, given that it is farther from the areas that historically experienced high subsidence levels, combined with a lack of subsidence throughout the entire region in recent years, it is reasonable to assume that the risk level for this subbasin is the same or less as the Rialto-Colton subbasin.

Climate Change Considerations

Landslide

There is no evidence that climate change affects seismic activity to any appreciable degree, and so climate change is not expected to have any effect on seismically induced landslides. Climate change may increase the frequency and/or intensity of moisture-induced landslides, given a possible increase in the intensity of major storm systems (as discussed in the "**Flooding**" section). Such an increase would likely cause higher precipitation levels, which could lead to slopes absorbing more moisture and becoming more unstable. As a result, landslides may become larger or could occur more often. Climate change may also increase the amount of land burned by wildfires (as discussed in the "Wildfires" section), which could also increase the likelihood of substantial landslides in Colton.

Subsidence

Subsidence in and around Colton has historically been linked to excessive groundwater pumping causing a decline in groundwater levels and resulting in the soil above compacting into the now-empty space. Climate change is expected to cause an increase in the frequency

[49] DWR (California Department of Water Resources). 2014. Summary of Recent, Historical, and Estimated Potential for Future Land Subsidence in California. https://www.water.ca.gov/LegacyFiles/groundwater/docs/Summary_of_Recent_Historical_Potential_Subsidence_in_CA_Final_with_Appendix.pdf

and severity of drought conditions, which could potentially affect groundwater levels (thus increasing the risk of further soil compaction). However, groundwater is more resilient to the effects of climate change than are other water resources, as discussed in the "**Drought**" section.

Human Caused Hazards

This Plan defines *human-caused* hazards as hazards that are a direct consequence of human activity or structures. They may be caused by natural hazard events or by human actions. In this Plan, human-caused hazards refer to infrastructure failure, hazardous material release, or terrorism. Potential consequences of human-caused hazards, such as wildfires or floods, are discussed in separate sections.

Description

Infrastructure Failure

Infrastructure failure is when an infrastructure component or network fails, creating a risk of harm to people, property, or other community assets. They often occur as a result of a natural hazard, such as an earthquake or flood. Infrastructure failures may also be caused by human error, deliberate sabotage, or because the infrastructure was not properly maintained and failed due to overuse or unrepaired damage.

One type of infrastructure failure—*active failure*—occurs when the failure releases a substance that is harmful or potentially harmful, or the failure directly causes damage or injury. For example, a break in a pipeline that releases flammable natural gas, or the collapse of a bridge would be considered an active failure. Alternatively, *passive failure* occurs when the infrastructure fails in such a way that it cannot function as intended. The failure itself may not be dangerous, but the loss of function may create a hazardous situation. For example, a clogged storm drain is not dangerous, but it could cause flooding if this infrastructure failure happens during heavy rainfall. Some infrastructure failures may qualify as both. For example, a leak in a water tank can be directly dangerous (it releases a large amount of water that could create a flood) and may cause an indirect risk by decreasing water supplies.

Hazardous Materials

Hazardous materials are a wide-ranging category of substances that can cause death or serious harm to people or may significantly damage human or environmental health. It includes materials that are toxic, flammable, explosive, corrosive, infectious, or radioactive. Some hazardous materials are only dangerous under specific circumstances (such as flammable materials that need to be exposed to a heat source to ignite), while others may be dangerous at all times. Hazardous materials can occur naturally or may be manufactured.

Hazardous materials pose a risk when released into the environment or an uncontrolled setting. This typically happens when a storage container or piece of equipment containing the material breaks, releasing the substances inside. It can happen through industrial accidents, transportation crashes, or other disasters (e.g., an earthquake that breaks a storage container). On occasion, hazardous materials may be released as a deliberate act.

Hazardous materials are widely used and are safe in most cases when used properly with the correct handling protocols. Some hazardous materials, such as cleaning supplies, may be found in almost all homes and businesses. Many businesses use hazardous materials regularly, and some manufacture hazardous materials for sale. Hazardous material that does not serve any

useful role may be considered *hazardous waste*. This Plan is concerned with the release of unusually harmful substances or large quantities of hazardous materials. It does not address the potential of small-scale hazardous material releases of common supplies, such as cleaning supplies under a sink or a spare can of gasoline in a shed.

Mass Casualty Incident/Terrorism

A Mass Casualty Incident (MCI) is an event that overwhelms local resources due to a large number of casualties, requiring a significant shift in how emergency medical services and healthcare facilities respond. MCIs can be caused by natural disasters, accidents, or deliberate acts like mass shootings. The key challenge is managing a surge of patients beyond the capacity of normal resources, necessitating triage, optimized resource allocation, and a focus on maximizing positive outcomes for the most critically injured.

Terrorism is the use of force or the threat of force to intimidate people or government agencies with the intent to achieve some specific social or political outcome. It may be used to achieve any number of objectives, such as changes to government policy or to influence an election. Terrorism may sometimes overlap with hate crimes or acts of war, and the boundaries between these acts and terrorism are not always clear.

Acts of terror may take many different forms. Commonly, terrorists will attempt to kill or injure people, damage or destroy property or infrastructure, disrupt government operations, interrupt key services, create mass uncertainty or fear, or some combination of these or other goals. Conventional firearms or explosives are the most common weapons for terrorists, although other methods may be used.

Increasingly, terrorists may use computer viruses or other methods to steal information from databases or to disrupt or destroy computer networks and any infrastructure that may rely on these computers, a tactic known as *cyberterrorism*. The use of weapons of mass destruction (biological agents, chemical agents, radioactive materials, or high-yield explosives) is not unprecedented but is extremely rare.

Power Failure

An *energy/power failure* occurs within an electric power system when the total real or reactive power of the power plants in the system is insufficient to supply all consumers with electric power of the required quality. These events are considered a *lifeline system failure*. These failures or outages can be the primary hazard, or these events can directly result from another hazard, such as an earthquake, extreme weather event, or flood. These failures can also be in conjunction with other lifeline system failures such as natural gas, communication, drinking water, wastewater disposal, or transportation. Power failure can exacerbate and or create detrimental effects on these various operational and lifeline systems. For this hazard profile discussion, energy/power failure incidents are the primary hazard of concern; however, power failure associated with other hazard events is a concern for many of the other hazards profiled in this Plan.

Generally, these power failure events are the direct result of events beyond the City's control. These events often occur during a time of extreme demand/need for power, such as an extreme heatwave that creates an enormous strain on the power grid as residents try to stay cool. Most of these energy outages are short-term but can last for weeks if the situation is dire. There are three types of power/energy failures or outages; each of them is categorized based on duration and the actual effect of the failure/outage event.

1) **Permanent:** A massive loss of power typically caused by a fault on a powerline. However, power is restored automatically once the fault has been cleared.
2) **Brownout:** A sag (or drop) in voltage in an electrical power supply. They can cause equipment or various operational systems to perform poorly.
3) **Blackout:** A total loss of power in an area; the worst form of a power outage. Blackouts can last from a few minutes to multiple weeks, depending on the nature of the causing event and the configuration of the actual electric network.

A *Public Safety Power Shutoff* (PSPS) is a practice that Southern California Edison (SCE, one of the electricity providers in Colton) and other utility companies may use to preemptively shut off power in high-fire-hazard areas to reduce fire risk during extreme and potentially dangerous weather conditions (hot, dry, and windy). According to the SCE, PSPS events are the last-resort option in a line of operational procedures employed to mitigate fire risk when conditions warrant. In considering whether to shut off power to lines in affected areas, SCE considers the following factors, which may include, but are not limited to:

- The National Weather Service has issued Red Flag Warnings for counties with SCE circuits in High Fire Risk Areas.
- Ongoing assessments from the SCE in-house meteorologists regarding the local wind speed, humidity, and temperature conditions are informed by strategically deployed weather stations.
- Real-time situational awareness information from highly trained personnel positioned locally in High Fire Risk Areas identified as at risk for extreme weather conditions.
- Input from SCE fire management experts regarding any ongoing firefighting efforts.
- Specific concerns from local and state fire authorities regarding the potential consequences of wildfires in select locations.
- Awareness of mandatory or voluntary evacuation orders in place.
- Expected impact of de-energizing circuits on essential services such as public safety agencies, water pumps, traffic controls, etc.
- Other operational considerations to minimize potential wildfire ignitions.

According to the City of Colton Electric Utility (CEU) 2022 Wildfire Mitigation Plan (WMP), coordination with SCE is critical during extreme weather and other emergency events. When SCE has determined that a planned de-energizing event is necessary, CEU and SCE work cooperatively to reduce the impacts to customers within CEU's territory.

In the event of a planned de-energizing event by SCE, the following protocols have been established by CEU:

1) Coordinate with SCE trigger events and which circuits will be de-energized and the CEU territory affected.
2) Notify public safety officials, including first responders, health care facilities, and operators of telecommunications infrastructure by phone, email, or text.
3) Initiate startup and activation of the Agua Mansa Power Plant.

4) Notify impacted customers through targeted mass distribution, email, text, and phone.

5) Notify the general public through City website and message boards.

The CEU has reviewed and is familiar with SCE's WMP and the events leading to the decision to initiate de-energization their system. The CEU's communication strategy is designed to provide advance notification to customers—including public safety and critical infrastructure providers—who may be affected by a de-energization event. Advance notice to customers will be provided only when CEU has planned a de-energization event. When SCE has planned the de-energization event, the CEU will supplement SCE's notification process by posting the information on their website and informing field and office support staff of the pending event.

Location and Extent

Infrastructure Failure

Infrastructure failure may occur anywhere in Colton, given the extent of infrastructure networks in modern society; however, some infrastructure networks exist only in some parts of the community, and therefore the risk of failure from these networks is limited to certain locations. Any infrastructure component may fail, although well-maintained infrastructure that is protected from damage is less likely to experience a failure. There is no scale for measuring infrastructure failure.

Hazardous Materials

As discussed earlier, hazardous materials have become very commonly used, and there are many different ways to identify hazardous material sites. The U.S. Environmental Protection Agency (EPA) identifies 73 facilities that actively produce hazardous wastes in Colton. These facilities include mechanical dealerships and repair shops, gasoline and diesel fuel stations, industrial facilities, services such as pharmacies and dry cleaners, and institutional centers, among others.[50]

The California Department of Toxic Substances Control (DTSC) maintains records of hazardous waste facilities as well as sites that are currently known or suspected of having hazardous material contamination that fall under the state's jurisdiction or have in the past. There are 16 sites that DTSC has investigated and found contamination at, most of which the EPA has also identified. These sites are mostly industrial facilities, including railroad sites, iron and metalworking operations, and utility facilities.[51] Additionally, the California State Water Resources Control Board keeps track of facilities that affect local water quality, have the potential to do so, or have done so in the past. There are 36 such facilities in Colton, although only one is currently undergoing cleanup. Two other sites have not completed cleanup activities, but currently there are no active cleanups. A fourth site is being verified to determine whether cleanup activities have been successful, and the remaining 32 have successfully completed cleanup activities.[52]

[50] EPA (US Environmental Protection Agency). 2025. "Search: System Data Searches: RCRAInfo." https://www3.epa.gov/enviro/facts/rcrainfo/search.html.

[51] DTSC (California Department of Toxic Substances Control). 2025. "EnviroStor." https://www.envirostor.dtsc.ca.gov/public/.

[52] SWRCB (State Water Resources Control Board). 2025. "GeoTracker". http://geotracker.waterboards.ca.gov/.

Hazardous material releases resulting from transportation crashes/accidents may happen anywhere. Crashes/accidents on Interstate 10 or Interstate 215 may cause the release of hazardous materials, but such upsets may also happen on roads between freeways and hazardous material sites, as hazardous materials are likely transported along these routes. The rail lines through Colton are also a potential source of accidents that could cause hazardous material releases. The main east-west Union Pacific right-of-way through Colton is a high-hazard-area rail line. These areas make up 2 percent of the track length in California but have experienced 18 percent of derailments. Therefore, rail lines through Colton have an elevated risk of upsets that could potentially release hazardous materials. [53]

Areas within a quarter mile of a hazardous material facility are likely at risk of hazardous material releases. However, depending on the type and quantity of material released and the nature of the event, dangerous concentrations of the material may be limited to a very small radius or may spread to a much wider area. **Figure 8** (page **55**) shows the location of hazardous material facilities in the City (not including areas vulnerable to hazardous material release from roads or railways).

Mass Casualty Incident/Terrorism

Terrorism and MCIs may take place anywhere. Soft targets that draw crowds—festivals, concerts, theaters, arenas, cafes, plazas, mass transit, churches, schools, markets, and tourist spots—are common targets. However, terrorists may also attack symbolic targets (such as important monuments or symbols of a disfavored group or nation), government offices, political rallies, and vulnerable infrastructure (pipelines and electrical substations are common examples). While terrorist acts are often measured by the number of deaths or injuries, or by the amount of damage, there is no standard scale for terrorism.

Power Failure

The entire City of Colton is vulnerable to energy/power failure. As stated earlier, most power outage events are not necessarily caused by humans. The catalyst of an energy/power loss can be an overwhelming demand for power due to accidents, equipment malfunction/failure, weather conditions, or other natural hazards the City is susceptible to.

Power failure/shortage may occur in only small areas of the City, such as a single location or neighborhood, or the entire grid could fail, suddenly causing the entire City to lose power. Power/energy failure is indiscriminate in who, where, or what it affects; however, locations with older or aboveground infrastructure may be more susceptible to weather-related hazards. The duration of these power/energy failures completely depends on the severity of the actual cause of the power loss and what is required to repair the issue or issues.

The electricity industry operated for years through "vertically integrated utilities," meaning that they owned generation, transmission, and distribution, which typically had monopolies in their designated service areas. In 1996, the Federal Energy Regulatory Commission issued orders 888 and 889 requiring utilities with transmission infrastructure to provide nondiscriminatory access to all transmission customers.

One way for a utility company to comply with this new requirement was to allow an independent system operator (ISO) to operate their transmission system for them. ISOs do not own the

[53] IRSWG (California Interagency Rail Safety Working Group). 2014. Oil by Rail Safety in California: Preliminary Findings and Recommendations. https://sntr.senate.ca.gov/sites/sntr.senate.ca.gov/files/Oil%20By%20Rail%20Safety%20in%20California.pdf

electricity transmitted over the grid, and they allow market participants to transmit electricity at the best available price. In 1998, because of Order 888 and CA state legislation AB 1890, California ISO (Cal ISO) was incorporated as a nonprofit public benefit corporation to fulfill this mission. ISOs are often compared to air traffic controllers, as they independently manage the traffic on a power grid they do not own, much like air traffic controllers manage airplane traffic in the airways and on airport runways.

Cal ISO is one of nine independent system operators in North America (refer to **Figure 9**, page **56**). Collectively, they deliver over 2.2 million gigawatt-hours of electricity each year and oversee more than 26,000 miles of high-voltage power lines. These independent grid operators serve two-thirds of the United States. The City of Colton and CEU was granted approval by the Cal ISO Board to become part of the ISO in 2012. Becoming a participating transmission owner allows Colton to acquire transmission access to new renewable resources in California and the Southwest necessary to meet California's green power goals.

FIGURE 8. HAZARDOUS MATERIAL SITES

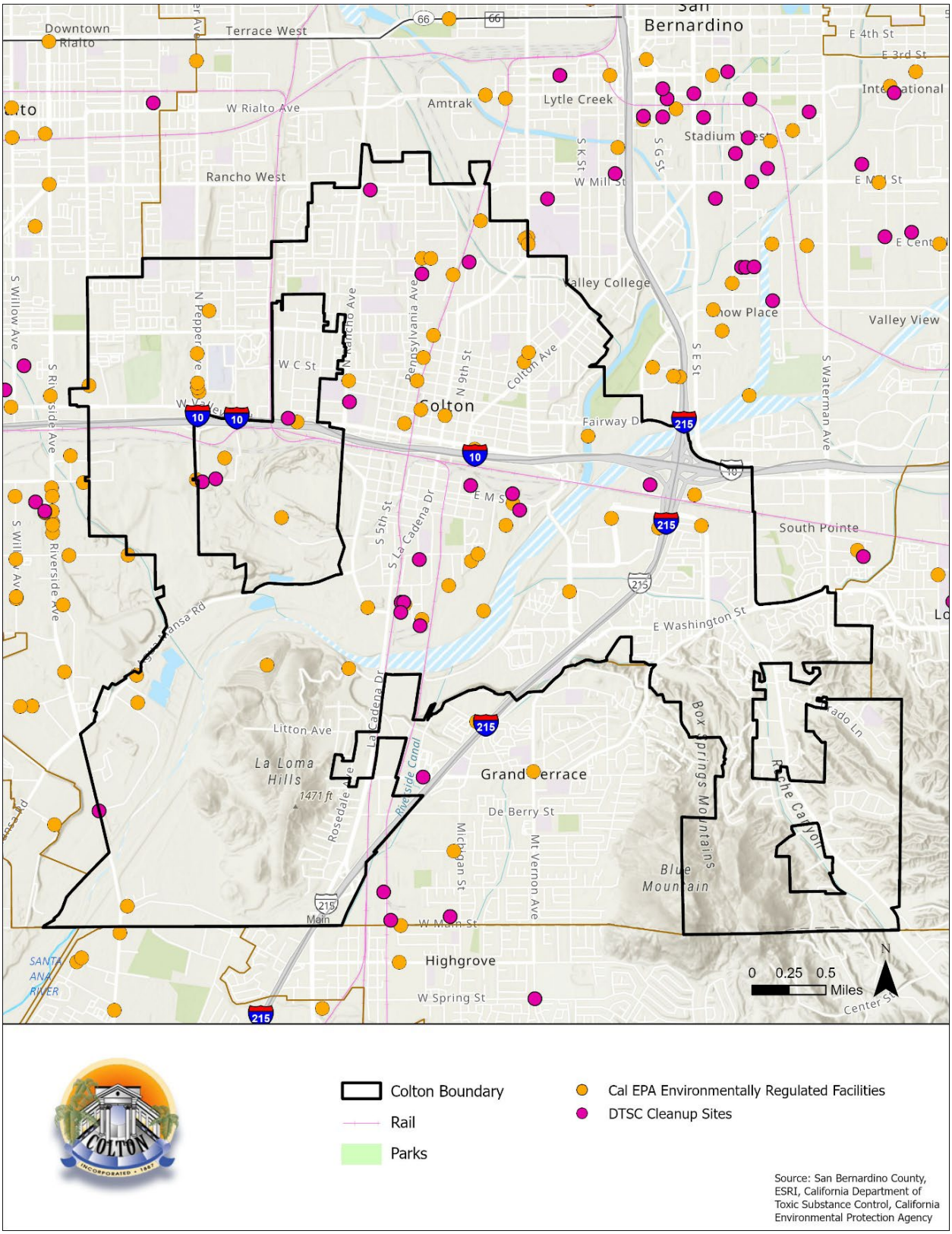


FIGURE 9. ISOS LOCATED IN NORTH AMERICA

Past Events

Infrastructure Failure

There is no record of major infrastructure failure in Colton. Small-scale infrastructure failure events have happened, such as downed power lines from heavy winds, breaks in water and sewage lines from earthquakes or landslides, and ponding as a result of blocked or overwhelmed storm drains.

Hazardous Materials

According to the EPA, there are 357 facilities or locations within the City that either use, store, transport, or produce hazardous materials. Due to the large number of industrial facilities in and around Colton, along with the railways and major freeways that run through the community, there have been a number of hazardous material releases in Colton. Since 2010, there have been 378 reported hazardous material releases or potential releases in the community, mostly associated with railroad operations. Petroleum fuels, such as diesel and gasoline, are among the most commonly released substances, although releases of acids, ammonia, and other industrial compounds have also occurred.[54] Although some releases or potential releases have prompted evacuations, there have been no major hazardous material releases in Colton's history. **Table 16** (page **57**) displays the hazardous material spills reported to Cal OES from 2010-2023. The City has an average of 27 reported spills annually.

[54] Cal OES. 2024. "Spill Release Reporting." https://www.caloes.ca.gov/office-of-the-director/operations/response-operations/fire-rescue/hazardous-materials/spill-release-reporting/

Table 16. Hazardous Materials Release Reporting	
Year	**Reported Releases**
2010	73
2011	37
2012	27
2013	23
2014	28
2015	22
2016	16
2017	25
2018	24
2019	26
2020	32
2021	19
2022	15
2023	11
Annual Avg	**27.00**
Source: https://www.caloes.ca.gov/cal-oes-divisions/fire-rescue/hazardous-materials/spill-release-reporting	

Mass Casualty Incident/Terrorism

The Global Terrorism Database, which tracks acts of terror since 1970, does not identify any terrorist acts in Colton. It does list 10 acts of terrorism in San Bernardino County, most notably on December 2, 2015, when two people pledging allegiance to the Daesh extremist group (also called ISIS, ISIL, or the Islamic State) attacked a holiday party in San Bernardino, killing 14 people and wounding 24 with firearms and pipe bombs before the terrorists fled and were killed by police.[55]

There has been one other terrorist attack in San Bernardino County that caused injury: on March 16, 1970, white extremists firebombed the house of Norris Gregory, San Bernardino's first African American City Council member. Gregory suffered minor injuries putting out the fire, which caused an estimated $4,000 damage. Other events include a 1970 firebombing of Redlands University that caused $40,000 in damage, a 2016 arson attack on a church in Redlands that caused $2,000 in damage, and a series of bombings and arson events in Trona in the spring of 1970 that may have been related to an ongoing strike at the American Potash Plant in the community.[56]

Power Failure

There have been multiple instances of power failure in Colton. The following are some of the larger failures on record.

[55] START (National Consortium for the Study of Terrorism and Responses to Terrorism). 2016. Global Terrorism Database. https://www.start.umd.edu/gtd/.

[56] START (National Consortium for the Study of Terrorism and Responses to Terrorism). 2016. Global Terrorism Database. https://www.start.umd.edu/gtd/.

- On September 1, 2017, a day when temperatures in Colton were expected to hit 107 degrees, a lightning strike caused 50,000 homes and businesses in Colton to lose power, forcing businesses and the school district to close. According to City staff, the lightning struck an Edison substation that the Colton Electric Utility uses to power the City. Power was restored to the majority of the City by approximately 5 p.m.
- An Edison power line went down near M Street and Mount Vernon on January 12, 2022**,** causing a significant power outage in portions of central and southeastern Colton and parts of Grand Terrace. Edison lines cross over Colton power lines, and when the line/pole fell, it caused damage to Colton lines. Edison crews had to remove cables that affected the Colton lines and caused the outage before Colton crews could begin work restoring power, one circuit at a time.
- A power outage affecting the Cooley circuit occurred in the late evening of August 31, 2023. Colton Utilities crews dispatched to diagnose and repair the issues. The majority of businesses and residential areas had their power restored by 10:30 a.m. on Friday, September 1. However, Rancho Mediterranean is a master-metered location with a single connection to the Colton Utility line. Upon thorough inspection of all equipment, facilities, cables, and infrastructure, it was determined that the fault was located on the property of 700 E. Washington, which fell outside the City's jurisdiction as Rancho Mediterranean is private property. To assist Rancho Mediterranean residents, a cooling center opened at the Gonzales Center at 670 Colton Avenue, where cell phones and other devices could be charged.

Risk of Future Events

Infrastructure Failure

Infrastructure failures are expected to continue to occur in and around Colton. Intense storm systems, landslides, and other events will likely continue to clog storm drains, break water and wastewater pipes, and bring down power lines. More significant infrastructure failure events are a possibility, particularly if such infrastructure is not well maintained, but the risk of these major events is unknown.

Hazardous Materials

So long as hazardous materials are used in Colton and transported through the community, hazardous material releases will continue to occur. Based on past experiences, there will likely be several small release events each year. Although major events have not occurred, the possibility of such releases remains.

Mass Casualty Incident/Terrorism

The risk of terrorism is generally a function of national or global conditions, such as social, political, and economic factors. The specific risk to an individual community cannot be accurately forecast. Colton is not a highly prominent city in the region, and so the risk is likely lower than for a number of other Southern California communities. At the same time, the significant industrial presence in Colton may make it more likely to be a target, and as mentioned before, terrorism may happen anywhere. Terrorism in Colton is likely to be a rare event, but the possibility is likely higher than some other nearby communities.

Power Failure

Today, several mechanisms are in place to monitor, manage, and adapt to changing conditions and demands to help reduce or eliminate energy failures. California and regional departments (Cal ISO, Federal Energy Regulatory Commission, Western Electricity Coordinating Council, North American Electric Reliability Corporation, California Public Utilities Commission, California Energy Commission), and CEU are focused on energy production, use, and management. Each agency plays a role in planning, managing, and coordinating the allocation of energy within California. Colton can experience a power/energy failure anywhere and anytime throughout the year. The probability of it occurring again will always be present, as the City depends on electricity to function.

Climate Change Considerations

Infrastructure Failure

Climate change may affect some types of infrastructure failure. As discussed elsewhere in this chapter, climate change may cause floods, landslides, wildfires, and severe weather events to occur more frequently and/or to be more severe. These natural hazards may result in infrastructure failure, and so climate change may indirectly cause infrastructure failure events to occur more often and/or with greater severity.

Hazardous Materials

Climate-related natural hazard events, such as increased precipitation and subsequent flooding, could cause an increase in hazardous materials releases. Some of these incidents could result from transportation crashes (due to poorer road conditions) or damage to storage containers or vessels containing these substances. Climate-related hazards could also exacerbate the effects and impacts of such events. For example, heavier rains could lead to more runoff from a contaminated hazardous materials site. These issues should be monitored during the five-year implementation period of this Plan.

Mass Casualty Incident/Terrorism

The link between mass casualty incidents/terrorism and climate change is not well understood. However, it has been suggested that the impacts of a changing climate may exacerbate existing social, political, religious, and ethnic tensions. For example, longer, more intense droughts may restrict food supply or limit economic growth for cities, regions, or even whole countries. Nevertheless, the likelihood of climate change impacting mass casualty incidents/acts of terrorism in Colton is negligible since these changes are more likely to impact developments on the national or international level.

Power Failure

Projections of changing climatic conditions through the end of the century suggest that the City should address future power failure concerns. Energy demand is not expected to increase significantly throughout the City (due to compliance with updated codes and requirements); however, some electricity production still occurs outside the City, reducing opportunities for Colton to be energy-independent. To better address energy/power failure, Colton's current and future climate change mitigation and adaptation efforts should prioritize energy efficiency measures, focus on continuing to generate energy locally from clean and renewable sources, and build reliability & redundancy using the latest energy storage and backup systems technologies.

SEISMIC HAZARDS

Description

Seismic hazards are associated with earthquakes and include fault rupture, liquefaction, and seismic shaking. Landslides, which are a potential consequence of earthquakes, are discussed separately under the "**Geologic Hazards**" section.

Fault Rupture

The shifting and movement of the Earth's tectonic plates is responsible for seismic events. These tectonic plates can pull away from, move toward, or pass by each other. As they do, the plates sometimes lock together. This creates tension, and the built-up tension is eventually released like a springboard. The tension dissipates into the Earth's crust.

The location at which two tectonic plates join is called a *fault line*. Fault lines are sometimes visible on the Earth's crust as sudden rifts or anomalies in the continuity of the landscape. California's major north-south fault line is the San Andreas Fault, where the North American and Pacific Plates meet. Constant friction between the two plates over the millennia has caused the areas where the two plates intersect to become fragmented, creating new, smaller faults.

The area near a fault line is at risk of damage due to the potential for a *fault rupture*—the deformation or displacement of land on either side of the fault, which may move a few inches to several feet in opposite directions. Any buildings or infrastructure situated around, on top of, or across a fault line could potentially be severely damaged or destroyed. The direction of the fault rupture depends upon the fault type. Dip-slip faults produce vertical shearing; strike-slip faults produce horizontal shearing; and oblique-slip faults produce both vertical and horizontal shearing. A fourth kind of fault, called a "blind" fault, produces virtually no visible land displacement.

Some faults have emerged recently in geologic history. Quaternary faults have developed any time between the Holocene Era and the present (within the last 1.8 million years). These faults are especially concerning since they are the most likely to be active and cause future earthquakes. The Alquist-Priolo Earthquake Fault Zoning Act enables California's State Geologist to designate zones surrounding active faults as Alquist-Priolo Special Study Zones, which is a special regulatory zone that requires additional study to determine the location of the fault and the limits of the area prohibited from surface construction on top of the known location of an active fault.

Liquefaction

Liquefaction occurs when water-saturated, loosely packed material (such as sand or silt) is suddenly shaken, as in an earthquake. This causes the material to temporarily act less like solid ground and more like a liquid. The material loses much of its stability when this occurs and may no longer be able to support any buildings or structures built either on or in it. Buildings, roadways, rail lines, or other structures built on the soil may be damaged or could collapse completely when liquefaction occurs. Pipelines or other utility lines running through a liquefaction zone can be breached during a liquefaction event, potentially leading to flooding or the release of hazardous materials.

Seismic Shaking

Seismic shaking is the actual shaking from an earthquake and is often the most damaging effect. The shaking is typically strongest at the epicenter, which is the point on the surface directly above the hypocenter (the focus or point of origin underground), and remains strong along the part of the fault that slipped, decreasing with distance from the fault. However, local geology can also affect how severe seismic shaking is. For example, an area located above firm bedrock may experience less shaking, while an area built on loose rocks and soil may experience more shaking, even if they are the same distance from the epicenter. The shaking can destroy buildings, roads, railways, power lines, utility pipes, and any other structure that is not able to resist the force of the earthquake. This damage may cause secondary hazards, such as fires from broken gas mains or downed power lines, floods and sinkholes from broken water pipes, or the release of hazardous materials, among others.

Location and Extent

Fault Rupture

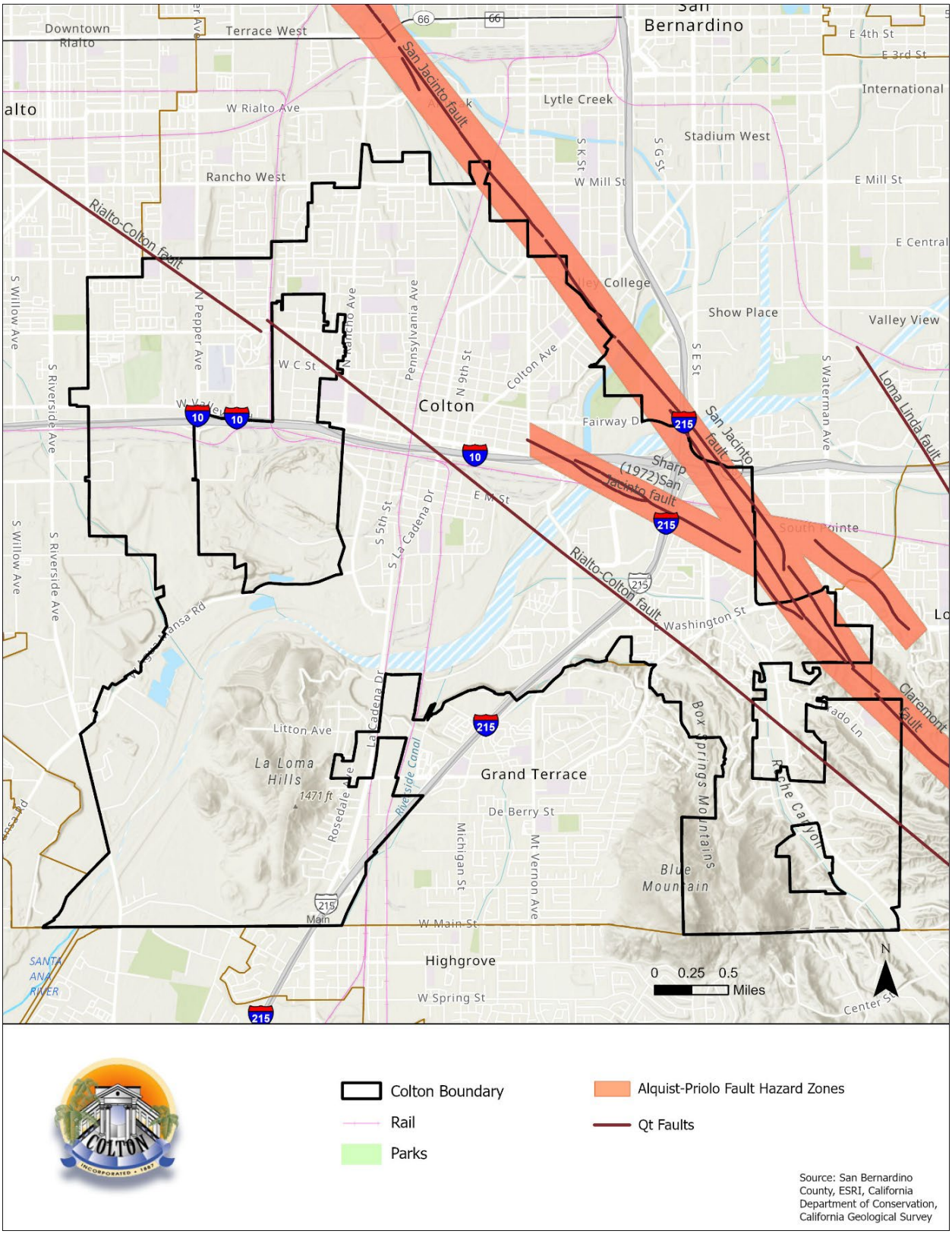
There is one fault in Colton that has the known potential to cause fault rupture: the San Jacinto Fault. This fault line passes along Colton's eastern border with the cities of Loma Linda and San Bernardino. It extends to the northwest to Lytle Creek and to the southeast as far as the outskirts of El Centro in the Imperial Valley. The total length of the fault is approximately 130 miles.[57] A second fault, the Rialto-Colton Fault, also runs diagonally through the City from northwest to southeast, very roughly cutting Colton in half. Relatively little is known about the Rialto-Colton fault, though if it is active (and there is some evidence suggesting that it is), there is a possibility that it could cause surface rupture.[58] **Figure 10** (page **62**) shows the fault rupture hazard zones in Colton.

There is no particular scale for measuring the magnitude or severity of fault rupture. Typically, a fault rupture is measured by the length of the section of fault that moved, or how far land on one side of the fault moved relative to the other (known as the *slip*). The longer the length of the fault rupture, the more area is affected by the physical shearing. The magnitude of the damage is often a function of the size of the slip.

[57] USGS (United States Geological Survey). 2015. "UCERF3: A New Earthquake Forecast for California's Complex Fault System". https://pubs.usgs.gov/fs/2015/3009/

[58] Gandhok, G., Catching, R. D., Rymer, M. J., et al. 2003. Shallow Geometry and Velocities along the Rialto-Colton Fault, San Bernardino Basin, California. American Geophysical Union Fall 2003 Meeting

FIGURE 10. FAULTS AND ALQUIST-PRIOLO SPECIAL STUDY ZONES



Liquefaction

The liquefaction risk in Colton is highest near the Santa Ana River between South La Cadena Drive and South Mt. Vernon Avenue. An area of medium liquefaction risk surrounds this zone, which includes the Cooley Ranch neighborhood between the Santa Ana River and Interstate 215, and in the upper parts of Reche Canyon south of Shane Drive. There is a lower (but still elevated) risk of liquefaction extending farther away from the Santa Ana River out to Valley Boulevard and Washington Street, and in the other low-lying areas of Reche Canyon. The Rialto-Colton Fault acts as a barrier to groundwater flow, limiting the liquefaction risk zone to the areas around the Santa Ana River upstream of the fault line.[59] **Figure 11** (page **66**) shows the liquefaction hazard zones in Colton.

Liquefaction is not measured using any specific scale. The severity of a liquefaction event is linked to the type of ground material, the amount of water, the strength of the shaking, and the size of the affected area.

Seismic Shaking

Colton is located in a seismically active area—the wider Southern California region is well known for seismic activity—and a number of different faults could cause seismic shaking in the community. There have been numerous past earthquakes that have affected the community to various degrees. All locations in Colton are at risk of seismic shaking.

The strength of seismic shaking is linked to a number of functions, including the amount of energy released by the fault rupture, the length of the fault rupture, and the hypocenter's depth. Generally, the more energy released, the longer the fault rupture, and the closer to the surface the hypocenter was, the stronger the shaking. The strongest earthquake ever recorded, the 1960 Valdivia earthquake in Chile, experienced an estimated fault rupture length of approximately 500 miles.[60] A substantially smaller fault rupture can still cause significant damage, depending on other characteristics. For example, the 1994 Northridge earthquake, one of the most damaging in Southern California, ruptured along a length of approximately nine miles.[61]

The intensity of seismic shaking is usually measured with the Modified Mercalli Intensity (MMI) scale. This is based on the amount of observed damage rather than a physical measurement of the earthquake itself. Different locations will have different MMI measurements depending on the amount of damage done. The MMI uses Roman numerals on a scale of I (1, the weakest) to XII (12, the strongest). **Table 17** (page **64**) shows the MMI scale.

[59] DWR (California Department of Water Resources). 2004. Upper Santa Ana Valley Groundwater Basin, Rialto-Colton Subbasin. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/8_002_04_Rialto-ColtonSubbasin.pdf

[60] Kanamori, H., and Cipar, J. J. 1974. Focal Process of the Great Chilean Earthquake May 22, 1960. Physics of the Earth and Planetary Interiors, 9(1974). Pages 128-136.

[61] USGS and SCEC (United States Geological Survey and Southern California Earthquake Center). 1994. The Magnitude 6.7 Northridge, California, Earthquake of 17 January 1994. Science, 266(5184). Pages 389-397

TABLE 17. MODIFIED MERCALLI INTENSITY SCALE		
Intensity	**Description**	**Description**
I	Instrumental	Felt only by very few people under especially favorable conditions.
II	Feeble	Felt only by a few people at rest, especially on the upper floors of buildings.
III	Slight	Noticeable by people indoors, especially on upper floors, but not always recognized as an earthquake.
IV	Moderate	Felt by many indoors and by some outdoors. Sleeping people may be awakened. Dishes, windows, and doors are disturbed.
V	Slightly strong	Felt by nearly everyone, and many sleeping people are awakened. Some dishes and windows broken, and unstable objects overturned.
VI	Strong	Felt by everyone. Some heavy furniture is moved, and there is slight damage.
VII	Very strong	Negligible damage in well-built buildings, slight to moderate damage in ordinary buildings, and considerable damage in poorly built buildings.
VIII	Destructive	Slight damage in well-built buildings, considerable damage and partial collapse in ordinary buildings, and great damage in poorly built buildings.
IX	Ruinous	Considerable damage in specially designed structures. Great damage and partial collapse in substantial buildings, and buildings are shifted off foundations.
X	Disastrous	Most foundations and buildings with masonry or frames are destroyed, along with some well-built wood structures. Rail lines are bent.
XI	Very disastrous	Most or all masonry structures are destroyed, along with bridges. Rail lines are greatly bent.
XII	Catastrophic	Damage is total. The lines of sight are distorted, and objects are thrown into the air.
Source: https://www.usgs.gov/media/images/modified-mercalli-intensity-mmi-scale-assigns-intensities		

In addition to the UCERF3, the USGS has also prepared a number of scenarios showing the potential intensity of different earthquakes depending on the location, fault, and magnitude of the earthquake. Several of these scenarios project shaking that would register at least VI (Strong) on the MMI scale. **Table 18** (page **65**) shows a sample of these scenarios.

TABLE 18. SELECTED EARTHQUAKE SCENARIOS			
Fault Name	**Magnitude (Mw)**	**Distance (Miles) ***	**MMI in Colton**
San Jacinto Fault	6.7	9	VII–VIII (Very Strong to Destructive)
	7.0	5	VIII–IX (Destructive to Ruinous)
	7.3	39	VII (Very Strong)
	7.8	64	VIII–IX (Destructive to Ruinous)
San Andreas	6.9	11	VII–VIII (Very Strong to Destructive)
	7.5	23	VIII (Destructive)
	7.8	54	VIII (Destructive)
	8.0	115	VIII (Destructive)
Elsinore Fault	6.9	25	VI (Strong)
	7.8	51	VII (Very Strong)
Pinto Mountain Fault	7.3	58	VI (Strong)

Source: USGS 2017

* As measured from downtown Colton to the modeled epicenter.

Seismic shaking may also be measured using the moment magnitude scale (MMS, denoted as Mw or sometimes M), which measures the amount of energy the earthquake releases. The MMS begins at 1.0 and increases the more energy is released. It is a logarithmic scale, meaning that the difference in energy between two measurements is substantially greater than the difference between the measurements themselves. For example, a 6.5 Mw earthquake releases approximately 1.4 times as much energy as a 6.4 Mw earthquake, and 1,000 times as much energy as a 4.5 Mw earthquake. The MMS replaces the Richter scale, which is a similar scale but less reliable when measuring large earthquakes. **Figure 12** (page **67**) displays the seismic shaking potential within the City.

FIGURE 11. LIQUEFACTION HAZARD ZONES

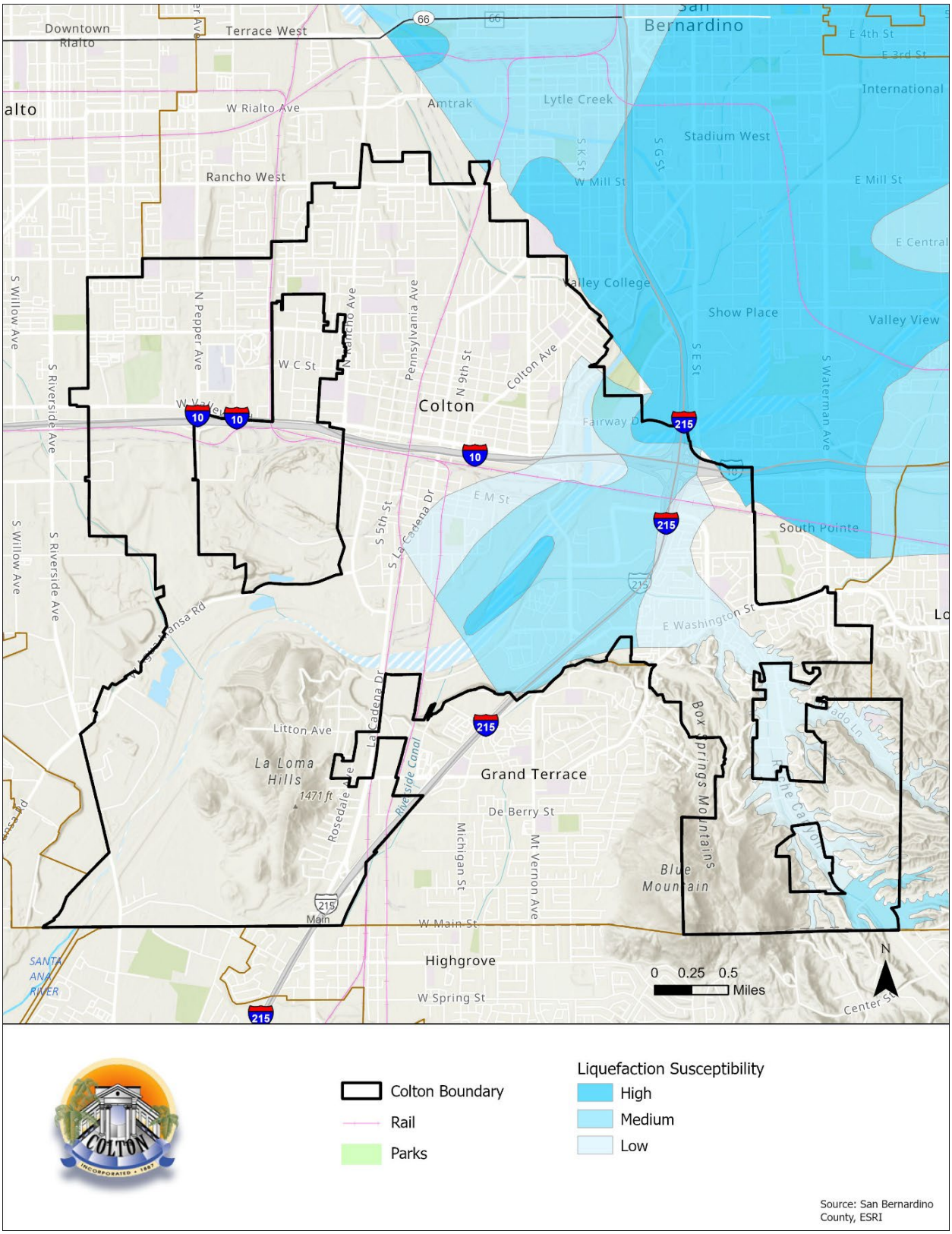
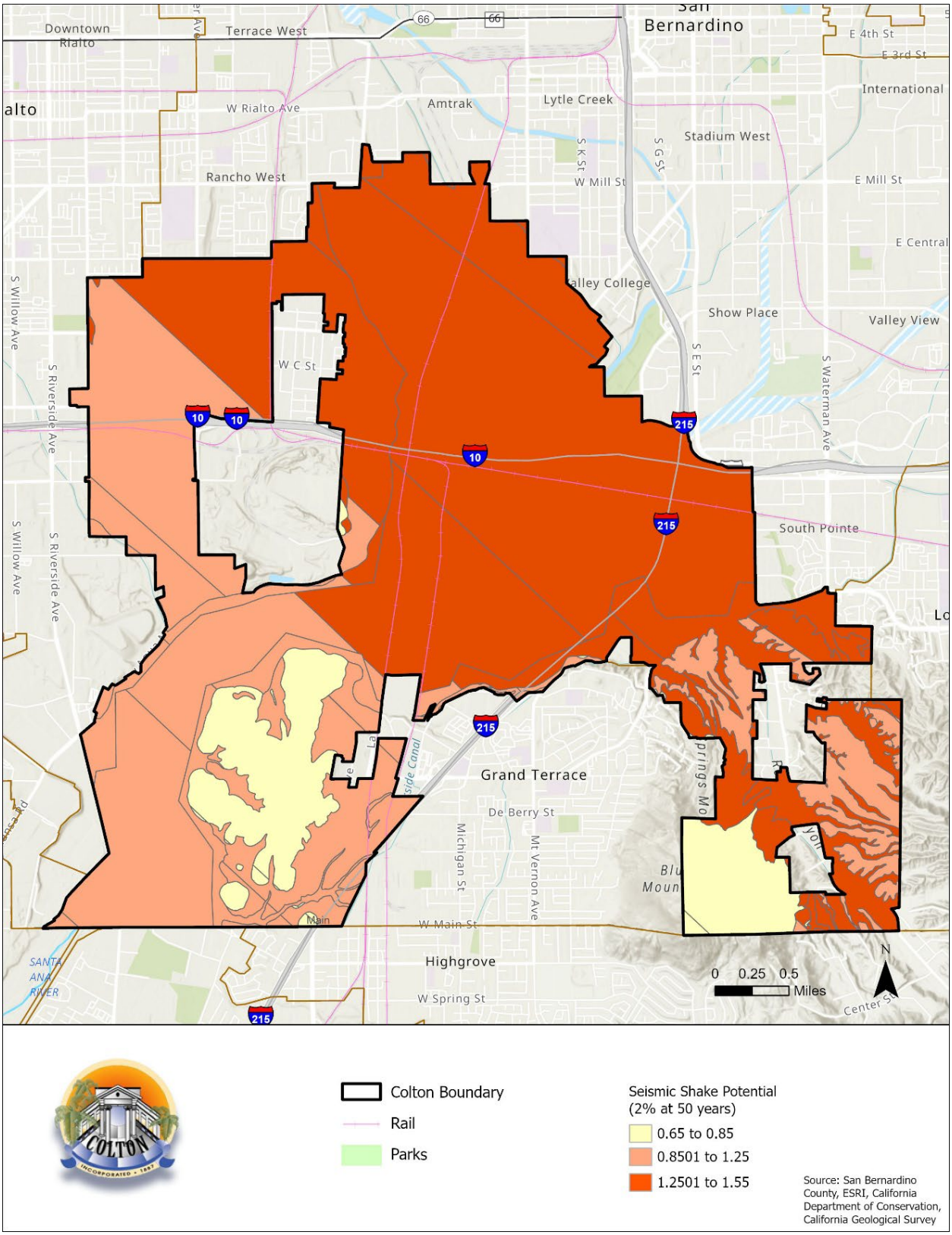


FIGURE 12. SEISMIC SHAKING POTENTIAL IN COLTON



Past Events

Fault Rupture

Although the San Jacinto Fault runs through Colton and has ruptured in recorded history, there are no records of surface rupture in Colton. Surface ruptures on this fault outside of Colton have ranged from five inches to approximately three feet.[62] There are no known records of fault rupture on the Rialto-Colton Fault, although there is some evidence the fault has been active in recent geologic times, and it may be capable of causing surface rupture.[63]

Earthquakes on other faults in the region have resulted in measurable surface fault rupture.

