2023 - 2028

Local Hazard Mitigation Plan

City of Corona, CA

Corona Fire Department

Emergency Services Division

City of Corona, CA

Corona Fire Department

Emergency Services Division

Contact Information

City of Corona

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PLAN ADOPTION AND RESOLUTION

The City of Corona will submit plans to the Riverside County Emergency Management Department (EMD) who will then forward the plans to the California Governor's Office of Emergency Services (Cal OES) for review prior to being submitted to the Federal Emergency Management Agency (FEMA). In addition, we will wait to receive an "Approval Pending Adoption" letter from FEMA before taking the plan to our local governing bodies for adoption. Upon approval, the City of Corona will insert the signed resolution into this publication.

EXECUTIVE SUMMARY

The purpose of this Local Hazard Mitigation Plan (LHMP) is to identify the City's hazards, review and assess past disaster occurrences, estimate the probability of future occurrences, and set goals to mitigate potential risks to reduce or eliminate long-term risks to preserve and protect life, property, and the environment from NATURAL HAZARDS.

The plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 to achieve eligibility and potentially secure mitigation funding through FEMA's Flood Mitigation Assistance, Pre-Disaster Mitigation, and Hazard Mitigation Grant Programs.

Riverside County's continual efforts to maintain a disaster-mitigation strategy is on-going. Our goal as the City of Corona is to develop and maintain an all-inclusive plan to include all jurisdictions, special districts, businesses, and community organizations to promote consistency, continuity and unification throughout the county and City.

The County's planning process followed a methodology presented by FEMA and Cal OES which included conducting meetings with the Operational Area Planning Committee (OAPC) coordinated by Riverside County EMD comprised of participating Federal, State, Local, Tribal, and Territorial (SLTT) governmental bodies and local jurisdictions agencies, special districts, school districts, non-profit communities, universities, businesses, and public.

The plan identifies vulnerabilities, provides recommendations for prioritized mitigation actions, evaluates resources, identifies mitigation shortcomings, provides future mitigation planning, and maintenance of the existing plan.

The plan will be implemented upon FEMA approval.

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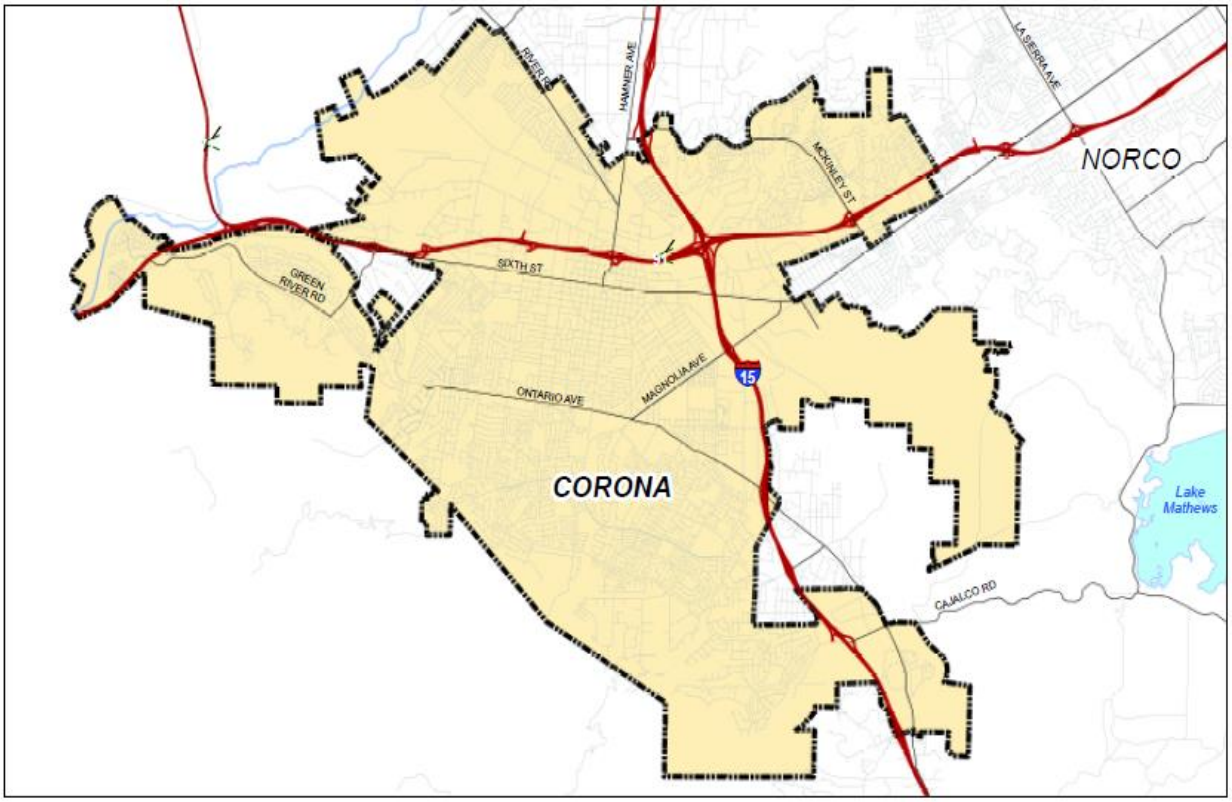
1.1 CITY OF CORONA MAP



1.2 GEOGRAPHY AND CLIMATE DESCRIPTION

The City of Corona is located approximately 45 miles southeast of Los Angeles in western Riverside County. It is in a valley, framed by forests and mountains, and the Prado Basin. Original settlements in the area focused on development within and adjacent to Grand Boulevard. As the City grew, the geographic limitations imposed by the Cleveland National Forest to the south and the Prado Basin to the northeast created natural barriers that confined the City.

Corona is bordered by the City of Norco to the north, the City of Riverside to the east, and other Riverside County cities to the west and south.

The City limits encompass 39.2 square miles and the population is approximately 161,823 (according to the United States Census Bureau's assessment in July 2021). Corona, a City whose heritage spans more than a century, has emerged as an ethnically diverse community, where a significant percentage of the population is made up of young and well-educated families.
The City's community boasts many amenities that provide a first-rate quality of life for its residents. It also has more than 394 acres of parks that include sports fields, basketball courts, playgrounds, tennis courts, two skate parks, and an outdoor pool.

Two major freeways and one railroad transect Corona. The Riverside Freeway (SR-91) runs east and west directly north of the City's center, Interstate 15 (I-15) runs north and south near the eastern edge of the City, and the railroad parallels SR-91. These corridors act as major transportation routes to the economic center of Orange County from the Inland Empire.

Two geographical areas are within the boundaries of the City of Corona General Plan Planning Area: lands within the City's corporate limits and lands within its Sphere of Influence (SOI). The City currently includes 39.2 square miles, plus 34.3 square miles in Riverside County designated as being within the SOI.

The SOI was defined by the City, the Southern California Association of Governments (SCAG), and the Riverside County Local Agency Formation Commission (LAFCO). It represents the areas likely to be served by and potentially annexed to the City. The SOI includes three geographically distinct areas including the West, East, and South Spheres. The West Sphere encompasses three geographic areas: the Prado Basin, Coronita, and the Foothill Area. The East Sphere includes the areas of Home Gardens, Eagle Valley East, and El Cerrito. Additionally, the Temescal Canyon makes up the South Sphere.

The City of Corona Planning Area is within the South Coast Air Basin of California (SCAB). The Air Basin is a 6,600-square mile area encompassing the non-desert portions of Riverside, Los Angeles, and San Bernardino Counties as well as all of Orange County. Bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, the South Coast Air Basin is an area of high air pollution potential.

The climate of the SCAB is dominated by the strength and position of the semi-permanent high-pressure center over the Pacific Ocean near Hawaii.

It creates the climate conditions typical of Southern California, (i.e., relatively cool summers, mild winters, infrequent rainfall, cool daytime sea breezes, comfortable humidity, and ample sunshine). Periods of extremely hot weather, winter storms, or Santa Ana wind conditions interrupt this pattern. Unfortunately, the same atmospheric processes that create the desirable living climate can combine to restrict the ability of the atmosphere to disperse the air pollution generated by the region's population.
The location of the Planning Area (east of the Chino Hills and Santa Ana Mountains) insulates it from the moderating effect of the ocean. Average summertime high temperatures range between about 85 to 92 degrees Fahrenheit from June through September, and average wintertime low temperatures are generally near 40 degrees in the months of December and January. Rainfall is highly variable and confined almost exclusively to the winter months. Rainfall in Corona averages about 12.6 inches annually. Temperatures and precipitation in Corona tend to vary more dramatically than other coastal areas of the basin.

Predominating winds travel from the ocean, across the urbanized coastal areas of Orange and Los Angeles Counties, to Corona through the Santa Ana River Canyon. The canyon acts as a funnel for air masses moving across the basin. Daytime winds are typically channeled through the canyon to create steady, abnormally high (greater than 12 mph) wind velocities from the west. Typical nighttime conditions reverse, and light winds (less than 1 mph) drift back towards the ocean. Exceptions to this pattern occurs when a high-pressure center forms over the western United States and creates the strong, hot, dry, gusty Santa Ana winds, which move through Corona from the eastern deserts into the canyon.

1.3 BRIEF HISTORY OF CORONA

Corona's historic resources are those physical elements, both structural and natural, which define the City's past. They help give the City its unique identity, charm, and orientation. These resources, when well preserved and maintained, provide the community with a sense of permanence, which fosters civic pride and stewardship among its residents and businesses. Information describing the historic and cultural resources were derived from the 2000 Riverside County Integrated Project (RCIP).

Corona's history has evolved on behalf of Native American inhabitation, missionary influence, agricultural development, and eventual rapid urbanization. The City's growth and development is typical of many other areas in Southern California.

In the early 1700s, prior to the arrival of the Spanish, the Gabrieleno and Luiseno Native American Tribes occupied the Corona area. These indigenous peoples used the hot waters in the Temescal Canyon for bathing and religious ceremonies.

Current residents and visitors still enjoy the rejuvenating mud baths and hot springs at the Glen Ivy Springs Resort. Luiseno religious ceremonies were strictly followed and remnants of some of their artistic pictographs and petroglyphs can still be found on rocks in undeveloped areas.

In the early 1800s, the agricultural and cattle ranching base developed, and portions of Corona became part of the Mexican land grant program (i.e., Rancho La Sierra Yorba, Rancho Jurupa, Rancho El Rincon, and Rancho El Sobrante de San Jacinto). With the Treaty of Guadalupe Hidalgo signed in 1846, Mexico ceded the Corona area as part of California to the United States. The Yorba, Serrano, Sepulveda, Cot, and Botiller families' ranched sheep and cattle on the original ranchos in the area. Remnants of the Serrano tanning vats are still found on Old Temescal Canyon Road. In 1849, the California gold rush brought prospectors, settlers, and new developments to Southern California.

In 1886, developer Robert Taylor persuaded his partners: Rimpau, Joy, Garretson, and Merrill to form the South Riverside Land and Water Company. Together they raised approximately $110,000 to purchase approximately 12,000 acres of agricultural land. Taylor realized the importance of water for the soon to be developed community and additional funds were used to ensure that sufficient water rights were obtained. Taylor hired Anaheim engineer H. C. Kellogg to design a circular Grand Boulevard three miles round.

Early residents used to parade their fancy buggies on this circular street which enclosed the main functions of the community: schools, churches, residences, and stores. To the north along the railroad tracks were the manufacturing plants and packing houses. The southern end of town featured the citrus industry, and the mining companies were established just outside the City's southeastern and eastern City limits.

The developers initially named their development South Riverside after the successful citrus community of Riverside located nearby. Almost all the new settlers planted orange and lemon trees in hopes of gaining future profits.

New groves continued to spring up and by 1912 there were 5,000 acres of established orange and lemon groves. By 1913, Corona shipped more fruit than any other town in Southern California. In 1961, citrus was still considered the backbone of Corona's economy and the largest source of revenue. In that year, citrus covered 7,500 acres. The labor force fluctuated between 400 and 1,800 workers at the peak of the harvest.

An additional 500 people worked at the Exchange Lemon Products Plant. By 1982, Corona's agricultural industry faced a bleak future as production costs made the economics of farming financially unsuccessful. Plans then began to change to replace the groves with approximately 12,500 dwelling units.

On July 13, 1896, residents voted to incorporate and change the name of the community to Corona, which is Spanish for crown, in honor of the City's circular Grand Boulevard. By 1900, the population had reached 1,434 people.

On September 9th, 1913, in observance of California's Admission's Day, Corona residents celebrated with an international automobile race on the Boulevard. The event attracted auto racing greats such as Ralph DePalma, Barney Oldfield, Terrible Teddy Tetzlaff, and Earl Cooper. More than 100,000 people came to the town to watch Cooper win the race and a prize of $8,250. It was so successful that races were held again in 1914 and 1916. The demise of the Corona Road races was due not only to tragic deaths, which occurred in 1916, but also because of the cost and local effort needed to continually stage such an extravagant event.

1.4 DESCRIPTION OF CORONA'S ECONOMY

Corona continues to maintain its position as the premier location for businesses looking to relocate and expand. Corona's geographic position attracts a highly educated labor force. Vacancy rates in industrial, commercial, and office properties all declined in 2022, with many companies returning to in-person work.
Industrial vacancy rates dropped even lower to 1.0%, retail vacancies dropped to 5.2%, and office vacancy rates steadily declined to 7.5%.

Taxable sales in Corona totaled just over $900 million in the fourth quarter of 2020, down 6.3% from the previous year. This is a more modest decline relative to Los Angeles County (-8.9%) and Orange County (-7.4%), but it contrasts with the growth in Riverside County (3.9%) and San Bernardino County (6.2%). From the first quarter of 2020 to first quarter of 2021, the pandemic led to a surge in spending in some categories. E-commerce surged during the pandemic, with spending up 43.4%.

Demographically, Corona benefits from a young median age, higher education levels, higher median incomes, and higher home values compared to Riverside County and other areas in California. As a thriving inland community, Corona is home to young families comprised of 48,905 households averaging 3.25 persons each, with a median age of 38.3. Annual median household income is $92,606 and 76% of the population age 25 and up possess a high school diploma or higher according to U.S. Census. Median home prices continue to improve with median values more than $620,600.

New industrial development, business expansions, and relocations to Corona have helped to stabilize Corona's job market, despite economic impacts related to the global pandemic. Job growth in Corona reported a 10% increase with employment numbers increasing to 86,700 in the first quarter of 2022.

Major contributors to local economic growth are the construction, health care, and finance industries, in addition to the fast-growing professional, management, and technology sectors in previous years. Job growth will be continuing to be fueled by the 1.8 million square feet of industrial development recently completed or under construction, and the recent completion of 147,000 square feet of Class A offices. The strong local job market keeps the unemployment rate in Corona at 3%, which is approximately 1% below the Riverside County average as of Fiscal Year 2021. Fiscal Year 2022 continued to see an expanding housing market with increased median home prices and average rents for multi-family communities.

With limited opportunities for large-scale new development, Corona continues looking for opportunities to redevelop and expand currently underutilized properties. Through its ongoing commitment to stimulate the local economy and expand its labor force, the City of Corona will continue to be the premier inland Southern California City to live, work, and play.

Nationwide, the economy has continued to show strong recovery from early COVID-19 pandemic shutdowns. The national unemployment rate was 3.6% at the end of Fiscal Year 2022 and increased to 3.7% in the first quarter of Fiscal Year 2022. However, national economic performance does not directly translate to improved or hindered financial condition for local governments, nor opportunities to fund more services. As an example, a rise in home prices does not directly correlate to the City collecting more in property taxes. With Proposition 13, property tax is capped at 1%, and the property's taxable value cannot increase more than 2% per year. At the same time, the increase in fixed cost for operating City government has outpaced its revenue growth.

Figure 1.4.1 – City of Corona Workforce

OFFICE OF ECONOMIC DEVELOPMENT

WORKFORCE

Workforce at a Glance

- 89,600 labor force
- More than 29% of adults ages 25+ achieved a bachelor's degree or higher
- 43 college campuses within a 40 mile radius
- 94% high school graduation rate
- 16.2% of jobs are in manufacturing

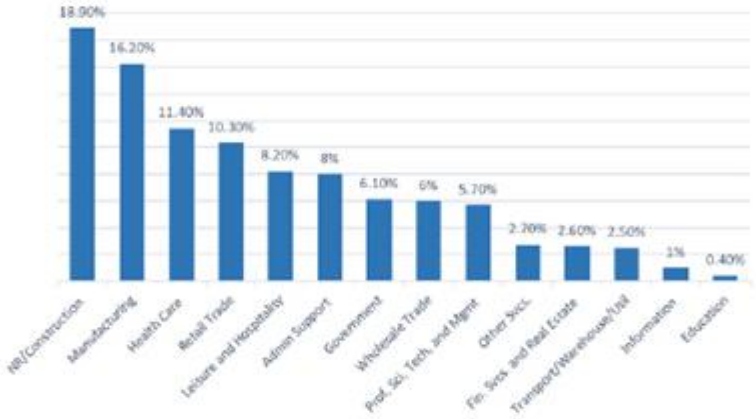
Total Labor Force

	Job Base	Unemployment
2022 Ann. Avg.	88,900	3.2%

Commuting Pattern

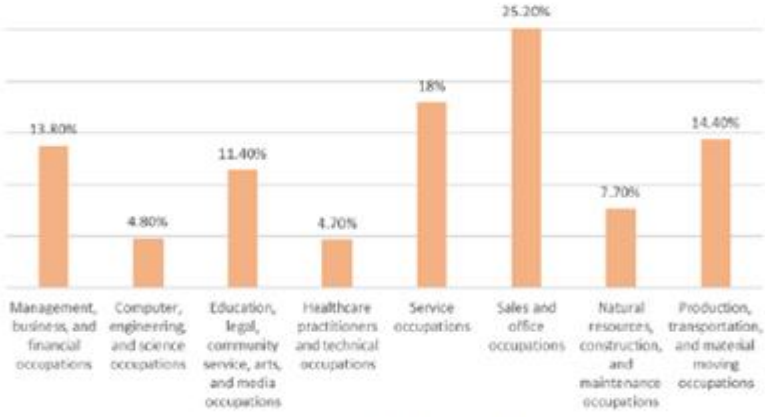
Average Commuting Time: 38 minutes
Source: American Community Survey

Employment by Industry



Source: California Employment Development Department; Analysis by Beacon Economics

Employment by Occupation



Source: U.S. Census Bureau, American Community Survey

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1.5 POPULATION AND HOUSING

In a little over a century, the City has evolved from a small town of 1,434 people with deep agricultural roots to a dynamic, diverse community of more than 161,823 people**.** At the turn of the millennium, Corona's growth had been among the highest in the United States. It's vast agricultural areas at the base of the Santa Ana Mountains, La Sierra Hills, and Chino Hills that is centered on a single place of business and civic identity, has evolved to a suburban community of multiple neighborhoods and centers of commerce and employment. Based on estimates from the California Department of Finance, the City's housing units has increased to 50,287 in 2023, an increase of approximately 2,223 units.

The City has been of the fastest growing cities in the United States during the past several decades. As of 2018, only a small percentage of the City's lands remain vacant and may be considered for development. The pace of future growth is likely to slow and occur on the limited vacant lands on the periphery of the City's existing urban development and the smaller remaining parcels within this pattern.

Population Growth and Projected Growth

	2010	2020	2045	% Change 2010-2020	% Change 2020-2045
Corona	152,374	168,332	187,534	9.9%	10.79%
Riverside County	2,203,332	2,383,286	3,252,000	8%	36%

Source: US Census Bureau 2010; CA Department of Finance, E-1 Population Estimates for Cities, Counties, and the State with Annual Percent Change – January 1, 2019, and 2020; SCAG Demographics and Growth Forecast, 2020.

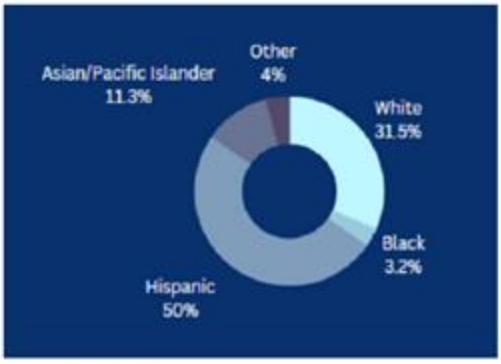
OFFICE OF ECONOMIC DEVELOPMENT

DEMOGRAPHICS

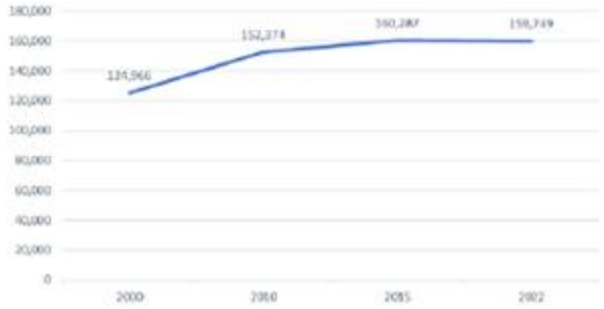
Leading Employers

Company	Employment
Corona-Norco Unified School District	4,807
Fender USA Corona	1,215
Corona Regional Medical Center	1,096
Monster Energy	900
City of Corona	824
TWR Framing Enterprises	725
All American Asphalt	650
Veg Fresh Farms	629
Kaiser Permanente	450
Thermal Structures	404

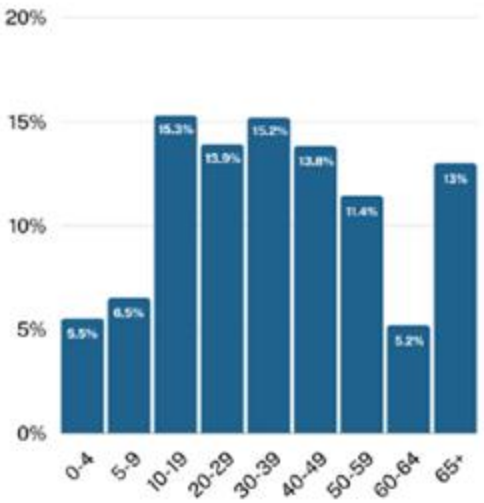
Race/Ethnicity



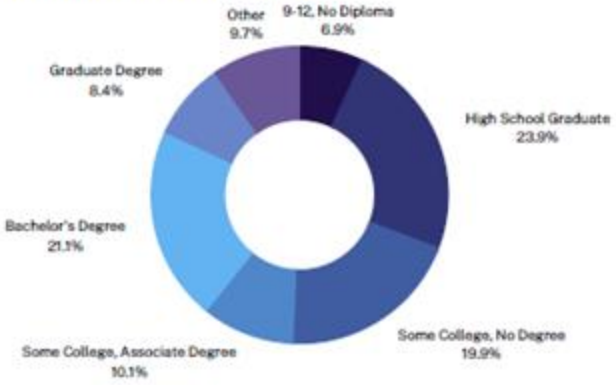
Population Growth



Age Distribution



Education Attainment



Source: Department of Finance

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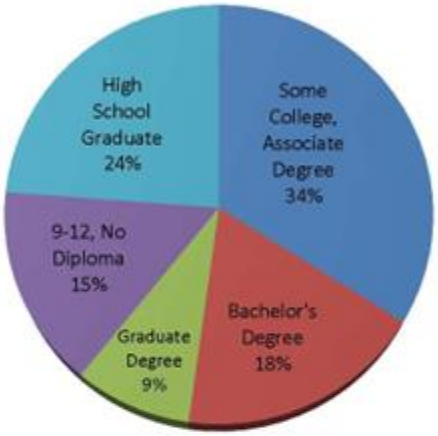
TEAM CORONA

Demographics

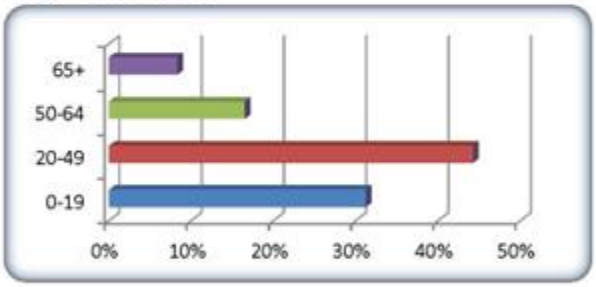
Leading Employers

Company	Employment
Corona-Norco Unified School District	5,098
Corona Regional Medical Center	1,113
Kaiser Permanente	995
All American Asphalt	842
City of Corona	749
Fender USA	600
TWR Framing	600
Monster Energy	544
Thermal Structures	500
CoreMark International	421
Dart Container Corp.	420
Veg-Fresh Farms	350
U.S. Food Service	320
Circor Aerospace	300
Advanced Flow Engineering	154

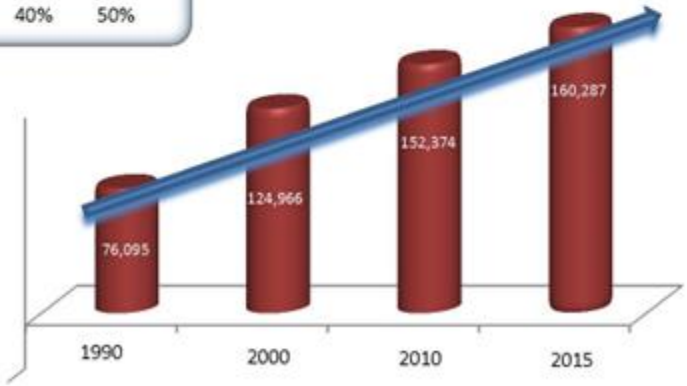
Education Attainment



Age Distribution



Population Growth



Ethnic/Race Breakdown

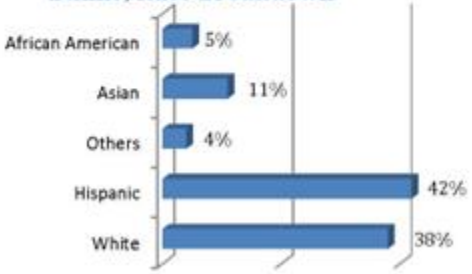


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Figure 1.5.1 – City of Corona Demographics

The data used in this section comes from the most comprehensive Esri forecasts for 2023 and 2028. US Census Bureau 2000 and 2010 Decennial census data converted by Esri into 2020 geography.

