Annex E City of Rancho Cordova

E.1 Introduction

This Annex details the hazard mitigation planning elements specific to the City of Rancho Cordova, a previously participating jurisdiction of the 2016 Sacramento County Local Hazard Mitigation Plan (LHMP) Update. This Annex is not intended to be a standalone document, but appends to and supplements the information contained in the Base Plan document. As such, all sections of the Base Plan, including the planning process and other procedural requirements apply to and were met by the City. This Annex provides additional information specific to Rancho Cordova, with a focus on providing additional details on the risk assessment and mitigation strategy for this community.

E.2 Planning Process

As described above, Rancho Cordova followed the planning process detailed in Chapter 3 of the Base Plan. In addition to providing representation on the Sacramento County Hazard Mitigation Planning Committee (HMPC), the City formulated their own internal planning team to support the broader planning process requirements. Internal planning participants, their positions, and how they participated in the planning process are shown in Table E-1. Additional details on Plan participation and City representatives are included in Appendix A.

Table E-1 City of Rancho Cordova – Planning Team

Name	Position/Title	How Participated
June Cowles	Senior Planner	Attended Hazard Mitigation Plan meetings, reviewed and revised the document. Proposed Mitigation Planning Action items. Provides Hazard Mitigation Plan annual report to City Council.
Darcy Goulart	Planning Manager	Reviewed and revised the plan document. Provided information for the update.
Elizabeth Sparkman	Community Development Director	Reviewed and revised the plan document. Provided information for the update.
Joe Cuffe	Chief Building Official	Reviewed the plan document and provided updates related to the Building & Safety Division.
Amanda Norton	Economic Development Manager	Reviewed the plan document and provided updates related to Economic Development data.
Laura Fickle	Economic Development Analyst	Reviewed the plan document and provided updates related to Economic Development data.
Albert Stricker	Public Works Director	Provided information related to Public Works data and general oversight.

Name	Position/Title	How Participated
Dalia Fadl	Senior Civil Engineer	Attended Hazard Mitigation Plan meetings, reviewed and revised the document. Proposed Mitigation Planning Action items. Provide general oversight of the plan update.
Margarita Dronov	Assistant Engineer	Reviewed the plan document and provided updates related to local flooding.
Maria Lopez	Management Technician	Reviewed the plan document and provided updates related to local flooding.
Laurel Bane	Facilities Services Representative	Reviewed the plan document and provided updates related to City facilities, cooling, and heating centers.
Ryan Gonzalez	GIS	Reviewed the plan document and provided updates related to GIS data and critical City facilities.
James FitzGibbon	GIS	Reviewed the plan document and provided updates related to GIS data and critical City facilities.

Coordination with other community planning efforts is paramount to the successful implementation of this LHMP Update. This section provides information on how the City integrated the previously approved 2016 Plan into existing planning mechanisms and programs. Specifically, the City incorporated into or implemented the 2016 LHMP through other plans and programs shown in Table E-2.

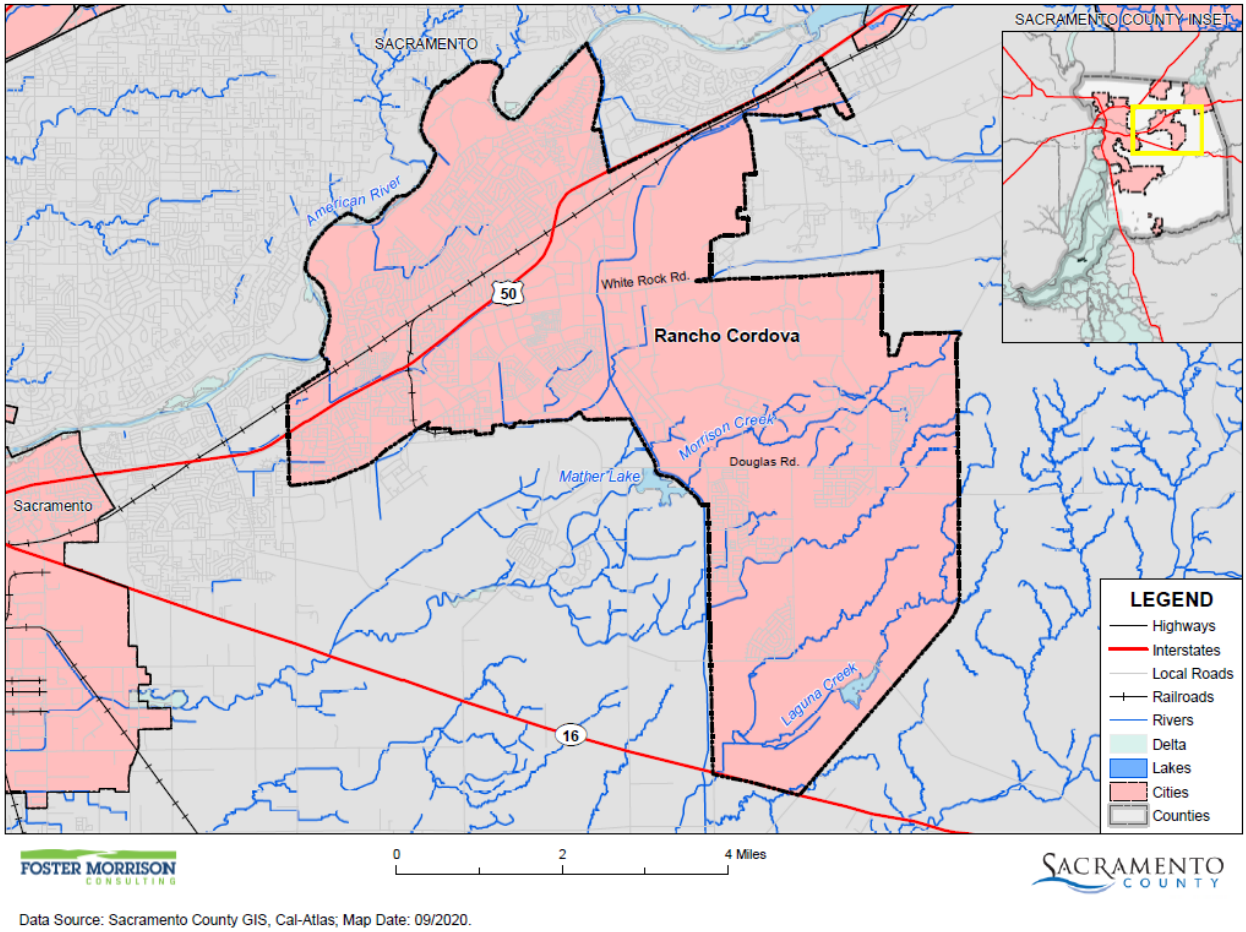
Table E-2 2016 LHMP Incorporation

Planning Mechanism 2016 LHMP Was Incorporated/Implemented In.	Details: How was it incorporated?
Adoption of the LHMP into the Safety Element of the General Plan by reference or incorporation	The Hazard Mitigation Plan was adopted within the General Plan under the Safety Element in December 2018
Transportation interconnectivity: ensure interconnectivity and road standards are maintained for disaster preparedness/evacuations	On-going action. Provided during subdivision review. Interconnectivity is a Goal within the General Plan Circulation Element
Land Use: as the City grows towards the south and east, cluster development and open space will be encouraged	On-going action. Open space land provided in environmental sensitive areas. (preserves). Provided through environmental review during Specific Plan and Special Area Plan. In addition, a Goal within the General Plan Open Space Element.
Post disaster training for staff	On-going action. Staff Supervisors have attended and are scheduled to attend training classes
Landscape Ordinance (update and maintain proper landscaping practices)	On-going action. All development is reviewed by a landscape reviewer that checks for water efficient sprinklers and drip for drought tolerant plants. Water efficient requirements are adopted within the city municipal code.
Restrict impervious surface	On-going action. City zoning code restricts Impervious surface area for residential front yard area.
Porous pavement and vegetative buffers	On-going action. Increase use due to LID standards and 2020 drainage requirements for on-site retention.
Roundabouts (encourage roundabouts in place of traffic signals where appropriate)	On-going action. Encourage developer to utilize roundabouts during Specific Plan, Special Area Plans, and subdivision reviews.