- The 1999 Hector Mine earthquake north of Joshua Tree ruptured along a length of 26 miles and caused as much as 17 feet of displacement.
- The 1992 Landers earthquake near Yucca Valley ruptured along a 53-mile length and caused fault rupture of around 10 to 13 feet, although some areas saw as much as 20 feet of displacement.
- The 1971 San Fernando earthquake caused a surface rupture along 12 miles, with a maximum displacement of 6 feet.
- More historically, the 1857 Fort Tejon earthquake caused as much as 30 feet of displacement along its 225-mile length, stretching from northern San Luis Obispo County to the Cajon Pass.[64]

Liquefaction

There is no historical record of liquefaction in Colton, although it has occurred in the wider region. Both the 1994 Northridge earthquake and the 1971 San Fernando earthquake caused liquefaction in the San Fernando Valley area.[65] After the 1992 Landers earthquake, liquefaction was observed east of Big Bear and in the Santa Ana River canyon of the San Bernardino Mountains.[66] Liquefaction also likely occurred as a result of the 1857 Fort Tejon earthquake.[67]

Seismic Shaking

The most substantial major earthquake in Colton was the 1992 Landers earthquake, which had an epicenter approximately 51 miles east of Colton, north of Yucca Valley. The earthquake measured 7.3 Mw and had a maximum MMI of IX (Ruinous). In Colton the earthquake had an

[62] SCEDC (Southern California Earthquake Data Center).“Elmore Ranch Earthquake/Superstition Hills Earthquake.” http://scedc.caltech.edu/significant/elmoreranch1987.html

[63] Gandhok, G., Catching, R. D., Rymer, M. J., et al. 2003. Shallow Geometry and Velocities along the Rialto-Colton Fault, San Bernardino Basin, California. American Geophysical Union Fall 2003 Meeting.

[64] SCEDC (Southern California Earthquake Data Center). “Hector Mine Earthquake”. http://scedc.caltech.edu/significant/hectormine1999.html; SCEDC (Southern California Earthquake Data Center).“Landers Earthquake.” http://scedc.caltech.edu/significant/landers1992.html.; SCEDC (Southern California Earthquake Data Center). “San Fernando Earthquake.” http://scedc.caltech.edu/significant/sanfernando1971.html ; SCEDC (Southern California Earthquake Data Center). “Fort Tejon Earthquake.” http://scedc.caltech.edu/significant/forttejon1857.html.

[65] Bennett, M. J. 1989. “Liquefaction Analysis of the 1971 Ground Failure at the San Fernando Valley Juvenile Hall, California.” Environmental and Engineering Geoscience, v. 2. Pages 209-226.

[66] Barrows, A.G. 1993. “Rockfalls and surface effects other than faulting Landers and Big Bear earthquakes.” California Geology, v. 46. Pages 17-23.

[67] Stover, C. W., and Coffman, J. L. 1993. Seismicity of the United States, 1568–1989 (Revised). https://pubs.usgs.gov/pp/1527/report.pdf.

MMI of VI (Strong) and caused approximately $400,000 in damage.[68] The 1992 Big Bear earthquake, which occurred three hours after the Landers event, was centered approximately 29 miles northeast of Colton. It measured 6.3 Mw and had an MMI in Colton of VI (Strong), costing the community approximately $92,000.[69]

There have also been a number of other earthquakes that did not cause substantial impacts to Colton but were sufficient to register an MMI of at least V (Slightly Strong) in the community. **Table 19** shows these events.

TABLE 19. SIGNIFICANT HISTORICAL EARTHQUAKES NEAR COLTON

Earthquake Name	Distance (Miles) *	Magnitude (M_w) †	Intensity (MMI) ‡	
			Maximum	In Colton
2019 Ridgecrest Earthquake (July 5th)	108	7.1	VIII (Destructive)	V (Slightly Strong)
2019 Ridgecrest Earthquake (July 4th)	108	6.4	VIII (Destructive)	V (Slightly Strong)
1999 Hector Mine earthquake	70	7.1	VIII (Destructive)	V (Slightly Strong)
1994 Northridge earthquake	71	6.7	VIII (Destructive)	V (Slightly Strong)
1992 Big Bear earthquake	29	6.3	VIII (Destructive)	VI (Strong)
1992 Landers earthquake	51	7.3	IX (Ruinous)	VI (Strong)
1987 Whittier Narrows earthquake	57	5.9	VII (Very Strong)	V (Slightly Strong)
1971 San Fernando (Sylmar) earthquake	65	6.6	VIII (Destructive)	V (Slightly Strong)
1968 Borrego Mountain earthquake	93	6.6	VIII (Destructive)	V (Slightly Strong)
1933 Long Beach earthquake	50	6.4	Unknown	Unknown
1923 North San Jacinto earthquake	6	6.3	Unknown	Unknown
1918 San Jacinto earthquake	30	Appx. 6.7	Unknown	Unknown
1910 Elsinore earthquake	24	Appx. 6.0	Unknown	Unknown
1899 San Jacinto Fault Zone earthquake	40	Appx. 6.5	Unknown	Unknown
1812 Wrightwood earthquake	Appx. 25–30	Appx. 7.5	Unknown	Unknown

Sources: SCEDC 2013f, 2013g, 2013h, 2013i; USGS 2018a, 2018b, 2018c, 2018d, 2018e, 2018f, 2018g, 2018h, 2018i.

* As measured from downtown Colton to the epicenter.

† Magnitudes before 1920 are measured using the Richter scale. Other magnitudes are measured in the MMS.

‡ The MMI from older earthquakes are unknown, but it is possible that these events measured at least a V (Slightly Strong), given their magnitude and proximity to Colton.

[68] Colton, City of. 2011. City of Colton Hazard Mitigation Plan. http://ca-colton.civicplus.com/DocumentCenter/View/3138; USGS USGS (United States Geological Survey). "M 7.3 – 10km N of Yucca Valley, CA." https://earthquake.usgs.gov/earthquakes/eventpage/ci3031111#executive

[69] Colton, City of. 2011. City of Colton Hazard Mitigation Plan. http://ca-colton.civicplus.com/DocumentCenter/View/3138; USGS USGS (United States Geological Survey). "M 6.3 – 7km SSE of Big Bear City, CA." https://earthquake.usgs.gov/earthquakes/eventpage/ci3031425#executive

Risk of Future Events

Fault Rupture

Although the San Jacinto Fault has not experienced surface rupture in Colton's boundaries in recorded history, there have been observed surface ruptures on this fault in other locations. There is therefore some risk that future earthquake events on this fault could result in a surface fault rupture in Colton, although the chances that this will occur in the foreseeable future are unknown. The risk of surface rupture on the Rialto-Colton Fault is unknown, as it is not clear if the fault is capable of surface rupture.

Liquefaction

Although there is no record of liquefaction events in Colton, there are parts of the community that are prone to liquefaction. Because of this, a sufficiently strong earthquake in the region could trigger liquefaction in Colton, particularly in the area close to the Santa Ana River. Earthquakes on the San Jacinto and San Andreas faults are most likely to trigger liquefaction, given their proximity to Colton and their potential to cause major earthquakes. Earthquakes from other faults are less likely to cause liquefaction, although it remains a possibility.

Seismic Shaking

Seismic shaking is a virtual inevitability in Colton, given that the community is located in close proximity to multiple major fault lines and has experienced substantial seismic shaking from past earthquake events. The Third Uniform California Earthquake Rupture Forecast[70] provides the likelihood of a major earthquake on various faults between 2015 and 2044. **Table 20** shows the probabilities of a significant earthquake by magnitude on the key fault lines near Colton, as estimated by the UCERF3 forecast.

[70] SCEC (Southern California Earthquake Center). 2015. "Third Uniform California Earthquake Rupture Forest." https://www.scec.org/ucerf.

TABLE 20. PROBABILITIES OF SIGNIFICANT EARTHQUAKE SCENARIOS NEAR COLTON					
Fault	Distance (Miles) *	Probability †			
		6.7+ Mw	7.0+ Mw	7.5+ Mw	8.0+ Mw
San Jacinto Fault	Less than 1	6.52%	6.26%	5.20%	2.64%
San Andreas Fault (southern segments)	7	25.87%	22.06%	18.53%	6.81%
Cucamonga Fault	10	1.53%	1.27%	0.76%	0.03%
Whittier Fault	23	1.64%	1.47%	0.81%	<0.01%
Elsinore Fault	23	3.83%	1.95%	1.08%	<0.01%
Sierra Madre Fault	25	1.43%	1.12%	0.73%	0.03%
Pinto Mountain Fault	34	3.07%	2.98%	1.25%	Negligible
Lenwood-Lockhart-Old Woman Springs Fault	43	1.30%	0.96%	0.02%	Negligible
Newport-Inglewood Fault	48	1.08%	0.78%	0.16%	Negligible
Emerson-Copper Mountain Fault	54	1.01%	0.71%	0.08%	Negligible
Palos Verdes Fault	58	2.67%	2.37%	0.92%	Negligible
Calico-Hidalgo Fault	60	2.77%	2.40%	0.73%	Negligible
Santa Susana Fault	61	4.20%	2.71%	0.77%	<0.01%
Oak Ridge Fault	84	3.07%	2.78%	1.11%	<0.01%
Garlock Fault	91	4.82%	4.65%	2.78%	0.30%

Source: USGS 2015.

* As measured from downtown Colton to the closest part of the fault.

† UCERF3 presents odds of fault rupture by individual fault segment. The odds presented here are the highest odds given for any individual segment.

Based on the UCERF3 probabilities and the various scenarios explored by the USGS, the faults of greatest concern for Colton are the San Jacinto and San Andreas faults. The San Jacinto Fault is less likely to rupture (it has approximately a 7 percent chance of causing a 6.7 Mw or greater earthquake by 2044), but since it runs directly under Colton, significant earthquakes have the potential to cause somewhat greater damage. The San Andreas Fault has a great chance of a major rupture (it has approximately a 26 percent chance of causing a 6.7 Mw or greater earthquake by 2044), but because it is farther from Colton, the intensity of the

earthquake in Colton may not be as high. However, although the San Andreas Fault is not likely capable of generating shaking in Colton as strong as would the San Jacinto Fault, it is still capable of causing highly damaging earthquakes in the community. Several other faults are capable of producing earthquakes strong enough to cause damage in Colton; while the odds of these earthquakes experiencing a significant rupture is fairly low, it is still a possibility.

The Rialto-Colton Fault is not included in the UCERF3 study, nor has the USGS modeled potential earthquake events for this fault line. Although studies of the fault are limited, scientists at a 2003 conference noted that it "may present a significant earthquake hazard for the [San Bernardino Valley] region."[71] Given that the Rialto-Colton Fault is connected to the San Jacinto Fault, it is possible that an earthquake on the San Jacinto Fault could also cause the Rialto-Colton Fault to rupture.

Climate Change Considerations

Fault Rupture

Fault rupture is caused by geologic processes. Although there is some evidence that melting land ice (a consequence of climate change) may affect seismic activity by redistributing weight from the land to the oceans, there is no reason yet to believe that this relationship would have a substantive impact on faults in and around Colton. Thus, there are no reasonably expected changes to the community's fault rupture risk as a result of climate change.

Liquefaction

Changes to precipitation patterns as a result of climate change could potentially affect liquefaction by altering groundwater levels, which could make soils more or less prone to liquefaction during an earthquake event. However, it is unknown if these changes to groundwater levels will have any substantive impact on the liquefaction risk in Colton.

Seismic Shaking

Climate change is generally unconnected to the tectonic forces that cause earthquakes, although there may be a limited relationship between melting ice and seismic activity. However, these relationships remain uncertain, and the effect may not be substantial enough to change the risk of earthquakes in a meaningful way.[72] Therefore, for all appreciable purposes, climate change is not expected to affect seismic shaking in Colton.

[71] Gandhok, G., Catching, R. D., Rymer, M. J., et al. 2003. Shallow Geometry and Velocities along the Rialto-Colton Fault, San Bernardino Basin, California. American Geophysical Union Fall 2003 Meeting.

[72] Johnson, C. W., Fu, Y., and Bürgmann, R. 2017. Stress Models of the Annual Hydrospheric, Atmospheric, Thermal, and Tidal Loading Cycles on California Faults: Perturbation of Background Stress and Changes in Seismicity. Journal of Geophysical Research, 122. Pages 10,605-10,625

Severe Weather

Severe weather is a very broad term that could refer to any number of intense weather events. In this Plan, the term will be used to refer to extreme heat, severe wind, and severe winter weather.

Description

Extreme Heat

Extreme heat refers to a time when temperatures are substantially higher than normal levels. For the purposes of hazard planning in California, extreme heat is more specifically defined as temperatures about 98 percent of the historic high temperatures for the area, as measured between April and October from 1961 to 1990. The threshold of extreme heat varies by location. For example, the extreme heat threshold in the Northern California coast or the Lake Tahoe region may be considered normal temperatures in a desert community.

A series of days with an extreme heat event is called a *heat wave*. Extreme heat events are a function of both temperature and humidity, as high humidity levels can make the air feel hotter than it really is. The perceived temperature from this effect is called the *heat index*, which may be much higher than the actual temperature. For example, an air temperature of 90°F with 90 percent humidity can make the temperature feel in excess of 120°F.

Extreme heat can cause a number of heat-related illnesses and other health risks, including heat cramps, heat exhaustion, and (more severely) heat stroke. These events can be particularly damaging to infants and senior citizens, who have less ability to maintain a safe internal body temperature (and therefore can overheat more easily during extreme temperatures), and people who work outdoors or in other exposed areas, such as construction workers. Very high temperatures also reduce the effectiveness of power lines. In combination with increased demand for electricity (to run air conditioning units), extreme heat events can stress electrical infrastructure and increase the rate of failure.

Severe Wind

Wind is the movement of air through the atmosphere due to differences in air pressure, caused by local and regional variations in temperature, topography, and the Earth's rotation. Air flows from areas of high pressure to areas of lower pressure. Places where the air pressure changes substantially over a short distance will generally experience the most severe wind, while places with more gradual pressure differences will see calmer breezes.

Severe wind is any wind that can harm people or property. This is generally winds with speeds at or above 47 miles per hour (mph), which is typically the threshold for structural damage (although damage is possible at a lower speed). The primary risk from severe wind is property damage, often caused by fallen tree limbs or airborne debris. People can be struck by debris or broken branches, causing injury or death. Additionally, severe wind can cause enough fallen or windblown material to block roads and railways, interrupting transportation networks and all activities depending on them. Power lines can be knocked down by severe wind, which may spark wildfires in addition to harming electrical service.

Winds may accompany storms (which are areas of low pressure) but may occur independent of storm systems. Many storm systems have some type of high wind event, including tornadoes, which are the most well-known and can cause significant damage due to the extreme wind

speeds involved (in excess of 200 mph in the most severe cases). Other types of severe winds associated with strong storm systems include downbursts, microbursts, and derechos. Severe winds that occur independent of storm systems include Southern California's infamous Santa Ana winds.

Severe Winter Weather

Severe winter weather, for the purposes of this Plan, refers to the intense storm systems that sometimes occur during the rainy winter season. There is no specific factor that separates a severe winter weather event from other storms, but in general these systems include strong wind, heavy rainfall, and occasionally lightning and hail. As noted in the "Floods" section, severe winter weather events are often associated with ARs and ENSO cycles. Severe winter storms are generally more common during the ENSO warm phase.[73]

Location and Extent

Extreme Heat

The threshold for an extreme heat event in Colton is approximately 104.6°F.[74] Extreme heat events may be measured using the temperature or heat index of the event. No part of Colton is more or less at risk of extreme heat.

Severe Wind

Strong winds can occur anywhere in Colton, although they may be strongest at the bottom of passes and canyons, such as in the Reche Canyon neighborhood. Some areas may be more sheltered from a particular wind event due to local topography and the specific conditions of the event, but such locations may be more exposed to high winds from another event.

Winds are usually measured using the Beaufort scale, developed in 1805. It categorizes winds on a scale of force 0 to force 12 based on their speed and observed effects. Winds that rank force 9 or higher on the Beaufort scale may be considered severe. **Table 21** (page **75**) shows the Beaufort scale. Some very severe wind types are measured using more specialized scales. Hurricanes are measured with the Saffir-Simpson Hurricane Wind Scale, and tornadoes are measured with the Enhanced Fujita (EF) scale.

Severe Winter Weather

All areas of Colton face a generally equal risk of severe winter weather events, although variations in the storm may make the specific effects stronger or weaker in different parts of the community. There is no standard scale for classifying such events, and they may be measured based on factors such as wind speed, precipitation amounts or rates, or the amount of damage done.

[73] Jong, B. T., Ting, M, and Seager, R. 2016. El Niño's impact on California precipitation: seasonality, regionality, and El Niño intensity. Environmental Research Letters, 11(5)

[74] Cal Adapt Climate Tool

TABLE 21. BEAUFORT SCALE		
Force	**Speed (mph)**	**Description**
1	0 to 1	**Calm:** Smoke rises vertically, and the sea is flat
2	1 to 3	**Light air:** The direction of wind is shown by smoke drift, but not wind vanes
3	4 to 7	**Light breeze:** Wind is felt on the face, leaves rustle, and wind vanes are moved. Small wavelets appear on the ocean, but do not break
4	8 to 12	**Gentle breeze:** Leaves and small twigs are in motion, and light flags are extended. Large wavelets appear on the ocean, and crests begin to break
5	13 to 18	**Moderate breeze:** Dust and loose paper become airborne, and small branches are moved. Small waves appear on the ocean
6	19 to 24	**Fresh breeze:** Small trees begin to sway and moderate waves form
7	25 to 31	**Strong breeze:** Large branches are in motion, and using an umbrella becomes difficult. Large waves begin to form
8	32 to 38	**Near gale:** Whole trees are in motion and walking against the wind can be hard. Foam from breaking waves is blown in streaks
9	39 to 46	**Gale:** Walking is difficult, and twigs break off trees
10	47 to 54	**Severe gale:** Slight structural damage. Crests of waves begin to topple
11	55 to 63	**Storm:** Trees are uprooted and considerable damage to structures. Very high waves form in long, overhanging crests
12	63 to 72	**Violent storm:** Widespread damage. Exceptionally high waves form, and the ocean is completely covered in foam
*Source: https://www.weather.gov/mfl/beaufort		

Past Events

Extreme Heat

The highest recorded temperature in the City is 116°F, measured in June 1917 and again in August 1933.[75] Several notable extreme heat events have occurred in the region, including the July 2006 heat wave that killed approximately 140 people statewide[76] and a series of heat waves from August to October of 2017.

Based on Cal Adapt's historical information (1950 through 2005), the city experiences five extreme heat days per year. During this same period, the city averaged (1) 3-day heatwave every year. Climate modeling under RCP 4.5 (the medium emissions scenario) predicts that by 2035, the city will experience (5) 3-day heatwave events per year and (7) 3-day heatwave events per year by the end of the century (2070-2099). Climate modeling under RCP 8.5 (the high emissions scenario) predicts that by 2035, the city will experience (7) 3-day heatwave events per year and (12) 3-day heatwave events per year by the end of the century (2070-

[75] WRCC (Western Regional Climate Center). 2016. "San Bernardino F S 226, California (047723)". https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7723

[76] California Governor's Office of Emergency Services (Cal OES). 2023. State Hazard Mitigation Plan. https://www.caloes.ca.gov/office-of-the-director/operations/recovery-directorate/hazard-mitigation/state-mitigation-planning/

2099). In 2022, California experienced one of the worst heatwaves it has ever experienced. From September 1st through September 9th, 2022, temperature records for September were shattered across the western portion of the United States.

The County of San Bernardino, including the City, has issued multiple high heat advisories or excessive heat warnings between 2020 and 2025:

- In July of 2022, San Bernardino and Riverside Counties issued an excessive heat warnings, with temperatures ranging from 98 to 107° F.
- On August 30, 2022, an excessive heat warning was issued for parts of Southern California, including San Bernardino County.
- On July 13, 2023, the County of San Bernardino issued an excessive heat warning, residents were urged to stay informed and protect themselves from the summer heat.
- On June 6, 2024, the San Bernardino County Health Officer issued a heat advisory as extreme heat was expected to begin that day and continue through early the following week
- On July 3, 2024, the San Bernardino County Health Officer issued a heat advisory as extreme heat was expected to begin that day and continue through the weekend.
- On July 10, 2024, an excessive heat warning was in effect for the Inland Empire, including San Bernardino County, with temperatures remaining high.
- On July 10, 2025, the National Weather Service issued a heat advisory for the Inland Empire, including San Bernardino County, with temperatures in the valleys reaching or exceeding triple digits.
- From July 8-10, 2025, a heat advisory was issued for the Inland Empire and valleys as the region prepared for triple-digit weather.[77]

Severe Wind

There have been several high wind events reported in and around Colton in recent years:

- On May 5, 1998, strong thunderstorms across the region caused high winds that shredded the roof of an auto repair shop in Rialto.
- On March 4, 2005, a small tornado touched down in Fontana. The tornado blew shingles off three homes, knocked down power lines and several trees, and ripped the roof off a water well building.
- On December 28, 2006**,** a strong Santa Ana wind event knocked down trees and power lines throughout the region. Wind speeds as high as 56 mph were measured in Rialto.
- Early December of 2011, a storm caused wind speeds over 65 mph, knocking down hundreds of trees, downing power lines, and overturning trucks throughout the San

[77] NOAA (National Oceanic and Atmospheric Administration). 2025. “Storm Events Database.” https://www.ncdc.noaa.gov/stormevents/.

Bernardino Valley. Later that month, another strong storm caused winds of 45 to 65 mph, with one recorded gust of at least 70 mph.

- In late January of 2012, a storm system that hit the region caused wind gusts over 60 mph, knocking down power lines and blowing containers off semi-trucks.
- In early March of 2012, strong winds affected the San Bernardino Valley region after a storm event, with gusts of over 60 mph.
- On February 28, 2014, wind speeds of 48 mph from a thunderstorm caused a tree to fall onto a car in San Bernardino and caused a roof to collapse in Fontana.
- In November of 2014, a Santa Ana wind event caused winds of approximately 50 mph, with damage reported throughout the region.
- On August 1, 2017, a thunderstorm resulted in wind speeds of 52 mph, knocking a two-foot-diameter tree onto a house in San Bernardino.
- In January of 2017, a series of three storms caused strong winds that knocked down hundreds of trees throughout the region, causing millions of dollars in damage.
- On October 9, 2017, a strong Santa Ana wind event caused wind gusts of 70 mph.[78]
- January 7, 2025, one of the most severe windstorms in years ripped through Southern California. Winds of 40-60 mph were reported in San Bernardino County and Colton, while gusts of 80-100 mph occurred in the mountains of Los Angeles County. Described as particularly dangerous by the National Weather Service, the storm and associated fires inspired numerous emergency alerts, in addition to alerts concerning dust and air quality throughout the region.

Severe Winter Weather

Severe winter weather events typically occur most years, with varying degrees of severity. Some particularly notable events from recent years include:

- November 10, 1997, a strong winter storm caused rainfall totals of up to 1.5 inches in coastal regions and up to 3 inches in the mountains. Street flooding was reported throughout Southern California.
- On February 10, 2001, a strong storm dropped up to 2.5 inches of rain in Orange and San Bernardino counties. The storm killed two people in the region and injured another three.
- In February of 2005, an extended series of storms dropped up to 6 inches of rain in the valley areas of Southern California. Total damages reached $26 million in San Bernardino County and $40 million statewide.
- A storm on January 19, 2010, caused extensive ponding in Colton and surrounding communities. The storm flooded a home in Fontana and damaged several cars in Redlands.

[78] NOAA (National Oceanic and Atmospheric Administration). “Climate Station Precipitation Summary – California Nevada River Forecast Center.” https://www.cnrfc.noaa.gov/awipsProducts/RNOWRKCLI.php.

- On October 11, 2012, a storm gauge in the region recorded 1.02 inches of rain in a 25-minute period. A warehouse roof in Fontana collapsed from accumulated rainfall. Water damaged ten homes in Riverside, Colton, and Fontana, and the storm caused extensive street flooding.
- In May of 2016, a late-season storm caused a building to collapse in Ontario. At Ontario International Airport, a storm gauge recorded 2.7 inches of rain per hour.[79]
- On August 20, 2023, Tropical Storm Hillary hit Southern California, leaving record rainfall throughout the state. The storm left behind flooded roads, mudslides, and downed trees. Some areas received up to 600% of their annual rainfall averages for the month of August. The floods killed one person in San Bernardino County, California. It caused over $900 million in damages in the U.S.

Risk of Future Events

Extreme Heat

As extreme heat events have occurred regularly in Colton's past, it is all but certain that they will continue to occur in the future. It is possible that the threshold for what constitutes an extreme heat event may change in the long term.

Severe Wind

High wind events will almost certainly continue to occur in and around Colton, given past events. It is likely that winter storms and Santa Ana wind events will continue to remain the most common types of severe winds. High winds from tornadoes and tropical storms may occur in Colton's future, but such events are expected to be very rare.

Severe Winter Weather

Severe winter weather events are a regular feature of Colton's climate, and all expectations are that they will continue to occur. Factors such as ARs and ENSO will very likely continue to play a role in the frequency and intensity of severe winter weather events.

Climate Change Considerations

Extreme Heat

Climate change is expected to have a significant impact on extreme heat events, as warmer temperatures are projected to increase the frequency and intensity of these events. The specific number of extreme heat events is expected to vary depending on how severe climate change becomes. Under more moderate projections, Colton is expected to see an average of approximately 31 extreme heat days (those above 104° to 106°F) each year between 2070 and 2099. If more severe projections for climate change end up occurring, the expectations are for Colton to see 47 to 48 extreme heat days annually toward the end of the 21st century.[80]

Severe Wind

Strong storms may become more intense with climate change (as discussed below). This may mean an increase in the number of storms that are accompanied by severe wind events and/or

[79] NOAA (National Oceanic and Atmospheric Administration). 2018b. "Storm Events Database." https://www.ncdc.noaa.gov/stormevents/

[80] Cal Adapt Climate Tool

an increase in the average intensity of these high winds. It is not yet known if climate change will have any effect on Santa Ana winds. There is a possibility that the increase in storm intensity may lead to more storms that are strong enough to generate tornadoes, although given the rarity of tornadoes in the San Bernardino Valley region, it is unlikely that any such effects would be noticeable for the purposes of this Plan.

Severe Winter Weather

The specific impact of climate change on severe winter storm systems remains a subject of debate. It is likely that storms associated with ARs in southern California will become stronger. As discussed in the "Floods" section, the typical Southern California AR storm is projected to become 10 to 20 percent more intense due to climate change, although the average number of AR storms affecting the region is not expected to change to a substantive degree.[81]

Scientists are not yet clear if climate change will affect the ENSO cycle, and if so, what such effects would be. A 2014 study found that extreme warm periods of the ENSO cycle (which are strongly associated with frequent and intense storms in Southern California) may occur twice as often due to climate change, although other studies found that ENSO will weaken (decreasing the frequency and intensity of the warm cycles), and still other studies found no risk of substantive change.[82]

WILDFIRES

Description

Wildfires are fires that burn in undeveloped and natural areas. While they are relatively harmless to people when they burn in remote and uninhabited areas, they are dangerous when they move into areas known as the *wildland-urban interface* (WUI). These areas are the border between natural and urbanized areas and are increasingly developed because they are often desirable places to live. This type of development brings people and property into wildfire-prone areas, creating a significant hazard risk. Additionally, wildfires may move past the WUI into fully developed areas and so may become *urban fires*. Development in the WUI throughout California, combined with the historical practice of suppressing naturally occurring wildfires (allowing dry fuel to accumulate), has made wildfires the most common type of hazard event in California. Since 1953 there have been 250 federally declared disasters in California, 183 of which have been associated with fires.[83]

Many things can cause a wildfire, including lightning, fallen power lines, or improperly extinguished campfires. The size and severity of a fire relates to the local topography, weather conditions, and availability of fuel. However, fires do not need to be particularly large to be damaging. The Tunnel Fire in the Oakland Hills killed 25 people and destroyed 2,900 structures in 1991 but was only 1,600 acres in size. By contrast, the largest single wildfire in California's

[81] Oskin, B. 2014. "'Atmospheric Rivers' to Soak California as Climate Warms." https://www.livescience.com/49225-atmospheric-rivers-double-climate-change.html

[82] Cho, R. 2016. "El Niño and Global Warming: What's the Connection?" State of the Planet. http://blogs.ei.columbia.edu/2016/02/02/el-nino-and-global-warming-whats-the-connection/.

[83] FEMA 2025

recorded modern history—the 2020 August Complex Fire—reached close to 1.2 milllion acres, killed 1 firefighter, and destroyed 935 structures.[84]

Historically, wildfires have occurred most often in late summer and fall when temperatures are high and several months have passed since significant precipitation. This is likely to remain the case, although wildfires can still occur in other months. For example, the Thomas Fire began in December, and multiple fatal wildfires have started as early as June.[85]

Location and Extent

Wildfires are generally measured by their size (typically the number of acres burned), although they may also be measured by the number of buildings destroyed or damaged, the number of injuries or deaths caused by the fire, the cost of the damage, or other impact-related metrics. Areas that are prone to wildfires are classified into three categories of fire hazard severity zones (FHSZs): very high, high, and moderate. There is no specific risk level or fire size/intensity that corresponds to each level of FHSZ. Rather, these are qualitative terms that consider factors such as fire history, terrain, weather conditions, development, and fuel availability, among others.[86]

Fire-prone areas can also be classified by the agency responsible for fire protection. Land protected by federal agencies such as the U.S. Forest Service or the Bureau of Land Management is considered a *Federal Responsibility Area* (FRA). Land that the California Department of Forestry and Fire Protection (CAL FIRE) is responsible for is called a *State Responsibility Area* (SRA). Local governments are responsible for fire protection services in *Local Responsibility Areas* (LRAs). These responsibility areas do not necessarily correspond to jurisdictional boundaries. For example, many local communities contract with CAL FIRE to provide fire protection services inside their boundaries, even for land that is under local jurisdiction.

The La Loma Hills and Box Springs Mountains areas in southern Colton are both Very High FHSZs. The flatter areas in southwest Colton near the La Loma Hills are considered a Moderate FHSZ, extending as far north as Slover Avenue, and there are limited areas that are classified as High FHSZ on the boundary of the Very High FHSZ that covers La Loma Hills. There is a narrow band of Moderate and High FHSZs surrounding the Very High FHSZ that covers the Box Spring Mountains. There is also a Moderate FHSZ north of the Santa Ana River to the east of the Union Pacific railroad and south of Congress Street, another north of the Santa Ana River in western Colton as far north as Interstate 10, and a third near the intersection of Interstates 10 and 215. Most of Colton is considered an LRA, although the unincorporated areas in the Reche Canyon neighborhood are SRAs. **Figure 13** (page **83**) shows the wildfire hazard severity zones and the WUI. **Figure 14** (page **84**) displays and historical wildfire perimeters of the City.

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[84] CAL FIRE. 2025. “Top 20 Most Destructive California Wildfires.” https://www.fire.ca.gov/our-impact/statistics.; Taras, Z. (2025, March 3). *The largest wildfire in California history burned 1 million acres*. HowStuffWorks Science. https://science.howstuffworks.com/nature/natural-disasters/largest-wildfire-in-california-history.htm#:~:text=surpassed%20previous%20records.-,10.,than%201%20million%20acres%20burned.

[85] CAL FIRE. 2025. “Top 20 Most Destructive California Wildfires.” https://www.fire.ca.gov/our-impact/statistics.; CAL FIRE.. “Top 20 Largest California Wildfires.” https://www.fire.ca.gov/our-impact/statistics.

[86] *Get ready*. Cal FIRE. https://www.fire.ca.gov/prepare/get-ready#:~:text=CREATE%20DEFENSIBLE%20SPACE&text=Create%20and%20maintain%20the%20required,feet%20away%20from%20your%20home.

Past Events

There have been multiple wildfires in the Reche Canyon and La Loma Hills areas of Colton. The largest of these was the Colton Fire in June of 1981, which burned approximately 4,051 acres in the Box Springs Mountains to the south and west of Reche Canyon Road. Only a small portion of the burned acreage was in Colton, although this area includes what is now Reche Canyon Mobile Estates mobile home park and homes west of Cordillera Avenue. Other reported wildfires in Colton are:

- An unnamed 1962 fire burned approximately 1,491 acres mostly in the unincorporated areas of Riverside County, although a small portion of the burned area extended into the extreme southeast corner of Colton.
- An unnamed fire in 1968 burned approximately 810 acres, including a small area of southwest Colton around Pellisier Road.
- The Blue Mountain Fire in 1969 burned approximately 463 acres around Reche Canyon, including the area around Canyon Drive and Cordillera Avenue.
- The Blue Fire in 1980 burned approximately 247 acres. A small part of the burnt acreage included the undeveloped area around Blue Mountain in southeast Colton.
- The Prado Fire in 1980 burned approximately 1,729 acres. Most of the burnt area was east of Colton, but the fire did extend into Colton between Crystal Ridge Lane and Scotch Lane in the Reche Canyon neighborhood.
- An unnamed fire in 1986 burned approximately 383 acres, mostly around Blue Mountain in southeast Colton.
- The Wick Fire in 1995 burned approximately 453 acres of largely undeveloped land in the southwest area of Reche Canyon.
- The 1996 Reche Fire burned approximately 280 acres, including the residential area around Tiffany Lane and Crystal Ridge Lane in the Reche Canyon neighborhood.
- The Scott Fire in 2010 burned approximately 98 acres, including the ridgeline behind Crystal Ridge Lane in the Reche Canyon neighborhood.[87]

Several other major wildfires have occurred in the region. Notable blazes include:

- The Williams Fire in 2002 burned approximately 38,119 acres in the San Gabriel Mountains behind Glendora and La Verne.
- The Grand Prix Fire in 2003 burned approximately 50,618 acres in the San Gabriel Mountains behind Rancho Cucamonga and Fontana.
- The Old Fire in 2003 burned approximately 91,428 acres in the San Bernardino Mountains between Interstate 15 and Running Springs.
- The 2006 Sawtooth Complex Fire burned approximately 61,767 acres in the San Bernardino Mountains behind Morongo Valley.

[87] CAL FIRE. 2025. Fire Perimeters [data table]. https://www.fire.ca.gov/what-we-do/fire-resource-assessment-program

- The 2009 Station Fire burned approximately 160,833 acres in the San Gabriel Mountains behind Pasadena.
- The 2015 Lake Fire burned approximately 31,284 acres in the San Bernardino Mountains southeast of Big Bear.
- The 2018 Valley Fire burned approximately 1,350 acres in the San Bernardino National Forest, causing 5 nonfatal injuries.
- The 2020 Apple Fire burned 33,424 acres in the San Bernardino National Forest, destroying 12 structures and 2 outbuildings. It caused one fatal injury.
- The 2020 El Dorado Fire burned approximately 22,744 acres in the San Bernardino Mountains, resulting in the death of one firefighter and 12 other nonfatal injuries. It destroyed 10 structures and damaged 6 others, causing over $42 million in damages.
- The 2024 Line Fire burned approximately 43,978 acres, destroying one structure, damaging 4 other structures, and causing 6 nonfatal injuries.

Based on historical records, most of Colton burns fairly rarely (approximately every 126 to 150 years). However, in the more fire-prone areas of the community, some locations burn as often as every 16 to 20 years, and other areas burn approximately every 50 years.[88]

[88] USFS (United States Forest Service). 2014. LANDFIRE: Mean Fire Return Interval [data table]. https://landfire.gov/fire-regime/fri

FIGURE 13. WILDFIRE HAZARD ZONES

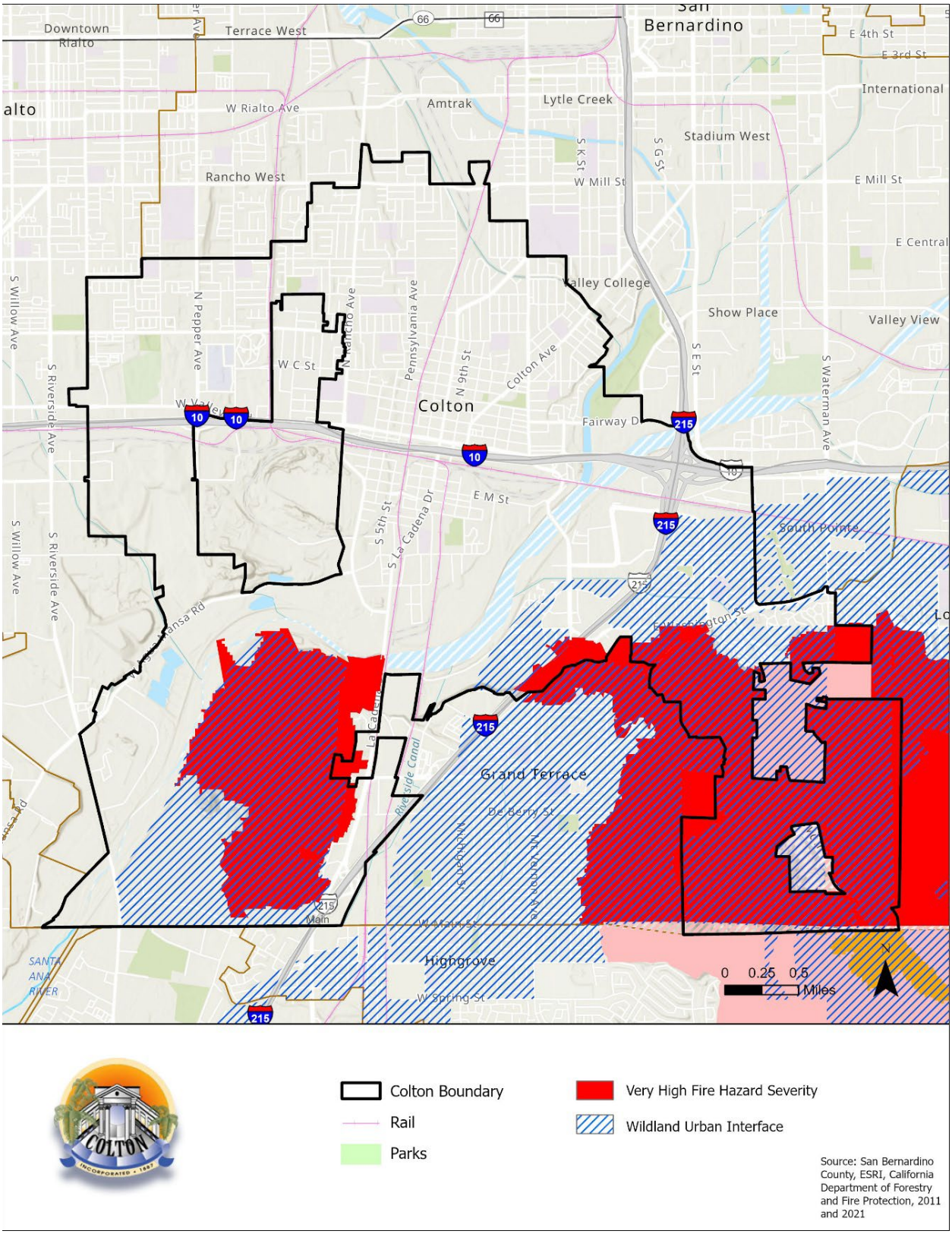
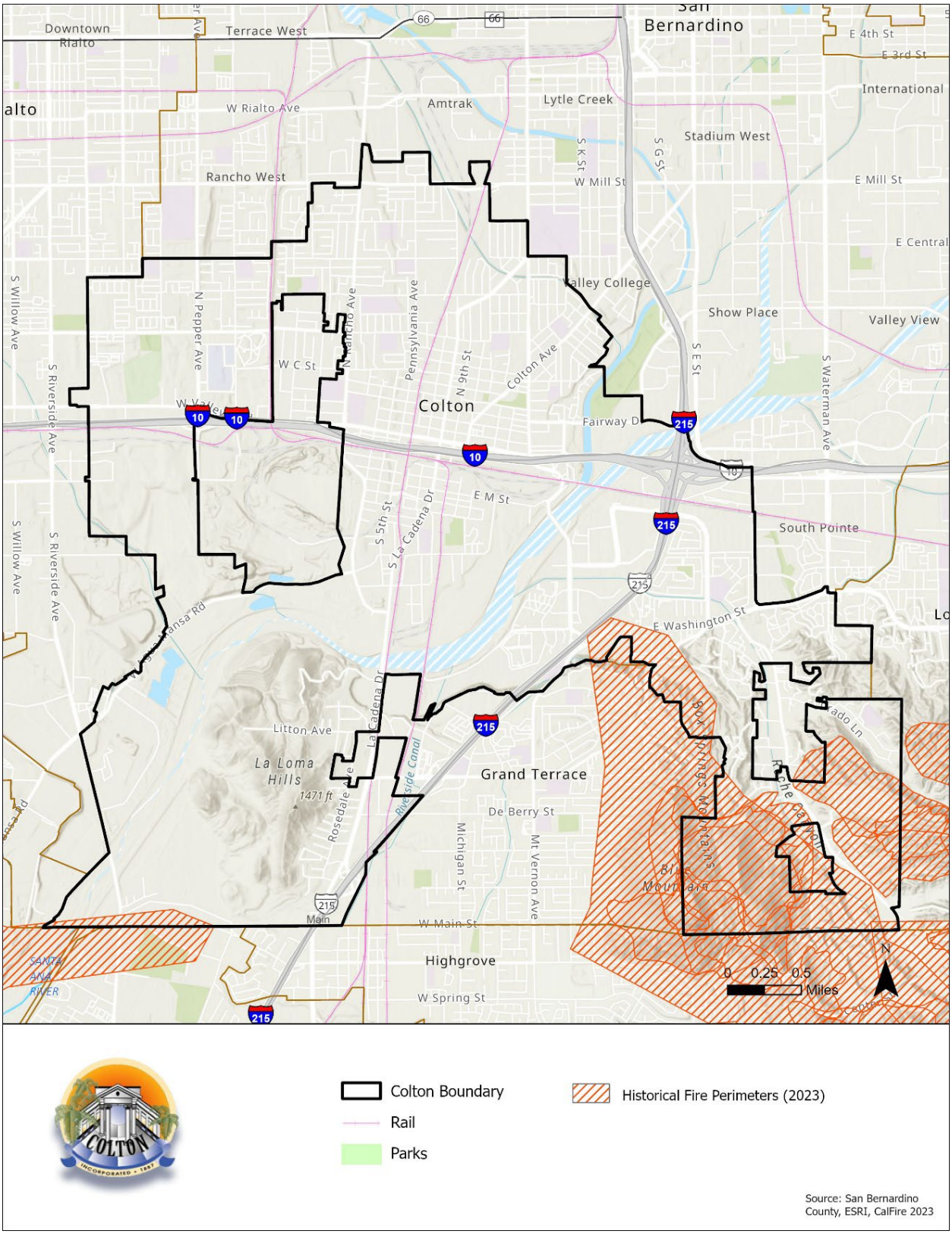


FIGURE 14. HISTORICAL WILDFIRE PERIMETERS



Risk of Future Events

Given that wildfires have occurred in Colton in the past and that substantial parts of the community remain classified as areas of elevated fire risk, it is very likely that wildfires will continue to occur in Colton. The areas of highest risk are expected to remain the La Loma Hills and Box Spring Mountains/Reche Canyon area, although it is possible that surrounding neighborhoods are also at risk. Vacant industrial land and the Santa Ana River bed may help to buffer other parts of the community from wildfire events, although under the right conditions a wildfire could jump these areas and threaten all of Colton.

