

SECTION 3

MUNICIPAL ANNEX

City of Watsonville



**SANTA CRUZ COUNTY
MULTI-JURISDICTIONAL
HAZARD MITIGATION PLAN**



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Santa Cruz County

2025 Multi-Jurisdictional Hazard Mitigation Plan

Volume 2, Section 3: City of Watsonville (WTS)

Municipal Annex

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Adoption Record

To comply with the Federal Disaster Mitigation Act of 2000 (DMA 2000), the City of Watsonville has officially adopted this 2025 Santa Cruz County Multi-Jurisdictional Hazard Mitigation Plan, including Volume 1 in its entirety as well as this Volume 2 Municipality annex. The adoption of the MJHMP recognizes the city's commitment to reducing the impacts of natural hazards within its jurisdiction and across Santa Cruz County.

A copy of the city's adoption record is provided on the following pages. Adoption records for all jurisdictions are summarized in Volume 1, Table ES-1.



ADOPTION RECORD TO BE INSERTED UPON COMPLETION.





Section 3. City of Watsonville

3.1 Scope & Purpose

This annex details the elements specific to the City of Watsonville in the 2025 Santa Cruz County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). This annex is not intended to be a standalone document but appends to and supplements the information contained in the umbrella plan document (Volume 1). As such, all sections of the umbrella plan, including the planning process and other procedural requirements apply to and were met by the City of Watsonville. This annex provides additional information specific to the City of Watsonville, with a focus on providing additional details on the planning process, risk assessment, and mitigation strategy for this jurisdiction.



City of Watsonville Points of Contact

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3.2 Jurisdictional Setting

The City of Watsonville is located in southern Santa Cruz County in Central California in the Pajaro Valley. Watsonville is 80 miles southeast of San Francisco. Located on the north bank of the Pajaro River, Watsonville is the center of Santa Cruz County’s agricultural industry.

The City of Watsonville encompasses approximately 6.7 square miles, with an average elevation of 29 feet above sea level. While Watsonville continues to advance in urban planning, housing, transportation, and flood resilience, population growth is trending downward. City of Watsonville’s location within Santa Cruz County and the State of California are shown in Figure 3-1.

- Date of Incorporation: March 30, 1868
- Current Population: 50,669 (United States Census Bureau, 2016-2021)
- Population Growth: The city has experienced a population decrease of -2.3% between 2013 and 2023 (United States Census Bureau, 2016-2021)



3.2.1 Geography & Climate

The City of Watsonville is situated in a low-lying river valley approximately three miles inland from the Pacific Ocean. Figure 3-1 illustrates its regional context within southern Santa Cruz County. The city's landscape is largely defined by alluvial deposits originating from surrounding hills and mountains, resulting in fertile soils that have historically supported its robust agricultural economy, particularly the cultivation of berries.

Soil composition varies across the city, with loam dominating the inland areas and sandy loam prevalent closer to the coast. Watsonville's topography is generally flat, with an average elevation of approximately 29 feet above sea level.

The city experiences a Mediterranean climate, characterized by warm to hot, dry summers and mild, wet winters. Average summer high temperatures can reach into the mid-90s°F, while winter lows occasionally drop into the upper 20s°F. Precipitation is concentrated between November and March, with minimal rainfall in the summer months. Snowfall is extremely rare due to the city's low elevation. Figure 3-2 presents the average annual precipitation data.

Prevailing winds are generally mild, but during summer evenings, onshore flow from the Pacific Ocean brings cooler marine air inland. These climatic and geographic conditions contribute to Watsonville's highly productive agricultural landscape but also present natural hazard risks, including flooding from the Pajaro River, periodic drought, and wildfire threats in surrounding upland areas.

3.2.2 Historical Overview

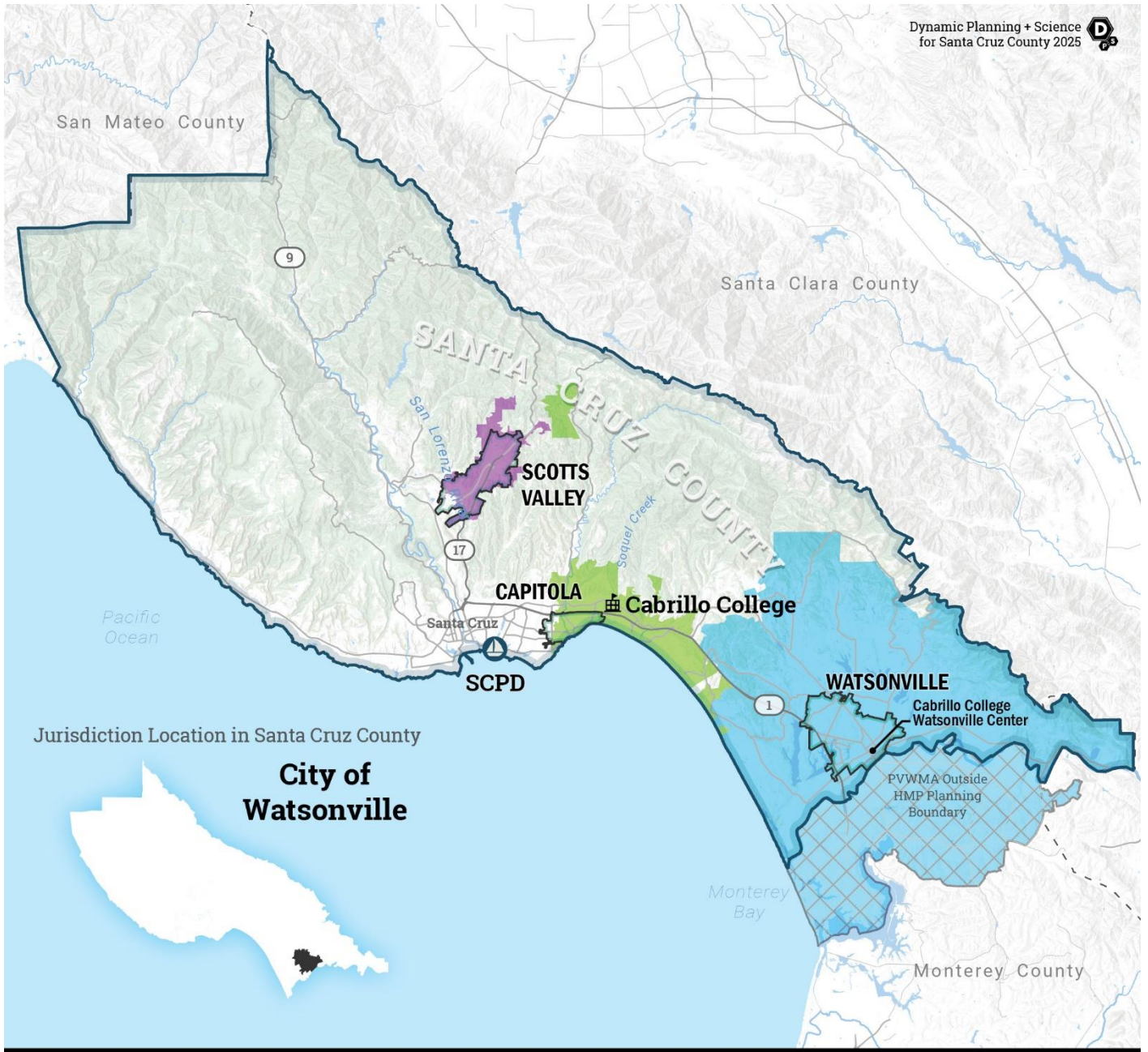
Watsonville was incorporated on March 30, 1868, and has since grown into the largest city in the Pajaro Valley, shaped by its agricultural economy and steady waves of residential development. The city's historic downtown reflects its 19th-century origins, with early civic and commercial buildings that continue to anchor the urban core.

Much of Watsonville's housing stock was constructed during the post-World War II era, when population growth and economic expansion spurred suburban-style development across the city. According to the City's Housing Element, about 45 percent of Watsonville's housing units are now more than 30 years old, reflecting their construction during the 1950s through the 1970s. These older homes, while integral to the city's neighborhoods and heritage, present ongoing challenges related to seismic safety, energy efficiency, and long-term maintenance (City of Watsonville Housing Element, 2015-2023).

Newer subdivisions, many built during the 1980s and 1990s, expanded the city's footprint, while more recent growth has emphasized infill housing, redevelopment of underutilized properties, and farmland preservation. This blend of historic downtown structures, mid-century neighborhoods, and newer developments defines Watsonville's built environment today, reflecting both the city's agricultural roots and its evolving role as a regional hub. (City of Watsonville General Plan, 2005); (City of Watsonville Housing Element, 2015-2023).



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Geographic Overview - Santa Cruz County HMP Participants

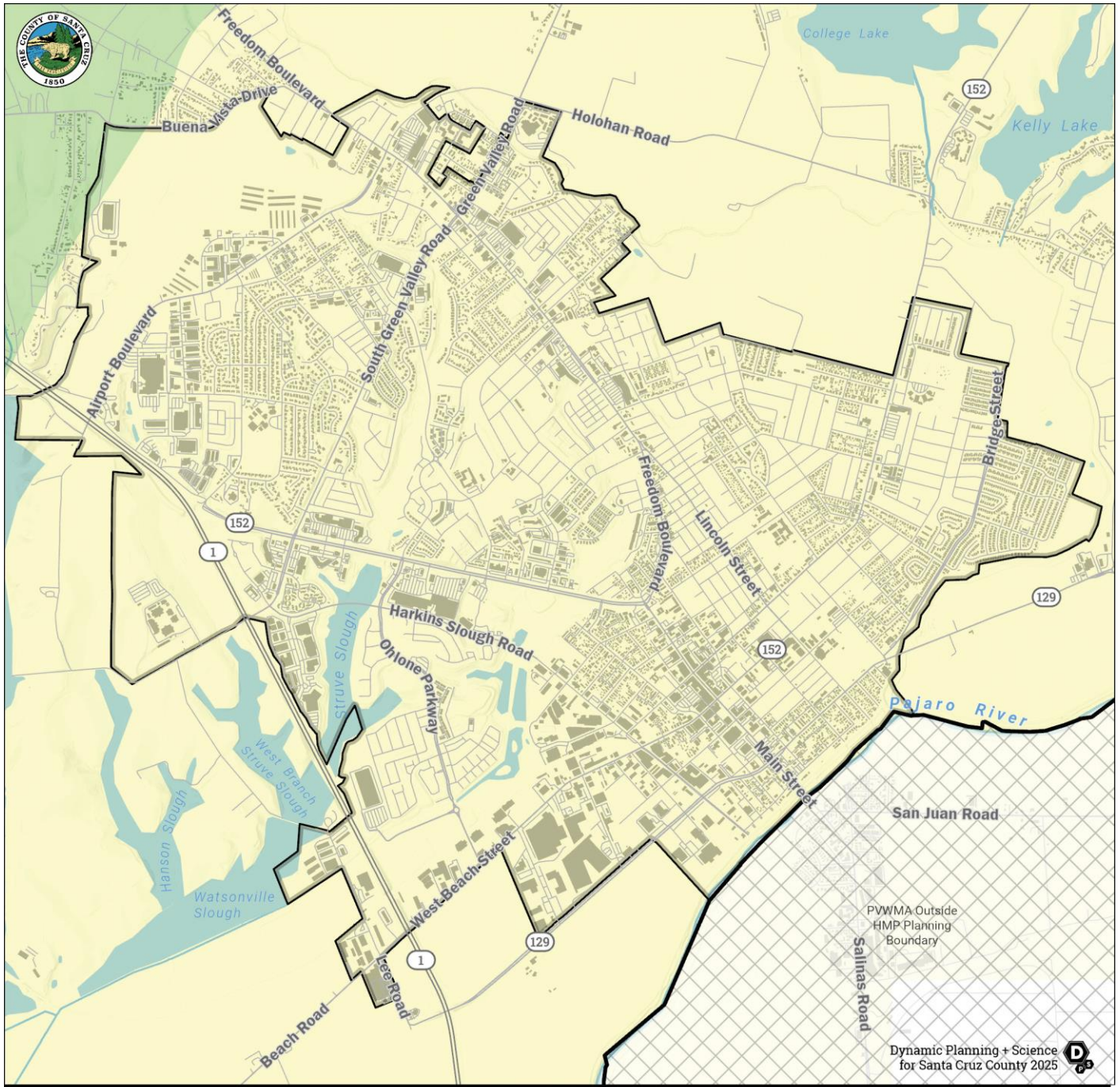
- Cabrillo College
- Santa Cruz Port District
- Participating Jurisdiction
- Scotts Valley Water District
- Pajaro Valley Water Management Agency
- Soquel Creek Water District

Santa Cruz County Resource Conservation District

Geographic extent is generally coterminous with the unincorporated county, with various incorporated areas excluded from the District's jurisdiction.



Figure 3-1: City of Watsonville Sphere of Influence



Average Annual Precipitation (1991-2020, Inches)

City of Watsonville

*Data sources: PRISM 30-Year Normals 1991-2020.



Figure 3-2 City of Watsonville Average Annual Precipitation Map



3.2.3 Demographics & Vulnerable Populations

This section describes the demographic characteristics of the City of Watsonville to guide hazard mitigation planning efforts. Natural disasters affect communities both physically and socially, with demographic composition playing a central role in determining how impacts are distributed, particularly among vulnerable groups facing greater challenges in preparedness, response, and recovery. Understanding the area's social and economic landscape also helps assess potential social costs from infrastructure damage, including housing, industry, public facilities, essential services, and transportation.

Exploring local demographic data may help to identify groups and geographic areas with specific vulnerability to hazard events. In the context of all-hazards preparedness and response planning, at-risk individuals (often used interchangeably with “vulnerable populations”) are defined federally as “children, pregnant women, senior citizens, and other individuals who have access or functional needs in the event of a public health emergency.” (42 U.S.C. § 2802(b)(4)(B) (2019)) These populations may include, but are not limited to, individuals who are economically disadvantaged, living with disabilities, dependent on caregivers, from historically marginalized communities, have limited English proficiency or are non-English speaking, lack access to transportation, are experiencing homelessness, or have chronic medical conditions.

Certain populations face greater risk following a natural hazard event due to age, economic mobility, physical disability, geographic location, or a combination of factors. Vulnerability in the face of a hazard event is not a fixed characteristic; the same individual may be at risk for some hazards but not at risk for others. Planning for vulnerable populations in the context of hazard mitigation can help communities to prioritize limited resources where they will be the most effective. Refer to Volume 1, Section 1.4.3, for a more in-depth discussion of planning for vulnerable populations, at-risk individuals with access and functional needs, and environmental justice.

The total population, total number of households, and average household size of the City of Watsonville are presented in Table 3-1, compared to the other municipalities and Santa Cruz County. The city is the second largest of all the incorporated municipalities and has the highest average household size.

Table 3-1: Population and Housing Summary

Jurisdiction	Total Population	Total Households	Average Household Size
City of Watsonville	51,968	15,792	3.24
Santa Cruz County	266,021	106,635	2.36

Source: ACS 5-Year, 2018-2023



3.2.3.1 Income & Housing

Economic mobility is one of the most important predictors of natural hazard vulnerability. Low-income residents are more likely to occupy housing which is inadequately maintained or otherwise poorly built to withstand extreme events. For example, mobile or modular homes are more susceptible to damage in earthquakes and floods than other types of residences and are less likely to contain A/C units to cope with high heat events. In urban areas, low-income residents are more likely to occupy older homes and apartment complexes with unreinforced masonry, which is particularly susceptible to seismic damage.

Low-income households and communities face disproportionate financial burden from costs associated with disaster preparedness, response, and recovery. Disasters create unexpected expenses which may serve as “tipping points” for families and individuals living on the edge of poverty or homelessness. Recovery costs may be higher for those without resources to conduct hazard mitigation activities ahead of time. Families and individuals who lack access to transportation may be unable to evacuate ahead of an emergency. (Krause & Reeves, 2017)

Low-income residents and renters are also less likely to purchase insurance, meaning that those with the most to lose during an event are also the least prepared to deal with potential losses. Major hurricane events in recent history such as Harvey, Irma, and Katrina all demonstrate that low-income and/or historically marginalized communities face increased vulnerability to hazard events and struggle the most to recover.

Median household income in the City of Watsonville was \$74,785, with an overall poverty rate of 15.1%. By comparison, median income and poverty rates for Santa Cruz County were \$109,266 and 11.2%, respectively. (see Table 3-2) Median income and poverty rates are also shown on the block group level in Figure 3-3 and Figure 3-4.

Table 3-2: Household Income and Poverty Levels

Jurisdiction	Median Income	Poverty Rate
City of Watsonville	\$74,785	15.1%
Santa Cruz County (Total)	\$109,266	11.2%

Source: ACS 5-Year, 2018-2023

Renters are also more vulnerable to natural hazards, as they are less likely to take out property insurance and the decision to make major structural improvements typically lies with the property owner. Federal disaster recovery services can exacerbate inequality between renters and homeowners; payout amounts are significantly higher for homeowners applying through FEMA’s Individual Assistance (IA) program; from 1999 to 2013 U.S. homeowners saw their wealth increase with local hazard damages, whereas renters’ wealth decreased. (Howell, Junia; Elliot, James, 2019)

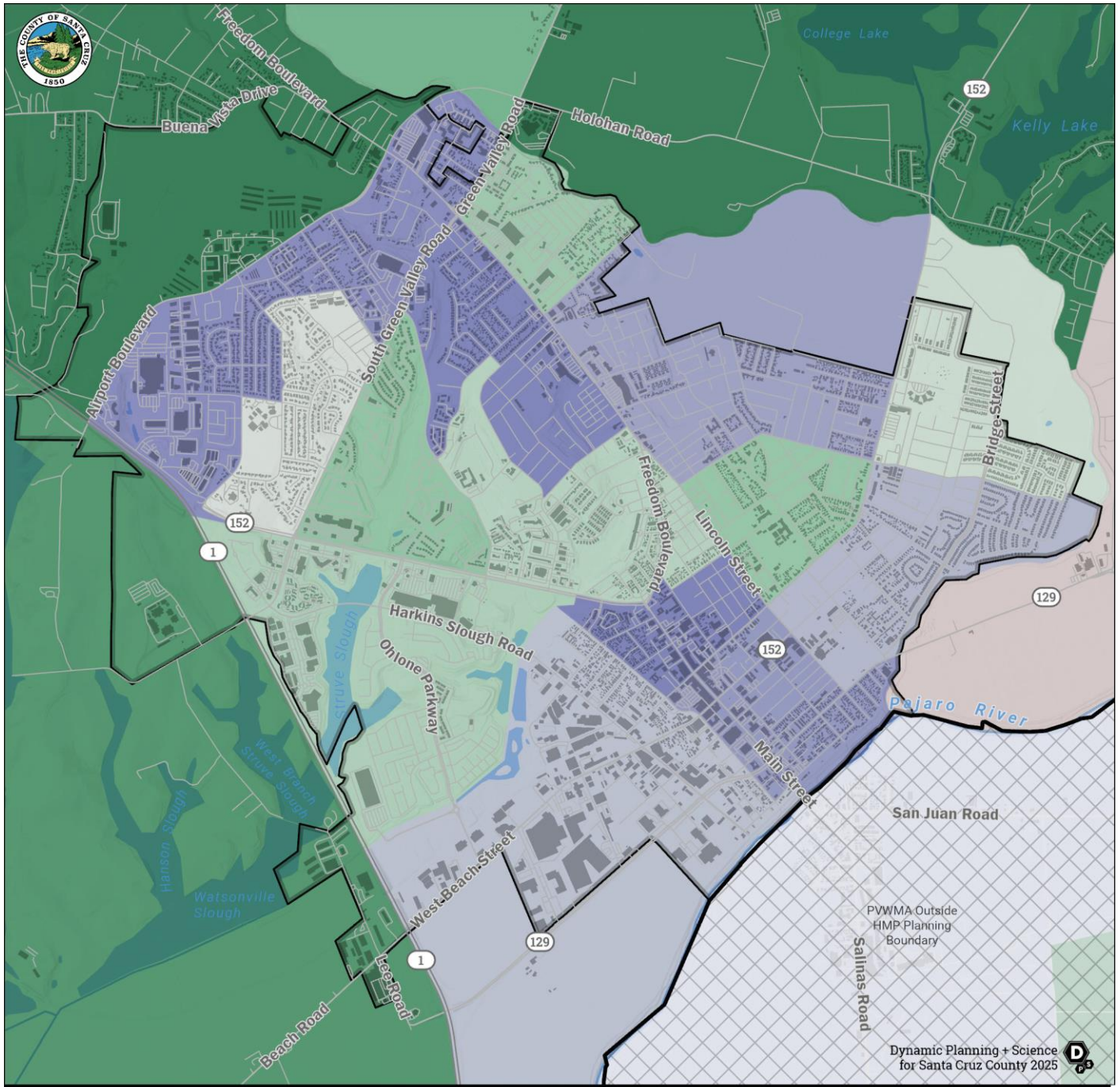


Approximately 56% of occupied housing units in City of Watsonville are renters, compared to 40% for Santa Cruz County as a whole; refer to Table 3-3. Hence, Watsonville has a much higher percentage of renter occupied dwelling units than Santa Cruz County as a whole. Figure 3-5 depicts housing occupancy in Watsonville.

Table 3-3: Owner- and Renter Occupied Households

Jurisdiction	# Occupied Housing Units	# Renter Occupied	% Renter Occupied	# Owner Occupied	% Owner Occupied
City of Watsonville	15,267	8,610	56.4%	6,657	43.6%
Santa Cruz County	96,873	38,771	40.0%	58,102	60.0%

Source: ACS 5-Year, 2018-2023



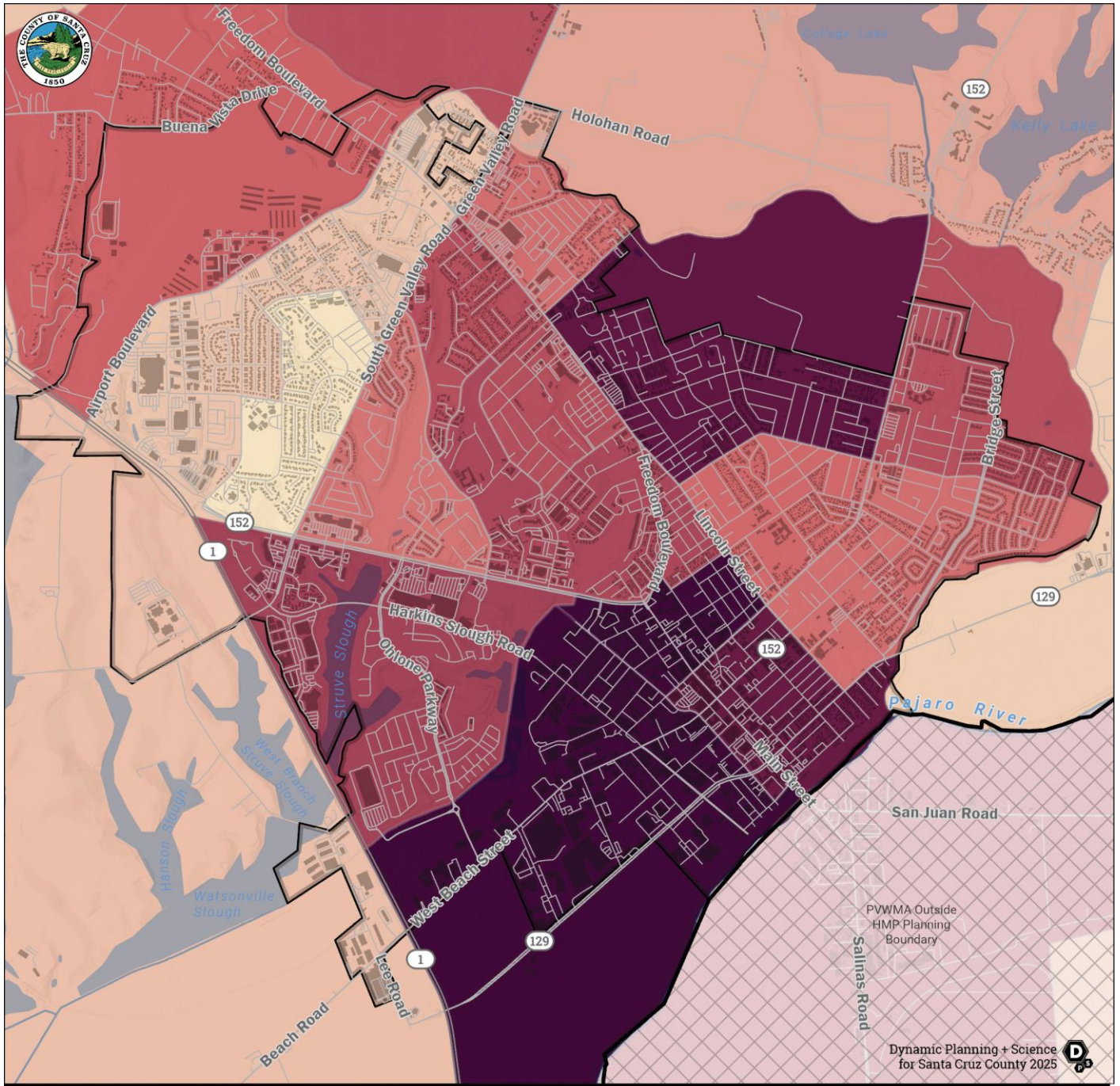
ACS Median Household Income
City of Watsonville

*Data sources: ESRI Demographics Service, ACS.