E.3 Community Profile

The community profile for the City of Rancho Cordova is detailed in the following sections. Figure E-1 displays a City map and the location of Rancho Cordova within Sacramento County.

Figure E-1 City of Rancho Cordova



E.3.1. Geography and Climate

The City of Rancho Cordova is located in northern Sacramento County, California within the Highway 50 corridor between the cities of Sacramento to the west, Folsom to the northeast, Elk Grove to the southwest and the unincorporated community of Fair Oaks to the north. Rancho Cordova covers approximately 34.8 square miles of land, the majority of which historically consisted of flat grassland and oak woodlands. The City is generally bordered by the American River to the north, Hazel Ave and the boundary of the 100-year floodplain for the Consumnes River on the east, Jackson Highway on the south, and Bradshaw Road on the west.

The City of Rancho Cordova contains a wide range of existing land uses, including approximately 3,582 acres of residential developments, 441 acres of commercial/retail uses, 894 acres of office uses, and approximately 837 acres of industrial uses within the City limits. In addition, there are approximately 9,746

acres of agricultural (vacant) uses, and over 2,198 acres of public/private recreation and natural preserve uses. Mather Airport is located along the southwest boundary of the City, and the Aerojet Rocket Testing Facility is located to the east.

Located within the City are various creeks, tributaries, drainage basins and surface waterways including: the American River, Cordova Creek, Morrison Creek and its tributaries, Laguna Creek, Buffalo Creek and the Folsom South Canal. The American River parkway on the City's northern boundary is a portion of a 29 mile open space greenbelt that provides flood protection and recreational opportunities within the City limits. The floodplain of the Cosumnes River is located to the southeast of the City's boundary.

Rancho Cordova, like much of the California Central Valley has a Mediterranean climate characterized by damp to wet, mild winters and hot, dry summers. The wet season runs from October through April, though there is occasional light rainfall in the summer months. The annual temperature mean is 61.1 °F, with monthly means ranging from 45.8°F in December to 75.4 °F in July. Summer high temperatures are often moderated by an ocean breeze known as the "delta breeze": which comes through the Sacramento-San Joaquin River Delta from the San Francisco Bay.

E.3.2. History

The earliest evidence of human occupation in the Rancho Cordova area is archaeological explorations of the Windmiller Pattern which dates from 4,500-2,500 Before Present (B.P.). Evidence suggests populations during this early horizon probably emphasized hunting and fishing, with seed collecting as a supplement to the diet. Later occupations during the Middle (2,500 B.P.-A.D. 500) and Late Horizons (A.D. 500-to Euroamerican contact) show similarities to the Early horizon culture, though local innovation or cultural blending seems to have resulted in intensive fishing, acorn use, and elaborate social and ceremonial customs.

Rancho Cordova and the surrounding area are in Valley Nisenan territory, one of a large population of Native Americans groups that inhabited a variety of ecological settings California prior to the arrival of Euroamericans. The Nisenan historically lived in permanent villages that were usually located on raised areas to avoid flooding. Organized around household family or household units that combined to form tribelets, the Valley Nisenan fostered trading relationships with surrounding groups for commodities such as salt, marine shells, and basketry.

Spanish exploration of the Central Valley dates to the late 1700s, but exploration of the Northern section of the Central Valley and contact with its Native American population did not begin until the early 1800s when Spanish missionaries moved in from the coastal areas. In 1833, the missions were secularized and their lands divided among the Californians as land grants called ranchos. These ranchos, such as the 35,000-acre Rancho Rio de los Americanos, part of which is located within the City, facilitated the growth of a semi-aristocratic group that controlled the large ranchos.

During the middle of the 19th century trails were being blazed across the plains and mountains facilitating the westward migration of Euroamericans. Rancho Rio de los Americanos however remained largely undeveloped until the discovery of gold in 1848 which resulted in a flood of Euroamericans in the region and caused a dramatic alteration of both Native American and Euroamerican cultural patterns. The second

half of the nineteenth century witnessed an ongoing and growing immigration of Euroamericans into the area, an influx also accompanied by regional cultural and economic changes. These changes are highlighted by the development of the Rancho Cordova area associated with expanding business opportunities related to gold mining, agriculture, and/or ranching.

On July 1, 2003, after more than 20 years of advocacy, the City of Rancho Cordova officially incorporated, becoming the 478th city in the State of California. Located in the eastern part of Sacramento County, Rancho Cordova is a community with a rich history including the first 12 miles of railroad in California, a thriving military base in its time, and the home of a successful aerospace company.

E.3.3. Economy and Tax Base

US Census estimates show economic characteristics for the City of Rancho Cordova. These are shown in Table E-3 and Table E-4. Mean household income in the City was $81,548. Median household income in the City was $71,655.

Table E-3 City of Rancho Cordova – Civilian Employed Population 16 years and Over

Industry	Estimated Employment	Percent
Agriculture, forestry, fishing and hunting, and mining	214	0.6%
Construction	2,748	7.7%
Manufacturing	2,195	6.1%
Wholesale trade	470	1.3%
Retail trade	4,651	13.0%
Transportation and warehousing, and utilities	2,778	7.8%
Information	270	0.8%
Finance and insurance, and real estate and rental and leasing	3,407	9.5%
Professional, scientific, and management, and administrative and waste management services	4,583	12.8%
Educational services, and health care and social assistance	6,101	17.0%
Arts, entertainment, and recreation, and accommodation and food services	3,881	10.8%
Other services, except public administration	1,554	4.3%
Public administration	2,991	8.3%

Source: US Census Bureau American Community Survey 2019 Estimates

Table E-4 City of Rancho Cordova – Income and Benefits

Income Bracket	Percent
<$10,000	4.8%
$10,000 – $14,999	4.5%
$15,000 - $24,9999	9.2%
$25,000 – $34,999	6.1%

Income Bracket	Percent
$35,000 – $49,999	8.3%
$50,000 – $74,999	20.4%
$75,000 – $99,999	15.8%
$100,000 – $149,999	19.4%
$150,000 – $199,999	6.3%
$200,000 or more	5.2%

Source: US Census Bureau American Community Survey 2019 Estimates

The largest employers with the City of Rancho Cordova are shown in Table E-5.