Climate Change Considerations

Throughout the state, climate change is expected to increase temperatures, as well as causing more frequent and intense drought conditions. This will likely increase the amount of dry brush that can act as fuel for wildfires. Because of this, the overall size of areas burned by wildfires in California is expected to increase. [89]

[89] Cal Adapt Climate Tool

CHAPTER 4 – THREAT AND VULNERABILITY

Each of the hazards discussed in **Chapter 3** can have varying effects on different populations and community assets in Colton. For example, while an extreme heat event will be equally severe across all of Colton, some people may be harmed more than others. This chapter analyzes how various hazard conditions may affect Colton and which populations and community assets face greater threats.

Threat Assessment Process

The threat assessment process looks at the harm that a hazard may cause to three different groups: the physical threat to key facilities, the threat to vulnerable populations, and the threat to any other community assets (noncritical facilities, key services, etc.).

KEY FACILITIES

A *key facility* is a building or structure that plays an important role in protecting the health, safety, and well-being of Colton's community members. It includes major government and institutional facilities, care centers for vulnerable persons, and pieces of infrastructure. Some key facilities are owned by the City of Colton, while others are owned by other government agencies or private organizations. The Hazard Mitigation Planning Team has classified key facilities into three groups:

- **Critical facilities.** This includes public safety buildings such as fire stations and hospitals, schools, community centers (which can function as shelters or assembly points during a disaster), and facilities that keep vital services such as electricity and water systems operational. It also includes City administrative and maintenance centers.
- **High potential loss.** This category includes facilities that permanently or regularly house large numbers of vulnerable persons, including adult and senior residential care, childcare, and foster agencies.
- **Transportation and lifeline.** This category includes pieces of infrastructure that help maintain transportation and communication systems in Colton. Cell phone towers, rail bridges, and highway and major road bridges are all included in this category.

Table 22 (page **87**) shows the number of key facilities by their category and specific function. **Appendix D** contains a complete list of all key facilities.

The likelihood that all facilities are completely damaged simultaneously is extremely remote. Most impacts are anticipated to be isolated to specific locations based on the hazard. This estimate does not include the value of underground infrastructure and surface drainage facilities owned and operated by the City.

Table 22. Key Facilities		
Category		**Number of Facilities**
Critical Facilities	City facility	2
	Community center	4
	Electric power facility	8
	Fire station	4
	Solar facility	3
	Water treatment facility	1
	Water infrastructure	25
	Hospital	1
High Potential Loss	School	15
	Adult residential care	10
	Child care center	7
	Elder residential care	5
	Foster family agency	2
Transportation and Lifeline	Home care organization	1
	Communication facility	16
	Highway bridge	14
	Rail bridge	7
	Road bridge	13
Total		**138**

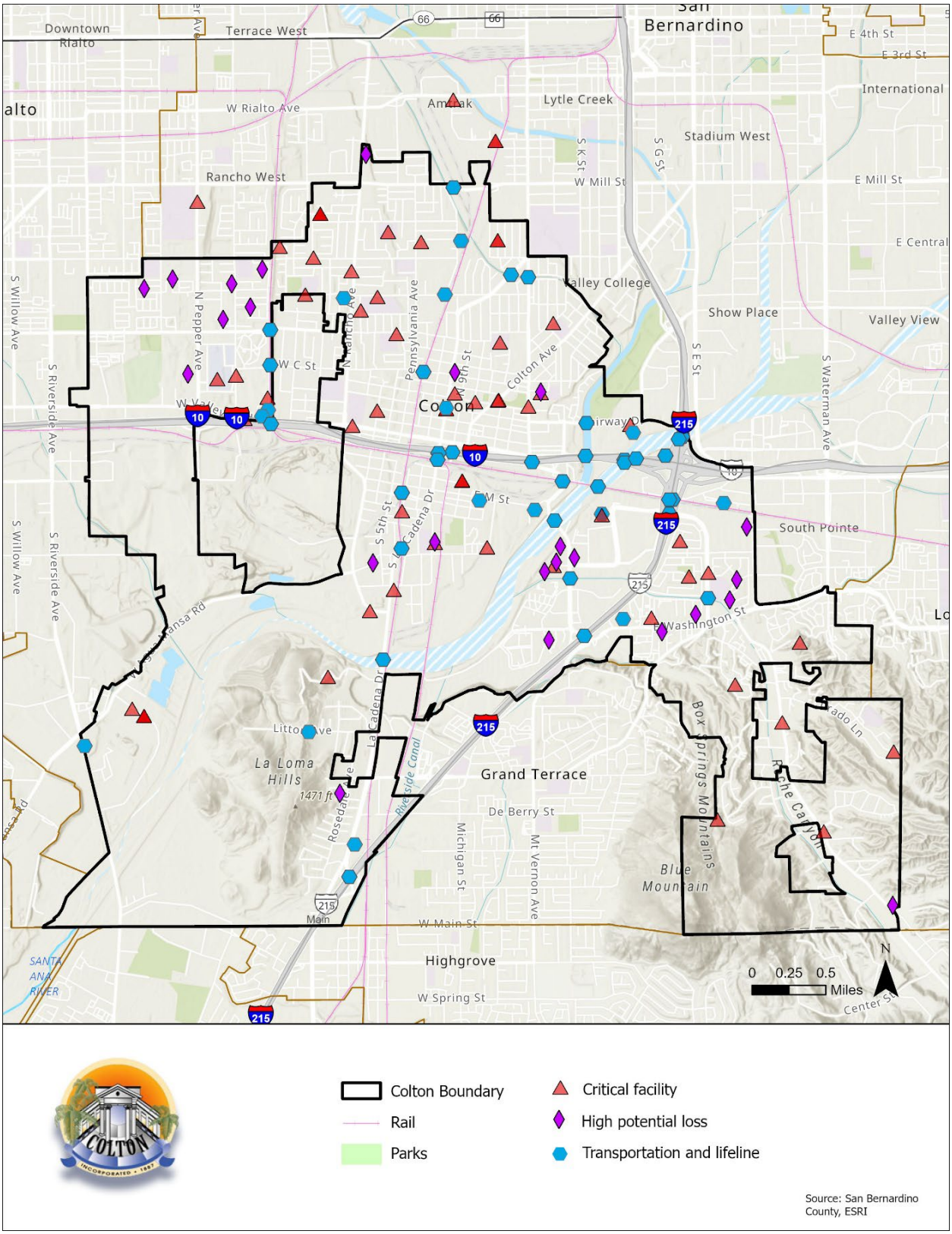
The threat assessment looks at the number and types of key facilities that lie within the areas of elevated risk for different hazards. These facilities face the risk of damage or destruction during a hazard event, reducing their ability to function or rendering them entirely nonfunctional. Facilities outside of the elevated risk areas may still be affected by hazards, although the risk of damage is lower. The threat assessment will also assess how key facilities may be harmed by hazard types that are not limited to specific risk areas, such as extreme heat. **Figure 15** (page **88**) shows the location of key facilities in Colton except for those whose locations are restricted for security reasons.

If a hazard event causes the destruction of any key facility, the cost to replace the facility (paid by insurers, the City, other agencies, or private companies) will likely be considerable. The specific value of a handful of key facilities owned by the City is known. The threat assessment will identify the replacement costs of key facilities at risk of various hazards if any of the facilities with a known value are within a mapped hazard zone.

Other Community Assets

There are other assets in Colton that may also be harmed by hazardous events. These assets include structures and pieces of infrastructure not identified as key facilities, important economic drivers, vital services, and local ecosystems. This chapter will identify the potential threat to these other community assets to the extent information is available.

FIGURE 15. KEY FACILITIES IN COLTON



Vulnerable Populations

As previously mentioned, a hazard event that strikes Colton with equal severity may have very different impacts on different groups of people. Age, socioeconomic status, physical and mental condition, and many other factors can influence the ability of people to be more resilient to hazard events. For example, wealthier homeowners living in older homes are more likely to be able to afford seismic retrofitting, compared to homeowners in similar homes with lower income levels. As a result, lower-income households may suffer greater damage from an earthquake than those with higher income levels.

The threat analysis looks at how people with various characteristics may be more vulnerable to hazard events and therefore may be considered vulnerable populations. This Plan assesses the following characteristics:

- **Disability status.** People with disabilities often have reduced mobility, and in some cases may have challenges taking care of themselves. This can reduce their ability to mitigate themselves, their homes, and their property against hazard events, particularly if they do not have assistance from others.
- **Limited English proficiency**. People who have a limited command of English can have a harder time obtaining information to help mitigate against hazard events, including information about financing opportunities and alerts about pending disasters.
- **Income levels.** People with lower incomes are less likely to have adequate financial resources to carry out mitigation activities on themselves and their homes and property, particularly if assistance programs are not available. These people are more likely to rent rather than own their homes, leaving them dependent on owners to mitigate their properties. Low-income individuals are also more likely to be transit- or transportation-dependent and thus less able to evacuate threatened areas without assistance. Limited financial resources can also make them more vulnerable to disruptions in the local economy from hazard events, which could cause significant financial hardship. Households that are under the poverty limit can face greater threats from hazard events.
- **Senior citizens.** Residents who are at least 65 years of age are more likely to have reduced mobility and physical or mental disabilities, which can decrease their ability to mitigate hazard events. Physical and mental characteristics may also make senior citizens more likely to be injured and more likely to suffer health complications from any injuries during a hazard event. Senior citizens who live alone face even higher levels of vulnerability.

Table 23 (page **90**) shows the metrics for Colton residents who meet at least one of the criteria for threatened or vulnerable populations. **Chapter 2** provides additional demographic details for the community.

TABLE 23. COLTON VULNERABLE POPULATION METRICS	
Vulnerable Population Metric	**Community-Wide Data**
Population	53,399
Households	16,133
Median household income	$77,087
Renter Households	49.2%
Percentage of households with at least one person living with a disability	27.6%
Percentage of households living under poverty limit	15.2%
Percentage of households with one or more members aged 65+	28.8%
Percentage of people aged 5+ not fluent in English	35.6%
Area affected by hazard	16.12 sq miles
Source: ESRI 2024 and U.S. Census Bureau American Community Survey 2019-23. Note: Due to data limitations, the population data used for the threat assessment may not be consistent with the Census demographic figures given in Chapter 2. The demographic data are used in the threat assessment for comparative purposes only and are not meant to replace the more accurate demographic data in Chapter 2. The demographics shown in this table include people living in Colton's sphere of influence.	

In addition to vulnerable populations that are included in Census counts, there are other vulnerable persons who cannot be as easily measured but may face just as great a risk as other socially vulnerable groups.

- Persons without access to lifelines (such as cars and basic telecommunication services) can have a difficult time getting information about hazard mitigation and may not have the resources to adequately prepare for future hazard events or escape them when they come.
- The homeless population in Colton is fairly small: an estimated 348 people in 2024, 118 of whom are sheltered and 230 persons who are unsheltered.[90] Without shelter, this population is exposed to the direct effects of hazards (natural and human caused) far more than other populations. They have very few (if any) resources to help make themselves more resilient to hazard conditions; social services may be limited or nonexistent; and it can be difficult to effectively communicate information about potential hazard events to homeless persons.
- Undocumented persons also face increased vulnerability from hazard events in the City. They frequently have lower income levels and may live in substandard housing, which can render their homes more susceptible to damage and make it more difficult for them to retrofit their homes to be more resilient. Distrust of government or other authority figures can mean that undocumented persons are less likely to participate in government-run hazard mitigation programs or less willing to listen to official notices about potential hazard events. Although there is no accurate count of undocumented persons in Colton, the total population in San Bernardino County is estimated at

[90] San Bernardino County Homeless Count & Survey Report. (n.d.-a). https://www.sbcounty.gov/uploads/sbchp/SBC-2024-Homeless-Count-Report.pdf

127,000, 49 percent of whom have limited English proficiency and an estimated 29 percent of whom live below the poverty level.[91]

Disaster Declaration Connections

FEMA has issued the following major disasters, emergency declarations, and fire management assistance grants (**Table 24**) in San Bernardino County. While none of these events directly affected the City or required the activation of the Emergency Operations Center (EOC), it should be noted that City staff did participate in online meetings with the Regional EOC and regularly updated WebEOC (software platform for emergency management) with new information. Past events identified in this Plan have been identified in connection with these events in the "Past Events" sections within each Hazard Profile located in **Chapter 3** of this Plan.

Table 24. Disaster Declarations – San Bernardino County (2018-2023)

Year	Declaration Number	Declaration Title	Incident Type	Affected the City	Activated EOC or Requested PA
2024	FM-5537-CA	BRIDGE FIRE	Fire	No	No
2024	FM-5535-CA	LINE FIRE	Fire	No	No
2024	DR-4769-CA	CALIFORNIA SEVERE WINTER STORMS, TORNADOES, FLOODING, LANDSLIDES, AND MUDSLIDES	Severe Storm	No	No
2023	DR-4750-CA	CALIFORNIA TROPICAL STORM HILARY	Severe Storm	No	No
2023	DR-4699-CA	SEVERE WINTER STORMS, STRAIGHT-LINE WINDS, FLOODING, LANDSLIDES, AND MUDSLIDES	Severe Storm	No	No
2023	EM-3591-CA	SEVERE WINTER STORMS, FLOODING, AND MUDSLIDES	Flood	No	No
2023	EM-3592-CA	SEVERE WINTER STORMS, FLOODING, LANDSLIDES, AND MUDSLIDES	Flood	No	No
2021	DR-4569-CA	WILDFIRES	Fire	No	No
2021	FM-5381-CA	BLUE RIDGE FIRE	Fire	No	No
2020	DR-4482-CA	COVID-19 PANDEMIC	Biological	Yes	Yes
2020	EM-3428-CA	COVID-19	Biological	Yes	Yes
2020	FM-5350-CA	EL DORADO FIRE	Fire	No	No
2020	FM-5325-CA	APPLE FIRE	Fire	No	No
2020	FM-5301-CA	HILLSIDE FIRE	Fire	No	No

DR = Major Disaster
EM = Emergency Declaration
FM = Fire Management Assistance Grant

[91] Migration Policy Institute 2024

Threat Profiles

Drought

Key Facilities

The primary threat from drought events is a reduced water supply. There is not likely to be any damage to key facilities from drought events, although it is possible that any water delivery infrastructure that is not used or used less during drought conditions may fall into some degree of disrepair if regular maintenance is deferred.

Vulnerable Populations

Drought conditions are generally consistent across the community, so there is no specific hazard area to evaluate. In urbanized areas, drought conditions are highly unlikely to become severe enough that a lack of water supplies poses a health or safety risk.

A drier climate and less watering of outside spaces often leads to increased dust and other air pollutants. This in turn aggravates allergies and respiratory diseases in people who already have them and increases their prevalence among the general population.

Drought can also shrink open bodies of water (such as lakes and ponds) and, by limiting replenishment and circulation, cause them to become stagnant, creating breeding areas for mosquitoes. The California Department of Public Health documented a rise in West Nile Virus cases during the 2013-6 drought; decreased availability of open water forced birds and mosquitos into closer contact, promoting spread of the disease to humans.

The community members at greatest risk are likely to be lower-income people, as droughts often bring increased water rates and fines for excessive water use. Depending on how these rates and fines are structured, they could have a disproportionately severe impact on people with lower incomes who may not have the financial resources to afford increased water bills and fines on top of other bills. This impact can be particularly severe if information about new rates and fines, as well as information about ways to conserve water, is not effectively communicated to community members. Additionally, community members who work in businesses that suffer during drought (e.g., swimming pool services, some types of farming) or in industries that rely on large amounts of water (nurseries, car washes, restaurants, and hospitality) may also face economic hardship.

Other Community Assets

Water service could be impacted during droughts; the greater the length or severity of the drought, the more extensive the impact. It is possible that water supplies may need to be rationed or otherwise subjected to strict controls during worse-than-normal droughts. The resulting dry flowerbeds and dead lawns can promote the infiltration of dust and plant spores into homes and businesses, leading to chronic heat and abrasive stress on electronics, appliances, and machinery, as well as increases in disease (as discussed above). Dead or non-existent landscaping can have a serious effect on the market value of both residential and commercial property, eventually leading to decreasing property-tax assessments and receipts. Cutting back on normal watering may also damage the urban forest, increasing the number of trees the City has to replace each year.

Acre for acre, golf courses are among the most water-intensive real estate in California. The average 18-hole golf course consumes up to 130,000 gallons of water each day. Colton has one golf course—Colton Golf Course—and it's unlikely to be able to bear the cost of that much water use during a severe shortage. Shutting down the course or letting it go brown will damage its usefulness for recreation and greatly diminish its revenue.

Changes in Population and Land Use Development

Droughts occur periodically (primarily during the summer/fall months) and generally do not affect populations to the degree that they would need to migrate in and out of the City. Drought's main effects are the slow degradation of the quality of life, a slowdown or end to development, and a loss of water-intensive industries. Water shortages or expensive water coupled with an increase in high-heat days may cause current residents to move to less rigorous conditions and may cause potential residents to look elsewhere.

It is unlikely that a "normal" drought—that is, the kind that has become semi-permanent in Southern California—will affect land use and development because the development review process will take steps to mitigate or minimize the impacts and vulnerability of drought in Colton. However, a lengthy, severe drought or a long-term reduction of the City's water supply may force drastic changes. Faced with a water shortage that has no foreseeable end, the City may have to enact a moratorium on new water hookups or on new development in general. This may kill housing or commercial projects that were years in the making, subject the City to legal action, and deprive the City of future economic benefits from the foregone development.

FLOODING

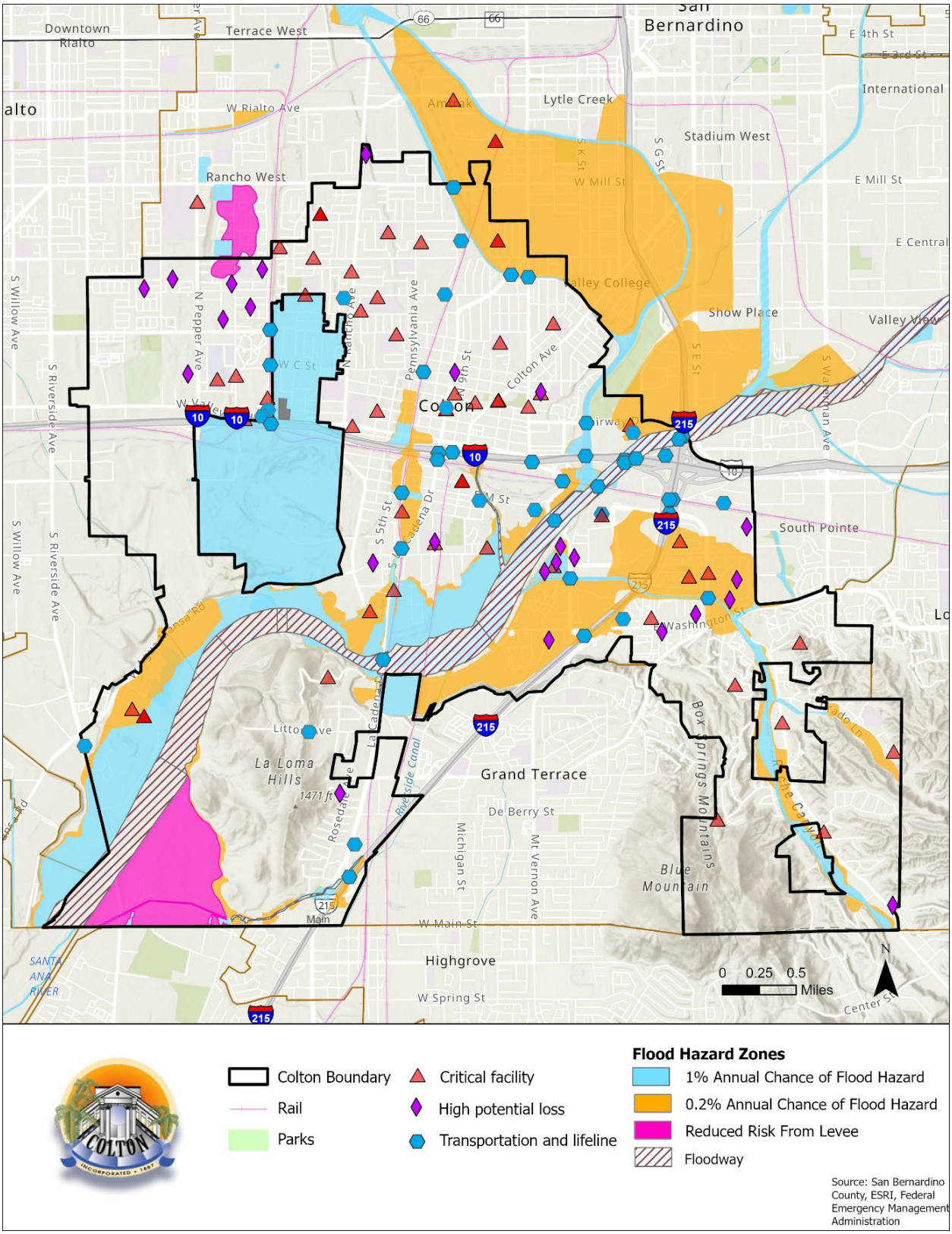
Key Facilities

There are 23 key facilities within the 100- or 500-year flood plain. This includes a number of bridges that may be damaged during a flood event, disrupting traffic flow and freight transport. Colton's Fire Station #3, which houses the Emergency Operations Center (EOC), is in the 100-year flood plain, and the City's Water Reclamation Facility is located partially in the 100-year floodplain and partially in the 500-year. There are also multiple electrical facilities in the 100-year flood plain, although a storm severe enough to qualify as a 500-year flood would likely disrupt electrical service regardless of where such facilities are located. Facilities outside of the 500-year flood plain may be impacted in particularly extreme examples. It is also possible that facilities outside of the 500-year flood plain could be damaged by ponding or other localized flooding. **Table 25** (page Error! Bookmark not defined.) shows the types of key facilities in the flood hazard zones.

Thirteen key facilities with known replacement values are in the flood hazard zone, located in both in the 100-year and 500-year flood plains. The total cost to replace these facilities is estimated at $158,089,722 million. **Figure 16** (page **95**) displays the critical facilities located within the 100-year and 500-year flood zones.

TABLE 25. KEY FACILITIES LOCATED IN FEMA FLOOD ZONES			
Facility Type	In Hazard Zone		Not In Hazard Zone
	100-Year Flood Plain	500-Year Flood Plain	
City facility	0	0	2
Community center	0	1	3
Electric power facility	4	0	4
Fire station	1	0	3
Solar facility	0	0	3
Water treatment facility	0	1	0
Water infrastructure	1	5	19
Hospital	0	0	1
School	0	1	14
Adult residential care	1	2	7
Childcare center	0	1	6
Elder residential care	0	1	4
Foster family agency	1	0	1
Home care organization	1	0	0
Communication facility	0	2	14
Highway bridge	0	0	14
Rail bridge	0	0	7
Road bridge	0	0	13
Total	**9**	**14**	**115**

FIGURE 16. KEY FACILITIES LOCATED IN THE 100-YEAR AND 500-YEAR FLOOD ZONES



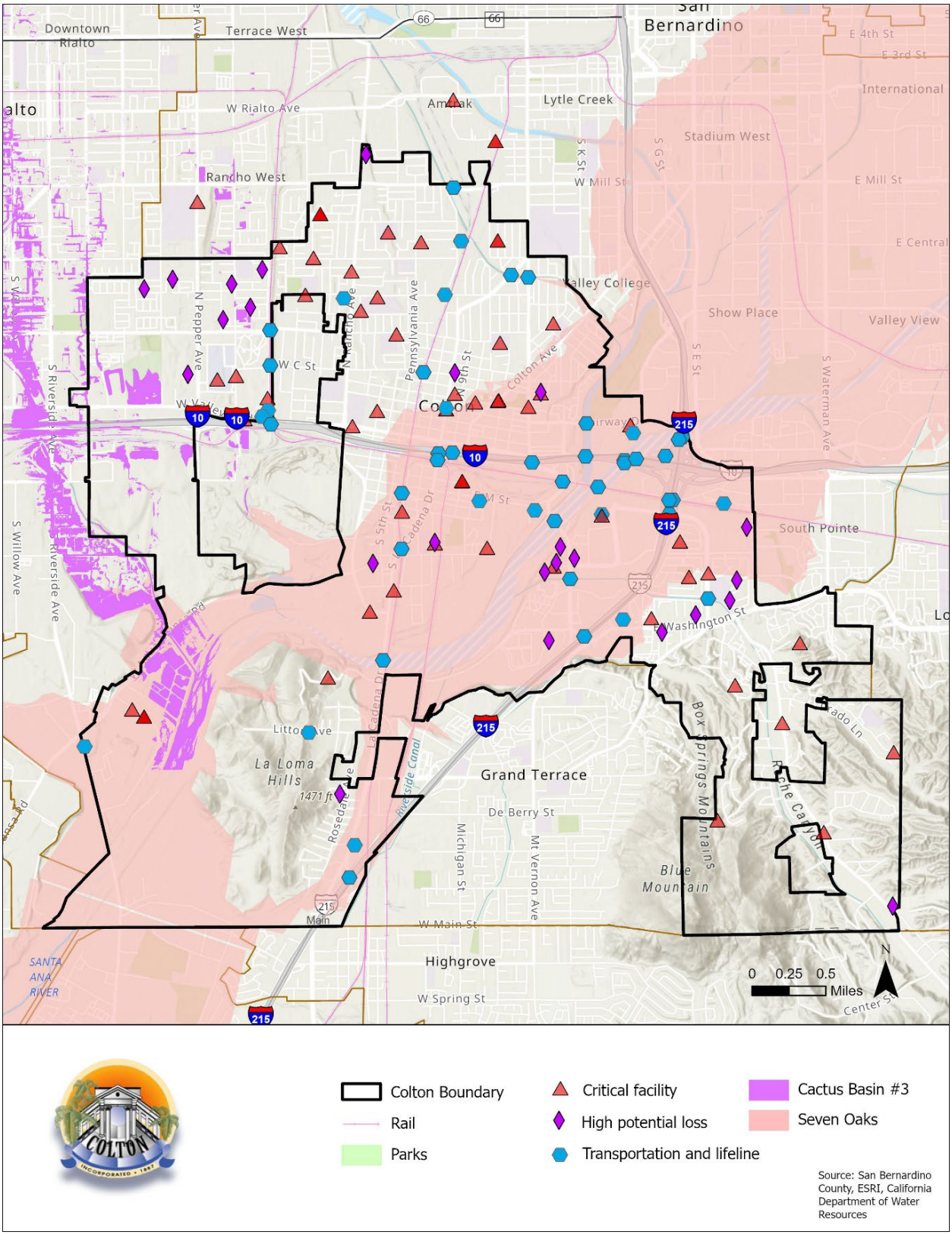
There are 82 key facilities in the Seven Oaks Dam failure inundation zone. A majority of Colton's electrical power facilities, the water treatment facility, and a large amount of water infrastructure are located in the dam inundation zone, along with several health and childcare facilities and two schools. Two of the City fire stations are in the dam inundation zone, including Fire Station 3 and the EOC. Of particular concern is that all highway, rail, and road bridges are located in the inundation zone and face a high risk of being damaged if the Seven Oaks Dam fails. This could be particularly hazardous should evacuation or emergency response be required in these areas of the City transportation network connected by bridges. **Table 26** shows the types of key facilities in the dam failure hazard zone.

There are 26 key facilities with known replacement values located in the Seven Oaks Dam inundation zone. The total cost to replace these seven facilities is estimated at $254,390,592 million. **Figure 17** (page **97**) displays the key facilities located within dam inundation zones.

TABLE 26. KEY FACILITIES IN DAM FAILURE HAZARD ZONE

Facility Type	Seven Oaks Dam Inundation Zone	Cactus Basin #3 Inundation Zone	Not In Hazard Zone
City facility	1	0	1
Community center	4	0	0
Electric power facility	8	0	0
Fire station	2	0	2
Solar facility	3	0	0
Water Treatment Facility	1	0	0
Water Infrastructure	10	0	15
Hospital	0	0	1
School	2	0	13
Adult residential care	3	0	7
Child care center	4	0	3
Elder residential care	1	0	4
Foster family agency	1	0	1
Home care organization	1	0	0
Communication facility	9	0	7
Highway bridge	10	0	4
Rail bridge	4	0	3
Road bridge	8	0	5
Total	**72**	**0**	**66**

FIGURE 17. KEY FACILITIES LOCATED IN DAM INUNDATION ZONES



Vulnerable Populations

The 100-year flood plain is relatively limited and is home to a fairly small population. By contrast, the 500-year flood plain and the dam failure hazard zone are home to thousands of people who could be harmed by such an event. People in the 500-year flood plain and the dam failure hazard zone have a lower median income than the rest of the community, and so they may be less able to afford flood insurance premiums or make flood-proofing retrofits. Therefore, these people could face disproportionate harm from flood events. There is also an above-average number of senior citizens in the 100-year flood plain who are more likely to need assistance preparing their homes for floods or evacuating. There are an estimated 16,278 residents located within the Seven Oaks Dam and Cactus Basin #3 inundation zones (approximately 7.38 sq miles or 46 percent of the City). These residents account for approximately 30 percent of the population. **Table 27** shows the social vulnerability of residents in the flood hazard and dam inundation zones.

Floods, particularly flash floods, can also be dangerous for other groups of socially vulnerable people. Residents without access to lifelines can be unaware of impending flash floods and may not have the means to evacuate on their own. Homeless persons are more likely to suffer injuries during a flood event due to their greater exposure. Additionally, a lack of flood insurance for some people in the flood plains, especially among renters, can render them highly vulnerable to suffering economic harm if a flood event does occur.

TABLE 27. FLOOD HAZARD ZONE VULNERABLE POPULATION METRICS					
Vulnerable Population Metric	**100-Year Flood Plain**	**500-Year Flood Plain**	**Seven Oaks Dam Inundation Zone**	**Cactus Basin #3 Inundation Zone**	**City of Colton**
Population	359	7,211	15,964	314	53,399
Households	95	2,375	5,161	71	16,133
Median household income	$64,258	$73,857	$69,411	$75,000	$77,087
Renter occupied households	50.5%	55.4%	61.7%	25.4%	49.2%
Percentage of households with at least one person living with a disability	34.0%	28.7%	28.4%	*N/A	27.6%
Percentage of households living under poverty limit	22.6%	14.5%	16.6%	*N/A	15.2%
Percentage of households with one-member aged 65+	35.8%	26.2%	23.5%	*N/A	28.8%
Area affected by hazard	1.04 sq miles	1.99 sq miles	7.03 sq miles	0.35 sq miles	16.12 sq miles

Source: ESRI 2024.

Note: Due to data limitations, the population data used for the threat assessment may not be consistent with the Census demographic figures given in Chapter 2. The demographic data are used in the threat assessment for comparative purposes only, and are not meant to replace the more accurate demographic data in Chapter 2. The demographics shown in this table include people living in Colton's sphere of influence.

*N/A - Dam failure area too small of population to measure statistically

Other Community Assets

Floods can cause extensive damage to homes, businesses, and other buildings in Colton that could cause significant hardship to the community and affect Colton's economic growth. A number of major commercial districts, including areas in and around the Cooley Ranch neighborhood, are in flood-prone areas. Floodwater or debris deposited by floods may block or damage road and rail networks, impeding transportation and harming the assets that depend on transportation systems, such as public transit and emergency response services. Electrical and communication systems could be damaged by floods, interrupting these services. Serious floods could potentially cause breaks in pipelines such as water and natural gas pipes, leading to further service interruptions, although such events are rare. Flood waters tend to spread toxic chemicals and other hazardous wastes throughout the inundation area, often contaminating the potable water distribution system.

Changes in Population and Land Use Development

Given the current percentage of residents in FEMA flood zones, it is possible that flooding will affect the City's population patterns and growth. Based on the current Housing Element data, the City's anticipated residential/population growth over the next five years is also anticipated to increase Colton's potential vulnerability to flood-related hazards (including dam failure).

This being said, the City should review its zoning and development plans to determine whether inordinate future development is projected for the City's 100-year flood plains and dam inundation zones. The City may choose to zone for denser development in less-threatened areas, or to proactively adopt flood-hardening code requirements to minimize or otherwise mitigate flood-related impacts on new and substantially renovated construction in the highest-threat areas.

Geological Hazards

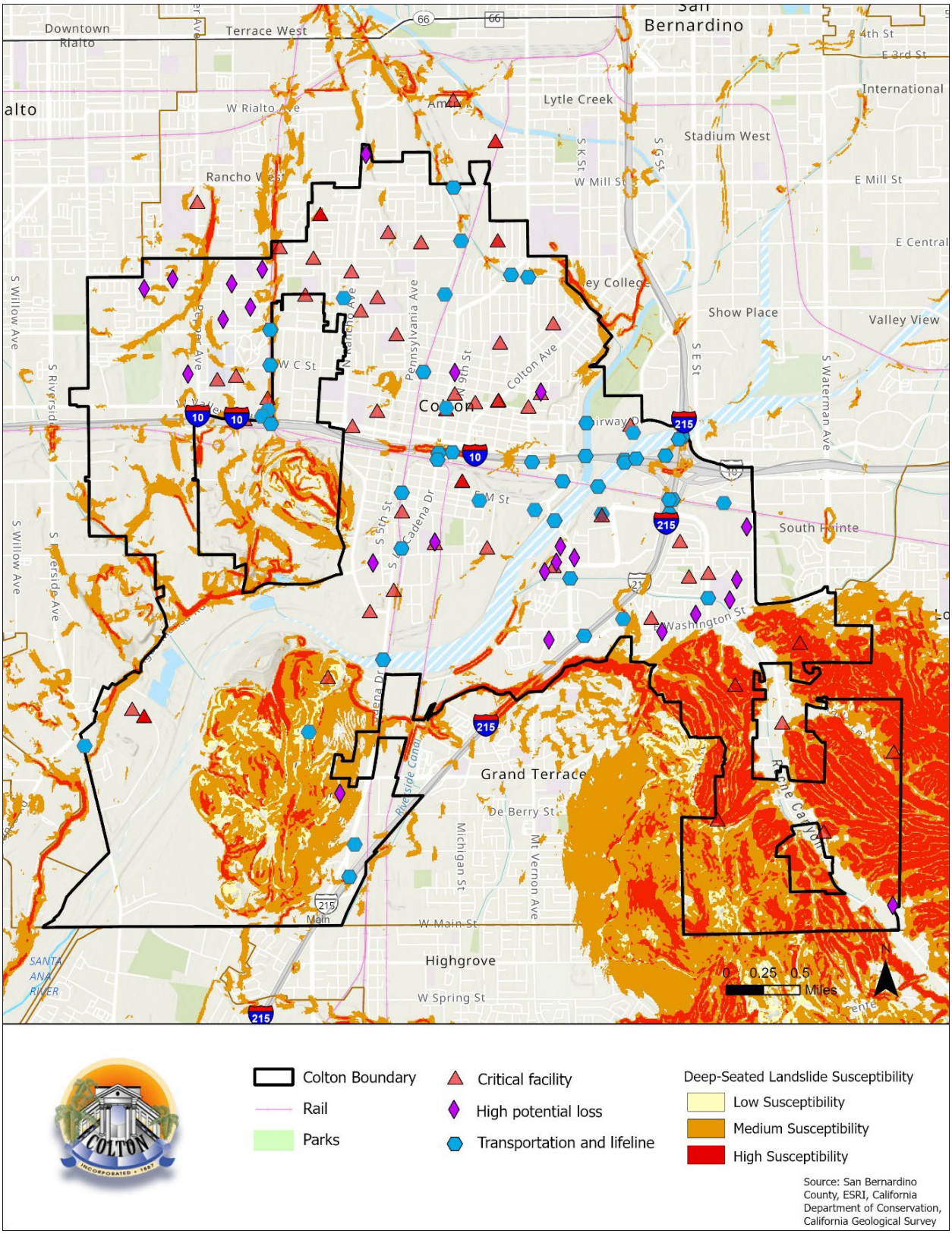
Key Facilities

There are 11 key facilities in the high landslide hazard zones. The majority of these are water infrastructure and bridges along the Interstate 10 corridor and near the Interstate 10/215 interchange. Other vulnerable facilities include two schools and an elder/senior residential care center. **Table 28** shows the types of key facilities in the landslide hazard zone. Of the listed key facilities in the landslide hazard zone, 8 have known replacement values, which are estimated at $17,278.441 million. **Figure 18** (page **101**) displays the key facilities located within the deep-seated landslide high susceptibility zones in the City.

Table 28. Key Facilities in Landslide Hazard Zones

Facility Type	In High Landslide Hazard Zone	Not In Hazard Zone
City facility	0	2
Community center	0	4
Electric power facility	0	8
Fire station	0	4
Solar facility	0	3
Water Treatment Facility	0	1
Water Infrastructure	8	17
Hospital	0	1
School	2	13
Adult residential care	0	10
Childcare center	0	7
Elder residential care	1	4
Foster family agency	0	2
Home care organization	0	1
Communication facility	0	16
Highway bridge	7	7
Rail bridge	0	7
Road bridge	0	13
Total	**18**	**127**

FIGURE 18. KEY FACILITIES LOCATED IN DEEP-SEATED LANDSLIDE ZONES



Subsidence is not ongoing in Colton, but there is some potential for it to resume if groundwater levels are not effectively managed. If such an event happens, it could pose a threat to all key facilities in the community, although the greatest threat would presumably be in areas with the fastest rate of subsidence. Since there has been no subsidence measured in Colton for several decades, it is not possible to say which parts of the City could face the greatest threat if this hazard were to resume.

Vulnerable Populations

The area of high landslide risk covers approximately 3.66 square miles and is home to an estimated 6,448 people. By most metrics, the residents of this area are not substantially more socially vulnerable than the average Colton resident. However, there is a somewhat higher proportion of senior citizens in the high landslide risk zone than there is in all of Colton. Senior citizens can have challenges evacuating an area, particularly given short notice, which is of particular concern for fast-moving landslide events. Similar challenges can affect people who lack access to vehicles. **Table 29** shows the social vulnerability of residents in the high landslide risk zone.

TABLE 29. LANDSLIDE HAZARD ZONE VULNERABLE POPULATION METRICS

Vulnerable Population Metric	High Landslide Risk Zone	City of Colton
Population	6,448	53,399
Households	4,966	16,133
Median household income	$93,907	$77,087
Renter occupied households	39.6%	49.2%
Percentage of households with at least one person living with a disability	26.1%	27.6%
Percentage of households living under the poverty limit	13.1%	15.2%
Percentage of households with one-member aged 65+	33.6%	28.8%
Area affected by hazard (square miles)	3.66 sq miles	16.12 sq miles

Subsidence is a potential hazard throughout all of Colton. Although subsidence activity in Colton has effectively ceased in recent decades, there is some possibility that it could return. If subsidence activity did resume at a significant level, it would likely have an impact on lower-income residents, who are more likely to live in houses that are less well built and may lack the financial resources to prepare their homes for such impacts.

Other Community Assets

Homes and businesses are typically damaged or destroyed by landslides. In addition to potentially causing significant injuries or fatalities, this can cause economic harm and create a need for long-term emergency sheltering and temporary housing until these buildings can be reconstructed. Landslides often block roadways or railways and may do so for weeks or even months after the event takes place. Long-term disruption to Colton's transportation networks can increase roadway congestion, harm public transit, delay response time for emergency services, and harm the local economy. Utility lines, such as power lines or water pipes, may be broken by a landslide, interrupting important services.

If subsidence did resume in Colton, the impact could be widespread. In addition to potentially damaging buildings throughout the community, subsidence could damage roads and rail lines as well as underground pipes such as water, wastewater, and natural gas. This could create more congestion on Colton's transportation networks and interrupt key utility services.

Changes in Population and Land Use Development

Land sliding is being monitored throughout the hazard prone areas in the City, the impacts can cause damage to structures located within these zones. However, these zones are generally located in certain areas of the City, meaning that the damage potential is limited to these areas. Despite this potential, landslides are unlikely to cause changes in population patterns. However, land use designations and new development may be limited in these areas out of precaution, or subject to any policies developed in City documents such as the LHMP or the General Plan's Land Use, Housing, and Safety Elements. The City's development review process will identify steps to mitigate or prevent future landslide events. Based on the current Housing Element data, the City's anticipated residential/population growth over the next five years is also anticipated to increase Colton's potential vulnerability to landslides should development occur in these areas.

Human-Caused Hazards

Key Facilities

Infrastructure failure may occur anywhere in Colton, and therefore any key facility may be affected. Some key facilities, such as bridges, are themselves pieces of infrastructure that could experience failure.

Due to the nature of hazardous material releases, the material and its effects may be confined to the area immediately around the release site, or it could spread over a wide distance. For the purposes of this Plan, the areas vulnerable to hazardous material releases are those within a quarter-mile radius of hazardous material facilities, a distance commonly used for environmental analysis of hazardous materials. This does not include the possibility of a hazardous material spill from a road or railway vehicle.

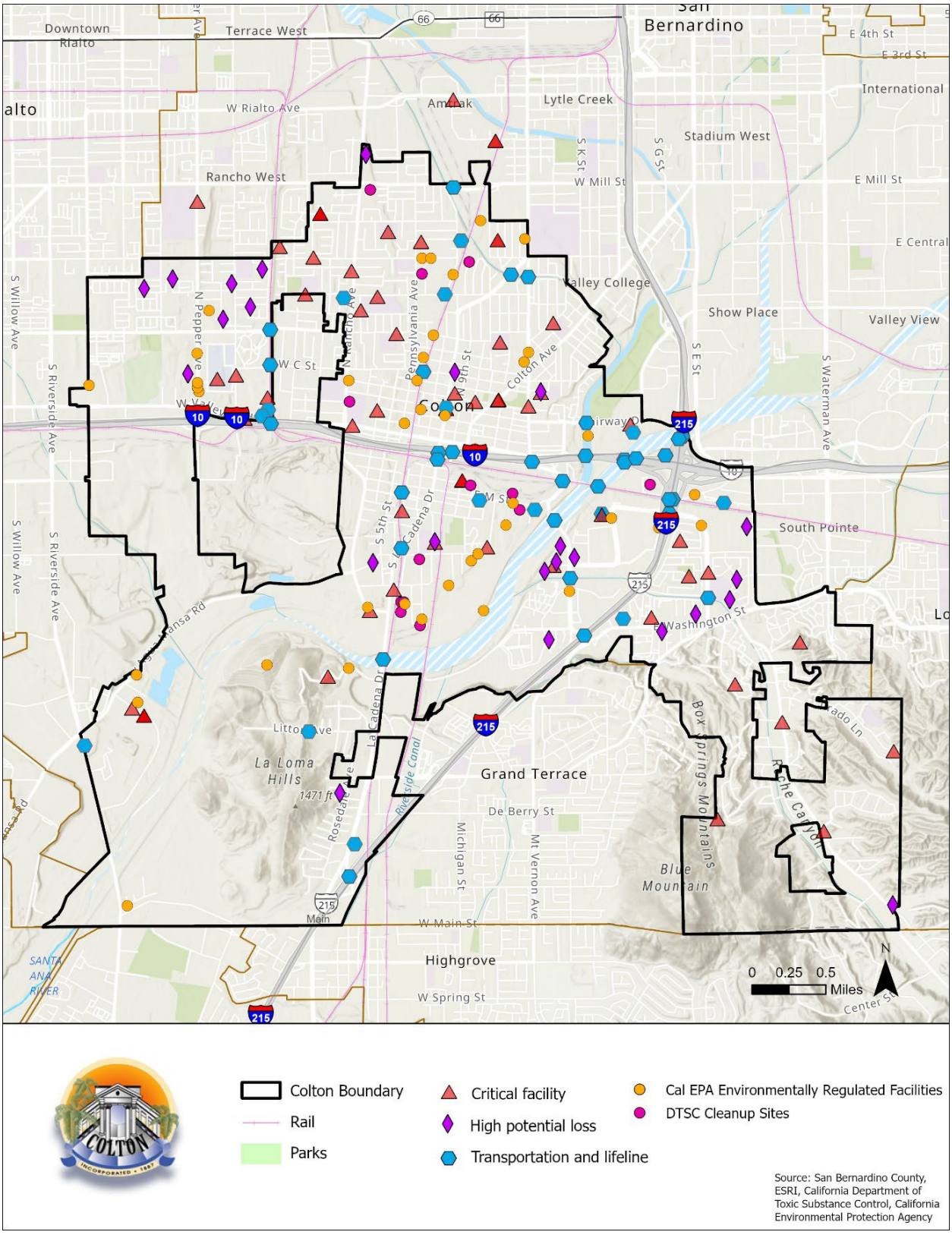
There are currently 60 key facilities in Colton that are partially or entirely within a 500-foot buffer of a hazardous material site. Vulnerable facilities include most of Colton's electrical infrastructure, one of the four fire stations, a large number of schools and care facilities, and the Arrowhead Regional Medical Center. Hazardous material releases can pose a safety threat to people at key facilities and may require them to be shut down until cleanup activities are completed. Most hazardous materials are not dangerous to the structures themselves, although some highly corrosive or reactive materials could be. Hazardous material releases may also spark fires that pose a greater threat to the structures of key facilities. **Table 30** (page **104**) shows the types of key facilities partially or entirely within the 500-foot buffer zone radius of hazardous material sites.

TABLE 30. KEY FACILITIES IN HAZARDOUS MATERIAL HAZARD ZONES (500 FT)		
Facility Type	**Within 500-ft Buffer of Hazardous Material Sites**	**Not in Hazard Zone**
City facility	1	1
Community center	1	3
Electric power facility	1	7
Fire station	1	3
Solar facility	1	2
Water treatment facility	0	1
Water infrastructure	5	20
Hospital	0	1
School	6	9
Adult residential care	8	2
Childcare center	1	6
Elder residential care	3	2
Foster family agency	1	1
Home care organization	1	0
Communication facility	6	10
Highway bridge	13	1
Rail bridge	4	3
Road bridge	7	6
Total	**60**	**138**

There are 9 key facilities that have known replacement values within a 500-foot buffer of hazardous material sites. The total cost to replace these facilities is estimated at $54,360,467 million.