Median Household Income

- > \$119,300
- < \$37,800
- No Value

Figure 3-3: City of Watsonville - Median Household Income Map



ACS Poverty Status
City of Watsonville

*Data sources: ESRI Demographics Service, ACS.

Percent of Population Whose Annual Income is Below Poverty

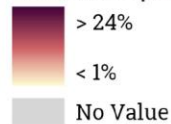


Figure 3-4: City of Watsonville - Poverty Status Map

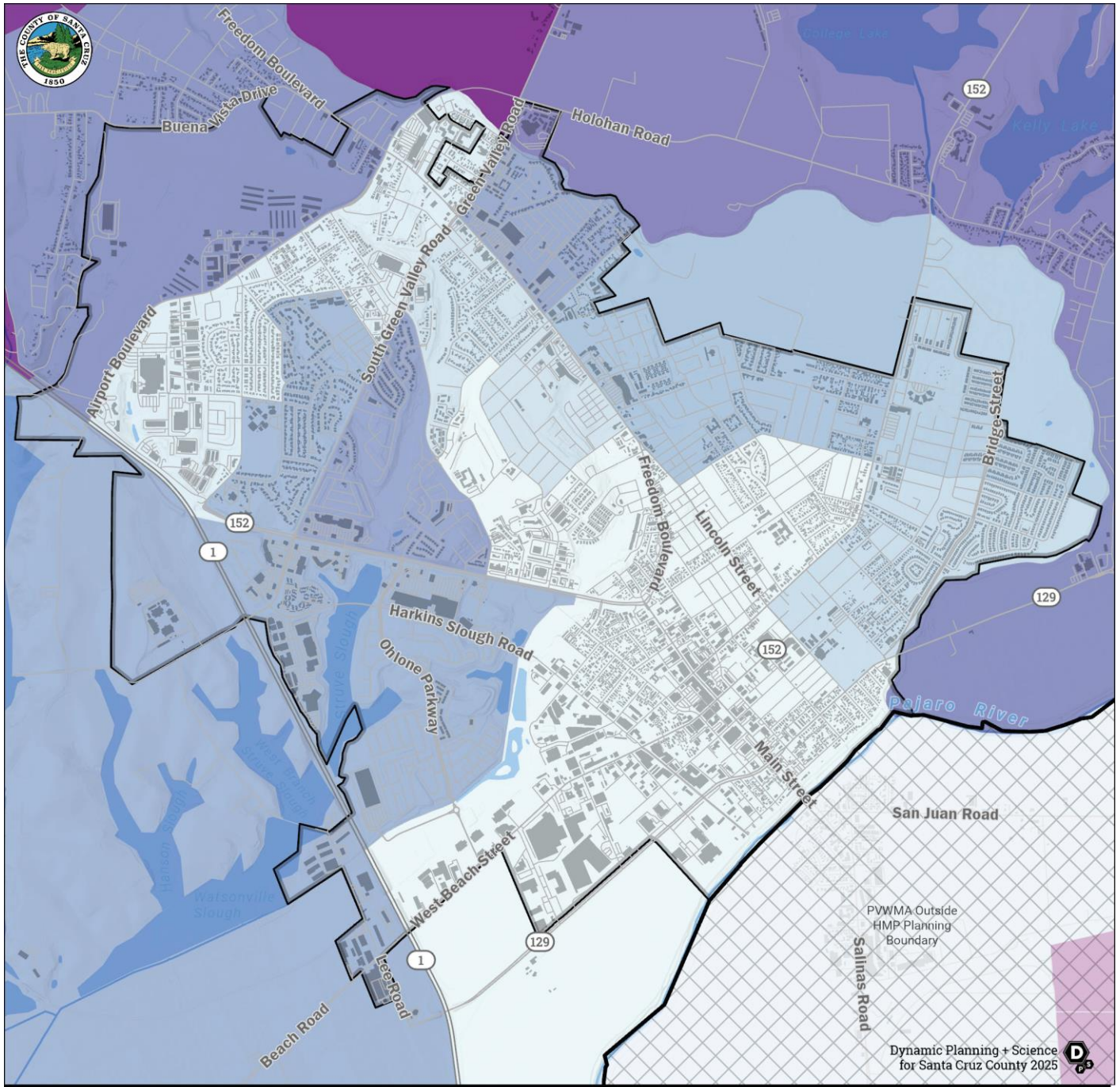


Figure 3-5: City of Watsonville - Occupied Housing Units Map



3.2.3.2 Dependent & Elderly Disabled Populations

Age is a significant factor in assessing vulnerability to natural hazards. Both older adults and children are considered dependent populations due to their reliance on caregivers for safety, mobility, and support during emergency events. These populations face heightened risks during disasters such as floods, wildfires, and earthquakes, particularly when compounding factors such as poverty, disability, or social isolation are present.

In the City of Watsonville, approximately 30.6% of households include at least one individual over the age of 65, and 4.2% of all households are comprised of seniors living alone. Among senior households, 5.3% live below the poverty line (Table 3-4). Seniors who live alone often face greater challenges in emergency situations, including difficulties with evacuation, limited access to real-time alerts due to digital literacy or lack of internet access, and chronic health conditions that require special care. These factors make seniors, especially those who are low-income or socially isolated, among the most vulnerable in a disaster context. Critical facilities such as assisted living centers require advanced coordination for evacuation and continuity of care and are therefore prioritized in emergency response plans.

Children are another key dependent population. In Watsonville, 42.1% of households include individuals under 18, with 12.9% of these households headed by a single caregiver (Table 3-4). Children rely entirely on caregivers for transportation, shelter, and decision-making during emergencies. The disruption of school systems, childcare, and social services during disasters can have significant emotional, developmental, and educational impacts on youth. Additionally, families with limited economic means or single caregivers may struggle to maintain access to necessary resources and recovery support.

Figure 3-6 highlights areas of the city with elevated concentrations of economically depend age groups.

Table 3-4: Economically Dependent Age Groups

Jurisdiction	% Households 65+	% Households 65+ Living Alone	% Households 65+ in Poverty	% Households <18	% Households <18 w Single Caregiver
City of Watsonville	30.6%	4.2%	5.3%	42.1%	12.9%
Santa Cruz County	33.4%	7.9%	2.7%	24.8%	6.0%

Source: ACS 5-Year, 2018-2023

Elderly populations face increased risks during disaster events due to age-related health conditions, mobility limitations, and potential social isolation. In Watsonville, approximately 11.8% of the non-institutionalized population lives with a disability, a slightly higher rate than the countywide average of 11.1% (Table 3-5).



Table 3-5: Watsonville Non-Institutionalized Disabled Population

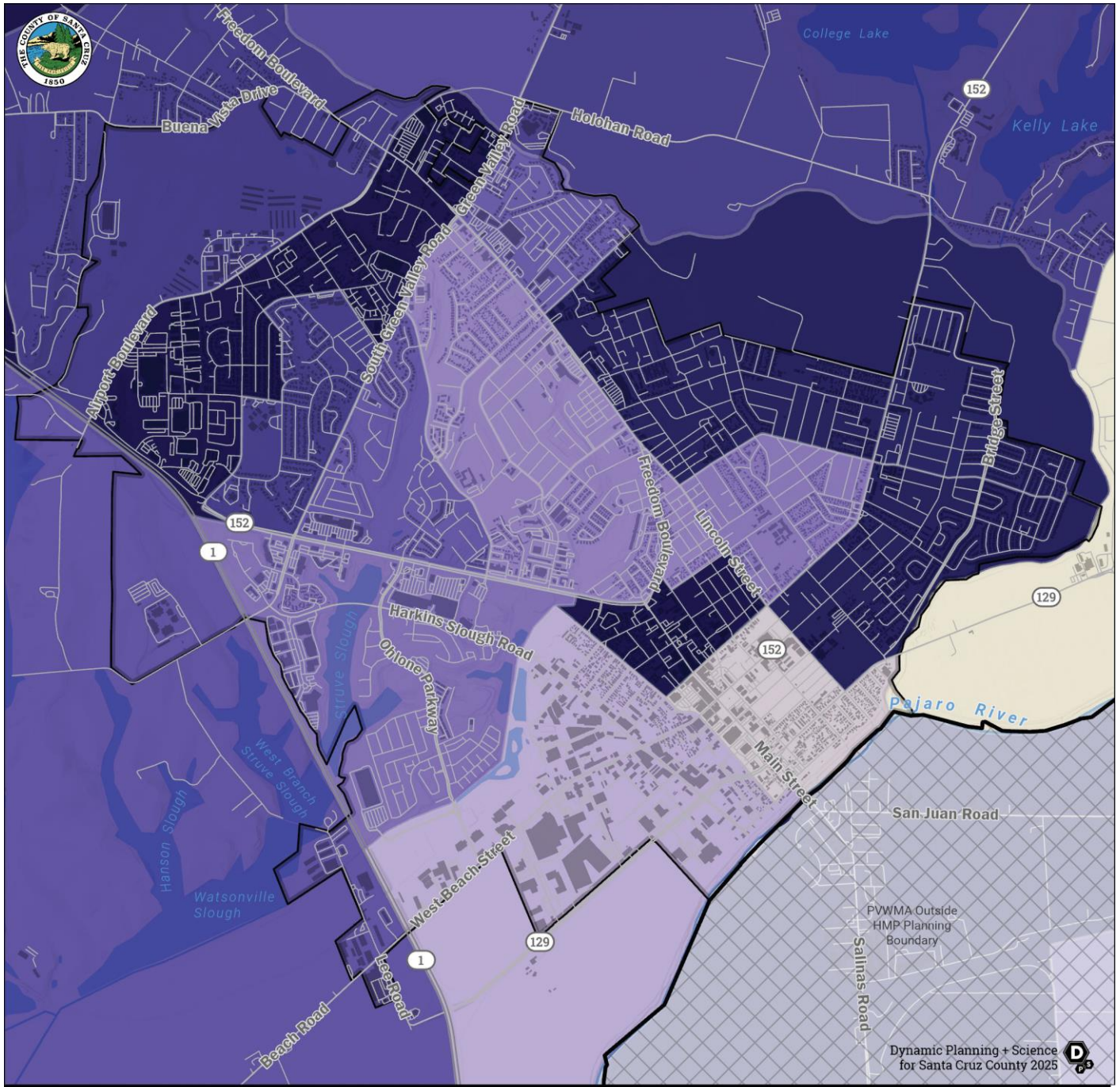
Jurisdiction	# Persons w Disability	% Persons w Disability
City of Watsonville	6,109	11.8%
Santa Cruz County	29,557	11.1%

Source: ACS 5-Year, 2018-2023

Among those with access and functional needs, elderly individuals with disabilities represent a highly vulnerable subpopulation when it comes to disaster preparedness, response, and recovery. This group includes seniors living with physical or cognitive impairments such as hearing or vision loss, reduced mobility, reliance on assistive medical devices, neurodivergence, or chronic health conditions that may be exacerbated by hazard events (e.g., exposure to wildfire smoke or extreme heat).

Figure 3-7 illustrates the distribution of elderly individuals (age 65+) with disabilities across the City of Watsonville. The data show notable concentrations—exceeding 47% of the elderly population—in several distinct neighborhoods, primarily located in the northern, eastern, and southeastern portions of the city. These include areas around East Lake Avenue, Green Valley Road, Airport Boulevard, and Freedom Boulevard, as well as pockets near the Pajaro River.

The combination of advanced age and disability can present significant challenges not only during emergency response but also in implementing hazard mitigation measures. Elderly individuals with disabilities may face physical, financial, or logistical barriers to undertaking activities such as seismic retrofitting, anchoring fuel tanks, installing foundation bracing, or implementing residential flood-proofing techniques. Many live in older housing stock that is more vulnerable to earthquake damage or repetitive flooding and may lack the resources or support networks needed to complete mitigation upgrades.



ACS Dependent Age Groups
City of Watsonville

*Data sources: ESRI Demographics Service, ACS.

Percent of Population in Dependent Age Groups

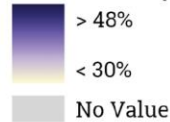
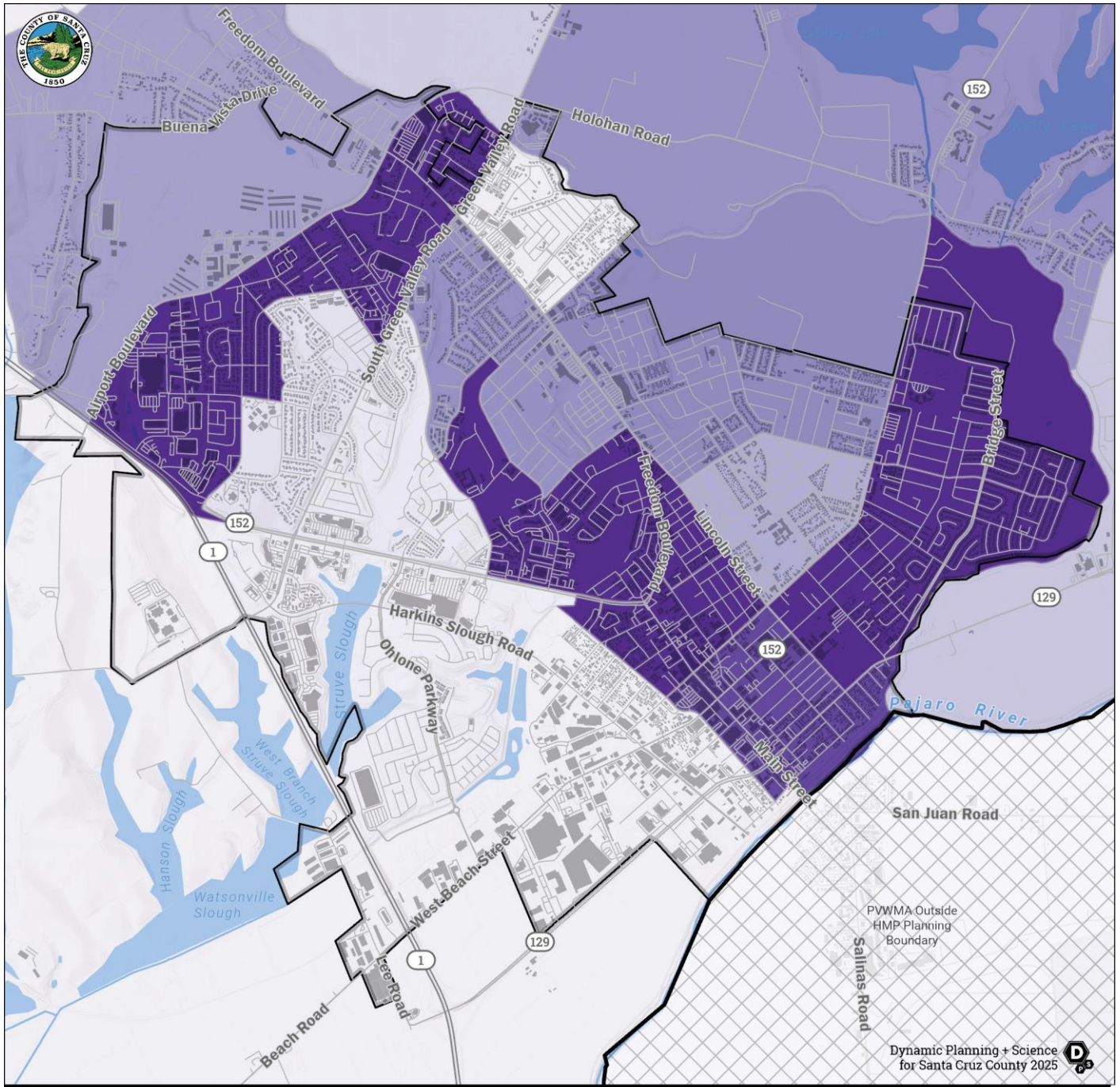


Figure 3-6: City of Watsonville - Economically Dependent Age Groups Map



ACS Disabled Elderly City of Watsonville

*Data sources: ESRI Demographics Service, ACS.

Percent of Elderly Population (65+) with a Disability

- > 47%
- < 19%
- No Value

Figure 3-7: City of Watsonville - Disabled Elderly Population Map



3.2.3.3 Race, Ethnicity & Language

Natural disasters compound racial disparities; non-white individuals and communities receive less recovery aid from FEMA than their white counterparts, even where the amount of damage is the same. (Howell, Junia; Elliott, James R., 2019) (National Advisory Council, 2020) These disparities are evidence of the complicated relationship between disaster recovery and overlapping social vulnerabilities including race, income, language, and health. Black and Latinx residents are more likely to be low income and renters, conditions which create barriers to navigating FEMA’s Individual Assistance programs. Communities with more non-white residents may have lower tax revenue and property values, which means less investment in mitigation and rebuilding efforts before and after an emergency.

Figure 3-8 depicts the racial and ethnic composition of the City of Watsonville. According to ACS data, nearly all census tracts within the city boundaries identify Hispanic or Latino as the predominant racial or ethnic group. This demographic pattern reflects Watsonville’s long-standing role as a cultural and economic hub for Latino communities in the Pajaro Valley, many of whom are employed in agriculture, food processing, and other essential industries.

The strong concentration of Hispanic and Latino populations has important implications for hazard mitigation planning. Language access, cultural relevance of outreach materials, and partnerships with trusted community-based organizations are essential to ensure effective communication of preparedness information, emergency alerts, and recovery resources. Tailoring hazard mitigation and resilience strategies to reflect Watsonville’s demographic reality will help reduce disparities in disaster outcomes and ensure equitable access to mitigation programs.

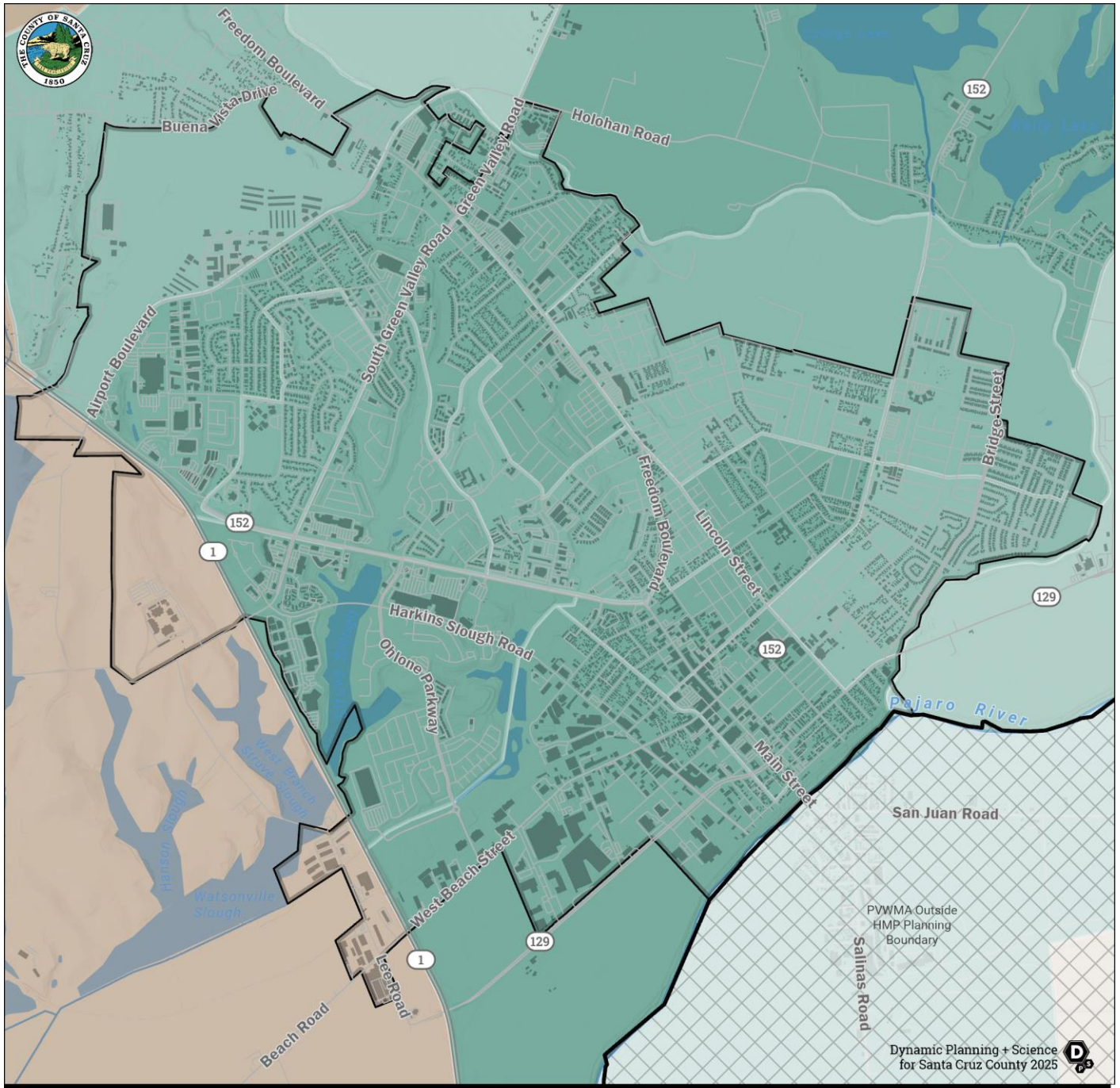
Residents with limited English proficiency (LEP) face heightened barriers to understanding emergency alerts, accessing preparedness resources, and navigating post-disaster recovery programs. In Watsonville, nearly 49% of households speak Spanish and 15% report limited English proficiency, rates significantly higher than the county average (Table 3-6). Figure 3-9 shows where Spanish-speaking populations are concentrated in Watsonville.

Many LEP residents are renters or frontline workers living in high-risk areas, making it critical to provide translated preparedness materials, culturally competent outreach, and tailored emergency alerts. Partnering with trusted community organizations can enhance outreach effectiveness and help ensure equitable access to mitigation resources and life-safety information.

Table 3-6: County-Wide Household Languages

Jurisdiction	# Spanish Speaking Households	% Spanish Speaking Households	# Limited English Households	% Limited English Households	# Other Language Households
City of Watsonville	7,719	48.9%	2,363	15.0%	0
Santa Cruz County (Total)	18,325	17.2%	3,354	3.1%	90

Source: ACS 5-Year, 2018-2023



ACS Race and Ethnicity City of Watsonville

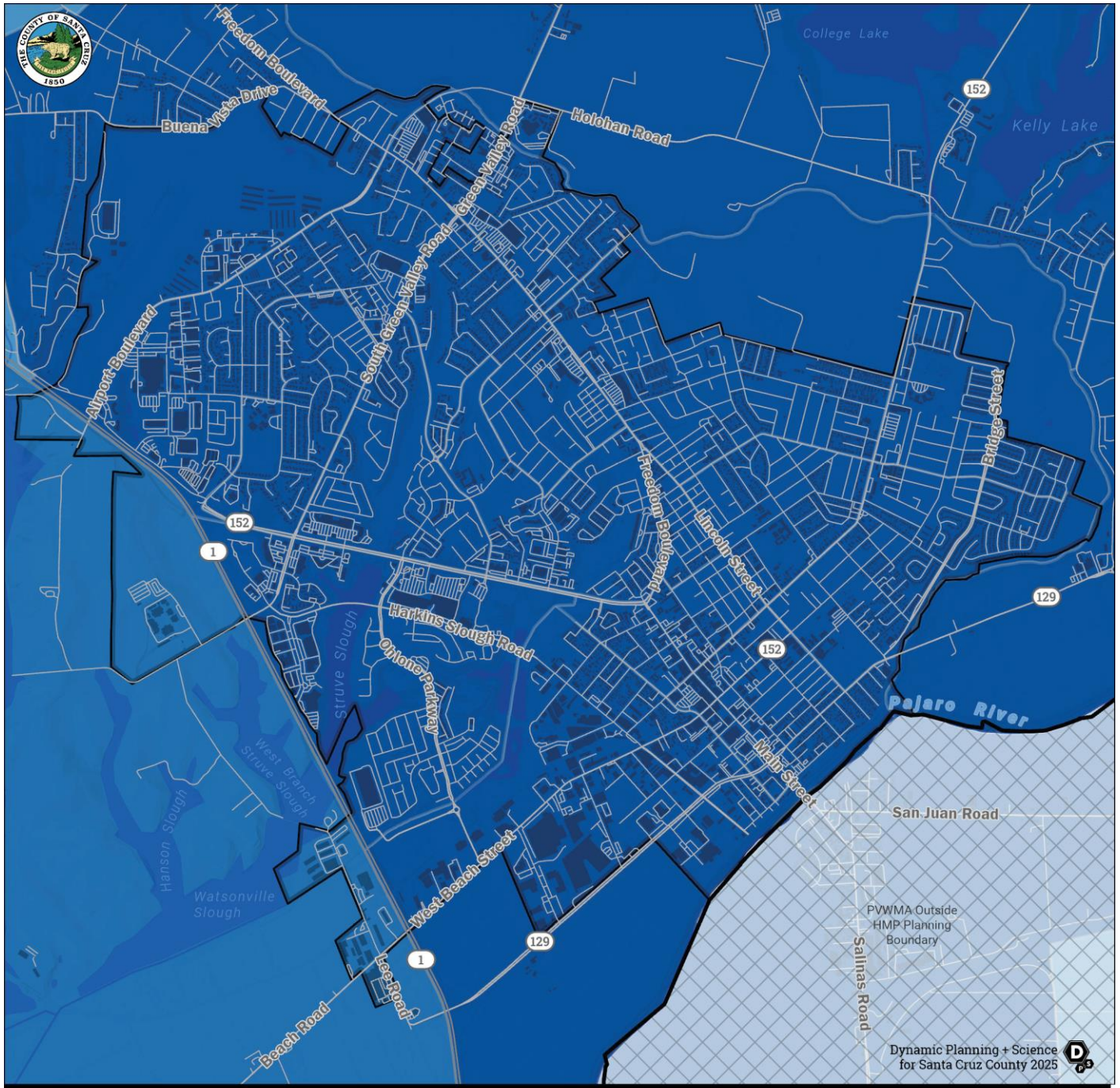
*Data sources: ESRI Demographics Service, ACS.