Table E-5 Largest Employers in the City of Rancho Cordova

Employer	Employer
75 to 99 Employees	
Michael Baker International	Simply Fresh Fruit
Raley's	Urata & Sons Concrete, LLC
RCI Electric, Inc.	California Highway Patrol
Corelogic, Inc.	Wells Fargo Commercial Distribution Finance, LLC
Orba Insurance Services, Inc.	Premier Pools and Spas, Lp
Russel Mechanical, Inc.	Fireman's Fund Insurance Company
Kleinfelder, Inc.	California Department of General Services
Folsom Cordova Unified School District	North State Electric Contractors, Inc.
Bissell Brothers Janitorial	Maximus, Inc.
Internal Revenue Service	Health Net Pharmaceutical Services
Moss Adams LLP	Federal Aviation Administration
Sierra Pacific Home & Comfort	Alessandro Electric, Inc.
Ricoh USA, Inc.	Outback Steakhouse
100–299 Employees	
Educational Credit Management Corporation	Volcano Corporation
Judson Enterprises, Inc.	National University
Infor (US), LLC	Verizon Business Network Services
PCBP Properties, Inc.	USI Insurance Services National, Inc.
Dignity Health Medical Foundation	California Department of Fish and Wildlife
Teledyne Defense Electronics, LLC	California Department of Technology Services
Cellco Partnership	Loanpal, LLC
California Department of Justice	Target Stores, Inc.
AT&T Services, Inc.	Perspecta Enterprise Solutions LLC
California Department of Corrections & Rehabilitation	Federal Home Loan Bank of San Francisco
Plexus Optix, Inc.	California Physicians' Service

Employer	Employer
Costco Wholesale Corporation	Infor Public Sector, Inc.
Walmart Inc.	Lowe's Home Centers, LLC
Safeway Stores, Inc.	Home Depot USA, Inc.
Dignity Health	Nevada Republic Electric North, Inc.
Callisonrtkl Inc.	Vander-Bend Manufacturing, Inc.
JL Haley Enterprises, Inc.	County of Sacramento
The Permanente Medical Group Inc.	Pacific Coast Building Products, Inc.
Bel Air Mart	Ehealthinsurance Services, Inc.
Centene Corporation	General Electric Company
Boot Barn Holdings	County of Sacramento
ELS Investments	Presidio Hotel Group, LLC
ABCD Associates	California Department of Transporation
California Fire & Rescue Training Authority	Franklin Templeton Investor Services, LLC
Lennar Homes, Inc.	Student Aid Commission, California
Scott Silva Concrete Inc.	Sacramento Spaghetti Restaurant Inc.
Landcare USA LLC	Bergelectric Corp.
Department of Health Care Services	Robert J McGarvey Elementary Parent Faculty Org
California Department of Finance	Pick-N-Pull
300+ Employees	
Folsom-Cordova Unified School District	Vision Service Plan, Inc.
Franklin Templeton Investor Services, LLC	Tetra Tech Ec, Inc.
Dignity Health Medical Foundation	Perspecta Enterprise Solutions LLC
Health Net Federal Services LLC	Alorica Customer Care, Inc.
Renaissance Food Group	Fine Chemicals Holdings Corp.
Nidec Motor Corporation	United States Postal Service
Northwestern Mutual	Pacific Motor Club
Aerojet Rocketdyne, Inc.	Automotive Importing Manufacturing, Inc.
Health Net of California, Inc.	

Source: City of Rancho Cordova Economic Development Department, May 2016

E.3.4. Population

The California Department of Finance estimated the January 1, 2020, total population for the City of Rancho Cordova was 78,381.

E.4 Hazard Identification

Rancho Cordova's identified the hazards that affect the City and summarized their location, extent, likelihood of future occurrence, potential magnitude, and significance specific to Rancho Cordova (see Table E-6).

Table E-6 City of Rancho Cordova—Hazard Identification Assessment

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Climate Change	Extensive	Likely	Limited	Medium	–
Dam Failure	Significant	Unlikely	Critical	High	Medium
Drought & Water Shortage	Limited	Likely	Critical	Medium	High
Earthquake	Extensive	Unlikely	Negligible	Medium	Low
Earthquake Liquefaction	Significant	Unlikely	Negligible	Medium	Low
Floods: 1%/0.2% annual chance	Significant	Occasional	Critical	Medium	Medium
Floods: Localized Stormwater	Significant	Likely	Limited	Medium	Medium
Landslides, Mudslides, and Debris Flow	Limited	Unlikely	Negligible	Low	Medium
Levee Failure	Limited	Unlikely	Negligible	Low	Medium
Pandemic	Extensive	Likely	Critical	Medium	Medium
Severe Weather: Extreme Cold and Freeze	Significant	Likely	Negligible	Low	Medium
Severe Weather: Extreme Heat	Significant	Highly Likely	Limited	Medium	High
Severe Weather: Heavy Rains and Storms	Significant	Highly Likely	Limited	Medium	Medium
Severe Weather: Wind and Tornado	Significant	Likely	Limited	Medium	Low
Subsidence	Limited	Occasional	Limited	Low	Medium
Volcano	Significant	Unlikely	Negligible	Low	Low
Wildfire	Significant	Highly Likely	Critical	High	High

Geographic Extent
Limited: Less than 10% of planning area
Significant: 10-50% of planning area
Extensive: 50-100% of planning area

Likelihood of Future Occurrences
Highly Likely: Near 100% chance of occurrence in next year, or happens every year.
Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.
Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

Magnitude/Severity
Catastrophic—More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths
Critical—25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability
Limited—10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability
Negligible—Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

Significance
Low: minimal potential impact
Medium: moderate potential impact
High: widespread potential impact

Climate Change Influence
Low: minimal potential impact
Medium: moderate potential impact
High: widespread potential impact

E.5 Hazard Profile and Vulnerability Assessment

The intent of this section is to profile Rancho Cordova's hazards and assess the City's vulnerability separate from that of the Sacramento County Planning Area as a whole, which has already been assessed in Section 4.3 Hazard Profiles and Vulnerability Assessment in the Base Plan. The hazard profiles in the Base Plan discuss overall impacts to the Sacramento County Planning Area and describes the hazard problem description, hazard location and extent, magnitude/severity, previous occurrences of hazard events and the likelihood of future occurrences. Hazard profile information specific to the City is included in this Annex. This vulnerability assessment analyzes the property, population, critical facilities, and other assets at risk to hazards ranked of medium or high significance specific to the City (as identified in the Significance column of Table E-6) and also includes a vulnerability assessment to the three primary hazards to the State of California: earthquake, flood, and wildfire. For more information about how hazards affect the County as a whole, see Chapter 4 Risk Assessment in the Base Plan.

E.5.1. Hazard Profiles

Each hazard vulnerability assessment in Section E.5.3, includes a hazard profile/problem description as to how each medium or high significant hazard affects the City and includes information on past hazard occurrences and the likelihood of future hazard occurrence. The intent of this section is to provide jurisdictional specific information on hazards and further describes how the hazards and risks differ across the Planning Area.

E.5.2. Vulnerability Assessment and Assets at Risk

This section identifies Rancho Cordova's total assets at risk, including values at risk, populations at risk, critical facilities and infrastructure, natural resources, and historic and cultural resources. Growth and development trends are also presented for the community. This data is not hazard specific, but is representative of total assets at risk within the community.

Values at Risk

The following data from the Sacramento County Assessor's Office is based on the 2020 Assessor's data. The methodology used to derive property values is the same as in Section 4.3.1 of the Base Plan. This data should only be used as a guideline to overall values in the County, as the information has some limitations. The most significant limitations are created by Proposition 13 and the Williamson Act as detailed in the Base Plan. With respect to Proposition 13, instead of adjusting property values annually, the values are not adjusted or assessed at fair market value until a property transfer occurs. As a result, overall value information is most likely low and does not reflect current market value of properties within the County. It is also important to note, in the event of a disaster, it is generally the value of the infrastructure or improvements to the land that is of concern or at risk. Generally, the land itself is not a loss. However, depending on the type of hazard and impact of any given hazard event, land values may be adversely affected; thus, land values are included as appropriate. Table E-7 shows the 2020 Assessor's values and content replacement values (e.g., the values at risk) broken down by property use for the City.