Corona the city has seen a population growth from the previously estimated population of 152,530 in the 2010 Census to the population estimate of 158,567 in 2023 an increase of 6,037 residents. Refer to Table 1-1: Basic Demographic and Housing for Corona.

Table 1-1: 2023 City of Corona Basic Demographics and Housing

Total population	**158,567**
Percentage of residents over 18	74.5%
Percentage of residents (65+)	11.1%
Median age (years)	34.4
Total households	**49,087**
Owner occupied units	63.5%
Renter-occupied units	33.6%
Per Capita Income	$39,578
Median Home Value	$605,453

Source: 2023 Esri Community Profile

Table 1-2: 2023 City of Corona Racial Composition

Race or Ethnicity	Population	Percentage
Hispanic Origin	76,112	48.0%
White	51,534	32.5%
Asian	19,662	12.4%
Black or African American alone	8,879	5.6%
American Indian and Alaska Native	1,907	1.6%
Native Hawaiian and Other Pacific Islander	473	0.4%
Total	**158,567**	100.00%

Source: 2023 Esri Community Profile

1. 6 TRENDS AND LAND USE

Corona's residential market continues to boom. Included in future planned construction are three new housing developments that will be adjacent to high fire hazard severity zones.

New single-family housing developments include Sierra Bella, a new family community consisting of 237 single family homes and Bedford South Corona, which will add more than 1,500 single family units once complete along with Corona's newest retail development, Bedford Marketplace. Both developments are under construction, with some homes complete and occupied by new homeowners.

Several proposed condominium developments are in various stages of plan check or construction including 109 attached units on the east side of Temescal Canyon Road and Dos Lagos Drive.

Corona has grown since the 2018 LHMP, this growth will increase Corona's vulnerabilities.

Figure 1.6.1: Responsibilities within City of Corona

JURISDICTION: CITY OF CORONA	DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES?		
	2018 DATA		2023 DATA
Current Population in Jurisdiction or Served	155,751	Projected Population in Jurisdiction or Served - in 2028	160,941
Current Sq. Miles in Jurisdiction or Served	39.2	Projected Sq. Miles in Jurisdiction or Served - in 2028	39.2
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	If yes, please list ordinance or regulation number. Ordinance No. 2429, 1973, 2077 Corona Municipal Code Chapters 2.52, 3.36, 4.04.80, 7a, 15.12.270 Section 705	
What is the biggest issue next 5 years	Economy and Infill/compact development		
Approximate Number of Homes/Apts/etc.	48,930	Projected Number of Homes/Apts/etc.- in 2023	50,580
Approximate Total Residential Value	$17.0 billion	Projected Residential Total Value - in 2023	$19.0 billion
Approximate Number of Commercial Businesses	9,000	Projected Number of Commercial Businesses - in 2023	12,000
Approximate Percentage of Homes/Apts/etc. in flood hazard zones	0.7%	Approximate Percentage of Homes/Apts/etc. in flood hazard zones - in 2023	1.0%
Approximate Percentage of Homes/Apts/etc. in earthquake hazard zones	3.5%	Approximate Percentage of Homes/Apts/etc. in earthquake hazard zones - in 2023	4.1%
Approximate Percentage of Homes/Apts/etc. in wildland fire hazard zones	6.55%	Approximate Percentage of Homes/Apts/etc. in wildland fire hazard zones - in 2023	7.2%
Approximate Percentage of Commercial Businesses in flood hazard zones	0.7%	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2023	3.7%
Approximate Percentage of Commercial Businesses in earthquake hazard zones	0.3%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2023	0.67%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	0	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2023	0
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	0	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2023	0
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	2	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2023	2
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	7	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2023	7
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	If not, how will your jurisdiction do plan maintenance?	N/A
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?	Yes		

Addresses of 4710 – 4740 Green River: Properties in High Fire Severity Zones in Corona.

4225 -4375 Prado and 4180-4350 Green River: Properties in High Fire Severity Zones in Corona.

CHAPTER 2 - PLANNING PROCESS

2.1 LOCAL PLANNING PROCESS

The 2023 LHMP seeks to identify where Corona can take reasonable actions to minimize the adverse effects and dangers posed by catastrophic events before they occur. Despite the City's efforts to reduce the potential for damage and harm while increasing readiness to respond to such circumstances, the potential for significant injury and damage arising from natural disasters remains.

The 2023 LHMP update was a review and update to align with the six-step planning process and incorporate updated information across the plan. Many of the 2018 LHMP sections were revised in their order within the update.

- Identify the core planning team.
- Situation Status
- Determine the goals and objectives.
- Develop the LHMP
- Prepare the plan.
- Implementation.

The local planning process included:

- Contact standing LHMP (City Department) employees and request a review of the current 2023 LHMP.
- Meet with City staff to discuss and assign LHMP tasks.
- Update and revise LHMP.
- Post ongoing drafts of the revised plan for public review and comments.

Multiple City departments contributed to the update of the 2023 Local Hazard Mitigation Plan. Personnel involved included senior management and staff from the Fire Department, Police Department, Community Development, Public Works, Administrative Services, Department of Utilities, Management Services, Maintenance Services, Library and Recreation, Information Technology, City Clerk, Legal, and Risk Management. The group also includes civil engineers, planners, building officials, City clerks, public information officers (PIO), Geographic Information System (GIS) administrator, accountants, managers, emergency managers, analysts, and fire and police officials.

- 10/12/22: Local LHMP Planning Meeting
- 12/13/22: Internal LHMP Planning Meeting (Emergency Management)
- 1/18/23: Local LHMP Planning Meeting
- 1/19/23: Internal meeting with partners to discuss all sections of the LHMP.
- 1/24/23: Coordination meeting with Police Dispatch Manager to discuss LHMP strategies, hazards, and risk assessments.
- 2/12/23: Launched updated public facing LHMP Review and Feedback Site where plan has remained active for public comment.
- 2/14/23: Coordination meeting with Public Works to discuss mitigation. strategies for local streets and roads, movement, and to reduce areas with large amounts of congestion.
- 2/15/23: Coordination meeting with Economic Development Administrator to discuss the following:
    - Community Profile
    - Demographics
    - Job Outlooks
    - Business Projections into 2028
    - Strategic Planning Efforts for Corona
- 4/12/23: Newsletter and Social Media updates
- 5/10/23: LHMP presentation for Police and Amateur Radio Working Group

Table 2.1.1 Local Hazard Mitigation Planning Team

HAZARD MITIGATION PLANNING TEAM		
DEPARTMENT/DIVISION/FUNCTION	**NAME**	**TITLE**
City Manager's Office	Justin Tucker	Assistant City Manager
Legal and Risk Management Office	Dean Derleth	City Attorney
City Clerk's Office	Sylvia Edwards	City Clerk
Planning and Development Department	Joanne Coletta	Planning and Development Director
Planning and Development Department	Sandra Yang	Senior Planner
Fire	Megan Quinn	Fire Inspector
Community Services Department	Moses Cortez	Parks and Trails Manager
Office of Economic Development	Ashley Zaragoza	Economic Development Administrator
Finance Division	Kim Sitton	Finance Director
Fire Department	Brian Young	Fire Chief
Fire Department	Lee Shin	Emergency Services Manager
Fire Department	Cindi Schmitz	Fire Marshall
Communications	Cindy Solis	Public Information Officer
Human Resources Division	April Chase Cabrera	Safety Program Specialist
Information Technology Department	Kyle Edgeworth	Deputy Chief Information Officer
Police Department	Matthew Windish	Public Safety Dispatch Manager
Police Department	Robert Newman	Police Chief
Department of Utilities	Erin Kunkle	Electric Utility Manager
Public Works Department	Savat Khamphou	Public Works Director
Public Works Department	Kenny Nguyen	CIP Manager

2.2 PARTICIPATION IN REGIONAL PLANNING PROCESS

The City's Emergency Manager participated in the Regional LHMP planning process with the Riverside Operational Area by attending LHMP meetings, and public hearings, various Riverside County workshops, conferences, and meetings, including:

- 10/5/22: Multi-Jurisdictional Local Hazard Mitigation Plan (MJCHM) Operational Area Steering Committee LHMP Meeting
- 1/4/23: Operational Area Steering Committee LHMP Meeting

2.3 USE OF EXISTING PLANS IN THE LHMP PROCESS

Corona maintains multiple plans covering emergency operations, support, hazards, and functions.

- Specific plans and programs are reviewed for inclusion in this update for planning consistency among documents.

- General Plan for the City 2020-2040 Update. Demographics and land-use were cross referenced for inclusion into the LHMP as part of the overall community profile. The 2030 Update will include the 2023 LHMP plan.

- Emergency Operations Plan – The 2022 EOP update included the assessed natural hazards, recovery plan annex, and annex updates.

- Emergency Preparedness Plans – Contains agriculture, medical health, and public health information.

- Flood and Dam Failure Plan – Corona reviewed this Plan for consistency for use as a reference in the "flood" section of the LHMP.

- City of Corona Climate Action Plan Update – 2019 – Establishes goals and policy that incorporate environmental responsibility into the everyday management of community operations.

2.4 DATES AVAILABLE FOR PUBLIC COMMENT

In an effort to involve the residents of Corona in the update process, and to better understand their concerns and opinions regarding hazards threatening their community and the City as a whole, a survey was developed and the draft LHMP was provided for review on January 11, 2023 on the City website. To reach many community members, the plan and survey were posted across the Corona Fire Department social media pages including Instagram and Facebook.

The 2018 LHMP plan and survey reached approximately 3500 people. The 2023 LHMP survey and plan received 28,896 impressions, and 330 engagements. Impressions are the number of times our content was displayed to social media users, not matter if it was clicked or not. Engagement quantifies each time a user interacted with the content, that could include a like, comment, or share. While the City encouraged all comments to be submitted by February 13, 2023, the opportunity to submit comments remained opened for continuous comments.

- No emails were received from the public through February 13, 2023, but the ability to provide comments remains open.
- Posted on the City website on January 11, 2023
- Posted on Instagram on February 4, 2023
- Posted on Facebook on February 12, 2023
- Posted on Facebook on March 14, 2023

No new hazards outside of the current contents of the 2023 LHMP were identified by the public. The Emergency Manager did not receive any email from the public after the 2023 LHMP was posted. For public notice documentation, please see Appendix C.

Corona will utilize strategies which include public outreach and awareness campaigns to improve public understanding of natural hazards. The 2023 approved LHMP will be open for continuous public review, including mitigation action implementation and the 2027 LHMP kickoff.

2.5 PLANS ADOPTED BY RESOLUTION

Upon approval by FEMA, the LHMP will be presented to the City Council in a public meeting for adoption via an Official Resolution.

CHAPTER 3 – MITIGATION ACTIONS AND UPDATES

3.1 UPDATES FROM 2018 PLAN

Although no new hazards have been identified from the 2018 LHMP, the occurrence or severity of some of these hazards has increased, making them a greater mitigation priority than in previous years. The unique hazards section was removed because all hazards that have a high potential and priority are listed in Section 4.1. There have been no significant changes in priorities since the approval of the 2018 plan.

3.2 LIST OF COUNTY AND CITY HAZARDS

The City of Corona is committed to providing mitigation to residents and businesses from natural hazards. The City is also committed to coping with and rebuilding from disasters and emergencies in a manner that is efficient, safe, and provides for a quick return to the quality of daily life in Corona. To accomplish this, it is imperative that the City is aware of the hazards it is susceptible to in order to prepare, respond, recover, and mitigate the applicable hazards.

The County of Riverside identified, evaluated, and ranked 23 HAZARDS that could have an impact on the health, safety, and social well-being of communities located within it. The rankings were based on severity of damage and probability of occurrence for each risk. The City of Corona then ranked the same 23 hazards and included the top 10 risks in the City's annex to the Riverside County MJHMP. Identifying the risks posed by these hazards and developing strategies to reduce the impact of these hazards can assist in protecting and preserving life, property, and the environment.

All 23 hazards are not individually addressed in the City of Corona's annex. For those hazards not expanded upon, the City feels that the County Plan provides adequate information to address the hazard as it relates to the City. Below are two tables, one identifies the 23 identified hazards with their probability and severity rates and the second lists the County and City final ranking of the hazards.

Figure 3.2.1 – County and City Hazard Rankings

City of Corona & Riverside County Hazard Ranking 2023		
Hazard	**Corona**	**County**
Earthquake	**1**	**2**
Wildland Fire	**2**	**1**
Power Failure	**3**	**6**
Terrorist Event	**4**	**11**
Flood	**5**	**5**
Water Supply Disruption	**6**	**18**
Drought	**7**	**8**
Transportation Failure	**8**	**16**
Communications Failure	**9**	**12**
Pandemic Flu	**10**	**4**
Cyber Attack	**11**	**10**
Pipeline Disruption	**12**	**21**
Extreme Weather	**13**	**7**
HazMat Incident	**14**	**9**
Dam Failure	**15**	**13**
Civil Disorder	**16**	**17**
Nuclear/Radiological Incident	**17**	**23**
Emergent Disease	**18**	**3**
Landslide	**19**	**14**
Tornado	**20**	**22**

3.3 NEW HAZARDS OR CHANGES

The occurrence or severity of some hazards has increased, making them a greater mitigation priority than in previous years. This was an important step to ensure that all potential hazards were considered, and relevant hazards ranked as the greatest concern to the community.

Examples of these high risks include floods, earthquake, drought, wildfire, climate change, pandemic, terrorism, extreme temperatures, winter storms, communication failures.

1. Earthquake - An earthquake would be considered one of the highest risks for Corona. Within Riverside County, there are several earthquake faults, and have the capability of greatly affecting the Corona by causing significant damage and disruption to widespread areas.

2. Flood – Several creeks, washes, channels, and flood zones are contained in the planning area of Corona. There are 7,192 properties in Corona at risk of flooding over the next 30 years. This represents 17% of all properties in Corona. Flooding is likely to impact the day-to-day life within the community.

3. Drought – Drought is a period of unusually constant dry weather that persists long enough to cause deficiencies in the water supply (surface or underground). Droughts are slow-onset hazards, but over time, they can severely affect crops, municipal water supplies, recreation resources, and wildlife. If drought conditions extend over several years, the direct and indirect economic impacts can be significant. High temperatures, high winds, and low humidity can worsen drought conditions and make areas more susceptible to wildfires. In addition, human actions and demands for water resources can accelerate drought-related impacts. Four types of conditions are referred to as drought.

    a. Meteorological drought is brought about when there is a prolonged period with less than average precipitation.
    b. Agricultural drought is brought about when there is insufficient moisture for average crop or range production.
    c. Hydrologic drought is brought about when the water reserves fall below the statistical average.
    d. Socioeconomic drought associates the supply and demand of water services with elements of meteorological, hydrologic, and agricultural drought.

4. Wildfire – Wildfires can be classified as either a wildland fire or a wildland-urban interface (WUI) fire.

   These fires occur in areas that are relatively underdeveloped except for the possible existence of basic infrastructure such as roads and power lines. Certain conditions must be present for a wildfire hazard to occur, including a large fuel source, hot, dry, or windy weather. Many of the areas at risk within Corona fall into the classic WUI category.

   The years 2020 and 2021 brought the busiest brush fire season over the last 20 years within Corona. While the larger volume fires were in Northern California, the Fire Department fought these brush fires year-round.
   The 2021 brush fire near the Corona Airport burned nearly 1000 acres in both directions of Highway 71. Evacuation warnings were issued for the Sonora Ranch neighborhood.

5. Climate change – Climate change may well be the preeminent challenge of our time and it is already having a significant and measurable impact on California's environment. These impacts include decreasing spring snowmelt runoff, rising sea levels, shrinking glaciers, increasing wildfires, warming lakes and oceans, and the gradual migration of many plants and animals in higher elevations. Weather patterns are becoming more variable, causing more severe winter and spring flooding and longer drier droughts. Climate change has already impacted California's water resources.

   In the future, warmer temperatures, different patterns of precipitation and runoff, and rising sea levels will profoundly affect the ability to manage water supplies and other natural resources.

6. Pandemic – An influenza pandemic is a global outbreak of a new Influenza A virus. A Novel Influenza A virus is one that has caused human infection but is different from current seasonal human influenza A viruses spreading among people. Novel Influenza A viruses can be viruses that originate in animals that gain the ability to infect humans or human viruses that change significantly to be different from current human seasonal Influenza A viruses. Some Novel Influenza A viruses are believed to pose a greater pandemic threat than others and are more concerning to public health officials because they have caused serious human illness, death, and have been able to spread in a limited manner from person-to-person.

The COVID-19 pandemic, also known as the coronavirus pandemic, is an ongoing global pandemic of coronavirus disease 2019 caused by severe acute respiratory syndrome. As of January 2023, the COVID-19 pandemic had caused more than 668 million deaths and 6.73 million confirmed deaths, making it one of the deadliest in history.

7. Terrorism – As defined by the FBI, terrorism is "the unlawful use or threatened use of violence committed against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives." The tactics of terrorism are diverse. The fear of such attacks within the target population is just as important as the actual attacks, making the threat of violence as effective as actual violence.

   Terrorist tactics tend to favor attacks that avoid effective countermeasures and exploit vulnerabilities. As such, terrorists have the potential to utilize many different types of tactics both conventional and unconventional.

   Some of these tactics include shootings, kidnappings, bombings, suicide attacks, bioterrorism, nuclear terrorism, and cyberterrorism. From 2010 to 2023 there have been roughly 40 confirmed domestic terrorist incidents.

   Cybersecurity threats are on the increase since the last LHMP update and have become a priority for the City. Protection of the computer network, protecting confidential information will continue to be a priority. In 2022, the City had an SQL injection attack consisting of insertion of a SQL query to read sensitive data. The Cybersecurity Incident Response Plan had to be activated.

8. Extreme Temperature – Heat: A span where the temperature rises quickly to a higher-than-average temperature and then drops. A prolonged period of hot days beyond expectation. For temperatures to be considered extreme, they must adversely impact human health or agriculture. Extreme heat can kill hundreds of Americans each year and can cause an increased frequency in illness. The most significant impact will be on livestock and agriculture. Some extreme heat events in the region included:

   a. In August of 2022, an extreme event occurred impacting Corona and the Southwestern Region of Riverside County.
   b. In September of 2020, a severe early September heat wave challenged record high temperatures across the region with local communities recording record high temperatures.

Climate change will continue to play a significant role in Excessive Heat events. Corona will face a greater probability of these events as temperatures rise and fall due to changing conditions.

9. Winter Storms: Periods of intense weather can include low temperatures, heavy rain, snow or sleet, high winds, and icing conditions. The general climate in Corona is not known for severe winter storms, but the potential exists. In February of 2023, Riverside County saw rare blizzard warnings for mountain regions, with cold air masses moving into California.

   The Southern California winter storms of 2023 in January wreaked havoc throughout Southern California cities that included road closures, and 23 dead. The National Weather Service called this storm "the most impressive storm since January 5-7, 2005".

10. Communications Failure: The disruptions that technology failures that includes cyber-attacks or accidental equipment failure can contribute to the loss of technology or data. This could potentially exploit technology vulnerabilities and adversely impact organizational operations, organizational assets, individuals, and utilities and telecommunications.

    These failures can happen anywhere within the City but will generally be targeted towards larger corporations or government organizations. Overall, the probability of communication failures is on the rise globally, nationally, locally. City Police Department experienced a 911 ANI/ALI notification failure and had to rely on Riverside Sheriff's Office in November of 2022.