Terrorism may occur anywhere, at any time. While the vast majority of recorded terrorist attacks involve soft targets, some domestic terrorists have attacked civic buildings or infrastructure. Any key facility in Colton could become a target of an act of terror. Such an act may directly seek to damage or destroy the key facility, or the structure may be damaged as a side effect of an act of terror that targets the people in the facility. Infrastructure and power failure are also a potential effect of hazardous materials release. **Figure 19** (page **105**) displays the location of key critical facilities and their location within the 500-foot buffer zone of hazardous material sites.

FIGURE 19. KEY FACILITIES LOCATED WITHIN 500-FT BUFFER ZONE OF HAZARDOUS MATERIAL SITES



Vulnerable Populations

All residents and visitors are vulnerable to infrastructure failure. As with many other types of hazards, people with lower income levels are more likely to live in housing that has been poorly built or poorly maintained (particularly if these people rent their homes). Such structures are more likely to be damaged during an infrastructure failure event. Residents with mobility challenges are more likely to have difficulty evacuating if an infrastructure failure event requires it.

An estimated 22,436 people or more live within a 500-foot buffer zone of hazardous material sites, approximately 42 percent of Colton's population. The level of social vulnerability for people within this buffer zone compared to the City at large is similar, although people in the hazard zone have a household income level that is approximately 4 percent higher than the average income for all Colton households. Additionally, a similar proportion of senior citizens in the hazard zone live alone and could require additional assistance if evacuation or sheltering in place is necessary. Depending on the nature of the hazardous material, young children or people with existing health problems may have a greater risk of being harmed by the material. People who face greater exposure, such as homeless persons or people who work outside, are also more likely to be harmed by such an event if they are unable to seek shelter in time. **Table 31** shows the social vulnerability of residents within a 500-foot buffer zone of hazardous material facilities.

TABLE 31. HAZARDOUS MATERIAL HAZARD ZONE SOCIAL VULNERABILITY METRICS

Vulnerable Population Metric	Within 500-ft Buffer of Hazardous Material Sites	City of Colton
Population	22,436	53,399
Households	6,957	16,133
Median household income	$80,533	$77,087
Renter-occupied households	49.9%	49.2%
Percentage of households with at least one person living with a disability	23.7%	27.6%
Percentage of households living under poverty limit	14.3%	15.2%
Percentage of households with one-member aged 65+	28.1%	28.8%
Area affected by hazard	5.33 sq miles	16.12 sq miles

Source: ESRI 2024.

Note: Due to data limitations, the population data used for the threat assessment may not be consistent with the Census demographic figures given in Chapter 2. The demographic data are used in the threat assessment for comparative purposes only, and are not meant to replace the more accurate demographic data in Chapter 2. The demographics shown in this table include people living in Colton's sphere of influence.

Most Colton residents generally face a similar threat level from terrorist activities. Individuals who work in high-profile positions or at sites that are more likely to be targeted could face a somewhat greater threat, although it is unclear if such an increase in threat levels would be appreciably higher. No population group faces a greater threat from terrorism than others.

Other Community Assets

A substantial infrastructure failure event would likely disrupt a number of services in Colton depending on the nature of the event, potentially including electricity and natural gas delivery, telecommunications, and water and wastewater. A citywide or even regionwide power failure could also occur, potentially leaving thousands without power, until service could be restored. Damage to roads or railways could affect transportation and freight-shipping activities. Any number of non-key facilities, such as homes or businesses, could be damaged or destroyed by an infrastructure failure that creates a flood, explosion, or fire.

The primary threat to other community assets from hazardous material releases is the disruption of transportation networks. Depending on the size, location, and nature of the release, large areas of the local road or rail system may be closed to keep people away from hazardous conditions and to allow for cleanup activities. The release of highly corrosive hazardous material could cause direct damage to physical assets such as homes and businesses. Hazardous material releases could also be highly dangerous to local ecosystems and may cause harm to plants and animals in wildland areas.

Terrorism may threaten any number of community assets. Depending on the nature of the terrorism act, community assets such as energy or transportation infrastructure may be directly targeted, causing service outages in part or all of Colton. Service disruptions or damage to other community assets could also occur as an incidental consequence of an act of terror.

Changes in Population and Land Use Development

A change in population pattern would only occur if a hazardous materials release was severe enough to require people to move. It is unlikely that hazardous materials release will affect land use and development because the development review process will take steps to mitigate or minimize impacts from a hazardous materials release event. Locations that store, produce, and dispose of hazardous materials are highly regulated within the City and monitored regularly. Through this process, as well as the development review process, it is not anticipated that land use and development patterns will change. Based on the current Housing Element data, the City's anticipated residential/population growth over the next five years is also anticipated to increase Colton’s potential vulnerability to hazardous materials release as development increases.

SEISMIC HAZARDS

Key Facilities

Fault Rupture

There are two identified key facilities in the Alquist-Priolo fault zone. Most of these facilities are highway bridges along Interstate 215, near the Santa Ana River and the interchange with Interstate 10. One elder-care facility is also situated in this hazard zone. **Table 32** (page **109**) lists the types of key facilities in the Alquist-Priolo zone. **Figure 20** (page **108**) displays the key facilities near AP zones and at risk from fault rupture damage. None of the key facilities in the Alquist-Priolo fault zones have known replacement values.

FIGURE 20. KEY FACILITIES NEAR FAULT LINES AND ALQUIST-PRIOLO FAULT ZONES

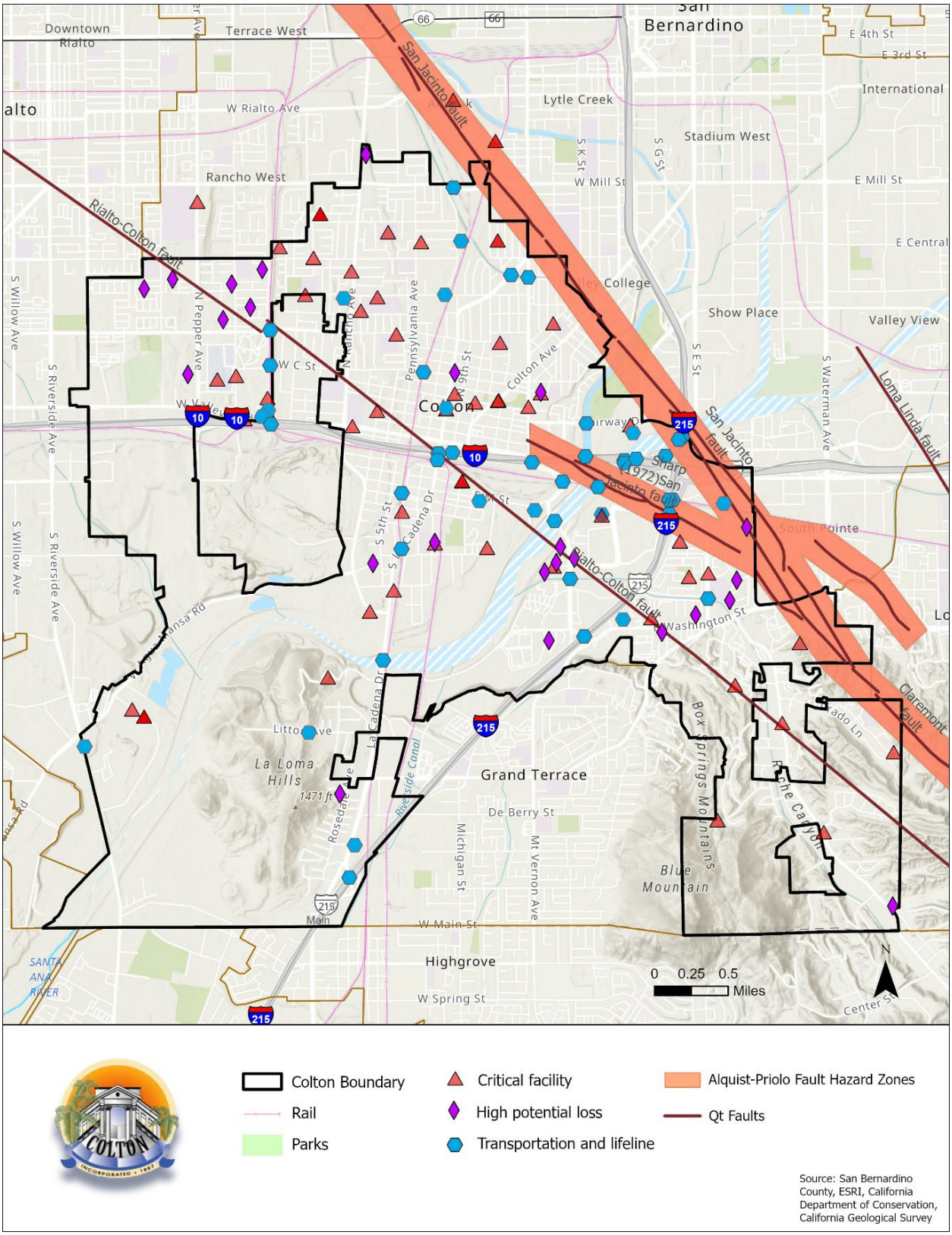


TABLE 32. KEY FACILITIES IN ALQUIST-PRIOLO FAULT ZONE		
Facility Type	**In Alquist-Priolo Zone**	**Not In Hazard Zone**
City facility	0	2
Community center	0	4
Electric power facility	0	8
Fire station	0	4
Solar facility	0	3
Water Treatment Facility	0	1
Water Infrastructure	0	25
Hospital	0	1
School	0	15
Adult residential care	0	10
Childcare center	0	7
Elder residential care	1	4
Foster family agency	0	2
Home care organization	0	1
Communication facility	1	15
Highway bridge	6	8
Rail bridge	1	6
Road bridge	0	13
Total	**9**	**129**

Liquefaction

Three key facilities are currently located in the high-susceptibility liquefaction hazard zone. These include two highway bridges and a communication facility. Table 33 (page 111) shows the types of key facilities located in the high susceptibility liquefaction hazard zone.

None of the key facilities located in this high-susceptibility liquefaction hazard zone have known replacement values. Figure 21 (page 110) shows the key facilities that are located in this high-susceptibility liquefaction hazard zone.

FIGURE 21. KEY FACILITIES IN LIQUEFACTION HAZARD ZONES

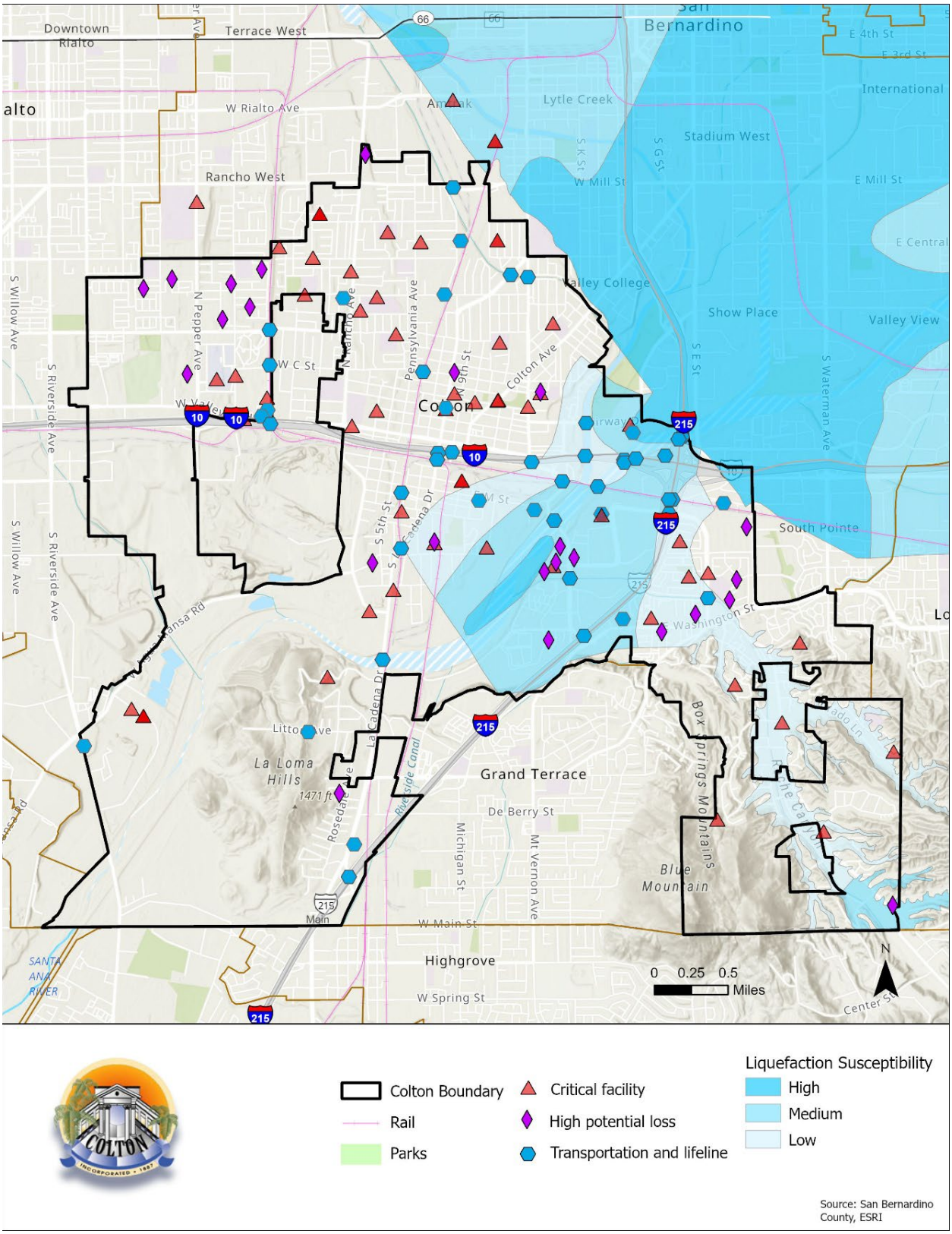
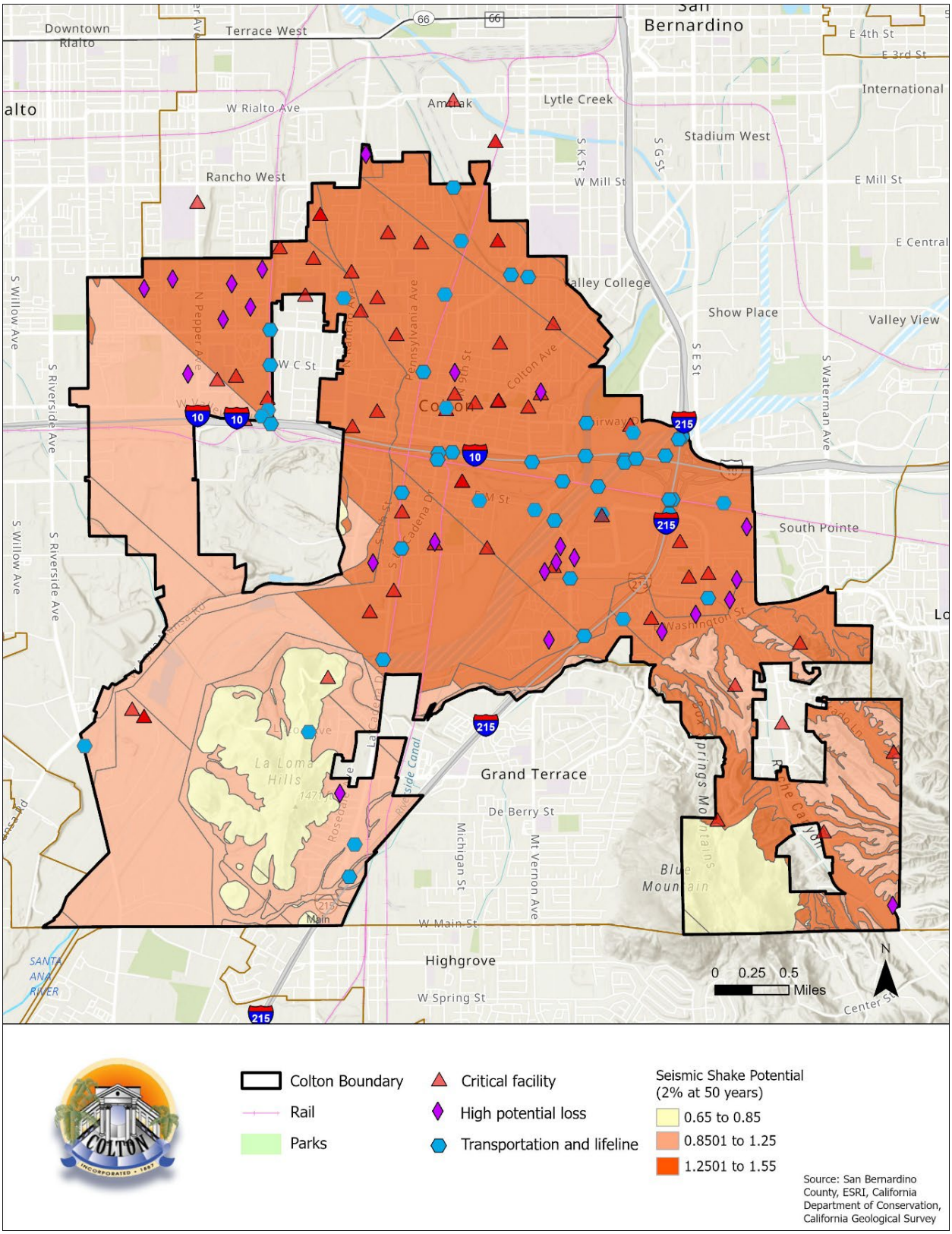


TABLE 33. KEY FACILITIES IN LIQUEFACTION HAZARD ZONES		
Facility Type	**High Susceptibility Liquefaction Zone**	**Not In Hazard Zone**
City facility	0	2
Community center	0	4
Electric power facility	0	8
Fire station	0	4
Solar facility	0	3
Water Treatment Facility	0	1
Water Infrastructure	0	25
Hospital	0	1
School	0	15
Adult residential care	0	10
Childcare center	0	7
Elder residential care	0	5
Foster family agency	0	2
Home care organization	0	1
Communication facility	1	15
Highway bridge	2	12
Rail bridge	0	7
Road bridge	0	13
Total	**3**	**135**

Seismic Shaking

Seismic shaking poses a threat to all key facilities. Any of them may face damage or destruction in a sufficiently strong earthquake. In general, facilities that are older and have not been well maintained, or facilities that were poorly constructed to begin with, face the greatest threat. Without a more detailed seismic evaluation of key facilities, it cannot be said which structures are more likely to be damaged or destroyed. Figure 22 (page 112) displays the seismic shaking that can potentially affect the City and its key facilities.

FIGURE 22. KEY FACILITIES AND SEISMIC SHAKING POTENTIAL



California law requires that hospitals undergo seismic retrofits or be built to seismically resilient standards so that, after a significant earthquake, both the structural and nonstructural elements of the hospital are capable of operating and providing medical care. The Arrowhead Regional Medical Center reports that most of the facility's buildings, including all that provide medical care, are rated as "reasonably capable" of providing medical care after a strong earthquake. The one exception is the facility's loading dock, which is rated as being vulnerable to a level of structural damage that "does not significantly jeopardize life," but may render it inoperable after a strong earthquake. All facilities at the Arrowhead Regional Medical Center, including the loading dock, are rated at the highest level of nonstructural performance, meaning that the hospital has onsite water supplies, energy supplies, and wastewater holding tanks sufficient to allow 72 hours of emergency operations without access to utility service.[92]

Vulnerable Populations

Fault Rupture

Residents in Colton's Alquist-Priolo zone who face the risk of surface fault rupture from the San Jacinto Fault do not have higher levels of social vulnerability than the average Colton resident. By some metrics—such as household income and level of poverty—residents of the Alquist-Priolo zone are less socially vulnerable than the average Colton resident. This does not mean that residents of the Alquist-Priolo zone are not socially vulnerable; in particular, the percentage of senior citizens living alone and people with limited English proficiency may create challenges for mitigation activities.

Liquefaction

Although in effect no one lives in the zone of high liquefaction risk, an estimated 14,000-plus residents live in other areas with an elevated liquefaction risk. Residents in the medium-high liquefaction risk have a substantially lower level of household income (approximately 26 percent below Colton's average), decreasing their ability to harden their homes against liquefaction and making them more susceptible to economic damage from seismic activity. Additionally, both the medium and medium-high liquefaction risk zones have higher proportions of senior citizens living alone. Seniors living alone may have a harder time hardening their homes against liquefaction or receiving information about risk levels, particularly if they lack regular assistance from formal or informal support networks. **Table 34** (page **114**) shows the social vulnerability of residents in the seismic hazard zones.

Seismic Shaking

In addition to the defined zones for surface fault rupture and liquefaction, all residents of Colton are at risk of seismic shaking. Persons with limited English proficiency may have a difficult time receiving information about being prepared for earthquake events if it is not made available in their language. Senior citizens (especially those living alone) and persons with disabilities could have a harder time strengthening their homes against seismic activity, and lower-income households and persons in poverty may not have the financial resources to do so. Persons with fewer financial resources are also more likely to be affected by the decrease in economic activity that would likely accompany a significant earthquake.

[92] OSHPD (California Office of Statewide Health Planning and Development). "California Hospitals Data: Arrowhead Regional Medical Center." https://hcai.ca.gov/?s=California+Hospitals+Data%3A+Arrowhead+Regional+Medical+Center.

TABLE 34. SEISMIC HAZARD ZONES SOCIAL VULNERABILITY METRICS			
Threatened Population Metric	**Alquist-Priolo Zone**	**High Liquefaction**	**City of Colton**
Population	3,295	8	53,399
Households	902	N/A	16,133
Median household income	$86,492	N/A	$77,087
Renter-occupied households	25.8%	N/A	49.2%
Percentage of households with at least one person living with a disability	28.3%	N/A	27.6%
Percentage of households living under the poverty limit	17.8%	N/A	15.2%
Percentage of households with one-member aged 65+	33.0%	N/A	28.8%
Area affected by hazard	0.9 sq miles	0.21 sq miles	16.12 sq miles

Other Community Assets

Fault Rupture

Surface fault rupture could damage any building or infrastructure within the rupture zone. This could include Interstates 10 and 215, as well as the Union Pacific railroad; the BNSF railroad also crosses the San Jacinto Fault's rupture zone immediately north of Colton. Surface roads could also be damaged, along with any utility lines or pipes that cross the fault line. This could create traffic congestion and block routes to the north and east of Colton, as well as causing widespread utility outages.

Liquefaction

Liquefaction could also damage Interstates 10 and 215, the Union Pacific railroad line, and any utility lines that run through the liquefaction hazard zone. In addition to creating service outages, impacts to these pieces of infrastructure can cause regional traffic congestion. The Cooley Ranch neighborhood between the Santa Ana River and Interstate 215 is designated a medium-high liquefaction hazard zone, and in addition to damage to homes, liquefaction could harm the large number of retail stores in the neighborhood, affecting the local economy.

Seismic Shaking

Seismic shaking may affect other community assets throughout Colton. Older buildings of all types that have not been seismically retrofitted may be harmed. As mentioned in **Chapter 3**, an earthquake on the San Jacinto Fault could cause shaking that would rank as IX (Ruinous) on the MMI scale, the same level of intensity as the 1994 Northridge earthquake at the areas of strongest shaking. Such shaking could damage or destroy roads or rail lines, bridges, and utility lines, creating transportation congestion and utility outages. There is also the possibility that a strong earthquake could rupture hazardous material storage containers, causing potentially several hazardous material releases.

Changes in Population and Land Use Development

Fault Rupture

Based on the current Housing Element, it is anticipated that population patterns will increase approximately 3% by 2030. This could indicate that land use and development policies would remain consistent with the most current regulations. Given the presence of multiple faults within the City, an increase in population and an increase in residential development will most likely increase the potential impacts from fault rupture in the City and to its residents, especially in the areas located near the Alquist-Priolo Special Study zones. New development and land use designations may be limited in these areas out of precaution, or subject to policies developed in City documents such as the LHMP and the General Plan's Land Use, Housing, and Safety Elements.

Liquefaction

Liquefaction is being monitored throughout hazard-prone areas in the City. However, these zones are generally located in certain areas of the City, meaning that the damage potential is limited to these areas. Despite this potential, liquefaction is unlikely to cause changes in population patterns. However, land use designations and new development may be limited in these areas out of precaution, or subject to policies developed in City documents such as the LHMP and the General Plan's Land Use, Housing, and Safety Elements. The City's development review process will identify steps to mitigate or prevent future liquefaction exposure.

Seismic Shaking

Based on the current Housing Element data, the City's anticipated residential/population growth over the next five years is also anticipated to increase Colton's potential vulnerability to seismic hazards as development increases. While this may also be true concerning land use and development, if a strong earthquake impacts the City, there is the potential that older structures of the City may be damaged more severely than newer structures and developments in the City.

Severe Weather

Key Facilities

Most key facilities are unlikely to be harmed by extreme heat. However, cellular telephone sites and electrical facilities such as substations and power plants could be affected by very high temperatures, as such conditions place increased stress on electronic components and the electrical grid. If demand is not properly managed, it is possible that electrical facilities may be damaged during extreme heat events. Severe wind and severe winter weather could cause damage to key facilities, particularly if they have not been well built or have been poorly maintained. This could range from relatively minor damage, such as some lost roofing material, to more significant structural damage or even some degree of destruction in extreme cases.

Vulnerable Populations

Extreme Heat

All types of severe weather events may occur anywhere in Colton, so there are no specific risk zones to analyze for social vulnerability. Extreme heat likely has the greatest potential to cause disproportionate harm to Colton's residents because extreme heat is very dangerous to young children, senior citizens, and people who live or work outside. This can create significant health risk, particularly for seniors who do not live near a cooling center (or have no way of reaching one), seniors who rely on help from another person to fulfill their basic needs, and residents who do not live in a home with air conditioning. Other exposed people, such as outdoor workers (such as gardeners and construction workers) and individuals experiencing homeless, also face an elevated risk from extreme heat events.

Severe Wind

Severe wind may be harmful to people who live in housing that has not been well constructed or well maintained, or to people who live in mobile homes. Such housing is more likely to be damaged by strong winds. Residents of these homes who have limited financial resources may face further hardships if their homes are damaged, as reconstruction may be a significant economic burden.

Severe Winter Weather

Severe winter weather can also harm people in poorly built or maintained houses, as such buildings may be similarly vulnerable to damage from an intense storm system. It also poses a threat to people working outside and people experiencing homelessness. If these weather systems create a need to evacuate, senior citizens, people with disabilities, and people without access to a vehicle may have difficulty doing so and could require assistance from formal or informal support groups.

Other Community Assets

Severe wind and severe winter weather can topple aboveground phone lines, street signs, trees (including parts of the City's urban forest), street furniture (bus shelters, trash cans, wayfinding signage), decorative banners, awnings, and sun shades, and road barricades, sometimes creating missile hazards. Flying debris can damage buildings and injure people caught outside in the storm. Throughout Colton, there is a risk of severe wind damaging buildings, particularly those that are poorly built or have been poorly maintained. Even if such buildings are not

considered key facilities, damage to these structures may pose a safety hazard and could affect the local economy.

Changes in Population and Land Use Development

Extreme Heat

There could be minor changes in population patterns due to extreme heat if people cannot continue to live in older structures with limited insulation and older cooling units. The anticipated population growth in Colton is not expected to significantly impact the City's vulnerability to extreme heat. However, if extreme heat becomes more common, both current and prospective residents may move to places that do not experience triple-digit temperatures, leading to lower population and economic growth.

The City's development review process will attempt to take steps to mitigate or minimize the impact of extreme heat on land use and development. However, these mitigation steps (in addition to those for flood and seismic safety, energy and water efficiency, and so on) will add costs to the resulting buildings that may eventually render them uneconomical. Zoning and development plans may need to change the type and location of new building to accommodate these new realities. In the meantime, additional investment may become necessary in older parts of the City to modify structures to handle extreme heat conditions. Without these expenditures, a growing portion of the existing residential and commercial building stock may become uninhabitable.

Severe Wind

Severe windstorms occur periodically (primarily during the fall months) and generally do not affect populations to the degree that they would need to migrate in and out of the City. The anticipated population growth in Colton is not expected to have a significant impact on the City's vulnerability to severe windstorms. It is unlikely that severe wind will affect land use and development because the development review process will take steps to mitigate or minimize the impacts of severe wind. There is the potential that older structures in the City may be impacted more severely than newer structures. Potential damage to overhead powerlines and mature trees may be difficult to mitigate. Older structures may not comply with current building codes, far less more stringent ones, and may be difficult to retrofit without sacrificing design details that make them distinctive and more valuable.

Severe Winter Weather

Based on the current Housing Element data, the anticipated residential growth in the City over the next five years could potentially increase Colton's vulnerability to severe winter weather.

ARs and ENSO precipitation variations are likely to add increasing rain to severe winter storms. Mitigating the effects of torrential downpours will resemble the efforts the City makes to control its flood risk (see "**Flooding**" section, above). Zoning, planning, and the development review process will need to coordinate to mitigate or minimize impacts from severe storms.

WILDFIRES

Key Facilities

Although the wildfire hazard zone covers a sizeable part of Colton, most key facilities are in urbanized or other non-wildland areas. As a result, only 11 key facilities are located in Very High

FHSZ areas. The Very High FHSZs include a communication facility, a childcare center, Colton's Water Reclamation Facility, several other pieces of water infrastructure, Reche Canyon Elementary School, and multiple private care centers. There are also multiple key facilities located within the wildland-urban interface zone (WUI); this is a concern as these areas are also highly susceptible to wildfires, as this is the area between the City- and state-owned undeveloped lands. Within the WUI there are 17 key facilities, including water infrastructure, a fire station, a school, multiple care facilities for adults and children, and multiple communication facilities. **Table 35** lists the types of key facilities in the Very High FHSZs and the WUI.

There are five key facilities with known replacement values in the very high fire hazard severity zones—all water infrastructure—totaling approximately $13,163,981 million. Six key facilities with known replacement values that total approximately $12,521,620 million are also located within the WUI, including a fire station and water infrastructure. **Figure 23** (page **119**) displays the key facilities that are located within the Very High FHSZs and the WUI, and **Figure 24** (page **120**) displays the key facilities located with the historic wildfire perimeters of Colton.

TABLE 35. KEY FACILITIES IN WILDFIRE HAZARD ZONES

Facility Type	Located within the Very High FHSZ	Located within the WUI	Not In Hazard Zone
City facility	0	0	2
Community center	0	0	4
Electric power facility	0	0	8
Fire station	0	1	3
Solar facility	0	0	3
Water Treatment Facility	0	0	1
Water Infrastructure	5	5	15
Hospital	0	0	1
School	1	1	13
Adult residential care	0	1	9
Childcare center	1	2	4
Elder residential care	2	5	0
Foster family agency	0	0	2
Home care organization	0	0	1
Communication facility	1	2	13
Highway bridge	0	0	14
Rail bridge	0	0	7
Road bridge	1	1	11
Total	**11**	**18**	**109**

FIGURE 23. KEY FACILITIES LOCATED WITHIN THE VERY HIGH FIRE HAZARD SEVERITY ZONES

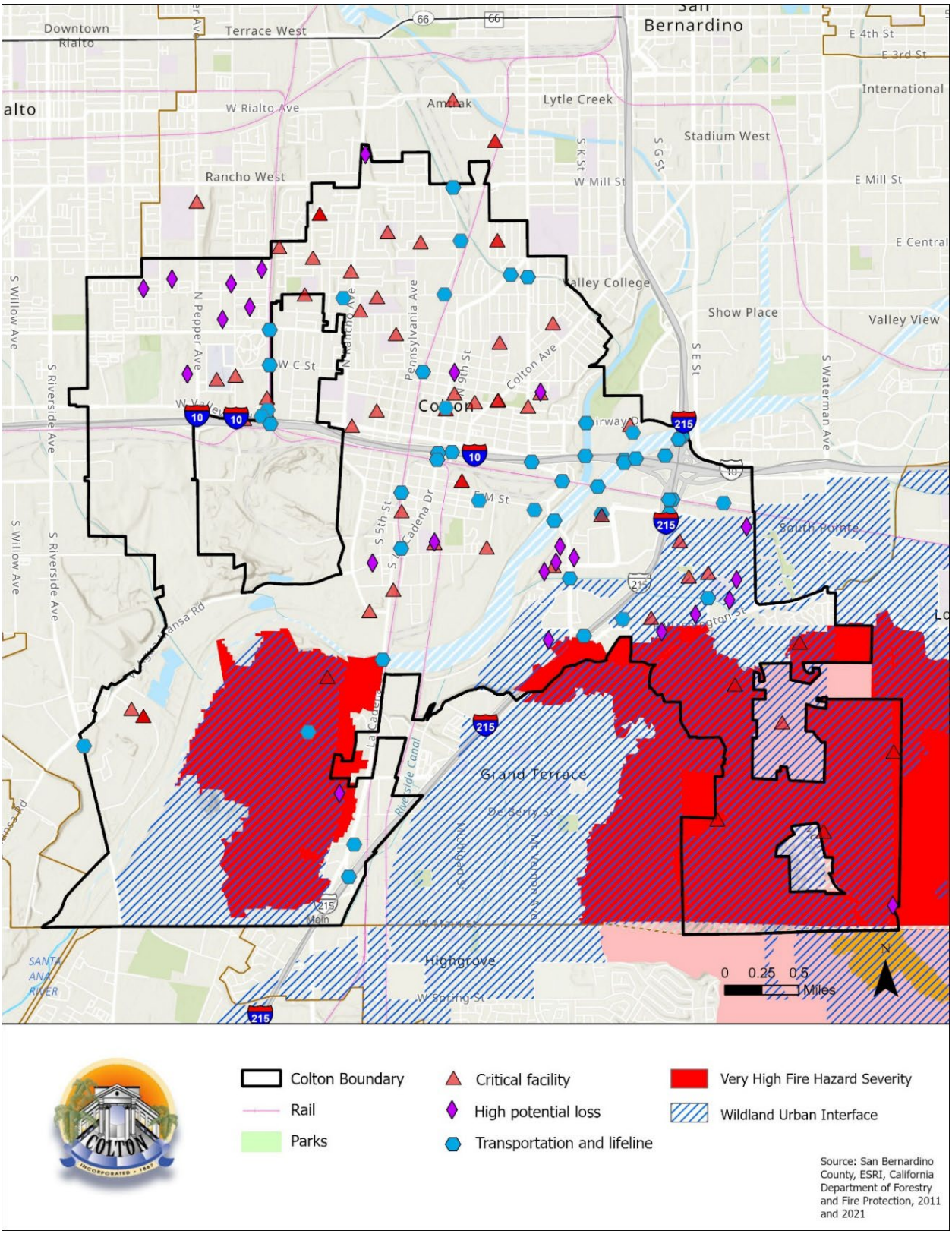
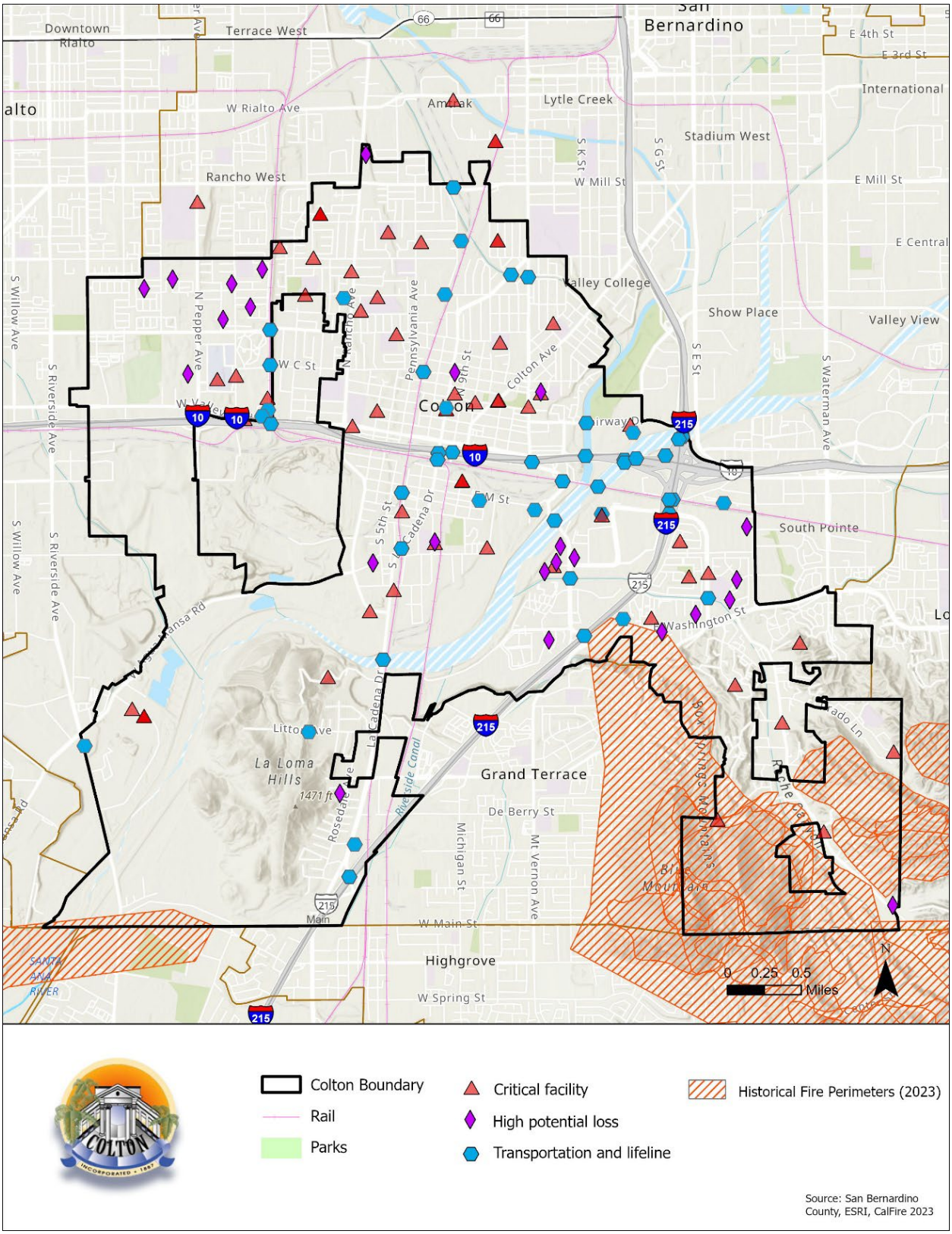


FIGURE 24. KEY FACILITIES LOCATED NEAR HISTORIC WILDFIRE PERIMETERS



Vulnerable Populations

Colton's Very High FHSZs include approximately 7,122 residents, while the WUI has approximately 14,109 residents. There are higher rates of senior citizens in both the Very High FHSZs and the WUI. As senior citizens are more likely to have disabilities and reduced mobility, areas with higher percentages of senior citizens can have more challenges with evacuation and preparatory activities. Households in the Very High FHSZs and the WUI have income levels higher than the rest of Colton. Such households may have an easier time preparing their homes and properties to be more resilient to wildfire. **Table 36** shows the social vulnerability of residents in the Very High FHSZs and WUI zones.

TABLE 36. WILDFIRE HAZARD ZONE SOCIAL VULNERABILITY METRICS

Threatened Population Metric	Very High FHSZ	WUI	City of Colton
Population	7,122	14,109	53,399
Households	2,165	4,796	16,133
Median household income	$103,412	$85,065	$77,087
Renter-occupied households	43.6%	50.9%	49.2%
Percentage of households with at least one person living with a disability	24.7%	26.6%	27.6%
Percentage of households living under the poverty limit	10.2%	11.7%	15.2%
Percentage of households with one-member aged 65+	31.4%	31.7%	28.8%
Area affected by hazard	3.97 sq miles	5.04 sq miles	16.12 sq miles

In addition to the impacts to residents of the FHSZs, wildfires can have more widespread impacts on socially vulnerable persons. Children, senior citizens, and people with respiratory conditions can be disproportionately affected by ash and smoke inhalation, creating or exacerbating health impacts throughout Colton and in the broader region.

Other Community Assets

The FHSZs in Colton include a large number of residential and commercial areas. Buildings of all types in wildfire-prone areas are at risk of significant damage or destruction from any blazes, requiring temporary housing and lengthy reconstruction activities. Wildfire events can interrupt transportation networks by burning too close to road or railways, requiring them to be closed for public safety and so as to provide easy access for emergency responders. Interstate 215 runs through the Very High FHSZ and other areas of elevated risk for wildfires and so could be vulnerable to closure during a wildfire event. In addition to creating significant congestion, such a move could hamper evacuation efforts. Wildfires often damage or destroy power lines and may also interrupt natural gas pipelines or cause them to be shut down for safety reasons, creating energy service outages.

Changes in Population and Land Use Development

If a large wildfire or urban fire were to occur, it is feasible that changes to population patterns could fluctuate. Future land use designations, redevelopment, or new development in these areas could be restricted or even prohibited, especially in the WUI and the VHFHSZs. The anticipated population growth in the City is not expected to significantly impact Colton's vulnerability to wildfire, assuming residential development is limited in fire prone areas.

CHAPTER 5 – HAZARD MITIGATION STRATEGY

Strategy Development Process

Colton's hazard mitigation strategy is a comprehensive set of actions intended to reduce the impact of hazard events. These hazard mitigation actions will help protect the safety and well-being of residents, visitors, CFs and FOCs, other buildings and structures, key services, the local economy, and other important community assets. Some actions will also help with emergency preparedness, allowing for a more effective community response to hazard events. Preparedness actions are not required for an LHMP, but they support and complement mitigation activities. The HMPT chose to include them as part of the overall hazard mitigation strategy.

Use Of Hazard And Threat Assessment

The HMPT relied partly on the hazard profiles and threat assessments in this Plan to develop the mitigation strategy's actions. A comprehensive set of mitigation actions was prepared to respond to the relevant hazard situations and protect residents, businesses, and community assets in Colton. The HMPT ensured that the mitigation actions would help reduce damage from the most frequent types of hazard events, the most significant that may reasonably occur, and those with the greatest potential to harm the community. The HMPT also drafted mitigation actions to help protect the most vulnerable community members and the most vulnerable local assets.

Capabilities Assessment

As part of the effort to draft mitigation actions, the City completed a capabilities assessment that included reviewing existing policies, personnel, and technical resources to support hazard mitigation activities in Colton. The hazard mitigation actions build on these resources' existing success and leverage their capabilities to support improved resiliency in the community. The capabilities assessment looked at the following types of resources:

- **Personnel resources:** City employees and volunteers, and employees and volunteers at other agencies
- **Plan resources:** Advisory or enforceable plans adopted by the City or other agencies
- **Policy resources:** Policies adopted and implemented by the City or other agencies
- **Technical resources:** Data and tools available to the City
- **Financial resources:** Funding mechanisms available to the City that support mitigation activities

Capabilities Improvement/Expansion

The ability to expand current mitigation capabilities will generally be reliant upon the budgeting allocated for each department/program for that fiscal year. The level at which these programs may or may not be expanded upon will be dependent upon the amount of funding received. FEMA has released a series of guides over the past few years that highlight some of the ways that jurisdictions can expand mitigation. Some strategies for increasing current mitigation capabilities may include:

1) The City should actively identify, adopt, and enforce the most current set of development codes and standards available. Strongly encouraging new development to be constructed to higher standards than currently required increases resilience within the community.
2) Engaging parts of the community that may not be actively involved in mitigation efforts.
3) Expanding the number and types of organizations involved in mitigation planning and implementation, increasing both efficiency and bandwidth.
4) Fostering new relationships to bring underrepresented populations and partners to the hazard mitigation planning process.
5) During the annual LHMP review, the committee should look for opportunities to fund and expand/enhance the effectiveness of current mitigation actions.