Table E-7 City of Rancho Cordova – Total Values at Risk by Property Use

Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Agricultural	24	3	$22,818,860	$142,065	$142,065	$23,102,990
Care/Health	13	11	$3,130,790	$21,931,121	$21,931,121	$46,993,032
Church/Welfare	33	32	$19,175,437	$58,389,789	$58,389,789	$135,955,015
Industrial	743	706	$304,286,152	$758,045,202	$1,137,067,811	$2,199,399,156
Miscellaneous	525	1	$745,525	$1,085	$1,085	$747,695
Office	292	263	$270,296,128	$1,139,859,175	$1,139,859,175	$2,550,014,478
Public/Utilities	59	0	$19	$0	$0	$19
Recreational	16	10	$8,063,755	$22,999,996	$22,999,996	$54,063,747
Residential	20,431	20,239	$1,609,451,961	$4,412,647,326	$2,206,323,655	$8,228,422,830
Retail/ Commercial	266	250	$211,231,179	$411,906,471	$411,906,471	$1,035,044,121
Unknown	3	3	$0	$311,254	$0	$311,254
Vacant	1,380	14	$247,756,808	$1,915,120	$0	$249,671,928
Rancho Cordova Total	**23,785**	**21,532**	**$2,696,956,614**	**$6,828,148,604**	**$4,998,621,168**	**$14,523,726,265**

Source: Sacramento County 2020 Parcel/Assessor's Data

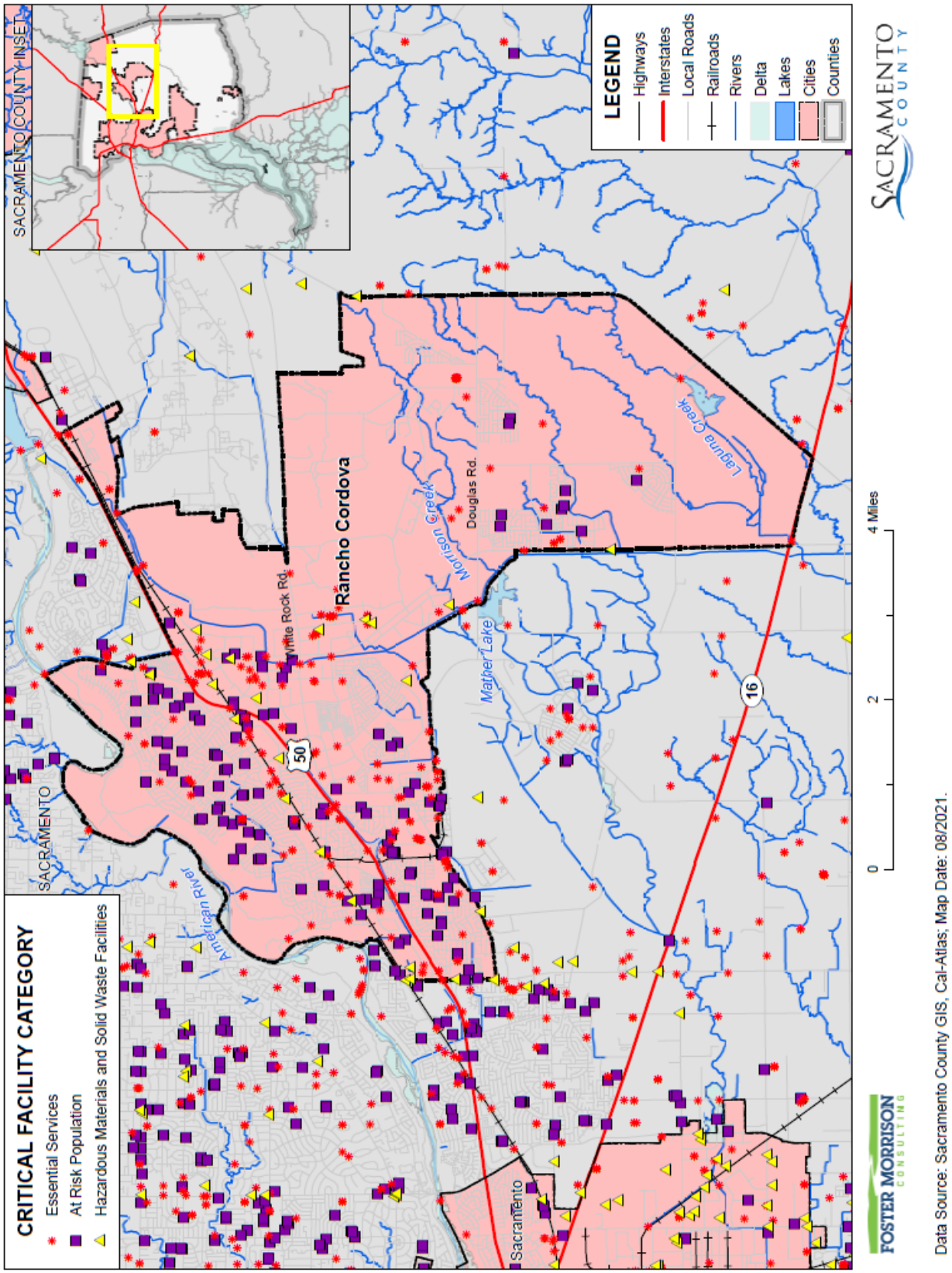
Critical Facilities and Infrastructure

Critical facilities and infrastructure are those buildings and infrastructure that are crucial to a community. Should these be damaged, it makes it more difficult for the community to respond to and recover from a disaster. For purposes of this Plan, a critical facility is defined as:

> *Any facility, including without limitation, a structure, infrastructure, property, equipment or service, that if adversely affected during a hazard event may result in severe consequences to public health and safety or interrupt essential services and operations for the community at any time before, during and after the hazard event.*

A critical facility is classified by the following categories: (1) Essential Services Facilities, (2) At-risk Populations Facilities, (3) Hazardous Materials and Solid Waste Facilities.

Figure E-2 City of Rancho Cordova – Critical Facilities



Natural Resources

Natural resources are unique to each area and are difficult to replace. Should a natural disaster occur, these species and locations are at risk. On the basis of origin, natural resources (economically referred to as raw materials) can be grouped into abiotic (non-living) and biotic (living) resources. Soils, mineral and surface waters comprise the main abiotic natural resources considered here while plant and animal communities comprise the biotic natural resources.

The majority of the soils in the City are the result of alluvial deposits, or river and lake deposits on various geomorphic surfaces. In terms of soil characteristics, surface runoff, soil erosion, and expansive soils can create potential problems for engineering designs and land use activities. The majority of the area soils are characterized by slight to moderate erosion potential, and very low to medium runoff rates.

Historic mineral production in the region has included construction aggregate, kaolin clay, common clay, pumice, and gold. Construction aggregate consists of sand, gravel, and crushed stone. Existing mineral extraction activities that occur in and around the Rancho Cordova Planning Area consist primarily of fine sand and coarse gravel construction aggregates, as well as clay. Construction aggregates come from two different sources: hardbed rock sources and river channel (alluvial) sources. Generally, sand, gravel, and clay are used as fill and for the construction of highways and roads, streets, urban and suburban development, canals, aqueducts, and pond linings, among other uses.