Figure 3.4.1 - Historical List of Disasters for City of Corona

Disaster Type	Year	Corona Disasters Description of Damage	Fiscal Impact	Federal Disaster Declared
Fire	1889	Santiago Canyon Fire – 300,000 acres of wildland fire from Santa Ana to Elsinore, Corona to Oceanside in 3 days	Unknown	Unknown
Flood	1938	Flooding included the intersection River Road and Main Street.	$100,000	Unknown
Fire	1948	Green River Fire – 46,000 acres of wildland and 22 homes destroyed.	Unknown	Unknown
Fire	1967	Paseo Fire – 50,000 acres wildland and 66 homes destroyed.	Unknown	Unknown

Flood	1969	City was declared a local disaster area. One hundred twenty-five residents were evacuated. Twenty homes were damaged.	$750,000	Yes
Freeze	1969	An ice freeze destroyed 75% of Corona's avocado crop; 50% of its lemons; 35% of Valencia oranges; 25% Navel oranges and 20% grapefruit	$8 million (Riverside County)	Unknown
Fire	1977	Tin Mine Fire – 5,500 acres burned. 1,500 firefighters fought fire at the peak of the fire. 1,610 avocado and fruit trees consumed by fire.	$5.9 million	Unknown
Flood	1978	Water line broken, 100 residents without drinking water; sewer line washed out; airport flooded.	$500,000	Unknown
Fire	1979	Paseo Fire – 2,000 acres burned. 100 people evacuated from homes. No significant property damages.	Unknown	Unknown
Fire	1980	Owl Fire – Wildland	Unknown	Unknown
Flood	1980	Street damage, airport damage, property damage.	$1.6 million	Unknown
Fire	1982	Gypsum Fire – 18,000 acres, 14 homes destroyed.	Unknown	Unknown
Fire	1982	Hagador Fire – Wildland Fire - South Corona	Unknown	Unknown
Fire	1987	Silverado Fire – Wildland fire – South Corona	Unknown	Unknown
Fire	1990	Bedfored Fire – south of Corona 4,500 Acres, 20 structures. FEMA DR 872	Unknown	Yes
Winds	1990	Powerful winds created no power supply to 1,580 homes for as long as two hours.	Unknown	Unknown
Freeze	1991	Crop Freeze – 10 nights of temperatures below 27 F. Damage to avocados and citrus.	Unknown	Yes
Flood	1993	Washed out roads, damaged public property	$1.525 million	Unknown
Flood	1998	Flooding to roads, airport, fallen trees El Nino FEMA DR	$650,000	Yes
Fire	1999	Chase Fire – Brush fire burns 500 acres near Skyline Drive. One home destroyed.	Unknown	Unknown
Fire	2002	Green Fire – Wildland fire Santa Ana River Canyon.	Unknown	Unknown
Flood	2005	FEMA DR1577 – Flooding Citywide, airport, Debris flow and mudslides.	$353,928	Yes
Fire	2005	Lincoln Fire – 800 acres wildland Eagle Valley.	Unknown	Unknown
Fire	2006	Sierra Fire – 10,600 acres Santa Ana River Canyon.	Unknown	Unknown
Fire	2007	Santiago Fire – 27,000 acres and destroyed more than a dozen homes. FEMA DR1731	$52,118	Yes
Winds	2007	Fallen trees and debris. State declaration CDAA DR	$18,616	Yes

Fire	2007	Cerrito Fire – Wildland fire, Eagle Valley.	Unknown	Unknown
Fire	2008	Freeway Fire – 18 homes damage or destroyed in the Green River Homes caused by fire newer Santa Ana River. FEMA DR 1810	$78,936	Yes
Flood	2010	Flooding, slope failures, fallen trees and road damage. FEMA DR 1884	$177,000	Yes
Fire	2010	McKinley Fire – Wildland fire, Eagle Valley.	Unknown	Unknown
Flood	2011	Flooding and damage to roads, fallen trees, airport flooding and damage. FEMA DR 1952	$370,000	Yes
Fire	2015	Highway Fire – 1,049 acres Hwy71/Hwy91 near Prado Basin	Unknown	No
Flood	2015	Heavy down pour causing flooding and civilian water rescues	Unknown	No
Flood	2018	Flooding and damage to PD facility and fallen trees. FEMA DR 4305	$67,000	Yes
Fire	2018	Canyon Fire – San Ramon Drive and San Alvarado Circle	Unknown	No
Fire	2020	Blue Ridge Fire – North of the 91 and Yorba Linda	Unknown	No
Cyber	2022	SQL Injection Attack	Unknown	No
Storms	2022	Severe Winter Storms – Riverside County	Unknown	No
Storms	2023	Severe Winter Storms – Riverside County	Unknown	No

3.4 MITIGATION PROJECT UPDATES

Since the adoption of the 2018 LHMP, the City of Corona has undertaken several measures and completed several projects to lessen the impact of disasters and prevent the loss of life and property. These mitigation actions are identified in table 3.5.1.

Figure 3.5.1 – Mitigation Projects Completed and 2023 Actions

The 2018 LHMP plan showed hazard type, project description, and status. All these mitigation actions have been completed or were not mitigation actions that would be applied as part of the mitigation process for natural or human caused hazards. The tables below show the 2018 LHMP actions, and the 2023 LHMP actions.

Figure 3.5.1 – Mitigation Projects Completed for 2018 Update

Hazard Type	Project Description	Status
All	Incorporated 2012 Approved Local Hazard Mitigation Plan with City of Corona General Plan	Complete
Fire, Water Supply Disruption	Updated Booster Station buildings to current fire standards (Kraft Ranch, Montana Ranch,SDO, Maybe Canyon,Eagle Glen, Harlin Hills)	Complete
Fire	Purchased 6 portable booster stations for emergency fire response	Complete
Earthquake	All above ground steel storage reservoirs were evaluated to ensure proper venting in the event of an earthquake. Modifications were made where needed.	Complete
Earthquake, Electrical Failure	Installation of emergency generators for 3 groundwater well sites.	Complete
Electrical Failure, Emergent Disease Contamination	Emergency generators installed at all lift stations, plus a portable sewage lift station for emergency bypass	Complete
Flood	Annual maintenance service on storm drains	Complete
Flood	Construction of Main St storm drain. Alleviate flooding from 11th to 8th St.	Complete
Flood	Construction of Harris storm drain. Alleviate flooding on 6th St and apartments of 5th St..	Complete
Water Supply/ Contamination	Converted out of service well to a triple-nested monitoring well. Will increase local ground water supply.	Complete
Water Supply Disruption/ Contamination	Replaced 4,700 feet of 6 and 8 inch waterlines with 12 inch Ductile Iron Waterline pipe	Complete
Flood	Cota Channel restoration	Complete
Terrorism	Became members of the BioWatch Program - BioWatch provides early detection of biological agents in the air used for a bioterrorism attack	Complete
Terrorism	Corona PD & Fire established a Tactical Response to Violent Incidents Team and adopted the RCFCA Standard Operating Guidelines	Complete
Pandemic Flu	Partnered with Riverside County Public Health with the development and implementation of the City of Corona Pandemic Influenza Plan	Complete
HazMat, Transportation Failure, Fire	2013 complete update to Hazardous Material Area Plan - to assist in the prevention or mitigation of damage from the release or threatened release of hazardous materials.	Complete

Hazard Type	Project Description	Status
Water Supply Disruption/ Drought	2015 complete update to the Urban Water Management Plan - conservation and efficient water use	Complete
Water Supply Disruption/ Drought	Instituted multiple residential water conservation programs, resulting in a nearly 20% reduction over the declared drought period	Complete
Flood/Water Supply Contamination	2017 complete update to Sewer System Management Plan - preventative maintenance, schedule, response plan	Complete
Transportation Failure	2012 development of Neighborhood Traffic Management Program	Complete
Transportation Failure	2014 development of Corona Municipal Airport Emergency Plan	Complete
Climate Change/Drought, Emergent Disease	2012 developed the City of Corona Climate Action Plan - reduce GHG emissions	Complete
Fire	2015 implementation of a Suppression Inspection Action Plan - facilitates the completion of hazard reduction inspections	Complete
HazMat, Fire	Contracted with G & G Environmental to ensure all on-site hazardous material inspections were completed within required timeframe.	Complete
Communications Failure/Fire	2015 complete update to the SOLAR - Multi-County Mutual Threat Zone Guide	Complete
Communications Failure/Fire	2015 update to the Corona Fire Radio Guide - Internal and external agency communications	Complete
All	Fire Department Annual Master Training Plan - improves the safety and performance of Department's members in order for them to prevent or minimize loss of life, damage to the environment and loss of property.	Complete
All	2015 update to the Corona Fire Department Emergency Medical Services Quality Improvement Program - delivery of consistent, high quality, compassionate pre-hospital patient care.	Complete
All	Police Department Annual Master Training Plan - improves the safety and performance of Department's members in order for them to prevent or minimize loss of life, damage to the environment and loss of property.	Complete
All	2017 implementation of the new Emergency Medical Dispatch Program - delivery of pre arrival medical direction	Complete

Figure 3.5.2 – Mitigation Projects for 2023 LHMP

Hazard Type	Project Description	Status	2018 Plan
All	Fire Department Annual Master Training Plan – improves the safety and performance of Department's members for them to prevent or minimize loss of life, damage to the environment and loss of property. Next update will be early 2024.	2023 Plan	Yes
All	2022 update to the Corona Fire Department Emergency Medical Services Quality Improvement Program – delivery of consistent, high quality, compassionate pre-hospital patient care.	2023 Plan	No
All	2019/2020 Neighborhood Traffic Management Program and Community Handbook – included emergency response and evacuation routes	2023 Plan	No
All	2022 Police Department Annual Master Training Plan – improves the safety and performance of Department's members for them to prevent or minimize loss of life, damage to the environment and loss of property.	2023 Plan	No
All	2022 Hired a Nurse Educator position within Fire Department to manage continuing education, and quality improvement	2023 Plan	No
Fire	2022 Fire Safe Council was established and introduced to City Council, and 501 C (3) approved in Spring of 2023	2023 Plan	No
Terrorism	2023 Police Department Active Shooter Training Program through FY 2024	2023 Plan	No
All	2023 additional dispatch resources to assist with Medical Dispatch in Ontario, California	2023 Plan	No
All	2023 Hiring within Fire Department included additional paramedics – Currently 65% of the Fire Department are Basic Emergency Medical Technicians	2023 Plan	No
Cybersecurity	IT is working on the 2022 Cybersecurity Incident Response Plan Update, to include SQL Mitigation, to be completed in late 2023 early 2024.	2023 Plan	No

CHAPTER 4.0 – HAZARD IDENTIFICATION AND RISK ASSESSMENT

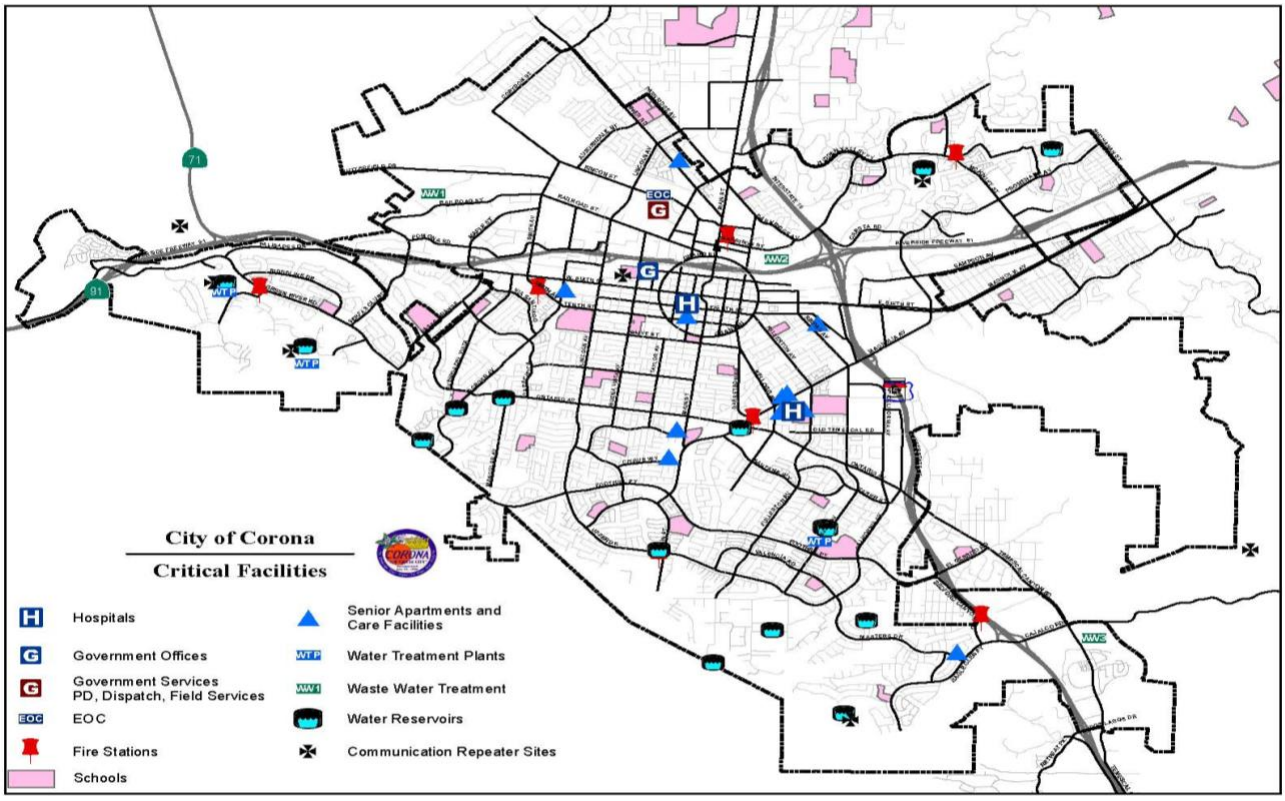
4.1 CRITICAL FACILITIES AND INFRASTRUCTURE

A critical facility can be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. An inventory of critical facilities in the City of Corona is included in figures 4.1.1 and 4.1.2.

Figure 4.1.1 – Critical Facilities for City of Corona 2023

Critical Facilities Type	Number
Public Safety Dispatch	1
Emergency Operations Center	1
City Services	2
Fire Stations	7
Water Reservoirs	15
Water Treatment Plants	3
Wastewater Treatment Plants	3
Hospitals	2
Police Department	1
Maintenance Yards	1
Senior Care	26
Schools	44
Radio Repeaters	7

Figure 4.1.2 Critical Facilities Map for City of Corona 2023



4.2 ESTIMATING POTENTIAL LOSS

The most vulnerable structures in the City are downtown, the Fire Station, City Hall, Cabot's Pueblo Museum. These facilities are the weakest in the City. A major earthquake the proximity to the San Andreas Fault would also cause damage to any of these facilities due to their proximity to the San Andreas Fault.

Loss estimates, exposure assessments, and hazard-specific vulnerability evaluations rely on best available data and methodologies. Uncertainties are inherent in any loss estimation methodology and arise in part from incomplete scientific knowledge concerning natural hazards and their effects on the built environment. Uncertainties can also result from the following:

- Incomplete or outdated inventory
- Geographic extent and severity of each hazard
- Mitigation measures already employed.
- Amount of advance notice residents must prepare for a specific hazard event.

4.3 TABLE OF REPLACEMENT VALUES

Figure 4.3.1 – Assets Table/Replacement Value for City of Corona

Name of Asset	Replacement Value ($)	Occupancy/ Capacity #	Hazard
City Hall/City Services	$45,094,961	N/A	Earthquake Fire Flood Pandemic Active Shooter
Fire Stations (7)	$25,200,000	N/A	Earthquake Fire Flood Railroad Active Shooter
Police Department	$15,154,127	N/A	Gas Line Flood Active Shooter Fire Earthquake
Emergency Operations Center	$15,976,093	N/A	Railroad Fire Earthquake
Public Safety Dispatch	$9,564,123	50	Railroad Fire Earthquake

Water Reservoirs	NA	25	Fire Earthquake Flood Railroad
Water Treatment Plants	NA	10	Fire Earthquake Flood Railroad
Wastewater Treatment Plants	NA	NA	Fire Earthquake Flood Railroad
Schools	NA	NA	Fire Earthquake Flood Railroad Pandemic Active Shooter
Hospitals	NA	NA	Fire Earthquake Flood Railroad
Senior Care	NA	NA	Fire Earthquake Flood Railroad Pandemic Active Shooter
Maintenance Yards	NA	45	Fire Earthquake Flood Railroad
Radio Repeaters	NA	NA	Fire Earthquake Flood Railroad

4.4 IDENTIFICATION OF RISKS AND VULNERABILITIES

The County of Riverside identified, evaluated, and ranked 23 natural and human-induced public safety risks that could have an impact on the health, safety, and social well-being of the community. The ranking was based on severity of damage and probability of occurrence for each risk. The City of Corona then ranked the same 23 hazards and included the top 10 risks in the City's annex to the Riverside County MJHMP. Below are the top 10 hazards in order of ranking. For a complete list of hazards, their probability and severity see Figure 3.2.1.

After the list of hazards was identified, the Planning Team went through a process to prioritize screening the hazards to determine which hazards created the greatest concern within the community. The process consists of generating a qualitative ranking, High, Medium, or Low rating for:

- Probability
    - High: Highly likely, experts feel that it is likely that the hazard will occur in the community.
    - Medium: Possible, experts feel that it is possible that the hazard will occur in the community.
    - Low: Unlikely, no historic occurrences of the hazard in the community or region.
- Impact from Hazard
    - High: Catastrophic impact with consequences that will be significant in terms of building damage and loss of life.
    - Medium: Limited impact but modest in terms of building damage and loss of life.
    - Low: Small and minimal impact

1. Earthquake

- Ranking: High Probability with High Impact

The City of Corona is seismically active, as is most of Southern California. Several known active or potentially active faults are in and around Corona.

The Elsinore Fault Zone is the closest major fault system to the City and one of the largest in Southern California. Historically, the Elsinore Fault Zone has also been one of the least active systems. At its northern end, near the City, the Elsinore Fault Zone splays into two segments, the Chino-Central Avenue Fault, and the Whittier Fault. Along the southwestern portion of the City, the Elsinore Fault Zone is referred to as the Glen Ivy Fault. For more information on the faults zone around the City, please reference Figure 4.4.1.

Ground surface rupture due to active faulting is considered possible in the western portion of the City where known active or potentially active faults are mapped. Geological evidence indicates that the Glen Ivy Fault and portions of the Whittier Fault are active and that the Chino-Central Avenue Fault is potentially active.

Historically, the Corona region has generally not been affected by a major, destructive earthquake. However, based on a search of earthquake databases of the United States Geological Survey (USGS) National Earthquake Information Center, several major earthquakes (magnitude 6.0 or more) have been recorded within approximately 100 kilometers of the City since 1769.

These programs specify various requirements including that detailed geologic investigations are to be conducted in conformance with guidelines of the California Division of Mines and Geology (CDMG) for all construction of transportation infrastructure in an Alquist-Priolo Special Study Zone and for construction of essential facilities within 200 feet of an active fault or potentially active fault. They also state that field information is to be developed as part of any California Environment Quality Act (CEQA) investigations and geologic reports by the City and/or County geologists should be kept current and accessible for use in report preparation, geologic reviews, and policy development.

Additionally, the City's General Plan Public Health and Safety Element has identified various implementation programs to be carried out by the City and/or County affecting seismic safety of critical facilities.
The probability of an earthquake is high and will strike suddenly without warning. Earthquakes can occur at any time of the year, and at any time of the day or night.

2. Wildland/Urban Fire

- **Ranking:** High Probability with High Impact

The combination of population density, weather, and growing residential and commercial development presents a potential year-round threat of conflagration. However, late spring through early fall months is commonly referred to as the "fire season."

The City of Corona is nearly surrounded by hills and mountains with the potential and the history of large wildland fires. To the south, the City sits at the base of the Santa Ana mountain range, and borders against the Cleveland National Forest. The shared boundary between the City and the Forest is about 12 miles in length. The fuels are heavy brush with oaks, sycamore and pines on the slopes and drainages.

Residential structures are immediately adjacent to this forest area throughout the entire boundary. Some are newer constructions with good clearances, and some are much older with less clearance.

The western portion of the City sits at the base of Prado Dam which is the headwater for the Santa Ana River Canyon. The Santa Ana Canyon's steep topography and East-West alignment serve as a wind funnel. The geography increases the wind's speed and magnifies the effects of fire on the available fuel bed, contributing to the rapid rate of fire spread.

The northern side of this canyon comprises primarily light flashy fuels due to frequent burning and fuel type-conversion, and the southern side comprises primarily of heavy brush. There is a significant fire history in this canyon area. The 91 Freeway parallels the Santa Ana River throughout the canyon. There are areas of development where structures sit adjacent to wildland areas throughout the western areas of the City. The northwest area of the City sits in the Prado Basin behind the Prado Dam and there are several developments that adjoin some heavy fuels.

The northeast area sits in the Corona Hills, and developments are built up to and on top of the hills. These hills comprise primarily of light flashy fuels due to frequent burning and type-conversion. The eastern edge of the City is bordered by hills and Eagle Valley. This area has not been developed and is comprised of light flashy fuels due to frequent burning and type-conversion. Fires occur frequently, but there is very little structural threat. In addition to interface areas within the City Limits, many of these areas also have significant residential development in unincorporated areas that are immediately adjacent to the City.

Over the years, there have been several significant fires, many of sizeable acreage, within the City or areas just outside its borders. Many of these fires have resulted in destroyed and damaged structures.

Climate change can play a significant role in wildfire hazards. The changing conditions from wet to dry can create more fuel. The increased possibility of high winds can increase risk and present a challenge. Large wildfires can increase the threat of other disasters such as landslide and flooding.

Weather

Weather patterns combined with certain geographic locations can create a favorable climate for wildfire activity. Areas where annual precipitation is less than 30 inches per year are extremely fire susceptible. High risk areas in Southern California share a hot, dry season in late summer and early fall when high temperatures and low humidity favor fire activity. The frequent occurrence of 40-50 mile per hour Santa Ana or foehn winds, coupled with temperatures more than 90 degrees, relative humidity of 20 percent or less and dense and extremely dry ground cover in inaccessible mountain or canyon areas causes the kinds of wildland fires Southern California experiences every year.

Topography

Topography has considerable effect on wildland fire behavior and on the ability of firefighters and their equipment to take action to suppress those fires. Simply because of topography, a fire starting in the bottom of a canyon may expand quickly to the ridge top before initial attack forces can arrive. Rough topography greatly limits road construction, road standards, and accessibility by ground equipment.

Steep topography also channels airflow, creating extremely erratic winds on leeward slopes and in canyons. Water supply for fire protection to structures at higher elevations is frequently dependent on pumping units. The source of power for such units is usually from overhead distribution lines, which are subject to destruction by wildland fires.

Vegetation

A key to effective fire control and the successful accommodation of fire in wildland management is the understanding of fire and its environment. Fire environment is the complex of fuel, topographic, and air mass factors that influence the inception, growth, and behavior of a fire. The topography and weather components are, for all practical purposes, beyond man's control, but it is a different story with fuels, which can be controlled before the outbreak of fires. In terms of future urban expansion, finding new ways to control and understand these fuels can lead to possible fire reduction.

Of these different vegetation types, coastal sage scrub, chaparral, and grasslands reach some degree of flammability during the dry summer months and, under certain conditions, during the winter months.

For example, as chaparral gets older, twigs and branches within the plants die and are held in place. A stand of brush 10- to 20- years of age usually has enough dead material to produce rates of spread about the same as in grass fires when the fuels have dried out. In severe drought years, additional plant material may die, contributing to the fuel load.

Wildfire Characteristics

There are three categories of interface fire: The classic wildland/urban interface exists where well-defined urban and suburban development presses up against open expanses of wildland areas; the mixed wildland/urban interface is characterized by isolated homes, subdivisions and small communities situated predominantly in wildland settings.

The occluded wildland/urban interface exists where islands of wildland vegetation occur inside a largely urbanized area. Certain conditions must be present for significant interface fires to occur.

The most common conditions include hot, dry, and windy weather; the inability of fire protection forces to contain or suppress the fire; the occurrence of multiple fires that overwhelm committed resources; and a large fuel load (dense vegetation). Once a fire has started, several conditions influence its behavior, including fuel, topography, weather, drought, and development. Southern California has two distinct areas of risk for wildland fire: the foothills and lower mountain areas which are most often covered with scrub brush or chaparral and the higher elevations of mountains with heavily forested terrain.