ACS Race and Ethnicity Predominance

- White alone, not Hispanic or Latino
- Hispanic or Latino
- Black or African American alone, not Hispanic or Latino
- Asian alone, not Hispanic or Latino
- American Indian and Alaska Native alone, not Hispanic or Latino
- Two or more races, not Hispanic or Latino
- Native Hawaiian and other Pacific Islander alone, not Hispanic or Latino
- Some other race alone, not Hispanic or Latino

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Figure 3-8: City of Watsonville - Race and Ethnicity Predominance Map



ACS Language Spoken
City of Watsonville

*Data sources: ESRI Demographics Service, ACS.

Percent of Population (5+) Who Speak Spanish at Home

- > 33%
- < 1%
- No Value

Figure 3-9: City of Watsonville - Percentage of Spanish-Speaking Population Map



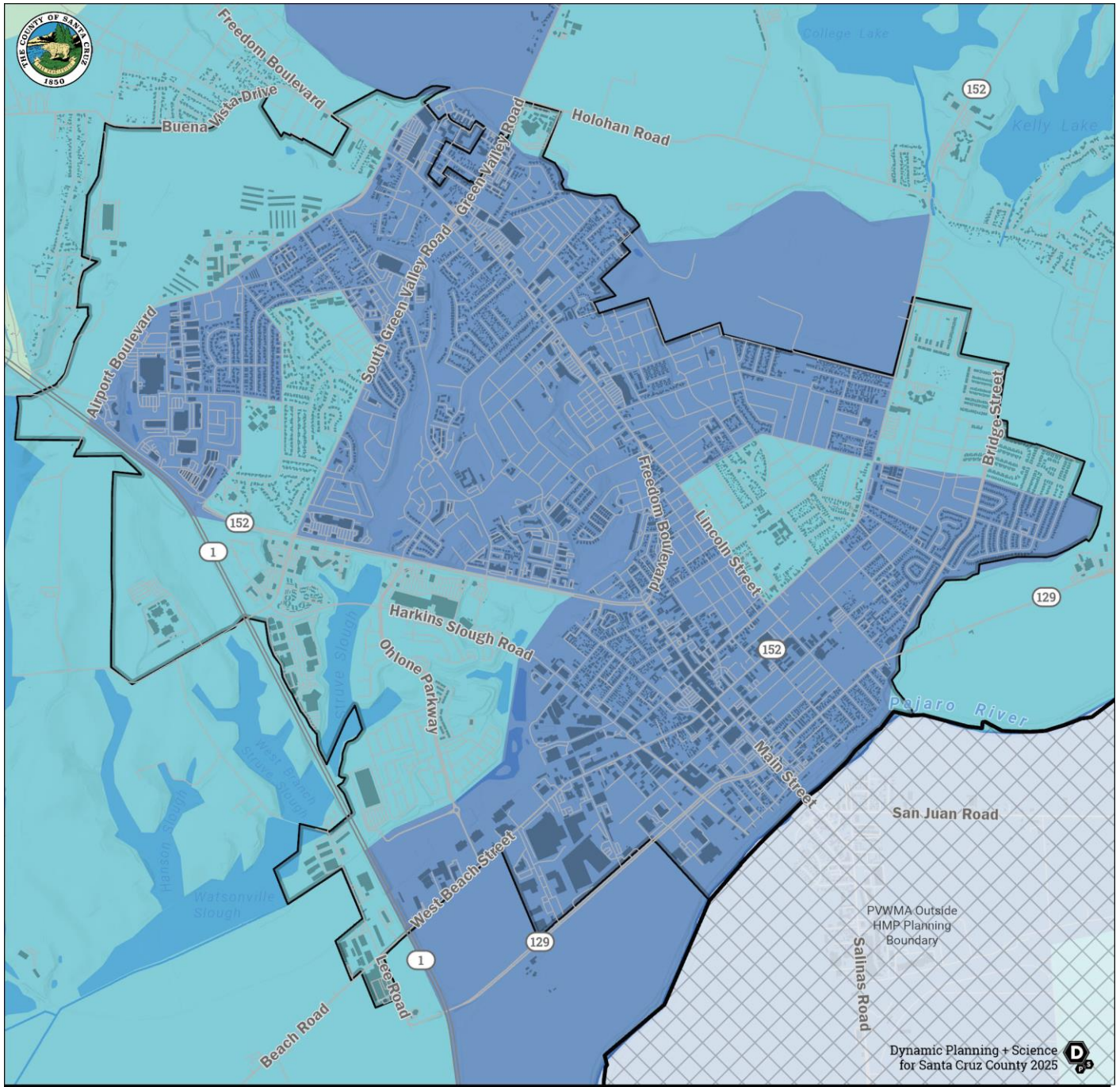
3.2.3.4 Social Vulnerability Index (SVI)

The CDC Social Vulnerability Index (SVI) provides important insight into the geographic and demographic factors that shape Watsonville's resilience to disasters. As described in Volume 1, Section 1.4.3.6, the SVI is a composite measure developed by the CDC that identifies communities more likely to require additional support before, during, and after an emergency. The index incorporates four key dimensions: socioeconomic status, household composition and disability, minority status and language, and housing and transportation access, producing scores that range from 0 (lowest vulnerability) to 1 (highest vulnerability).

Figure 3-10 shows that Watsonville ranks among the areas of highest vulnerability in Santa Cruz County, with many census tracts scoring between 0.50 and 1.00. This reflects the city's demographic and socioeconomic profile, which includes large populations of agricultural workers, renters, Spanish-speaking households, and lower-income families. In addition, a significant share of residents are seniors, children, or individuals with disabilities, further elevating vulnerability scores.

These conditions highlight how disaster preparedness, hazard mitigation, and recovery can be more challenging in Watsonville than in other parts of the county. Language barriers, limited access to transportation, and economic constraints can delay evacuation, reduce access to hazard insurance, and create barriers to implementing home retrofits or floodproofing measures.

The presence of elevated social vulnerability in Watsonville underscores the importance of equity-focused hazard mitigation strategies. Tailored outreach in multiple languages, partnerships with trusted community organizations, and targeted funding support for housing retrofits, flood protection, and seismic strengthening are critical steps to ensure that Watsonville residents, particularly those in high vulnerability neighborhoods, have the resources and support needed to reduce disaster risk.



CDC Social Vulnerability Index 2022

City of Watsonville

*Data sources: ESRI Demographics Service, ACS.

CDC Social Vulnerability Index

 0.0000 - 0.2500	 0.7501 - 1.0000
 0.2501 - 0.5000	 No data
 0.5001 - 0.7500	

Figure 3-10: City of Watsonville Social Vulnerability Index Map



3.2.4 Economy

Watsonville serves as the economic heart of the Pajaro Valley, with a local economy that is both agriculture-based and globally connected. The region is renowned for its fertile soils and temperate climate, which have made agriculture the city's economic backbone for more than a century. Today, Watsonville remains a national leader in berry and vegetable production, with strawberries, apples, fresh flowers, broccoli, cauliflower, and artichokes among the most significant crops grown in the valley.

In addition to farming, Watsonville has built a strong food-processing and distribution sector. The city's processors freeze and ship more fruits and vegetables than any other single area in the United States, and more than \$280 million is invested annually in shipping fresh and processed products worldwide. This makes Watsonville a critical link in the national and international food supply chain.

Beyond agriculture, Watsonville hosts major employers in manufacturing, construction, and distribution. Companies headquartered in the city include Driscoll's Strawberries, Martinelli's, California Giant, Monterey Mushrooms, Graniterock, Granite Construction, West Marine, Vendwize, and Fox Racing Shox, all of which reflect the city's economic diversity. Together, these industries contribute to Watsonville's role as both a regional employment center and a hub of agricultural innovation.

Watsonville's economic profile has direct implications for hazard resilience. Agriculture and food processing are highly sensitive to disruptions caused by flooding, earthquakes, and climate-related hazards. Damage to fields, cold storage facilities, or transportation networks could have cascading impacts beyond the local economy, affecting regional food security and supply chains. Similarly, many of the city's essential industries rely on a large workforce of agricultural and service-sector employees, many of whom face economic vulnerabilities that can compound disaster impacts.

For this reason, hazard mitigation planning in Watsonville must prioritize the protection of critical economic infrastructure, workforce housing, and transportation corridors, ensuring that both local livelihoods and regional supply chains remain resilient in the face of future hazards.

3.2.5 Growth Trends & Future Development

The City of Watsonville had an estimated population of 51,968 in 2023, which is approximately 20% of the total population of Santa Cruz County. Between 2013 and 2019, Watsonville's population grew from 51,544 to 53,800, an increase of 4%. It then declined by nearly 2,000 people in the span of four years to 51,968 in 2023, almost wiping out all the growth between 2013 and 2019. Watsonville has ample room to grow both within the existing city limits and through annexation, and it would be expected the population would resume an upward trend.

Although recent demographic shifts indicate a downturn in population growth and development, they also highlight the need to recalibrate hazard mitigation strategies to reflect changing conditions. Reduced growth may alleviate immediate pressure on infrastructure and resource demand, yet it can also lead to challenges such as diminished funding for hazard mitigation initiatives or delayed upgrades to aging



infrastructure. Aligning development plans with hazard mitigation objectives becomes even more critical in this context. Proactive planning is essential to ensure that the city remains resilient, addressing potential vulnerabilities and maintaining readiness to respond to natural hazards despite slowing growth.

Population density and household composition can provide critical insights into the assumed location of risk within a community. In 2023, Watsonville had 15,792 total households, with an average household size of 3.24 individuals per household. This figure is the highest in Santa Cruz County and well above the Countywide average of 2.36. Such metrics suggest that the city may have a higher prevalence of multi-generational or family units as compared to senior or single-occupant households. Areas with higher population densities or distinctive household structures are often more susceptible to hazards like flooding, fire, or evacuation challenges, given the concentration of people and infrastructure. Consequently, mitigation strategies tailored for these demographics, including enhanced sheltering solutions and evacuation procedures, are essential. Although the City of Watsonville has taken significant mitigation steps since the prior MJHMP, ongoing efforts in this annex focus on addressing these vulnerabilities and refining strategies to counter persistent risks stemming from past development and residual hazard exposures.

Table 3-7: Population and Household Size

Jurisdiction	Population	Households	Avg. Household Size
Santa Cruz County	266,021	106,635	2.36
City of Watsonville	51,968	15,792	3.24

Source: 2016-2021 ACS 5-Year Estimates

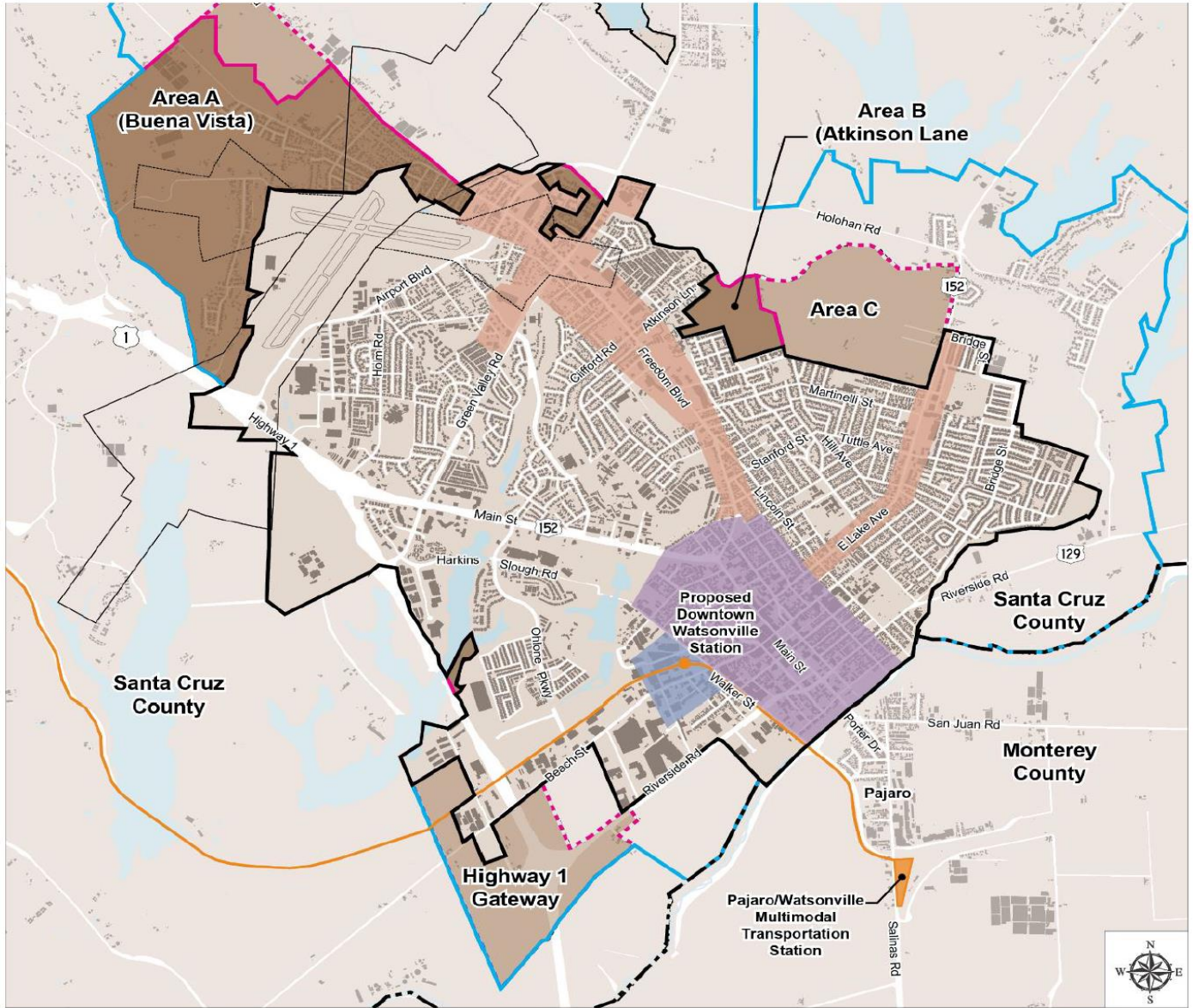


Long Range Growth

The City of Watsonville is preparing for significant residential and commercial growth through its 2050 General Plan. The accompanying Environmental Impact Report projects the addition of up to 5,980 new housing units and approximately 1.7 million square feet of non-residential development. Much of this growth will occur as infill along East Lake Avenue, Freedom Boulevard, and Downtown Watsonville, where the recently adopted Downtown Specific Plan encourages mixed-use development and increased density.

Growth is also anticipated beyond current city limits in areas such as Buena Vista, Atkinson Lane, Area C, and the Highway 1 Gateway (See Figure 3-11), which together represent major opportunities for new homeownership and commercial development. However, these sites require annexation or approval through citywide referendums before large-scale development can proceed.

This projected growth carries important implications for hazard mitigation planning. First, expanded residential and commercial development will place additional demands on infrastructure while also increasing exposure to flood, seismic, and wildfire hazards, particularly in newly developed or annexed areas. Second, as development extends into outlying neighborhoods, equitable access to evacuation routes, emergency services, and mitigation funding will be essential to protect vulnerable populations. Finally, Watsonville has a unique opportunity to ensure that infill and new construction are designed with resilience in mind. This includes adopting elevated construction in flood-prone areas, incorporating green infrastructure to reduce stormwater impacts, and requiring seismic retrofitting or advanced building practices to better withstand future earthquakes.



Legend

- City Limit
- - - County Boundary
- Sphere of Influence (SOI)
- Existing Urban Limit Line (ULL)
- - - Proposed Urban Limit Line (ULL)
- Downtown Infill
- Station Area Infill
- Corridor Infill
- New Growth Area within ULL
- New Growth Area outside ULL
- Main Runway Airport Safety Zones 1-5
- - - Crosswind Runway Airport Safety Zones 1-5
- Proposed Passenger Rail Line and Station

Figure 3-11: Areas of Growth Identified from the 2050 General Plan



3.3 Planning Process

The City of Watsonville followed the planning process detailed in Volume 1, Section 2, including participating in the county-wide Hazard Mitigation Planning Team (HMPT) and formulating their own internal planning team to support the broader planning process.

The city’s representatives in the Steering Group led stakeholder and public engagement efforts alongside the Consultant Team, with assistance from the county-wide HMPT and their internal planning team. This engagement process is described in Volume 1. Specifically, for the City of Watsonville, this included postings to the city website and social media, outreach events, and public presentations, as documented in Appendix B. Examples of Key Stakeholders engaged by Santa Cruz County on behalf of the city with relevance to the development of Watsonville’s mitigation strategy include the USDA and other federal agencies; DWR and other state agencies; the City of Santa Cruz and other neighboring jurisdictions; community-based organizations such as Community Bridges and Watsonville Wetlands Watch; utility providers like AT&T and Pajaro Valley Water Management Agency; UC Santa Cruz and other academia; and local businesses.

All Key Stakeholders that participated in the planning process are listed in Volume 1, Section 2. The city’s internal planning participants, their positions, and how they participated in the planning process are shown in Table 3-8.

Table 3-8: City of Watsonville Planning Committee and Steering Group Members

Stakeholder	Title	Department	CRS Expertise	Description of Involvement
Courtney Lindberg	Public Works Director	Public Works		Lead Point-of-Contact
Leslie Rios	Environmental Project Manager	Public Works		Alternate Point-of-Contact
Toto Vu-Duc	Environmental Project Manager	Public Works		Alternate Point-of-Contact
Charles Hanley	GIS Coordinator	Innovation and Technology		HMPT #2
Christopher Gregorio	Assistant Engineer / CRS Coordination	Public Works		HMPT #1, BO#2
Cristy Cassel	Conservation Outreach Program Manager	Public Works		HMPT #2
Danielle Green	Assistant Director of Public Works	Public Works		HMPT #1,#2; BO#1
David Rodriguez	Assistant Police Chief	Police		HMPT #2, BO#2
Joseph DeSante	Chief Building Official	Community Development		HMPT #1, BO#2.5
Justin Meek	Interim Community Development Director	Community Development		HMPT #2,#3. All Breakouts



Stakeholder	Title	Department	CRS Expertise	Description of Involvement
Matt Orbach	Assistant Community Development Director	Community Development		HMPT #1,#2; BO#1
Michelle Pulido	Public Information Officer	Police		HMPT #1,#2; BO#1
Nancy Porto	Community Outreach Coordinator	Public Works		Outreach Assistant
Nick Culabaquib	Deputy City Manager	City Manager's Office		HMPT #1; BO#1
Raunel Zavala	Senior Administrative Analyst			Kick-Off Meeting
Tamara Vides	City Manager	City Manager's Office		BO#1
Tom Avila	Division Chief – Operations	Fire		HMPT #1,#2,#3,#4; BO#1, BO#2,

The City of Watsonville participated in a comprehensive hazard mitigation planning process as part of the 2025 Santa Cruz County MJHMP update. This included a series of breakout meetings that engaged the city’s planning team, which included key city personnel and stakeholders in evaluating hazards, identifying local vulnerabilities, and prioritizing mitigation strategies.

The kickoff meeting held on January 27, 2025, launched the planning process by introducing the project scope and clarifying the roles of the Steering Group and participating jurisdictional teams. In the months that followed, a series of structured meetings addressed foundational elements of the plan, including a review of key changes since the previous plan, an overview of hazard mitigation principles, and exercises to prioritize local hazards.

On Thursday, April 24, 2025, the City of Watsonville convened its first breakout session to advance local hazard mitigation planning efforts. The meeting reinforced Watsonville’s role within the broader multi-jurisdictional framework and emphasized the importance of sustained participation from city departments and regional partners. Participants discussed recent and potential natural disasters, with particular focus on their impacts to critical infrastructure and community resilience. The session highlighted the increasing frequency and severity of hazard events and the vital role of proactive planning in reducing risk. Newly released hazard data were reviewed, and concerns were raised regarding inaccuracies in the updated CAL FIRE wildfire hazard maps, underscoring the need for reliable data and stronger coordination with state agencies to improve local risk modeling.

Building on this initial meeting, Watsonville city staff worked closely with the county-wide HMPT to review historical hazard impacts, assess ongoing development trends, and evaluate the city’s capabilities and gaps in risk reduction. The breakout session included the development of a localized risk matrix to prioritize the hazards affecting the city, tailored to Watsonville’s unique geography and built environment, and laid the foundation for identifying hazard-specific problem statements and mitigation actions.



July 14, 2025, Breakout Meeting shifted toward reviewing local capabilities and defining specific areas of concern, which informed the drafting of problem statements. Teams worked collaboratively to refine mitigation alternatives, align actions with FEMA guidelines, and develop a shortlist of priority mitigation actions and inter-jurisdictional collaboration opportunities.

These efforts built upon the county-wide meetings held between January 2025 and August 2025, which introduced the MJHMP update process, defined the roles of the Steering Group and county planning committee, and outlined the timeline and deliverables for each participating jurisdiction.

Throughout this planning process, the City of Watsonville has remained focused on aligning its goals with FEMA standards, maintaining eligibility for federal mitigation funding, and incorporating updated risk data into planning and policy documents. These localized efforts are documented in this annex as well as in Volume 1, Appendix B of the 2025 MJHMP. Table 3-9 shows meeting records for the City of Watsonville Planning Team. Steering Group and county-wide HMPT meetings are documented in Volume 1, Section 2.

Table 3-9: City of Watsonville Planning Team Meetings

Meeting & Date	Agenda / Topics	Goals / Key Inputs
County-Wide Steering Group and HMPT Meetings #1 & #2 January 27, 2025 – March 27, 2025		
WTS Planning Team Breakout Meeting #1 April 24, 2025	<ul style="list-style-type: none"> ▪ Community engagement progress and results ▪ Risk assessment and community vulnerability ▪ Demographics and vulnerable populations ▪ Overview of jurisdiction-specific hazard risks and exposure ▪ Introduction to Risk Assessment Mapping Platform (RAMP) ▪ Jurisdiction-specific hazard risk ranking exercise 	<ul style="list-style-type: none"> ▪ Consensus on jurisdiction-specific priority hazards ▪ Identify capabilities and potential mitigation actions ▪ Community engagement volunteers
County-Wide HMPT Meeting #3 June 2, 2025		
WTS Planning Team Breakout Meeting #2 July 14, 2025	<ul style="list-style-type: none"> ▪ Review capabilities assessment ▪ Review areas of concern and define problem statements ▪ Principles of effective mitigation strategies and actions, and mitigation alternatives ▪ Refine and align jurisdiction-specific mitigation actions exercise 	<ul style="list-style-type: none"> ▪ Consensus on jurisdiction-specific capabilities ▪ Consensus on jurisdiction-specific areas of concern ▪ Consensus on priority mitigation actions and collaboration opportunities ▪ Community engagement volunteers
County-Wide HMPT Meeting #4 August 4, 2025		



3.3.1 Public Input & Draft Review

As detailed in Volume 1, Section 2, the draft plan was available for public review and comment from September 29 to October 20, 2025. Public comments received during that time were similar to those gathered throughout the public engagement process, including the need for more equity in the distribution of mitigation activities and funding and the need for enhanced cooperation among jurisdictions, utility providers, and state agencies. These comments were incorporated into the city's mitigation strategy, as appropriate; although, most were already addressed by the Mitigation Action Plan which was based on previous public input.

Public and stakeholder input was gathered and incorporated throughout the plan development process, before the public review period, such as from the online public survey (see Volume 1, Section 2.1.2 and Appendix B, for details). During the review period, jurisdictional staff and stakeholders that participated in the plan development also reviewed the public draft and provided comments on minor corrections and revisions, which were addressed in the final plan.

3.4 What's New

This section provides an overview of hazard mitigation planning efforts for the planning area and highlights the updates made in the 2025 MJHMP. The City of Watsonville previously maintained its own standalone Local Hazard Mitigation Plan, which guided resilience planning and hazard mitigation actions at the city level. For the first time, Watsonville is now participating in the countywide MJHMP process. This integration reflects the City's ongoing commitment to regional resilience and acknowledges that many hazards such as flooding, severe storms, drought, and earthquakes cross jurisdictional boundaries.

Through participation in the MJHMP, Watsonville has identified its highest priority hazards, developed hazard specific problem statements, and proposed actionable strategies to reduce risks. By aligning with countywide partners and leveraging regional resources, Watsonville has strengthened its capacity to prepare for, withstand, and recover from disasters while continuing to protect its unique coastal community character.