The City of Rancho Cordova has a variety of natural resources of value to the community. A variety of unique and valuable habitats are found within the City, including, but not limited to, oak and cottonwood woodlands, various grasslands, vernal pool areas, and open water and rivers. Major surface waters in the vicinity of the Rancho Cordova include the American River to the north and other surface waters within the City limits include the Folsom South Canal as well as Laguna and Morrison Creeks. There are approximately 609 acres of vernal pools and approximately 73 acres of freshwater marshes, 37 seasonal marshes and 30,873 acres of valley grassland within the larger Rancho Cordova Planning Area that surrounds and includes the City.

Vernal pools are primary biological natural resource within the City. They are described as seasonal pools that exhibit a four-stage life cycle providing critical habitat to several species of plants and animals, including some species of concern. Many animal species found in the grassland cover type are also found in the vernal pool grassland cover type. Some species found in vernal pool and vernal pool grassland cover types have adapted to specific conditions and are, thus, only found in those cover types. Of those types, some of these species may utilize the vernal pool and vernal pool grassland habitats only during specific stages of vernal pools, and others can be found year-round. Animals that utilize the vernal pool grassland habitat include aquatic crustaceans (branchiopods), amphibians, nesting birds, raptors, and small mammals. The habitats of the City contain numerous special status plant and animal species. A comprehensive list of the habitats and species in the Planning Area is provided in Table E-8. Areas these species reside in are shown in both Figure E-3 and Figure E-4.

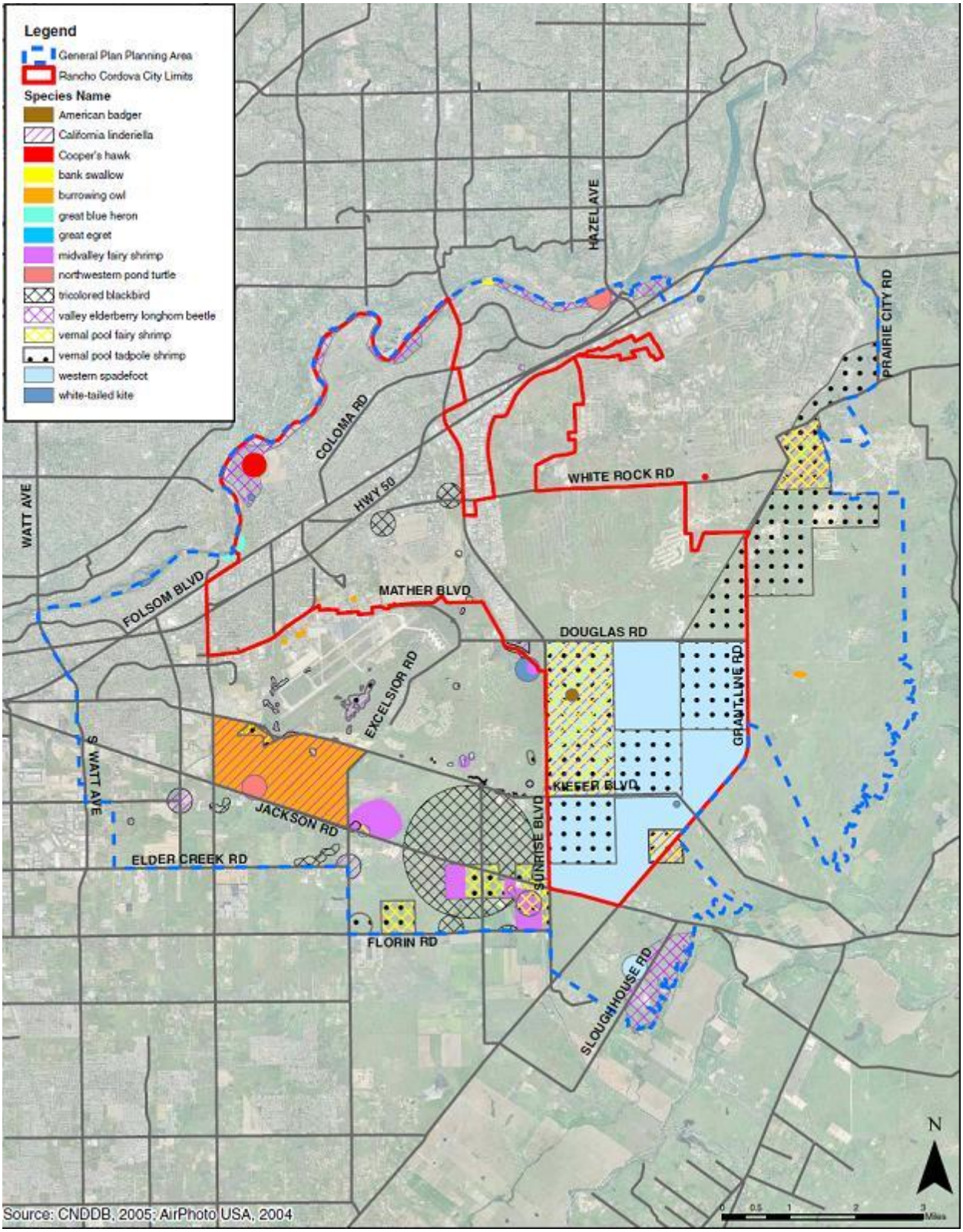
Table E-8 Special Status Species Occurring in the Rancho Cordova Planning Area

Scientific Name	Common Name	State Listing Status	Federal Listing Status	Other Status
Plant Species				
Downingia pusilla	Dwarf downingia	None	None	CNPS:2 R-E-D: 1-2-1
Gratiola heterosepala	Boggs Lake hedge-hyssop	Endangered	None	CNPS: 1B R-E-D: 1-2-2 USFWS: SC
Juncus Leiospermus	Ahart's dwarf rush	None	None	CNPS: 1B R-E-D: 3-2-3 USFWS: SC
Legenere limosa	Legenere	None	None	CNPS: 1B R-E-D: 2-3-3 USFWS: SC
Narvarretia myersii ssp. myersi	Pincushion navarretia	None	None	CNPS: 1B R-E-D: 3-3-3 USFWS: SC
Orcuttia tenuis	Slender orcutt grass	Endangered	Threatened	CNPS: 1B R-E-D: 2-3-3
Orcuttia viscida	Sacramento orcutt grass	Endangered	Endangered	CNPS: 1B R-E-D: 3-3-3
Sagittaria sanfordii	Sanford's arrowhead	None	None	CNPS: 1B R-E-D: 2-2-3 USFWS: SC
Amphibian Species				
Spea (Scaphiopus) hammondii	Western spadefoot	None	None	CDFG: CSC USFWS: SC
Bird Species				
Accipiter cooperii	Cooper's hawk	None	None	CDFG: CSC
Agelaius tricolor	Tricolored blackbird	None	None	CDFG: CSC USFWS: SC
Ardea alba	Great egret	None	None	
Ardea herodias	Great blue heron	None	None	
Asio flammeus (nesting)	Short-eared Owl	None	None	CDFG: CSC
Athene Cunicularia (burrow sites)	Burrowing owl	None	None	CDFG: CSC USFWS: SC
Buteo swainsoni	Swainson's hawk	Threatened	None	
Circus cyaneus (nesting)	Northern harrier	None	None	CDFG: CSC
Elanus leucurus	White-tailed kite	None	None	CDFG: fully protected
Eremophila alpestris actia	California horned lark	None	None	CDFG: CSC
Icteria virens (nesting)	Yellow-breasted chat	None	None	CDFG: CSC
Lanius ludovicianus (nesting)	Loggerhead shrike	None	None	CDFG: CSC USFWS: SC
Plegadis chihi (rookery site)	White-faced ibis	None	None	CDFG: CSC USFWS: SC
Riparia riparia	Bank swallow	Threatened	None	
Invertebrate Species				
Branchinecta lynchi	Vernal pool fairy shrimp	None	Threatened	