Table 37 (page **125**) shows the capabilities assessment for Colton.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
Legal and Regulatory Capabilities		
Colton City General Plan – Housing Element (2021)	The Housing Element contains the following material: • Discusses demographics, such as age and race. • Includes a description of the household, including size, income, and home ownership. • Discusses new housing growth needs. • Discusses sustainability and energy efficiency. • Addresses building code. The Housing Element can be found at: https://www.ci.colton.ca.us/778/Planning-Documents	**Expansion and Improvement:** The Housing Element and LHMP will be aligned to describe the City and its population.
Colton City General Plan – Land Use Element (2013)	The Land Use Element serves as a guide to the ultimate development pattern for the City, both within its incorporated boundaries and sphere of influence. The Land Use Element: • Designates the distribution, location, and balance of land uses. • Describes the desired build-out of Colton. • Describes building intensity standards for each land use. • Communicates population density. • Facilitates compatibility between land uses. The entire Land Use Element can be found at: https://www.ci.colton.ca.us/778/Planning-Documents	**Expansion and Improvement:** The City will align the Land Use Element and LHMP to describe developmental trends, hazards, and potential development in hazard areas.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
Colton City General Plan – Safety Element (2018)	The Safety Element identifies potential hazards: • Climate change • Flooding • Hazardous material release • Seismically induced conditions, including ground shaking, surface rupture, ground failure, slope instability leading to mudslides and landslides, subsidence, and other geologic hazards • Wildland and urban fires It discusses water supply requirements and design standards for new development as they relate to identified fire, seismic, and geologic hazards. The Safety Element can be found at: https://www.ci.colton.ca.us/778/Planning-Documents	**Expansion and Improvement:** The LHMP will be linked by reference to the Safety Element of the General Plan. The City will adopt the approved LHMP as part of the General Plan to meet the requirements of AB 2140. As the City revises the Safety Element, it will include applicable material from the LHMP for hazard analysis and goals. The City intends to add drought to the Safety Element.
Area Specific Plans	Colton maintains specific plans for various areas, including: • Reche Canyon (1991) • HUB City Center (2014) • South Colton Livable Corridor (2019) • Roquet Ranch (2018) These plans adapt the precepts of the General Plan's Land Use and Housing Elements to specific parts of the City.	**Expansion and Improvement:** The LHMP will take the specific plans into account when determining development trends, hazards, and mitigation opportunities.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
Capital Improvement Program (CIP)	Colton's Capital Improvement Program is a set of planned construction projects at City-owned buildings, facilities, and infrastructure. Examples may include new or retrofitted City facilities, street repairs or modifications, and improvements to drainage systems. Colton's CIP was last updated during the budget process for the 2024/2025 fiscal year and is set to be updated every five years. Funding may come from grants or dedicated revenue sources. The 2024/2025 CIP can be found at: https://www.ci.colton.ca.us/DocumentCenter/View/8324/CIP-PROJECTS-FY-22-23-rev-04042023	**Expansion and Improvement:** Mitigation actions that involve construction or retrofits to City buildings, facilities, and infrastructure may be included in the CIP.
Colton Municipal Code – Chapter 2.28, Emergency Organization (1971)	This section of the Municipal Code provides for the preparation and implementation of plans for the protection of people and property within the City during an emergency, the direction of the emergency organization, and the coordination of Colton's emergency functions with all other public agencies, corporations, organizations, and affected private persons. This section of the Municipal Code can be found at: https://library.municode.com/ca/colton/codes/code_of_ordinances?nodeId=TIT2ADPE_CH2.28EMOR	**Expansion and Improvement:** The emergency management organization described in the Municipal Code represents a framework for understanding preparedness activities. It can inform the LHMP as to how the City prepares to respond to hazards.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
Colton Municipal Code – Title 15, Buildings and Construction (2022)	Colton's Building and Construction codes include several individual codes and regulations, including the City's Building Code, Electrical Code, and Fire Code, which govern the construction of new and renovated buildings. These standards are published by the state and adopted by local communities, sometimes with amendments to address local issues. They are typically updated every three years, although more minor updates may occur in the interim. The building and construction safety code can be found at: https://library.municode.com/ca/colton/codes/code_of_ordinances?nodeId=TIT15BUCO	**Expansion and Improvement:** The City can update Buildings and Construction codes with local amendments that require new or renovated buildings to better resist damage or harm to occupants during a disaster and so may support hazard mitigation activities.
Colton City Municipal Code – Title 18, Zoning Code (2013)	The City's Zoning Code is a set of regulations for different land uses in the community. It establishes standards for where different types of development and land use activity may occur (including defining hazard-prone areas where different development and land use standards may apply), how they look, how they can be operated, and the necessary permitting and approval processes for development. The Zoning Code is an implementation tool of the City's General Plan and plays a significant role in determining Colton's appearance and community characteristics. The zoning code can be found at: https://library.municode.com/ca/colton/codes/code_of_ordinances?nodeId=TIT18ZO	**Expansion and Improvement:** Understanding land-use policy and regulatory requirements is essential to developing mitigation strategies and activities. The land-use components of the Municipal Code will inform the development of LHMP mitigation actions.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
Floodplain Management Regulations – Municipal Code Chapter 15.22 (2015)	Colton's Floodplain Management Regulations are required for the City's participation in the National Flood Insurance Program. Under the terms of these regulations, construction activities within the 100-year flood plain must feature flood-resilient design features. The regulations also limit the types of land-use activities that can be conducted within the 100-year floodplain. The Floodplain Management Regulations can be found at: https://library.municode.com/ca/colton/codes/code_of_ordinances?nodeId=TIT15BUCO_CH15.22FLMARE	**Expansion and Improvement:** Amendments to Colton's Floodplain Management Regulations could help implement mitigation actions that address the vulnerability of buildings in the 100-year floodplain.
Seismic Strengthening for Unreinforced Masonry Buildings Regulations – Municipal Code Chapter 15.20 (2015)	Colton's Seismic Strengthening for Unreinforced Masonry Buildings Regulations are a set of standards requiring all existing buildings with an unreinforced masonry bearing wall to undergo retrofitting that make the buildings more resistant to seismic shaking. These regulations can be found at: https://library.municode.com/ca/colton/codes/code_of_ordinances?nodeId=TIT15BUCO_CH15.20SESTUNMABU	**Expansion and Improvement:** Mitigation actions that relate to the seismic resiliency of unreinforced masonry buildings in Colton may be implemented through amendments to this set of regulations. Mitigation actions related to the resiliency of other building types (including other hazards) may be implemented through a similar set of standards.
City Emergency Operations Plan (EOP)	The EOP explains how the City will respond to a major emergency or disaster and coordinate between the Emergency Operations Center (EOC) and field-level incident commanders. The EOP includes a brief description of each hazard; the concept of operations during a major emergency or disaster; the role of the EOC; and the coordination that occurs between the EOC, county departments, and other local, state, and federal governments in times of disaster.	**Expansion and Improvement:** The LHMP informs the hazards section of the EOP, as the two are closely correlated.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan (2022)	The San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan (SBC MHMP) identifies hazard events present in the unincorporated areas of San Bernardino County and recommends mitigation actions to reduce the harm from these events. The SBC MHMP can be found at the following link: https://www.sbcounty.gov/uploads/OES/documents/Hazardous-Mitigation-Plan.pdf	**Expansion and Improvement:** The county and Colton can share resources and best practices for hazard mitigation activities. Similar mitigation actions in the county's and Colton's plans can help create more regional consistency. Mitigation actions that require coordination with the San Bernardino County Office of Emergency Services or other county agencies may be integrated into the SBC MHMP.
California Building Standards Code (2022)	The California Building Standards Code is a compilation of three types of building standards from three different origins: • Building standards that state agencies have adopted without change from the International Building Code. • Building standards that have been adopted and adapted from national model codes to address California's ever-changing conditions. • Building standards authorized by the California legislature that constitute amendments not covered by national model codes, which have been created and adopted to address California concerns.	**Expansion and Improvement:** Adherence to building codes, including local codes, regulates growth and controls land use patterns. Addressing known hazards as codes are updated results in lowered risk and potentially fewer losses.
California Emergency Services Act	California Government Code §§8550-8669.7 codifies the California Emergency Services Act. It covers the entire range of disaster and emergency powers and responsibilities of state and local government dealing with any natural or human-caused disasters or a state of war. The California Emergency Services Act can be found at: https://leginfo.legislature.ca.gov/faces/codes_displayexpandedbranch.xhtml?lawCode=GOV&division=1.&title=2.&part=&chapter=7.&article=1.&goUp=Y	**Expansion and Improvement:** The City shall maintain a current version of the Emergency Services Act to inform the City Council and staff of changes to disaster mitigation and preparedness activities and processes in the state.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
California State Hazard Mitigation Plan (2023)	California's State Hazard Mitigation Plan identifies and analyzes the various natural and human-caused hazards in California. It includes descriptions of these hazards, summaries of past hazard events, assessment of how these hazards may harm people and other assets in California, and projections of future hazard conditions. The California SHMP can be found at: https://www.caloes.ca.gov/office-of-the-director/operations/recovery-directorate/hazard-mitigation/state-mitigation-planning/	**Expansion and Improvement:** The City can use the 2023 SHMP as a source of information to refine the hazard profiles and vulnerability assessments in future LHMPs.
National Flood Insurance Program	The National Flood Insurance Program (NFIP) makes federally backed flood insurance available to homeowners, renters, and business owners in participating communities. The City will continue to participate in the NFIP program and will make changes accordingly.	**Expansion and Improvement:** City websites and social media accounts will include information on the value of NFIP insurance for properties located in flood hazard areas and how to buy the insurance.
Administrative and Technical Capabilities		
Development Services Department	The Development Services Department is responsible for conducting short- and long-term planning activities in Colton, approving building permits and business licenses, and inspecting private properties. Through these activities, the Development Services Department enforces the City's Buildings and Construction codes and related standards, as well as all land-use regulations.	**Expansion and Improvement:** The Development Services Department staff can carry out any mitigation actions related to land use, construction of new structures or retrofits to existing ones, and operating conditions of private property.
Electric Utility Department	Colton's Electric Utility Department provides electrical service to properties in the community and maintains the City's electricity distribution network. As a part of these duties, it is responsible for setting electrical rates and has purview over local renewable energy and electrical energy efficiency programs.	**Expansion and Improvement:** The Electric Utility Department staff will implement mitigation actions that relate to electrical service and electrical infrastructure resilience.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
Finance Division	Colton's Finance Division, part of the City's Management Services Department, is responsible for the City's financial operations. It conducts budgeting activities, handles the City's payroll, provides general accounting services, and prepares financial reports.	**Expansion and Improvement:** Finance Division staff can support efforts to improve local resiliency by integrating mitigation actions into the City budget and administering mitigation-related grants.
Fire Department	The Colton Fire Department is responsible for firefighting, fire protection, and emergency medical response services in the community. This includes mitigation activities that reduce the likelihood of fires or limit the damage from such events. Department activities also include efforts to prepare for local disasters and support a more effective response. The Fire Department is responsible for mitigation actions that involve resiliency to wildfire.	**Expansion and Improvement:** Provide training to staff to enable them to see potential hazards better and take action to report them. Use the Fire Marshal to provide input into the LHMP mitigation action plan.
Police Department	The Colton Police Department is responsible for law enforcement, criminal investigation, traffic control, and emergency response. Mitigation actions that fall within the Police Department's purview include those related to the safe movement of traffic and the security of community members during emergency events.	**Expansion and Improvement:** Provide training to officers to enable them to see potential hazards better and take action to report them.
Public Works Department	The Colton Public Works Department is responsible for maintaining City-owned buildings and parks, constructing and maintaining City streets, bridges, traffic signals, storm drain facilities and sidewalks (including streetside trees and other public landscaping), and maintaining the City's vehicle fleet. The Department also provides engineering services to the City, oversees the Capital Improvement Program, and issues permits for engineering activities on private land.	**Expansion and Improvement:** Public Works engineers and technicians manage the City's infrastructure. They possess a critical understanding of the risks posed by hazards and potential mitigation activities to address the risks to lifeline infrastructure. Their input into developing infrastructure mitigation strategies and actions is critical.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
Water and Wastewater Department	Colton's Water and Wastewater Department provides water service to approximately 90 percent of the community, and wastewater collection and some treatment services to all of Colton. This includes constructing, maintaining, and operating the infrastructure that sources and distributes most of the City's water and conveys the City's wastewater. Such systems include groundwater wells, pump stations, pipes, storage tanks, and wastewater treatment facilities. The Water and Wastewater Department is also responsible for water conservation activities within its service territory.	**Expansion and Improvement:** The Water and Wastewater Department staff may implement any mitigation actions that involve Colton's water sources, how much water the community uses, the City's water or wastewater-related infrastructure, or other issues related to water and wastewater services.
Floodplain Manager	The duties and responsibilities of the Floodplain Administrator include: • Permit review • Flood hazard reduction • NFIP program administration • Construction inspections	**Expansion and Improvement:** The Floodplain Administrator supports compliance with NFIP requirements, advocates for appropriate development in flood hazard areas, and provides technical expertise on effective flood mitigation activities. These actions can support mitigation activities.
Planning Commission	This five-member Commission—established by state law—studies proposed developments that may affect the community's growth and environment. This Commission determines whether proposed developments will meet the City's technical, environmental, and aesthetic standards. The Commission holds public hearings to review development plan compliance with the City's zoning regulations and General Plan.	**Expansion and Improvement:** Provide continued education opportunities for Planning Commission members to maintain state-of-the-art knowledge of the new code and regulatory requirements.
City Attorney	The City Attorney provides legal advice to the City Council and City Manager and reviews and approves resolutions and ordinances.	**Expansion and Improvement:** Provide opportunities for the City Attorney to review updates to regulatory information to provide expert review of county and state resolutions and ordinances that address hazard mitigation

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
City Clerk	The City Clerk administers elections, all legislative actions, and public transparency functions. The City Clerk is also a compliance officer for federal, state, and local statutes, including the Political Reform Act and the Brown Act.	**Expansion and Improvement:** The City Clerk is integral to the LHMP adoption process. She/he makes sure the adoption resolution meets all administrative requirements.
Community GIS	Provides complex mapping and data management of City facilities, land use, and potential hazards. It supports the visualization of complex data sets using geolocation and data correlation.	**Expansion and Improvement:** Acquire and conduct training for GIS technicians on the latest versions of ArcGIS. Integrate GIS into the City EOC.
San Bernardino County Office of Emergency Services	The San Bernardino County Office of Emergency Services (SBC OES) is responsible for emergency planning, hazard mitigation, and emergency response and recovery activities throughout the county, in collaboration with local communities. SBC OES helps coordinate activities between the county and cities, conducts emergency training and exercises, and manages emergency grants, among other activities.	**Expansion and Improvement:** Mitigation actions involving coordination with county agencies or other cities may be facilitated through work with SBC OES. SBC OES can also support Colton's own hazard mitigation activities by providing funding or other resources.
San Bernardino County Flood Control District	The San Bernardino County Flood Control District—part of the county's Department of Public Works—is responsible for constructing and maintaining flood control infrastructure in San Bernardino County, such as drainage basins and channels. The District also is a partial operator of the Seven Oaks Dam on the headwaters of the Santa Ana River. The courses of the Santa Ana River and Warm Creek, as well as various drainage channels throughout Colton, fall under the District's purview.	**Expansion and Improvement:** Mitigation actions that involve changes to flood control infrastructure in Colton will likely require support and coordination with the County Flood Control District.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
San Bernardino Valley Municipal Water District	The San Bernardino Valley Municipal Water District (SBVMWD) is responsible for long-term water supply in the San Bernardino Valley. The District acts as a water wholesaler, obtaining water from various sources and distributing it to local water suppliers. The SBVMWD imports water from the State Water Project and manages most of the valley's groundwater basins.	**Expansion and Improvement:** The City can work with SBVMWD on mitigation actions that relate to local water supply and water use.
West Valley Water District	The West Valley Water District (WVWD) provides water services to various communities in San Bernardino County, including approximately ten percent of Colton. Like Colton's own Water and Wastewater Department, the WVWD is responsible for sourcing water, maintaining water delivery infrastructure, and administering water conservation and related programs for its service territory.	**Expansion and Improvement:** Mitigation actions involving water supply and use can be implemented throughout all of Colton in collaboration with the WVWD.
Southern California Association of Governments (SCAG)	Functions as the Metropolitan Planning Organization for Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial Counties. SCAG is mandated by the federal government to research and draw up plans for transportation, growth management, hazardous waste management, and air quality.	**Expansion and Improvement:** Attend SCAG meetings. Continue to participate in SCAG-sponsored programs. Routinely coordinate with SCAG staff to stay informed of current planning initiatives.
California Governor's Office of Emergency Services (Cal OES)	The California Governor's Office of Emergency Services is responsible for reducing hazards through mitigation activities, conducting emergency planning, supporting emergency response and recovery activities, and liaising between local and federal agencies on emergency-related issues. Cal OES guides hazard mitigation planning activities, shares best practices, and distributes funding opportunities.	**Expansion and Improvement:** The City can work with Cal OES to obtain funding to implement LHMP mitigation strategies and receive future updates.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
Cal-Adapt	Cal-Adapt is an online tool that provides detailed projections for future climate-related conditions in California, including factors such as temperature, precipitation, and sea-level rise. These projections can help inform future hazard planning and explain how hazard conditions are expected to change. Cal-Adapt can be found at: https://cal-adapt.org/	**Expansion and Improvement:** The City can use Cal-Adapt to monitor anticipated changes in future climate conditions and adjust mitigation actions accordingly.
California Department of Transportation (Caltrans)	The California Department of Transportation has design, construction, operation, and maintenance jurisdiction over designated state and federal highways, including CA-60, CA-66, CA-210, and Interstates I-10 and I-215.	**Expansion and Improvement:** The City will coordinate with Caltrans to implement mitigation measures related to ensuring the resilience of state-designated routes.
South Coast Air Quality Management District (South Coast AQMD)	The South Coast Air Quality Management District develops plans and regulations designed to achieve public health standards by reducing emissions from business and industry. South Coast AQMD's Governing Board adopts plans and regulations for the region, then submits them to the California Air Resources Board and the federal EPA	**Expansion and Improvement:** Some of the City's mitigation actions involve installing diesel generators for power backup. The City will have to coordinate with South Coast AQMD to obtain permits to operate these generators and to remain within clear air goals while operating them.
Federal Emergency Management Agency (FEMA)	The Federal Emergency Management Agency is responsible for hazard mitigation, emergency preparedness, and emergency response and recovery at the national level. FEMA provides hazard mitigation guidance to state and local governments, including information on best practices and compliance with federal requirements for hazard mitigation plans. It also provides a number of grants for hazard mitigation activities.	**Expansion and Improvement:** FEMA can assist Colton with developing mitigation actions and support their implementation through grants. The agency also provides guidance that Colton will use in future updates to its LHMP.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
American Red Cross	The American Red Cross is a humanitarian assistance organization that provides disaster relief services in the aftermath of emergency events. This includes operating emergency disaster shelters, distributing meals and relief supplies, and providing basic health services.	**Expansion and Improvement:** There may be opportunities for the Red Cross to support mitigation activities through community engagement and education.
BNSF Railway	The BNSF Railway is one of the country's major freight railroad companies. It owns the main north-south railway line in Colton and its various spur lines, and operates a rail yard immediately north of the City.	**Expansion and Improvement:** Mitigation actions that relate to the resilience of Colton's railways and related issues will need to be implemented in coordination with BNSF.
Southern California Edison (SCE)	Southern California Edison provides electricity to most of Southern California. Although it supplies electricity to only a small number of properties in Colton, it owns and operates the high-voltage electrical transmission lines and most of the electrical substations in the community.	**Expansion and Improvement:** The City will need to coordinate with SCE regarding mitigation actions that involve the resilience of Colton's high-voltage transmission lines and other electrical infrastructure not owned by the City. SCE can also support other mitigation actions that involve electricity.
Southern California Gas Company (SoCalGas)	The Southern California Gas Company is the natural gas service provider for most of Southern California, including Colton. In addition to providing natural gas service, it owns and operates the natural gas infrastructure in and around the community.	**Expansion and Improvement:** The City will need to coordinate with SoCal Gas on implementation of mitigation actions that involve natural gas use or relate to the resilience of natural gas infrastructure.
Union Pacific Railroad (UPRR)	The Union Pacific Railroad is a major freight railroad company. It owns the primary east-west railway line in Colton and various spur lines and operates a rail yard in western Colton.	**Expansion and Improvement:** Mitigation actions related to railway resiliency in the community, as well as related issues, will require coordination with UPRR to implement.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
Financial Resources		
General Fund	Colton's General Fund is revenue that the City collects from sales tax, property tax, other taxes, license and permit fees, fines, and various other sources. Unlike other sources of revenue that are often restricted to specific types of projects or programs, General Fund revenue may be used for any City expenses. Currently, most General Fund revenue is spent on City staff salary and benefits.	**Expansion and Improvement:** The General Fund can provide the financial resources to implement mitigation actions that cannot be feasibly funded through other mechanisms, including paying for additional staff as needed.
Electric Utility Fund	The Electric Utility Fund is a dedicated pot of money accrued from the electricity service fees charged to Colton Electric customers. The utility uses this Fund to pay for salaries for its employees, maintenance and operations of the City's electricity network, and other charges related to running Colton Electric.	**Expansion and Improvement:** The Electric Utility Fund can support mitigation actions that improve resiliency of electrical services and infrastructure.
Water and Wastewater Utility Funds	The Water Utility Fund and Wastewater Utility Fund are two separate funds to collect the fees charged to City water and wastewater customers. Salaries for water and wastewater employees are paid from these funds, along with maintenance and operations of water and wastewater systems, capital improvements to water and wastewater infrastructure, and other charges related to these services.	**Expansion and Improvement:** The water and wastewater utility funds may support mitigation actions that involve water or wastewater service or infrastructure in Colton.
California Proposition One Bond Programs	Authorizes $7.545 billion in general obligation bonds to fund ecosystems and watershed protection and restoration, water supply infrastructure projects, including surface and groundwater storage, and drinking water protection.	**Expansion and Improvement:** Provides monetary opportunities for projects that are outside traditional mitigation projects.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
Community Development Block Grants (CDBG)	The federal CDBG program provides funding for eligible senior activities such as in-home care, art classes, counseling, and home-delivered meals. HUD also provides disaster recovery assistance in the form of flexible grants to help cities, counties, and states recover from Presidentially declared disasters, especially in low-income areas, subject to the availability of supplemental appropriations.	**Expansion and Improvement:** Where applicable, CDBG grants should be used to fund mitigation projects that enhance the resiliency of low-income and underserved communities.
Hazard Mitigation Grant Program (HMPG)	Provides support for pre- and post-disaster mitigation plans and projects.	**Expansion and Improvement:** Train staff on notice of intent (NOI) procedures and track opportunities on the Cal OES mitigation website to initiate applications for grant funding.
Flood Mitigation Assistance Grant Program (FMA)	Mitigates structures and infrastructure that have been repetitively flooded.	**Expansion and Improvement:** Train staff on NOI procedures and track opportunities on the Cal OES mitigation website to initiate applications for grant funding
Education and Outreach Capabilities		
Colton Ready **Disaster Preparedness Guide**	The Colton Fire Department website offers a residents' guide to disaster preparedness. It discusses evacuation, making an emergency plan, stocking supplies, staying informed, and getting involved. *Colton Ready* can be found at: https://www.coltonfire.com/disaster-preparedness-guide/	**Expansion and Improvement:** Provide links to county, state, and federal preparedness information.
City Social Media Accounts	In addition to normal City business and events, Colton's social media accounts provide alert and warning information, safety and evacuation procedures, and information on home and individual preparedness. The City's social media accounts include: • Facebook • Instagram • X	**Expansion and Improvement:** Repost emergency-related news and directions from neighboring cities, county, state, and federal social media during disasters. Post preparedness-related material that links to the appropriate sources.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
Community Emergency Response Team (CERT)	Colton's CERT program educates residents about disaster preparedness for hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. Using the training learned in the classroom and during practical exercises, CERT members can assist others in their neighborhood or workplace immediately following an event when professional emergency responders are not immediately available to help.	**Expansion and Improvement:** Include material in CERT curriculum that provides updates to progress in the mitigation action plan, including links to the appropriate website page. CERT volunteers can also assist with mitigation-related outreach activities.
Emergency Communications Services	Emergency Communications Services (ECS) is a group of volunteer FCC-licensed amateur radio operators who can provide backup communication services if a disaster damages or destroys conventional communication networks. ECS volunteers can provide communication services for emergency response personnel and other key City staff, allowing for more effective response activities. The Colton Fire Department runs the program.	**Expansion and Improvement:** ECS may implement mitigation actions related to providing backup emergency communication systems. ECS volunteers may also be able to assist with community-wide outreach and education, particularly on issues of emergency communication.
San Bernardino County Smart 911 Emergency Alerts	The county's Emergency Alerts program can send high-speed mass notifications via telephone, email, and text messages during emergencies and disasters. This system can be targeted to specific geographic areas.	**Expansion and Improvement:** The City will continue to conduct community outreach to increase the number of residents who are subscribers.
Cal OES Family Readiness Guide	The Guide provides a comprehensive toolkit for making a family emergency plan. The Cal OES Family Readiness Guide can be found at: https://www.caloes.ca.gov/wp-content/uploads/Preparedness/Documents/Cal_OES_Family_Readiness_GuideENG.pdf	**Expansion and Improvement:** Provide a link to the Readiness Guide on the City website and Facebook account.

TABLE 37. CITY OF COLTON CAPABILITIES ASSESSMENT		
Resource	**Resource Description**	**Connection to Current Mitigation/Future Opportunities for Expansion and Improvement**
Ready.gov	FEMA's comprehensive disaster preparedness and response website for businesses and residents. It includes information about drafting family and business emergency plans, building go kits, acquiring emergency supplies, and how to react to various types of disasters. https://www.ready.gov/	**Expansion and Improvement:** Provide a link to Ready.gov on the City web page and Facebook account.

Hazard Mitigation Strategies

Hazard Mitigation Goals

The goals identified in **Chapter 1** help develop policies to protect community members, ecosystems, and other important assets from hazard events. These goals informed the development of mitigation actions and acted as checkpoints to help City staff determine implementation progress.

Evaluation of Potential Hazard Mitigation Actions

The HMPT prepared a set of potential mitigation actions based on the hazard profiles, threat assessment, capabilities assessment, community survey results, discussions among HMPT members, and existing best practices. Next, the HMPT evaluated these potential actions using the following criteria:

FEMA requires local governments to evaluate potential mitigation actions' monetary and non-monetary costs and benefits. While local governments are not required to assign specific dollar values to each action, they should identify the general size of costs and benefits. The HMPT may elect to include measures with high costs or low benefits, but such measures should benefit the community and make appropriate use of local resources.

Also, FEMA directs local governments to consider the following questions as part of the financial analysis:

1) What is the frequency and severity of the hazard type to be addressed by the action, and how vulnerable is the community to this hazard?
2) What impacts of the hazard will the action reduce or avoid?
3) What benefits will the action provide to the community?

The HMPT also reviewed and revised the potential hazard mitigation actions using the STAPLE/E (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) criteria (**Table 38**). The HMPT did not formally assess every potential mitigation action under all STAPLE/E criteria but used the criteria to guide and inform the discussion. The HMPT also discussed how the criteria might evaluate grant applications the City may submit to receive funding for LHMP implementation.

TABLE 38. STAPLE/E CRITERIA	
Issues	**Criteria**
Social	• Is the action socially acceptable to Colton community members? • Would the action mistreat some individuals? • Is there a reasonable chance of the action causing social disruption?
Technical	• Is the action likely to reduce the risk of the hazard occurring, or will it reduce the hazard's effects? • Will the action create new hazards or make existing hazards worse? • Is the action the most useful approach for Colton to take, given the City's and community members' goals?
Administrative	• Does the City have the administrative capabilities to implement the action? • Are there existing City staff who can lead and coordinate the action's implementation, or can the City reasonably hire new staff for this role? • Does the City have enough staff, funding, technical support, and other resources to implement the action? • Are there administrative barriers to implementing the action?
Political	• Is the action politically acceptable to City officials and other relevant jurisdictions and political entities? • Do community members support the action?
Legal	• Does the City have the legal authority to implement and enforce the action? • Are there potential legal barriers or consequences that could hinder or prevent the implementation of the action? • Is there a reasonable chance that the implementation of the action would expose the City to legal liabilities? • Could the action reasonably face other legal challenges?
Economic	• What are the monetary costs of the action, and do the costs exceed the monetary benefits? • What are the start-up and maintenance costs of the action, including administrative costs? • Has the funding for action implementation been secured, or is a potential funding source available? • How will funding the action affect the City's financial capabilities? • Could the implementation of the action unreasonably burden the Colton economy or tax base? • Could there reasonably be other budgetary and revenue impacts to the City?
Environmental	• What are the potential environmental impacts of the action? • Will the action require environmental regulatory approvals? • Will the action comply with all applicable federal, state, regional, and local environmental regulations? • Will the action unreasonably affect any endangered, threatened, or otherwise sensitive species of concern?

Relative Cost Estimates

The HMPT identified relative cost estimates to meet the hazard mitigation planning process's cost estimation requirements based on their understanding of the mitigation action intent and their experience developing identical or similar programs/implementing projects. Four cost categories based on the City's typical cost criteria were used for budgeting purposes:

- **Low cost ($):** $25,000 or less
- **Medium cost ($$):** $25,001 to $999,999
- **High cost ($$$):** Greater than $1,000,000

Prioritization

As part of the mitigation actions development and review, the HMPT also prioritized the actions. The prioritization efforts looked at the risks and threats of each hazard, financial costs and benefits, technical feasibility, and community values. HMPT members were asked to identify their priority actions through a voting exercise. Items are prioritized based on the number of votes each mitigation action receives from the HMPT members. These quantitative scores were then converted to low, medium, and high priority qualitative categories.

2025 Hazard Mitigation Actions

Based on the criteria and evaluation processes used during Plan development, the HMPT prepared a prioritized list of mitigation actions (**Table 39**, page **145**) to improve Colton's resilience to hazard events. These actions collectively form Colton's hazard mitigation strategy.

The list of actions also includes preparedness activities that are intended to improve emergency response for the City and community members when hazard events occur or are imminent. Although these actions are not considered mitigation activities, they are expected to decrease the harm the community faces from hazard events and so support the same goals as mitigation actions.

TABLE 39. MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
Emergency Preparedness Activities						
P.1	Identify an alternative location for the Emergency Operations Center (EOC).	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	2-5 Years	Low
P.2	Conduct an evacuation study for Reche Canyon, including looking at opportunities to provide secondary access and circulation improvements.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management/ Development Services	$$	1-3 Years	Medium
P.3	Develop a backup communication system for critical City operations.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	1-2 Years	High
P.4	Periodically update the Emergency Operations Plan, prepare a Community Risk Reduction Program, and regularly conduct emergency preparedness drills and training exercises for City staff.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	1-3 Years	High
P.5	Work with Colton business groups to conduct regular workplace emergency preparedness drills.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	Ongoing Annually	Low

TABLE 39. MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
P.6	Expand participation in the Colton Community Emergency Response Team (CERT) program for residents and businesses.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	Ongoing Annually	Low
P.7	Store critical emergency supplies and equipment in locations on both sides of the Santa Ana River in case of bridge damage/failure.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	1-3 Years Maintain Annually	Medium
P.8	Design community evacuation plans to include provisions for community members who do not have access to private vehicles or are otherwise unable to drive.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	2-5 Years	Low
P.9	Continue to issue effective emergency notifications through multiple media, in English and Spanish, about pending, imminent, or ongoing emergency events. Whenever possible, produce information that is accessible to people with disabilities and functional needs.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	Ongoing Annually	Low
P.10	Increase the number of City staff with CalOES Safety Assessment Program (SAP) credentials.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	Ongoing Annually	Low

TABLE 39. MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
Multiple Hazards						
1.1	Relocate Fire Stations 3 and 4 outside of mapped hazard zones or harden these facilities against hazardous situations if no feasible alternate locations exist.	General Fund, Grants, Community Facilities Districts, Bonds	Fire Department	$$$	3-5 Years	Medium
1.2	Install an emergency power system at the Water Reclamation Facility and harden the facility against hazardous events.	General Fund, Grants, Community Facilities Districts, Bonds	Water Department	$$$	1-2 Years	High
1.3	Install backup generators at community facilities that serve as cooling or evacuation centers.	General Fund, Grants, Community Facilities Districts, Bonds	Community Services/ Emergency Management	$$	1-2 Years	High
1.4	Conduct educational campaigns for Colton residents that emphasize cost-effective mitigation efforts, making material available in English and Spanish. Distribute information online, through local media, at special events, in City facilities, and through other appropriate means.	General Fund, Grants, Community Facilities Districts, Bonds	Community Services/ Emergency Management	$	Initiate in 1-3 Years Continuing Annually	Low
1.5	Continue to stabilize loose slopes along public rights-of-way as needed with geotextile fabric, deep-rooted vegetation, and other appropriate techniques, especially after a wildfire event.	General Fund, Grants, Community Facilities Districts, Bonds	Engineering/ Fire Department	$ - $$	Ongoing Annually/ After Wildfire Event	Low

TABLE 39. MITIGATION ACTIONS IMPLEMENTATION PLAN

Action #	Mitigation Action Item	Potential Funding Source	Responsible Agency	Relative Cost	Time Frame	Priority
1.6	Work closely with community groups to increase awareness of hazard events and resiliency opportunities among socially vulnerable community members.	General Fund, Grants, Community Facilities Districts, Bonds	Community Services/ Emergency Management	$	3-5 Years	Low
1.7	Avoid building new City-owned key facilities in mapped hazard areas. If no feasible sites outside of mapped areas exist, harden such facilities against hazards beyond any minimum building requirements/mitigation standards.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	Variable	Ongoing Standard	Low
1.8	Install backup power systems for key City-owned water pumps.	General Fund, Grants, Community Facilities Districts, Bonds	Water Department	$$	1-2 Years	High
1.9	Coordinate with regional social service agencies and nonprofit care providers to obtain temporary shelter for homeless people in advance of potential hazard events.	General Fund, Grants, Community Facilities Districts, Bonds	Community Services	$	Ongoing - Annually / As Needed	Low
1.10	Work with Caltrans and railroad operators to harden bridges against hazard events.	General Fund, Grants, Community Facilities Districts, Bonds	Engineering	$$$	5-10 Years	Low
1.11	Closely monitor changes in the boundaries of mapped hazard areas resulting from land use changes or climate change. Adopt new mitigation actions or revise existing ones to enable continued resiliency.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/ Fire Department	$	Ongoing Annually / After Land Use Policy Changes	Low

TABLE 39. MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
1.12	Explore the feasibility of a third sewer trunk line connection to Grand Terrace to increase system redundancy and capacity.	General Fund, Grants, Community Facilities Districts, Bonds	Water/ Wastewater Department	$$$	3-5 Years	Medium
1.13	Integrate policy direction and other information from this Plan into other City documents, including the General Plan, Emergency Operations Plan, and Capital Improvements Program.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/ Engineering/ Emergency Management	$	Ongoing - Upon Plan Updates	Medium
1.14	Monitor funding sources for hazard mitigation activities.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	$	Ongoing - Annually	Low
1.15	Integrate climate change mitigation and adaptation information and analysis into future LHMP updates and other City plans, where practicable.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/ Emergency Management	$	Ongoing – Upon Plan Updates	Medium
1.16	Identify updated equipment and training to enhance emergency services and increase the efficiency of emergency response and recovery activities	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	$	3-5 Years	Medium
1.17	Private water system and wells removal and incorporation into the City's water system.	General Fund, Grants, Community Facilities Districts, Bonds	Water Department	$$$	3-5 Years	Medium

TABLE 39. MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
Drought						
2.1	Continue to aggressively search for and repair leaks in Colton's water infrastructure.	General Fund, Water Depreciation Fund, Grants, Community Facilities Districts, Bonds	Water/ Wastewater	$$	Ongoing – Annually	Low
2.2	Use drought-tolerant plants or xeriscaping when installing new or significantly redoing City-owned landscapes. Limit turf that is not drought tolerant to recreational fields and lawns, and only in instances where no feasible drought-tolerant alternatives exist.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works	$ - $$	3-5 Years	Low
2.3	Develop a campaign to encourage water/energy efficiency, reduce consumption for existing development, and promote the expansion of electric vehicle-ready construction in new development.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/Public Works/ Water/ Electric	$	3-5 Years	Medium
2.4	Private water system and wells removal and incorporation into the City's water system.	General Fund, Grants, Community Facilities Districts, Bonds	Water Department	$$$	5-10 Years	Low
Flooding						
3.1	Use permeable paving and landscaped swales for new and replacement City-owned hardscaped areas.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works	$$	Ongoing – Upon New Builds or Replacement	Medium

TABLE 39. MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
3.2	Conduct frequent cleanings of storm drain intakes, especially before and during rainy seasons.	General Fund, Grants, Community Facilities Districts, Bonds	Water/ Wastewater/ Public Works	$-$$	Ongoing – Annually / As Necessary	Low
3.3	Identify areas with known ponding or poor drainage during rain events and increase storm drain capacity in these areas.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works/ Wastewater	$$-$$$	5-10 Years	Low
3.4	Participate in FEMA's Community Rating System to reduce flood insurance premiums for Colton property owners.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works/ Development Services	$$	5-10 Years	Low
3.5	Develop incentives to harden private buildings and structures in the flood plain against floodwaters.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works/ Development Services	$$	5-10 Years	Low
3.6	Discourage new schools, childcare centers, and adult and senior assisted-living facilities from locating in 100-year and 500-year flood plains.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	$	Ongoing Standard	Low
3.7	Encourage renters in flood plains to obtain rental insurance that includes flood protection.	General Fund, Grants, Community Facilities Districts, Bonds	Finance	$	Ongoing – Annually	Low

TABLE 39. MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
3.8	Secure funding needed to complete the storm drain system from West Valley Boulevard and North Pepper Avenue extending east to South Rancho Avenue and Agua Mansa Road.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works	$$$	1-2 Years	High
Geologic Hazards						
4.1	Monitor changes in groundwater levels to remain aware of potential liquefaction and subsidence risks.	General Fund, Grants, Community Facilities Districts, Bonds	Water/ Wastewater	$	Ongoing-Annually	Low
4.2	Analyze locations of significant geologic hazard threats. Identify existing and allowed densities and determine if retrofitting strategies are necessary for these hazard areas.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/Engineering	$$	3-5 Years	Medium
Human-Caused Hazards						
5.1	Continue to work with solid waste service contractors to educate Colton residents and businesses on safe disposal of small quantities of hazardous materials.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works	$	Ongoing-Annually	Low
5.2	Maintain relationships with Union Pacific and BNSF to improve rail safety, particularly the main east-west Union Pacific line designated a High Hazard Area Rail Line.	General Fund, Grants, Community Facilities Districts, Bonds	City Manager	$	Ongoing-Annually	Low

TABLE 39. MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
5.3	Analyze the locations of railroad rights-of-way and the associated adjacent land uses to determine key locations of concern should a train derailment occur.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works/ Development Services/ Engineering/Fire	$-$$	3-5 Years	Medium
Seismic Hazards						
6.1	Conduct an inventory of seismically vulnerable buildings and structures. Pursue funding to incentivize retrofits of seismically vulnerable buildings and structures not covered by the existing Seismic Strengthening for Unreinforced Masonry Buildings ordinance.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/ Building Department	$	5-10 Years	Low
6.2	Promote small-scale seismic retrofits, such as window films to minimize shattering, anchors for rooftop-mounted equipment, and bracing for masonry chimneys.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	$	Ongoing-Annually	Low
6.3	Conduct a seismic analysis of all City-owned key facilities and retrofit vulnerable facilities. Prioritize fire stations, water/wastewater facilities, electrical service, and building facilities that do not meet seismic requirements.	General Fund, Grants, Community Facilities Districts, Bonds	Engineering	$$$	1-2 Years	High-Medium

TABLE 39. MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
6.4	Consider the use of flexible water pipes/joints, particularly near Alquist-Priolo fault zones, to enhance seismic resiliency of the water infrastructure.	General Fund, Water Depreciation Fund, Grants, Community Facilities Districts, Bonds	Engineering / Water/Wastewater	$$$	5-10 Years	Low
6.5	Explore amending the Colton Building Code to incorporate standards requiring new buildings to be safely habitable and functional following an earthquake.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	$$	5-10 Years	Low
6.6	Encourage community groups and industry representatives to conduct outreach about earthquake insurance to Colton community members, including renters.	General Fund, Grants, Community Facilities Districts, Bonds	Finance	$	Ongoing-Annually	Low
Severe Weather						
7.1	Strengthen power lines to be more resistant to intense winds.	General Fund, Grants, Community Facilities Districts, Bonds	Electric Department	$$$	3-5 Years	Medium
7.2	Encourage significant retrofits to existing buildings to meet wind-speed design specifications in the Colton Building Code.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	$$	5-10 Years	Low

TABLE 39. MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
7.3	Plant street trees and other vegetation to provide shade and green spaces throughout Colton, particularly around senior and medical facilities. Emphasize drought-tolerant and wind-resistant species.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works	$$	5-10 Years	Low
7.4	Encourage replacing dark roofs on homes and businesses with light-colored roofs. Look for funding to help owners complete cool roof replacements.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	$	5-10 Years	Low
7.5	Promote light-colored pavement for new or significantly renovated hardscapes, such as parking lots and driveways.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/ Public Works	$	Ongoing – Annually	Low
Wildfires						
8.1	Develop new water reservoirs in areas of north Colton outside of mapped wildfire hazard zones.	General Fund, Grants, Community Facilities Districts, Bonds	Engineering/ Water Department	$$$	5-10 Years	Low
8.2	Expand the existing fire inspection program for residents and businesses in fire-prone areas to provide better information regarding ways to retrofit buildings and landscapes to improve resiliency.	General Fund, Grants, Community Facilities Districts, Bonds	Fire Department	$$	3-5 Years	Medium

TABLE 39. MITIGATION ACTIONS IMPLEMENTATION PLAN

Action #	Mitigation Action Item	Potential Funding Source	Responsible Agency	Relative Cost	Time Frame	Priority
8.3	Enhance existing fire stations and/or locations to meet current and future community needs and fire response requirements.	General Fund, Grants, Community Facilities Districts, Bonds	Fire Department	$$$	3-5 Years	Medium
8.4	Prepare a Community Risk Assessment to include a Community Wildfire Protection Plan.	General Fund, Grants, Community Facilities Districts, Bonds	Fire Department	$-$$	1-2 Years	High
8.5	Incorporate the most up-to-date fire codes, regulations, and ordinances into the General Plan.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	$	Initiate in 3-5 Years Ongoing-Upon Plan Updates	Medium
8.6	Work with property owners to manage dead vegetation on vacant properties, in flood control facility footprints, railroad rights-of-way, parks, and open spaces, especially during and after periods of extreme heat or prolonged drought.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/Fire Department	$-$$	Ongoing-Annually	Medium

*** Relative Cost Categories**
$ - Less than $25,000
$$ - $25,001 to $999,999
$$$ - Greater than $1,000,000

Existing Mitigation Measures

Colton's previous LHMP was adopted in 2019. Most of the mitigation actions in the previous LHMP have been incorporated into the mitigation strategy presented in this updated Plan. In many cases, the 2019 actions have either been directly copied into the updated Plan or have been integrated through multiple actions in the new Plan. Some 2019 actions are not part of the updated mitigation strategy because they have been addressed elsewhere in the LHMP planning process or are more general LHMP goals that are not suitable as a specific mitigation action under current best practices.

Table 40 shows the 2019 mitigation actions and how they have been addressed in this updated LHMP.

TABLE 40. STATUS OF MITIGATION ACTIONS IN 2011 LHMP

2019 Mitigation Actions	Status in Updated LHMP
P.1 - Identify an alternative location for the Emergency Operations Center (EOC).	New EOC building is pending; current EOC will become an alternate site once completed.
P.2 - Conduct an evacuation study for Reche Canyon, including looking at opportunities to provide secondary access and circulation improvements.	Approval of Iron Horse Hills Development includes secondary emergency access.
P.3 - Develop a backup communication system for critical City operations.	City is currently evaluating use of handheld non-commercial radios
P.4 - Periodically update the Emergency Operations Plan, prepare a Community Risk Reduction Program, and regularly conduct emergency preparedness drills and training exercises for City staff.	EOC is currently being evaluated for any equipment needs. Current EOC personnel have been identified and contact information recorded. Anticipate drills and exercises starting before the end of the year. All EOC staff were provided with information on CSTI training opportunities specific to their position.
P.5 - Work with Colton business groups to conduct regular workplace emergency preparedness drills.	Potentially incorporating this as Community Risk Reduction project
P.6 - Expand participation in the Colton Community Emergency Response Team (CERT) program for residents and businesses.	City is currently working with other CERT administrators to revitalize this program
1.1 - Relocate Fire Stations 3 and 4 outside of mapped hazard zones or harden these facilities against hazardous situations if no feasible alternate locations exist.	A feasibility study for relocation has been proposed at the site for new Fire Station 213. The older station could be moved to this site.
1.2 - Install an emergency power system at the Water Reclamation Facility and harden the facility against hazardous events.	The City is currently working to budget this action.
1.3 - Install backup generators at community facilities that serve as cooling or evacuation centers.	Currently complete at the Gonzalez Center, with plans to modify other facilities.

TABLE 40. STATUS OF MITIGATION ACTIONS IN 2011 LHMP	
2019 Mitigation Actions	**Status in Updated LHMP**
1.10 - Work with Caltrans and railroad operators to harden bridges against hazard events.	Currently 5 bridges have been completed for seismic retrofitting (2 pedestrian bridges, undercrossing at S. La Cadena, 2 undercrossing at C Street). On-going projects for design are La Cadena (remove and replace), Mt. Vernon Ave over UPRR Track widening including seismic retrofit of existing bridge, Barton Bridge over UPRR Track (removal of bridge and replace with regular road), Mt. Vernon Bridge over Santa Ana River (seismic retrofit), and Barton Bridge over BNSF Tack (remove and replace with 4-lane bridge. Riverside Ave. bridge over Santa Ana River (no project now).
3.2 - Require new large developments and significant retrofits to use low-impact development strategies.	This is a condition for approval for new and large redevelopments. Has been removed from the LHMP and added to the capabilities assessment.
3.8 - Work with the U.S. Army Corps of Engineers and the San Bernardino County Flood Control District to support safety assessments and any needed retrofits to Seven Oaks Dam.	U.S. Army Corps of Engineers has been identified as the coordinator of Seven Oaks. Has been removed from the LHMP and added to capabilities assessment.
4.1 - Work with private property owners to install and maintain drainage systems and stabilizing vegetation on and above steep slopes.	Project design are now conditions of approval for development, geotechnical reports and proper drainage design are mandatory. This has been removed from the LHMP and added to capabilities assessment.
5.1 - Discourage new sensitive land uses, including schools, parks, childcare centers, adult and senior assisted living facilities, and community centers, from locating near identified hazardous material facilities. Discourage or prohibit new hazardous material facilities from locating near sensitive land uses.	Incorporated as a General Plan policy. Has been removed from the LHMP and added to the capabilities assessment.
6.3 - Conduct a seismic analysis of all City-owned key facilities and retrofit vulnerable facilities. Prioritizing current fire stations that do not meet seismic requirements.	It has been modified to include water/wastewater facilities, electric facilities, and building facilities that do not meet standards. Water/wastewater is addressing this on a case-by-case basis for key water infrastructure sites.
8.1 - Conduct brush clearing and other fuel modification programs in areas with an elevated wildfire risk.	Added year-round weed mitigation throughout the City. Has been removed from the LHMP and added to the capabilities assessment.

National Flood Insurance Program

Colton participates in the National Flood Insurance Program (NFIP), created by Congress in 1968 to provide flood insurance at subsidized rates to homeowners living in flood-prone areas. Individual communities can participate in the NFIP, although property owners who live in nonparticipating communities with flood-prone areas cannot buy flood insurance through the program. Additionally, nonparticipating communities with mapped floodplains cannot receive

federal grants or loans for development activities in flood-prone areas and cannot receive federal disaster assistance to repair flood-damaged buildings in mapped floodplains. **Table 41** provides the City's NFIP participation information. [93]

Continued participation in the NFIP is not a dedicated hazard mitigation action, although Colton will continue to do so and will remain in compliance with the program's requirements through continued enforcement of the City's Floodplain Management Regulations. [94] The Floodplain Management Regulations act as Colton's flood plain management ordinance, which all participating communities in the NFIP must adopt. These regulations apply to land within the mapped 100-year flood plain and limit the types of development and construction activities that can occur in this area. New construction must meet a number of flood-resistant standards, such as being anchored to better resist damage from moving floodwaters. Other standards apply to new subdivisions, utility projects, and manufactured homes. [95] As part of the City's commitment to complying with the requirements of the NFIP, the City will make updates and revisions as needed to the Floodplain Management Regulations. These changes may be made because of changes in best practices, shifts in flood-prone areas, or other factors that allow the City to better protect against the threat of flood events. The City will also continue to incorporate changes in the location and designations of mapped flood plains into future planning documents, including future updates to this Plan.