3.4.1 Mitigation Activities

The city has successfully implemented several initiatives aimed at addressing identified vulnerabilities. These accomplishments are highlighted in this section and have directly contributed to reducing risks from hazards such as flooding, all hazards, and severe weather. These completed projects showcase Watsonville's ability to effectively plan, fund, and execute measures that protect its residents and infrastructure.

In addition, Watsonville has systematically reviewed and adjusted its mitigation actions, exemplifying adherence to FEMA's Planning Policy Guide principles and emphasizing the importance of dynamic and



adaptive mitigation planning. By fostering partnerships, leveraging funding opportunities, and prioritizing equity in implementation, the city aligns with best practices to build resilience against natural disasters. This ongoing effort is a testament to the city's commitment to the principles of risk-informed decision-making, equitable resource allocation, and integration with broader regional and state hazard mitigation objectives.

Adjustments to Previous Mitigation Actions

A significant portion of the city's mitigation efforts remain ongoing or in the pipeline. These actions, ranging from infrastructure upgrades to community outreach initiatives, represent the city's proactive approach to addressing hazards as resources become available.

Recognizing constraints such as limited funding and shifting priorities, the city has reevaluated certain initiatives, leading to their reprioritization or canceling of mitigation actions. Factors such as feasibility, cost-effectiveness, and emerging risks informed these decisions, ensuring alignment with the city's updated hazard mitigation goals. Adjustments to previous mitigation actions are documented as part of the City of Watsonville's Mitigation Action Plan in Table 3-15, and more specific status updates are provided in Table 3-16.

3.4.2 Mitigation Successes

Watsonville General Plan 2050

The City of Watsonville General Plan was last comprehensively updated in 1994. The city initiated a comprehensive update in 2023 and the updated plan, Watsonville General Plan 2050, is expected to be adopted by Fall 2025. The update includes an update to the Safety Element to reference the Santa Cruz Multi-Jurisdiction Hazard Mitigation Plan. Watsonville General Plan 2050 anticipates new growth occurring in undeveloped portions of Atkinson Lane and Manabe/Burgstrom. Watsonville General Plan 2050 also will address changes to State Law that apply to General Plans.

Watsonville 2030 Climate Action & Adaption Plan

The Watsonville City Council adopted the Watsonville 2030 Climate Action & Adaption Plan in July 2021. The plan sets in motion a suite of programs that are designed to reduce the community's greenhouse gas emissions to 80% lower than levels in 1990 by 2030, meeting a State-mandated legal target. The plan provides a roadmap to reduce the community's greenhouse gas emissions, combat the impacts of climate change, and explore carbon sequestration and habitat restoration.



Infrastructure Projects

The City of Watsonville is undertaking a number of infrastructure projects. These projects include the Water Main Replacement Project, Roache Well & Pump Station, Freedom/Green Valley Water & Sewer Improvements, Hames Reservoir Interior Coating & Connection Modifications, and Sydney & Jehl Avenue Sewer, Storm, & Water Improvements. These projects can assist the City of Watsonville at improving resiliency to extreme temperatures, drought, and climate change.



3.5 Risk Assessment

This section focuses on profiling hazards specific to the City of Watsonville and assessing their vulnerability independent of the broader county-wide planning area, which has been evaluated in Section 3 of Volume 1. The hazard profiles in Volume 1 discuss overall impacts to the planning area and describe relevant plans, policies, and regulations; past events; location; frequency and probability of future occurrences; severity and extent; warning time; secondary hazards; and climate change impacts. For more information on risk assessment methodologies, see Volume 1, Appendix A.

This section includes a tailored vulnerability assessment, analyzing assets at risk such as population, property, and critical facilities and infrastructure unique to the city, and information on city-specific differences in hazard vulnerability across the planning area. It also identifies total city assets at risk, including people, property, and critical facilities and infrastructure within the city. In addition, this section presents growth and development trends for the community, offering insights into vulnerabilities and risks that represent the broader context of assets at risk.

3.5.1 Hazard Screening & Prioritization

Members of the Planning Team from each participating jurisdiction came together to collaboratively decide which hazards would be included in the MJHMP and which would be excluded. The hazard screening and prioritization process integrated historic data, local knowledge, and consensus opinions to create a risk assessment matrix for the county as well as for each participating jurisdiction. These matrices indicate the priority of each profiled hazard. Details about this process, the results of the discussion, and in-depth profiles for county-wide hazards can be found in Volume 1, Section 3.

The City of Watsonville's internal planning group used the same hazard identification and prioritization process as the county-wide Planning Team. They reviewed previously prepared hazard mitigation plans and other relevant documents to determine the realm of natural hazards that have the potential to affect the city. Table 3-10 provides a crosswalk of hazards identified in the City of Watsonville's General Plan, the 2021 Santa Cruz County MJHMP, and the 2023 State of California HMP. The crosswalk was used to develop a preliminary hazards list, providing a framework for the group to evaluate which hazards were truly relevant to the City of Watsonville and which ones were not.

The internal planning group then ranked hazards based on their probability of affecting City of Watsonville and potential impacts on the community. Figure 3-12 displays the results of the hazard risk ranking exercise that was performed. After reviewing the capabilities of the city, the Planning Team decided to profile Coastal Erosion, Sea-level Rise, Earthquake, Wildfire, Flood, Drought, High Winds, Winter Storms, Tsunami, and Slope Failure. All hazards have been profiled in Volume 1 of this document. The purpose of this annex is to specifically address the city's vulnerability to specifically identified hazards.



Table 3-10: City Document Review Crosswalk

Hazard	City of Watsonville General Plan 2005*	Santa Cruz County LHMP 2021	2023 California State HMP
Agricultural Pests			■
Avalanche			■
Climate Change		■	■
Dam Failure	■	■	■
Drought	■	■	■
Earthquake	■	■	■
Extreme Heat		■	■
Extreme Weather		■	■
Flood	■	■	■
Hazardous Materials	■		■
Human-Caused	■		■
Insects			■
Landslide		■	■
Levee Failure			■
Pandemic Disease			■
Sea Level Rise			■
Terrorism / Tech			■
Tsunami			■
Volcanic			■
Wildfire	■	■	■

**May Include additional elements such as safety element.*

Risk Assessment Matrix Definitions

PROBABILITY RATING

The likelihood of a hazard event occurring within a time period?

PROBABILITY	Highly Likely	Highly likely - 100% annual probability. Or Likely to occur every year in your lifetime.
	Likely	Likely - between 10 & 100% annual probability. Or will occur several times in your lifetime.
	Possible	Possible - between 1 & 10% annual probability. Or Likely to occur some time in your lifetime.
	Unlikely	Unlikely - less than 1% annual probability. Or unlikely but possible to occur in your lifetime.

IMPACT RATING

In terms of injuries, damage, or death, would you anticipate impacts to be minor, limited, critical, or catastrophic when a significant hazard event occurs? The impact could be in terms of one hazard event (flooding from a culvert failure) or a large-scale event (multiple rivers flooding) in the same jurisdictional boundary.

IMPACT			
Minor	Limited	Critical	Catastrophic

Minor - very few injuries, if any. Only minor property damage & minimal disruption on quality of life. Temporary shutdown of critical facilities.

Limited - minor injuries only. Approx. 10% or less of property in disaster footprint damaged or destroyed. Complete shutdown of critical facilities for more than one day.

Critical - multiple deaths/injuries possible. Between 25% and 50% of property in disaster footprint is damaged or destroyed. Complete shutdown of critical facilities for more than one week.

Catastrophic - high number of deaths/injuries possible. More than 50% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for 30 days or more.

To concentrate resources, the jurisdictional planning team will focus on "High" and "Extreme" risk hazards. These hazards have the higher probability and greater impact as it relates to the jurisdictions planning area.

Hazard definitions are included in Vol. 1 of this plan. Some hazards are discussed as subset hazards— e.g., "Dam Failure" within the "Flood" hazard profile. If a hazard is not present on the risk matrix or are grey in color, the jurisdictional planning team felt the hazard had a minimal footprint within their planning area and was not ranked.

Hazard Information / Legend:



Climate Change impacts will be addressed at the end of each hazard section and as a stand alone section for each jurisdiction.

For County and Municipal governments you will be required to address climate change impacts in the Safety Element of your General Plan. Climate change may change the frequency, duration and intensity of hazards listed above.

City of Watsonville Risk Matrix

		IMPACT			
		Minor	Limited	Critical	Catastrophic
PROBABILITY	Highly Likely	Medium	High FLOOD LEVEE FAILURE	Extreme	Extreme
	Likely	EXTREME WEATHER DROUGHT	SLOPE FAILURE	EARTHQUAKE	Extreme
	Possible	Low	HIGH HEAT WILDFIRE	High	High
	Unlikely	Low	Low	Medium	Medium

Figure 3-12: City of Watsonville - Risk Assessment Matrix



3.5.2 Vulnerability to Specific Hazards

Assessing vulnerabilities exposes the unique characteristics of individual hazards and begins the process of narrowing down which areas within the city are vulnerable to specific hazard events. The vulnerability assessment considered unique local knowledge of hazards and impacts and a GIS overlaying method for examining such vulnerabilities in more depth. Using these methods, the city’s planning group estimated vulnerable populations, properties, and assets, and potential losses, primarily to flood hazards. In addition, the exposure of city assets to drought, geological, earthquake, wildfire and slope failure were also considered.

Many of the hazard profiles include a snapshot map and damage estimation tables that illustrate the city’s vulnerabilities to those specific hazards. These maps assisted the planning group in understanding the hazard exposure of populations, parcels, and critical facilities and infrastructure. Each snapshot map contains an exposure summary that displays the percentage of the population, the improvement and content value of parcels, and the amount of critical infrastructure that is exposed. For hazards without geospatial extents, such as drought and extreme weather, narratives are provided instead of exposure maps and tables.

Based on the hazard prioritization exercise, this vulnerability assessment focuses on eight hazards for the City of Watsonville, some of which encompass subhazards such as Levee Failure, Liquefaction, and Heavy Rain.

Wildfire
SECTION 3.5.2.1



Flood
SECTION 3.5.2.2



Earthquake
SECTION 3.5.2.3



Severe Weather
SECTION 3.5.2.4



Slope Failure
SECTION 3.5.2.5



Drought
SECTION 3.5.2.6



Extreme Heat
SECTION 3.5.2.7



Climate Change
SECTION 3.5.2.8





3.5.2.1 Wildfire Hazard

Watsonville is located in a river valley, with its urban edges extending into areas of grasslands, foothills, and wildland vegetation that create localized wildfire risk. While most of the city is urbanized and at low wildfire risk, Figure 3-13 shows that the northwest portion of Watsonville lies within CAL FIRE–designated moderate to high wildfire hazard zones. These areas coincide with the wildland-urban interface (WUI), where residential neighborhoods are located adjacent to flammable vegetation.

Exposure within city limits is relatively limited: only 18 residents and 2 parcels fall within mapped wildfire hazard zones. However, approximately 21 transportation and lifeline assets (2% of the citywide total) are also located in these zones, highlighting risks to local road access and emergency response. While structural exposure is modest, wildfire can still have disproportionate impacts on vulnerable populations and critical systems.

Watsonville residents living near the WUI, especially seniors, limited-English speakers, and other dependent populations, face evacuation challenges due to limited road access, lack of route redundancy, and barriers to emergency communication. Multiple critical facilities, including emergency shelters, water infrastructure, and hazardous materials storage sites, are also located in wildfire-prone areas, where fire-related damage or service interruption could result in cascading impacts.

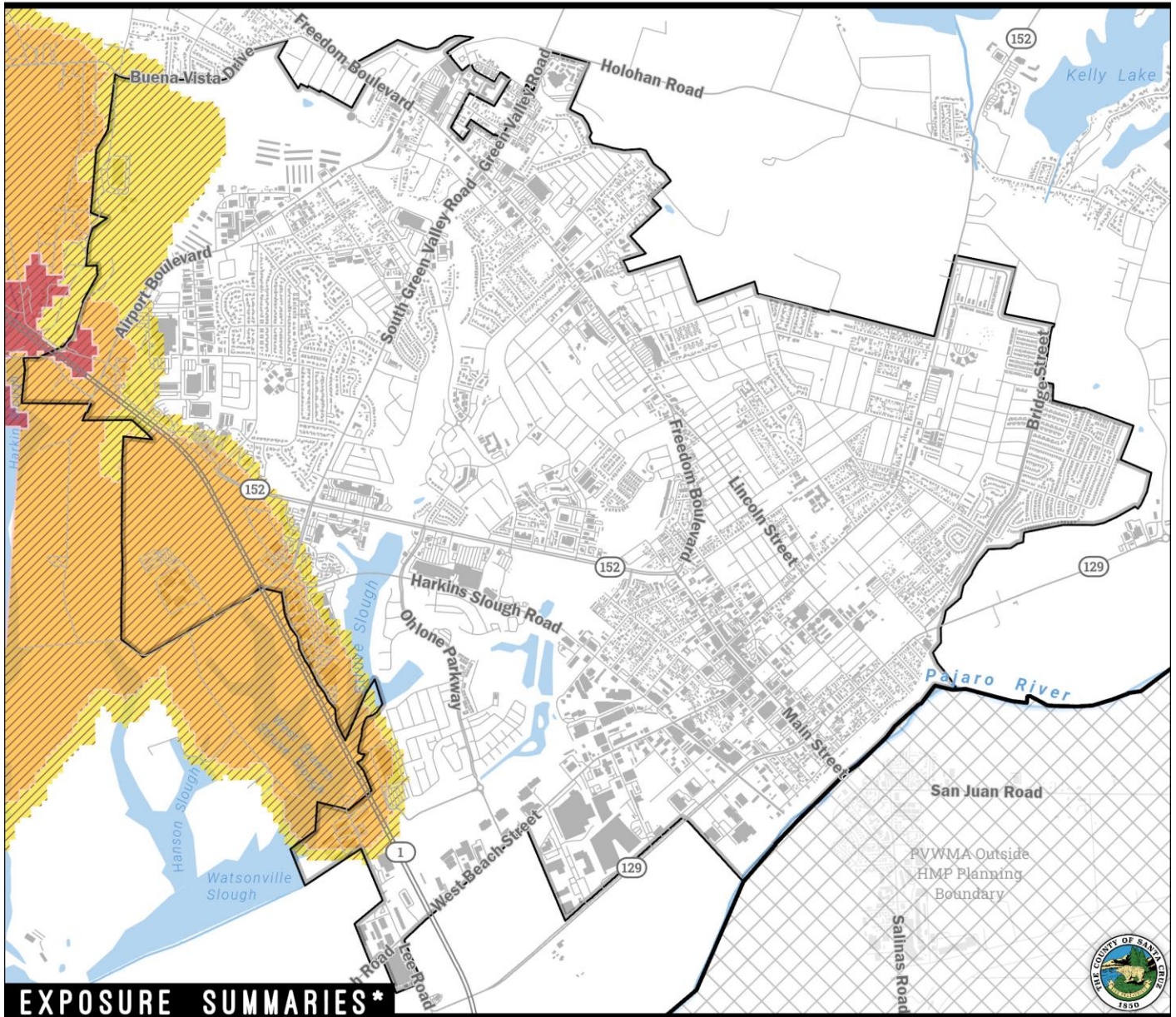
Although wildfire has historically been a lower priority hazard compared to flooding and earthquakes, climate change is expected to increase wildfire risk across the region. Hotter and drier conditions, combined with fuel accumulation and the expansion of development into flammable landscapes, are heightening the city's exposure. Even localized fire events near the city's perimeter could disrupt transportation corridors, threaten utilities, or require rapid evacuations of at-risk populations.

For Watsonville, wildfire risk management should focus on protecting vulnerable populations at the WUI, hardening critical facilities, maintaining defensible space, and strengthening evacuation planning and communication systems. Continued collaboration with CAL FIRE, Santa Cruz County Fire, and neighboring jurisdictions will be essential to reducing wildfire risk along Watsonville's edges while ensuring equitable protection for the city's most at-risk residents.



WILDFIRE RISK EXPOSURE

CITY OF WATSONVILLE



EXPOSURE SUMMARIES*

POPULATION COUNT IN HAZARD AREA	
Count	Exp. Rate**
18	0%
Count Includes: VERY HIGH	

PARCEL COUNT IN HAZARD AREA	
Count	Exp. Rate**
0	0%
Count Includes: VERY HIGH	

PARCEL VALUE IN HAZARD AREA	
Sum of Improvement Value	Exp. Rate**
\$0	0%
Sum of Content Value	
\$0	0%
Count Includes: VERY HIGH	

CRITICAL INFRASTRUCTURE COUNTS IN HAZARD AREA			
Infrastructure Category	Count	Exp. Rate**	Count/Sum Includes:
Essential Facilities	0	0%	VERY HIGH
Hazmat	0	0%	
High Potential Loss	0	0%	Sum of Transportation & Lifeline Linear Mileage
Transportation & Lifeline	21	0%	



*Exposure summaries include very high risk areas. Hazard data source: Cal Fire.
 **Exposure Rate - Exposed summary or count as a percentage of total summary or count within jurisdiction.
 Dynamic Planning + Science for Santa Cruz County 2025

Figure 3-13 City of Watsonville - Wildfire Risk Exposure Map



3.5.2.2 Flood Hazard

Flooding is one of the most significant hazards facing the City of Watsonville, posing risks to residents, businesses, critical infrastructure, and the local economy. The city's location along the Pajaro River and its tributaries, combined with flat low-lying topography and extensive development within the floodplain, has resulted in a long history of damaging flood events. In addition to riverine flooding, Watsonville is also vulnerable to localized stormwater flooding and levee failures, threats that are expected to worsen with climate change and sea level rise.

Location & Extent

The city's location at the confluence of the Pajaro River Basin and the Watsonville Slough watershed places much of the community at high risk of inundation. The eastern and downtown neighborhoods drain into the Pajaro River and its tributaries, Salsipuedes Creek and Corralitos Creek, while the central and western areas drain into the Watsonville Slough system, including Harkins, Struve, and West Struve Sloughs. These waterways, combined with Watsonville's flat topography and aging levee infrastructure, create multiple pathways for flooding.

Flooding in Watsonville can occur in several ways. In some neighborhoods, inadequate interior drainage results in shallow urban flooding, typically less than three feet in depth. More severe events occur when the Pajaro River or Salsipuedes Creek levees are overtopped or fail, a scenario that the U.S. Army Corps of Engineers has indicated is likely during a 100-year storm event. Overflow of Corralitos Creek upstream of the levees presents another chronic concern, particularly in the eastern half of the city, where floodwaters cannot re-enter the channel once overtopped. FEMA Flood Insurance Rate Maps (FIRMs) designate much of Watsonville as Special Flood Hazard Areas (SFHAs), classified as Zones A, AO, AH, and AE, with additional risk represented by shaded Zone X (0.2% annual chance flood).

Historical Flooding

Watsonville has a long history of damaging flood events. The 1955 and 1958 Pajaro River floods remain the largest on record, producing discharges of 24,000 and 23,500 cubic feet per second at the Chittenden gauge. Both events caused widespread inundation, with recurrence intervals of roughly 25 years. More recent floods in 1995 and 1998 also resulted in extensive property and infrastructure damage due to levee overtopping and failures. These events underscore the chronic nature of Watsonville's flood risk and the vulnerabilities that persist today.

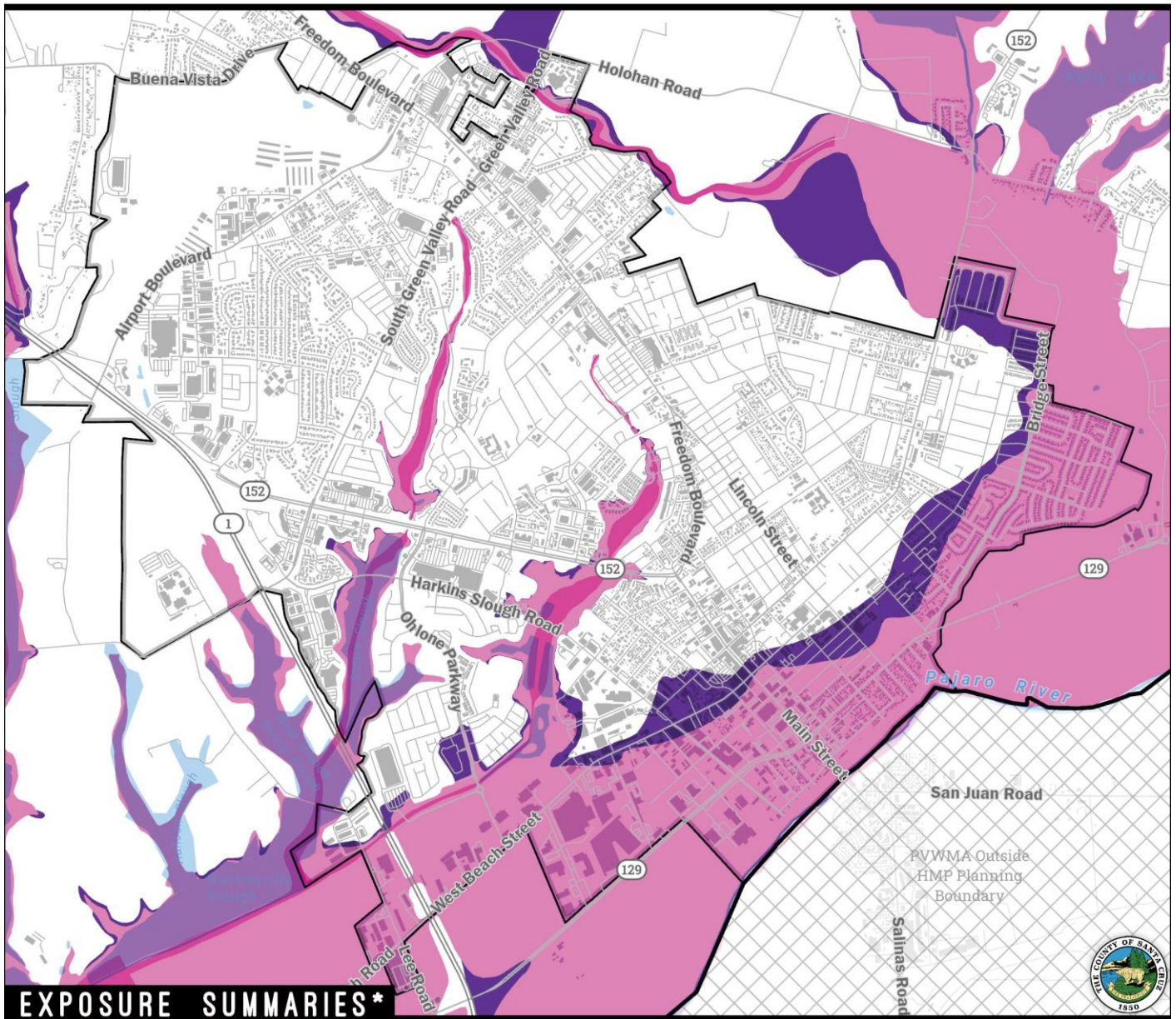
Flood Risk Exposure

FEMA Flood Risk Exposure mapping (Figure 3-14) highlights the scale of Watsonville's exposure. Approximately 11,470 residents, about 22% of the city's population, and 2,084 parcels (20% of total) lie within the FEMA 100-year and 500-year flood hazard zones. The total improvement value at risk is estimated at \$1.92 billion, with an additional \$1.72 billion in contents value. Critical facilities are also threatened, including three essential facilities (43% of citywide total), 50 hazardous material sites (30%), and more than 1,500 transportation and lifeline assets (81%), reflecting the potential for community-wide disruption during a major flood.



FEMA FLOOD RISK EXPOSURE

CITY OF WATSONVILLE



EXPOSURE SUMMARIES*

POPULATION COUNT IN HAZARD AREA

Count	Exp. Rate**
11,470	22%
Count Includes: 100 + + 500	

PARCEL COUNT IN HAZARD AREA

Count	Exp. Rate**
2,084	22%
Count Includes: 100 + + 500	

PARCEL VALUE IN HAZARD AREA

Sum of Improvement Value	Exp. Rate**
\$1,920,594,802	23%
Sum of Content Value	
\$1,720,926,207	27%
Count Includes: 100 + + 500	

CRITICAL INFRASTRUCTURE COUNTS IN HAZARD AREA

Infrastructure Category	Count	Exp. Rate**	Count/Sum Includes:
Essential Facilities	3	43%	100 + + 500
Hazmat	50	30%	
High Potential Loss	25	17%	
Transportation & Lifeline	1558	23%	Sum of Transportation & Lifeline Linear Mileage: 81 25%

MAP LEGEND



*Exposure summaries include 100-year and 500-year flood zone areas, including coastal zones.
Hazard data source: FEMA.
**Exposure Rate - Exposed summary or count as a percentage of total summary or count within jurisdiction.

Figure 3-14: City of Watsonville - FEMA Flood Risk Exposure



Social Vulnerability & At-Risk Populations

Flood impacts are disproportionately borne by Watsonville's most vulnerable residents. Elderly individuals living near the Pajaro River face mobility challenges during evacuation, while low-income and Spanish-speaking households in downtown and industrial flood zones may lack access to warnings, insurance, and recovery programs. These barriers increase the likelihood of prolonged displacement and financial hardship after a disaster.

Critical Facilities & Infrastructure Risks

Key city facilities, including the wastewater treatment plant and police station, are within the 1% annual chance floodplain. Flooding also disrupts stormwater systems and roadways in downtown and east Watsonville, causing business closures and limiting emergency access. The Watsonville Slough system faces contamination risk during flood events, threatening a critical backup water supply for drought periods.