Scientific Name	Common Name	State Listing Status	Federal Listing Status	Other Status
Branchinecta mesovallensis	Midvalley fairy shrimp	None	None	USFWS: SC
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	None	Threatened	
Lepidurus packardi	Vernal pool tadpole shrimp	None	Endangered	
Linderiella occidentalis	California linderiella (fairy shrimp)	None	Endangered	USFWS: SC
Mammal Species				
Antrozous pallidus	Pallid bat	None	None	CDFG: CSC
Bassariscus astutus	Ringtail	None	None	CDFG: CFP
Myotis ciliolabrum	Western smallfooted myotis	None	None	USFWS: SC
Myotis evotis	Long-eared myotis	None	None	USFWS: SC
Myotis thysanodes	Fringed myotis	None	None	USFWS: SC
Myotis volans	Long-legged myotis	None	None	USFWS: SC
Myotis yumaensis	Yuma myotis	None	None	USFWS: SC
Taxidea taxus	American badger	None	None	CDFG: CSC
Reptile Species				
Emys (=Clemmys) marmorata marmorata	North-western pond turtle	None	None	CDFG: CSC USFWS: SC

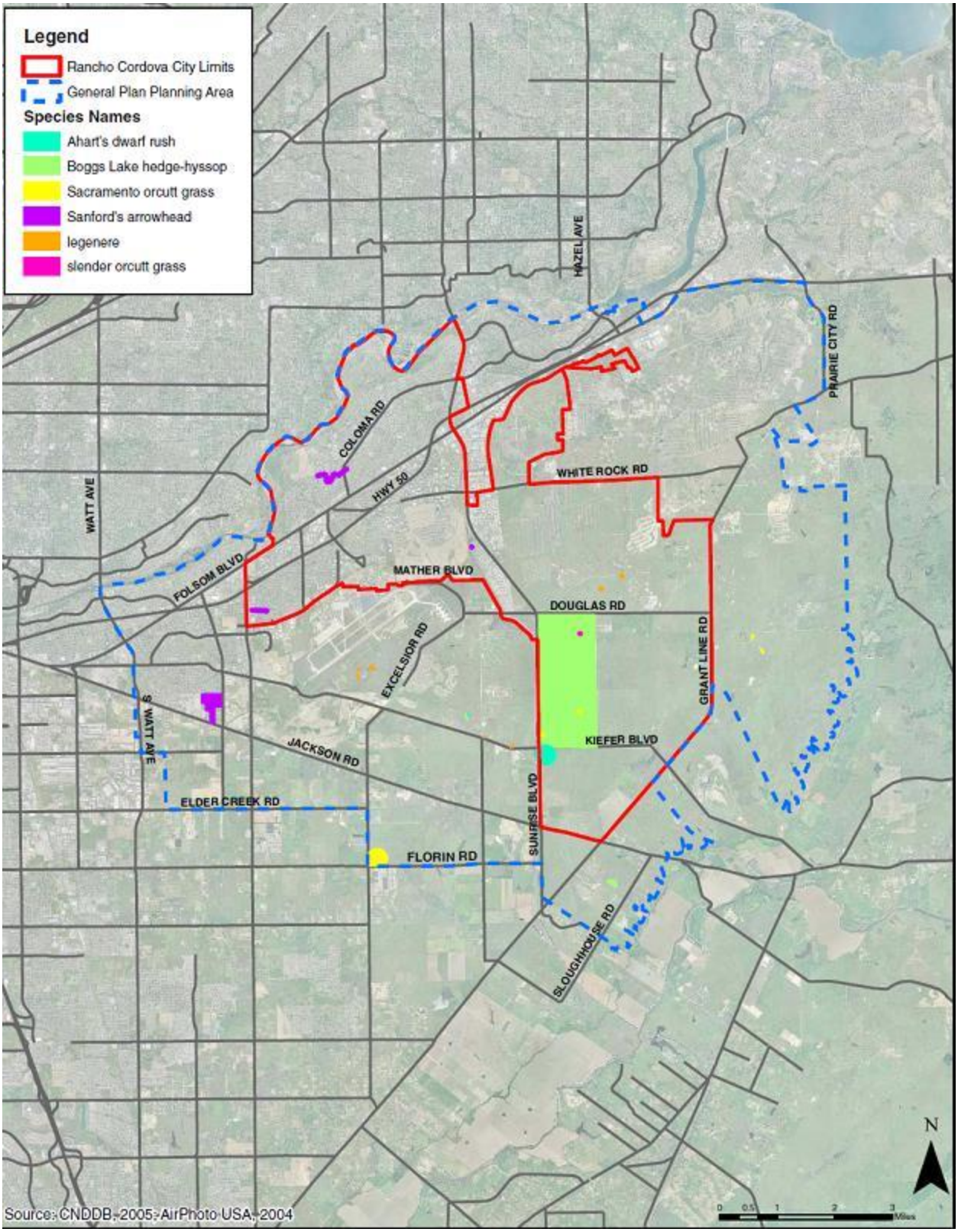
Source: City of Rancho Cordova General Plan Natural Resources Element (2016)
Key to Ranks and Lists
CDFG: CSC California Species of Special Concern
CDFG: CFP California Fully Protected
USFWS: SC USFWS Species of Concern
CNPS Lists:
List 1A: Plants Presumed Extinct in California
List 1B: Plants Rare, Threatened or Endangered in California or Elsewhere
List 2: Plants Rare, Threatened or Endangered in California, But More Common Elsewhere
List 3: Plants About Which We Need More Information – A Review List
List 4: Plants of Limited Distribution – A Watch List

Figure E-3 Location of Special Status Animal Species in Rancho Cordova



City of Rancho Cordova General Plan Natural Resources Element (2006)

Figure E-4 Location of Special Status Plant Species in Rancho Cordova



City of Rancho Cordova General Plan Natural Resources Element (2006)

The City of Rancho Cordova assisted in local efforts to adopt the South Sacramento Habitat Conservation Plan (SSHCP or Plan). The SSHCP encompasses a 317,000 acre area in south Sacramento County and streamlines federal and state permitting for development and infrastructure projects while conserving habitat. An interconnected regional preserve system of over 36,000 acres - roughly 1.2 times the total size of San Francisco - will be created over the next 50 years to protect twenty-eight plant and wildlife species and their natural habitats. The Plan is the first in the nation to include Clean Water Act (CWA) permits issued by the Army Corps of Engineers (USACE) and Endangered Species Act (ESA) permits issued by the U.S. Fish and Wildlife Service (USFWS). Instead of permitting through several separate state and federal agencies, most actions in the Plan area can be permitted through the City of Rancho Cordova Planning Department.

The Plan Area is located in the southern portion of Sacramento County. It is divided into two components: inside and outside the Urban Development Area (UDA). All proposed urbanization and some preserves will occur inside the UDA. Most preservation will occur outside of the UDA and help protect agricultural lands as well as habitat.