TABLE 41. FLOOD INSURANCE PROGRAM PARTICIPANT DATA

Initial Flood Hazard Boundary Map (FHBM)	06/07/1974
Initial Flood Insurance Rate Map (FIRM)	09/17/1980
NFIP Participation Date	09/17/1980
Current Effective Map Date	09/02/2016

Although participation is not a dedicated hazard mitigation action, Colton will continue to participate in NFIP and comply with the program's requirements by enforcing the City's Floodplain Management Regulations (Municipal Code Chapter 5: Floodplain Management Ordinance). **Table 42** (page 162) identifies the City's floodplain management regulations.

[93] FEMA (Federal Emergency Management Agency). "Participation in the National Flood Insurance Program." https://www.fema.gov/participation-national-flood-insurance-program.

[94] Chapter 15.22 of the Colton Code of Ordinances

[95] Colton, City of.. "History of Colton" https://www.coltonca.gov/98/History-of-Colton

TABLE 42. COLTON FLOODPLAIN MANAGEMENT REGULATIONS	
Adoption of Minimum Floodplain Management Criteria and Implementation and Enforcement of Floodplain Management Regulations	Chapter 15.22: Floodplain Management Adopted in 2015
Designee to Implement NFIP	Chapter 15.22.140 Designation of Floodplain Administrator. The City Manager and the City Engineer, as the designated appointee, are appointed to administer, implement, and enforce the duties of the Floodplain Administrator.
Implementation of Substantial Improvement/ Substantial Damages Provisions	Chapter 15.22.040: Methods of Reducing Flood Issues
Note: Ordinances Hyperlinked	

These regulations apply to all areas of special flood hazards, flood-related erosion hazards, and mudslide (i.e., mudflow) hazards within the city. These regulations aim to promote public health, safety, and general welfare and minimize public and private losses due to flood conditions. This chapter also includes methods of reducing flood losses, the basis for establishing flood hazard areas, development permit requirements, duties and responsibilities of the City's Floodplain Administrator, the development standards that apply in flood-prone areas and required documentation and analysis for construction within these areas. As part of the City's efforts to comply with NFIP, Colton will make updates and revisions to these regulations periodically to ensure they are most effective at minimizing the threat of harm from flood events. These updates and revisions may be promoted by changes in local demographics, land use shifts, flood regime changes such as frequency and intensity of flood events, and other factors that may warrant municipal action. The City will also continue to incorporate any changes to the locations and designations of mapped floodplains into future planning documents, including future updates to this Plan.

As of July 2024, there were 23 properties in Colton insured under the NFIP, with a total insured value of approximately $8.9 million. There have been 11 claims filed for these insured properties. One property is known as a repetitive loss property, meaning that it has filed claims for flood damage at least twice.[96]

[96] FEMA 2024

CHAPTER 6 – PLAN MAINTENANCE

For this LHMP to remain effective and useful to the community of Colton, it must remain up to date. An updated version of the LHMP will continue to guide Colton's hazard mitigation activities and help keep the City eligible for state and federal hazard mitigation funding. The HMPT has structured this LHMP so individual sections can easily be updated as new information becomes available and new needs arise, helping to keep this Plan current.

This chapter discusses updating this Plan to comply with applicable state and federal requirements. This chapter also describes how the City can incorporate the mitigation actions described in **Chapter 5** into existing programs and planning mechanisms and how public participation will remain an important part of Plan monitoring and future update activities.

Plan Adoption

The Colton City Council is responsible for updating this Plan as well as all future updates. LHMPs are subject to review by FEMA to determine whether the Plan meets all applicable federal requirements and thus provides additional funding benefits to Colton. Once the Plan is consistent with FEMA's requirements, FEMA will notify the City that the Plan is Approved Pending Adoption. At this point, the City Council can formally adopt the Plan. Following adoption, the Colton Fire Department will send a copy of the adopted Plan, including the resolution of adoption, to FEMA.

Plan Implementation

The Plan's effectiveness depends on the successful implementation of the mitigation actions. Implementation includes integrating mitigation actions into existing City plans, policies, programs, and other implementation mechanisms. The mitigation actions in this Plan are intended to reduce the damage from hazard events, help the City secure funding, and provide a framework for hazard mitigation activities. HMPT members prioritized the hazard mitigation actions in **Table 39** (page **145**) in **Chapter 5**. These priorities will guide implementing these actions through new or existing City mechanisms as resources are available. The LHMP project manager is responsible for overseeing the implementation, promotion, and maintenance of this Plan and facilitating meetings and coordinating activities related to Plan implementation and maintenance.

Coordinating Body

Implementation will be the responsibility of the individual City departments and other agencies tasked with each mitigation action, as identified in the overall mitigation strategy. Implementation will be coordinated through the Hazard Mitigation Planning Team. **Table 1** (page **6**) lists the current Planning Team members.

In future years, representatives from the following City organizations (either current Planning Team members or others) should be included in meetings of the Planning Team:

- City Clerk
- City Manager
- Community Services
- Development Services
- Economic Development
- Electric Utility
- Finance
- Fire Department
- Human Resources
- Information Technology
- Public Works and Utility Services Department
- Police Department
- Purchasing
- Water / Wastewater

Staff members from other organizations who sat on the Planning Team during the preparation of this Plan should be invited to participate in future Planning Team meetings, plus any other applicable agencies. Based on the composition of the Planning Team during the preparation of this Plan, the other organizations that should be asked to participate are:

- Arrowhead Regional Medical Center
- Caltrans
- Colton Joint Unified School District

The Colton Fire Department Deputy Chief is the staff member responsible for coordinating the implementation of the LHMP and future meetings of the Planning Team. The Deputy Chief may designate this role to another staff member.

Plan Maintenance Process

The City's plan-maintenance process will rely on the Colton Mitigation Implementation Handbook, located in **Appendix E**. The handbook is intended to function as a stand-alone document that gives concise and accessible guidance to staff to implement and maintain the Plan. A key component is the specific mechanisms that the City can use to integrate this Plan into the other City planning mechanisms.

Plan Monitoring And Evaluation

When members of the HMPT are not updating the Plan, they should meet at least once a year to go over mitigation action implementation and evaluate the Plan's effectiveness. These meetings should include:

1) Discussion of the timing of mitigation action implementation
2) Mitigation action implementation evaluation and determination of success

3) Mitigation action prioritization revisions, if deemed necessary

4) Mitigation action integration into other mechanisms, as needed

The first of these meetings will be held in the 2025-2026 fiscal year. To the extent possible, HMPT meetings should be scheduled at an appropriate time in the City's annual budgeting process, which will help ensure that funding and staffing needs for mitigation actions are considered.

When the HMPT meets to evaluate the Plan, members should consider these questions:

- What hazard events, if any, have occurred in Colton in the past year? What were the impacts of these events on the community? Were the impacts mitigated, and if so, how?
- What mitigation actions have been successfully implemented? Have any mitigation actions been implemented but not successfully, and if so, why?
- What mitigation actions, if any, have been scheduled for implementation but have not yet been implemented?
- What is the schedule for implementing future mitigation actions? Is this schedule reasonable? Does the schedule need to be adjusted for future implementation, and are such adjustments appropriate and feasible?
- Have any new concerns arisen, including hazard events in other communities or regions not covered by existing mitigation actions?
- Is new data available to inform the Plan's updates, including data relevant to the hazard profiles and threat assessments?
- Are there any new planning programs, funding sources, or other mechanisms to support hazard mitigation activities in Colton?

Plan Updates

The information in this Plan, including the hazard profiles, threat assessments, and mitigation actions, is based on the best available information, practices, technology, and methods available to the City and HMPT when this Plan was prepared. As factors change, including technologies, community demographics and characteristics, best practices, and hazard conditions, it is necessary to update the Plan to remain relevant.

The HMPT may decide to make interim changes to the LHMP outside the five-year cycle of formal review and Council adoption. This may include updating the scope of an existing hazard or the risk it poses, adding a new hazard or eliminating an existing one, updating the status of mitigation actions, reflecting changes in local capabilities or funding vehicles, and so on. Changes of this nature do not trigger a new round of Cal OES and FEMA review, nor do they require City Council adoption.

Title 44, Section 201.6(d)(3) of the Code of Federal Regulations requires that LHMPs be reviewed, revised, and resubmitted for approval every five years to remain eligible for federal benefits.

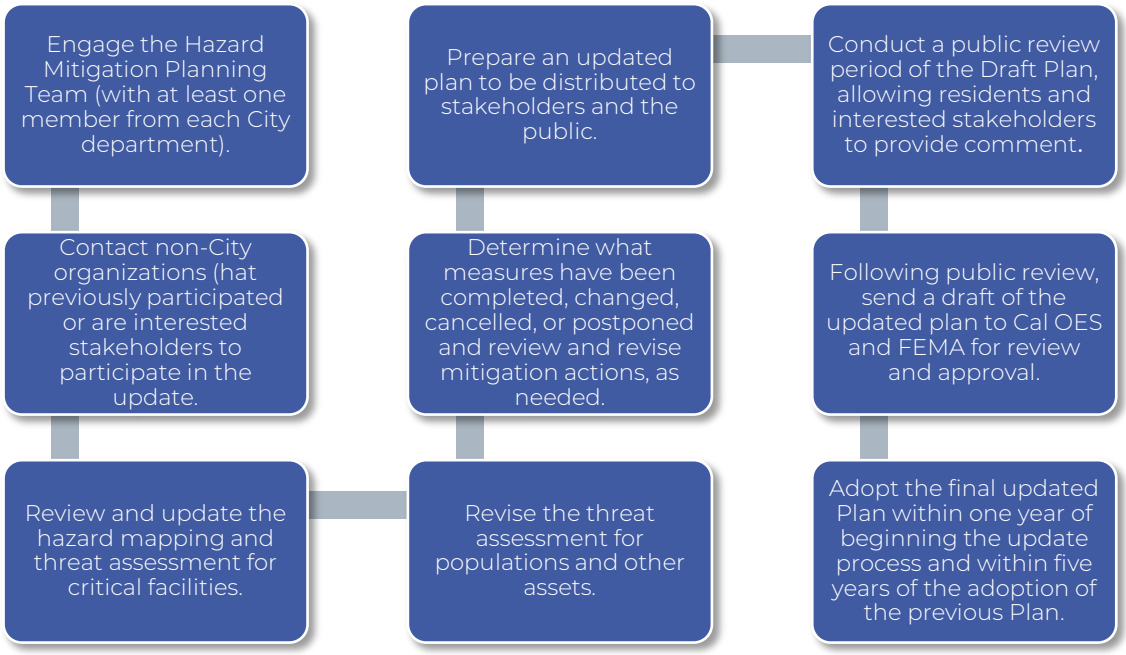
Update Method And Schedule

The update process will begin no later than four years after this Plan is adopted, allowing a year for the update process before the Plan expires. However, it is recommended that you begin the update process three years after Plan adoption if the funding source for the Plan will be a mitigation grant. Depending on the circumstances, the LHMP project manager or their designee may also choose to begin the update process sooner.

Some reasons for accelerating the update process may include:

- A presidential disaster declaration for Colton or an area that includes part of or the entire City.
- A hazard event that results in one or more fatalities in Colton.

The update process will add new and updated methods, demographic data, community information, hazard data and events, considerations for threat assessments, mitigation actions, and other necessary information, keeping the Plan relevant and current. The HMPT will determine the best process for updating the Plan, which should include the following steps:



Update Adoption

The Colton City Council is responsible for adopting this Plan and all future updates. As previously mentioned, adoption should occur every five years. The City should begin the update process at least one year before expiration to ensure the Plan remains active. If the City has a grant application that relies on the LHMP, an update to the Plan should occur no later than 18 months before expiration. Adoption should take place after FEMA notifies the City that the Plan is Approved Pending Adoption. Once the City Council adopts the Plan following FEMA's approval, the adopted Plan should be transmitted to FEMA.

Incorporation into Existing Planning Mechanisms

Incorporating the mitigation strategy into existing City plans, policies, programs, and other efforts helps to promote successful implementation. This Plan works in concert with the Colton General Plan, particularly the General Plan's Safety Element. The Safety Element establishes a community-wide framework for hazard mitigation and preparation activities and integrates with the goals of this Plan. The LHMP expands on the topics and issues in the Safety Element and other applicable sections of the General Plan, translating the high-level community objectives into specific mitigation actions. General Plan policies should synchronize with the mitigation actions in the LHMP in future updates to the General Plan.

In addition to the General Plan, this LHMP should be incorporated into other City documents as applicable.

- Mitigation actions that involve construction of new City buildings or infrastructure or major retrofits to existing structures should be reflected in updates to the Capital Improvement Program.
- Mitigation actions that improve resiliency in new construction by increasing the standards for new construction should be reflected in updates to Colton's Building and Construction Regulations.
- Revisions to requirements for new construction activities specifically within flood plains should result in changes to the City's Floodplain Management Regulations.
- Requirements related to seismic retrofits to existing buildings may be implemented through amendments to the City's Seismic Strengthening for Unreinforced Masonry Buildings Regulations.
- Any mitigation actions that change where different developments and land use activities can occur, how they should be sited, and how they can be constructed or operated, should be integrated as applicable into the City of Colton Zoning Code.

Appendix E provides guidance on best practices to accomplish this integration.

Continued Public Involvement

The City will continue to keep members of the public informed about the Planning Team's actions to review and update the Plan. When updating the Plan, the Planning Team will develop a revised community engagement strategy that reflects the City's updated needs and capabilities. This updated strategy should include a schedule and plan for public meetings, recommendations about the appropriate use of the City website and social media accounts, and any sample content for public outreach documentations. The Planning Team should also consider distributing annual progress reports about Plan implementation to Colton community members. Options for receiving feedback shall include a comment portal on the City's website as well as an email address for individuals to submit their comments to the City.

Point Of Contact

The Deputy Chief of the Colton Fire Department is the primary point of contact for this Plan and for future updates. At the time of writing, the Deputy Chief of the Colton Fire Department is Justin Weems, who can be contacted at (909) 370-5144 or jweems@confire.org

Appendix A – HMPT Meeting Materials

2025 Colton Hazard Mitigation Planning Team Attendees

TABLE 1-1: COLTON HAZARD MITIGATION PLANNING TEAM (HMPT)		
Name	**Title**	**Department**
Corrie Kates	Building Official	Building and Safety Division
Ray Bruno	Fire Chief	City of Colton Fire Department
Justin Weems	Deputy Fire Chief	City of Colton Fire Department
Jon Boggs	Battalion Chief/Fire Marshall	City of Colton Fire Department
Rob Wilson	Lieutenant	Colton Police Department
Joey Armendarez	Instructor/Colton Fire Dept Captain	Community Emergency Response Team
Deb Farrar	Director	Community Services Department
Sid Jain	Finance Manager, Purchasing and Customer Services	Finance Division
Regina Hawkins	Senior Human Resources Specialist	Human Resources Department
Brandt Bahling	Senior Risk Management Analyst	Human Resources Department
Victor Ortiz	Assistant Public Works Director/City Engineer	Public Works and Utilities Department
Bassam Alzammar	Supervisor	Public Works and Utilities Department

City of Colton

LOCAL HAZARD MITIGATION PLAN UPDATE
HMPC MEETING #1 AGENDA

I. **Team Introductions**

II. **Local Hazard Mitigation Plan Overview**

III. **Project Goals and Expectations**

IV. **Hazard Mitigation Planning Team Roster**

V. **Data Needs (Critical Facilities List, vulnerable populations, recent/past hazards, GIS)**

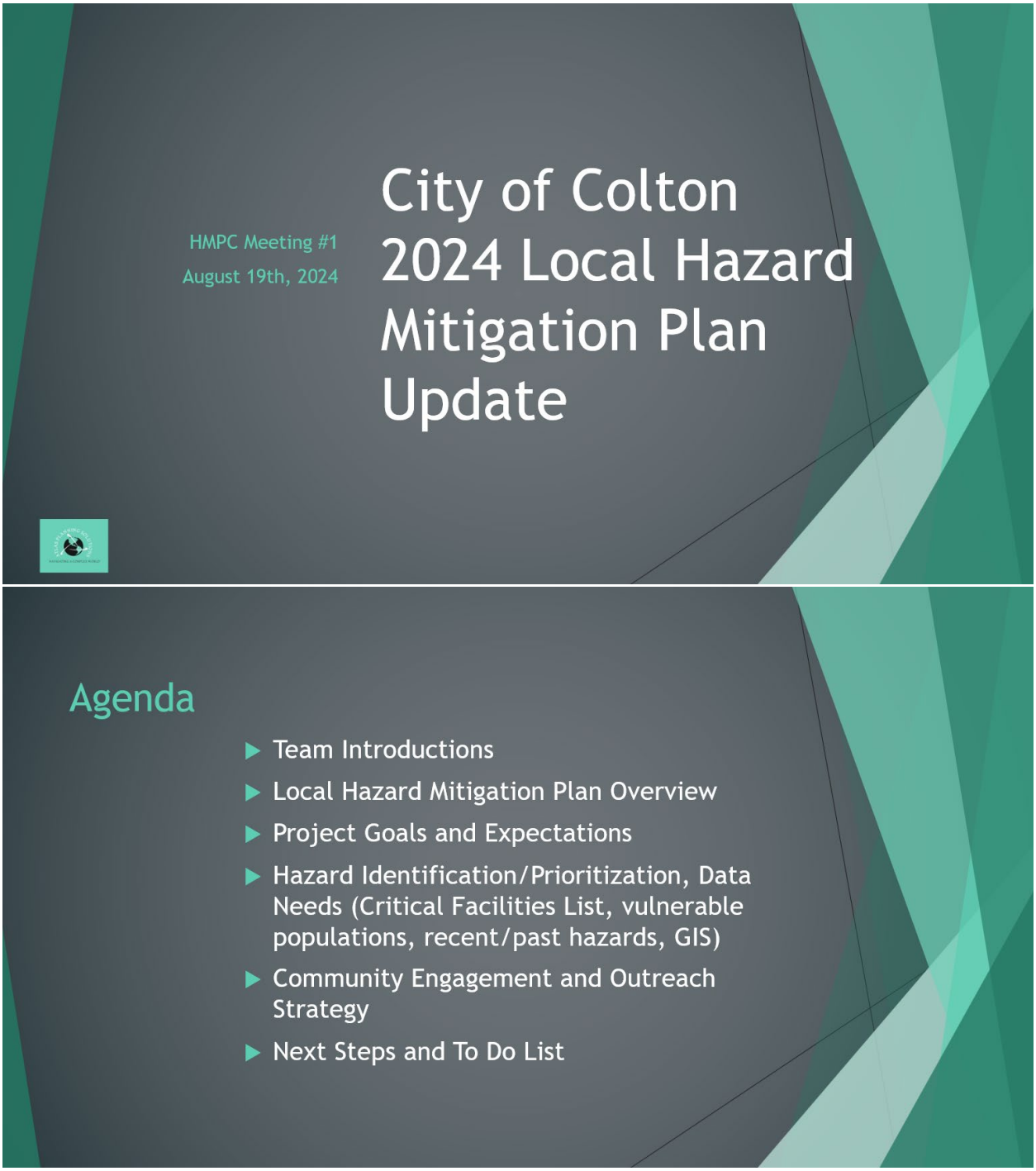
VI. **Community Engagement and Outreach Strategy**

VII. **Hazard Identification/Prioritization**

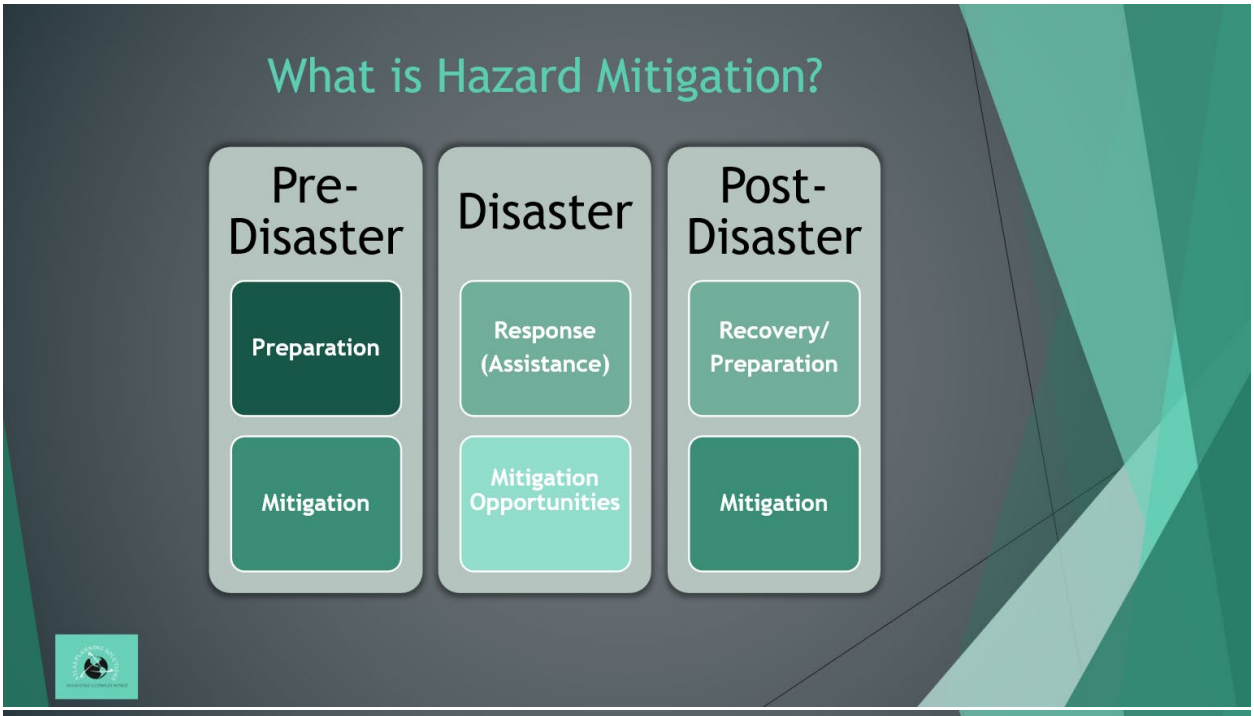
VIII. **Next Steps and To-Do List**

Hazard Mitigation Planning Update Process	**August 2024 – August 2025**
Community Outreach	Ongoing
Administrative Draft LHMP	MAY 2025
Public Review Draft LHMP Document	July 2025
Cal OES/FEMA Review Draft Document	August 2025

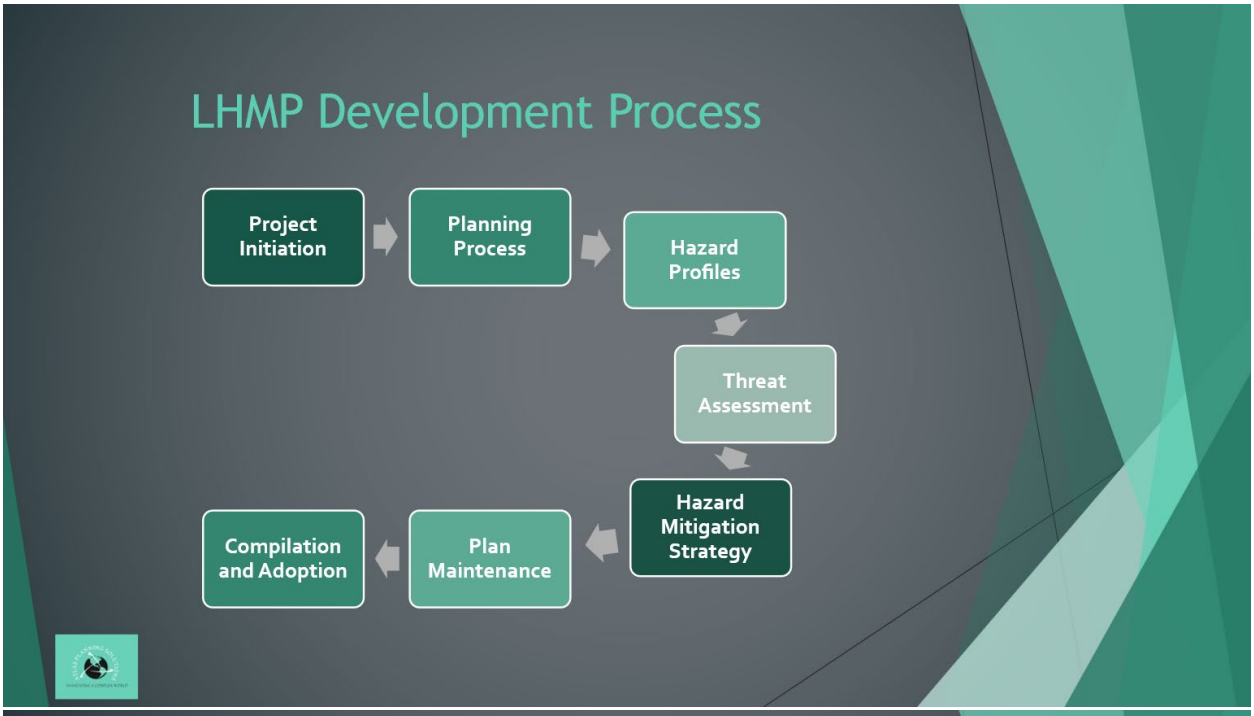
Criteria	1	2	3	4
Probability: *Estimated Likelihood that the hazard will occur in the future.*	**Unlikely**	**Occasionally**	**Likely**	**Highly Likely**
Location: *The size of the affected area from a typical future occurrence.*	**Negligible**	**Limited**	**Significant**	**Extensive**
Maximum Probable Extent: *The estimated damage to facilities from a typical failure.*	**Weak –** little to no damage	**Moderate –** some damage, loss of service for days	**Severe –** devastating damage, loss of service for months	**Extreme –** catastrophic damage, uninhabitable conditions
Secondary Impacts: *The effects to the community beyond physical damage*	**Negligible –** no loss of function, downtime, and/or evacuations	**Limited –** minimal loss of function, downtime, and/or evacuations	**Moderate –** some loss of function, downtime, and/or evacuations	**High –** major loss of function, downtime, and/or evacuations

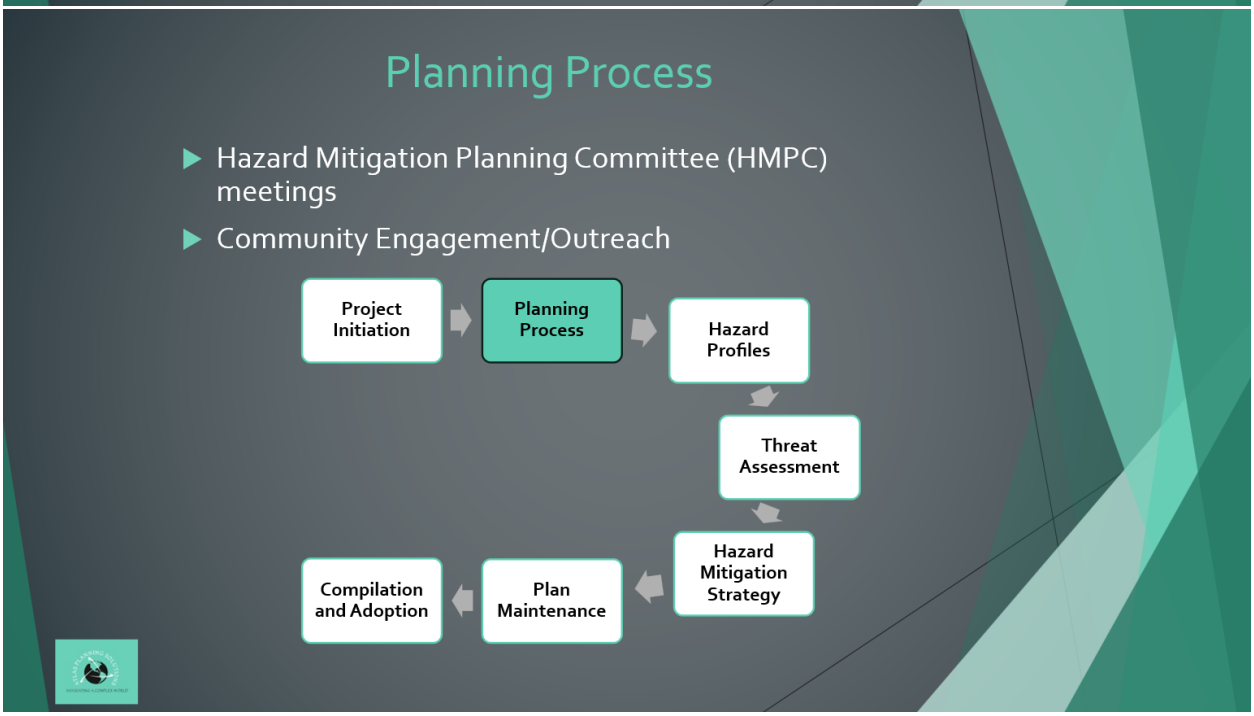

HMPC Meeting #1
August 19th, 2024
City of Colton 2024 Local Hazard Mitigation Plan Update
Agenda
Team Introductions
Local Hazard Mitigation Plan Overview
Project Goals and Expectations
Hazard Identification/Prioritization, Data Needs (Critical Facilities List, vulnerable populations, recent/past hazards, GIS)
Community Engagement and Outreach Strategy
Next Steps and To Do List

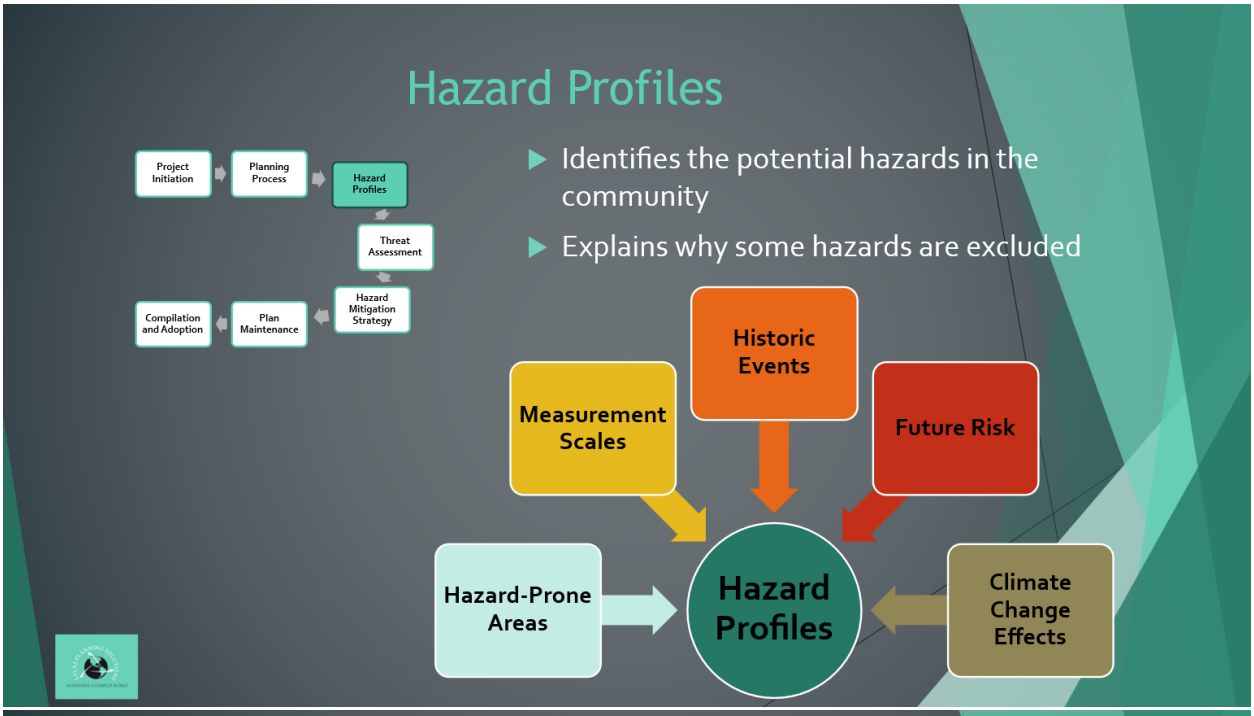

Team Introductions
Take a Moment to Share:
Your Name
Your Department
Your Primary Function With the City
Prior Experience with Hazard Mitigation
Is Anyone Missing?
Local Hazard Mitigation Plan Overview
Eligibility for FEMA and Cal OES Grant Funding
Unified and deliberate approach to improving community resilience.
Valid for five years
LHMP
Preparedness
DISASTER
Response
Recovery
Mitigation
Resiliency

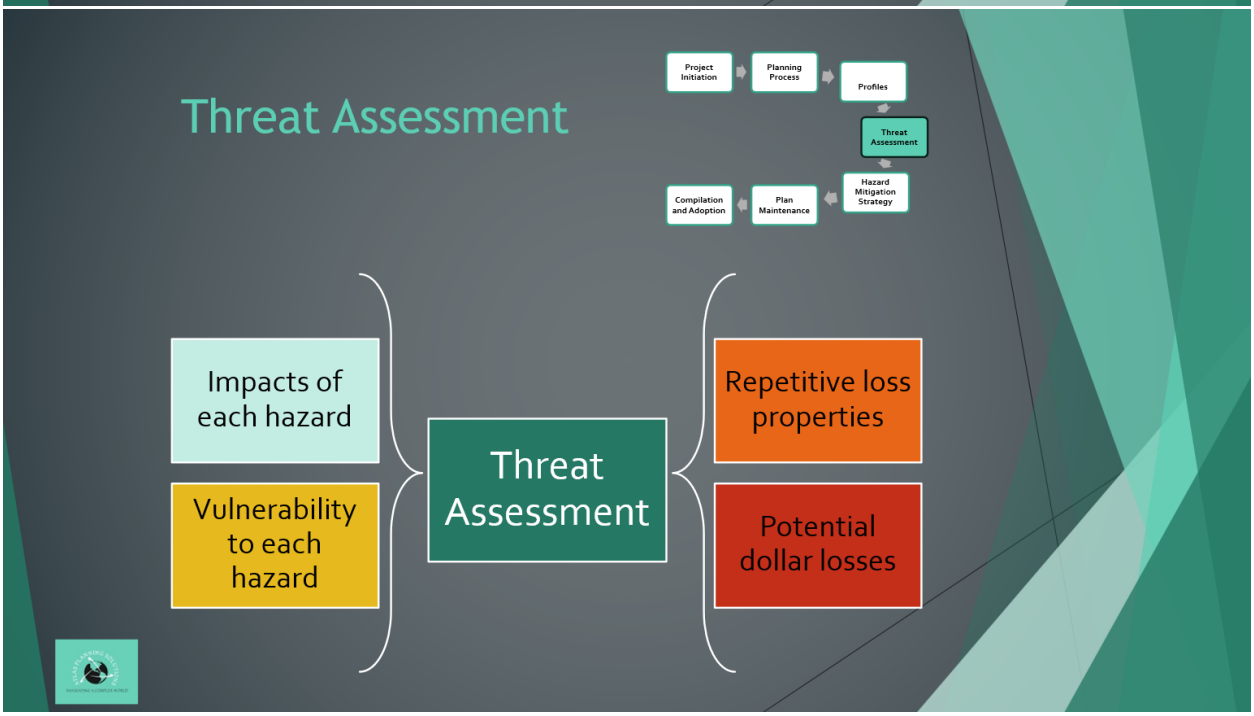

What is Hazard Mitigation?
Pre-Disaster
Preparation
Mitigation
Disaster
Response (Assistance)
Mitigation Opportunities
Post-Disaster
Recovery/ Preparation
Mitigation

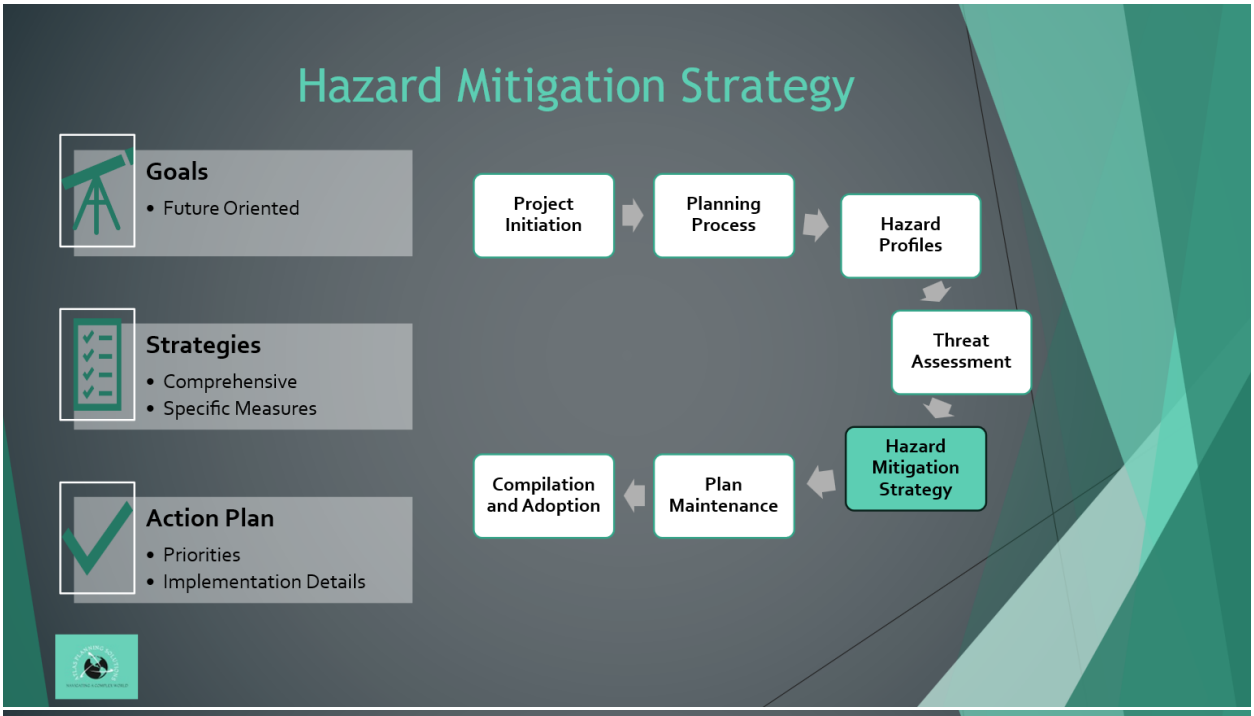

What does Hazard Mitigation Look Like?

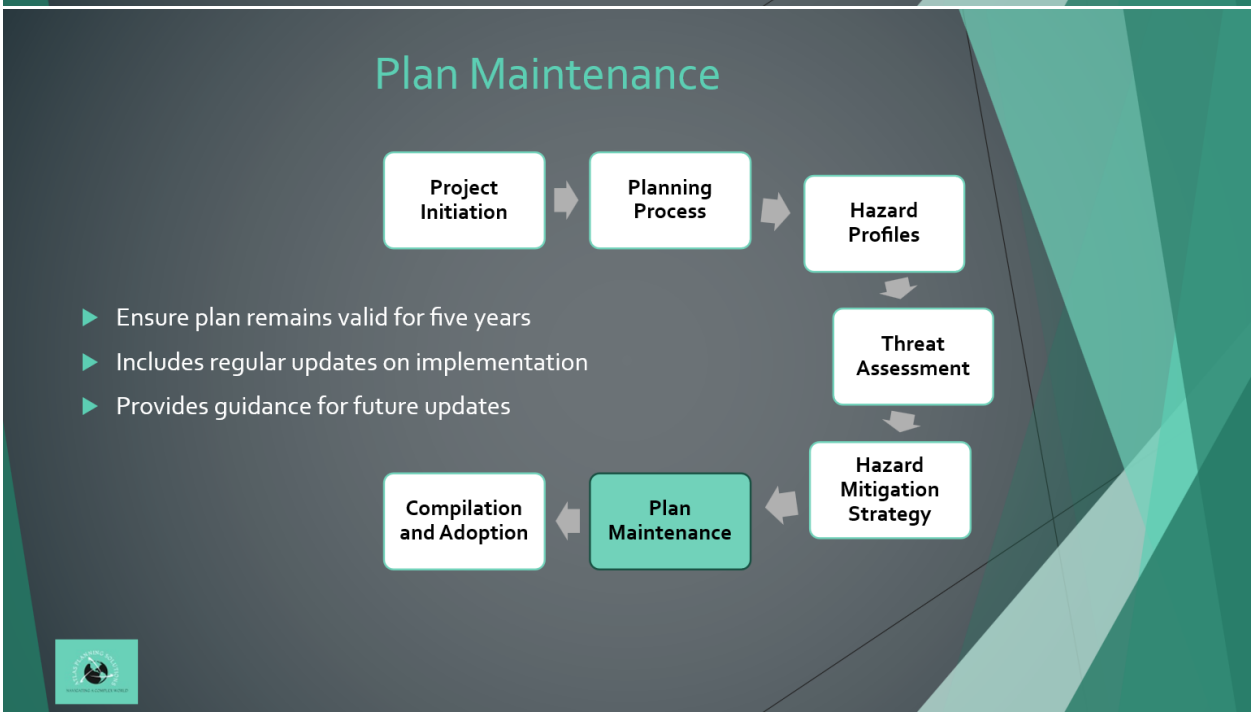

LHMP Development Process
Project Initiation
Planning Process
Hazard Profiles
Threat Assessment
Hazard Mitigation Strategy
Plan Maintenance
Compilation and Adoption

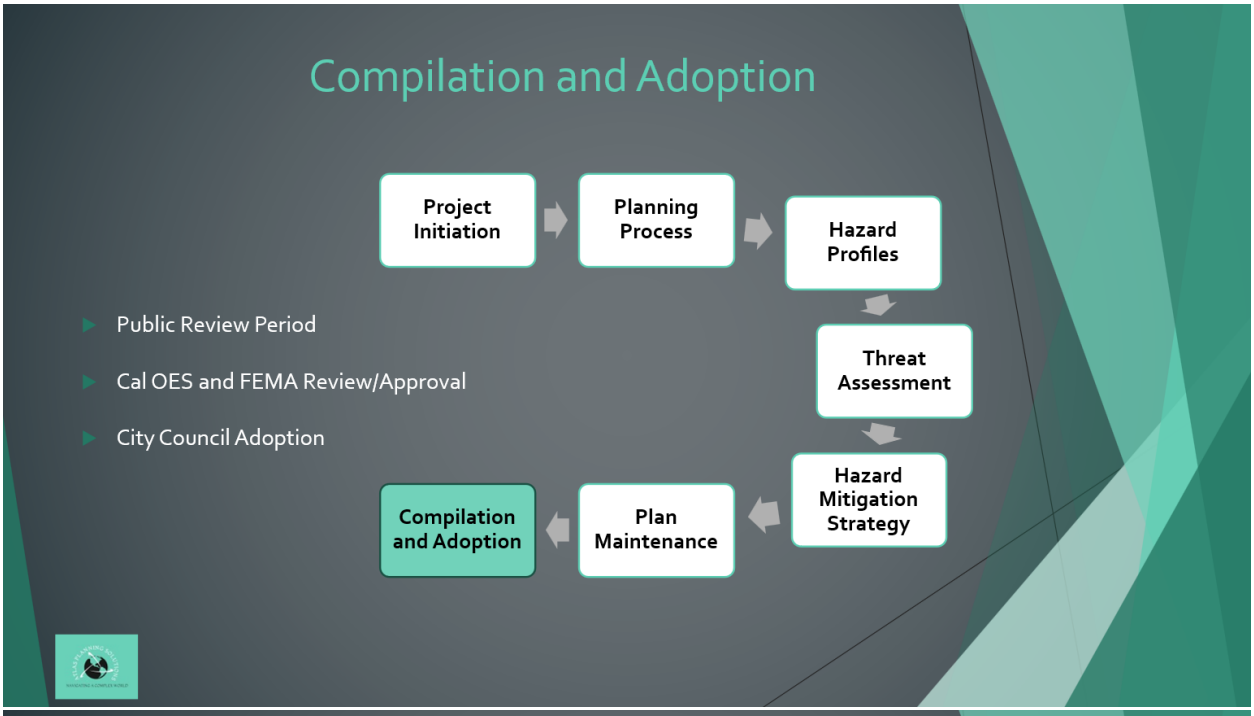

Planning Process
Hazard Mitigation Planning Committee (HMPC) meetings
Community Engagement/Outreach
Project Initiation
Planning Process
Hazard Profiles
Threat Assessment
Hazard Mitigation Strategy
Plan Maintenance
Compilation and Adoption

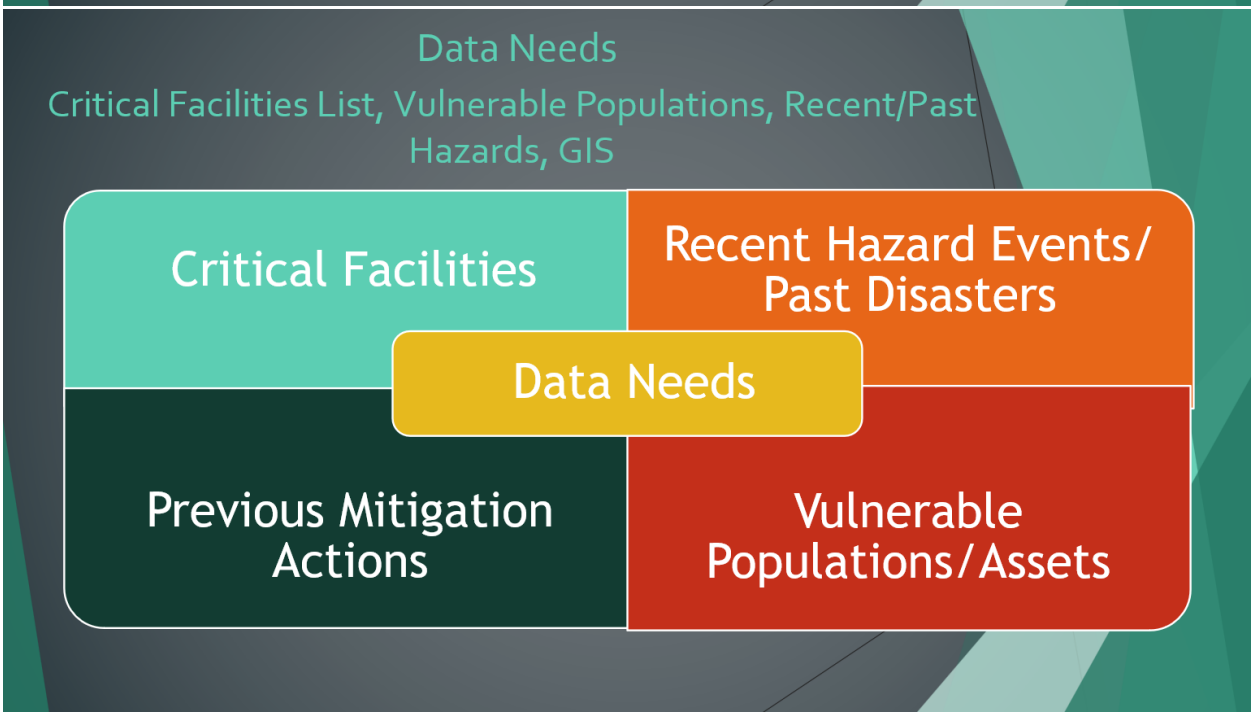

Hazard Profiles
Project Initiation
Planning Process
Hazard Profiles
Threat Assessment
Hazard Mitigation Strategy
Plan Maintenance
Compilation and Adoption
Identifies the potential hazards in the community
Explains why some hazards are excluded
Historic Events
Measurement Scales
Future Risk
Hazard-Prone Areas
Hazard Profiles
Climate Change Effects


Threat Assessment
Project Initiation
Planning Process
Profiles
Threat Assessment
Hazard Mitigation Strategy
Plan Maintenance
Compilation and Adoption
Impacts of each hazard
Vulnerability to each hazard
Threat Assessment
Repetitive loss properties
Potential dollar losses


Hazard Mitigation Strategy
Goals
• Future Oriented
Strategies
• Comprehensive
• Specific Measures
Action Plan
• Priorities
• Implementation Details
Project Initiation
Planning Process
Hazard Profiles
Threat Assessment
Hazard Mitigation Strategy
Plan Maintenance
Compilation and Adoption


Plan Maintenance
Project Initiation
Planning Process
Hazard Profiles
Threat Assessment
Hazard Mitigation Strategy
Plan Maintenance
Compilation and Adoption
Ensure plan remains valid for five years
Includes regular updates on implementation
Provides guidance for future updates


Compilation and Adoption
Project Initiation
Planning Process
Hazard Profiles
Threat Assessment
Hazard Mitigation Strategy
Plan Maintenance
Compilation and Adoption
Public Review Period
Cal OES and FEMA Review/Approval
City Council Adoption


Data Needs
Critical Facilities List, Vulnerable Populations, Recent/Past Hazards, GIS
Critical Facilities
Recent Hazard Events/ Past Disasters
Data Needs
Previous Mitigation Actions
Vulnerable Populations/Assets

2018 City of Colton LHMP Goals

1. Save lives and reduce injuries among Colton community members and visitors.
2. Avoid damage to public and private property and to environmental systems.
3. Preserve key government functions and other critical services.
4. Integrate hazard mitigation activities into City policies.
5. Maintain the City's eligibility for increased hazard mitigation and disaster recovery funding.
6. Support compliance with state laws that require addressing specific hazards and other items, including the effects of climate change.