Chronic Threats & Climate Change

Watsonville faces chronic flood risk from the Pajaro River and nearby creeks, made worse by aging levees and more intense storms linked to climate change. Ongoing urbanization has increased impervious surfaces, contributing to greater stormwater runoff and more frequent localized flooding. In addition, FEMA's flood maps are outdated and do not adequately account for sea level rise, sedimentation, or storm surge interaction with local sloughs, leading to an underestimation of future exposure

3.5.2.2.1 Levee Failure

Levee failure is a significant subhazard of riverine flooding in Watsonville, with the Pajaro River levee system representing one of the city's most critical sources of flood risk. Levees are designed to protect low-lying areas by containing river flows within a defined channel during high-water events. While they reduce the frequency of flooding, they do not eliminate risk. Levee failure can occur through overtopping during extreme storms, erosion of embankments, seepage beneath or through the levee structure, or collapse caused by prolonged saturation or foundation instability.

The Pajaro River levee system, constructed in the late 1940s, provides flood protection to Watsonville, the unincorporated community of Pajaro in Monterey County, and surrounding agricultural lands. However, the levees are widely recognized as under-designed for current hydrologic conditions and have a documented history of failures, including during the March 2023 atmospheric river event, when a major breach inundated large portions of Pajaro and prompted mass evacuations in both Monterey and Santa Cruz Counties. By contrast, the San Lorenzo River levee system in Santa Cruz has been upgraded in recent decades, but the Pajaro River levees remain vulnerable despite ongoing efforts such as the Pajaro River Flood Risk Management Project.

A levee breach poses a particularly severe hazard because the sudden release of impounded water can produce deeper, faster-moving floods than natural overbank events, leaving little time for evacuation. In

Watsonville, levee failure would threaten residential neighborhoods, critical infrastructure, major roadways, and agricultural areas, with consequences including property loss, prolonged service disruptions, contamination of water supplies, and risks to human safety. Factors that increase the likelihood of levee failure in Watsonville include:

- Extreme storm events exceeding the design capacity of the Pajaro River levees.
- Deferred maintenance, including erosion, vegetation, or burrowing animals that weaken structural integrity.
- Prolonged high flows, leading to seepage or internal erosion (piping).
- Seismic activity, which could compromise levee stability.
- Climate change, with more intense rainfall events increasing hydraulic stress on the levee system.

Given the central role of the Pajaro River levees in protecting Watsonville, levee failure remains one of the city's most acute and consequential flood hazards.



Figure 3-15. Pajaro River Levee System Source: Santa Cruz County



Implications for Hazard Mitigation

Flooding remains Watsonville's highest-impact hazard, threatening residents, infrastructure, and critical services. The Pajaro River Flood Risk Management Project is an essential regional investment to address levee deficiencies and reduce long-term flood exposure. At the local level, Watsonville must also prioritize:

- Upgrading stormwater infrastructure to reduce urban flooding.
- Floodproofing and elevating critical facilities to maintain essential services.
- Updating hazard maps to incorporate climate change and sea level rise.
- Equitable outreach and engagement, ensuring elderly, low-income, and Spanish-speaking populations receive accessible preparedness resources.

By combining structural investments with equity-focused strategies, Watsonville can reduce both the physical and social impacts of future floods, enhancing long-term resilience for the entire community.

Growth & Flood Hazard Overlap in Watsonville

Future growth in Watsonville is expected to occur through a mix of downtown infill, station area development, and expansion into designated growth areas at the city's edges. While these areas align with the city's long-term goals for compact, transit-oriented development, a closer look at flood hazard exposure reveals that many of these sites overlap with FEMA-designated floodplains and areas historically vulnerable to levee overtopping and stormwater flooding.

The Downtown Infill and Station Area are central to Watsonville's growth strategy, but they are also among the areas of highest flood exposure. FEMA flood maps show that much of the downtown core lies within the 100-year and 500-year floodplains of Struve Slough and Corralitos Creek, exposing future housing and commercial development to recurrent flooding. Without targeted floodproofing and stormwater infrastructure improvements, these projects could increase the concentration of vulnerable populations in high-risk areas.

Similarly, the Highway 1 Gateway growth area lies adjacent to the Harkins and Struve Sloughs, both identified on FEMA maps as subject to flooding. This means that new residential or commercial development here will likely face shallow flooding hazards and water quality concerns, especially during major storm events when slough systems overtop.

In the northeast, Area C (Atkinson Lane) overlaps with flood zones associated with Corralitos and Salsipuedes Creeks. Historical accounts and hydrologic studies note that floodwaters from Corralitos Creek, once overtopped, cannot easily re-enter the channel downstream due to levee confinement. Growth in this area would therefore bring new residents and assets into areas already challenged by recurring flood problems.



By contrast, the northwest growth area at Buena Vista (Area A) is largely outside mapped flood hazard zones. This location represents one of the few areas where Watsonville can accommodate new growth without directly placing additional population and assets into high flood risk zones.

Taken together, this analysis shows that Watsonville's most significant areas of planned growth—downtown, station areas, Atkinson Lane, and the Highway 1 Gateway—are also areas of concentrated flood risk. While this supports smart-growth principles, it underscores the importance of integrating hazard mitigation into future land use planning. Investments in levee improvements, stormwater system upgrades, resilient design standards, and climate-informed flood mapping will be essential to ensure that Watsonville's growth does not also amplify its vulnerability to flooding.

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. FEMA has prepared a detailed Flood Insurance Study (FIS) for Santa Cruz County and municipalities. The study presents water surface elevations for floods of various magnitudes, including the 1% annual chance flood (100-YR flood) and the 0.2% annual chance flood (500-YR flood). Base flood elevations and the boundaries of the 100- and 500-YR floodplains are shown on Flood Insurance Rate Maps (FIRMs), which are the principal tools for identifying the extent and location of the flood hazard. FIRMs are the most detailed and consistent data source available, and for many communities they represent the minimum area of oversight under their floodplain management program. See Section 4 of Volume 1 for general information on the NFIP.

The City of Watsonville has participated in the NFIP since 1984 and has adopted the most recent FIRMs and FIS issued by FEMA (effective on August 3, 2016) as well as local floodplain development regulations in compliance with the minimum NFIP standards. These minimum standards include procedures and provisions for substantial improvements and substantial damages to existing structures, in accordance with NFIP requirements. By code, implementation and enforcement of the city's floodplain regulations are assigned to the City Administrator, City Clerk, or County Building Official. Currently, the City Administrator serves as the floodplain administrator.

The City of Watsonville is currently in good standing with the provisions of the NFIP. Compliance is monitored by FEMA regional staff and by the California Department of Water Resources under a contract with FEMA. Maintaining compliance under the NFIP is an important component of flood risk reduction. See Table 3-11 for more information on the City's policies and historic flood insurance claims.



Table 3-11: City of Watsonville - National Flood Insurance Program Information

City of Watsonville NFIP Status and Flood Insurance Statistics	
NFIP Status	Participating Since 1984
Community Identification (CID)	060357
CRS Class (Entry Date)	Class 8 (October 1992)
Policies in Force (Total Coverage)	360 Policies (\$100,866,000 in Coverage)
Policies Inside SFHA / Outside SFHA	234 Inside / 36 Outside
Total Claims (Total Paid)	144 Claims (\$1,623,932 Paid)
Repetitive Loss (RL) / Severe Repetitive Loss (SRL) Properties	3 RL / 0 SRL
Repetitive Loss Payments	\$107,891 for Buildings / \$2,677 for Contents

Note: The number of policies is by property and does not count policies for individual buildings. The Privacy Act of 1974 (5 USC 522a) restricts the release of certain types of data to the public. Flood insurance policy and claims data is included in the list of restricted information. FEMA can only release such data to state and local governments, and only if the data is used for floodplain management, mitigation, or research purposes. Therefore, this plan does not identify the repetitive loss properties or include claims data for any individual property.

Community Rating System

The City of Watsonville has participated in FEMA’s Community Rating System (CRS) since October 1, 1992. The CRS is a voluntary program under the National Flood Insurance Program (NFIP) that rewards communities for implementing floodplain management practices beyond NFIP minimum standards. Participation provides flood insurance policyholders with reduced premiums while encouraging local investment in flood risk reduction.

Watsonville currently holds a Class 8 rating, which provides all policyholders within FEMA-designated Special Flood Hazard Areas (SFHAs) with a 10% discount on annual flood insurance premiums (FEMA CRS Eligible Communities, 2022).

Over the years, Watsonville has supported projects, programs and other flood mitigation measures that have reduced repetitive loss risk and helped property owners lower their flood insurance costs. Funding sources for these projects have included FEMA Hazard Mitigation Assistance grants, Community Development Block Grant (CDBG) programs, and Army Corps/State Reclamation Board initiatives. Some projects have been completed, while additional properties remain in need of elevation or retrofit to meet current flood protection standards.

Through CRS, the city also documents and addresses repetitive loss properties, earning credits for activities that reduce the likelihood of future claims. Each class improvement in CRS corresponds to an additional 5% premium discount for policyholders in SFHAs. By expanding CRS activities—such as higher building standards, enhanced public outreach, and integration of Pajaro River levee improvements—Watsonville has the opportunity to pursue a Class 7 rating, which would increase flood insurance discounts to 15% while further strengthening resilience to flooding.



3.5.2.3 Earthquake Hazard

Watsonville is located in a seismically active region of California and is highly susceptible to the impacts of earthquakes due to its proximity to the San Andreas Fault and several local active faults, including the Zayante and Butano, which can produce earthquakes in the magnitude 6.4–7.4 range. While no active faults run directly through the city, the entire community is exposed to strong ground shaking and secondary hazards such as liquefaction. A scenario magnitude 7.1 earthquake on the San Andreas Fault in the Santa Cruz Mountains demonstrates the scale of this hazard. Based upon this modeled event, Figure 3-16 shows that all of Watsonville would experience strong to very strong shaking.

Older residential structures, many of which predate modern seismic codes, are particularly vulnerable to collapse or severe damage. Disadvantaged residents, including renters and mobile home occupants, face elevated risks because they may lack earthquake insurance, adequate emergency supplies, or the ability to afford post-disaster repairs, leaving them vulnerable to long-term displacement. The city also contains a small number of unreinforced masonry buildings in the downtown core and industrial areas, which are at high risk of failure in strong seismic events.

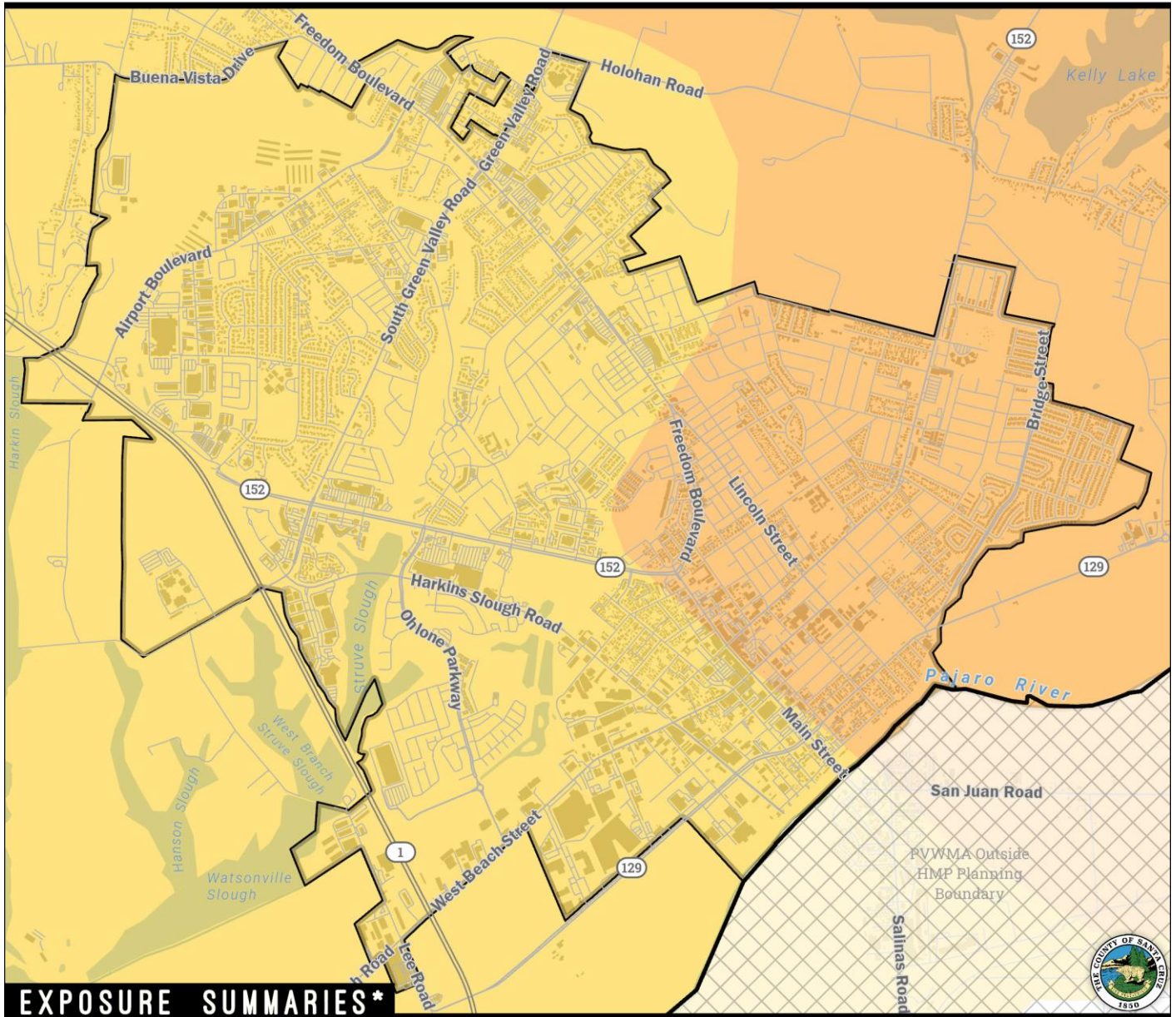
Seismic events also threaten Watsonville's lifeline systems. A major earthquake could disrupt pipelines, water storage tanks, wastewater infrastructure, and electrical facilities, leading to cascading service failures and long-term outages. Shaking may also damage roadways, bridges, and culverts, delaying emergency response and evacuation efforts. Beyond shaking damage, liquefaction poses a severe secondary hazard across much of the city due to its soft soils and high groundwater table. Figure 3-17 shows that more than 23,000 people, 4,500 parcels, and three essential facilities are in liquefaction hazard zones.

Finally, Watsonville lacks a formal program to inventory and retrofit its highest-risk buildings, such as unreinforced masonry or soft-story structures. This leaves well-documented vulnerabilities unaddressed. Together, these factors illustrate that earthquakes remain one of the most consequential hazards for Watsonville, threatening not only lives and property but also critical infrastructure, lifeline systems, and the city's most vulnerable populations.



N SAN ANDREAS - SANTA CRUZ MTN EARTHQUAKE SCENARIO M7.1

CITY OF WATSONVILLE



EXPOSURE SUMMARIES*

POPULATION COUNT IN HAZARD AREA

Count	Exp. Rate**
51,968	100%
Count Includes: VII VIII	

PARCEL COUNT IN HAZARD AREA

Count	Exp. Rate**
9,501	100%
Count Includes: VII VIII	

PARCEL VALUE IN HAZARD AREA

Sum of Improvement Value	Exp. Rate**
\$8,496,490,409	100%
Sum of Content Value	
\$6,290,123,018	100%
Count Includes: VII VIII	

CRITICAL INFRASTRUCTURE COUNTS IN HAZARD AREA

Infrastructure Category	Count	Exp. Rate**	Count/Sum Includes:
Essential Facilities	7	100%	VII VIII
Hazmat	168	100%	
High Potential Loss	147	100%	Sum of Transportation & Lifeline Linear Mileage
Transportation & Lifeline	6660	99%	

MAP LEGEND



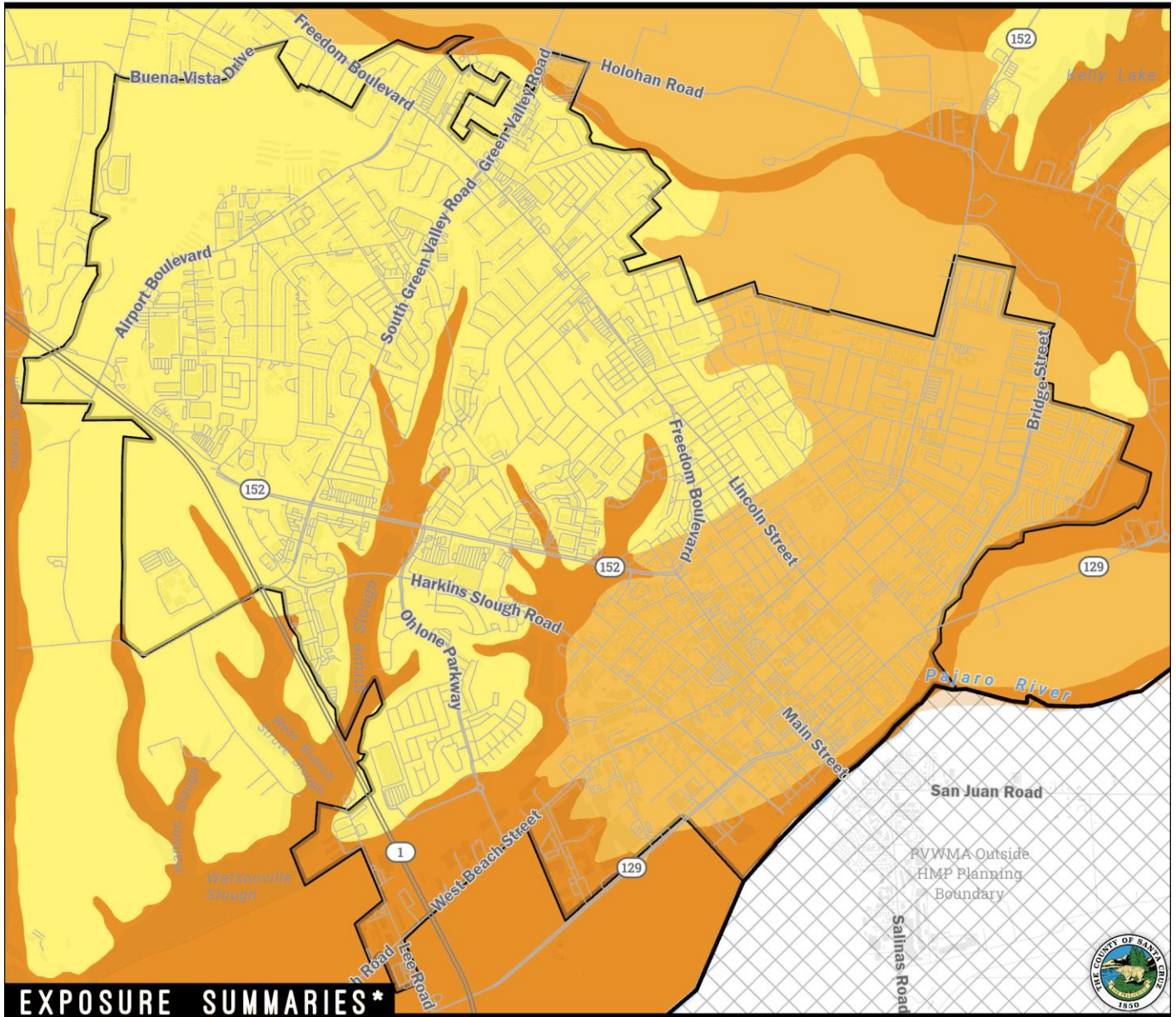
*Exposure summaries include severe and very strong MMI classes. Hazard data source: USGS.
 **Exposure Rate - Exposed summary or count as a percentage of total summary or count within jurisdiction.
 Dynamic Planning + Science for Santa Cruz County 2025

Figure 3-16: Exposure Summary – City of Watsonville Earthquake Risk (M7.1 San Andreas Shaking)



AREAS WITH POTENTIAL FOR LIQUEFACTION

CITY OF WATSONVILLE



EXPOSURE SUMMARIES*

POPULATION COUNT IN HAZARD AREA

Count	Exp. Rate**
23,538	45%
Count Includes:	M+V

PARCEL COUNT IN HAZARD AREA

Count	Exp. Rate**
4,512	47%
Count Includes:	M+V

PARCEL VALUE IN HAZARD AREA

Sum of Improvement Value	Exp. Rate**
\$3,908,189,202	46%
Sum of Content Value	
\$3,047,672,403	48%
Count Includes:	M+V

CRITICAL INFRASTRUCTURE COUNTS IN HAZARD AREA

Infrastructure Category	Count	Exp. Rate**	Count/Sum Includes:
Essential Facilities	3	43%	M+V
Hazmat	71	42%	
High Potential Loss	64	44%	
Transportation & Lifeline	2822	42%	
			149 47%

Sum of Transportation & Lifeline Linear Mileage



*Exposure summaries include very high, high, and moderate. Hazard data source: County, W.R. Dupre 1975.

**Exposure Rate - Exposed summary or count as a percentage of total summary or count within jurisdiction.

Figure 3-17: Exposure Summary – City of Watsonville Liquefaction Risk



3.5.2.4 Severe Weather Hazard

Severe storms are a recurring hazard in Watsonville, typically driven by high winds, heavy rainfall, and atmospheric river events during the winter months. While tornadoes, hail, and snow are rare in the region, severe storm impacts can be significant due to the city's vulnerable infrastructure, older housing stock, and concentrations of at-risk populations.

Residents in mobile homes and older housing, many of whom are low-income or elderly, are particularly vulnerable during storm events. These households face heightened risks from power outages, mobility limitations, and health impacts during prolonged high-wind or heavy-rain events.

High winds frequently cause downed trees and power lines in and around Watsonville, leading to widespread power outages, communication disruptions, and blocked roadways. Such conditions strain emergency response capabilities, delay evacuations, and exacerbate challenges for dependent populations.

Heavy rainfall during atmospheric river events can overwhelm Watsonville's aging stormwater infrastructure, especially in older downtown areas and low-lying neighborhoods near culverts and sloughs. These localized flash floods result in hazardous road conditions, temporary isolation of neighborhoods, and damage to property and infrastructure.

Severe storm frequency and intensity are projected to increase because of climate change. Watsonville already faces frequent winter storms and recurring atmospheric rivers, which are contributing to repeated road closures, localized flooding, and long-term infrastructure strain. Climate-driven changes to storm severity highlight the city's continued vulnerability to cascading hazards, including flooding and slope instability along the slough system.

While severe storms in Watsonville may not produce catastrophic destruction, their compounding effects on vulnerable populations, lifeline infrastructure, and mobility make them a critical hazard for ongoing mitigation planning. Strategies to reduce risk should prioritize hardening power and drainage systems, enhance stormwater infrastructure, and develop targeted preparedness and response measures that reach the city's most at-risk residents.



3.5.2.5 Slope Failure Hazard

Slope failure, which includes landslides and localized slope instability, is a secondary but important hazard for the City of Watsonville. These events are typically triggered by earthquakes, prolonged rainfall, loss of vegetation, or grading activities. Although most of Watsonville lies on relatively flat terrain, slope failure risk is concentrated along the banks of the Watsonville Slough system and in limited hillside neighborhoods on the western and northern edges of the city.

Figure 3-18 illustrates the areas of Watsonville mapped as highly susceptible to slope failure. Nearly 2,200 residents and more than 250 parcels are located in these zones. The total value of improvements at risk is estimated at \$172 million, with an additional \$95 million in contents value. Critical facilities are not widely exposed; however, several transportation and lifeline assets (4% of citywide total) are located within mapped hazard areas, reflecting the potential for slope failures to interrupt connectivity and access.