SSHCP Covered Activities may be carried out by the Permittee Agencies or by Third Party Project Proponents. The Conservation Strategy and process for Covered Activity project authorization is described in the SSHCP and associated permits. In all cases language in the permit(s) prevail when different than the SSHCP. The Plan will be made consistent with the permit conditions and language.

Historic and Cultural Resources

Historic and cultural resources are difficult to replace. Should a natural disaster occur, these properties and locations can be at risk.

The City of Rancho Cordova has a stock of historically significant homes, public buildings, and landmarks. To inventory these resources, the HMPC collected information from a number of sources. The California Department of Parks and Recreation Office of Historic Preservation (OHP) was the primary source of information. OHP administers the National Register of Historic Places, the California Register of Historical Resources, California Historical Landmarks, and the California Points of Historical Interest programs. Each program has different eligibility criteria and procedural requirements. These requirements are detailed in Section 4.3.1 of the Base Plan. Table E-9 lists the historical buildings in the City.

Table E-9 City of Rancho Cordova – Historical Resources

Name (Landmark Plaque Number)	National Register	State Landmark	California Register	Point of Interest	Date Listed	City/Area
American River Grange Hall #172 (P823)	X			X	5/15/1996	Rancho Cordova
Fifteen Mile House-Overland Pony Express Route in California (698)		X			9/11/1959	Rancho Cordova

Source: California Department of Parks and Recreation Office of Historic Preservation, http://ohp.parks.ca.gov/

It should be noted that these lists may not be complete, as they may not include those currently in the nomination process and not yet listed. Additionally, as defined by the California Environmental Quality

Act (CEQA) and the National Environmental Policy Act (NEPA), any property over 50 years of age is considered a historic resource and is potentially eligible for the National Register. Thus, in the event that the property is to be altered, or has been altered, as the result of a major federal action, the property must be evaluated under the guidelines set forth by CEQA and NEPA. Structural mitigation projects are considered alterations for the purpose of this regulation.

In addition to the registered sites, there are several assets within Rancho Cordova that define the community and represent the City's history. A records search at the North Central Information Center at California State University, Sacramento identified eight prehistoric sites and one prehistoric/historic site within the larger Rancho Cordova Planning Area. Most of the prehistoric sites are located along the American River and creeks and some of the sites are known to contain human remains. The prehistoric and historic Native American occupation of the Rancho Cordova area is generally related to the Middle and Late Horizon.

A records search, shown in Table E-10 at the North Central Information Center at California State University, Sacramento identified twenty-three historic resources (e.g., historical archaeological sites, historic buildings, and artifacts) and one prehistoric/historic site within the larger Rancho Cordova Planning Area. These sites are distributed across the area and are generally related to the development of transportation networks and agriculture. Historic archaeological site CA-SAC-428-H, prehistoric/historic archaeological site CA-SAC-320/H, the Pfingst Realty building, and the American River Grange Hall are eligible for inclusion in the NRHP and the CRHR.

Table E-10 Known Cultural Resources in the City of Rancho Cordova

Trinomial/Address	Description	Eligibility for the National Register of Historic Places
CA-Sac-155/156	Prehistoric site with fire-affected rock and debitage; historic refuse (Shields and Williamson Mounds)	Evaluated 1988; eligible
CA-Sac-157	Prehistoric midden site with fire-affected rock and debitage; historic refuse (Wamser Mound #1)	Not Evaluated
CA-Sac-158	Prehistoric habitation site with artifacts (Wamser Mound #2)	Not Evaluated
CA-Sac-159	Prehistoric habitation site with fire-affected rocks and debitage (Wamser Mound #3)	Not Evaluated
CA-Sac-205	Prehistoric village with groundstone tools and debitage	Not Evaluated
CA-Sac-308-H	Dredge mine tailings (P-34-335)	Not Evaluated
CA-Sac-319	Prehistoric village with groundstone tools and debitage	Evaluated 1995; eligible
CA-Sac-320/H	Prehistoric village with groundstone tools and debitage; historic Chinese occupation site	Evaluated 2001; eligible
CA-Sac-428-H	Sacramento Valley Railroad (P-34-455)	Evaluated 1993; eligible; Reaffirmed 1997
CA-Sac-435-H	Historic refuse scatter	Evaluated 1994; ineligible
CA-Sac-469	Prehistoric midden with fire-affected rock and debitage	Not evaluated
CA-Sac-480-H	Southern Pacific Railroad, Fair Oaks spur	Evaluated 1995; ineligible
PA-99-63	Historic well	Evaluated 1999; ineligible

Trinomial/Address	Description	Eligibility for the National Register of Historic Places
PA-99-64	Possible historic cellar	Evaluated 1999; ineligible
—	Folsom Boulevard	Recognized as historically significant to local government
9878 Folsom Blvd	Pfingst Realty Company building	Evaluated 1993; eligible
Dawes Street and Folsom Blvd	Mills Station Building	Evaluated 1993; ineligible
9857 Horn Road	Silva Brothers Winery (Currently Rascals Restaurant)	Evaluated 1993; ineligible
2720 Kilgore Road	American River Grange Hall	Evaluated 1996; eligible
—	Aerojet Site 5: Military Personnel Dump	Not evaluated
—	Air Force Plant 70	Ineligible
Rio del Oro Planning Area	Sigma Test Area (Nike Hercules Rocket Test Area)	Evaluated in 2005; potentially eligible
10595 Folsom Blvd	Fire Station 61	Ineligible
12395 Folsom Blvd	Fire Station 63	Ineligible
12401 Folsom Blvd	Retail/Restaurants	Ineligible
12415 Folsom Blvd	Demolished	Ineligible
—	Hazel Ave/Nimbus Dam	Not evaluated
2909 Mather Field Rd	Domino's Pizza/Vacant	Ineligible
2919 Mather Field Rd	Residence	Ineligible
10298 McCracken Dr	Residence	Ineligible
State Route 16	Highway	Ineligible
White Rock Road	Road	Not evaluated
Whiterock Road; 0.2 miles east of Whiterock Road/Sunrise Blvd	15 Mile House (Demolished)	State Historic Landmark #698
Kilgore Road between Trade Center and Sun Center Drive	Kilgore Cemetery	Not evaluated

Source: City of Rancho Cordova General Plan Background Report

Growth and Development Trends

As part of the planning process, the HMPC looked at changes in growth and development, both past and future, and examined these changes in the context of hazard-prone areas, and how the changes in growth and development affect loss estimates and vulnerability over time. Information from the City of Rancho Cordova General Plan Housing Element, the California Department of Finance, the US Census Bureau form the basis of this discussion.

Historic Population Trends and Current Population

Population growth can increase the number of people living in hazard prone areas. Growth within the City of Rancho Cordova has been slow and steady. Rancho Cordova became an incorporated city on July 1, 2003. It is the seventh community in Sacramento County to incorporate and is also California's 478th city. Rancho Cordova has generally seen steady growth. Rancho Cordova has seen growth rates as shown in Table E-11.

Table E-11 City of Rancho Cordova – Population Changes Since 1950

Year	Population	Change	% Change
2000	51,322	–	–
2010[1]	53,605	2,283	4.4%
2020[2]	78,381	24,676	46.2%

Source: [1]US Census Bureau, [2]California Department of Finance

Special Populations and Disadvantaged Communities

According to the 2014–2018 ACS, 8,428 persons in Rancho Cordova are 65 years and older, and these seniors account for approximately 12 percent of the City's total population. Approximately 77 percent own their own homes, and 23 percent rent their homes. Rancho Cordova has one major skilled nursing facility and nine smaller licensed residential care homes that provide care and assistance to elderly residents who are partially self-sufficient. Assisted living is provided mainly in smaller facilities of six persons or less

Data from the Alta Regional Center, one of the 21 regional centers in California serving as an entry point to services for people with developmental disabilities, shows that there are approximately 644 developmentally disabled persons within the largest zip codes covering the City. 76.2% of these persons are located in the 95670 zip code.