Are these goals still relevant to Colton's current planned direction? Should these goals be added to, kept as is, edited, or removed?

Hazard Identification and Prioritization

Current Hazards for Colton as identified in the City's 2018 LHMP:

1. Drought
2. Flooding (including Dam Inundation)
3. Geologic Hazards (Landslide and Subsidence)
4. Human-caused Hazards (Infrastructure Failure, Hazardous Materials Release, and Terrorism)
5. Seismic Hazards (Fault Rupture, Liquefaction, and Seismic Shaking)
6. Severe Weather (Extreme Heat, Severe Wind, and Severe Winter Weather)
7. Wildfire

- Do these hazards still apply?
- Should any new ones be added?
- Should any be deleted?

Hazard Identification and Prioritization

Changes in Population and Land Use Development:

1. Drought
2. Flooding (including Dam Inundation)
3. Geologic Hazards (Landslide and Subsidence)
4. Human-caused Hazards (Infrastructure Failure, Hazardous Materials Release, and Terrorism)
5. Seismic Hazards (Fault Rupture, Liquefaction, and Seismic Shaking)
6. Severe Weather (Extreme Heat, Severe Wind, and Severe Winter Weather)
7. Wildfire

- New Requirement
- Which hazards intersect with this concern?

Community Engagement and Outreach Strategy

FEMA requires community involvement during plan development

Online Engagement

- Online Survey to Colton community members
- Social Media Posts:
  - Facebook: City of Colton-Community Services Department
  - Instagram: @coltoncsd
  - X (Formerly Twitter): has a link to City of Colton HR (@Colton_HR). Is there another account for community events and information?
  - YouTube: @cityofcoltoncommunityservi6255Nextdoor: ???
- Project Website: https://www.ci.colton.ca.us/820/Local-Hazard-Mitigation

In Person Engagement

- Community Meeting(s) - share the process and provide opportunities for feedback
- City Council/Planning Commission - opportunities for feedback from both the public and decision makers

What Other Community Engagement Activities?

Hazard Mitigation Planning Process	June 2024 - January 2025
Community Outreach	Ongoing
HMPC Meeting 2	September 2024
Administrative Draft LHMP	November 2024
Public Review Draft LHMP Document	December 2024
Cal OES/FEMA Review Draft Document	January 2025

Data Needs: Please send any information that may help with historic events, critical facilities, mitigation action progress, future projects to be undertaken

Next Steps and To Do List

Questions?

Justin Weems

jweems@confire.org

909-370-5144

Aaron Pfannenstiel, AICP

aaron@atlasplanning.org

951-444-9379

City of Colton

LOCAL HAZARD MITIGATION PLAN UPDATE STAKEHOLDER MEETING JUNE 25, 2025

THE CITY OF COLTON California

City of Colton Local Hazard Mitigation Plan

Stakeholder Engagement Meeting

June 25, 2025

What is this Meeting About?

WHAT

- Update of the Local Hazard Mitigation Plan (LHMP)

WHO

- Key Community Stakeholders

WHY

- Access to Funding and Grants

WHAT DOES AN LHMP DO?

Discuss Community hazards

Analyzes hazard risks

Identifies Policies / Projects to Reduce Risk

Provides direction to implement and monitor

Hazard Prioritization Exercise

Hazard	Probabilty (2.0)	Impact (2.0)			Final Score	Threat Level
		Location (0.8)	Primary Impact (0.7)	Secondary Impact (0.5)		
Drought	4 (Highly likely)	4 (Extensive)	3 (Severe)	3 (Moderate)	54.4	High
Flooding	2 (Occasional)	2 (Limited)	3 (Severe)	3 (Moderate)	20.8	Medium
Geologic Hazards	3 (Likely)	2 (Limited)	2 (Moderate)	2 (Limited)	24.0	Medium
Human-Caused Hazards	2 (Occasional)	3 (Significant)	3 (Severe)	3 (Moderate)	24.0	Medium
Seismic Hazards	4 (Highly likely)	4 (Extensive)	4 (Extreme)	4 (High)	64.0	High
Severe weather	3 (Likely)	4 (Extensive)	4 (Extreme)	4 (High)	48.0	High
Wildfire	4 (Highly likely)	3 (Significant)	3 (Severe)	3 (Moderate)	48.0	High

4

Hazard Type	Hazard Planning Consideration
[illegible]	High
[illegible]	High
[illegible]	High
[illegible]	Medium
[illegible]	High
[illegible]	High
[illegible]	High
[illegible]	High
[illegible]	High
[illegible]	Medium
[illegible]	Medium
[illegible]	Medium
[illegible]	Medium
[illegible]	Medium
[illegible]	Medium
[illegible]	Medium
[illegible]	Low
[illegible]	Medium
[illegible]	Medium
[illegible]	Medium
[illegible]	Medium

What Hazards are in th LHMP?

Are any hazards missing?

Should any of the listed hazards have a higher priority?

Should any of the listed hazards have a lower priority?

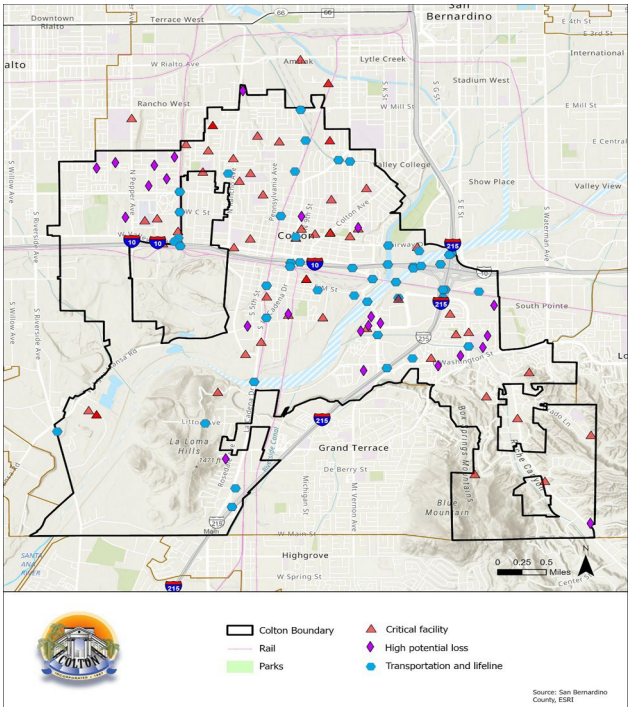
5

What Projects/ Initiatives by your Agency/Entity Should be Highlighted in this Plan?

- Utility Upgrades
- Infrastructure Projects
- Community Engagement Initiatives
- Inter/Intra Agency Coordination Efforts
- Other

6

What Locations are most vulnerable from your perspective?



Thoughts or Concerns?

What are we missing?

What have you seen in other communities like Colton?

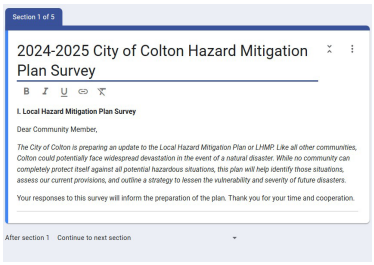
Can you think of anyone else we should engage with?

8

Outreach and Public Participation

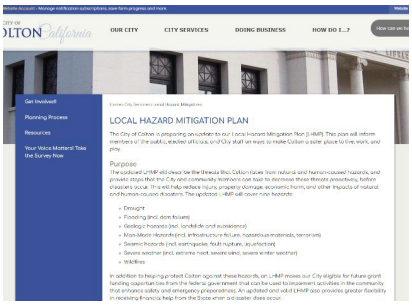
Online Survey

https://forms.gle/X1giJZJA69sjmUF87



LHMP Website

https://www.coltonca.gov/820/Local -Hazard-Mitigation



9

Schedule

Planning Process	Public Review	Agency Review
• Fall 2024-Spring 2025	• Summer 2025	• Fall 2025

10

Questions?

Please Contact:

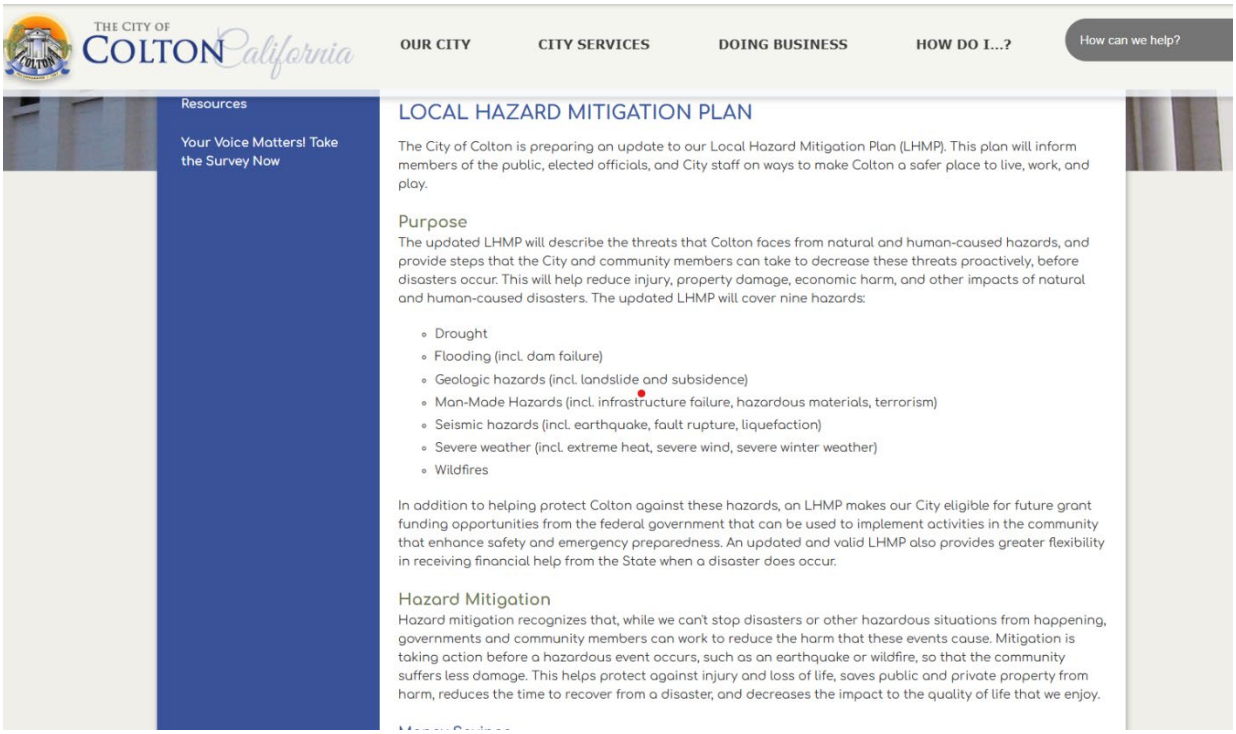
Justin Weems
Deputy Chief -
Colton Fire Department

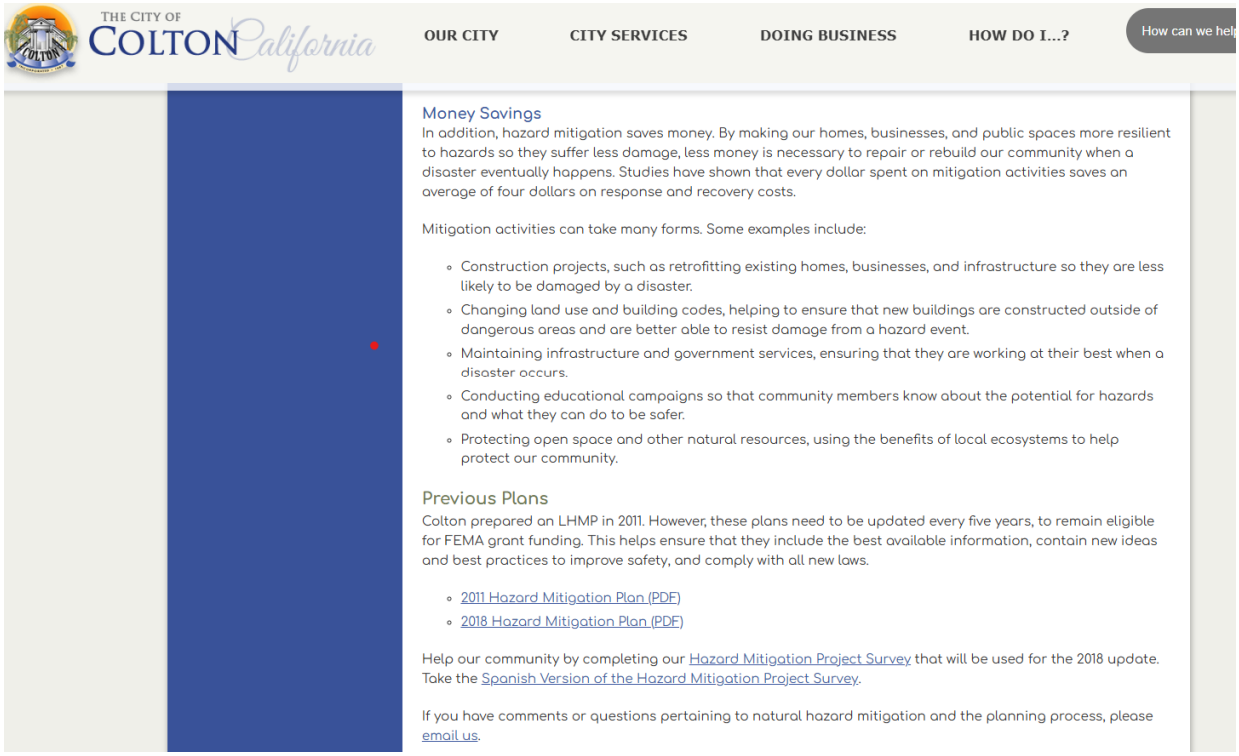
Email: Jweems@confire.org

Appendix B – Outreach Engagement Materials

City of Colton 2025 LHMP Update Project Website

www.coltonca.gov/820/Local-Hazard-Mitigation





I. 2024-2025 City of Colton Hazard Mitigation Plan Survey

Local Hazard Mitigation Plan Survey

Dear Community Member,

The City of Colton is preparing an update to the Local Hazard Mitigation Plan or LHMP. Like all other communities, Colton could potentially face widespread devastation in the event of a natural disaster. While no community can completely protect itself against all potential hazardous situations, this plan will help identify those situations, assess our current provisions, and outline a strategy to lessen the vulnerability and severity of future disasters.

Your responses to this survey will inform the preparation of the plan. Thank you for your time and cooperation.

II. Hazard Awareness

1. **Please indicate whether you live or work in the City of Colton.**
   a. I live in the City of Colton.
   b. I work in the City of Colton.
   c. I live and work in the City of Colton.
   d. Neither applies to me, but I am interested in the City's resilience.

2. **What is the Zip code of your home?**

3. **Have you been impacted by a hazard event in your current residence?**
   a. Yes
   b. No

4. **If you answered yes to the previous question, please select the type of hazard event that you have been impacted by (select all that apply).**

Drought	Seismic Hazards (Fault Rupture, Liquefaction, and Seismic Shaking)
Flooding (Including Dam Inundation)	Severe Weather (Extreme Heat, Severe Wind, and Severe Winter Weather)
Geologic Hazards (Landslide and Subsidence)	Wildfire
Human-caused Hazards (Infrastructure Failure, Hazardous Materials Release, and Terrorism)	Other

Please list any additional hazards that have previously impacted your neighborhood or home.

5. **The following hazards could potentially impact the City. Please mark the THREE (3) hazards that are of the greatest concern to your neighborhood or home.**

Drought	Seismic Hazards (Fault Rupture, Liquefaction, and Seismic Shaking)
Flooding (Including Dam Inundation)	Severe Weather (Extreme Heat, Severe Wind, and Severe Winter Weather)
Geologic Hazards (Landslide and Subsidence)	Wildfire
Human-caused Hazards (Infrastructure Failure, Hazardous Materials Release, and Terrorism)	Other

Please list any additional hazards that present a threat to your neighborhood or home.

6. **The planning team uses various data sources to identify hazards in your community; however, some of these data sources do not provide data at a general citywide level. Are there any small-scale issues that you would like the planning team to consider, such as ponding at a specific intersection during rain?**

   a. I am not aware of local hazards

   b. I am aware of local hazards

Please provide as much detail as possible, including location and type of hazard.

7. **How concerned are you that climate change may create new hazardous situations in Colton or worsen existing natural hazards?**

   a. Very concerned.
   b. Somewhat concerned.
   c. Somewhat unconcerned.
   d. Not at all concerned.

e. Unsure.

8. When do you think climate change will pose a threat to your health, property, livelihood, or overall wellbeing?

a. It already is.
b. Within the next five years.
c. In five to twenty years.
d. Not for at least another twenty years.
e. Never, or not in my lifetime.

9. If you have taken any action to protect yourself against natural hazards, how confident are you that these actions will be sufficient to protect against more severe hazards that are expected because of climate change?

a. Very confident.
b. Somewhat confident.
c. Somewhat unconfident.
d. Not at all confident.
e. Unsure.

10. If you are a homeowner, do you have adequate homeowners' insurance to cover the hazards that could impact your home?

a. Yes, my insurance coverage should be adequate.
b. No, I don't believe my insurance coverage would be adequate for a major disaster.
c. Unsure.
d. I do not have an insurance policy.
e. Not applicable; I rent my current residence.

11. If you rent your residence, do you have renters' insurance?

a. Yes
b. No
c. Not applicable; I own my residence.

12. Do you have flood insurance for your home?

a. Yes, I own my home and have flood insurance.
b. Yes, I rent my home and have flood insurance.
c. No, but I am interested in reviewing flood insurance options (http://www.floodsmart.gov/floodsmart/).

13. Have you done anything to your home to make it less vulnerable to hazards such as earthquakes, floods, and fires?

a. Yes
b. No
c. Not applicable; I rent my residence.

If not, do you plan to?

14. If a severe hazard event occurred today such that all services were cut off from your home (power, gas, water, sewer) and you were unable to leave or access a store for 72 hours, which of these items do you have readily available?

a. Potable water (3 gallons per person)
b. Cooking and eating utensils
c. Can opener
d. Canned / nonperishable foods (ready to eat)
e. Gas grill/camping stove
f. Extra medications and contact lenses (if applicable)
g. First aid kit/supplies
h. Portable AM/FM radio (solar-powered, hand crank, or batteries)
i. Handheld "walkie-talkie" radios (with batteries)
j. Important family photos/documentation in a water- and fireproof container
k. Extra clothes and shoes
l. Blanket(s) / sleeping bag(s)
m. Cash
n. Flashlight (with batteries)
o. Gasoline
p. Telephone (with batteries)
q. Pet supplies
r. Secondary source of heat

For more information on emergency kits, visit: https://www.ready.gov/kit

What else do you have in your emergency kit?

15. **Are you familiar with the special needs of your neighbors in the event of a disaster situation (special needs may include limited mobility, severe medical conditions, memory impairments)?**
    a. Yes
    b. No

16. **Are you a trained member of your Community Emergency Response Team (CERT)?**
    a. Yes
    b. No, but I would like to learn more about CERT.
    c. No, I am not interested in being a trained CERT member.

    For more information about CERT, please visit:

    www.coltonfire.com/who-is-east-valley-fire-command/

17. **How can the City help you become better prepared for a disaster? (choose all that apply)**
    a. Provide effective emergency notifications and communication.
    b. Provide training and education to residents and business owners on how to reduce future damage.
    c. Provide community outreach regarding emergency preparedness.
    d. Create awareness of special needs and vulnerable populations.
    e. Other (please specify)

If you do NOT work in the City of Colton, please skip to question 21

18. **Does your employer have a plan for disaster recovery in place?**
    a. Yes
    b. No
    c. I don't know

19. **Does your employer have a workforce communications plan to implement following a disaster, so they can contact you?**
    a. Yes
    b. No

III. Recommendations and Future Participation

20. **Would you like to be contacted when the Draft 2024 Colton Hazard Mitigation Plan is available for review?**
    a. Yes; please notify me using my contact information in the next question.
    b. No

21. **If you would like to be notified of future opportunities to participate in hazard mitigation and resiliency planning, please provide your name and e-mail address. If you do not have an e-mail address, please provide your mailing address.**

Full Name:	
E-Mail Address:	
Street Address:	
City, State, Zip:	

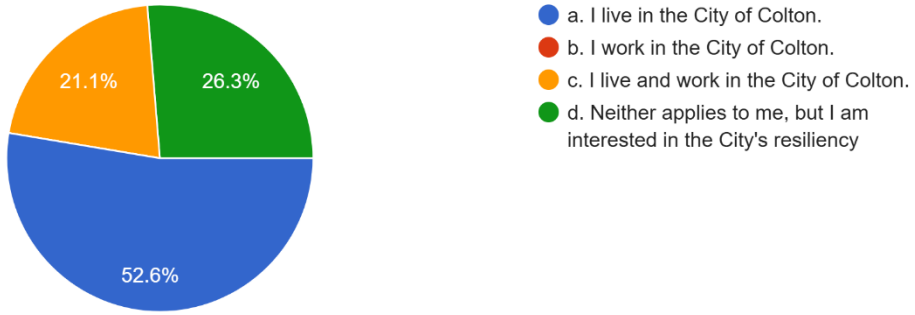
22. **Please provide us with any additional comments/suggestions/questions regarding your risk of future hazard events.**

Thank you for taking the time to complete this survey. If you have any questions, or if you know of other people/organizations that should be involved, please contact the city.

The City of Colton Hazard Mitigation Plan Survey Results

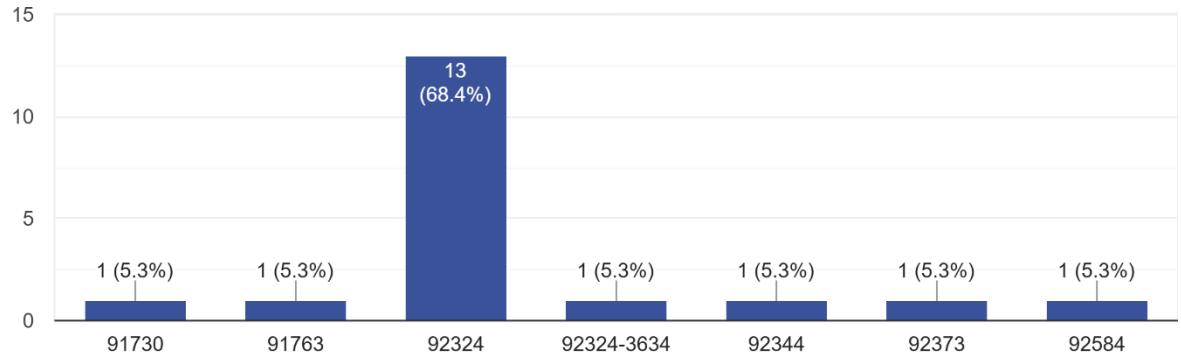
1. Please indicate whether you live or work in the City of Colton.

19 responses



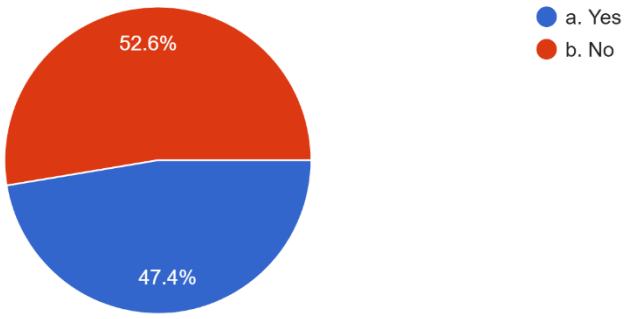
2. What is the Zip Code of your home?

19 responses



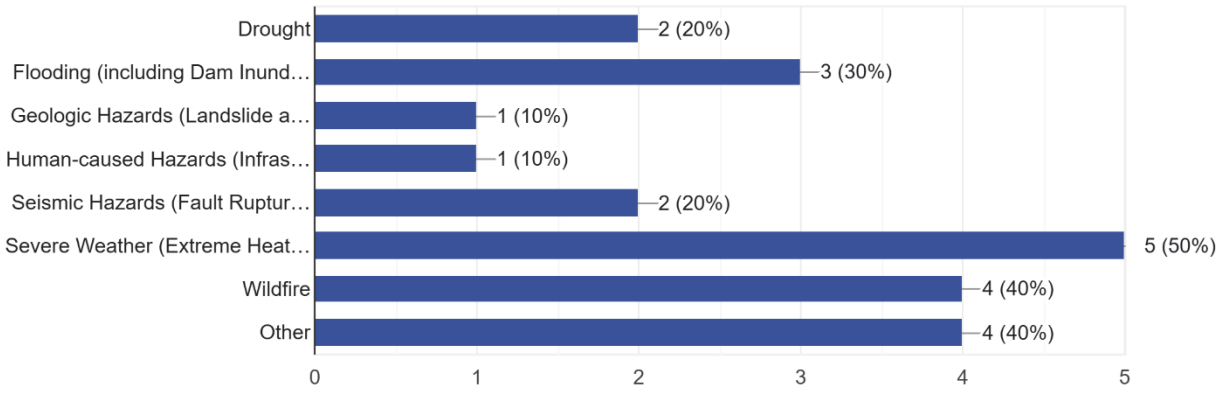
3. Have you been impacted by a hazard event in your current residence?

19 responses



4. If you answered yes to the previous question, please select the type of hazard event that you have been impacted by (select all that apply).

10 responses



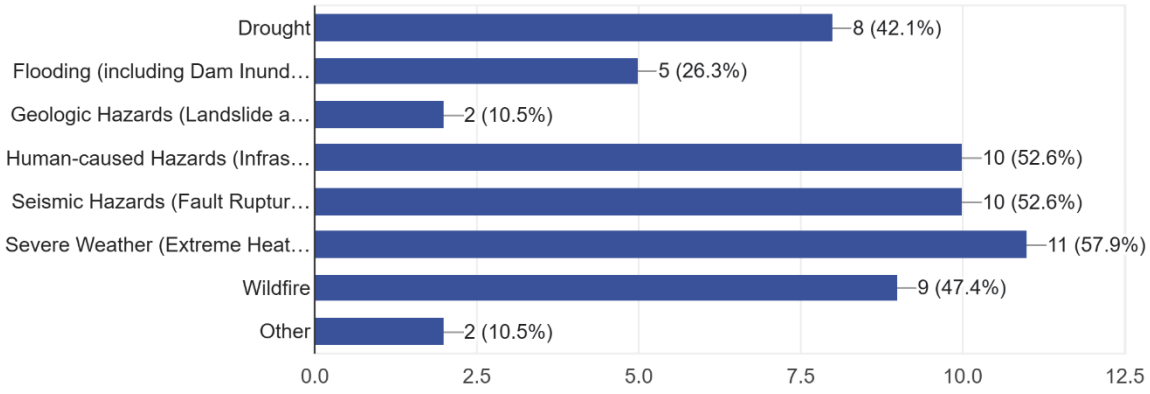
If you selected “Other” above, please list any additional hazards that have previously impacted your neighborhood or home.

4 responses

Unkept residential and apartments over grown back and front yards over grown with weeds that could create or add to a wildfire. Overgrown palms that block view to cross over streets.
Gas leak on main property gas line
Poor air quality, multiple negative environmental impacts due to industrial businesses within the city.
Train noise level, shaking house, train high speed.

5. The following hazards could potentially impact the city. Please mark the THREE (3) hazards that are of most concern to your neighborhood or home.

19 responses



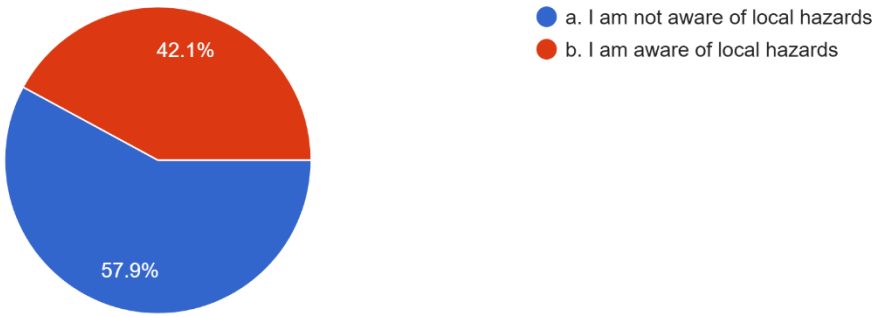
If you selected “Other” above, please list any additional hazards that have previously impacted your neighborhood or home.

2 responses

Train derailment
Poor air quality

6. The planning team is using various data sources to identify hazards in your community; however, some of these data sources do not provide data at ...hat you would like the planning team to consider?

19 responses



Please provide as much detail as possible, including location and type of hazard.

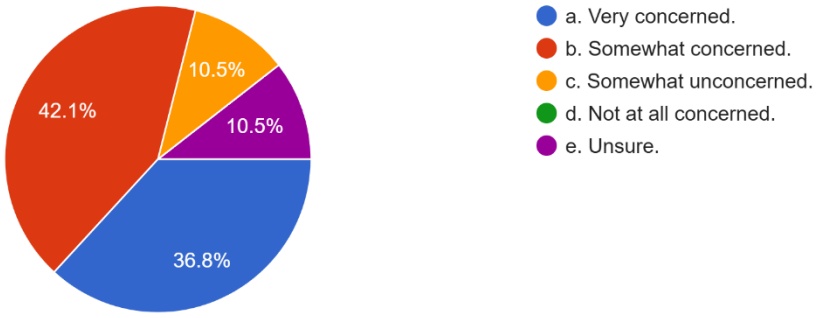
7 responses

Barton road and Washington street across from the car wash there is significant water accumulation with heavy rain.

Pepper near the hospital has been flooding for the 35 years my family has lived here. It messed up part of my car earlier this year
The Barton road bridge between La Cadena and Grand Terrace road over the old railroad tracks needs to be torn down and removed. We need 2 lanes each way there, it is a significant choke point in an emergency
Flooding. Valley blvd. Meridian st.
Flood control channels are cracking, probably from people showing homemade bombs and fireworks in them.
Many houses with overgrown vegetation weed abatement should be enforced in both front and backyard and around property lines.
Flooding underpasses

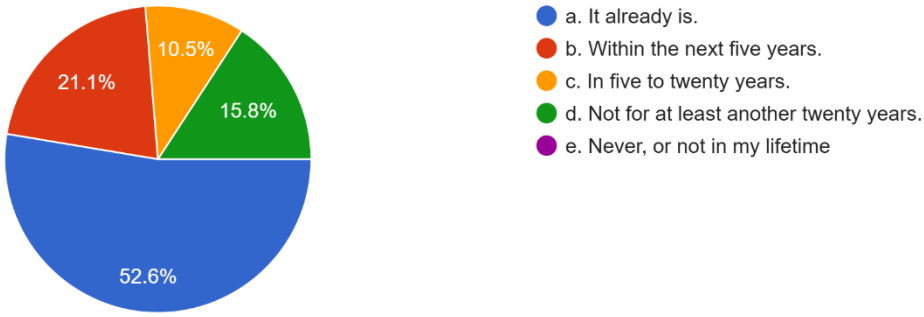
7. How concerned are you that climate change may create new hazardous situations in Colton or make existing natural hazards worse?

19 responses



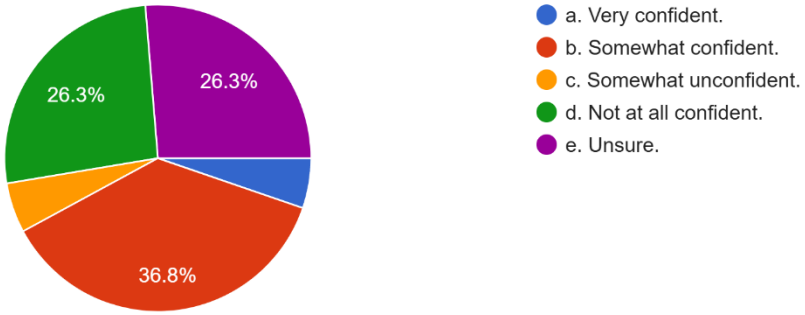
8. When do you think climate change will pose a threat to your health, property, livelihood, or overall wellbeing?

19 responses



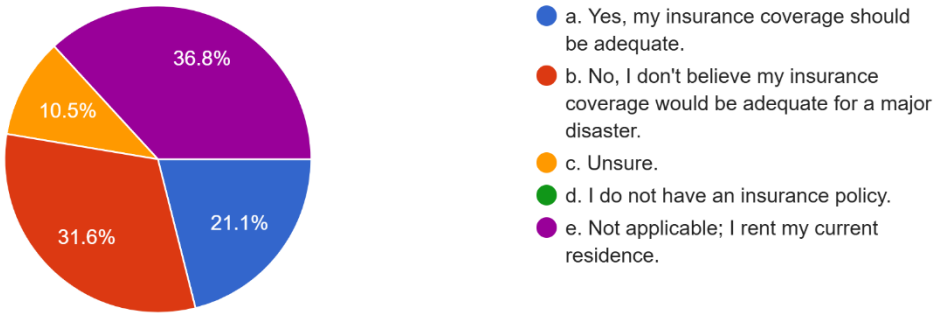
9. If you have taken any action to protect yourself against natural hazards, how confident are you that these actions will be sufficient to protect ag...zards that are expected because of climate change?

19 responses



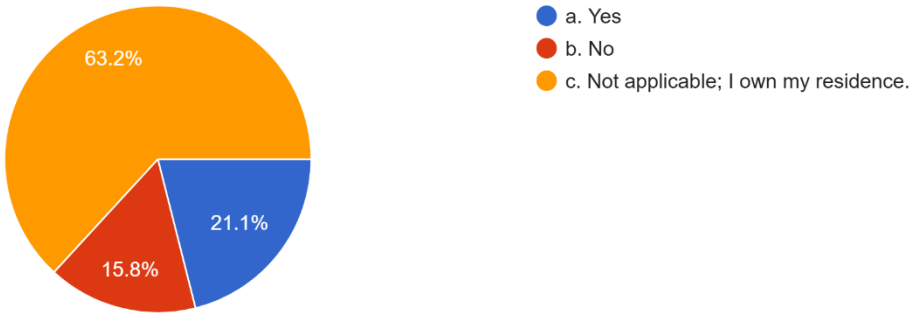
10. If you are a homeowner, do you have adequate homeowners' insurance to cover the hazards that could impact your home?

19 responses



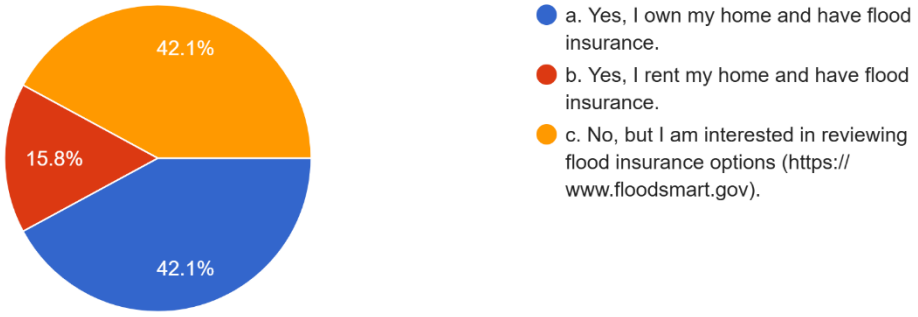
11. If you rent your residence, do you have renters' insurance?

19 responses



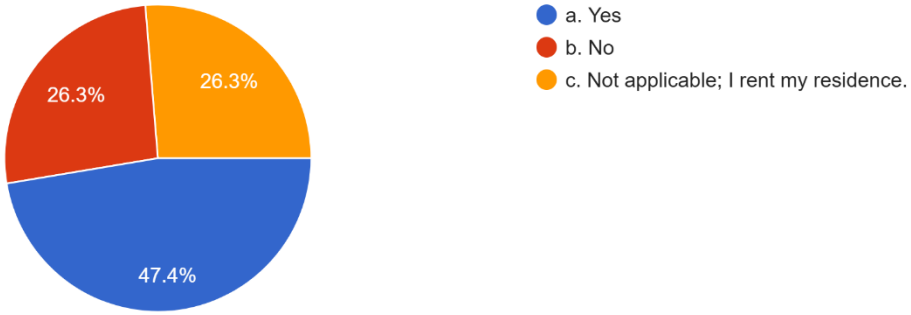
12. Do you have flood insurance for your home?

19 responses



13. Have you done anything to your home to make it less vulnerable to hazards such as earthquakes, floods, and fires?

19 responses



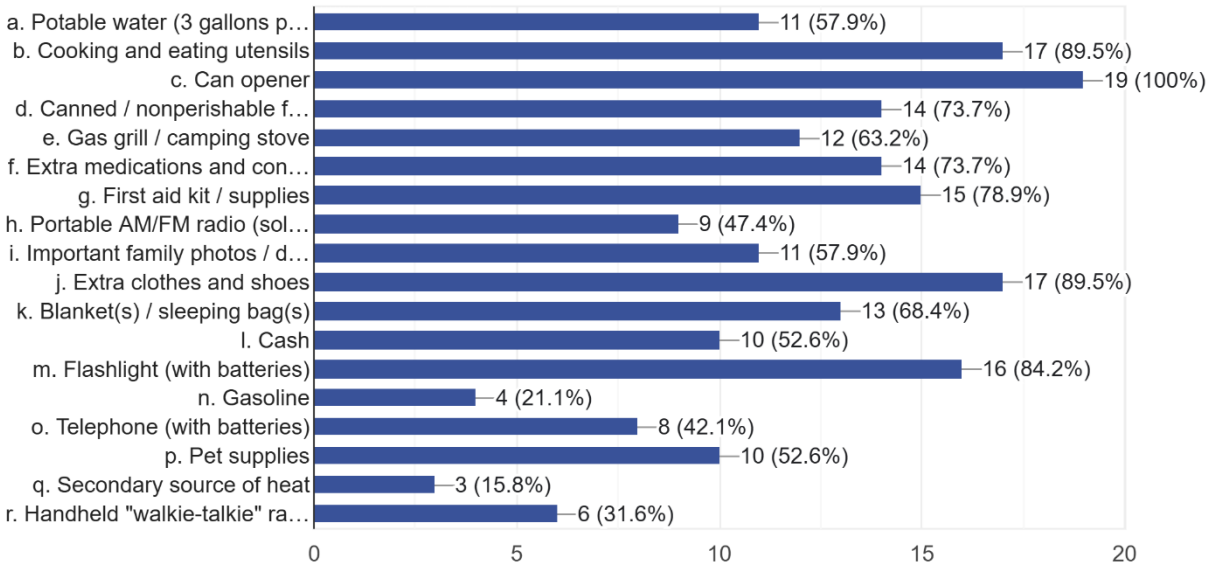
If not, do you plan to?

4 responses

maybe
Like what?
I would love to but cost is an issue
No

14. If a severe hazard event occurred today such that all services were cut off from your home (power, gas, water, sewer) and you were unable to l...hich of these items do you have readily available?

19 responses



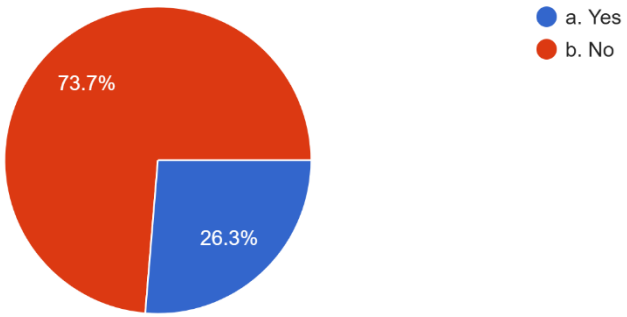
What else do you have in your emergency kit?

3 responses

Toilet supplies
Not much
Blankets, extra batteries

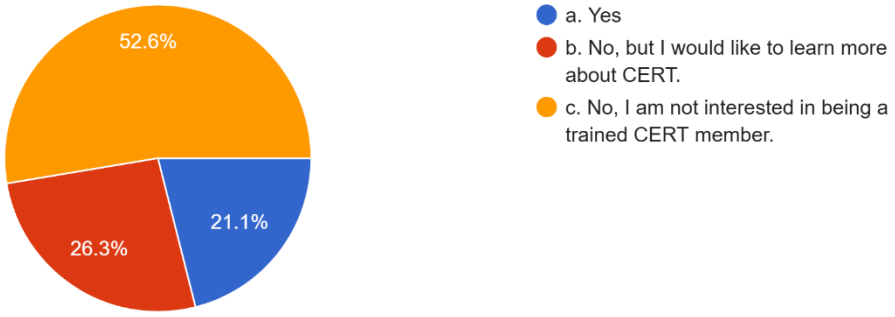
15. Are you familiar with the special needs of your neighbors in the event of a disaster situation (special needs may include limited mobility, severe medical conditions, memory impairments)?

19 responses



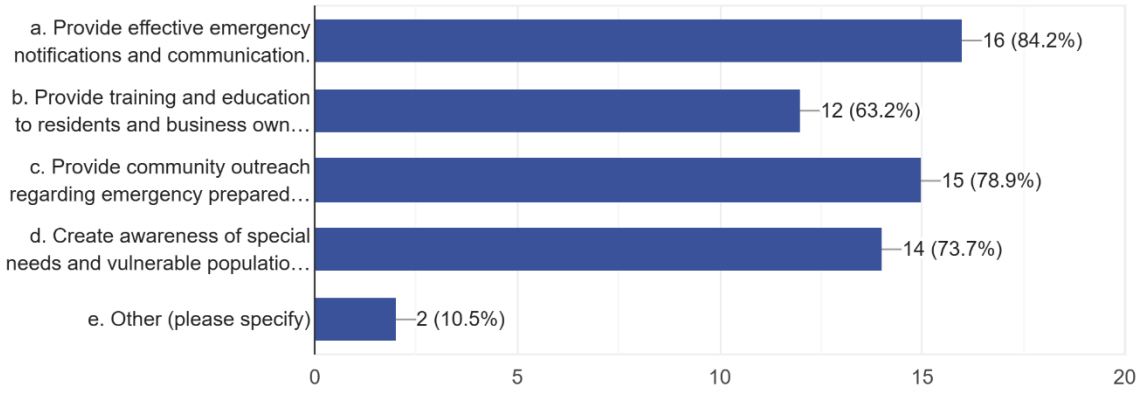
16. Are you a trained member of your Community Emergency Response Team (CERT)?

19 responses



17. How can the City help you become better prepared for a disaster? (Choose all that apply)

19 responses



If you selected “Other” above, please describe.