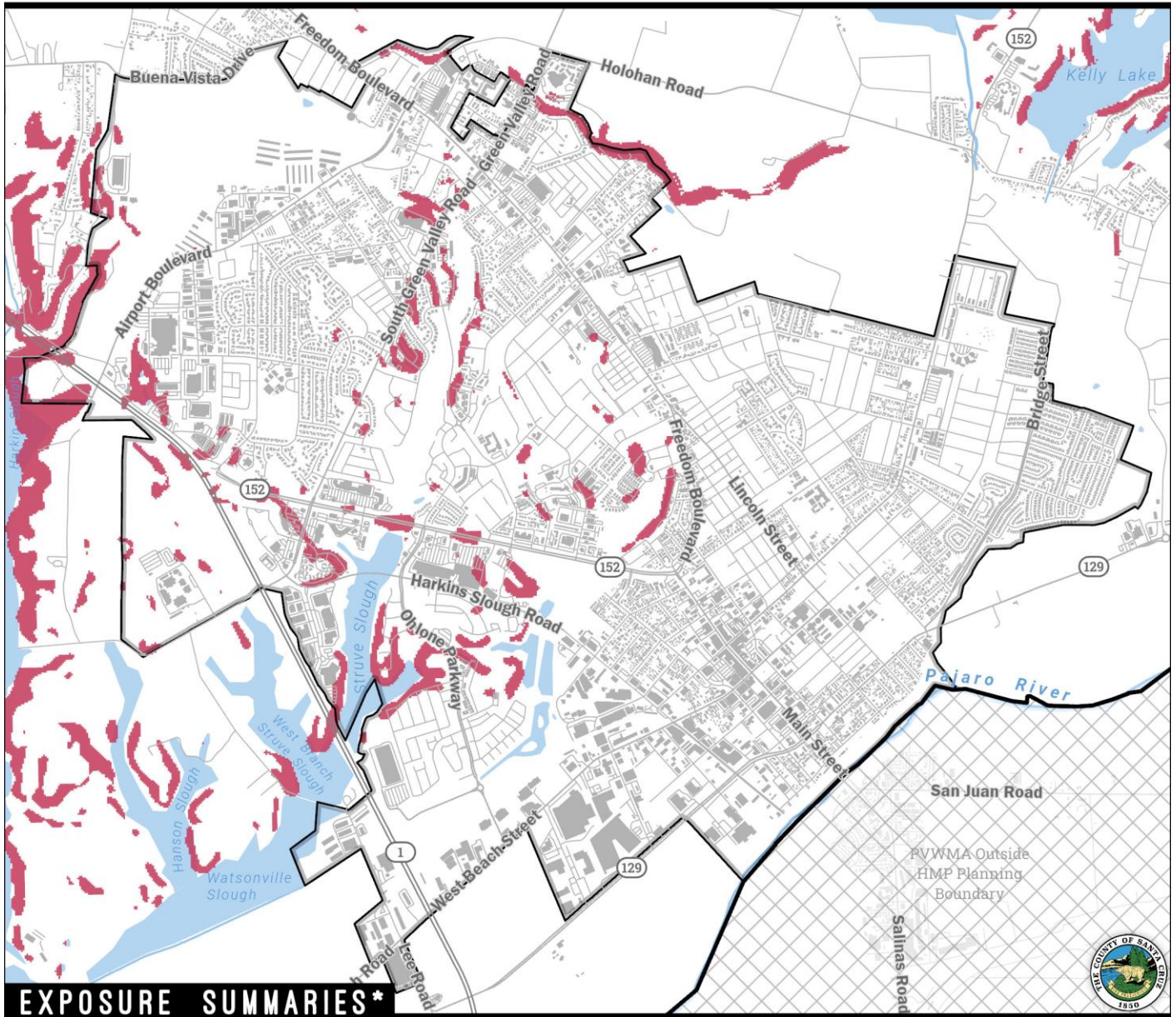
Slope failure has the potential to damage roadways, culverts, and underground utilities, restricting emergency access and service delivery in affected neighborhoods. The city's underlying geology, including Santa Margarita Sandstone and Santa Cruz Mudstone formations, is particularly prone to landslides when exposed to heavy rainfall or seismic shaking, conditions that can exacerbate slope instability.

While slope failure is less widespread than flooding or earthquakes in Watsonville, its impacts can be severe at the neighborhood scale, isolating residents and disrupting critical services. Mitigation efforts should focus on monitoring unstable slopes along slough banks, restricting future development in high-susceptibility zones, and stabilizing vulnerable areas where feasible, while also integrating slope failure risk into emergency access planning.



LANDSLIDE RISK EXPOSURE

CITY OF WATSONVILLE



EXPOSURE SUMMARIES*

POPULATION COUNT IN HAZARD AREA

Count	Exp. Rate**
2,184	4%
Count Includes:	HIGH

PARCEL COUNT IN HAZARD AREA

Count	Exp. Rate**
252	3%
Count Includes:	HIGH

PARCEL VALUE IN HAZARD AREA

Sum of Improvement Value	Exp. Rate**
\$172,392,400	2%
Sum of Content Value	
\$94,963,200	2%
Count Includes:	HIGH

CRITICAL INFRASTRUCTURE COUNTS IN HAZARD AREA

Infrastructure Category	Count	Exp. Rate**	Count/Sum Includes:
Essential Facilities	0	0%	HIGH
Hazmat	7	4%	
High Potential Loss	1	1%	
Transportation & Lifeline	280	4%	
			Sum of Transportation & Lifeline Linear Mileage
	14	4%	



*Exposure summaries include high susceptibility only. Hazard data source: CGS, DPS.
 **Exposure Rate - Exposed summary or count as a percentage of total summary or count within jurisdiction.
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Figure 3-18 City of Watsonville - Landslide Risk Exposure Map



3.5.2.6 Drought Hazard

Drought is a chronic hazard for Watsonville and the Pajaro Valley, with conditions recurring regularly over the past two decades. As shown in Figure 3-19, Santa Cruz County has experienced multiple prolonged drought cycles since 2000, including exceptional drought (D4) conditions between 2014–2016 and again during 2021–2022. These cycles have had profound impacts on local water supply, agriculture, and vulnerable populations.

Watsonville depends heavily on the Pajaro Valley Groundwater Basin, which is already overdrafted and subject to chronic depletion. Extended drought reduces recharge of aquifers and surface water flows, placing stress on municipal wells and water supplies for fire suppression. Declining groundwater levels also heighten the risk of saltwater intrusion from Monterey Bay into the Pajaro Valley Basin, further threatening long-term water quality and reliability.

Drought impacts disproportionately affect low-income residents, farm workers, and disadvantaged households, who may face rising utility costs, stricter water use restrictions, and employment disruptions in the agriculture and food processing sectors. In rural and fringe neighborhoods where residents rely on shallow or aging wells, prolonged drought increases the risk of well failure or degraded water quality, further exacerbating inequities in water access.

Climate change is expected to intensify the frequency and duration of multi-year droughts, increasing Watsonville's dependence on the already overdrawn Pajaro Valley Basin. The city's limited storage capacity compounds this vulnerability, leaving residents and agricultural operations more exposed to recurring water shortages. Drought conditions also interact with other hazards, such as increasing wildfire risk by drying vegetation and reducing water available for suppression.

Building resilience to drought in Watsonville will require expanding groundwater recharge projects, investing in water conservation and efficiency programs, and advancing equitable drought planning that prioritizes at-risk communities. Collaboration with the Pajaro Valley Water Management Agency, local farmers, and regional partners remains critical to ensuring long-term water security for residents, agriculture, and the local economy.



Table 3-12: Drought Classifications and Impacts

Category	Description	Possible Impacts
D0	Abnormally Dry	<ul style="list-style-type: none"> Soil is dry; irrigation delivery begins early Dryland crop germination is stunted Active fire season begins
D1	Moderate Drought	<ul style="list-style-type: none"> Dryland pasture growth is stunted; producers give supplemental feed to cattle Landscaping and gardens need irrigation earlier; wildlife patterns begin to change Stock ponds and creeks are lower than usual
D2	Severe Drought	<ul style="list-style-type: none"> Producers increase water efficiency methods and drought-resistant crops Grazing land inadequate Fire season is longer, with high burn intensity, dry fuels, and large fire spatial extent; more fire crews on staff Lake- and river-based tourism declines; boat ramps close Trees are stressed; plants increase reproductive mechanisms; wildlife diseases increase Water temperatures increase; programs to divert water to protect fish begin River flows decrease; reservoir levels are low and banks are exposed
D3	Extreme Drought	<ul style="list-style-type: none"> Federal water not adequate to meet irrigation contracts; extracting supplemental groundwater is expensive Fire season lasts year-round; fires occur in typically wet parts of the state; burn bans are implemented Ski and rafting business is low; mountain communities suffer Low water levels impede fish migration and cause lower survival rates Wildlife encroach on developed areas; little native food and water is available for bears, which hibernate less Water sanitation is a concern; reservoir levels drop significantly; surface water is nearly dry, flows are very low; water theft occurs Livestock need supplemental feed, cattle and horses are sold; little pasture remains Well and aquifer levels decrease; homeowners drill new wells
D4	Exceptional Drought	<ul style="list-style-type: none"> Fire season is very costly; number of fires and areas burned are extensive Many recreational activities are affected Fields are left fallow; orchards are removed; vegetable yields are low; honey harvest is small; agricultural unemployment is high, food aid is needed Fish rescue and relocation begins; pine beetle infestation occurs; forest mortality is high; wetlands dry up; wildlife death is widespread; algae blooms appear Poor air quality affects health; greenhouse gas emissions increase as hydropower production decreases; West Nile outbreaks rise Water shortages are widespread; surface water is depleted; federal irrigation water deliveries are curtailed; water prices are extremely high; wells are dry, more and deeper wells are drilled; water quality is poor

Source: Adapted from U.S. Drought Monitor Drought Classifications and Impacts

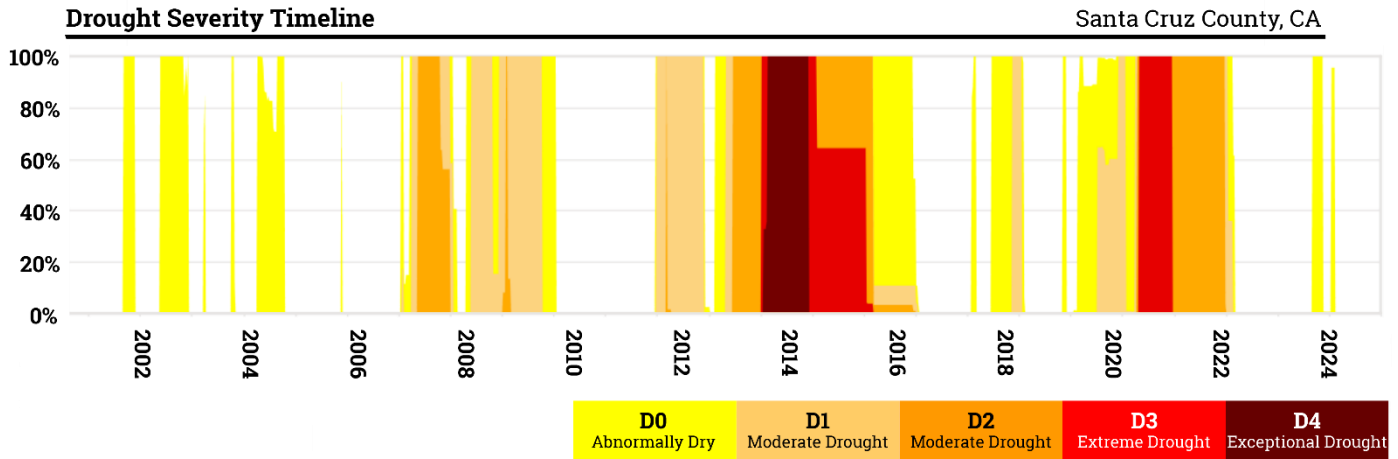


Figure 3-19: Drought Severity Timeline 2000-2024

3.5.2.7 Extreme Heat Hazard

The city’s inland valley location and reliance on outdoor agricultural labor make it particularly sensitive to rising temperatures and more frequent extreme heat days. While the coastal influence of Monterey Bay provides some natural moderation, climate change is projected to increase both the frequency and intensity of heat waves in the region, posing growing risks to public health, agriculture, and infrastructure.

Heat waves are becoming more common across California, with projections showing a significant rise in the number of extreme heat days by mid-century. In Watsonville, outdoor agricultural workers face elevated risks during extreme heat events, particularly those without access to shaded rest areas, cooling stations, or protective equipment. Seniors, low-income residents, and individuals in older housing stock without air conditioning are also especially vulnerable to heat-related illness and may lack transportation to reach cooling centers.

The city’s population exposure is compounded by socioeconomic factors. Many households in Watsonville are cost-burdened and lack adaptive measures such as air conditioning or urban tree canopy coverage, increasing health risks during prolonged heat events. This mirrors statewide findings that low-income and minority populations are disproportionately affected by extreme heat.

The frequency of extreme heat days is projected to rise significantly across inland Santa Cruz County by mid-century. For Watsonville, this means disproportionate impacts on agricultural workers in the Pajaro Valley as well as low-income neighborhoods with limited adaptive capacity. By the end of the century, the number of warm nights—when temperatures remain elevated and prevent recovery from daytime heat—is also projected to increase dramatically.



Extreme heat often coincides with elevated wildfire risk, reduced air quality from ozone and particulates, and public safety power shutoffs designed to prevent utility-caused ignitions. These secondary hazards can compound vulnerabilities by cutting access to cooling or disrupting medical care reliant on electricity.

3.5.2.8 Climate Change Hazard

Climate change is a cross-cutting hazard that intensifies the risks posed by flooding, drought, wildfire, severe storms, and extreme heat. For Watsonville, located in the Pajaro Valley at the intersection of coastal, riverine, and agricultural systems, climate change is already evident in more frequent atmospheric rivers, longer drought cycles, and hotter summers. Projections show these stressors will continue to worsen through mid- and late-centuries, compounding risks across natural and built environments.

Vulnerable Populations

Watsonville's most vulnerable residents—including seniors, renters, farmworkers, low-income households, and limited-English communities—are disproportionately at risk from climate-driven hazards. These groups often face barriers such as limited financial resources, lack of insurance, or reduced mobility during emergencies. Farm workers are directly exposed to rising temperatures and wildfire smoke during agricultural labor, while renters in older housing may lack cooling, insulation, or flood protection measures.

Stress on Critical Systems

Climate change amplifies stress on critical infrastructure systems. Heavier rainfall and atmospheric rivers test aging stormwater networks, while drought reduces groundwater recharge in the overdrafted Pajaro Valley Basin. Energy systems are increasingly strained during heat waves and Public Safety Power Shutoffs (PSPS), while transportation networks are vulnerable to both flood damage and wildfire-related closures. These cascading disruptions highlight the interdependence of lifeline systems and the growing need for redundancy and resilience planning.

Projected Hazards & Future Risks

Climate projections indicate an increase in both frequency and intensity of hazards, including extreme heat, severe winter storms, drought, wildfire, and sea-level rise. Sea-level rise is expected to elevate flood risk along the Pajaro River and adjacent sloughs, threatening Watsonville's neighborhoods and agricultural economy. Extreme heat days are projected to rise sharply by mid-century, disproportionately affecting outdoor workers and inland communities. These overlapping threats compound and cascade, magnifying risks across sectors and lengthening recovery times.

3.5.3 Planning for Hazards & Growth

As a charter city, Watsonville manages growth within the framework of its municipal charter while also adhering to California's planning, zoning, subdivision, and environmental regulations. Watsonville is bordered by prime agricultural lands, the Pajaro River, and an extensive network of sloughs, meaning future growth will occur primarily through infill development and redevelopment of underutilized properties within the existing urban footprint. This growth pattern places new development in areas already exposed to hazards, including flooding along the Pajaro River and local creeks, liquefaction-prone soils, and localized stormwater flooding in low-lying neighborhoods.

By coordinating with the General Plan Safety Element, hazard vulnerability is integrated into land use decisions, infrastructure investments, and redevelopment approvals. This approach satisfies state and federal requirements for hazard mitigation planning and positions Watsonville to pursue disaster recovery and resilience funding.

Climate change is expected to intensify hazards such as flooding, severe storms, drought, wildfire at the wildland urban interface, and extreme heat. For Watsonville, where much of the city lies within flood-prone areas of the Pajaro Valley, this means that new projects must be designed with resilience in mind. Growth management therefore emphasizes sustainable building practices, water conservation, agricultural preservation, and integration of climate adaptation strategies to ensure that redevelopment and infill do not increase existing risks.

Long-Range Planning & Growth Management

Planning for future growth in the City of Watsonville requires a proactive approach that balances development needs with hazard awareness and risk reduction. As Watsonville continues to evolve, careful planning and compliance with state and local standards are essential to safeguard public safety, protect infrastructure, and reduce vulnerabilities. By embedding hazard mitigation into long-range planning and growth management, the city strengthens its overall resilience to natural hazards.

The General Plan serves as Watsonville's overarching blueprint for growth and community priorities, addressing land use, circulation, housing, utilities, open space, conservation, noise, and public safety. Within it, the Safety Element establishes policies to address hazards such as flooding, seismic risk, wildfire at the wildland urban interface, and extreme weather, and it is to be used in close coordination with the County-Wide MJHMP. The General Plan Land Use Element provides guidance on where future development will occur, with an emphasis on infill development, redevelopment of underutilized properties, and farmland preservation. At the time of this MJHMP update, Watsonville is preparing a new General Plan that will more fully integrate hazard mitigation and climate adaptation into its planning framework.

Watsonville does not have a large Sphere of Influence compared to other cities, but its growth policies, shaped by the Santa Cruz County Local Agency Formation Commission (LAFCO), require balancing housing and employment needs with the preservation of surrounding agricultural lands. In addition to the General



Plan, the city relies on specific plans, master plans, and infrastructure plans to manage growth in key areas, such as downtown revitalization, industrial redevelopment, and neighborhood-scale infill projects. These plans often incorporate hazard data to ensure that new development is consistent with both the General Plan and state regulatory standards.

As part of its planning framework, Watsonville integrates hazard information from the MJHMP directly into land use and capital improvement planning. The 2025 MJHMP update expands on this integration by introducing new mapping and analytical tools, including the Risk Assessment and Mitigation Planning (RAMP) platform (see Volume 1, Section 2.2.1), which supports data-driven decisions about where and how development should occur. By applying these updated tools and policies, Watsonville ensures that future growth is resilient, sustainable, and responsive to the evolving challenges of climate change and natural hazards.

Building Codes & Development Standards

Watsonville's development strategies combine comprehensive planning frameworks with strong regulatory measures to guide growth while reducing risks from natural hazards. Building codes play a central role in this approach. Nationally, continual improvements to building codes since 1990 have added only about one percent to construction costs while significantly improving disaster resilience (National Institute of Building Sciences, 2019). In California, building codes are among the most stringent in the world, establishing minimum standards to safeguard against hazards such as earthquakes, flooding, wildfire, landslides, and severe weather. Watsonville enforces these standards locally, providing a strong foundation for resilient construction and hazard reduction.

The City is required to regularly update its development regulations to align with the California Building Code (CBC), which is revised every three years and was most recently updated in 2025. The CBC establishes some of the world's highest construction standards, ensuring occupant safety in the face of natural hazards. Climate change is also addressed through adoption and enforcement of the California Green Building Standards (CALGreen) and Energy Codes, which incorporate energy efficiency, sustainable design, and climate adaptation measures.

The City of Watsonville's Municipal Code sets forth stringent regulations to mitigate hazards for both new and existing structures. These include:

- **Title 8 Adoption of most recent California building codes**, including the California Fire Code and seismic standards, which ensure structures are resilient to wildfire, earthquake, and other hazards.
- **Title 9, Chapter 2 Floodplain management regulations** to ensure new development avoids or mitigates risks in flood-prone areas.
- **Title 14 Zoning restrictions** that prevent development in hazardous zones, including floodplains and WUI areas.



Watsonville also participates in the National Flood Insurance Program (NFIP) and the Community Rating System (CRS), requiring that all new developments in designated flood hazard areas meet or exceed FEMA's minimum flood protection standards. This participation provides direct benefits to residents through reduced flood insurance premiums and demonstrates the City's commitment to proactive floodplain management.

Through these building and development regulations, Watsonville ensures that new development in hazard-prone areas is either restricted or subject to strict hazard-mitigation requirements. Where development is permitted, codes emphasize reducing exposure and vulnerability through appropriate siting, resilient construction techniques, stormwater management, and emergency access provisions. For example, new structures in liquefaction-prone areas must comply with geotechnical design standards, and development along the Pajaro River is subject to strict floodproofing requirements.

Beyond code enforcement, Watsonville integrates these mandates into its broader planning framework, including the General Plan, Housing Element, and Hazard Mitigation Plan (HMP). This alignment ensures that growth management, environmental review, and hazard mitigation strategies work together to address emerging risks from flooding, drought, extreme heat, wildfire, and severe storms, all of which are projected to intensify with climate change.

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) requires General Plans, Specific Plans, and major development projects to evaluate hazards such as flooding, wildfire, seismic risk, and slope instability. Environmental documents must identify these risks and propose mitigation measures to reduce impacts, which may include infrastructure upgrades, evacuation planning, geotechnical design standards, or limits on development in high-risk areas.

In Watsonville, CEQA is especially important for projects near the Pajaro River floodplain, local sloughs, and liquefaction-prone soils. For example, if new residential uses are proposed near the wildland urban interface (WUI) or flood zones, CEQA would require an assessment of hazard exposure and could recommend setbacks, fire-resistant construction, and improved emergency access.

By embedding hazard considerations into land use review, CEQA ensures that future growth in Watsonville is planned with both environmental protection and public safety in mind.



3.5.3.1 Development & Hazard Considerations

The City of Watsonville covers approximately 6.6 square miles and functions as a regional hub for housing, agriculture, and industry in the Pajaro Valley. Unlike smaller neighboring jurisdictions, Watsonville maintains both infill opportunities and designated areas for new growth within its Sphere of Influence (SOI). Future development is expected to occur through a combination of downtown and corridor infill, redevelopment near the proposed passenger rail station, and expansion into planned growth areas such as Buena Vista (Area A), Atkinson Lane (Area B), and the Highway 1 Gateway (Area C) (See Figure 3-11).

Watsonville's regulatory framework requires that new development conform to California's strict planning and building codes, reducing—but not eliminating—exposure to natural hazards. As the city continues to grow, hazard considerations are increasingly important because many of the areas designated for future development overlap with zones at risk from flooding, liquefaction, and other geologic hazards.

Flood Hazards: Flood risk is concentrated along the Pajaro River, Corralitos Creek, and Salsipuedes Creek, as well as throughout the Watsonville Slough system. FEMA Flood Insurance Rate Maps (FIRMs) identify large portions of the downtown, industrial districts, and eastern neighborhoods within the 100-year floodplain. Future growth in low-lying areas near the Highway 1 Gateway and Atkinson Lane will require strict compliance with FEMA and state flood protection standards, along with investments in stormwater and levee infrastructure to reduce chronic flood risk.

Liquefaction Hazards: Much of Watsonville is underlain by unconsolidated alluvial soils with shallow groundwater, placing nearly half of the city's population—more than 23,000 residents—at risk of liquefaction during a major earthquake. Growth in areas such as Buena Vista and the rail station district will require geotechnical investigations, soil stabilization measures, and resilient infrastructure design to mitigate earthquake-induced ground failure risks.

Slope Failure Hazards: While landslide hazards are less widespread, areas along the western hillsides and near slough embankments show susceptibility to slope instability. These hazards are most relevant where road access and utility infrastructure cross hazard-prone areas. Growth in hillside or slough-adjacent areas should incorporate slope stabilization, erosion control, and redundant access routes to maintain emergency connectivity.

Wildfire Hazards: Watsonville's wildfire exposure is limited compared to inland communities; however, the northwestern city edge near Buena Vista lies within a moderate to high wildfire hazard zone. Development in this area must comply with California Fire Code standards, including defensible space and fire-resistant construction. While the overall risk remains low, planning for emergency evacuation and fire-safe design will be essential in this growth area.

Drought and Water Supply: Future growth will place additional demand on Watsonville's water system, which relies heavily on groundwater from the Pajaro Valley Basin. This basin is already overdrafted and threatened by saltwater intrusion, making drought and climate change significant stressors. Planned



development must therefore integrate water efficiency, conservation, and reliance on recycled or supplemental water supplies to avoid exacerbating long-term scarcity.

In summary, Watsonville is not fully built out and retains significant growth capacity. However, much of its expansion potential lies in areas already exposed to flooding, liquefaction, and water supply stress. By embedding hazard data into General Plan implementation, Specific Plans, and CEQA review, the city can ensure that growth occurs in a way that is resilient, sustainable, and protective of both people and infrastructure.

3.5.4 Hazard Problem Statements

As part of the mitigation action identification process, the internal planning group for each jurisdiction identified areas of concern (aka problem statements) for their respective facilities based on the risk assessment and vulnerability analysis. Problem statements focused on the impact, victim, and the threat that the hazard could create in the jurisdiction, as described in Table 3-13 Identifying common issues and weaknesses through these problem statements assisted the planning group in understanding the realm of resources needed for mitigation.

The goal is to have at least one mitigation action for every problem statement. Projects or actions have been developed to mitigate each problem identified. See Table 3-15 for a full list of mitigation actions and corresponding problem statements that they address. Each problem statement is coded with a problem number for cross-referencing between Table 3-13 and Table 3-15.

Table 3-13: City of Watsonville Problem Statements

Hazard	Area of Concern	Problem ID	Description
Climate Change	Victim	ps-CC-WTS-01	Watsonville’s vulnerable populations, including seniors, renters, farmworkers, low-income families, and limited-English communities, face increased cumulative risk from intersecting climate change-driven hazards such as heatwaves, floods, wildfire, and drought.
Climate Change	Impact	ps-CC-WTS-02	Critical systems like stormwater, water supply, energy, and transportation, are increasingly stressed during compounding, climate change-driven events.
Climate Change	Threat	ps-CC-WTS-03	Climate projections show increasing frequency and intensity of hazards, including extreme heat, severe storms, drought, wildfire, and sea-level rise, that compound and cascade risk across sectors.
Drought	Victim	ps-DR-WTS-01	Low-income residents and farmworkers may be disproportionately impacted by drought-related water restrictions, rising utility costs, and potential employment disruptions in agriculture and food processing sectors.
Drought	Victim	ps-DR-WTS-02	Rural and fringe-area residents relying on shallow or aging wells face heightened risk of well failure or poor water quality during prolonged drought cycles.
Drought	Impact	ps-DR-WTS-03	Declining recharge during extended droughts reduces groundwater levels, stressing municipal wells and water supply reliability for fire suppression.
Drought	Impact	ps-DR-WTS-04	Drought-induced groundwater depletion exacerbates the chronic threat of saltwater intrusion into the Pajaro Valley Basin.