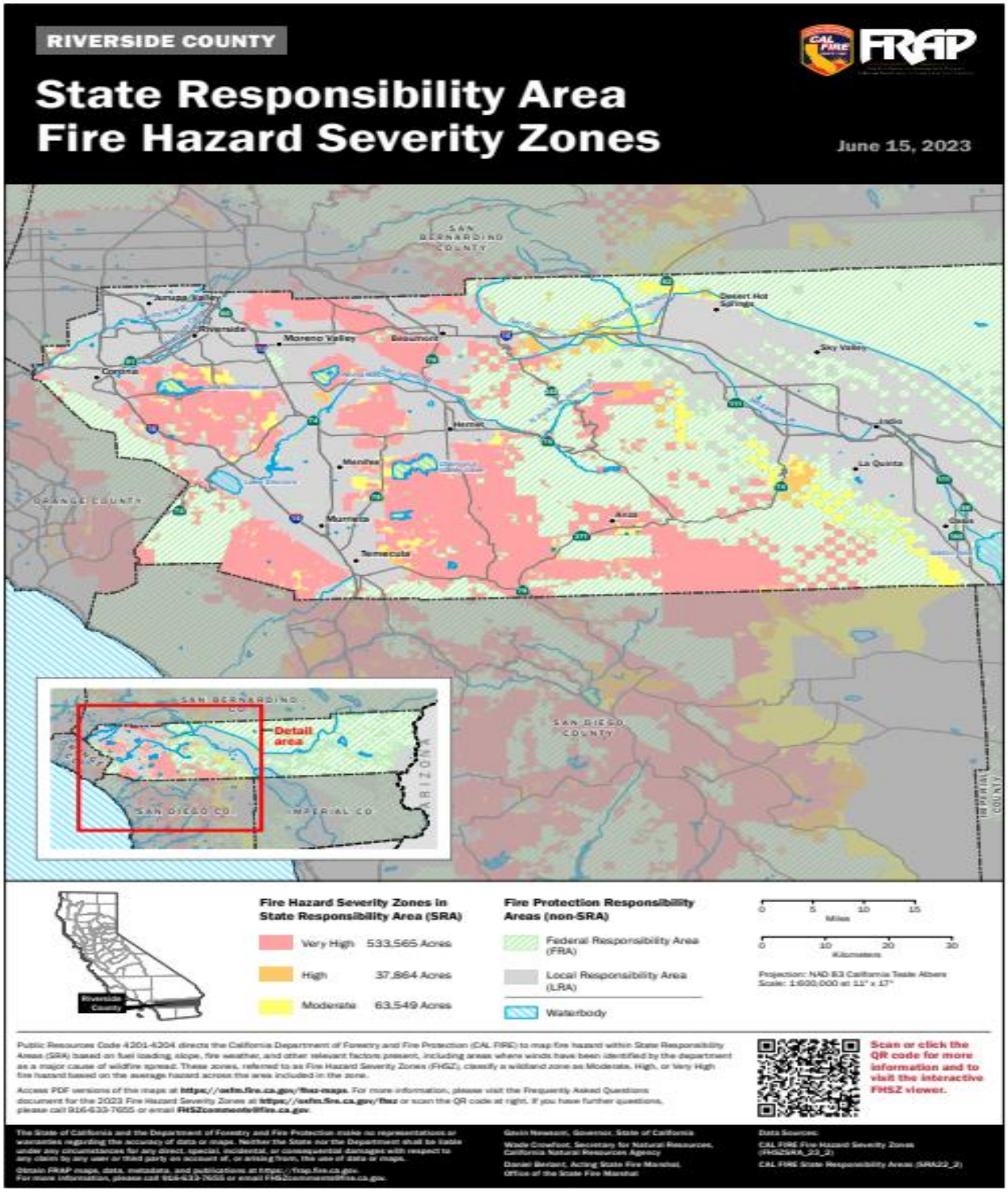
Wildfire Hazard Areas

The State of California Department of Forestry and Fire Protection (CAL FIRE) is required by law to periodically map areas of significant fire hazards based on history, fuels, terrain, weather, and other relevant factors that influence fire potential and behavior.

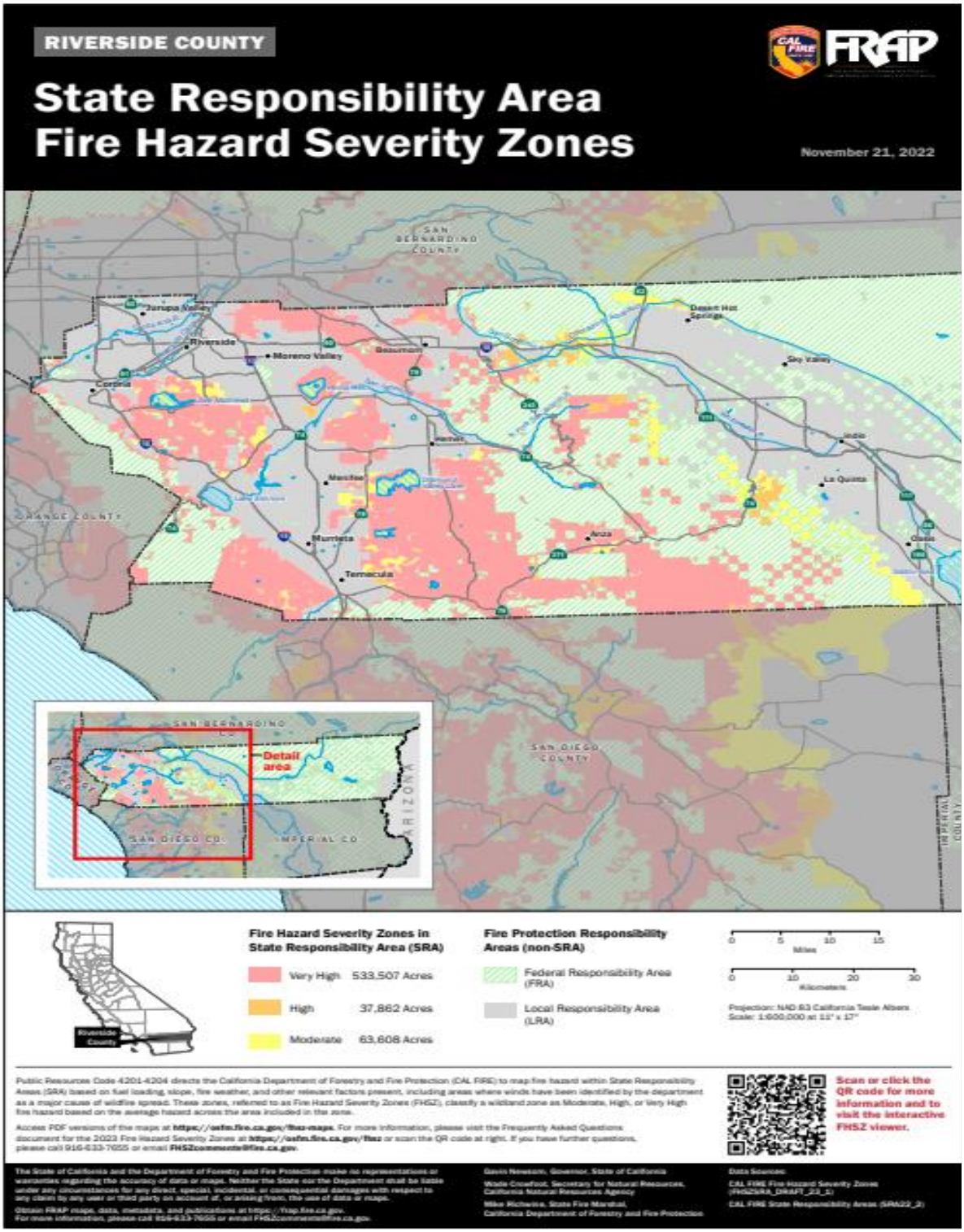
The fire hazard areas are delineated into zones known as Fire Hazard Severity Zones (FHSZ) that influence the construction of buildings and property protection to reduce the risks associated with wildland fires.
In addition to areas of state responsibility, the map also displays areas where local governments have financial responsibility for wildland fire protection depicting moderate, high, and very high delineations.

Public Resources Code 4201-4204 directs the California Department of Forestry and Fire Protection (CAL FIRE) to map fire hazard within the State Responsibility Areas (SRA) based on fuel loading, slope, fire weather, and other relevant factors present, including areas where winds have been identified by the department as a major cause of wildfire spread. These zones, referred to as Fire Hazard Severity Zones (FHSZ), to classify a wildland zone as Moderate, High, or Very High fire based on the average hazard across the area included in the zone.

June 15, 2023. [Fire Hazard Severity Zones in State Responsibility Area - Riverside County (ca.gov)]



November 21, 2022. [Fire Hazard Severity Zones in State Responsibility Area - Riverside County (ca.gov)]



June 15, 2023 [Fire Hazard Severity Zones in State Responsibility Area (ca.gov)]

November 21, 2022 [Fire Hazard Severity Zones in State Responsibility Area - Statewide (ca.gov)]

The Fire Hazard Severity Zone Map will be used for:

- Implementing wildland-urban interface building standards for new construction using the 2007 California Building Code, Section 7A (Wildland-Urban Interface).
- Natural hazard real estate disclosure at the time of sale.
- One-hundred-foot defensible space clearance requirements around buildings.
- Property development standards such as road widths, water supply and signage.
- Reference for City and County General Plans.

3. Electrical Failure (Public Safety Power Shutoff)

- **Ranking:** Probability Medium with High Impact

Corona's electric utility was established on April 4, 2001, by City Council Resolution No. 2001-25 in response to state-wide rolling blackouts and electric price instability. The electric utility provides fully bundled electric service to City owned and operated facilities and eight areas within the City. It also provides energy delivery services to municipal and commercial customers within the City.

The current lack of back-up electricity at the City's well sites leaves the City and its residents vulnerable to water service interruptions in the event of an electrical power failure. The Corona Department of Water and Power is responsible for the provision of water to more than 40,000 service connections. Currently, approximately half of the City's water is imported (via the Metropolitan Water District) and the other half is produced via local groundwater wells. Most (add %) of the City's groundwater wells do not have back-up generator power. This critical water source has great potential to be compromised by a power failure. A lack of pumping capability could interrupt water supply and delivery to thousands of residents. A power failure could deeply affect water supplies to residents, hospitals, and other essential facilities.

The loss of potable water is one of the most devastating effects from a natural disaster and can have long-term and lethal impacts. The lack of drinking water quickly leads to water-borne illness and dehydration and these conditions disproportionately affect the elderly, young and infirm.

The City's above ground power lines are susceptible to the high winds that pass through the City.

The potential for arcing lines causing sparks to drop onto buildings or brush is a hazard that the utility department continues to address, however there have been few major fires caused by this type of event. In addition to the overhead lines, there is a potential for events relating to underground vaults and power lines.

A higher probability of an electrical failure will occur during the warmer summer months and during Red Flag Warning days that include high temperature, low humidity, and high wind events.

4. Terrorist Event

- **Ranking:** Probability Medium with High Impact

Terrorism, as defined by the FBI, is "the unlawful use of force against persons or property to intimidate or coerce a government, the civilian population or any segment thereof, in the furtherance of political or social objectives.

The tactics of terrorism are diverse. As important as the actual attacks is the cultivation in the target population of the fear of such attacks, so that the threat of violence becomes as effective as actual violence. Terrorist tactics tend to favor attacks that avoid effective countermeasures and exploit vulnerabilities.

As such, terrorists have the potential to utilize many different types of tactics both conventional and unconventional. Some of these tactics include shootings, kidnappings, bombings, suicide attacks, bioterrorism, agroterrorism, nuclear terrorism, and cyberterrorism. From 2010 to 2023 there have been roughly 40 confirmed domestic terrorist incidents (See Riverside County OA MJHMP Section 4.0)

5. Water Supply Disruption/Contamination

- Ranking: Probability Medium with High Impact

The Corona Department of Water and Power is responsible for the provision of water, serving approximately 150,000 customers. Currently, approximately half of the City's water is imported (via the Metropolitan Water District) and the other half is produced via local groundwater wells.

Most of the City's groundwater wells do not have back-up generator power. This critical water source has great potential to be compromised by a power failure.

A lack of pumping capability could interrupt water supply and delivery to thousands of residents. A power failure could deeply affect water supplies to residents, hospitals, and other essential facilities. The loss of potable water is one of the most devastating effects from a natural disaster and can have long-term and lethal impacts. The lack of drinking water quickly leads to water-borne illness and dehydration and these conditions disproportionately affect the elderly, young and infirm.

In addition, water reservoir failure could critically impair the City's fire fighting capabilities. The Corona Fire Department currently uses potable water for fighting fires. Plans are in place for the recycled water to be utilized as new infrastructure is constructed and more water is treated for recycled use. However, City-wide availability of recycled water for firefighting is several years away.

On June 4, 2008, the Governor of the State of California proclaimed a condition of statewide drought and strongly encouraged local agencies to take aggressive, immediate action to reduce water consumption and prepare for potentially worsening conditions. Once again, conditions worsened and on January 17, 2014, California State Governor, Jerry Brown, declared a drought state of emergency. On April 17, 2018, Brown issued Executive Order B-40-17, officially ending the drought state of emergency in all California counties except Fresno, Kings, Tulare, and Tuolumne.

During these times the City of Corona adopted, implemented, and enforced water conservation programs to reduce the quantity of water used by consumers within the City to ensure that there was sufficient water for human consumption, sanitation, and fire protection. The City was diligent in conserving water, resulting in a nearly 20% reduction in Corona over the declared drought period.

The City is authorized to declare a water shortage emergency to prevail within its jurisdiction when it finds and determines that the City will not be able to or cannot satisfy the ordinary demands and requirements of water consumers without depleting the water supply of the City to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

Corona can be subject to drought conditions and water shortages. It is important to note that droughts do not happen overnight, they are a slow buildup of conditions. Climate change has the potential to impact drought events.

6. Flood

- **Ranking:** Probability High with High Impact

There are 3,907 properties in Corona that have a greater than 26 chance of being severely affected by flooding over the next 30 years. This represents 17 percent of all properties in Corona.

Several creeks, washes, channels, and flood zones are contained in the Planning area of Corona. Areas of the City adjacent to the Santa Ana River, Temescal Creek and Mabey Canyon Wash are designated as Flood Zone A, which indicates the area is inundated by one percent annual chance flooding.

Portions of the Planning Area surrounding the Temescal Wash, Main Street Wash, and the Arlington Channel have been designated as Flood Zone X500, which is inundated by 0.2 percent annual chance flooding. Other portions of the Planning Area are either designated as Flood Zone D, which is an area with undetermined possible flood hazards, or Flood Zone X, which lies outside the one percent and 0.2 percent annual chance flood plains. See Figure 4.7.2 – Flood Zones.

Several creeks, washes, channels, and flood zones are contained in the Planning area of Corona. Areas of the City adjacent to the Santa Ana River, Temescal Creek and Mabey Canyon Wash are designated as Flood Zone A, which indicates the area is inundated by one percent annual chance flooding.

Portions of the Planning Area surrounding the Temescal Wash, Main Street Wash, and the Arlington Channel have been designated as Flood Zone X500, which is inundated by 0.2 percent annual chance flooding. Other portions of the Planning Area are either designated as Flood Zone D, which is an area with undetermined possible flood hazards, or Flood Zone X, which lies outside the one percent and 0.2 percent annual chance flood plains. See Figure 4.7.2 – Flood Zones.

Temescal Wash has the highest flooding potential in the Corona Planning Area. Due to the size of the Temescal Watershed and the amount of rainfall received, several peak discharges have been recorded.

The Planning Area has experienced major flooding during periods of heavy runoff. The 1969 flooding in Temescal Wash caused extensive damage, which was determined to be higher than 100-year storm levels.

Major flooding in the Planning Area could occur along the Temescal Wash and in west Corona, and storm sheet flows would produce a variety of damage depending upon the location.

A levee is a raised area that runs along the banks of a river or canal. Levees reinforce the bank and help prevent flooding. Levees reduce, not eliminate, the risks to individuals and the structure behind them. It is important to remember that no levee provides protection from events for which it was not designed.

This sheet flow would be the result of overflows from the Oak Street Channel, Lincoln Avenue drain, Main Street Channel, Buena Vista drain, and Taylor Avenue drain. Other significant flooding areas are found along the open channel facilities near the City Yard. These facilities are determined to be inadequate for the 2-year storm event.

The City participates in the National Flood Insurance Program (NFIP), as administered through the Federal Emergency Management Agency (FEMA). Consequently, property owners can purchase Federal Flood Insurance.

In turn, the City has identified flood hazard areas and protective controls, including land use planning measures to reduce the potential risk of flood damage to property and loss of human life. As of 2021, the City offers sandbag stations located at Santana Park. Bulk sand and empty bags are available as a self-serve station. Corona residents may take up to 10 free sandbags.

Periods of heavy rainfall caused by multiple atmospheric in California between December 31, 2022, and March 25, 2023, resulted in floods that affected Riverside County. The flooding resulted in property damage.

7. Emergent Disease/Contamination

- **Ranking:** Probability Low with High Impact

Infectious diseases have for centuries ranked wars and famine as major challenges to human progress and survival. They remain among the leading causes of death and disability worldwide.

Against a constant background of established infections, epidemics of new and old infectious diseases periodically emerge, greatly magnifying the global burden of infections.

Studies of these emerging infections reveal the evolutionary properties of pathogenic microorganisms and the dynamic relationships between microorganisms, their hosts, and the environment.

Climate change may well be the pre-eminent challenge of our time and it is already having a significant and measurable impact on California's environment. Climatic factors influence the emergence and reemergence of infectious diseases, in addition to multiple human, biological, and ecological determinants.

Climatologists have identified upward trends in global temperatures and now estimate an unprecedented rise of 2.0°C by the year 2100. Of major concern is that these changes can affect the introduction and dissemination of many serious infectious diseases.

The risk for emergent diseases has been heightened in recent years because of COVID-19. First identified in Wuhan, China in December 2019, the City of Corona was impacted by COVID-19 both from an economic and community-based standpoint. There is an annual risk of an infectious disease outbreak.

8. Transportation Failure

- **Ranking:** Probability Medium with High Impact

The City of Corona's extensive transportation network which includes state highways, public transit, rail lines, and municipal airport provide additional associated incident risks that may cause severe injuries and/or deaths. Two major freeways and one railroad transect Corona. The Riverside Freeway (SR-91) runs east/west directly north of the City's center, Interstate 15 (I-15) runs north/south near the eastern edge of the City.

Along with the potential for death and injuries from large-scale motor vehicle accidents, there is the potential for hazardous material spills or fires as numerous commercial transportation vehicles travel the highways and freeways with various types and quantities of hazardous materials.

The BNSF Railroad parallels SR-91, it is a strictly commercial freight transportation system. Large quantities and numerous types of hazardous materials are transported through Corona by rail daily.

These corridors are major transportation routes to the economic center of Orange County from the Inland Empire.

The primary hazard with rail service has not been any train vs. train or track derailments. There continues to be a large number of train v. vehicle or train v. pedestrian accidents in the City.

These accidents have caused both traffic and rail service delays. The danger with these types of accidents is that they can create train derailments or accidents when the train impacts with a vehicle or when the train engineer attempts to stop the train quickly.

The Corona Municipal Airport is home to 350-400 general aviation aircraft and is strictly a recreational airport with no commercial flights. Although small, the airport is extremely active, with approximately 50,000 annual operations. The City's transportation network of roads, freeways, rail lines and airport has been a priority in the City's planning and mitigation efforts.

A Traffic Safety Plan has been implemented for the management of traffic events that occur in the City. Public Works, Police, and Fire have identified routes through the City to mitigate traffic issues that might occur. Command Posts, staging areas and other aspects of Incident Command have been addressed in the Traffic Safety Plan.

9. Communication Failure

- Medium Probability and Impact

One of the most immediate and significant impacts of disasters is the sudden and wide-scale breakdown or interruption of communications infrastructure.

When public communication networks fail, the impact can be widely felt and can wipe out access to standard mobile or landline telecommunications, in addition to Internet, fiber-optic cables, and even satellite-based emergency communication devices. Whether these systems are completely or just partially knocked offline, communications systems during a disaster can be the difference between life and death for those affected.

Locating those who may be trapped or injured becomes nearly impossible for emergency responders, and rescue efforts are further complicated by the inability to coordinate via standard methods of communication.

In addition to disruptions caused by physical damage you will more than likely encounter network congestion.

When disaster strikes, the “pipes” that make up our communications networks often become congested with exceptionally high levels of data traffic, as those impacted seek to contact family and friends, emergency personnel work to coordinate relief efforts, and hundreds more upload pictures and videos of the damage.

Aggregation hubs are often the failure point for congested networks. This occurs when data from several smaller sources flows into a central processing point and creates bottlenecks. When this happens, communication can be severely limited or cut off completely.

The probability of technology disruptions is on the rise nationally and locally. The probability of occurrence of cyber threats is increased with increased reliance on the internet and cloud-based computing. Local governments are increasingly being targeted by cyber criminals on the basis that they have fewer resources to defend themselves.

10. Pandemic Flu

- **Ranking:** Probability Low with High Impact

An influenza pandemic is a global outbreak of a new influenza A virus. A novel influenza A virus is one that has caused human infection but is different from current seasonal human influenza A viruses spreading among people. Novel influenza A viruses can be viruses that originate in animals that gain the ability to infect humans or human viruses that change significantly to be different from current human seasonal influenza A viruses.

Some novel flu A viruses are believed to pose a greater pandemic threat than others and are more concerning to public health officials because they have caused serious human illness and death and have been able to spread in a limited manner from person-to-person. Novel influenza A viruses are of extra concern because of the potential impact they could have on public health if they gained the ability to spread from person-to-person easily, triggering a pandemic.

The most recent pandemic (COVID-19) showed that infectious diseases can occur at any given time during the year. The world is still dealing with the effects of COVID-19. New cases of and death rates of COVID-19 are rising globally daily but not at the rate it was during 2020 and 2021.

Locally, the City of Corona was impacted by COVID-19 both from an economic and community-based standpoint from 2020 through 2023. The probability of an annual risk of experiencing an infectious disease outbreak in the City of Corona is a continued threat. Infectious disease outbreaks and epidemics will occur on an ongoing basis.

11. Vulnerable Populations

Factors such as age, physical conditions, socioeconomic status, access to key services, and many other factors affect the ability of residents to prepare for and protect themselves and their property from a catastrophic event. Higher income households for example, are more likely to afford the cost of retrofitting homes to resist flooding than a lower income household. As a result, the higher-income household is less likely to experience significant damage during a flood event than the lower income household, even if the same amount of rain falls on both.