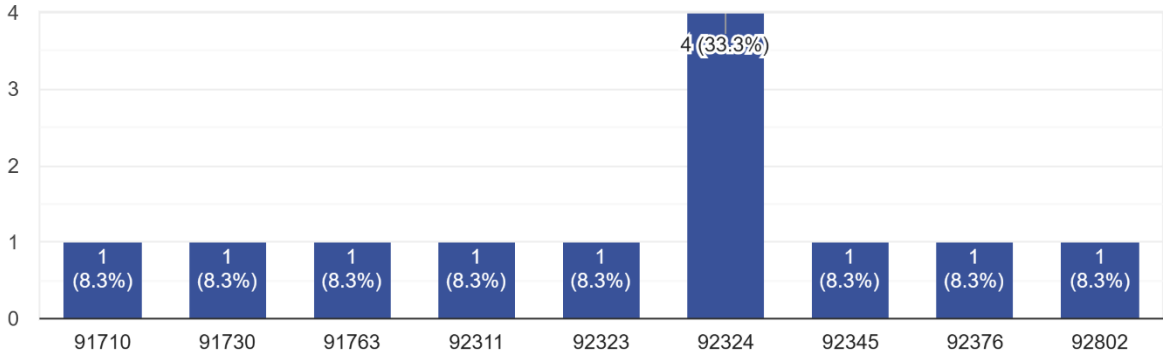
2 responses

Funds and improvement projects

provide more police and fire personnel.

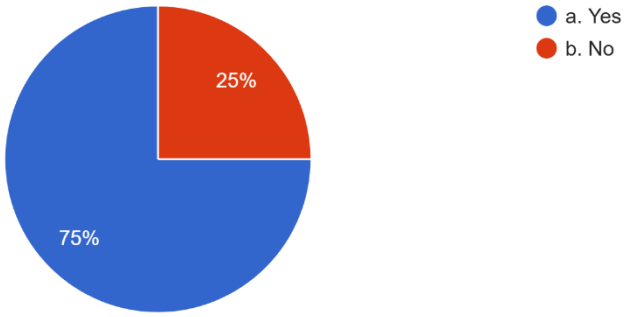
18. What is the ZIP code of your workplace?

12 responses



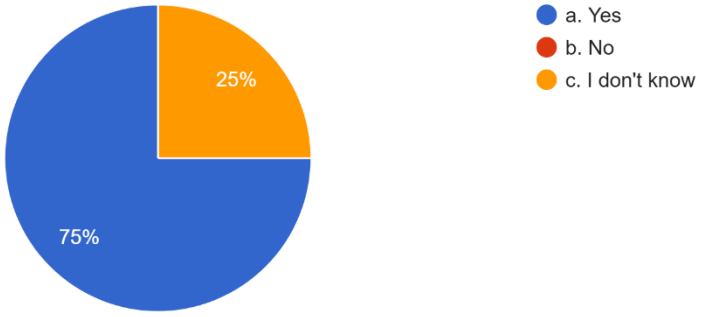
20. Does your employer have a workforce communications plan to implement following a disaster, so they can contact you?

12 responses



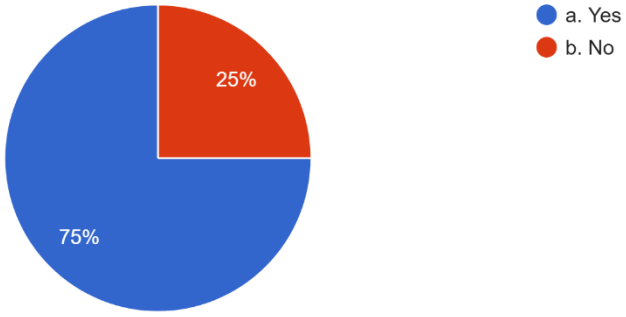
19. Does your employer have a plan for disaster recovery in place?

12 responses



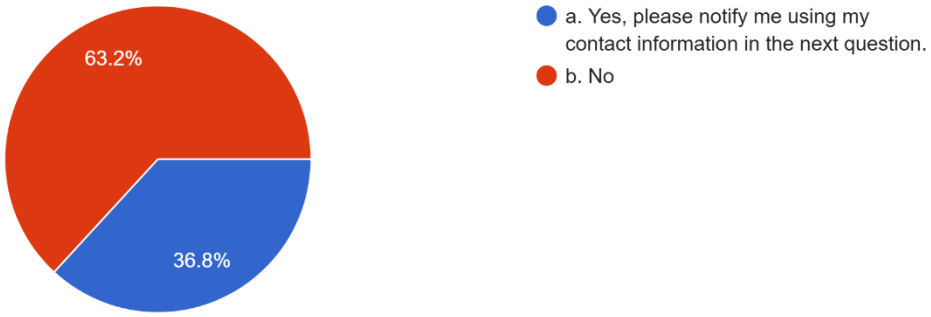
20. Does your employer have a workforce communications plan to implement following a disaster, so they can contact you?

12 responses



21. Would you like to be contacted when the Draft 2024 Colton Hazard Mitigation Plan is available for review?

19 responses



22. If you would like to be notified of future opportunities to participate in hazard mitigation and resiliency planning, please provide your name and e-mail address. If you do not have an e-mail address, please provide your mailing address. This information will be kept confidential.

7 responses

23. Please provide us with any additional comments/suggestions/questions regarding your risk of future hazard events.

5 responses

Our infrastructure needs updating
n/a
the City of Colton needs more police and fire personnel
Please contact railroad and give them concerns I wrote . It’s getting worse. Not including the drug trafficking that occurs all hours of the night.
Please address homeowners burning trash or yard waste on no burn days

Appendix C - Resolution of Adoption
(to be inserted after City Council approval)

Appendix D- List of Key Facilities

TABLE 1. KEY FACILITIES		
Category		**Number of Facilities**
Critical Facilities	City facility	2
	Community center	4
	Electric power facility	8
	Fire station	4
	Solar facility	3
	Water treatment facility	1
	Water infrastructure	25
	Hospital	1
High Potential Loss	School	15
	Adult residential care	10
	Child care center	7
	Elder residential care	5
	Foster family agency	2
Transportation and Lifeline	Home care organization	1
	Communication facility	16
	Highway bridge	14
	Rail bridge	7
	Road bridge	13
Total		**138**

Not all critical facility locations are listed here. Only those locations that have been made accessible to public records have been listed to maintain facility site integrity and security.

Appendix E – Hazard Mitigation Implementation Handbook

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Local Hazard Mitigation Plan Implementation Handbook

August 2025

What Is This Handbook?

The Local Hazard Mitigation Plan (LHMP) for the City of Colton features an evaluation of the City's hazards as well as a variety of corresponding mitigation actions. These actions are intended to preserve public safety, maintain critical municipal government operations and services when hazard events emerge, and empower community members to take on hazard mitigation at an individual level. This Implementation Handbook (Handbook) is intended for use by City staff and decision-makers after the LHMP is adopted. It will:

- Give clear instructions following the adoption of the LHMP.
- Simplify future updates to the LHMP.
- Assist the City in preparing grant funding applications related to hazard mitigation.
- Guide annual plan review actions.

How do I Use This Handbook?

This Handbook can help City staff and decision-makers in several different situations. If and when the events listed below occur, consult the respective sections of this Handbook for advice on how best to proceed:

- A disaster proclamation has been issued by the Colton City Council
- A disaster proclamation has been issued by the State of California
- A disaster declaration has been signed by the Federal Government
- I want to apply for mitigation grant funding
- Colton is undergoing its budgeting process
- Colton is holding its annual meeting of the Hazard Mitigation Planning Team
- Colton is updating the following policy and regulatory documents:
    - The Local Hazard Mitigation Plan
    - The Safety Element of the General Plan
    - The Housing Element of the General Plan
    - The Zoning Code

Who Maintains This Handbook?

The Hazard Mitigation Planning Team (HMPT) leader is responsible for maintaining this Handbook. At the time of writing, the current HMPT leader is Justin Weems, Deputy Chief, City of Colton Fire Department. The HMPT may delegate this responsibility to someone else should they choose.

What to do when a disaster has been proclaimed or declared

Disasters may be proclaimed or declared by the Colton City Council, the State of California, or the federal government. Responsibilities may differ depending on who proclaims or declares the disaster. If multiple organizations proclaim or declare a disaster, consult all applicable lists.

The Colton City Council

If the Colton City Council (or the Director of Emergency Services, if the City Council is not in session) proclaims a Local Emergency, take the following steps:

- ☐ Update **Attachment** 1 with information about the disaster. Include information about cumulative damage, including any damage outside of Colton.
- ☐ Discuss opportunities for local assistance with the representatives from the California Office of Emergency Services (Cal OES).
- ☐ If the disaster damages local infrastructure or City-owned facilities, repair or rebuild the structure to be more resilient, following applicable hazard mitigation actions. A list of actions, organized by hazards, is included in **Attachment 4**.
- ☐ **Chapter 6** of the Colton LHMP states that the City should consider updating the LHMP if a disaster causes a loss of life in the community, even if there is no state disaster proclamation or federal disaster declaration that includes part or all of the city. If there is a loss of life in Colton, consider updating the LHMP. Consult the section on updating the LHMP in this Handbook for details.

The State of California

If the State of California proclaims a disaster for Colton, or an area that includes part or all of Colton, take the following steps:

- ☐ Update **Attachment 1** with information about the disaster. Include information about cumulative damage, including any damage outside of Colton.
- ☐ Collaborate with representatives from Cal OES to assess the damage from the event.
- ☐ Discuss opportunities for local assistance with representatives from Cal OES.
- ☐ If the disaster damages local infrastructure or City-owned facilities, repair or rebuild the structure to be more resilient, following applicable hazard mitigation actions. A list of actions, organized by hazards, is included in **Attachment 4.**
- ☐ If the disaster may escalate into a federal disaster declaration, begin any necessary coordination with representatives from the Federal Emergency Management Agency (FEMA).
- ☐ **Chapter 6** of the Colton LHMP states that the City should consider updating the LHMP if a disaster leads to a state disaster proclamation or federal disaster declaration that includes part or all of Colton, even if there is no loss of life. Consider updating the LHMP. Consult the section on updating the LHMP in this Handbook for details.

The Federal Government

If the federal government declares a disaster for Colton, or any area that includes part or all of Colton, take the following steps:

- ☐ Update **Attachment 1** with information about the disaster. Include information about cumulative damage, including any damage outside of Colton.
- ☐ Collaborate with Cal OES and FEMA representatives to assess the damage.
- ☐ Determine if Colton will be eligible for public assistance funds related to the federal disaster declaration. These funds can be used to reimburse the City for response and recovery activities. If the City is eligible, work with FEMA and Cal OES representatives to enact the necessary requirements and receive funding.
- ☐ If the disaster damages local infrastructure or City-owned facilities, repair or rebuild the structure to be more resilient, following applicable hazard mitigation actions. A list of actions, organized by hazards, is included in **Attachment 4**.
- ☐ The Hazard Mitigation Grant Program (HMGP) is a FEMA program that helps fund hazard mitigation activities after a disaster event. Colton may be eligible for funding because of the federal disaster declaration, although not all activities may meet the program's requirements. If Colton is eligible, work with FEMA to apply for this funding.
- ☐ **Chapter 6** of the Colton LHMP states that the City should consider updating the LHMP if a disaster leads to a state disaster proclamation or federal disaster declaration that includes part or all of Colton, even if there is no loss of life. Consider updating the LHMP. Consult the section on updating the LHMP in this Handbook for details.

I Want to Apply for Mitigation Grant Funding

There are three potential grant funding programs that FEMA administers for hazard mitigation activities. Two of these programs, the Building Resilient Infrastructure and Communities (BRIC)[1] and Flood Mitigation Assistance (FMA) funding sources, are available to communities with an LHMP that complies with FEMA guidelines and has been adopted within the past five years.
The third funding program is the Hazard Mitigation Grant Program (HMGP), which is available for communities that are part of a federal disaster declaration. This section discusses the BRIC and FMA programs and how to apply for them. The HMGP is discussed under the "Federal Government" subsection of the above "What to Do When a Disaster Has Been Proclaimed or Declared" section.

Building Resilient Infrastructure and Communities (BRIC)

Building Resilient Infrastructure and Communities (BRIC) will support states, local communities, tribes, and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. BRIC is a FEMA pre-disaster hazard mitigation program that replaced the Pre-Disaster Mitigation (PDM) program.

The BRIC program's guiding principles are supporting communities through capability- and capacity-building, encouraging and enabling innovation, promoting partnerships, enabling large projects, maintaining flexibility, and providing consistency.

Development projects must be identified in a hazard mitigation plan that meets FEMA guidelines and has been adopted within the past five years. When applying to this program, review the list of hazard mitigation actions in **Attachment 4** to see which projects may be eligible. Planning efforts for communities that lack a valid hazard mitigation plan may be eligible for funding if the

[1] The BRIC Program still exists; however, it is currently not being funded.

effort would create a valid hazard mitigation plan. All BRIC grant applications are processed through the State. To learn more, consult with Cal OES representatives or visit the FEMA webpage for the program. At the time of writing, this webpage is available at https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities.

TAKE THE FOLLOWING STEPS TO APPLY FOR BRIC FUNDING:

- ☐ Confirm that the program is currently accepting funding applications. Check with representatives from Cal OES or consult the Cal OES webpage on the BRIC program. At the time of writing, this webpage is available at https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities.
- ☐ Identify the actions from the hazard mitigation strategy (see Attachment 4) that call on the City to pursue funding or list grants as a potential funding source. Confirm that the actions are consistent with the requirements of the BRIC grant.
- ☐ Coordinate with Cal OES representatives to compile and submit materials for the grant application.

Flood Mitigation Assistance

The FMA grant program is a competitive, national program that awards funding for physical development projects and planning efforts that mitigate against long-term damage from flooding. The funding is only available to communities participating in the National Flood Insurance Program (NFIP), which Colton currently does. Communities must also have a valid hazard mitigation plan that meets FEMA guidelines to be eligible, and all projects must be consistent with the list of actions in the hazard mitigation strategy. When applying to this program, review the list of hazard mitigation actions in **Attachment 4** to see which projects may be eligible. As with the BRIC program, applications for the FMA program must be processed through the State. To view more information, consult with Cal OES representatives or visit the FEMA webpage on the program. At the time of writing, this webpage is available at https://www.fema.gov/grants/mitigation/floods.

TAKE THE FOLLOWING STEPS TO APPLY FOR FMA FUNDING:

- ☐ Confirm that the program is currently accepting funding applications. Check with representatives from Cal OES or consult the Cal OES webpage on the FMA program. At the time of writing, this webpage is available at https://www.fema.gov/grants/mitigation/floods.
- ☐ Identify the actions from the hazard mitigation strategy (**see Attachment 4**) that call on the City to pursue funding or list grants as a potential funding source. Confirm that the actions are consistent with the requirements of the FMA grant.
- ☐ Coordinate with Cal OES representatives to compile and submit materials for the grant application.

Colton is going through the budgeting process

Colton's budget process is an ideal opportunity to secure funding for hazard mitigation actions and to ensure that hazard mitigation efforts are incorporated into the City's fiscal priorities. Colton currently operates on an annual budget cycle that runs from July 1st to June 30th.

During this process, City staff should take the following steps to incorporate hazard mitigation into Colton's annual budget:

- ☐ Include hazard mitigation activities into Colton's list of Capital Improvement Projects (CIP). Review the list of hazard mitigation actions in Attachment 4 and identify the projects that can be included in the CIP or can support efforts within the CIP.
- ☐ Review the risk and threat assessments in the LHMP (Chapter 3 and Chapter 4) to ensure that all items in the CIP list are planned, designed, and constructed to minimize the threat from hazard events.
- ☐ Identify opportunities to identify stand-alone hazard mitigation actions through the annual budget process. Include appropriate items from Attachment 4 in the budget as stand-alone line items, particularly items that the Hazard Mitigation Planning Team (Planning Team) considered a high priority.
- ☐ Set aside staff to conduct hazard mitigation activities, including time to participate in Planning Team meetings and research, prepare, and submit BRIC and FMA grant opportunities (consult the "I Want to Apply for Mitigation Grant Funding" section above).
- ☐ Ensure hazard mitigation activities are reflected in each department's priorities and earmarked time for specific goals.

Colton is Conducting its Annual meeting of the Hazard Mitigation Planning Team

The hazard mitigation planning process brings together representatives from multiple City departments as well as other relevant stakeholders. It provides a forum to discuss the hazards in Colton and how to mitigate them effectively. As mentioned in **Chapter 6** of the LHMP, the Planning Team should meet at least once each year, beginning a year after the LHMP is adopted. During these meetings, the Planning Team should discuss implementation progress and integration of hazard mitigation actions in other City documents. At these meetings, the Planning Team can review the status of the hazard mitigation actions and discuss whether completed or in-progress actions are working as expected. These meetings also allow the Planning Team to strategically plan for the upcoming year.

It may help for the Planning Team to meet early in the year, in advance of annual budget activities. **Attachment 3** contains an example of a Planning Team Meeting Agenda.

The annual meeting should include representatives from City departments and other organizations that originally prepared the LHMP. Representatives from other relevant organizations should also be invited. During the preparation of the current LHMP, the following individuals were part of the Planning Team:

TABLE 1-1: COLTON HAZARD MITIGATION PLANNING TEAM (HMPT)		
Name	**Title**	**Department**
Corrie Kates	Building Official	Building and Safety Division
Ray Bruno	Fire Chief	City of Colton Fire Department
Justin Weems	Deputy Fire Chief	City of Colton Fire Department
Jon Boggs	Battalion Chief/Fire Marshall	City of Colton Fire Department
Rob Wilson	Lieutenant	Colton Police Department
Joey Armendarez	Instructor/Colton Fire Dept Captain	Community Emergency Response Team
Deb Farrar	Director	Community Services Department
Sid Jain	Finance Manager, Purchasing and Customer Services	Finance Division
Regina Hawkins	Senior Human Resources Specialist	Human Resources Department
Brandt Bahling	Senior Risk Management Analyst	Human Resources Department
Victor Ortiz	Assistant Public Works Director/City Engineer	Public Works and Utilities Department
Bassam Alzammar	Supervisor	Public Works and Utilities Department

In advance of Planning Team meetings, consider using **Attachment 1** to maintain an accurate list of recent disaster events that have occurred in and around Colton since the LHMP was adopted. At the Planning Team meeting, review the Plan Maintenance Table **(Attachment 2**) to identify any gaps in the LHMP or any other component of the plan that needs updating. This also allows Planning Team members the opportunity to review the actions in the hazard mitigation strategy **(Attachment 4)** and ensure that they are implemented as intended.

Colton is updating its policy and regulatory documents

If Colton is updating the LHMP, the Safety Element or Housing Element of the General Plan, or the Zoning Code, consult the following applicable section.

Local Hazard Mitigation Plan

All LHMPs should be updated every five years. This helps keep the plan up to date and ensures that it reflects the most recent guidance, requirements, science, and best practices. An updated LHMP also helps keep Colton eligible for hazard mitigation grants that require a valid, recent LHMP (see "I Want to Apply for Mitigation Grant Funding"), along with an increased amount of post-disaster recovery funds.

The update process for the LHMP takes approximately one year. To ensure that a new LHMP comes into effect before the previous one expires, the update process should begin no later than four years after the plan is adopted. Updates may occur sooner at the City's discretion. Potential reasons for updating the LHMP sooner may include a state disaster proclamation or federal disaster declaration that covers part or all of Colton, or if a disaster leads to a loss of life in Colton (see the "What to Do When a Disaster Has Been Proclaimed or Declared" section), as discussed in **Chapter 6** of the LHMP.

Take the following steps to update the LHMP:

ASSEMBLE THE HAZARD MITIGATION PLANNING TEAM

- ☐ Convene a Planning Team meeting no later than four years after the LHMP is adopted. Invite the regular Planning Team members, along with representatives from other organizations that may have a role to play in the update process.
- ☐ Review the current status of mitigation actions, including if there are any that are not being implemented as planned or are not working as expected. Determine if there have been any changes in hazard events, regulations, best practices, or other items that should be incorporated into an updated LHMP.
- ☐ Decide if there is a need for a technical consultant to assist with the LHMP update and conduct consultant selection activities if needed. If a consultant is desired, the selection process should begin a few months before the update begins.
- ☐ Create and implement a community engagement strategy based on the strategy prepared for the existing LHMP. Describe in-person and online engagement strategies and materials, including ideas for meetings and workshops, draft community surveys, content for websites and press releases, and other materials that may be useful.

UPDATE THE RISK AND THREAT ASSESSMENTS

- ☐ Review and update the risk assessment to reflect the most recent conditions in Colton. Consider recent hazard events, new science associated with hazards and climate change, new development and land use patterns, and other recent changes in local conditions.

- ☐ Evaluate the status of all key facilities. Update this list if new facilities have been constructed or if existing facilities have been decommissioned. Re-assess the threat to key facilities.
- ☐ Review the demographics of community residents and update the threat assessment for vulnerable populations and other community members.
- ☐ Assess any changes to the threat to all other community assets, including key services, other facilities, and economic drivers.

Update the Mitigation Actions

- ☐ Update the existing hazard mitigation actions to reflect actions in progress. Remove actions that have been completed or revise them to increase their effectiveness. Revise actions that have been abandoned or delayed to make them more feasible or remove them from the list of mitigation actions if they are no longer appropriate for Colton.
- ☐ Develop mitigation actions to improve the status of hazard mitigation activities in Colton by addressing any issues not covered by the existing LHMP.
- ☐ The ability to expand current mitigation capabilities will generally be reliant upon the budgeting allocated for each department/program for that fiscal year. The level at which these programs may or may not be expanded upon, will be dependent upon the amount of funding received. FEMA has released a series of guides over the past few years which highlight some of the ways in which jurisdictions can expand mitigation. Some strategies for increasing current mitigation capabilities may include:
  - City should actively identify, adopt, and enforce the most current set of development codes and standards available. Strongly encouraging new development to be constructed to higher standards than currently required, increasing resilience within the community.
  - Engaging parts of the community that may not be actively involved in mitigation efforts.
  - Expanding the number and types of organizations involved in mitigation planning and implementation, increasing both efficiency and bandwidth.
  - Fostering new relationships to bring underrepresented populations and partners to the hazard mitigation planning process.
  - During the annual LHMP review, the HMPT should look for opportunities to fund and expand/enhance the effectiveness of current mitigation actions.
  - During annual budgeting processes, the City should identify new funding sources (bonds, grants, assessment districts, etc.) that can be used to support existing capabilities enhancements.
- ☐ Ensure that the feedback from the community engagement activities is reflected in the new and updated mitigation actions.

Review and Adopt the Updated Plan

- ☐ Review the other chapters and appendices of the LHMP to reflect any changes made through the update process.
- ☐ Release the updated plan to the Planning Team members and revise the plan to reflect any comments by Planning Team members.

- ☐ Distribute the updated Plan to any appropriate external agencies not included in the Planning Team and revise the plan as appropriate in response to any comments.
- ☐ Release the updated plan publicly for review and make revisions to the plan to reflect public comments.
- ☐ Submit the plan to Cal OES and FEMA for approval and make any necessary revisions.
- ☐ Submit the plan to the Colton City Council for adoption.

The Safety Element of the General Plan

The Safety Element is a required component of Colton's General Plan. It can be updated as a stand-alone activity or as part of a more comprehensive process to update multiple sections or all of the General Plan. The Safety Element does not need to be updated on any set schedule, but updates should be frequent enough for the element to remain current and applicable to the community.

Local communities can incorporate their LHMP into their Safety Element as allowed under Section 65302.6 of the California Government Code, as long as the LHMP meets minimum federal guidelines. This allows communities to be eligible for an increased share of post-disaster relief funding from the State if a hazard situation occurs, as per Section 8685.9 of the California Government Code.

Take the following steps to incorporate the LHMP into the Safety Element:

INCORPORATE NEW REQUIREMENTS INTO THE SAFETY ELEMENT AND ENSURE THAT THE LHMP IS CONSISTENT WITH THE SAFETY ELEMENT

- ☐ Review the requirements for Safety Elements in Section 65302(g) of the California Government Code and for LHMPs in Section 65302.6. Ensure that both documents meet all state requirements.
- ☐ Ensure that the information in both plans does not contradict each other and that any inconsistencies are corrected to use the most accurate and appropriate information. This information should include a community description, a risk assessment, and a threat assessment.
- ☐ Ensure that the policies in the Safety Element support the LHMP and provide a planning framework for specific hazard mitigation actions.

The Housing Element of the General Plan

The Housing Element is a required component of Colton's General Plan. Section 65583 of the California Government Code requires a Housing Element to analyze and plan for new residential growth in a community, including residential growth for households with an annual income below the area median. Like an LHMP, state regulations require the Housing Elements to be updated regularly to remain current and valid.

The Housing Element is not required to contain any information or policies related to hazards, although it may include policies that address retrofitting homes to improve resiliency. However, state law links the regular schedule of Housing Element updates to mandatory revisions to other General Plan elements. For example, Section 65302(g)(2) of the California Government Code requires that communities that update their Housing Element on or after January 1, 2009, also

update their Safety Element to include specific information and policies related to flood protection. As the LHMP is incorporated into the Safety Element, updates to the Housing Element may indirectly trigger updates to the LHMP.

To update the LHMP concurrent with updates to the Housing Element, take the following steps:

ENSURE THAT THE LHMP MEETS ANY NEW REQUIREMENTS FOR THE SAFETY ELEMENT THAT MAY BE TRIGGERED BY A HOUSING ELEMENT UPDATE

- ☐ Section 65302(g) of the California Government Code lists several requirements for the Safety Element of the General Plan. Some of these requirements are triggered by updates to the Housing Element. Check to see if there are any new requirements of this nature. Note that the requirement is linked to the new Housing Element's adoption date, not the date the update process begins.
- ☐ Because the LHMP is incorporated into the Safety Element, any amendments or revisions to the Safety Element triggered by the Housing Element update may be made directly in the LHMP. Requirements triggered by the Housing Element are unlikely to require a full rewrite of the LHMP, but the process should fully involve the Planning Team and include appropriate community engagement.
- ☐ Adopt the updated LHMP and incorporate it into the Safety Element. If necessary, amend the Safety Element to ensure the two documents are consistent (review the "Incorporate New Requirements Into the Safety Element, and Ensure that the LHMP is Consistent with the Safety Element" subsection above).

The Colton Municipal Code

Colton's Municipal Code contains a set of standards that guide land uses and development in the community. These standards include where different types of buildings and land use activities may be located, how these structures must be built, and how they must be operated or maintained. The Municipal Code may include requirements that structures (particularly new structures or those undergoing substantial renovations) incorporate hazard-resistant features, be located outside the most hazard-prone areas, or take other steps to reduce hazard vulnerability.

All communities in California are required to adopt the minimum state Building Standard Code (BSC), which includes some hazard mitigation requirements for new or significantly renovated structures. The BSC is generally updated every three years, with supplemental code updates halfway into each update cycle. Title 15, Chapter 15.22, "Floodplain Management Regulations," of Colton's Municipal Code contains building regulations and incorporates the BSC. Other sections of the Code adopt additional standards as desired by the City that adapts the BSC to Colton's local context.

As a participant in the National Flood Insurance Program (NFIP), Colton is required to incorporate Floodplain Management Requirements in its Zoning Code, which is located Title 15, “Buildings and Construction.” These regulations establish standards for developing and operating facilities within mapped flood-prone areas. Other sections of the Colton Municipal Code may include additional standards related to hazard mitigation activities.

With the exception of the Floodplain Management Regulations and the minimum standards in the BSC, Colton is not required to incorporate hazard-related requirements in the Municipal Code. However, the Municipal Code is an effective tool for implementing hazard mitigation measures

related to the siting, construction, and operation of new buildings and other structures. Substantial updates to the Municipal Code, including the Buildings and Construction and Zoning Code sections, should be done in a way that is consistent with the LHMP.

Include Hazard-Related Requirements in Applicable Sections of the Colton Code of Ordinances

- ☐ If the BSC is being updated, evaluate the hazard-related requirements of all sections in the new BSC. Identify any areas where it may be feasible to add or revise standards to help reduce the threat from hazard events. Ensure that these standards are consistent with the LHMP. Consider whether standards should be applied to all structures, to specific types of structures, or to structures in a limited area (such as a flood plain).
- ☐ If the Zoning Code is being updated, ensure that all requirements do not expose community members or community assets to an excessive risk of harm. Where feasible, use the requirements to strengthen community resiliency to hazard events. Ensure that these standards are consistent with the LHMP. Consider possible standards such as overlay zones that strengthen zoning requirements in hazard-prone areas, landscaping and grading requirements that buffer development from hazards, siting, and design standards that make structures more resilient, and other strategies as appropriate.

Attachment 1: Disaster Information Table

Use this table to fill out the information about any disaster events that have occurred in Colton or nearby and have affected the community. Include the date and location of the disaster event, the damages associated with the event, and any information about disaster proclamations or declarations resulting from the event.

Date	Location	Damages *	Declaration Details †

* Includes number and type of injuries, number of deaths, and cost of physical damage
† If the disaster was proclaimed or declared by the local, state, and/or federal government

Attachment 2: Plan Maintenance Table

Use this table when reviewing the LHMP as part of the Planning Team's annual activities. For each section of the LHMP, note if any changes should be made to make the plan more effective for the community. This includes noting if anything in the LHMP is incorrect or if any important information is missing. Make revisions consistent with these notes as part of the next update to the LHMP.

Section	Is Anything Incorrect?	Is Anything Missing?	Should Any Other Changes Be Made?
Multiple sections or throughout			
Chapter 1: Introduction			
Chapter 2: Community Profile			
Chapter 3: Risk Assessment			
Chapter 4: Threat Assessment			
Chapter 5: Mitigation Strategy			
Chapter 6: Plan Maintenance			
Appendices			

Attachment 3: Sample Agenda and Topics for the Hazard Mitigation Planning Team

This attachment includes a sample agenda and discussion topics for the annual meeting of the Planning Team. Meetings do not have to follow this order or structure, but the items included in this attachment should be addressed as part of the annual meeting. During the update process for the LHMP, it is likely that the Planning Team will meet more frequently. The meetings of the Planning Team during the update process will involve different discussion topics.

ITEM 1: RECENT HAZARD EVENTS

1.1. What hazard events have occurred this past year in Colton or nearby in a way that affected the community?
- Identify events that caused loss of life or significant injury to Colton community members, significant property damage in Colton, or widespread disruption to Colton.
- More minor events should also be identified if there is a need for a community response to mitigate against future such events.

1.2. What are the basic facts and details behind any such hazard events?
- Consider the size and location of the affected area, any measurements of severity, any injuries and deaths, the cost of any damage, the number of people displaced or otherwise impacted, and other relevant summary information.
- Ensure that these facts and details are clearly recorded for future plan updates, including using the Disaster Information Table (**Attachment 1**).

ITEMS 2: MITIGATION ACTION ACTIVITIES

2.1. What mitigation actions have been fully implemented? Are they working as expected, or do they need to be revised?

2.2. What mitigation actions have started to be implemented since the Planning Team last met? Is the implementation of these actions proceeding as expected, or are there any barriers or delays? If there are barriers or delays, how can they be removed?

2.3. What mitigation actions are scheduled to begin implementation in the next year? Are there any factors that could delay implementation or weaken the effectiveness of the actions? How can these factors be addressed?

2.4. What resources are needed to support planned, in-process, or ongoing mitigation actions? Does the City have access to these resources? If not, how can the City obtain access to these resources?

ITEM 3: INFORMATION SHARING

3.1. Is the City communicating with all appropriate local jurisdictions, including neighboring communities, San Bernardino County, and special districts? This should include information on district-specific hazard situations, mitigation actions, and other relevant information.

3.2. Is the City communicating with the appropriate state and federal agencies? Is the City receiving information about new regulations, best practices, and data related to hazard mitigation activities?

3.3. Are there opportunities for the City to improve coordination with local, state, and federal jurisdictions and agencies?

ITEM 4: BUDGETARY PLANNING

4.1. What are the financial needs for Colton to support the implementation of planned and in-process mitigation actions, including ongoing items? Is there sufficient funding for all measures in the LHMP that are planned for the next year, including in-process and ongoing items? If sufficient funding is unavailable, how can the City obtain these funds?

4.2. If it is not feasible for the City to support all planned, in-process, or ongoing mitigation actions, which ones should be prioritized?

4.3. Are there hazard-related activities not included in the LHMP that should be budgeted for? Can the City obtain the necessary funding for these activities?

ITEM 5: STRATEGIC PLANNING

5.1. Which grants are available for hazard mitigation activities, and which activities are best positioned to secure funding?

5.2. How should the agencies and other organizations represented on the Planning Team coordinate to maximize the chances of receiving funding?

5.3. Are there any scheduled or anticipated updates to other City documents that could relate to hazard mitigation activities? How can the Planning Team share information with staff and any technical consultants responsible for these updates and ensure that the updates will enhance community resiliency?

5.4. What capital projects are scheduled or anticipated? Are these capital projects being designed and built to be resistant to hazard events? Are there opportunities for these projects to support hazard mitigation activities?

5.5. How can Planning Team members coordinate efforts with those responsible for capital projects to take advantage of economies of scale that will make implementing hazard mitigation activities easier?

5.6. Has it been four years since the adoption of the LHMP? If so, lay out a timeline for plan update activities, including additional meetings of the Planning Team. Identify if a technical consultant is needed and begin the contracting process.

5.7. Are there any other opportunities for Planning Team members and the organizations they represent to coordinate efforts?

ITEMS 6: NEW BUSINESS

6.1. Are there any other items related to the Planning Team's mission?

Attachment 4: Hazard Mitigation Strategy

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
Emergency Preparedness Activities						
P.1	Identify an alternative location for the Emergency Operations Center (EOC).	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	2-5 Years	Low
P.2	Conduct an evacuation study for Reche Canyon, including looking at opportunities to provide secondary access and circulation improvements.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management/ Development Services	$$	1-3 Years	Medium
P.3	Develop a backup communication system for critical City operations.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	1-2 Years	High
P.4	Periodically update the Emergency Operations Plan, prepare a Community Risk Reduction Program, and regularly conduct emergency preparedness drills and training exercises for City staff.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	1-3 Years	High
P.5	Work with Colton business groups to conduct regular workplace emergency preparedness drills.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	Ongoing Annually	Low

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
P.6	Expand participation in the Colton Community Emergency Response Team (CERT) program for residents and businesses.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	Ongoing Annually	Low
P.7	Store critical emergency supplies and equipment in locations on both sides of the Santa Ana River in case of bridge damage/failure.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	1-3 Years Maintain Annually	Medium
P.8	Design community evacuation plans to include provisions for community members who do not have access to private vehicles or are otherwise unable to drive.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	2-5 Years	Low
P.9	Continue to issue effective emergency notifications through multiple media, in English and Spanish, about pending, imminent, or ongoing emergency events. Whenever possible, produce information that is accessible to people with disabilities and functional needs.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	Ongoing Annually	Low

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
P.10	Increase the number of City staff with CalOES Safety Assessment Program (SAP) credentials.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	N/A	Ongoing Annually	Low
Multiple Hazards						
1.1	Relocate Fire Stations 3 and 4 outside of mapped hazard zones or harden these facilities against hazardous situations if no feasible alternate locations exist.	General Fund, Grants, Community Facilities Districts, Bonds	Fire Department	$$$	3-5 Years	Medium
1.2	Install an emergency power system at the Water Reclamation Facility and harden the facility against hazardous events.	General Fund, Grants, Community Facilities Districts, Bonds	Water Department	$$$	1-2 Years	High
1.3	Install backup generators at community facilities that serve as cooling or evacuation centers.	General Fund, Grants, Community Facilities Districts, Bonds	Community Services/ Emergency Management	$$	1-2 Years	High

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
1.4	Conduct educational campaigns for Colton residents that emphasize cost-effective mitigation efforts, making material available in English and Spanish. Distribute information online, through local media, at special events, in City facilities, and through other appropriate means.	General Fund, Grants, Community Facilities Districts, Bonds	Community Services/ Emergency Management	$	Initiate in 1-3 Years Continuing Annually	Low
1.5	Continue to stabilize loose slopes along public rights-of-way as needed with geotextile fabric, deep-rooted vegetation, and other appropriate techniques, especially after a wildfire event.	General Fund, Grants, Community Facilities Districts, Bonds	Engineering/ Fire Department	$ - $$	Ongoing Annually/ After Wildfire Event	Low
1.6	Work closely with community groups to increase awareness of hazard events and resiliency opportunities among socially vulnerable community members.	General Fund, Grants, Community Facilities Districts, Bonds	Community Services/ Emergency Management	$	3-5 Years	Low
1.7	Avoid building new City-owned key facilities in mapped hazard areas. If no feasible sites outside of mapped areas exist, harden such facilities against hazards beyond any minimum building requirements/mitigation standards.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	Variable	Ongoing Standard	Low
1.8	Install backup power systems for key City-owned water pumps.	General Fund, Grants, Community Facilities Districts, Bonds	Water Department	$$	1-2 Years	High

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
1.9	Coordinate with regional social service agencies and nonprofit care providers to obtain temporary shelter for homeless people in advance of potential hazard events.	General Fund, Grants, Community Facilities Districts, Bonds	Community Services	$	Ongoing - Annually / As Needed	Low
1.10	Work with Caltrans and railroad operators to harden bridges against hazard events.	General Fund, Grants, Community Facilities Districts, Bonds	Engineering	$$$	5-10 Years	Low
1.11	Closely monitor changes in the boundaries of mapped hazard areas resulting from land use changes or climate change. Adopt new mitigation actions or revise existing ones to enable continued resiliency.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/ Fire Department	$	Ongoing Annually / After Land Use Policy Changes	Low
1.12	Explore the feasibility of a third sewer trunk line connection to Grand Terrace to increase system redundancy and capacity.	General Fund, Grants, Community Facilities Districts, Bonds	Water/ Wastewater Department	$$$	3-5 Years	Medium
1.13	Integrate policy direction and other information from this Plan into other City documents, including the General Plan, Emergency Operations Plan, and Capital Improvements Program.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/ Engineering/ Emergency Management	$	Ongoing - Upon Plan Updates	Medium

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
1.14	Monitor funding sources for hazard mitigation activities.	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	$	Ongoing - Annually	Low
1.15	Integrate climate change mitigation and adaptation information and analysis into future LHMP updates and other City plans, where practicable.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/ Emergency Management	$	Ongoing – Upon Plan Updates	Medium
1.16	Identify updated equipment and training to enhance emergency services and increase the efficiency of emergency response and recovery activities	General Fund, Grants, Community Facilities Districts, Bonds	Emergency Management	$	3-5 Years	Medium
1.17	Private water system and wells removal and incorporation into the City's water system.	General Fund, Grants, Community Facilities Districts, Bonds	Water Department	$$$	3-5 Years	Medium
Drought						

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
2.1	Continue to aggressively search for and repair leaks in Colton's water infrastructure.	General Fund, Water Depreciation Fund, Grants, Community Facilities Districts, Bonds	Water/ Wastewater	$$	Ongoing – Annually	Low
2.2	Use drought-tolerant plants or xeriscaping when installing new or significantly redoing City-owned landscapes. Limit turf that is not drought tolerant to recreational fields and lawns, and only in instances where no feasible drought-tolerant alternatives exist.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works	$ - $$	3-5 Years	Low
2.3	Develop a campaign to encourage water/energy efficiency, reduce consumption for existing development, and promote the expansion of electric vehicle-ready construction in new development.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/Public Works/ Water/ Electric	$	3-5 Years	Medium
2.4	Private water system and wells removal and incorporation into the City's water system.	General Fund, Grants, Community Facilities Districts, Bonds	Water Department	$$$	5-10 Years	Low
Flooding						
3.1	Use permeable paving and landscaped swales for new and replacement City-owned hardscaped areas.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works	$$	Ongoing – Upon New Builds or Replacement	Medium

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
3.2	Conduct frequent cleanings of storm drain intakes, especially before and during rainy seasons.	General Fund, Grants, Community Facilities Districts, Bonds	Water/ Wastewater/ Public Works	$-$$	Ongoing – Annually / As Necessary	Low
3.3	Identify areas with known ponding or poor drainage during rain events and increase storm drain capacity in these areas.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works/ Wastewater	$$-$$$	5-10 Years	Low
3.4	Participate in FEMA's Community Rating System to reduce flood insurance premiums for Colton property owners.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works/ Development Services	$$	5-10 Years	Low
3.5	Develop incentives to harden private buildings and structures in the flood plain against floodwaters.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works/ Development Services	$$	5-10 Years	Low
3.6	Discourage new schools, childcare centers, and adult and senior assisted-living facilities from locating in 100-year and 500-year flood plains.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	$	Ongoing Standard	Low

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
3.7	Encourage renters in flood plains to obtain rental insurance that includes flood protection.	General Fund, Grants, Community Facilities Districts, Bonds	Finance	$	Ongoing – Annually	Low
3.8	Secure funding needed to complete the storm drain system from West Valley Boulevard and North Pepper Avenue extending east to South Rancho Avenue and Agua Mansa Road.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works	$$$	1-2 Years	High
Geologic Hazards						
4.1	Monitor changes in groundwater levels to remain aware of potential liquefaction and subsidence risks.	General Fund, Grants, Community Facilities Districts, Bonds	Water/ Wastewater	$	Ongoing-Annually	Low
4.2	Analyze locations of significant geologic hazard threats. Identify existing and allowed densities and determine if retrofitting strategies are necessary for these hazard areas.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/Engineering	$$	3-5 Years	Medium
Human-Caused Hazards						

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
5.1	Continue to work with solid waste service contractors to educate Colton residents and businesses on safe disposal of small quantities of hazardous materials.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works	$	Ongoing-Annually	Low
5.2	Maintain relationships with Union Pacific and BNSF to improve rail safety, particularly the main east-west Union Pacific line designated a High Hazard Area Rail Line.	General Fund, Grants, Community Facilities Districts, Bonds	City Manager	$	Ongoing-Annually	Low
5.3	Analyze the locations of railroad rights-of-way and the associated adjacent land uses to determine key locations of concern should a train derailment occur.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works/ Development Services/ Engineering/Fire	$-$$	3-5 Years	Medium
Seismic Hazards						
6.1	Conduct an inventory of seismically vulnerable buildings and structures. Pursue funding to incentivize retrofits of seismically vulnerable buildings and structures not covered by the existing Seismic Strengthening for Unreinforced Masonry Buildings ordinance.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/ Building Department	$	5-10 Years	Low

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
6.2	Promote small-scale seismic retrofits, such as window films to minimize shattering, anchors for rooftop-mounted equipment, and bracing for masonry chimneys.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	$	Ongoing-Annually	Low
6.3	Conduct a seismic analysis of all City-owned key facilities and retrofit vulnerable facilities. Prioritize fire stations, water/wastewater facilities, electrical service, and building facilities that do not meet seismic requirements.	General Fund, Grants, Community Facilities Districts, Bonds	Engineering	$$$	1-2 Years	High-Medium
6.4	Consider the use of flexible water pipes/joints, particularly near Alquist-Priolo fault zones, to enhance seismic resiliency of the water infrastructure.	General Fund, Water Depreciation Fund, Grants, Community Facilities Districts, Bonds	Engineering / Water/Wastewater	$$$	5-10 Years	Low
6.5	Explore amending the Colton Building Code to incorporate standards requiring new buildings to be safely habitable and functional following an earthquake.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	$$	5-10 Years	Low
6.6	Encourage community groups and industry representatives to conduct outreach about earthquake insurance to Colton community members, including renters.	General Fund, Grants, Community Facilities Districts, Bonds	Finance	$	Ongoing-Annually	Low
Severe Weather						

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
7.1	Strengthen power lines to be more resistant to intense winds.	General Fund, Grants, Community Facilities Districts, Bonds	Electric Department	$$$	3-5 Years	Medium
7.2	Encourage significant retrofits to existing buildings to meet wind-speed design specifications in the Colton Building Code.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	$$	5-10 Years	Low
7.3	Plant street trees and other vegetation to provide shade and green spaces throughout Colton, particularly around senior and medical facilities. Emphasize drought-tolerant and wind-resistant species.	General Fund, Grants, Community Facilities Districts, Bonds	Public Works	$$	5-10 Years	Low
7.4	Encourage replacing dark roofs on homes and businesses with light-colored roofs. Look for funding to help owners complete cool roof replacements.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	$	5-10 Years	Low
7.5	Promote light-colored pavement for new or significantly renovated hardscapes, such as parking lots and driveways.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/ Public Works	$	Ongoing – Annually	Low
Wildfires						

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
8.1	Develop new water reservoirs in areas of north Colton outside of mapped wildfire hazard zones.	General Fund, Grants, Community Facilities Districts, Bonds	Engineering/ Water Department	$$$	5-10 Years	Low
8.2	Expand the existing fire inspection program for residents and businesses in fire-prone areas to provide better information regarding ways to retrofit buildings and landscapes to improve resiliency.	General Fund, Grants, Community Facilities Districts, Bonds	Fire Department	$$	3-5 Years	Medium
8.3	Enhance existing fire stations and/or locations to meet current and future community needs and fire response requirements.	General Fund, Grants, Community Facilities Districts, Bonds	Fire Department	$$$	3-5 Years	Medium
8.4	Prepare a Community Risk Assessment to include a Community Wildfire Protection Plan.	General Fund, Grants, Community Facilities Districts, Bonds	Fire Department	$-$$	1-2 Years	High
8.5	Incorporate the most up-to-date fire codes, regulations, and ordinances into the General Plan.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services	$	Initiate in 3-5 Years Ongoing- Upon Plan Updates	Medium

MITIGATION ACTIONS IMPLEMENTATION PLAN						
Action #	**Mitigation Action Item**	**Potential Funding Source**	**Responsible Agency**	**Relative Cost**	**Time Frame**	**Priority**
8.6	Work with property owners to manage dead vegetation on vacant properties, in flood control facility footprints, railroad rights-of-way, parks, and open spaces, especially during and after periods of extreme heat or prolonged drought.	General Fund, Grants, Community Facilities Districts, Bonds	Development Services/Fire Department	$-$$	Ongoing-Annually	Medium

*** Relative Cost Categories**
$ - Less than $25,000
$$ - $25,001 to $999,999
$$$ - Greater than $1,000,000