Hazard	Area of Concern	Problem ID	Description
Drought	Threat	ps-DR-WTS-05	Climate change is projected to intensify the frequency and duration of multi-year drought cycles and dependence on the overdrafted Pajaro Valley groundwater basin creates chronic vulnerability, especially since the city's existing storage capacity is insufficient for drought resilience.
Earthquake	Victim	ps-EQ-WTS-01	Watsonville contains a concentration of older residential buildings often occupied by disadvantaged households, many of which may not meet current seismic codes and are more likely to suffer collapse or life-threatening damage during an earthquake.
Earthquake	Victim	ps-EQ-WTS-02	Disadvantaged residents, including renters and mobile home occupants, may lack earthquake insurance, emergency supplies, or the ability to afford post-disaster repairs, increasing vulnerability to long-term displacement.
Earthquake	Impact	ps-EQ-WTS-03	The city contains numerous unreinforced masonry buildings, particularly in the downtown core and industrial areas, which are at high risk of structural failure during strong seismic events.
Earthquake	Impact	ps-EQ-WTS-04	A major earthquake could disrupt essential infrastructure systems, including pipelines, water storage tanks, sewage networks, and electrical facilities, leading to cascading failures and long-term service outages.
Earthquake	Impact	ps-EQ-WTS-05	Seismic activity could damage roadways, bridges, and culverts, restricting emergency vehicle access and delaying evacuations or aid delivery in affected areas.
Earthquake	Threat	ps-EQ-WTS-06	Watsonville is exposed to high seismic hazard due to proximity to the San Andreas Fault and local active faults (Zayante, Butano), which are capable of producing magnitude 6.4–7.4 earthquakes.
Earthquake	Threat	ps-EQ-WTS-07	The city lacks a formal or consistently enforced program to inventory, evaluate, and retrofit high-risk structures such as unreinforced masonry or soft-story buildings, leaving known vulnerabilities unaddressed.
Extreme Heat	Victim	ps-EH-WTS-01	Outdoor agricultural workers in the Watsonville area face heightened health risks from increasing extreme heat days, particularly those lacking access to shaded rest areas, cooling stations, or protective equipment.
Extreme Heat	Victim	ps-EH-WTS-02	Seniors, low-income residents, and individuals in older housing without air conditioning are especially vulnerable to heat-related illness during high heat days and may lack transportation to reach cooling centers.
Extreme Heat	Threat	ps-EH-WTS-03	The frequency of extreme heat days is projected to rise significantly by mid-century, with disproportionate impacts on inland agricultural zones and low-income neighborhoods.
Extreme Heat	Threat	ps-EH-WTS-04	Watsonville lacks formal procedures for opening and staffing cooling centers, outreach to vulnerable populations, and pre-positioning resources on extreme heat days.
Flood	Victim	ps-FL-WTS-01	Elderly residents in neighborhoods and unhoused encampments adjacent to the Pajaro River face mobility challenges and are less able to evacuate or access emergency services during flood events.
Flood	Victim	ps-FL-WTS-02	Low-income and Spanish-speaking communities living in downtown and industrial areas are disproportionately located in flood-prone zones and may lack access to warnings, insurance, and recovery support.
Flood	Impact	ps-FL-WTS-03	The City's wastewater treatment plant, police station, and other critical infrastructure lie within the 1% annual chance floodplain, placing essential services at risk of prolonged disruption during major flood events.
Flood	Impact	ps-FL-WTS-04	Flood events damage stormwater systems and roadways in downtown and east Watsonville, leading to road closures, business disruption, and restricted emergency access.
Flood	Impact	ps-FL-WTS-05	Flooding poses a contamination risk to drinking water sources, including the Watsonville Slough, which may serve as a water source during drought or emergency periods.



Hazard	Area of Concern	Problem ID	Description
Flood	Threat	ps-FL-WTS-06	Watsonville experiences chronic flood risk from the Pajaro River and Corralitos and Salsipuedes Creeks. Aging levees and increased storm intensity due to climate change exacerbate this threat despite ongoing planning efforts.
Flood	Threat	ps-FL-WTS-07	Urbanization and impervious surfaces are increasing stormwater runoff volume and frequency, worsening flood severity in areas with inadequate drainage or no levee protection.
Flood	Threat	ps-FL-WTS-08	Flood maps are outdated and do not fully reflect sea level rise, sedimentation, or storm surge interactions with sloughs and the Pajaro River, underestimating future hazard exposure.
Flood	Victim	ps-FL-WTS-09	Flood impacts to farmworkers are increased due to potential employment disruptions in agriculture and food processing sectors.
Heavy Rain	Impact	ps-HR-WTS-01	Heavy rain during atmospheric river events overwhelms stormwater infrastructure, causing localized flash flooding in low-lying roadways and near culverts, particularly in older downtown areas.
Heavy Rain	Threat	ps-HR-WTS-02	Watsonville faces frequent winter storms and atmospheric river events, which are increasing in severity due to climate change and contribute to recurring road closures and local flooding.
Liquefaction	Threat	ps-LQ-WTS-01	Large portions of Watsonville are susceptible to liquefaction, particularly in areas with high water tables and soft alluvial soils, exacerbating ground shaking impacts and structural instability.
Severe Weather	Victim	ps-SW-WTS-01	Residents in mobile homes and older housing, many of whom are low-income or elderly, are particularly vulnerable to power outages, loss of access, and associated health risks during high wind and heavy rain events.
Severe Weather	Impact	ps-SW-WTS-02	High wind events, especially following heavy rain, regularly down trees and power lines, disrupting power, communications, and road access throughout Watsonville and straining emergency response capabilities.
Severe Weather	Victim	ps-SW-WTS-03	Severe storms disproportionately impact farmworker communities due to increased insecurity from potential employment disruptions in agriculture and food processing sectors.
Slope Failure	Victim	ps-SF-WTS-01	Residents in hillside neighborhoods along the city's western and northern edges may face evacuation challenges resulting from landslides blocking access, especially dependent populations.
Slope Failure	Impact	ps-SF-WTS-02	Landslides and debris flows can damage roadways, pipelines, bridges, and culverts, restricting emergency access and utility service in areas of steeper slopes and less stable soils.
Slope Failure	Threat	ps-SF-WTS-03	Local geology, including Santa Margarita Sandstone and Santa Cruz Mudstone, is highly prone to landslides exacerbated by heavy rain, vegetation loss, or grading activities.
Wildfire	Victim	ps-WF-WTS-01	Watsonville residents living near the wildland-urban interface (WUI), especially vulnerable populations such as senior and limited-English speakers, face evacuation challenges due to limited road access, insufficient route redundancy, and emergency communications barriers.
Wildfire	Impact	ps-WF-WTS-02	Multiple critical facilities, including emergency shelters, water infrastructure, and hazardous materials storage facilities, are located in high or moderate wildfire hazard zones, posing risk of fire-related service interruption or secondary hazards.
Wildfire	Threat	ps-WF-WTS-03	Wildfire risk is increasing due to hotter, drier conditions, fuel accumulation, and proximity of development to flammable vegetation along the city's edges.



3.5.4.1 Climate Change Impacts & Vulnerable Populations

The City of Watsonville is home to diverse and vibrant communities, yet many residents face disproportionate risks from climate change–driven hazards. Seniors, renters, farmworkers, low-income families, and limited-English speakers are particularly vulnerable due to a combination of socioeconomic, linguistic, and housing-related factors. Vulnerability is not uniform; some groups may face elevated risks from certain hazards such as extreme heat or flooding while being less impacted by others. Climate change is expected to intensify these disparities by increasing the frequency and severity of compounding hazard events.

Drought and Water Supply: Watsonville depends heavily on the Pajaro Valley Groundwater Basin, which is chronically overdrafted and subject to saltwater intrusion. Prolonged droughts reduce recharge, lower groundwater levels, and stress water availability for municipal and agricultural uses. Low-income households and farmworker communities are disproportionately impacted by water restrictions, higher utility costs, and employment disruptions in agriculture and food processing sectors. Rural residents dependent on shallow or aging wells also face elevated risks of water shortage or contamination.

Flooding and Severe Storms: Watsonville faces chronic flood risk from the Pajaro River, Corralitos Creek, and Salsipuedes Creek, with nearly 1,000 residents and multiple critical facilities—including the wastewater treatment plant and police station—located in the one percent annual chance floodplain. Aging levees and outdated flood maps compound the threat, while increasing storm intensity from atmospheric rivers elevates future flood exposure. Elderly residents, unhoused populations along the river, and low-income or Spanish-speaking households face heightened vulnerability due to evacuation challenges, limited insurance coverage, and barriers to recovery resources. Farmworkers also experience secondary impacts through job loss when agriculture and food processing facilities are disrupted by flooding.

Earthquake and Liquefaction: Watsonville is located near the San Andreas Fault and other active local faults, making it highly susceptible to seismic activity. Although not impacted by climate change, the city has a concentration of older residential buildings and unreinforced masonry structures, particularly in the downtown core, which are especially vulnerable to collapse. Liquefaction risk is elevated in areas with soft soils and high groundwater. Renters, mobile home residents, and low-income households often lack earthquake insurance, retrofits, or the resources to recover from damage, leading to higher displacement risk.

Extreme Heat: Outdoor agricultural workers face significant health risks from increasing numbers of extreme heat days, particularly when shaded rest areas or cooling stations are unavailable. Seniors, low-income households, and residents in older housing without air conditioning are also highly vulnerable. Rising energy costs may force some households to avoid using cooling systems, increasing health risks during prolonged heatwaves. The city currently lacks formal heat response procedures such as pre-positioned cooling centers and outreach strategies for at-risk populations.

Slope Failure: Hillside neighborhoods on the city’s western and northern edges are prone to landslides and debris flows during heavy rain, which can block access routes and restrict emergency services. Local



geology, including Santa Margarita Sandstone and Santa Cruz Mudstone, further elevates susceptibility to slope instability. Populations with limited mobility or financial resources may be unable to address slope hazards on private land or evacuate quickly when needed.

Wildfire: While Watsonville’s urban core faces lower wildfire risk, residents near the wildland-urban interface (WUI) are increasingly exposed to fire hazards. Vulnerable populations, including seniors and limited-English speakers, face challenges with evacuation and emergency communications. Wildfire also poses risks to critical facilities such as emergency shelters, water infrastructure, and hazardous materials storage sites. Hotter, drier conditions and accumulated fuels increase the likelihood of fire spread, while post-wildfire recovery is complicated by limited funding and socioeconomic disparities.

The compounding effects of climate change on Watsonville’s vulnerable populations require proactive and equitable strategies. Enhancing emergency communication in multiple languages, investing in resilient infrastructure, expanding resources for renters and farmworker households, and integrating climate adaptation into daily city operations will strengthen Watsonville’s resilience and reduce disparities across its most at-risk populations.



3.6 Mitigation Strategy

This section provides the framework for how the City of Watsonville will reduce hazard risk within its jurisdiction while supporting the broader goals of the Santa Cruz County MJHMP. It includes an overview of existing capabilities, opportunities to strengthen resilience, and the City's prioritized mitigation actions. Together, these elements demonstrate how Watsonville integrates hazard awareness into its planning and development processes while contributing to a coordinated countywide approach.

Within the Santa Cruz County MJHMP, the mitigation strategy serves as the roadmap for future hazard mitigation efforts. For Watsonville, the strategy outlined in this annex reflects the outcomes of the countywide planning process while also addressing the City's unique risks, priorities, and community needs. The strategy is designed to reduce vulnerabilities identified in the risk assessment, including the problem statements developed for flooding, earthquakes and liquefaction, slope failure, wildfire, drought, severe storms, extreme heat, and climate change.

Mitigation actions identified in this annex include both policy-based and project-based initiatives, with an emphasis on integrating resilience into land use planning, infrastructure investments, and community programs. Actions are structured to align with FEMA's requirements and to coordinate with existing city, county, and regional planning mechanisms. Each action identifies responsible parties, potential funding sources, and the resources needed for implementation.

For Watsonville, this strategy provides a framework for strengthening resilience by combining city-led initiatives—such as infrastructure improvements, building code enforcement, and community preparedness—with regional coordination through the MJHMP. By advancing these efforts in alignment with the General Plan and other local planning documents, Watsonville enhances its ability to reduce hazard risk while supporting long-term community safety, sustainability, and economic stability.

The subsections that follow describe these elements in detail:

- **Section 4.6.1 Aligning Action Planning** with Capabilities provides a summary of the City's capacity to address natural hazards.
- **Section 4.6.3 Mitigation Action Plan** presents Watsonville's prioritized actions to guide implementation in coordination with countywide strategies.

3.6.1 Aligning the Action Plan

This section connects the City of Watsonville's mitigation actions with its existing capabilities and areas for growth. Capability assessments are a required element of hazard mitigation planning under the Disaster Mitigation Act of 2000 and FEMA's 2023 guidance, ensuring that actions are realistic, achievable, and aligned with available resources.

The section begins with a summary of Watsonville's capabilities across four areas: planning and regulatory, administrative and technical, fiscal, education and outreach. This overview highlights the tools and



strengths that the city's already uses to reduce hazard risk. The section then provides a detailed analysis of each capability area, identifying both current practices and opportunities to expand resilience.

Planning & Regulatory Capabilities

The City of Watsonville maintains strong planning and regulatory tools that directly reduce hazard risks and guide future development. The city adopts and enforces the California Building Code through its Municipal Code (Title 8), ensuring that all new construction meets some of the most rigorous seismic, fire, and structural standards in the nation. In addition, Titles 9 and 14 of the Municipal Code apply specialized hazard-related development standards, including flood protection requirements, seismic safety overlays, hillside protections, and coastal zone regulations. These measures are reinforced by Watsonville's Zoning Ordinance (Title 14) and a Growth Management Ordinance, which establishes an Urban Limit Line and ties annual development caps to the General Plan's Land Use and Housing Elements.

Watsonville's Capital Improvement Program (2023–2027) prioritizes drainage, levee, and pump infrastructure upgrades in flood-prone areas, directly supporting flood risk reduction. The city also implements an Erosion and Sediment Control Program under Municipal Code Chapter 7-6, which regulates grading and filling activities, and requires compliance with post-construction stormwater standards.

Public outreach on hazards is supported through the Fire Department and County OR3, with seasonal campaigns related to flood and fire awareness. The City also coordinates hazard reduction through its Urban Water Management Plan (2020), which addresses long-term drought resilience, water conservation, and supply reliability.

As a regulated MS4 stormwater operator, Watsonville conducts annual inspections to ensure compliance with the City's Stormwater Management Program, reducing flood and water quality risks. Seismic safety is addressed in the Municipal Code through the Seismic Safety District (Section 14-16.2300), which requires site-specific geologic investigations for development in known hazard areas.

Although Watsonville does not maintain a dedicated retrofit program for unreinforced masonry (URM) or soft-story structures, the General Plan's Safety Element acknowledges seismic risks and provides policy direction for addressing them. This remains an opportunity for future program development to further reduce earthquake vulnerability.

Administrative & Technical Capacity

The City of Watsonville has a well-established administrative and technical framework for hazard mitigation, anchored by its Community Development, Public Works and Utilities, and Fire Departments. These departments collectively provide planning, engineering, and emergency management services that support implementation of the City's hazard reduction programs.

Watsonville maintains professional planning and engineering staff across multiple departments, including community planners, land development engineers, and construction engineers, ensuring that hazard



considerations are integrated into site review, permitting, and capital projects. The Building Official, housed in the Community Development Department, serves as both the City's Building Code Official and Floodplain Administrator, enforcing California Building Code provisions and FEMA floodplain management standards.

The Fire Department provides a dedicated Fire Marshal who leads plan review, building inspections, and fire hazard mitigation activities. Emergency coordination is managed by a designated Emergency Manager within the Fire Department, who also participates in the County's Emergency Operations Center (EOC).

While the City has strong in-house expertise, certain specialized capacities remain limited. Watsonville does not maintain a dedicated resiliency planner or public outreach personnel, though adaptation planning is integrated into the City's 2022 Climate Action and Adaptation Plan (CAAP). Similarly, the city relies on cross-trained planners and engineers for climate and flood planning but does not yet employ dedicated hazard scientists. GIS services are available through the Community Development and Information Services Departments, but staffing is limited, and the city frequently partners with consultants for advanced mapping and analysis.

Grant-writing and management are handled by staff in Public Works and Finance, though the city lacks a dedicated full-time grant manager or mitigation specialist. This has not prevented Watsonville from successfully securing outside funds for hazard-related projects, but additional capacity could strengthen future applications for state and federal resilience grants.

Overall, Watsonville's administrative and technical strengths lie in its multidisciplinary staff capacity and integration across departments, combined with strong interagency partnerships. Expanding specialized functions such as resiliency planning, dedicated outreach, and GIS analysis would further enhance the City's ability to proactively address hazard vulnerabilities.

Warning Systems & Services

The City of Watsonville relies heavily on the regional emergency alert and warning infrastructure coordinated by County OR3. The CruzAware system serves as the City's primary platform for hazard alerts, providing residents with real-time notifications by text, phone, or email. CruzAware issues warnings for a broad range of hazards including floods, wildfires, geological hazards, and severe weather events, ensuring consistency across the countywide emergency management framework.

Although the City does not operate its own independent warning system, it actively supports dissemination of alerts through City-managed communication channels. This includes integration with the City's website, social media platforms (Facebook, Instagram, and Twitter/X), and coordination with the Fire and Police Departments, which amplify urgent messages during emergencies. The city also maintains a strong relationship with the National Weather Service Monterey Office, which provides storm forecasts, flood warnings, and coastal hazard alerts specific to the region.

Watsonville's emergency warning capacity is strengthened through participation in countywide systems, but there remain opportunities for expansion. For example, the city does not currently participate in FEMA's

StormReady program, though Santa Cruz County has achieved StormReady and TsunamiReady status. Additionally, hazard-specific public education campaigns—such as neighborhood flood alerts or fire season preparedness messaging—are conducted only on a limited basis, often seasonally.

In practice, Watsonville’s role is to amplify and localize county and state warnings while ensuring that alerts reach its diverse population. Given the City’s large Spanish-speaking community and agricultural workforce, expanding multilingual emergency communications and ensuring alerts are accessible to residents with limited connectivity are critical next steps.

Fiscal Capabilities

The City of Watsonville maintains a broad set of fiscal tools that support hazard mitigation and resilience investments. Unlike smaller jurisdictions, Watsonville can both levy voter-approved taxes and administer a range of development-related fees, providing a diversified base for funding capital projects and disaster preparedness.

The City has the authority to levy special taxes for specific purposes, as demonstrated by past measures such as Measure G, which funded police and fire services. In addition, Watsonville generates stable revenue through stormwater, solid waste, and water utility fees, which directly support drainage system maintenance, water reliability projects, and compliance with state and federal stormwater requirements.

Watsonville also relies on system development fees charged to new development, which fund public improvements, including stormwater and transportation infrastructure. Capital Improvement Program (CIP) funding is another cornerstone of the City’s fiscal capacity. The 2023–2027 CIP dedicates significant investment toward levee improvements, pump station upgrades, and other drainage projects in flood-prone areas, reflecting a strong linkage between fiscal policy and hazard risk reduction.

Additional resources come from federal and state programs, including annual allocations of Community Development Block Grants (CDBG), which have historically supported ADA accessibility, emergency response, and infrastructure improvements in vulnerable neighborhoods. These external funds help extend the City’s reach, particularly in low-income and hazard-prone areas.

While Watsonville has the authority to issue general obligation bonds and special tax bonds, these tools are not currently utilized for hazard mitigation projects. Expanding their use could provide long-term funding for major infrastructure upgrades, particularly flood protection. Similarly, the City does not currently use benefit assessments or formal policies for withholding development in hazard-prone areas, though hazard-related zoning standards and urban limit lines already reduce exposure in high-risk zones.

In practice, Watsonville’s fiscal strategy blends local fees and taxes with external grant funding, creating a flexible, layered approach to resilience. Opportunities remain to leverage untapped financing mechanisms—such as bonds or benefit assessments—to address large-scale capital needs, particularly as climate change intensifies flooding, drought, and extreme weather impacts.



Education & Outreach Capabilities

The City of Watsonville maintains strong education and outreach programs that connect hazard awareness with community preparedness. These efforts are led primarily by the Fire Department, Police Department, Public Works and Utilities, with additional support from regional partners such as the Santa Cruz County Fire Safe Council and the Pajaro Valley Water Management Agency.

The city uses its website and social media platforms (Facebook, Instagram, and X) to provide real-time emergency alerts, preparedness tips, and seasonal safety reminders. These channels are widely used during winter storm events, wildfire smoke episodes, and flood advisories, offering residents timely, accessible information. However, opportunities remain to centralize hazard-related resources into a single web portal for easier community access.

Watsonville also participates in annual public safety events, including National Night Out, Preparedness Month activities, fire safety school visits, and station tours. These events provide direct opportunities for residents to learn about evacuation planning, flood safety, and emergency communications. Outreach efforts are supported by seasonal mailers and flyers, though a recurring hazard mitigation newsletter could further strengthen ongoing public awareness.

At the neighborhood level, Watsonville supports community preparedness through its Community Emergency Response Team (CERT) program, part of the Santa Cruz County CERT network. Local CERT volunteers receive training in basic disaster response, first aid, and search-and-rescue, expanding the City's response capacity during major hazard events.

Partnerships also play a critical role. The Fire Safe Council of Santa Cruz County works with Watsonville to expand defensible space programs, vegetation management, and community education, while the City's collaboration with regional conservation and water agencies promotes drought awareness, flood preparedness, and groundwater conservation. Watsonville is also home to a designated Firewise community, with potential to expand this program into other high-risk neighborhoods along hillside edges.

Overall, Watsonville's education and outreach capabilities reflect a community-based approach: combining digital tools, in-person events, and regional partnerships to ensure hazard information reaches a diverse population, including vulnerable residents such as seniors, farmworkers, and limited-English speakers.

3.6.2 Capabilities & Opportunities Assessment

To develop a realistic and actionable mitigation strategy, it must account for existing jurisdictional capabilities and what future opportunities there are to enhance those capabilities for purposes of hazard mitigation. This section provides an assessment of the City of Watsonville's existing capabilities and future opportunities, including planning and regulatory, administrative and technical, fiscal, and public outreach and education capabilities. This assessment also identifies opportunities to integrate this MJHMP into future planning, policies, or programs to weave mitigation efforts into daily operations and address hazard problems holistically. Capabilities are categorized into four groups and include various mechanisms.



- **Planning and Regulatory Capabilities:** Existing long-range plans, emergency response plans, hazard-specific plans, land use policies, and building and development standards.
- **Administrative and Technical Capabilities:** Available expertise in emergency services, engineering, grant management, and community planning.
- **Fiscal Capabilities:** Budgetary capacity, taxing authority, grants, and other funding mechanisms that can support mitigation projects.
- **Outreach and Education Capabilities:** Existing programs for providing technical assistance, community education, public warnings, and stakeholder engagement.

A full description of the process used to develop the capabilities assessment is provided in Volume 1, Section 2.3.3.

This capabilities and opportunities assessment for Watsonville lists the various types of capabilities along with how they have been, currently are, or will in the future be integrated into hazard mitigation planning efforts. The three “HMP Integration” columns that identify the capability’s status and usage are color-coded with green, yellow, or orange shading to communicate the following:

- **Status:** If the capability is present at all and what level of use it has generally.
- **Current Mitigation Use:** If the capability is currently being used in mitigation efforts, specifically, and at what level.
- **Future Opportunity:** If there is a future opportunity to integrate the capability into mitigation efforts and at what level.

CAPABILITY ASSESSMENT LEGEND
HMP Integration

Status	Current Mitigation Use	Future Opportunity
Currently in use or present.	Used widely for mitigation.	Opportunity to expand and integrate.
(Sort of) Seldomly used or limited presence.	Limited use in mitigation planning.	Limited opportunity to expand and integrate.
(No) Not present or available.	Not used in mitigation planning.	No opportunity to expand or integrate.