The following groups can be considered vulnerable or at a greater risk during an emergency:

- Infants and small children under age 3
- Women who are pregnant
- Elderly (age 65 older)
- Homeless
- Obese and bedridden
- Mentally ill
- Cognitive disabilities
- Medical conditions (heart disease, diabetes, high blood pressure)
- Those requiring life-saving medications (high blood pressure, depression)
- Drug or alcohol addiction
- Mobility constraints
- Non-English speakers

Figure 4.4.1 – Earthquake Fault Zones for City of Corona 2023

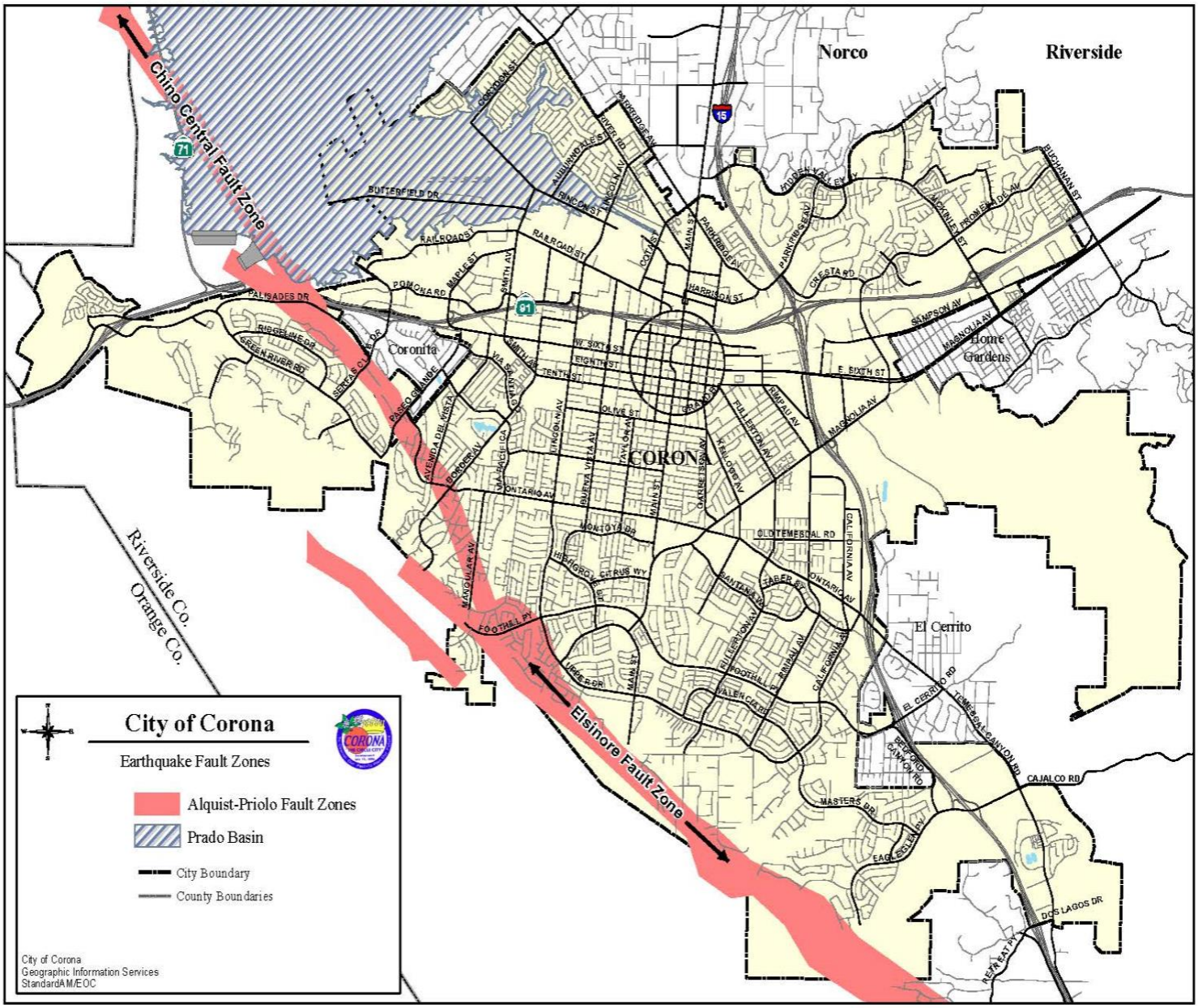


Figure 4.4.2 – Flood Zones for City of Corona 2023

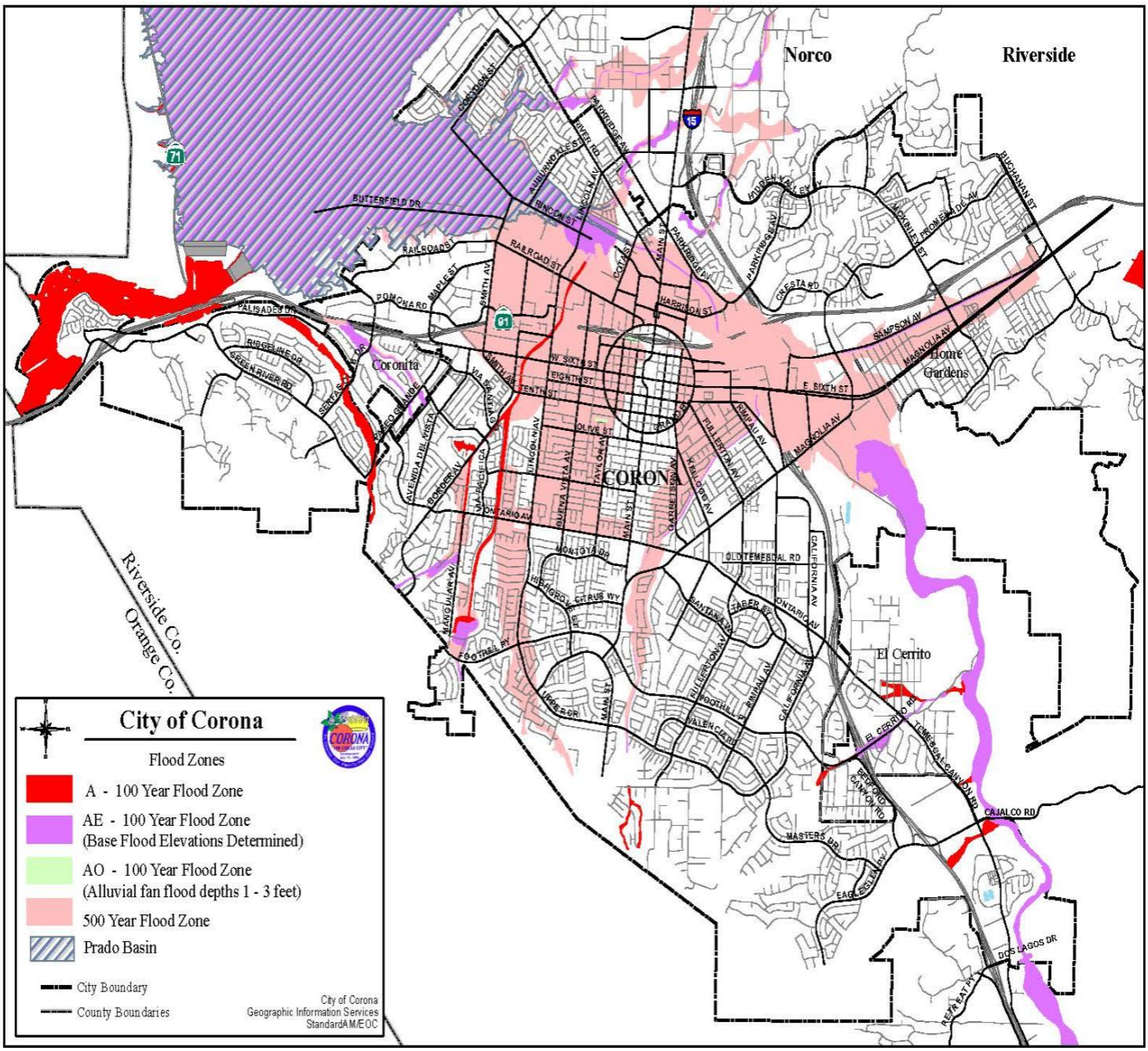
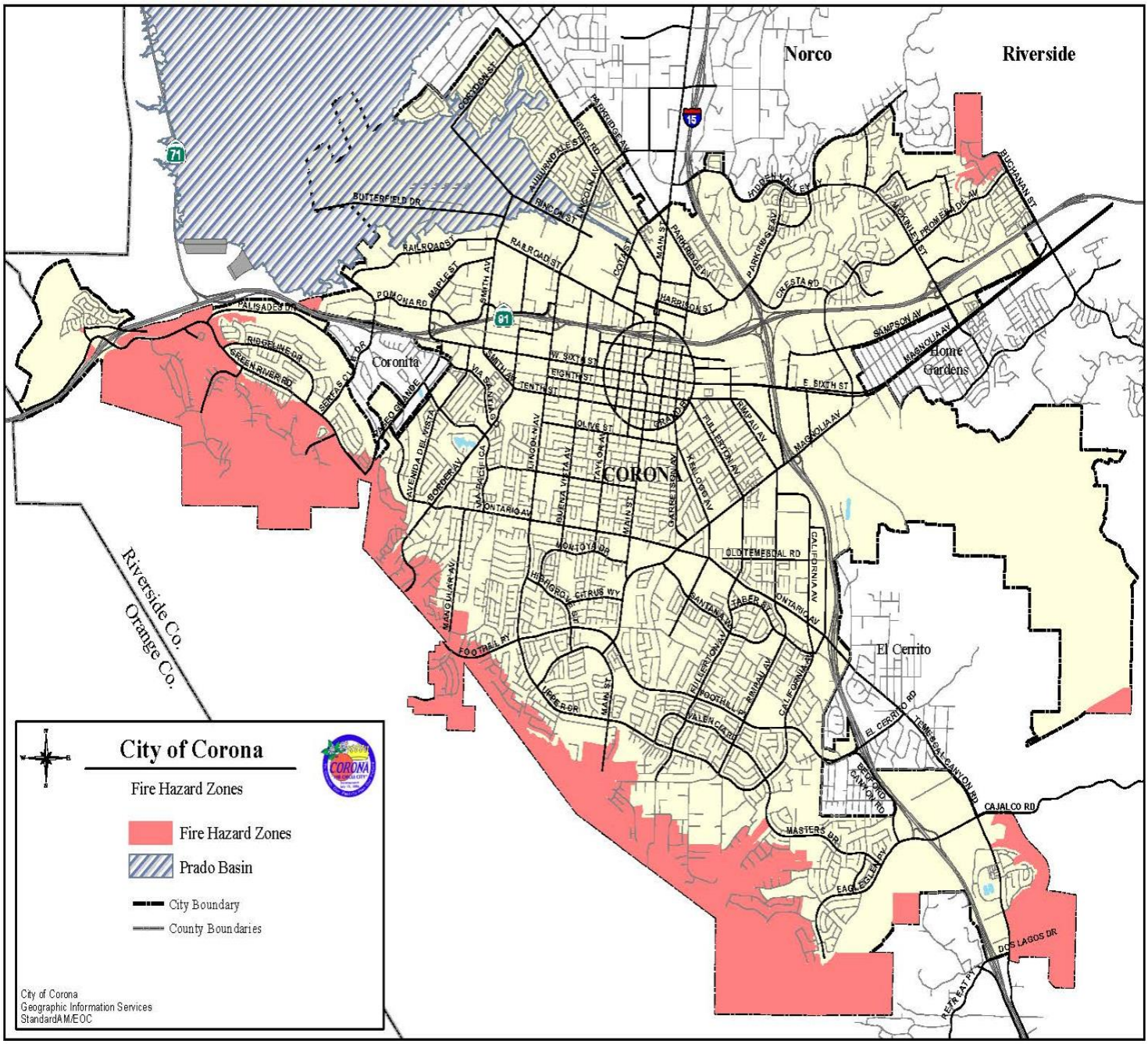


Figure 4.4.3 – Fire Hazard Zones for City of Corona



SECTION 5.0 – COMMUNITY RATING SYSTEM

5.1 REPETITIVE LOSS PROPERTIES

The National Flood Insurance Program's (NFIP) Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements.

As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS:

1. Reduce flood losses.
2. Facilitate accurate insurance rating; and
3. Promote the awareness of flood insurance.

On March 7, 2022, City of Corona had a meeting with California Department of Water Resources so that the City's floodplain management program be in full compliance with the minimum NFIP requirements. As of 2022, the City has 38 repetitive loss properties, with 65 claims paid since 1978. As of 2023, there are currently 68 insurance policies in force with approximately $24,825,500 in coverage. We currently do not have the historical data regarding the loss properties available. This data is being requested from FEMA and will be added to the LHMP before the next update.

5.2 NATIONAL FLOOD INSURANCE PROPERTIES

The City of Corona has participated in the National Flood Insurance Program since 1978. This section was reviewed by the LHMP planning team, and no changes from the 2018 LHMP update.

a. ***Describe participation in NFIP, including any changes since previously approved plan.*** Corona's recent activity related to NFIP includes updated Riverside County Flood Insurance Study and digitized Flood Insurance Rate Maps (FIRM) on August 28, 2008. City of Corona Floodplain Management Ordinance updated on December 3, 2008. In the 2020 General Plan Update, reference to the 100-Year and 500-Year Flood Zones.

b. ***Date first joined NFIP*** - May 15, 1978

c. ***Identify actions related to continued compliance with NFIP*** – Corona Floodplain Management Ordinance was updated in 2008 to meet the minimum NFIP requirements pursuant to Title 44 Code of Federal Regulations Sections 59, 60.3-60.6, and 65.3 and the California Department of Water Resources (DWR) Model Ordinance.

The Public Works Department reviews development permit applications and plans to ensure they are following our Ordinances and requires map revisions as necessary and maintains records such as elevation certificates, Letters of Map Changes, and Flood Insurance Rate Maps (FIRMs) for public availability. In 2022, an NFIP Community Assistance Contact (CAC) Questionnaire was sent out to the public. The questionnaire covered 5 topic areas: 1. Floodplain management regulations 2. Map availability and accuracy 3. Floodplain development review process 4. Record keeping 5. FEMA/State Assistance

d. The Community Services and Public Works Department investigate violations and issue enforcement orders to bring developments in compliance with City Ordinances.

e. **CRS member** – No

f. **CRS class** – n/a

g. ***Describe any data used to regulate flood hazard area other than FEMA maps***- Riverside County Flood Insurance Study issued August 28, 2008; Drainage studies used to support CLOMR and LOMR issuance. No-rise Certification is required pursuant to Chapter 18.20.050. (A) of Corona's Municipal Code.

h. ***Have there been issues with community participation in the program?*** No

i. ***What are the general hurdles for effective implementation of the NFIP?*** Funding for updating outdated drainage studies and for performing new studies in previously unstudied flood hazard areas.

j. **Summarize actions related to continued compliance with NFIP** – Continued compliance can include communicating ordinance to the City's website: https://codelibrary.amlegal.com/codes/corona/latest/corona_ca/0-0-0-56590. The City has a Master Drainage Plan but only available upon request and not

accessible through the City's website. The City would like to integrate training in the 2023-2028 LHMP cycle.

SECTION 6.0 - CAPABILITIES ASSESSMENT

The City's ability to reduce hazards by improving upon existing mitigation strategies or implementing newly identified mitigation strategies, include it's legal and regulatory authorities, administrative, technical, and fiscal capabilities, and imperative to the success of all these strategies, are its continuous outreach, education, and partnership building capabilities.

6.1 REGULATORY MITIGATION CAPABILITIES

The City formally adopts, reviews, and updates regulatory policies and plans, along with implementing regulations such as zoning and subdivision ordinances. The City partners and coordinates with Riverside County Operational Area to ensure we are apprised of all regional efforts and adhere to State and Federal mandates.

The hazard mitigation plan update process provides the City with an opportunity to review, evaluate, and expand on existing policies, plans, and City programs. Figure 6.1.1. is an example of regulatory capabilities that assist the City in mitigation strategies.

Figure 6.1.1 Regulatory Mitigation Capabilities for City of Corona

Regulatory Tool	Yes/No	Comments
General Plan	Yes	Comprehensive General Plan for the City 2020-2040: Long Range Policy Document
Zoning Ordinance	Yes	Corona Municipal Code (CMC) – Title 17
Subdivision Ordinance	Yes	Corona Municipal Code – Title 16
Site Plan Review	Yes	Development Plan Review CMC 17.102
Growth Management Ordinance	No	Included in Corona General Plan – Growth Development Plan
Floodplain Ordinance	Yes	Corona Municipal Code Title 18
Floodplain Insurance Rate Maps	Yes	Corona Municipal Code Title 18
Other special purpose ordinance (storm water, water conservation, wildfire)	Yes	Water Conservation Ordinance, 2009; Chapter 13.26 of the Corona Municipal Code, Airport General Provisions Title 4 CMC, Fire Facilities Fee Chapter 3.36 CMC.
Building Code	Yes	Green Buildings Code, CMC 15.05.010, Fuel Modification CMC 15.12.110, Eave Protection Chapter CMC 15.12.270.
Fire Department ISO Rating	Yes	Rating: 02/2X
Erosion or sediment control program	Yes	CMC 15.36.80 (Ord. 2806 and 2568)
Storm Water Management Program	Yes	CMC 13.27, Riverside County Drainage Area Management Plan (DAMP), Draining Master Plan-Riverside County NPDES co-permittee.
Capital Improvements Program	Yes	Five-year plan with annual updates.

Economic Development Plan	Yes	The 2021 Economic Development Strategic Plan guides the City's development, retention, expansion, and resiliency efforts
Local Emergency Operations Plan	Yes	Emergency Operations Plan Updated 2022. Recovery Annex Updated 2022.
Other Special Plans		• Water Master Plan • 2022 Community Wildfire Protection Plan Update • Urban Water Management Plan • Corona DWP Standard Plans and Specification for Sewer & Water • 2022 Structure Protection Plan Update • California Fire Code Chapter 49, 2010 • Hazardous Materials Area Plan, California Fire Code • Certified Unified Program Agency, • Fire Mutual Aid Threat – S.O.L.A.R. Plan • 2021-2029 Corona General Plan Housing Element Update • Neighborhood Traffic Management Program Community Handbook • 2022 Cybersecurity Incident Response Plan
Flood Insurance Study or other engineering study for streams	Yes	Riverside County Flood Insurance Study, which includes City of Corona streams.

6.2 ADMINISTRATIVE AND TECHNICAL MITIGATION CAPABILITIES

The figure below shows City personnel responsible for activities related to hazard mitigation. Expertise is used in hazard mitigation identification, planning and strategies, and where information is shared across various City plans.

Figure 6.2.1 Administrative and Technical Mitigation Capabilities for Corona

Personnel Resources	Yes/No	Describe Capability
Community Development Director	Yes	Knowledge of land development and management practices.
Public Works Director	Yes	Understanding of construction practices related to infrastructure
Civil Engineer	Yes	Evaluation of physical construction
GIS Coordinator	Yes	Implement, updates, and manages maps
Chief Building Official	Yes	Enforcement of laws and codes governing new building construction
IT Project Manager	Yes	Implementation of Cybersecurity Readiness
Emergency Services Manager	Yes	All-Hazards Coordination and Response
Health and Safety Manager	Yes	All-Hazards Health and Safety
Grant Writer	Yes	Contract with outside consultant
Police Dispatch Manager	Yes	Warning systems, Reverse 911
Chief Financial Officer	Yes	Budgets and finance
Nurse Educator	Yes	Training, Quality Control, EMS Capacity
HAZMAT	Yes	All-Hazards
Homeless Solutions Manager	Yes	Homeless Shelter management
Warning Systems	Yes	Automated emergency notification system.
Mutual Aid Agreements	Yes	Interschool with Corona Norco Unified
Mitigation Planning Committee	No	Created for this plan update
Planner	Yes	Hire planner to work towards mitigation plan
Emergency Manager	Yes	Alert and Warning
Maintenance Programs (Tree Trim and Cleaning Drainage)	Yes	Corona Norco Unified School District

6.3 FISCAL MITIGATION CAPABILITIES

The figure below identifies financial tools and resources the City could potentially use to help fund mitigation activities. The City continually identifies potential Federal and State grant opportunities to supplement mitigation financial capabilities. See Section 6.5 Funding Opportunities.

Figure 6.3.1 - Fiscal Mitigation Capabilities for City of Corona

Financial Resources	Accessible/Eligible to Use (Yes/No)	Comments
Community Development Block Grants	Yes	Depending on budget & grantor approval
Capital improvements project funding	Yes	Depending on available budget
Authority to levy taxes for specific purposes	Yes	With voter/City council approval
Fees for water, sewer, gas, or electric services	Yes	With voter/City council approval
Impact fees for new development	Yes	With City Council Approval
Incur debt through general obligation bonds	Yes	With voter/City council approval
Incur debt through special tax bonds	Yes	With voter/City council approval
Incur debt through private activities	No	With voter/City council approval
Withhold spending in hazard prone areas	Yes	With voter/City council approval
General Fund	Yes	With City Council Approval
Measure X	Yes	With voter/City council approval

6.4 MITIGATION OUTREACH AND PARTNERSHIPS

The City of Corona has an active emergency preparedness, education, and outreach programs. Mitigation strategies are taught throughout the year at various community events, fairs, schools, businesses, and other functions. The greatest outreach efforts are being conducted through our CERT Program that includes classes provided for Corona Norco Unified School District and public and private sector partnerships.

Monthly outreach and education events are scheduled for 2023 into 2025 that include the following:

- Sound the Alarm Event in March of 2023 with American Red Cross:
    - Installation of Fire Alarms
- Special Needs Prom at Crossroads Church
    - Integration with Special Needs Population
- Corona Day of the Child Event in April of 2023
    - Education and Outreach to the Community
- Relay for Life Event in May of 2023
    - Education and Outreach to the Community
- National Night Out in August of 2023
    - Education and Outreach to the Community
- Christmas Tree Lighting in November of 2023
    - Education and Outreach to the Community

The City coordinates with local profit, non-profit, volunteer, and special district entities, such as the school district, the hospital, and the American Red Cross in addition to our Operational Area partners and their volunteer organizations, to plan for and participant in all hazards joint training and exercises. The vast array of knowledge and resources these entities bring to the table greatly improves our emergency management capabilities.

An example of these coordinated planning and training efforts is our City's participation in the regional mass care and shelter planning as we incorporate planning for access and functional needs individuals. In addition, the City has designated cooling and warming centers to utilize during severe weather emergencies, when the establishment of a shelter is not necessary.

The Corona Fire Safe Council was established in 2022, made up of residents and fire officials to prepare the community from catastrophic wildfires. Corona Fire Department will facilitate and this will include the following:

- Community Risk Assessment to determine fuel hazards, evacuation routes, and overall risk.
- Community Home Ignition Workshops focus on defensible space concepts and hardening structures to protect homes from wildfires.

One of the most successful systems used to improve upon and augment our City's capabilities and resources is our participation and partnership in the various mutual aid systems. Our Police and Fire Departments participate in mutual aid agreements in the event the City's forces are stretched beyond their capabilities.

CalOES coordinates the Emergency Management Assistance Act for the response of emergency management resources to assist in the management of emergencies and disasters. Our Corona Department of Water and Power participates in Cal WARN and the local ERNIE water resource mutual aid organizations. The City manages emergencies under the National Incident Management System (NIMS) which utilizes the Master Mutual Aid concept.

6.5 EXPANSION/EXPANDING UPON IMPROVEMENT MITIGATION CAPABILITIES

There are a multitude of methods and processes that a jurisdiction may use to improve upon current capabilities to mitigate emergencies or disasters. The City of Corona has identified the below to support this thought process:

Personnel: Hiring of new staff in departments with identified weaknesses in capability or processes can and will make the staff stronger thereby increasing capabilities. Adding employees does not always work in parallel with capability. Through training and exercise, additional support resources and working groups can be potentially successful in the absence of additional staffing.

- Governance: Continue to ensure that regulations are put in place relating to building codes, ordinances, and state and federal requirements.

- Administrative: The administration capabilities can be improved upon by developing a mitigation action implementation plan that is reviewed and updated on a continuous basis. This can be used to update the LHMP over the coming years providing updates to the status of projects and actions.

- Technical: Incorporate subject matter experts within City staff into emergency management planning that includes mitigation projects.

- Fiscal: Utilize hazard mitigation grant funding to complete any projects that have been identified by the Hazard Mitigation Planning Team.

- Outreach: Integrate the business community, HOA's, and civic organizations through outreach events. This outreach and preparedness through social media can be effective.

6.6 FUNDING OPPORTUNITIES

In addition to the fiscal capabilities identified in figure 6.3.1 – Fiscal Mitigation Capabilities for City of Corona, some of the greatest funding opportunities come in the form of State and Federal grants, such as the Hazard Mitigation Grant Program and the California Earthquake Authority (CEA) Earthquake Retrofit Grant Program.

The Hazard Mitigation Grant Program (HMGP) is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (the Stafford Act), Title 42, United States Code (U.S.C.) 5170c. The key purpose of HMGP is to ensure that the opportunities to take critical mitigation measures to reduce the risk of loss of life and property from future disasters are not lost during the reconstruction process following a disaster. HMGP is available, when authorized under a Presidential major disaster declaration, in the areas of the State requested by the Governor. The amount of HMGP funding available to the Applicant is based upon the total Federal assistance to be provided by FEMA for disaster recovery under the Presidential major disaster declaration.

The City of Corona applies for various grants to augment our mitigation financial capabilities. Examples of successful grants awarded to the City to assist in our mitigation efforts are as follows.

1. The City applied for and was awarded Hazard Mitigation Grant Program #4653-307-01R funding for a hydro-seeding project in the burn scar of the 2018 Canyon Fire. The approved activity is to hydro-seed 200,000 square feet of fire damaged area behind a residential area bordering 48 homes and infrastructure using an endemic mixture of California Native Species. The re-establishment of ground cover will assist in the prevention of or lessening the effects of erosion, flash flooding and debris flow.
2. This project was completed in February of 2019. The area of seeding is currently under maintenance contract as part of the LMD Zone 10 maintenance with Tropical Plaza. As of 2023, the area will be continuously irrigated and maintained as part of the mitigation process to ensure the success of seeding and growth into the future.

CEA Earthquake Retrofit Grants will be evaluated. The City will look to leverage this grant for older homes built before 2000. The CEA and the California Residential Mitigation Program (CRMP) will provide monetary grants to assist qualified

homeowners in securing structural home improvements to reduce damage or collapse in the event of an earthquake.

SECTION 7.0 - MITIGATION STRATEGIES

7.1 GOALS AND OBJECTIVES

The City of Corona coordinated through the Riverside County Emergency Management Department and other multiple cities and agencies throughout Riverside County in the creation/update of the 2023 LHMP. The cooperation and discussions both in regional meetings, community outreach, and internal meetings allowed a global perspective and local jurisdictional perspective to identify additional exposures and hazards within Corona.

Goal 1: Reduce loss of life and injuries.

Objective 1.1: Provide timely notification and direction to the public in preparation for and response to imminent and potential hazards.
Objective 1.2: Protect public health and safety through mitigation, preparing for, responding to, and recovering from the effects of natural disasters.
Objective 1.3: Reduce hazard impacts and protect life, property, and the environment from damage.

Goal 2: Reduce Hazard Related Property Losses

Objective 2.1: Encourage new development to occur in locations that avoid or minimize exposure to hazards.
Objective 2.2: Reduce hazard related property losses by enforcing strong building, fire, and municipal codes.
Objective 2.3: Reduce repetitive losses for fire, flood, and earthquakes by encouraging protective measures and by anticipating future events.
Objective 2.4: Reduce hazard impacts to critical facilities, utilities, and services through the implementation of mitigation strategies.
Objective 2.5: Continue to strengthen land use regulations in high hazard areas.

Goal 3: Protect the Environment

Objective 3.1: Mitigate the impact of recurring drought conditions that impact both ground water supply and the agricultural industry.
Objective 3.2: Protect the environment from hazardous material releases or exposures.
Objective 3.3: Protect the environment from sewage, wastewater, and storm water pollution or contamination.

Goal 4: Improve coordination and collaboration with City Departments and partnering agencies throughout all phases of emergency management.

Objective 4.1: Coordinate with Riverside County EMD, Cal OES, and FEMA to ensure SEMS/NIMS compliancy and to ensure any updates or changes are instituted.
Objective 4.2: Improve City's transition to continuity of operations for all hazard incidents.
Objective 4.3: Incorporate mitigation related activities into other disaster planning mechanisms, such as the General Plan, Climate Change Plan, Flood and Dam Failure Plan, and the Emergency Operations Plan.
Objective 4.4: Participate in Operational Area meetings, committees, and exercises.

Goal 5: Improve Community and Agency Awareness

Objective 5.1: Improve mitigation and hazard related outreach to the public, businesses, and other stakeholders to increase their understanding of the various types, locations and effects of hazards and vulnerabilities, and actions they can take to reduce those hazard impacts.
Objective 5.2: Improve, standardize, and expand the emergency preparedness education and outreach program.

7.2 MITIGATION ACTIONS

The City of Corona identified the following mitigation actions to be taken based on the Goals and Objectives established, pertinent to the hazard ranking assessment.

These actions are in addition to the on-going mitigation strategies identified in Section 7.3 and the projects to be completed in the comprehensive Five-Year Capital Improvement Program (CIP), which provides for the maintenance and improvement of the City's infrastructure.

The following mitigation projects are from the 2018 LHMP update with status.

1) **Goal 4**: Reduce Hazard Related Property Losses

Objective 2.3: Reduce repetitive losses for fire, flood, and earthquakes by encouraging protective measures and by anticipating future events.

Action: Design and construction of Corona MDP Line 52 to alleviate flooding on Grand Avenue and Joy Street

Responsible Dept: Utilities Department
Mitigated Hazard: Flood
Status: Completed in 2018
Funding: City General Fund – Capital Improvement Project

2) **Goal 2:** Reduce Hazard Related Property Losses

Objective 2.3: Reduce repetitive losses for fire, flood, and earthquakes by encouraging protective measures and by anticipating future events.

Action: Utilities Department in conjunction with Emergency Management Division will facilitate the creation of a Flood Plan for the City.

Responsible Dept: Utilities Department
Mitigated Hazard: Flood
Status: Completed in 2018
Funding: California Department of Resources – Statewide Grant

Objective 2.3: Reduce repetitive losses for fire, flood, and earthquakes by encouraging protective measures and by anticipating future events.

3) **Goal 2**: Reduce Hazard Related Property Losses

Objective 2.4: Reduce hazard impacts to critical facilities, utilities, and services through the implementation of mitigation strategies.

Action: A comprehensive needs assessment, risk analysis, and prioritized implementation plan that will help Corona be prepared for and address power outages at critical facilities.

Responsible Dept: Department of Utilities
Mitigated Hazard: Power Failure
Status: Completed in 2020
Funding: Community Power Resiliency (CPR) Program

4) **Goal 2**: Reduce Hazard Related Property Losses

Objective 2.3: Reduce repetitive losses for fire, flood, and earthquakes by encouraging protective measures and by anticipating future events.

Action: Department of Utilities in conjunction with Emergency Management Division will facilitate the creation of a flood plan for the City of Corona

Responsible Dept: Department of Utilities and Fire Department
Mitigated Hazard: Flood
Status: Completed in December 2021
Funding: California Dept. of Water Resources – Flood Emergency Response Projects – Statewide Grant

5) **Goal 3**: Protect the environment.

Objective 3.2: Protect the environment from hazardous material releases or exposures.

Action: The 2021 Hazardous Materials Area Plan was updated in coordination with Riverside County Environmental Health to assist in the prevention or mitigation of damage from the release or threatened release of hazardous materials.

Responsible Dept: Fire Department
Mitigated Hazard: Hazardous Materials Incident, Fire
Status: Completed 2021
Funding: State Homeland Security Grant Funds

The following mitigation projects have been identified by the responsible City department, scheduled, and a funding mechanism has been allocated for the 2023 LHMP update.

The following are mitigation actions for this 2023 LHMP update which shows the highest mitigation action priority designated as priority #1, and the lowest mitigation priority designated as priority #12.

Figure 7.2.1 Mitigation Actions for The City of Corona

Plan Year	Action	Hazard	Background/Benefit	Departments	Potential Funding	Timeline	Priority
2023	Enhance communication interoperability by the integration of the Next Generation 911 (NG911) telecommunication system. The NG911 will enable voice and multi-media communications between the 911 caller, PSAP, and first responders in catastrophic events.	Earthquake	Improve coordination and collaboration with City Departments and partnering agencies throughout all phases of emergency management	Police	CalOES 911 Tax	1 Year	1
2023	Integration of mass notification system Civic Ready.	Power Failure	Provide timely mass notification and direction to the public in preparation for and response to imminent and potential catastrophic hazard and incidents	Police and Fire	PEG Fund General Fund	1 Year	2
2023	Coldwater Canyon Structural Improvements	Flood	Reduces flood risk and nuisance to traveling public, these conceptual improvements are pending friendly acquisition of parcels	Public Works	General Fund	1 Year	3
2023	Longer Term Outdoor Conservation	Drought	Adding drought tolerant grass, ground covers, and planting of shrubs and trees	Community Services	General Fund	5 Years	4
2023	Education and Outreach Green Programs. Corona will continue to expand and build those programs for the next 5 years.	Wildfire	Education program that will include cutting back overgrown weeds and vegetation, and fire trails for easier access	Public Works/Fire	General Fund	5 Years	5
2023	Reducing Urban Heat	Extreme Temperature	Trees, green roofs, and vegetation added at City Hall, and Corona Parks	Community Services	General Fund	5 Years	6
2023	Reforesting Effort	Extreme Temperature	Corona will add 15,000 trees across parks, street parkways, and residential areas	Community Services	General Fund	5 Years	6
2023	Removal of debris in waterways to reduce flooding	Winter Storms	Routine inspection maintenance plans	Public Works	General Fund	3 Years	7
2023	Provide Community Emergency Response Team training to the community. Offer this twice a year to the community.	All Hazards	Improve community awareness	Fire	SHSP Grant	1-4 Years	8
2023	Coordination with Caltrans, Riverside County Transportation Commission with the Corona Freeway Improvement Projects.	Transportation	Improve coordination and collaboration with City Departments	Public Works	Caltrans District 8 and General Fund	1-5 Years	9

2023	Develop a multi-year EOC training and exercise plan, enhancing the City's ability to respond and recover from all hazard incidents, lessening the negative impacts to our residents.	All Hazards	Improve coordination and collaboration with City Departments and partnering agencies throughout all phases of emergency management.	Fire / Emergency Management	General Fund and EMPG	1-7 Years	10
2023	Update of the Structure Fire Protection Plan in 2022.	Fire and Earthquake	Reduce Hazard Related Property Losses.	Fire / Prevention	General Fund	1-2 Years	11
2023	Conduct Active Shooter exercises citywide. Enter scene under force protection to provide care to victims that otherwise would have died from preventable injuries.	Terrorism	Reduce loss of life and injuries.	Police and Fire	General Fund	1-3 Years	12

7.3 ON-GOING MITIGATION STRATEGY PROGRAMS

The City of Corona has implemented and or updated several policies, procedures, programs and plans to lessen the impact of disasters and prevent the loss of life and property. Some of these on-going mitigation efforts are identified in the table below.

Figure 7.3.1 On-Going Mitigation Strategy Programs

Hazard Type	Mitigation Action	Mitigation Strategy
All	2023 LHMP Update and annual review	Update 2023 Local Hazard Mitigation Plan to identify projects to decrease the impact of disasters and prevent the loss of life and property. Review to ensure priorities are not changed.
Contamination, Pollution, Flood	Storm Water and Urban Runoff Pollution Prevention Program	Prevents pollution of local waterways, regulates what can be discharged into storm drains.
Transportation Failure, Terrorism	Traffic Management Center	Single location to monitor throughout the City over 70 traffic signals, 15 monitoring cameras and a video and data link between Caltrans District 8 TMC in San Bernardino.
Transportation Failure	Advance Traffic Management System	Ability to adjust timing of traffic signal systems on local streets and bottom of freeway ramps to assist in moderating congestion.
Terrorism	Train and Exercise PD & Fire Tactical Response Team	Enter scene under force protection to provide care to victims that otherwise would have died from preventable death injuries.
HazMat, Transportation Failure, Fire	Hazardous Material Area Plan	Hazardous Material Area Plan assists in the prevention or mitigation of damage from the release or threated release of hazardous materials.
Pandemic Flu	Pandemic Influenza Plan	Facilitates coordination with local Public Health.
Fire, Transportation Failure, Terrorism	Emergency Airport Plan	Corona Municipal Airport Emergency Plan, provides agency coordination, communication procedures and lines of authority.
Flood/Water Supply Contamination	Sewer System Management Plan	Sewer System Management Plan, outlines preventative maintenance, schedule of maintenance ad response plan.
Water Supply Disruption/Drought	Urban Water Management Plan	Urba Water Management Plan – conservation and efficient water use
Climate Change, Fire	Climate Action Plan	Climate Action Plan – identifies and implements actions to reduce GHG emissions.
Fire	Suppression Inspection Action Plan	Suppression Inspection Action Plan – facilitates the completion of hazard reduction inspections.
Cybersecurity	2023/2024 Cybersecurity Incident Response Plan Update	The update will include mitigation for SQL injection attacks, implementation of the update will occur in late 2023 early 2024.
Power Disruption	Power Resiliency Needs and Risk Assessment	Comprehensive Needs assessment, risk analysis, and prioritized implementation plan that will help guide the City of Corona for a power outage.
HazMat, Fire	G&G Environmental Contract	Conduct on-site inspections for businesses housing hazardous materials to ensure compliance of State, County and local policies and procedures.
Communications Failure/Fire	SOLAR/Multi – County Mutual Threat Zone Guide	Continued participation with the SOLAR group in contingency planning for communications, resources, and response to mutual threat areas.
All	EOC Upgrade	Full EOC upgrade to include the ability to broadcast in and out of the EOC. New audiovisual capability.
All	2023 Emergency Response Guide Update	Update of the Emergency Response Guide that includes updated evacuation routes, assembly areas, and hazards.

All	Fire Master Training Plan	Improves the safety and performance of Department's members for them to prevent or minimize loss of life, damage to the environment and loss of property.
All	Police Active Shooter Training	Provide Active Shooter Training beginning in 2023 into 2024 to 2026.
All	Moving Medical Call Center to Ontario in 2023	More resources to appropriate medical dispatch calls.
Climate Change	2019 Corona Climate Action Plan Update	Incorporation of environmental responsibility into the everyday management of community operations.

7.4 FUTURE MITIGATION STRATEGIES

Below are identified mitigation strategies. A funding source has either not yet been identified for these projects or the project is only partially funded. The City of Corona is continuously looking for funding opportunities to augment its financial mitigation capabilities.

The City will continue to foster and develop Review Cooperative Agreements with the Cities of Norco, Riverside, and Eastvale in connection with hazard mitigation projects, outreach, and preparedness.

1) **Goal 2**: Reduce Hazard Related Property Losses

   Objective 2.4: Reduce hazard impacts to critical facilities, utilities, and services through the implementation of mitigation strategies.

   Action: Purchase and install back-up generators at City's groundwater wells and blend station
   Responsible Dept: Department of Utilities
   Mitigated Hazard: Electrical Failure, Water Supply Disruption, Earthquake
   Status: In Progress but Delayed (Supply Chain Issues)
   Funding: As of 2023, did not receive the HMGP funding, but did receive the Community Resiliency Funding, and purchased an emergency generator for Well 17A that arrived in 2023.

2) **Goal 2**: Reduce Hazard Related Property Losses

   Objective 2.4: Reduce hazard impacts to critical facilities, utilities, and services through the implementation of mitigation strategies.

Action: Ensure the City's oldest fire stations with ages ranging from 30 to 50 years of service can withstand a significant seismic event. Fire Station 2 will be replaced by the end of 2025 by the American Rescue Plan federal grant.

Station 3 will be replaced by the end of 2026 with seismic retro updates. This retrofitting will prevent displacement from the structure's concrete foundation.

A comprehensive fire facility assessment will be completed by the fall of 2024 for overall capital improvement for the other 6 stations. Seven fire stations currently exist.

Responsible Dept: Fire Department
Mitigated Hazard: Earthquake, Electrical Failure
Status: In Progress
Funding: Federal Grant Funds

3) **Goal 2**: Reduce Hazard Related Property Losses

Objective 2.4: Reduce hazard impacts to critical facilities, utilities, and services through the implementation of mitigation strategies.

Action: Conduct maintenance identified in the Caltrans bridge inspection reports. The passing of Senate Bill 1 will provide the City funding for repairs to roads and bridges. Advertising for Citywide Street improvement FY 2023 into September 2023, and begin construction in early 2024.

Responsible Dept: Public Works
Mitigated Hazard: Transportation Failure, Earthquake
Status: In Progress
Funding: In the CIP Budget

4) **Goal 4**: Improve coordination and collaboration with City Departments and partnering agencies throughout all phases of emergency management.

Objective 4.4: Participate in multi-agency multi-jurisdictional training and exercises.

Action: The City has included Norco College, City of Eastvale, City of Riverside in 2023 Functional Exercise, EOC Call Exercise, and CERT Trainings.

Responsible Dept: Emergency Management
Mitigated Hazard: All Hazards
Status: Ongoing and Continuous
Funding: SHSP CERT and City General Fund

5) **Goal 2**: Reduce Hazard Related Property Losses

Objective 2.3: Reduce repetitive losses for fire, flood, and earthquakes by encouraging protective measures and by anticipating future events.

Action: Sandbag station at Santana Regional Park has been established next to the soccer field in 2023. The use of sandbags will prevent or reduce flood water damage. Properly filled and placed sandbags can act as a barrier to divert moving water around, instead of through buildings.

Responsible Dept: Community Services
Mitigated Hazard: Floods
Status: Continuous
Funding: City General Fund

SECTION 8.0 – PLAN IMPLEMENTATION AND MAINTENANCE PROCESS

Implementation and maintenance of this 2023 LHMP is critical to the overall success of hazard mitigation planning. This is the 4th step in the planning process. This chapter provides an overview of the overall strategy for plan implementation and maintenance, and outlines the method and schedule for monitoring, updating, and evaluating the LHMP. We will review the LHMP and assess. The LHMP will be reviewed continuously and updated after a significant training or incident. The goals and objectives and address current and expected conditions.

- If the nature, magnitude, and/or type of risks have changed.
- Current resources for implementing the plan and exploring new resources.
- Implementation problems, such as technical, political, legal, or coordination issues with other agencies.
- The outcomes to ensure they are in line with the expected outcome, if not we will modify plan.

- Changes in Federal, State, or local ordinances, laws, and regulations
- Involve the public by posting notices on websites and announcements during public meetings intent to review and update LHMP allowing for public comment and input continuously.

If we discover changes that have occurred during the evaluation, we will update the LHMP Revision Page, and notify Riverside County EMD to update our Annex.

- The Fire Department Emergency Services Division will coordinate the monitoring, evaluation, and update of the LHMP.
- The City has incorporated the LHMP by adoption into the Safety Element of the City's General Plan.

SECTION 9.0 – INCORPORATION INTO EXISTING PLANNING MECHANISMS

The City has incorporated the Local Hazard Mitigation Plan by adoption into the Safety Element of the City's General Plan, Emergency Operations Plan, Recovery Annex, and Continuity of Operations Plan. The Safety Element includes discussion of fire, earthquake, flooding, and landslide hazards. Based on the ranking of hazards identified in the LHMP priority of mitigation projects to address these hazards will be determined and used in the development of the City's Capital Improvement Plan.

In addition, the City has often developed plans, policies and adopted ordinance to assist in the mitigation of hazards identified in the LHMP. These mitigation efforts can be seen in the following figures:

See Figure 3.5.1 Mitigation Project Updates
See Figure 6.1.1 Regulatory Mitigation Capabilities
See Figure 7.3.1 On-Going Mitigation Strategy Programs

The City of Corona Office of Emergency Management will be incorporating and/or leverage the information from the LHMP into the:

- Emergency Operations Plan
- General Plan
- Climate Action Plan
- Continuity of Operations Plan
- Cybersecurity Incident Response Plan
- Wildland Urban Interface Fire Area Plan
- Pandemic Influenza Plan

The City will be incorporating the LHMP into the City's update to the General Plan. The City will continue to incorporate new LHMP information into other plans where appropriate. The LHMP will be utilized to assess future developments in accordance with the General Plan. In addition to reviewing future development against relevant land use and zoning regulations, building and fire codes, and environmental and engineering standards, it will also be reviewed against the LHMP. The LHMP will also serve as a reference for suggested mitigation measure to reduce or eliminate risk from those hazards.

SECTION 10.0 - CONTINUED PUBLIC INVOLVEMENT

Continued public involvement is imperative to the overall success of the LHMP implementation. The update process provides an opportunity to solicit participation from new and existing stakeholders and to publicize success stories from the plan implementation and seek additional public comment. The LHMP maintenance and update process will include continued public and stakeholder involvement and input through attendance at City Council Meetings, Community Based Organization meetings, through the Corona Fire Safe Council, CERT Trainings, other meetings or events that may be scheduled, web postings, social media, and public hearings.

If any changes are made in the Scheduled Plan Maintenance Process, the public will be notified through actions taken at City Council meetings by posting of the agenda, cable TV viewing of these meetings, posting on the City's website and outreach at community meetings.

APPENDIX A – PLANNING TEAM MEETINGS

Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP) Update
Steering Committee Meeting Minutes
Date: October 5, 2022
Time: 10:00 a.m. to 11:30 a.m.

Email Designated for LHMP: LHMP@RIVCO.ORG

Brian MacGavin called the meeting to order and reviewed housekeeping items and meeting minutes from August 3, 2022.

Meeting Purpose: To provide a forum for MJLHMP participants to be able to share information and provide feedback into the oversight of the MJLHMP update process.

Review of Update / Requirements and timeline.

- Jennifer Smith reviewed the immediate update requirements and the MJLHMP timeline.
- August-October: identify goals, objectives, and actions to take and have data compiled.
- Inventory Worksheets and Risk Assessments should be completed by October 25 and mitigation actions should be finalized In November.
- A Teams meeting will be held with all county department representatives on October 25 to discuss completing Inventory and Risk Assessments that are due by October 25th.

Data Collection and HAZUS

- Breakdown of every risk category.
  - https://hazards.fema.gov/nri/map
- Risk Assessment Survey has been sent out.

Tracking and Scoring Mitigation Projects

- Brian MacGavin presented information on the tracking and scoring of mitigation projects.
- A new spreadsheet will be formulated for 2023 mitigation projects and actions.
- Separate spreadsheets will be reviewed as we go forward with the update.

Jurisdictional and County Department Assessments

- William Luna provided information on completing jurisdictional and county department assessments.

Additional Discussion and Feedback

- Something to do after plan is approved, going back and reviewing the definitions.

Next steps and Action Items

- Complete Inventory Worksheets and Risk Assessments.
- Contact Brian MacGavin, Jennifer Smith, or William Luna for assistance or questions.

Adjournment / Next Meeting

- Brian MacGavin adjourned the meeting and announced that the next meeting will be on January 4, 2023.