Table 3-14: City of Watsonville Capabilities Assessment

Resource	HMP Integration			Notes / Additional Detail
	Status	Current Mitigation Use	Future Opportunity	
Planning and Regulatory Capabilities				
Construction and Future Development Regulations				
Building Codes				City Municipal Code Title 8, Building Regulations, adopting the 2022 California Building Code (Part 2 of Title 24 of the California Code of Regulations)
Hazard-Related Development Standards				City Municipal Code Titles 9 and 14, Planning / Zoning, apply Coastal, Flood Protection, Seismic Safety, and Hillside zones and development standards; Title 8, Building Regulations, applies fire hazard standards
Zoning Ordinance				City Municipal Code Title 14, Zoning
Hazard-Specific Ordinance				City Municipal Code Titles 9 and 14, Planning / Zoning, apply Coastal, Flood Protection, Seismic Safety, and Hillside zones and development standards
Growth Management Ordinance				Urban Limit Line and annual development caps tied to the General Plan Land Use and Housing Elements
Hazard Reduction Programs (Annually Conducted)				
Capital Improvements Program (CIP) or Plan				2023-2027 CIP includes drainage, levee, and pump infrastructure upgrades in flood-prone areas
Erosion/Sediment Control Program				City Municipal Code Chapter 7-6, Excavations, Grading, Filling, and Erosion Control, and Public Improvement Standards Stormwater Post Construction Standards
Hazard-Related Public Outreach Program				Emergency preparedness outreach through Fire Department and County OES; some seasonal flood/fire awareness efforts
Urban Water Management Plan				2020 UWMP supports drought planning, conservation, and water reliability
Stormwater Management Program (Annual Inspections)				Classified as an MS4 operating under a NPDES permit; annual inspections conducted
Seismic Safety Program (Non-structural)				City Municipal Code Section 14-16.2300, Seismic Safety District, requires site-specific geologic reports within areas of known hazards
Earthquake Modernization Plan (Building Safety)				No specific soft-story or URM retrofit program; General Plan Safety Element addresses seismic hazards but no structured mitigation program currently
Hazard Plans				
General Plan Safety Element				Current General Plan Public Safety Element addresses hazards such as seismic, flood, and coastal
Site Plan Review Requirements				Site plan reviews enforced through City Municipal Code Title 14, Zoning, and CEQA review processes



HMP Integration

Resource	HMP Integration			Notes / Additional Detail
	Status	Current Mitigation Use	Future Opportunity	
General Plan Environmental Justice Element				No standalone element in current General Plan; to be integrated upon next update and through CAAP implementation
Community Wildfire Protection Plan (CWPP)				Covered under 2022 Santa Cruz County CWPP (WUI risk minimal within City limits)
Economic Development Plan				No formal plan, but priorities embedded in General Plan, Downtown Watsonville Specific Plan, and CAAP
Floodplain Management Plan				No formal plan, but City Municipal Code Titles 9 and 14, Planning / Zoning, apply Flood Protection development standards
Stormwater Management Plan				Watsonville Stormwater Management Plan under NPDES Phase II MS4 Permit; updated BMPs and outreach conducted annually
Emergency Operations Plan				2019 Emergency Operations Plan; participates in the Santa Cruz County Operational Area Plan
Climate Action Plan				2022 Climate Action & Adaptation Plan (CAAP) includes mitigation strategies for sea level rise, extreme heat, and wildfire smoke
Climate Vulnerability Assessment				Completed as part of 2022 CAAP; includes social vulnerability mapping, hazard exposure, and future climate projections
Urban Greening Plan				Community Forestry Project; tree canopy and nature-based stormwater infrastructure projects via CAAP
Ground Water Management Planning / Plans				2020 UWMP; City coordinates on groundwater recharge and water conservation; covered through Pajaro Valley Water Management Agency (PV Water)
National Flood Protection Program (NFIP)				
Floodplain Management Regulations				City Municipal Code Titles 9 and 14, Planning / Zoning, apply Flood Protection development standards
Flood Insurance Education and Technical Assist.				Public outreach through floodplain permitting process and website; no formal technical assistance program
Flood Insurance Study				Effective FEMA FIS adopted by reference in City Municipal Code Chapter 9-2, Floodplain Management
Elevation Certificates				Maintained by Engineering Division
Flood Hazard Mapping / Re-Mapping				Effective FEMA FIRMs adopted by reference in City Municipal Code Chapter 9-2, Floodplain Management
Community Rating System (CRS)				Joined October 1992; currently Class 8
Administrative and Technical				
Community Planning and Development Services				
Community Planner				Staff in Community Development Department



HMP Integration

Resource	HMP Integration			Notes / Additional Detail
	Status	Current Mitigation Use	Future Opportunity	
Planner/Engineer (Land Development)				Staff in Community Development and Public Works and Utilities Departments
Engineer/Professional (Construction)				Staff in Public Works and Utilities Department
Planner/Engineer/Scientist (Natural Hazards)				No dedicated staff; however, cross-trained planners and engineers support climate and flood planning
Transportation Planner				No dedicated staff; limited future opportunity
Resiliency Planner				No dedicated staff, but CAAP includes adaptation planning tasks
Building Official (Full time or Augmented)				Building Official housed in Community Development Department
Floodplain Administrator				Role fulfilled by Engineering staff
Fire Marshal				Fire Marshall housed in Watsonville FD administration; Planning Department manages plan review with consultant ensuring fire code compliance; inspections conducted by both Building and Fire Department staff
Dedicated Public Outreach Personnel				No dedicated staff; future opportunity
GIS Specialist and Capability				GIS Coordinator in Information and Technology Services Department, but limited capacity
Emergency Manager				Emergency services coordination housed in City Manager's Office; participates in County EOC functions
Dedicated Grant Manager, Writer, or Specialist				No dedicated staff; however, staff in Public Works and Finance manage grant applications when needed
Other	N/A	N/A	N/A	
Warning Systems and Services				
General				Participates in Santa Cruz County's regional emergency alert system CruzAware
Flood				CruzAware alerts
Tornado				CruzAware alerts
Wildfire				CruzAware alerts
Geological Hazards				CruzAware alerts
Fiscal Capabilities				
Financial Resources (for Hazard Mitigation)				
Levy Taxes for Specific Purposes				Watsonville can levy special taxes via voter approval (e.g., Measure G for police/fire)
Utilities Fees				Stormwater, solid waste, and water utility fees
Benefit Assessments				Not currently, future opportunity
Community Development Block Grants (CDBG)				Annual CDBG allocations for emergency response and ADA infrastructure



HMP Integration

Resource	HMP Integration			Notes / Additional Detail
	Status	Current Mitigation Use	Future Opportunity	
System Development Fee	Green	Green	Green	Collected on new developments to fund public improvements including stormwater and transportation
General Obligation Bonds to Incur Debt	Yellow	Orange	Green	Bond issuance is authorized but not currently used for hazard mitigation; may be considered for levee or drainage upgrades
Special Tax Bonds to Incur Debt	Yellow	Orange	Green	No special tax bonds for hazard mitigation; may be explored to fund specific flood mitigation
Withheld Spending in Hazard-Prone Areas	Yellow	Yellow	Yellow	No formal policies, but development is constrained in high-risk zones via zoning and development standards (e.g., floodplain)
Stormwater Service Fees	Green	Green	Green	Fees support drainage system maintenance and improvements per MS4 permit compliance
Capital Improvement Project Funding	Green	Green	Green	2023-2027 CIP includes drainage, levee, and pump infrastructure upgrades in flood-prone areas

Education / Outreach Capabilities

Education/Outreach Resources

Website Dedicated to Hazard Topics	Green	Green	Green	Emergency preparedness and hazard-specific webpages under City Manager, Public Works and Utilities, and Fire Department; opportunity to centralize content
Dedicated Social Media	Green	Green	Green	City posts emergency alerts and preparedness tips via Facebook, Instagram, and Twitter (X)
Local Citizen Groups That Communicate Hazard Risks	Yellow	Yellow	Green	Fire Safe Council of Santa Cruz County; partner organizations (e.g., PV Water, environmental NGOs) conduct limited outreach
Hazard Info. Avail. at Library/ Planning Desk	Orange	Orange	Green	Not currently, future opportunity
Annual Public Safety Events	Green	Green	Green	Watsonville Fire and Police host National Night Out, Preparedness Month, fire safety school visits, station tours, and other public safety activities
Ability to Field Public Tech. Assistance Requests	Yellow	Yellow	Green	Requests related to hazard information, code enforcement, and stormwater handled via general service request system
Public Safety Newsletters or Printed Outreach	Yellow	Yellow	Green	Limited seasonal outreach via flyers or mailers (e.g., storm prep), but no recurring hazard mitigation newsletter
Community Emergency Response Team (CERT)	Green	Green	Green	Has a city team through Santa Cruz County CERT program with local training options
Fire Safe Councils	Green	Yellow	Green	City is covered by Fire Safe Council of Santa Cruz County, but activity is limited in urban Watsonville
Firewise	Green	Green	Green	Only one Firewise community in Watsonville as of 2025; could pursue additional in hillside-adjacent zones
StormReady	Yellow	Yellow	Green	City does not participate, but Santa Cruz County is both StormReady and TsunamiReady



HMP Integration

Resource	HMP Integration			Notes / Additional Detail
	Status	Current Mitigation Use	Future Opportunity	
Resource Conservation Districts				Resource Conservation District of Santa Cruz County supports groundwater recharge, fire fuel management, and climate education
Other	N/A	N/A	N/A	



3.6.3 City of Watsonville Mitigation Action Plan

Watsonville’s mitigation actions were developed through a collaborative process informed by the updated risk assessment, local priorities, and extensive stakeholder engagement. As part of this 2025 MJHMP update, the City reviewed mitigation actions from its prior Local Hazard Mitigation Plan to determine which actions to carry forward, which to consolidate, and where entirely new strategies were required. This careful evaluation ensured that the updated action plan builds upon past commitments while also responding to current risks and future challenges.

The plan addresses Watsonville’s most significant hazards, including flooding, earthquakes, severe storms, drought, wildfire, extreme heat, and climate change. Each mitigation action is designed to align with FEMA’s hazard mitigation guidance and the requirements of the Disaster Mitigation Act of 2000. Where appropriate, overlapping or redundant actions were consolidated into broader, more comprehensive strategies that improve clarity, increase feasibility, and strengthen regional coordination.

The mitigation action prioritization method used by all participating jurisdictions is described in Volume 1, Section 4. Each action specific to Watsonville is documented in Table 3-15, which identifies the responsible department, implementation timeframe, potential funding sources, and resources required to complete the action. Each action is also assigned a unique alphanumeric identifier (see Figure 3-20) that links the strategy to its associated hazard and supports consistent monitoring and reporting.

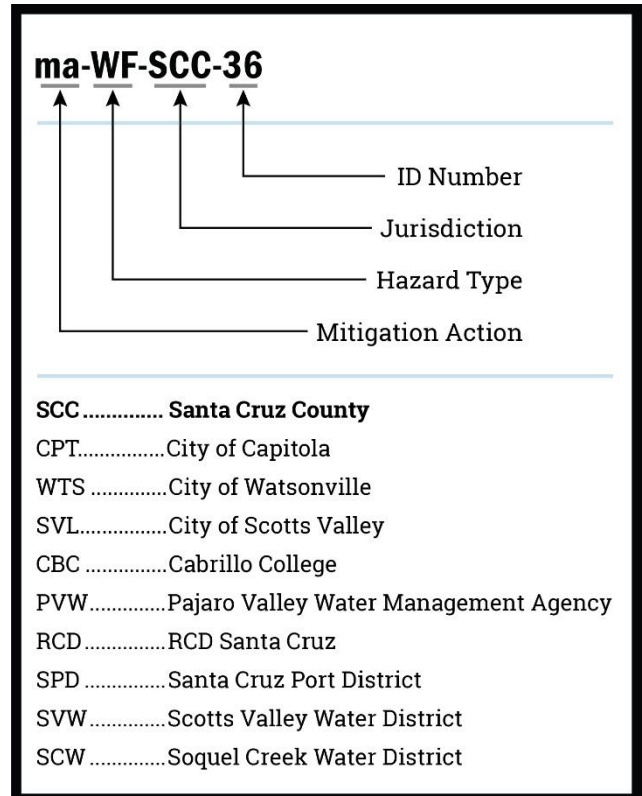


Figure 3-20: Mitigation Action Number Key

Watsonville’s approach recognizes that some hazards are most effectively addressed through regional efforts. Flood protection, drought resilience, and wildfire risk reduction often extend beyond the city’s boundaries and require collaboration with county, regional, and state partners. By aligning local actions with regional strategies, Watsonville helps to consolidate resources, maximize funding opportunities, and ensure that mitigation projects achieve the greatest benefit for the Pajaro Valley and the wider Santa Cruz County community.

Collectively, these mitigation actions provide a roadmap for reducing hazard risk, protecting vulnerable populations, and strengthening the long-term resilience of Watsonville.



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Table 3-15: City of Watsonville Mitigation Action Plan

Hazard	Action ID	Action Title	Description	FEMA Mitigation Alternative	Timeline	Responsibility	Cost	Benefit	Internal Funding Source	External Funding Source	Priority (Based on Criteria)	Problems Addressed
All Hazard	ma-AH-WTS-01	Emergency Center Activation Plan	Expand formal procedures and funding for activating, staffing, and advertising emergency centers for warming, cooling, or other sheltering needs during extreme weather and other hazard events.	PRV, PE&A	Short 1-3 Years	City Parks + County, City of Santa Cruz, and other regional partners	Low	High	General fund, staff Time	other state grants	High	ps-AH-SCC-08, ps-EH-SCC-02, ps-EH-SVL-05, ps-EH-WTS-04, ps-CC-SCC-05, ps-DF-SCC-03, ps-SW-SCC-03, ps-WW-SCC-01, ps-WW-SCC-02, ps-CC-WTS-01, ps-CC-WTS-03, ps-EH-WTS-02, ps-EH-WTS-03, ps-FL-WTS-01, ps-FL-WTS-02, ps-WF-WTS-02
Climate Change	ma-CC-WTS-01	Neighborhood Climate Resilience Program	Develop an enhanced multilingual and multigenerational outreach and assistance program to increase resilience through activities such as urban gardening, tree planting, and xeriscaping.	PE&A, PRV	Medium 3-5 Years	City Sustainability + County OR3, CBOs, HOAs, Community Advisory Committee, Promotoras	Low	High	Water Conservation Program, general fund, staff time	Measure Q	High	ps-CC-WTS-01, ps-CC-WTS-02, ps-CC-WTS-03, ps-DR-WTS-01, ps-DR-WTS-02, ps-DR-WTS-05, ps-EH-WTS-01, ps-EH-WTS-02, ps-EH-WTS-03, ps-FL-WTS-01, ps-SW-WTS-03
Drought	ma-DR-WTS-01	Drought-Resilient Storage & Reuse	Build new water tank and expand non-potable reuse systems to offset supply stress during droughts.	SP	Short 1-3 Years	City Water + DWR	High	High	Water fund, staff time	DWR Urban & Multi Benefit Drought Relief Grant	Low	ps-DR-WTS-03, ps-DR-SPD-03, ps-CC-WTS-02, ps-CC-WTS-03, ps-DR-WTS-01, ps-DR-WTS-02, ps-DR-WTS-04, ps-DR-WTS-05
Earthquake	ma-EQ-WTS-01	Retrofit High-Risk Buildings	Develop and implement an incentive-based retrofit program for unreinforced masonry and soft-story buildings, prioritized by occupancy and proximity to critical facilities.	PRV	Medium 3-5 Years	City Building + contractors	High	High	General fund, staff time (Limited)	CDBG	Medium	ps-EQ-SVL-04, ps-EQ-WTS-03, ps-EQ-WTS-07, ps-EQ-WTS-06, ps-EQ-WTS-01, ps-EQ-WTS-02, ps-EQ-WTS-06, ps-LQ-WTS-01
Earthquake	ma-EQ-WTS-02	Critical Infrastructure Seismic Hardening	Strengthen and stabilize critical facilities and infrastructure, including upgrading pipelines, drainage channels, storage tanks, reservoirs, roads, and bridges, based on vulnerability analysis. May include establishing backup power or enhancing communication systems.	SP, PPRO	Medium 3-5 Years	City Public Works and Utilities + utility and road partners	High	High	General fund, water fund, sewer fund, staff time	HMGP	Medium	ps-EQ-WTS-04, ps-EQ-WTS-05, ps-EQ-WTS-06, ps-LQ-WTS-01
Extreme Heat	ma-EH-WTS-01	Meet Urban Forest Master Plan Goals	Implement the Urban Forest Master Plan, Urban Greening Plan, and Climate Action Plan to achieve their goals, including reducing extreme heat impacts.	PRV, PE&A	Long 5-10 Years	City Parks + CBOs	Medium	High	General fund, staff time, Measure R	Measure Q, Prop 4, EPA	Medium	ps-EH-CPT-02, ps-EH-SVL-05, ps-EH-WTS-03, ps-CC-WTS-01, ps-CC-WTS-02, ps-CC-WTS-03, ps-EH-WTS-01, ps-EH-WTS-03
Flood	ma-FL-WTS-01	Green Stormwater Infrastructure	Expand stormwater BMPs and green infrastructure (e.g., raingardens, bioswales) in urban flood-prone areas, to retain stormwater and reduce the risk of flooding in adjacent or downstream areas. Integrate with climate change projections.	NRP, SP, PRV	Long 5-10 Years	City Public Works and Planning	High	High	Staff time, general fund, utility fund (when applicable)	Measure Q, Prop 4, EPA	Very High	ps-FL-SCC-07, ps-FL-SVL-04, ps-FL-WTS-04, ps-FL-WTS-05, ps-FL-WTS-06, ps-FL-WTS-07, ps-CC-WTS-02, ps-CC-WTS-03, ps-FL-WTS-01, ps-FL-WTS-02, ps-FL-WTS-08, ps-FL-WTS-09, ps-HR-WTS-01, ps-HR-WTS-02, ps-SW-WTS-01
Flood	ma-FL-WTS-02	Critical Facility Floodproofing	Elevate, floodproof, or relocate the wastewater treatment plant, police station, and emergency shelters located within the 1% annual chance floodplain.	PPRO, SP	Medium 3-5 Years	City Public Works and Utilities + County	High	High	Sewer fund, staff time	HMGP	High	ps-FL-CPT-04, ps-FL-WTS-03, ps-CC-WTS-03, ps-FL-WTS-04, ps-FL-WTS-06
Heavy Rain	ma-HR-WTS-01	Culvert & Drainage Retrofit Program	Upgrade culverts in flood prone areas and implement green infrastructure drainage solutions, using both nature-based and structural solutions where appropriate, to reduce localized flooding.	SP, PPRO	Medium 3-5 Years	City Public Works + Caltrans, County	High	High	Staff time, general fund, utility fund (when applicable)	Measure Q, Prop 4, EPA	Very High	ps-HR-WTS-01, ps-HR-SCC-01, ps-HR-SVL-02, ps-CC-WTS-02, ps-CC-WTS-03, ps-FL-WTS-04, ps-FL-WTS-06, ps-FL-WTS-07, ps-FL-WTS-08, ps-FL-WTS-09, ps-HR-WTS-02, ps-SW-WTS-01, ps-SW-WTS-02

Hazard	Action ID	Action Title	Description	FEMA Mitigation Alternative	Timeline	Responsibility	Cost	Benefit	Internal Funding Source	External Funding Source	Priority (Based on Criteria)	Problems Addressed
High Wind	ma-HW-WTS-01	Utility High Wind Corridor Assessment & Microgrid Pilot	Identify high-risk corridors and coordinate with utility providers to bury or harden power and communication lines and poles in high-risk corridors prone to wind damage. Invest in energy redundancy through piloting microgrid development.	SP, PPRO	Long 5-10 Years	City Public Works and Utilities + PG&E and other utility providers	High	High	Enterprise funds when applicable, staff time, general fund	PG&E Vegetation Management Partnership; FEMA HMGP; Cal Fire	Low	ps-HW-CBC-01, ps-HW-SVL-01, ps-HW-SVL-03, ps-CC-WTS-02, ps-CC-WTS-03, ps-SW-WTS-01, ps-SW-WTS-02
Slope Failure	ma-SF-WTS-01	Landslide Hazard Inventory & Mapping	Update slope stability and landslide risk maps to reflect local geology and rainfall trends.	PRV	Medium 3-5 Years	City Public Works and Planning + consultants	Medium	High	Staff time, general fund	FEMA	Medium	ps-SF-WTS-03, ps-SF-WTS-01, ps-SF-WTS-02, ps-SF-WTS-03
Slope Failure	ma-SF-WTS-02	Hillside Stabilization & Drainage Improvements	Conduct outreach to owners of high-risk properties to install slope stabilizing drainage and vegetation controls in western/northern neighborhoods.	PPRO, SP	Short 1-3 Years	City Planning + County OR3, RCD, CDFA, NRCS	Medium	High	Staff time, general fund	HMGP Cal Trans	Medium	ps-SF-WTS-01, ps-SF-CPT-02, ps-SF-WTS-02, ps-SF-WTS-03
Wildfire	ma-WF-WTS-02	Evacuation Education & Awareness	Create targeted multilingual and multigenerational outreach for mitigation resources, evacuation routes, and wildfire response in vulnerable WUI neighborhoods.	PE&A	Long 5-10 Years	City Police + County OR3, CERT, CBO partners	Medium	Medium	Staff time,	HMGP CAL FIRE CalOES	Medium	ps-WF-SVL-01, ps-CC-WTS-02, ps-CC-WTS-03, ps-WF-WTS-01, ps-WF-WTS-03
Wildfire	ma-WF-WTS-01	Establish Defensible Space Program	Establish defensible space inspection program and ensure compliance with clearing around critical facilities and infrastructure sites.	PRV, NRP, PPRO	Short 1-3 Years	City Fire and Public Works + CAL FIRE, County OES	Medium	High	Staff time	HMGP, CAL FIRE, CalOES, Prop 4, Measure Q	Low	ps-WF-CBC-02, ps-CC-WTS-02, ps-CC-WTS-03, ps-WF-WTS-01, ps-WF-WTS-02, ps-WF-WTS-03



3.6.4 Status of Previous Mitigation Actions

In 2020, the City of Watsonville adopted its previous FEMA-approved HMP. This 2025 MJHMP represents a comprehensive update from that previous plan, as discussed in Volume 1, Section 1.5. Table 3-16 provides status updates for the previous City Mitigation Action Plan, from which many of the mitigation actions in Table 3-15 were sourced and revised.

Table 3-16: Status of 2020 City of Watsonville Mitigation Actions

Action ID	Description	Status
1	Develop and implement seismic retrofit program options for home and business owners, including through public-private partnerships	Combined and revised into ma-EQ-WTS-01
2	Strengthen and stabilize public facilities and infrastructure, including but limited to nonreinforced masonry buildings, nonductile concrete buildings and facilities, storm lines, sloughs, storm culverts, channels, streets, and bridges	Combined and revised into ma-EQ-WTS-02, ma-HR-WTS-01
3	Structural improvements to earthen reservoirs	Combined and revised into ma-EQ-WTS-02
4	Protect roads, including in downtown and green valley corridors	Combined and revised into ma-EQ-WTS-02
5	Develop an eave construction program for homes	Combined and revised into ma-WF-WTS-01
6	Develop or improve defensible space for critical facilities, including wells, pump stations, reservoirs, booster tanks, and filter plant	Combined and revised into ma-WF-WTS-01
7	Assess and develop a plan to implement a 100-foot buffer for sloughs within City limits	Combined and revised into ma-FL-WTS-01
8	Develop or improve stormwater system BMPs, including but not limited to flood attenuation ponds, bio-retention, detention basins, gutters, storm drain inlets, culverts, culvert outfalls, bio swales, catch basins, and storm outfall dissipaters	Combined and revised into ma-FL-WTS-01, ma-HR-WTS-01
9	Develop and implement watershed improvements and habitat enhancements for sloughs, storm culverts, and channels	Combined and revised into ma-FL-WTS-01, ma-HR-WTS-01
10	Protect (elevate, armor, or relocate) critical infrastructure, facilities, and systems from sea level rise, including but not limited to pump stations, wells, and the wastewater treatment facility	Combined and revised into ma-FL-WTS-02
11	Promote and sponsor programs to buy out, relocate, elevate, and flood-proof existing flood-prone structures	Cancelled, ongoing baseline mitigation activity
12	Assess and increase the development and use of community gardens to support local food production, including through partnerships	Combined and revised into ma-CC-WTS-01



Action ID	Description	Status
13	Develop and implement upgrades to City properties and facilities with features that would improve stormwater runoff, provide water saving opportunities, and incorporate low-impact development strategies—all moving toward a more green infrastructure	Combined and revised into ma-FL-WTS-01
14	Develop and implement natural resource protection and management policies and programs, including tree planting programs, monitoring of invasive species, and support for native plants	Combined and revised into ma-CC-WTS-01, ma-FL-WTS-01
15	Develop redundancy in communications systems for water, storm pump stations, sewer lift stations, and critical airport facilities	Combined and revised into ma-EQ-WTS-02
16	Conduct a flood outreach program, including increased signage in flood-prone areas and improvements to the Flood Alert System	Cancelled, ongoing baseline mitigation activity
17	Develop community empowerment programs that promote hazard mitigation leadership and action	Combined and revised into ma-WF-WTS-02
18	Develop and implement energy efficiency policies and programs, including through public-private partnerships	Combined and revised into ma-CC-WTS-01
19	Develop and implement policies and programs that increase investments in local energy production, distribution, and storage, including through microgrid development	Combined and revised into ma-HW-WTS-01
20	Assess and provide backup power for critical infrastructure and facilities, including but not limited to wells, pump stations, reservoirs, booster tanks, and traffic control facilities	Combined and revised into ma-EQ-WTS-02, ma-HW-WTS-01
21	Assess the vulnerability of public facilities, infrastructure, and structures to seismic risk	Combined and revised into ma-EQ-WTS-01, ma-EQ-WTS-02
22	Develop an inventory of private structures and identify the types that are at greatest seismic risk	Combined and revised into ma-EQ-WTS-01, ma-EQ-WTS-02
23	Evaluate current policies that relate to stormwater and flood control to accommodate and mitigate expected future impacts to property, infrastructure, and community well-being	Combined and revised into ma-FL-WTS-02
24	Develop and implement a drought plan that includes monitoring groundwater levels and supply and increasing aquifer storage and recovery	Combined and revised into ma-DR-WTS-01
25	Assess current capacity of food banks and develop strategies to increase their functionality during disasters	Combined and revised into ma-FL-WTS-02
26	Trains and prepares City employees with the skills needed to properly manage any natural disaster or major critical incident	Cancelled, ongoing baseline mitigation activity