SIGN-IN SHEET

Local Hazard Mitigation Planning Meeting

October 12, 2022: Planning Meeting

NAME **AND** TITLE	ORGANIZATION	EMAIL ADDRESS
Lee Shin	Emergency Management Services Division	lee.shin@coronaca.gov
Abby Holmen	Emergency Management Services Division	abby.holmen@coronaca.gov
Matthew Windish	Public Safety Dispatch Police	matthew.windish@coronaca.gov
Steve Ellis	Corona Norco Unified School District	sellis@cnusd.k12.ca.us
Kurt Tanoue	Emergency Management Services Division	Kurt.tanoue@coronaca.gov
Savat Khamphou	City of Corona Public Works	savat.khamphou@coronaca.gov
Tanesha Coronado	City of Corona Health and Safety	tanesha.coronado@coronaca.gov
Ashley Zaragoza	City of Corona Economic Development	Ashley.zaragoza@coronaca.gov

LHMP Planning

Subject	Time	Presented by	Purpose	Attachments
Introductions / Housekeeping	10 mins	Brian MacGavin	Inform	Sign-in Sheet
Review of Minutes from August 3, 2022	5 mins.	Brian MacGavin	Inform	August 5, 2022 Steering Committee Minutes
Review of update requirements and timeline	10 mins.	Jennifer Smith	Inform	Local Mitigation Plan Review Guide & Timeline
Data Collection and HAZUS	10 mins	Catherine Farrokhi	Information	
Tracking and Scoring Mitigation Projects / Actions	15 mins	Brian MacGavin	Inform	Mitigation Projects Spreadsheet
Jurisdictional and County Department Assessments	15 mins.	William Luna	Information	
Additional Discussion and Feedback from Steering Committee Members	15 mins.	All	Discuss	N/A
Next Steps /Action Items	5 mins.	Brian MacGavin	Discuss	N/A
Adjourn / Next Meeting	2 mins.	Brian MacGavin	Inform	N/A

Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP) Update
OA Steering Committee Agenda
Date: January 4, 2023
Time: 10:00 AM to 11:30 AM

Subject	Time	Presented by	Purpose	Attachments
Introductions / Housekeeping	10 mins.	Brian MacGavin	Inform	Sign-in Sheet
Review of Minutes from October 5, 2022	5 mins.	Brian MacGavin	Inform	October 5, 2022 Steering Committee Minutes
Review of update requirements and timeline	10 mins.	Jennifer Smith	Inform	Local Mitigation Plan Review Guide & Timeline
GIS / Data Collection	10 mins.	Moses Martinez	Information	
2023-2028 Tracking and Scoring Mitigation Projects / Actions	15 mins.	Brian MacGavin	Inform	Mitigation Projects Spreadsheet
Jurisdictional LHMP Status Reports	15 mins.	William Luna	Information	
Additional Discussion and Feedback from Steering Committee Members	15 mins.	All	Discuss	N/A
Next Steps /Action Items	5 mins.	Brian MacGavin	Discuss	N/A
Adjourn / Next Meeting	2 mins.	Brian MacGavin	Inform	N/A

SIGN-IN SHEET

Local Hazard Mitigation Planning Meeting

January 18, 2023: Planning Meeting

NAME **AND** TITLE	ORGANIZATION	EMAIL ADDRESS
Lee Shin	Emergency Management Services Division	lee.shin@coronaca.gov
Abby Holmen	Emergency Management Services Division	abby.holmen@coronaca.gov
Matthew Windish	Public Safety Dispatch Police	matthew.windish@coronaca.gov
Steve Ellis	Corona Norco Unified School District	sellis@cnusd.k12.ca.us
Gerald Winkel	American Red Cross	Gerald.winkel@redcross.org
Savat Khamphou	City of Corona Public Works	savat.khamphou@coronaca.gov
Tanesha Coronado	City of Corona Health and Safety	tanesha.coronado@coronaca.gov
Ashley Zaragoza	City of Corona Economic Development	Ashley.zaragoza@coronaca.gov
Paul de Jonckheere	City of Corona IT	Paul.dejonckheere@coronaca.gov
David Deng	City of Corona IT	David.deng@coronaca.gov
Kyle Edgeworth	City of Corona IT	Kyle.edgeworth@coronaca.gov

LHMP Planning

Lee Shin

Subject:	LHMP Presentation for PD.
Location:	Corona Police Department (730 Public Safety Way, Corona, CA 92878)
Start:	Mon 2/20/2023 7:00 PM
End:	Mon 2/20/2023 8:00 PM
Recurrence:	(none)
Meeting Status:	Meeting organizer
Organizer:	Lee Shin
Required Attendees:	Kurt Tanoue; Abby Holmen; Paul de Jonckheere

Agenda:

1. Welcome and Introductions
2. Discussion on the Local Hazard Mitigation Plan for the City of Corona
3. Mitigation Strategies
4. Discussion of the Hazard Rankings for City of Corona
5. Upcoming EM Events
6. Amateur Radio Group Update
7. Closeout

1

APPENDIX B – PLANNING TEAM MEMBERS

HAZARD MITIGATION PLANNING TEAM			
Product:	EMERGENCY PLANNING TEAM ROSTER: LHMP	**Version 2.0**	March 2023
Projects:	Local Hazard Mitigation Plan 2022 - 2027		

NAME	TITLE	SIGNATURE
Justin Tucker	Assistant City Manager	DocuSigned by: JUSTIN TUCKER
Dean Derleth	City Attorney/Legal & Risk Management Director	DocuSigned by:
Sylvia Edwards	City Clerk	DocuSigned by: Sylvia Edwards
Jennifer Schaefer	Management Analyst	DocuSigned by: Jennifer Schaefer
Joanne Coletta	Planning Development Director	DocuSigned by: Joanne Coletta
Megan Quinn	Fire Inspector	DocuSigned by:
Moses Cortez	Parks and Trails Manager	DocuSigned by: Moses Cortez
Ashley Zaragoza	Economic Development Administrator	DocuSigned by: Ashley Zaragoza
Kim Sitton	Finance Director	DocuSigned by: Kim Sitton
Brian Young	Fire Chief	DocuSigned by:
Cindi Schmitz	Fire Marshall	DocuSigned by: Cindi Schmitz
Lee Shin	Emergency Services Manager	DocuSigned by: Lee Shin
Tom Moody	Director of Utilities	DocuSigned by: Tom Moody
Cindy Solis	Public Information Officer	DocuSigned by: Cindy Solis
Jazmine Vasquez	Safety Program Specialist	DocuSigned by: Jazmine Vasquez
Kyle Edgeworth	Deputy Chief Information Officer	DocuSigned by: Kyle Edgeworth
Matthew Windish	Communications Manager	DocuSigned by:
Robert Newman	Police Chief	DocuSigned by: Robert Newman
Erin Kunkle	Electric Utility Manager	DocuSigned by: Erin Kunkle

APPENDIX C – PUBLIC OUTREACH

Lee Shin

From:	Lee Shin
Sent:	Wednesday, January 11, 2023 4:29 PM
To:	Cindy Solis
Cc:	Abby Holmen; Lee Shin
Subject:	Corona LHMP 2023 Draft Version 1.4 January
Attachments:	Corona LHMP 2023 Draft Version 1.4 January.docx

Good Afternoon Cindy,

The 2023 Local Hazard Mitigation Plan Update is ready for review/comment by the public and all interested stakeholders.

This feedback will be used during the review and updating process in coordination with Riverside EMD, and to CalOES, and finally to FEMA for approval.

Thank you again,

1

facebook

Log In

City of Corona - City Government

February 12 ·

The City of Corona is conducting an update to our Local Hazard Mitigation Plan (LHMP). The intent of the plan is to help identify, reduce or remove long-term risk and protect people and property.

We are seeking the community's help and input during the local hazard mitigation process. If you have disaster related stories and/or photographs that you would like to share, or you have comments or other information directly related to natural hazard mitigation and the planning process, please email them to Lee Shin, Emergency Services Manager at Lee.Shin@CoronaCA.gov.

Click here to view the draft LHMP: https://bit.ly/3QIv7zb

Learn more: https://bit.ly/3QOOTcs

3

3 comments

Like

Comment

sproutsocial

Tag Performance | 5 of 10

Top Posts

View the top tagged published posts from the publishing period.

Descending by Lifetime Engagements

C city_of_corona
Sat 2/4/2023 11:11 am ...

The City of Corona is conducting an update to our Local Hazard Mitigation Plan...

Total Engagements	**28**
Likes	27
Comments	1
Saves	0

City of Corona ...
Sat 2/4/2023 11:11 am ...

The City of Corona is conducting an update to our Local Hazard Mitigation Plan...

Total Engagements	**25**
Reactions	4
Comments	0
Shares	0
Post Link Clicks	5
Other Post Clicks	16

C city_of_corona
Sun 2/12/2023 7:48 am ...

The City of Corona is conducting an update to our Local Hazard Mitigation Plan...

Total Engagements	**16**
Likes	16
Comments	0
Saves	0

Lee Shin

From: Cindy Solis
Sent: Wednesday, April 12, 2023 9:17 AM
To: Lee Shin
Cc: Kurt Tanoue; Abby Holmen; Lee Shin
Subject: Re: Emailing: Corona LHMP 2023 Final Version to Riverside EMD on Feb 1

Got it. I'll get this updated online.

We shared a total of 9 posts on Social Media and included it in the newsletter a few times. Our call to action directed individuals wanting to submit comments to email them directly to you, so any you have received so far is what we've gotten. The only post with related comments was here. Let me know if you need anything else.

Thank you,
-Cindy

From: Lee Shin <Lee.Shin@coronaca.gov>
Date: Wednesday, April 12, 2023 at 9:10 AM
To: Cindy Solis <Cindy.Solis@CoronaCA.gov>
Cc: Kurt Tanoue <Kurt.Tanoue@coronaca.gov>, Abby Holmen <abby.holmen@coronaca.gov>, Lee Shin <Lee.Shin@coronaca.gov>
Subject: RE: Emailing: Corona LHMP 2023 Final Version to Riverside EMD on Feb 1

Good Morning,

Here is the PDF 2023,

Any additional comments/feedback from community?

Have a great day,

Lee Shin
Emergency Services Manager, Corona Fire Department
735 Public Safety Way, Corona, CA 92878
Cell: 951.496.1299. | www.CoronaCA.gov/Fire

From: Cindy Solis <Cindy.Solis@CoronaCA.gov>
Sent: Tuesday, April 11, 2023 9:23 AM
To: Lee Shin <Lee.Shin@coronaca.gov>
Cc: Kurt Tanoue <Kurt.Tanoue@coronaca.gov>
Subject: Re: Emailing: Corona LHMP 2023 Final Version to Riverside EMD on Feb 1

1

Lee Shin

Subject:	Fw: LHMP Steering Committee Planning Meeting
Start:	Wed 1/4/2023 10:00 AM
End:	Wed 1/4/2023 11:30 AM
Recurrence:	(none)
Meeting Status:	Accepted
Organizer:	Lopez, Marlene

[CAUTION] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Marlene Lopez
Office Assistant III
County of Riverside
Emergency Management Department
Main Line: (951) 233-4819 Office: (760) 863-8057
Email: marllopez@rivco.org

From: Lopez, Marlene <MarlLopez@Rivco.org>
Sent: Wednesday, June 22, 2022 10:45 AM
To: Aguirre, Maricarmen <MAguirre@Rivco.org>; Mikel Alford <mikel.alford@temeculaca.gov>; Annas, Mark <mannas@riversideca.gov>; Bartlette, Brice <Brice.Bartlette@rivco.org>; Barton, Bruce <BBarton@RIVCO.ORG>; Vanessa Barrera <vbarrera@cityofmenifee.us>; Bassett, Mark <mark.bassett@rivco.org>; Cadden, Eric <eric.cadden@rivco.org>; Cardenas, Adrian <Adrian.Cardenas@RIVCO.ORG>; Collins, Camille <camille.collins@rivco.org>; Dennis Day <dday@indio.org>; Daniel DeSelms <daniel.deselms@palmspringsca.gov>; Gutierrez, Ana <AnGutierrez@Rivco.org>; Jones, Matthew <matthew.jones@rivco.org>; Kelly, Michelle <michelle.kelly@rivco.org>; Leon, Ramon A. <RALeon@RIVCO.ORG>; Luna, William <wiluna@rivco.org>; Macgavin, Brian <BMacgavi@RIVCO.ORG>; Mesa, Ralph <RMesa@RIVCO.ORG>; Ornelas, Michael <Michael.Ornelas@Rivco.org>; Ramirez, Erik B <EBramirez@rivco.org>; Reichardt, Shane <shane.reichardt@rivco.org>; Sellas, Peter <psellas@riversideca.gov>; Smith, Jennifer T <JTSmith@RIVCO.ORG>; Valterria, Mary <MValterr@RIVCO.ORG>
Subject: LHMP Steering Committee Planning Meeting
When: Wednesday, January 4, 2023 10:00 AM-11:30 AM.
Where:

Microsoft Teams meeting

Join on your computer or mobile app

APPENDIX B – INVENTORY WORKSHEETS

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY

2023 INVENTORY WORKSHEETS

City of Corona

JUNE 2023

TABLE OF CONTENTS

Introduction: These documents are meant to be discussed, used, and reviewed by a multi-disciplinary team. Participation by a wide range of stakeholders who play a role in identifying and implementing mitigation actions is required.

SPECIAL CONCERNS:

1. *The completed Letter of Commitment has been returned to EMD.*
2. *The completed Letter of Participation has been returned to EMD.*

Appendix A the Plan Review Tool for your reference. This is the document Cal EMA and FEMA will utilize to verify that all the required information is in the submitted documents.

1. LOCAL JURISDICTION CONTACT INFORMATION

The information on this page identifies:

- Jurisdiction and the contact person
- Jurisdiction's service area size and population
- EOP Plan and a Safety Element of their General Plan

PLEASE PROVIDE THE FOLLOWING INFORMATION:

Agency/Jurisdiction:		City of Corona		
Type Agency/Jurisdiction:		Local Government		
Contact Person:	Title:	Emergency Services Manager		
First Name:	Lee	Last Name:	Shin	
Agency Address:	Street:	735 Public Safety Way		
	City:	Corona		
	State:	CA		
	Zip:	92880		
Contact Phone	951-496-1299		FAX	951-736-2497
E-mail	lee.shin@coronaca.gov			

Population Served	161,823
Square Miles Served	39.2

Does your organization have a general plan?	Yes
Does your organization have a safety component to the general plan?	Yes
What year was your plan last updated?	2018

Does your organization have a disaster/emergency operations plan?	Yes
What year was your plan last updated?	2023
Do you have a recovery annex or section in your plan?	Yes
Do you have a terrorism/WMD annex or section in your plan?	Yes

2. Hazard Identification Questionnaire

The purpose of the questionnaire is to help identify the hazards within your service area. The list was developed from the first round of meetings with the various working groups in the 2023 plan creation, and from the hazards listed in the County's General Plan. Each hazard is discussed in detail in Part I of the 2023 LHMP. The information will be used as the basis for each jurisdiction to evaluate its capabilities, determine its needs, and to assist in developing goals and strategies. The information identifies:

a) What hazards can be identified within or adjacent to the service area of the jurisdiction.
b) Which of those hazards have had reoccurring events.
c) What specific hazards and risks are considered by the jurisdiction to be a threat specifically to the jurisdiction? (These locations should be identified by name and location for inclusion in the Specific Hazard Summary Table).
    a. Specific types of facilities owned and operated by the jurisdiction.
    b. Locations damaged from prior disasters or hazard causing events.
d) Information about the jurisdiction's EOC

With your Multi-Disciplinary Planning Team:

a. Instructions for Updating Jurisdictions, with your planning team: Review your old Questionnaire for accuracy and relevance, mark changes.
b. Instructions for New Jurisdictions and Special Districts, with your planning team, meet and go over the questionnaire. Fill in YES, NO or NA on the Questionnaire.

HAZARD IDENTIFICATION QUESTIONNAIRE

DOES YOUR ORGANIZATION HAVE:	
AIRPORT IN JURISDICTION	Yes
AIRPORT NEXT TO JURISDICTION	No
DAIRY INDUSTRY	No
POULTRY INDUSTRY	No
CROPS/ORCHARDS	No
DAMS IN JURISDICTION	Yes
DAMS NEXT TO JURISDICTION	Yes
LAKE/RESERVOIR IN JURISDICTION	Yes
LAKE/RESERVOIR NEAR JURISDICTION	Yes
JURISDICTION IN FLOOD PLAIN	Yes
CONTROLLED FLOOD CONTROL CHANNEL	Yes
UNCONTROLLED FLOOD CONTROL CHANNEL	Yes
EARTHQUAKE FAULTS IN JURISDICTION	Yes
EARTHQUAKE FAULTS NEXT TO JURISDICTION	Yes
MOBILE HOME PARKS	Yes
NON-REINFORCED FREEWAY BRIDGES	No
NON-REINFORCED BRIDGES	No
BRIDGES IN FLOOD PLAIN	No
BRIDGES OVER OR ACROSS RIVER/STREAM	Yes
ROADWAY CROSSING RIVER/STREAM	No
NON-REINFORCED BUILDINGS	No
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	Yes
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	Yes
FOREST AREA IN JURISDICTION	No
FOREST AREA NEXT TO JURISDICTION	Yes
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	Yes
MAJOR GAS/OIL PIPELINES IN JURISDICTION	Yes
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	Yes
RAILROAD TRACKS IN JURISDICTION	Yes
RAILROAD TRACKS NEXT TO JURISDICTION	Yes
HAZARDOUS WASTE FACILITIES IN JURISDICTION	Yes
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	Yes
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	Yes
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	Yes
DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY	
IN A FLOOD PLAIN	Yes
NEAR FLOOD PLAIN	Yes
NEAR RAILROAD TRACKS	Yes
NEAR A DAM	Yes
UPSTREAM FROM A DAM	Yes
DOWNSTREAM FROM A DAM	Yes
DOWNSTREAM OF A LAKE	Yes
DOWNSTREAM FROM A RESERVOIR	Yes
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	Yes
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	Yes
ON AN EARTHQUAKE FAULT	Yes
NEAR AN EARTHQUAKE FAULT	Yes
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	Yes
IN A FOREST AREA	No
NEAR A FOREST AREA	Yes
NEAR A MAJOR HIGHWAY	Yes
A HAZARDOUS WASTE FACILITY	Yes

NEAR A HAZARDOUS WASTE FACILITY	Yes
A HAZARDOUS STORAGE FACILITY	Yes
NEAR A HAZARDOUS STORAGE FACILITY	Yes
NON-REINFORCED BUILDINGS	No
A MAJOR GAS/OIL PIPELINE	No
NEAR A MAJOR GAS/OIL PIPELINE	Yes
DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:	
HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	No
HAVE BEEN DAMAGED BY FLOOD	Yes
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	Yes
HAVE BEEN DAMAGED BY FOREST FIRE	No
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	No
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	Yes
HAVE BEEN IMPACTED BY A PIPELINE EVENT	No
EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	Yes
IS YOUR EOC LOCATED IN A FLOOD PLAIN	Yes
NEAR FLOOD PLAIN	Yes
NEAR RAILROAD TRACKS	Yes
NEAR A DAM	Yes
UPSTREAM FROM A DAM	Yes
DOWNSTREAM FROM A DAM	Yes
DOWNSTREAM OF A LAKE	Yes
DOWNSTREAM FROM A RESERVOIR	Yes
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	Yes
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	Yes
ON AN EARTHQUAKE FAULT	No
NEAR AN EARTHQUAKE FAULT	Yes
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	Yes
IN A FOREST AREA	No
NEAR A FOREST AREA	Yes
NEAR A MAJOR HIGHWAY	Yes
A HAZARDOUS WASTE FACILITY	Yes
NEAR A HAZARDOUS WASTE FACILITY	Yes
A HAZARDOUS STORAGE FACILITY	Yes
NEAR A HAZARDOUS STORAGE FACILITY	Yes
NON-REINFORCED BUILDINGS	No
A MAJOR GAS/OIL PIPELINE	Yes
NEAR A MAJOR GAS/OIL PIPELINE	Yes
OTHER FACILITY INFORMATION **ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:**	
COULD BE CONSIDERED A TERRORIST TARGET	Yes
COULD BE CONSIDERED A BIO-HAZARD RISK	Yes

With your planning team, list the “Yes” answers and discuss. Use the information as a group to summarize your jurisdiction’s hazards and vulnerabilities.

3. SPECIFIC HAZARDS SUMMARY

This table helps to identify the information (name, owner, location, etc.) about the specific hazards identified in the Hazard Questionnaire.

In the Summary Table, list the basic information of the hazards identified by the jurisdiction in the Hazard Identification Questionnaire as a potential threat. These specific hazards were used in the development of response plans, maps, and other analysis data.

a. Instructions for Updating Jurisdictions and Special Districts: With your planning team, review the "Yes" answers and see if there were any changes, if so, summarize why there is a difference from 2018 LHMP.

b. Instructions for New Jurisdictions and Special Districts: With your planning team, review the "Yes" answers and discuss. Use the information as a group to summarize your jurisdiction's hazards and vulnerabilities.

SPECIFIC HAZARDS SUMMARY

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?
Corona	Dam	Lake Mathews	No	Yes
	Dam	Prado	No	Yes
	Fault	Elsinore	Yes	Yes
	Flood Channel	Mabey Canyon	Yes	No
	Flood Channel	Temescal Creek	Yes	Yes
	Hazmat Manufacturing Facility	Downs Energy	Yes	No
	Hazmat Manufacturing Facility	Dart Containers	Yes	No
	Hazmat Manufacturing Facility	G & S Associates	Yes	No
	Hazmat Manufacturing Facility	Golden Cheese	Yes	No
	Hazmat Manufacturing Facility	GTM, Inc.	Yes	No
	Hazmat Manufacturing Facility	Hi-Country	Yes	No
	Hazmat Manufacturing Facility	Us Battery	Yes	No
	Hazmat Manufacturing Facility	Watson Pharmaceuticals	Yes	No
	Hazmat Storage Location	Advanced Fuel Filtration	Yes	No
	Hazmat Storage Location	All American Asphalt	Yes	No
	Hazmat Storage Location	Liston Aluminum	Yes	No
	Hazmat Storage Location	United Agri Products	Yes	No
	Lake	Lake Mathews	No	Yes
	Pipeline	Four Corners Oil Pipeline	Yes	No
	Pipeline	Natural Gas	Yes	No
	Railroad Track	BNSF	Yes	No
	Reservoir	Lake Mathews	No	Yes
	River	Santa Ana River	No	Yes

4. JURISDICTION VULNERABILITY WORKSHEET

This table is a listing of the primary hazards identified by the 2022 LHMP working groups. Each jurisdiction was asked to evaluate the potential for an event to occur in their jurisdiction by hazard. They were also asked to evaluate the potential impact of that event by hazard on their jurisdiction. The impact potential was determined based on:

1. Economic loss and recovery
2. Physical loss to structures (residential, commercial, and critical facilities)
3. The loss or damage to the jurisdiction's infrastructure
4. Their ability to continue with normal daily governmental activities
5. Their ability to quickly recover from the event and return to normal daily activities
6. The loss of life and potential injuries from the event.

The jurisdictions were asked to rate the potential and severity using a scale of between 0 and 4 (4 being the most severe). The jurisdictions were also asked to rank the listed hazards as they relate to their jurisdiction from 1 to 19 (1 being the highest overall threat to their jurisdiction).

With the assistance of the RCIP Plan and County Departments, Riverside County EMD conducted an extensive evaluation of the severity and probability potential for the county. The hazards were also ranked for the County. Those numbers and rankings were provided to the jurisdictions as a comparison guide.

A separate table was created to address the hazards relating to agriculture and was assessed by the agriculture working group.

a. Instructions for Updating Jurisdictions and Special Districts: Please review the table, determine if you're ranking from the 2018 LHMP remains the same, and note that Pandemic has been added to the list. Please discuss and document new or unchanged severity and rankings.

b. Instructions for New Jurisdictions and Special Districts: Please evaluate the potential for an event to occur in your jurisdiction by hazard. Then, evaluate the potential impact of that event by hazard on your jurisdiction according to #1-6 from the potential impact list above.

NOTE: Under Medical, Pandemic was added. This was a result of COVID-19.

Source: 2005 LHMP – Verified 8/2012

NAME: City of Corona AGENCY: DATE: 2/20/2023

	COUNTY		CITY OF CORONA		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 19**
EARTHQUAKE	4	2	4	3	1
WILDLAND FIRE	3	4	3	3	2
FLOOD	3	3	3	3	6
OTHER NATURAL HAZARDS					
DROUGHT	3	3	3	3	12
LANDSLIDES	3	3	2	1	20
INSECT INFESTATION	2	3	1	1	18
EXTREME SUMMER/WINTER WEATHER	3	2	2	2	13
SEVERE WIND EVENT					NA
AGRICULTURAL					
DISEASE/CONTAMINATION	3	3	3	3	7
TERRORISM	3	1	4	2	4
OTHER MAN-MADE					
PIPELINE	3	2	3	2	19
AQUEDUCT	3	2	2	2	22
TRANSPORTATION	3	2	3	2	8
POWER OUTAGE ELECTRICAL FAILURE	4	4	4	4	3
HAZMAT ACCIDENTS	3	4	3	2	14
NUCLEAR ACCIDENT	4	1	4	1	17
TERRORISM	3	1	4	2	4
CIVIL UNREST	3	2	2	2	16
MEDICAL					
PANDEMIC	4	2	4	2	10

JURISDICTION MITIGATION STRATEGIES AND GOALS

This comprehensive table is a listing of the various mitigation strategies, goals, and objectives developed by the 2023 LHMP working groups.

The jurisdictions were also given the opportunity to list additional strategies, goals, and objectives specific to their jurisdiction.

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

With your Planning Team

a. Instructions for Updating Jurisdictions and Special Districts: please review the table; determine if you're ranking from the 2023 LHMP remains the same.

b. Instructions for New Jurisdictions and Special Districts: please follow below:

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE	
M	Aggressive public education campaign in light of predictions
M	Generate new literature for dissemination to:
M	◊ Government employees
M	◊ Businesses
L	◊ Hotel/motel literature
M	◊ Local radio stations for education
M	◊ Public education via utilities
M	◊ Identify/create television documentary content
M	Improve the Emergency Alert System (EAS)
M	◊ Consider integration with radio notification systems
H	◊ Upgrade alerting and warning systems for hearing impaired
H	◊ Training and maintenance
L	Procure earthquake-warning devices for critical facilities
H	Reinforce emergency response facilities
N/A	Provide training to hospital staffs
L	Require earthquake gas shutoffs on remodels/new construction
M	Evaluate re-enforcing reservoir concrete bases
L	Evaluate EOCs for seismic stability
H	Install earthquake cutoffs at reservoirs
M	Install earthquake-warning devices at critical facilities
L	Develop a dam inundation plan for new Diamond Valley Reservoir
M	Earthquake retrofitting
N/A	◊ Bridges/dams/pipelines
L	◊ Government buildings/schools
N/A	◊ Mobile home parks
L	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
M	Ensure Uniform Building Code compliance
M	◊ Update to current compliance when retrofitting
L	Insurance coverage on public facilities
L	Funding for non-structural abatement (Earthquake kits, etc.)
L	Pre - identify empty commercial space for seismic re-location
L	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
L	Mapping of liquefaction zones
M	Incorporate County geologist data into planning
N/A	Backup water supplies for hospitals
M	Evaluate pipeline seismic resiliency
M	Pre-positioning of temporary response structures
M	Fire sprinkler ordinance for all structures
L	Evaluate adequacy of reservoir capaCity for sprinkler systems

L	Training/standardization for contractors performing retrofitting
L	Website with mitigation/contractor/retrofitting information
L	◊ Links to jurisdictions
M	◊ Alerting information
L	◊ Volunteer information
M	Evaluate depths of aquifers/wells for adequacy during quakes
L	Evaluate hazmat storage regulations near faults
COMMUNICATIONS IN DISASTER ISSUES	
M	Communications Interoperability
M	Harden repeater sites
H	Continue existing interoperability project
M	Strengthen/harden
M	Relocate
H	Redundancy
M	Mobile repeaters
FLOODS	
L	Update development policies for flood plains
L	Public education on locations of flood plains
L	Develop multi-jurisdictional working group on floodplain management
L	Develop greenbelt requirements in new developments
L	Update weather pattern/flood plain maps
L	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
M	Required water flow/runoff plans for new development
M	Perform GIS mapping of flood channels, etc.
L	Install vehicular crossing gates/physical barriers for road closure
H	Maintenance of storm sewers/flood channels
M	Create map of flood channels/diversions/water systems etc.
L	Require digital floor plans on new non-residential construction
M	Upgrade dirt embankments to concrete
M	Conduct countywide needs study on drainage capabilities
H	Increase number of pumping stations
L	Increase sandbag distribution capacities
M	Develop pre-planned response plan for floods
M	◊ Evacuation documentation
M	◊ Re-examine historical flooding data for potential street re-design
L	Training for City/county PIOs about flood issues
L	Warning systems - ensure accurate information provided
L	◊ Publicize flood plain information (website?)
L	◊ Install warning/water level signage
L	◊ Enhanced public information
L	◊ Road closure compliance

L	◊ Shelter locations
L	◊ Pre-event communications
L	Look at County requirements for neighborhood access
L	◊ Secondary means of ingress/egress
M	Vegetation restoration programs
M	Ensure critical facilities are hardened/backed up
L	Hardening water towers
L	Terrorism Surveillance - cameras at reservoirs/dams
M	Riverbed maintenance
M	Evaluate existing lift stations for adequacy
L	Acquisition of property for on-site retention
M	Evaluate regulations on roof drainage mechanism
M	Erosion-resistant plants
L	Traffic light protection
M	Upkeep of diversionary devices
M	Install more turn-off valves on pipelines
H	Backup generation facilities
H	Identify swift water rescue capabilities across County
WILDFIRES	
M	Aggressive weed abatement program
M	◊ Networking of agencies for weed abatement
N/A	Develop strategic plan for forest management
H	Public education on wildfire defense
M	Encourage citizen surveillance and reporting
L	Identify hydrants with equipment ownership information
M	Enhanced firefighting equipment
L	Fire spotter program/red flag program
L	◊ Expand to other utilities
N/A	Research on insect/pest mitigation technologies
L	Volunteer home inspection program
L	Public education program
L	◊ Weather reporting/alerting
M	◊ Building protection
L	◊ Respiration
M	Pre-identify shelters/recovery centers/other resources
M	Roofing materials/defensive spacing regulations
M	Community task forces for planning and education
M	Fuel/dead tree removal
L	Strategic pre-placement of firefighting equipment
L	Establish FEMA coordination processes based on ICS
M	Brush clearings around repeaters

L	Research new technologies for identifying/tracking fires
M	Procure/deploy backup communications equipment
N/A	"Red Tag" homes in advance of event
N/A	Provide fire-resistant gel to homeowners
L	Involve insurance agencies in mitigation programs
N/A	Clear out abandoned vehicles from oases
H	Code enforcement
H	Codes prohibiting fireworks
H	Fuel modification/removal
L	Evaluate building codes
H	Maintaining catch basins
OTHER HAZARDS	
N/A	Improve pipeline maintenance
N/A	Wetlands mosquito mitigation (West Nile Virus)
M	Insect control study
N/A	Increase County Vector Control capacities
H	General public drought awareness
H	◊ Lawn watering rotation
N/A	Develop County drought plan
H	Mitigation of landslide-prone areas
N/A	Develop winter storm sheltering plan
N/A	Ease permitting process for building transmission lines
L	Evaluate restrictions on dust/dirt/generating activities during wind seasons
N/A	Rotational crop planning/soil stabilization
N/A	Enhance agricultural checkpoint enforcement
N/A	Agriculture - funding of detection programs
M	Communications of pipeline maps (based on need to know)
M	Improved notification plan on runaway trains
M	Improve/maintain blackout notification plan.
M	Support business continuity planning for utility outages
H	Terrorism training/equipment for first responders
H	◊ Terrorism planning/coordination
M	◊ Staffing for terrorism mitigation
M	Create a SONGS regional planning group
L	◊ Include dirty bomb planning
M	Cooling stations - MOUs in place
N/A	Fire Ant eradication program
N/A	White Fly infestation abatement/eradication program
M	Develop plan for supplemental water sources
H	Public education on low water landscaping
N/A	Salton Sea desalinization

N/A	Establish agriculture security standards (focus on water supply)
M	ID mutual aid agreements
M	Vulnerability assessment on fiber-optic cable
N/A	Upgrade valves on California aqueduct
L	Public education
L	◊ Bi-lingual signs
L	◊ Power Outage information
M	Notification system for rail traffic - container contents
H	Control and release of terrorism intelligence
N/A	Develop prison evacuation plan (shelter in place?)

Use the list and rankings to narrow down or identify “your” strategies.

The mitigation strategy serves as the long-term blueprint for reducing the potential losses identified in the risk assessment. The mitigation strategy includes the development of goals, objectives, and prioritized mitigation actions.

Goals are general guidelines that explain what you want to achieve. They are broad policy statements and are usually long-term and represent global visions, such as “Protect Existing Property.”

Objectives define strategies or implementation steps to attain the identified goals. Unlike goals, objectives are specific, measurable, and may have a defined completion date. Objectives are more specific, such as “Increase the number of buildings protected from flooding.”

The development of effective goals and objectives enables the planning team to evaluate the merits of alternative mitigation actions and the local conditions in which these activities would be pursued. A potential mitigation action that would support the goal and objective goal example above is “Acquire repetitive flood loss properties in the Acadia Woods Subdivision.”

In the 2018 LHMP, each jurisdiction was required to develop a Mitigation Strategy Proposal based on one of the following:

1. The strategy, goal, or objective rating “High Priority” on the Local Jurisdiction Mitigation Strategies and Goals (WORKSHEET ABOVE)
2. A specifically identified strategy, goal, or objective that was developed as part of one of the working groups planning sessions such as the hospitals or agriculture.
3. A specifically identified strategy, goal, or objective that was developed as part of

one of
the jurisdiction's internal working group planning sessions

5. LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

a. Instructions for Updating Jurisdictions and Special Districts: With your planning team, please review the table from # 5, and determine if you're ranking from the 2023 LHMP remains the same.

Review the chosen Mitigation Strategy that your jurisdiction submitted. The updated plan **must** identify the completed, deleted, or deferred actions or activities from the previously approved plan as a benchmark for progress.

If the mitigation actions or activities remain unchanged from the previously approved plan, the updated plan **must** indicate why changes are not necessary. Further, the updated plan **shall** include in its prioritization any new mitigation actions identified since the previous plan was approved or through the plan update process.

b. Instructions for New Jurisdictions and Special Districts: With your planning team, Use the "High Priority" rated strategy, goal or objective as a starting point to determine your Mitigation Strategy Proposal.

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction: City of Corona	
Contact:	Lee Shin
Phone:	951-496-1299

MITIGATION STRATEGY INFORMATION

Proposal Name:

DWP Emergency Generators

Proposal Location:

Citywide – Ground Water Wells and Blending station

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e., update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
X	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

List any previous disaster related events (dates, costs, etc.)

Proposal/Event History	The proposed project is to purchase emergency generators for each ground water well and blending station as an earthquake mitigation strategy. The Mexico, Easter earthquake of 2010 caused significant damage to the water systems in Imperial County and the action is a result of lessons learned. There have been earthquakes in the region that have made it apparent that emergency generators will be necessary at ground water wells and blending stations to lessen the possibility of water disruption.

Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below, including estimated timeline. (How long will it take)

Description of Mitigation Goal Narrative:	Because the City of Corona is in an area of seismic faults, back-up power for pumping water at ground water wells to the community is a good mitigation measure. There have been earthquakes in the region that have made it apparent that emergency generators will be necessary at ground water wells and the blending station to lessen the possibility of water disruption.

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency: Department of Utilities

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

	Unfunded proposal - funds are not available for the proposal currently
	Local jurisdiction General Fund
	Local jurisdiction Special Fund (road tax, assessment fees, etc.)
	Non-FEMA Hazard Mitigation Funds
X	Local Hazard Mitigation Grant Funds - Future Request
X	Hazard Mitigation Funds
X	Other no general fund source.
	Has your jurisdiction evaluated this mitigation strategy to determine its cost benefits? yes (i.e., has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

As part of this process, each Submitting Jurisdiction is required to perform a cost-benefit analysis. They were required to answer the question at the bottom of the Proposal page that asks if they had conducted a Cost-Benefit Analysis of some type. This analysis was conducted either by completing a Cost Benefit form or by some other approved method. Many of the jurisdictions used the cost-effective analysis approach outlined in the FEMA publication, *Cost and Benefits of Natural Hazards Mitigation.* This cost-benefit analysis was not restricted to natural hazards.

In some cases, the jurisdiction or working group identified a proposal that highlighted a life-safety issue over a standard hazard proposal. This was done when there was either historical data or other sources of information indicating that the life-safety issue needed to be emphasized or brought to the public's attention.

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

JURISDICTION: CITY OF CORONA	DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES?			
	2012 DATA	2018 DATA		2023 DATA
Current Population in Jurisdiction or Served	153,649	155,751	Projected Population in Jurisdiction or Served - in 2028	185,000
Current Sq. Miles in Jurisdiction or Served	39.2	39.2	Projected Sq. Miles in Jurisdiction or Served - in 2028	39.2
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	Yes	If yes, please list ordinance or regulation number. Ordinance No. 2429, 1973, 2077 Corona Municipal Code Chapters 2.52, 3.36, 4.04.80, 7a, 15.12.270 Section 705	
What is the biggest issue next 5 years	Economy and Infill/compact development			
Approximate Number of Homes/Apts/etc.	47,182	48,930	Projected Number of Homes/Apts/etc.- in 2023	50,500
Approximate Total Residential Value	$16.3 billion	$17.0 billion	Projected Residential Total Value - in 2023	$19.0 billion
Approximate Number of Commercial Businesses	5,205	9,000	Projected Number of Commercial Businesses - in 2023	12,000
Approximate Percentage of Homes/Apts/etc. in flood hazard zones	0.7%	0.7%	Approximate Percentage of Homes/Apts/etc. in flood hazard zones - in 2023	1.0%
Approximate Percentage of Homes/Apts/etc. in earthquake hazard zones	3.5%	3.5%	Approximate Percentage of Homes/Apts/etc. in earthquake hazard zones - in 2023	4.1%
Approximate Percentage of Homes/Apts/etc. in wildland fire hazard zones	6.55%	6.55%	Approximate Percentage of Homes/Apts/etc. in wildland fire hazard zones - in 2023	7.2%
Approximate Percentage of Commercial Businesses in flood hazard zones	0.003%	0.7%	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2023	3.7%
Approximate Percentage of Commercial Businesses in earthquake hazard zones	1.9%	0.3%	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2023	0.67%
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	4.5%	0	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2023	0
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	0	0	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2023	0
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	2	2	Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2023	2
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	7	7	Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2023	7
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?	Yes	Yes	If not, how will your jurisdiction do plan maintenance?	N/A
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes	

APPENDIX C – PLAN REVIEW TOOL/CROSSWALK

LOCAL MITIGATION PLAN REVIEW TOOL

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA's evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan's strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

Jurisdiction: City of Corona	**Title of Plan:** Local Hazard Mitigation Plan	**Date of Plan:** 2/1/2023
Local Point of Contact: Lee Shin		**Address:** 735 Public Safety Way Corona, CA 92880
Title: Emergency Services Manager		
Agency: Fire Department		
Phone Number: 951-496-1299		**E-Mail:** lee.shin@coronaca.gov

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**
Date Received in FEMA Region ***(insert #)***		
Plan Not Approved		
Plan Approvable Pending Adoption		
Plan Approved		

SECTION 1:
REGULATION CHECKLIST

INSTRUCTIONS: The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been 'Met' or 'Not Met.' The 'Required Revisions' summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is 'Not Met.' Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	**Location in Plan (Section and/or page number)**	**Met**	**Not Met**
ELEMENT A. PLANNING PROCESS			
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	Section 2.1		
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	Section 2.2		
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Section 2.3		
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Section 9.0		
A5. Is there discussion of how the community will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	Section 10.0 Section 8.0		

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (Section and/or page number)	Met	Not Met
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating, and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(I))	Section 8.0		
ELEMENT A: REQUIRED REVISIONS			
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT			
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(I))	Section 3.4		
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(I))	Section 3.4		
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	Section 4.4 Section 3.2		
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	Section 5.1 Figure 4.4.2 pg.42		
ELEMENT B: REQUIRED REVISIONS			
ELEMENT C. MITIGATION STRATEGY			
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Section 6.1		
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	Section 5.2		
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Section 7.1		
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	Section 7.2 Section 7.3		

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (Section and/or page number)	Met	Not Met
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	Section 7.2 Section 7.4		
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	Section 9.0 Section 7.3		
ELEMENT C: REQUIRED REVISIONS			
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)			
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Section 1.4 Section 1.5 Section 1.6		
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Section 3.5		
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Section 3.1 Section 3.2 Section 3.3		
ELEMENT D: REQUIRED REVISIONS			
ELEMENT E. PLAN ADOPTION			
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	Plan Adoption/ Resolution Page 4 all plans		
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	Plan Adoption/ Resolution Page 4 all plans		
ELEMENT E: REQUIRED REVISIONS			
ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)			
F1.			
F2.			
ELEMENT F: REQUIRED REVISIONS			

SECTION 2:
PLAN ASSESSMENT

INSTRUCTIONS: The purpose of the Plan Assessment is to offer the local community more comprehensive feedback to the community on the quality and utility of the plan in a narrative format. The audience for the Plan Assessment is not only the plan developer/local community planner, but also elected officials, local departments and agencies, and others involved in implementing the Local Mitigation Plan. The Plan Assessment must be completed by FEMA. The Assessment is an opportunity for FEMA to provide feedback and information to the community on 1) suggested improvements to the Plan; 2) specific sections in the Plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and information on other FEMA programs, specifically Risk MAP and Hazard Mitigation Assistance programs. The Plan Assessment is divided into two sections:

1. Plan Strengths and Opportunities for Improvement
2. Resources for Implementing Your Approved Plan

Plan Strengths and Opportunities for Improvement is organized according to the plan Elements listed in the Regulation Checklist. Each Element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each Element.

The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature and should be open-ended and provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the Plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.

Resources for Implementing Your Approved Plan provides a place for FEMA to offer information, data sources and general suggestions on the plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

How does the Plan go above and beyond minimum requirements to document the planning process with respect to:

- *Involvement of stakeholders (elected officials/decision makers, plan implementers, business owners, academic institutions, utility companies, water/sanitation districts, etc.);*
- *Involvement of Planning, Emergency Management, Public Works Departments or other planning agencies (i.e., regional planning councils);*
- *Diverse methods of participation (meetings, surveys, online, etc.); and*
- *Reflective of an open and inclusive public involvement process.*

Element B: Hazard Identification and Risk Assessment

In addition to the requirements listed in the Regulation Checklist, 44 CFR 201.6 Local Mitigation Plans identifies additional elements that should be included as part of a plan's risk assessment. The plan should describe vulnerability in terms of:

1) *A general description of land uses and future development trends within the community so that mitigation options can be considered in future land use decisions.*
2) *The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas; and*
3) *A description of potential dollar losses to vulnerable structures, and a description of the methodology used to prepare the estimate.*

How does the Plan go above and beyond minimum requirements to document the Hazard Identification and Risk Assessment with respect to:

- *Use of best available data (flood maps, HAZUS, flood studies) to describe significant hazards.*
- *Communication of risk on people, property, and infrastructure to the public (through tables, charts, maps, photos, etc.).*
- *Incorporation of techniques and methodologies to estimate dollar losses to vulnerable structures.*
- *Incorporation of Risk MAP products (i.e., depth grids, Flood Risk Report, Changes Since Last FIRM, Areas of Mitigation Interest, etc.); and*
- *Identification of any data gaps that can be filled as new data became available.*

Element C: Mitigation Strategy

How does the Plan go above and beyond minimum requirements to document the Mitigation Strategy with respect to:

- *Key problems identified in, and linkages to, the vulnerability assessment.*
- *Serving as a blueprint for reducing potential losses identified in the Hazard Identification and Risk Assessment.*
- *Plan content flow from the risk assessment (problem identification) to goal setting to mitigation action development.*
- *An understanding of mitigation principles (diversity of actions that include structural projects, preventative measures, outreach activities, property protection measures, post-disaster actions, etc.).*
- *Specific mitigation actions for each participating jurisdictions that reflects their unique risks and capabilities.*
- *Integration of mitigation actions with existing local authorities, policies, programs, and resources; and*
- *Discussion of existing programs (including the NFIP), plans, and policies that could be used to implement mitigation, as well as document past projects.*

Element D: Plan Update, Evaluation, and Implementation (***Plan Updates Only***)

How does the Plan go above and beyond minimum requirements to document the 5-year Evaluation and Implementation measures with respect to:

- *Status of previously recommended mitigation actions.*
- *Identification of barriers or obstacles to successful implementation or completion of mitigation actions, along with possible solutions for overcoming risk.*
- *Documentation of annual reviews and committee involvement.*
- *Identification of a lead person to take ownership of, and champion the Plan.*
- *Reducing risks from natural hazards and serving as a guide for decisions makers as they commit resources to reducing the effects of natural hazards.*
- *An approach to evaluating future conditions (i.e., socio-economic, environmental, demographic, change in built environment etc.).*
- *Discussion of how changing conditions and opportunities could impact community resilience in the long term; and*
- *Discussion of how the mitigation goals and actions support the long-term community vision for increased resilience.*

B. Resources for Implementing Your Approved Plan

Ideas may be offered on moving the mitigation plan forward and continuing the relationship with key mitigation stakeholders such as the following:

- *What FEMA assistance (funding) programs are available (for example, Hazard Mitigation Assistance (HMA)) to the jurisdiction(s) to assist with implementing the mitigation actions?*
- *What other Federal programs (National Flood Insurance Program (NFIP), Community Rating System (CRS), Risk MAP, etc.) may aid with mitigation activities?*
- *What publications, technical guidance or other resources are available to the jurisdiction(s) relevant to the identified mitigation actions?*
- *Are there upcoming trainings/workshops (Benefit-Cost Analysis (BCA), HMA, etc.) to assist the jurisdictions(s)?*
- *What mitigation actions can be funded by other Federal agencies (for example, U.S. Forest Service, National Oceanic and Atmospheric Administration (NOAA), Environmental Protection Agency (EPA) Smart Growth, Housing and Urban Development (HUD) Sustainable Communities, etc.) and/or state and local agencies?*

SECTION 3:
MULTI-JURISDICTION SUMMARY SHEET (OPTIONAL)

INSTRUCTIONS: For multi-jurisdictional plans, a Multi-jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were 'Met' or 'Not Met,' and when the adoption resolutions were received. This Summary Sheet does not imply that a mini plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type (City/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Require-ments
1												
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