Single-parent and female-headed households may also have special needs involving the availability of daycare or childcare, health care, and other supportive services. According to data from the 2014–2018 ACS, 4,217 households, or 24.4 percent of all family households in Rancho Cordova, are female-headed households. Female-headed households comprise the overwhelming majority of all single-parent households. Of households headed by a female, 51.2 percent (2,159 households) have related children under 18 present. Of the 2,448 female-headed households with related children under 18, 36.1 percent are classified as below the poverty level.

Homeless individuals and families are more at risk of being severely impacted by hazards. Due to the transitional nature of homelessness, it is difficult to get a concrete count of homeless persons in the City of Rancho Cordova. Every two years, Sacramento County's Continuum of Care does a point-in-time (PIT) count of homeless persons. While this number fluctuates over the year, the count provides some basis for evaluating the needs for homelessness services in Sacramento County. As of the 2019 PIT count, 249 of the Sacramento County's 3,900 unsheltered residents experiencing homelessness were in Rancho Cordova, representing approximately 6 percent of the unsheltered homeless population in Sacramento County.

Manufactured homes are often a source of affordable housing in communities where stickbuilt homes are beyond the price range of low- and moderate-income households. Very inexpensive manufactured homes are generally those built before 1980, some of which may have structural problems. Newer manufactured home models can be quite large, with more than 2,500 square feet and four bedrooms. Rancho Cordova has nine manufactured home parks with just over 1,400 manufactured home spaces and 15 RV spaces. There is one large park located on Sunrise Blvd, most of the other parks are concentrated around Routier Rd.

The City of Rancho Cordova has one census tract that is considered a Racially/Ethnically Concentrated Area of Poverty (R/ECAP), as defined by HUD. The tract is in the Cordova Meadows area surrounded by La Loma Dr, W La Loma Drive, and Folsom Blvd. A R/ECAP, as defined by HUD, is any area with a non-white population of more than 50 percent and either a poverty rate of 40 percent or more or a poverty rate of more than three times the average poverty rate for the county. As of the 2014–2018 ACS, the population of this R/ECAP tract was estimated to be 2,445. A disproportionately high percentage of Black residents in Rancho Cordova live in this area, including a majority of project-based Section 8 housing and Housing Choice Voucher recipients. Poorer residents in this area have fewer resources to turn to in the event of an emergency, and may rely on other public resources, such as transit, that may also be impacted by an emergency.

Land Use

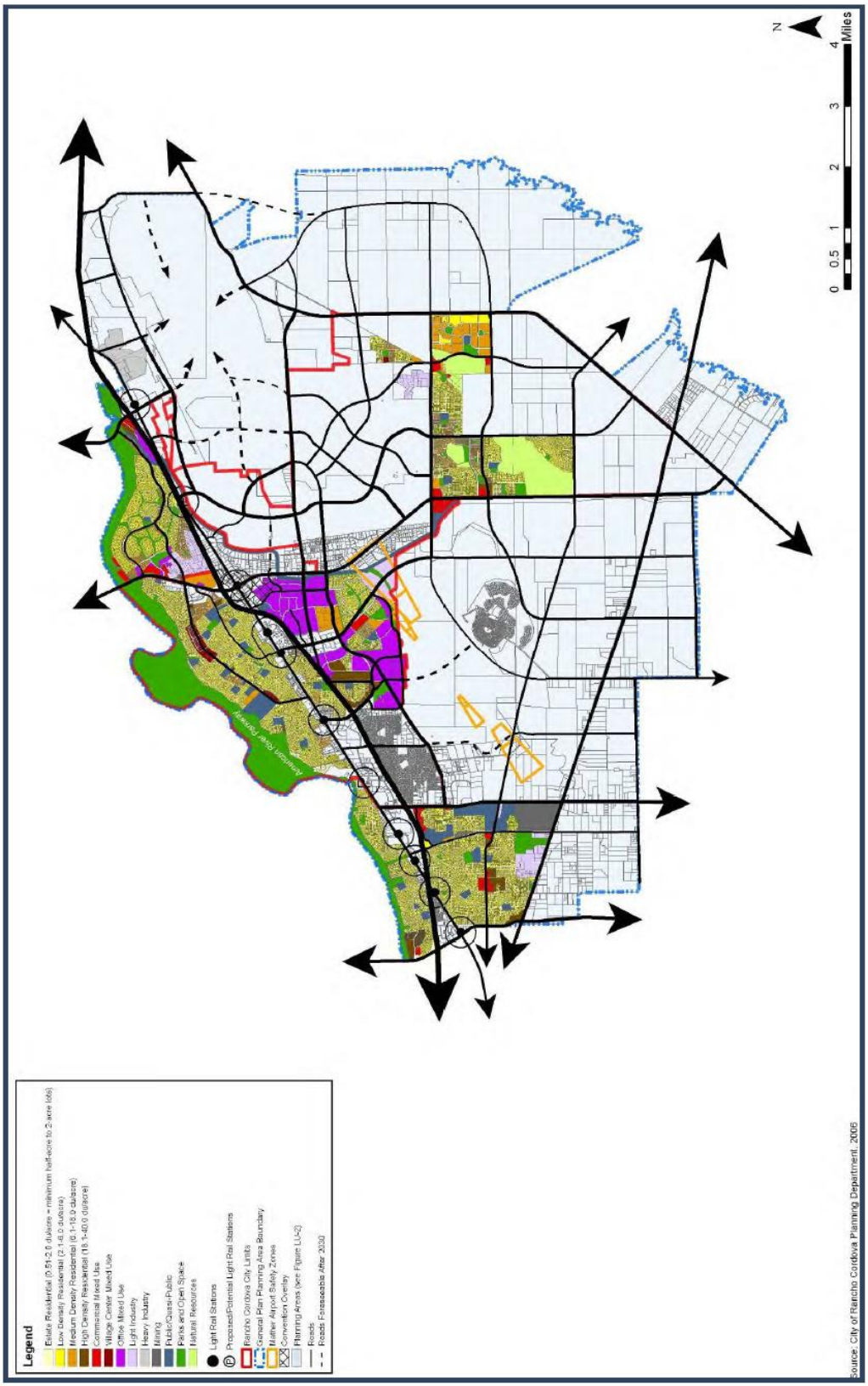
State planning law requires that the land use element of a general plan include a statement of the standard population density, building intensity, and allowed uses for the various land use designations in the plan (Government Code Section 65302(a)). The City's land use designations are generally described below and mapped on the Land Use Diagram. The Rancho Cordova Municipal Code provides detailed land use and development standards for development.

Existing land use patterns in Rancho Cordova began during the Gold Rush and expanded with the development of Mather Air Force Base and Aerojet. Regional growth patterns, geography, and circulation have impacted the land uses that comprise the City's current development pattern.

The first figure (Figure E-5) illustrates the General Plan land use designations for most of the General Plan Planning Area developed prior to the City's Incorporation in 2003. This map is parcel based with a specific land use category applied to each parcel. Subsequent zoning and new development/redevelopment must comply with the General Plan land use designation.

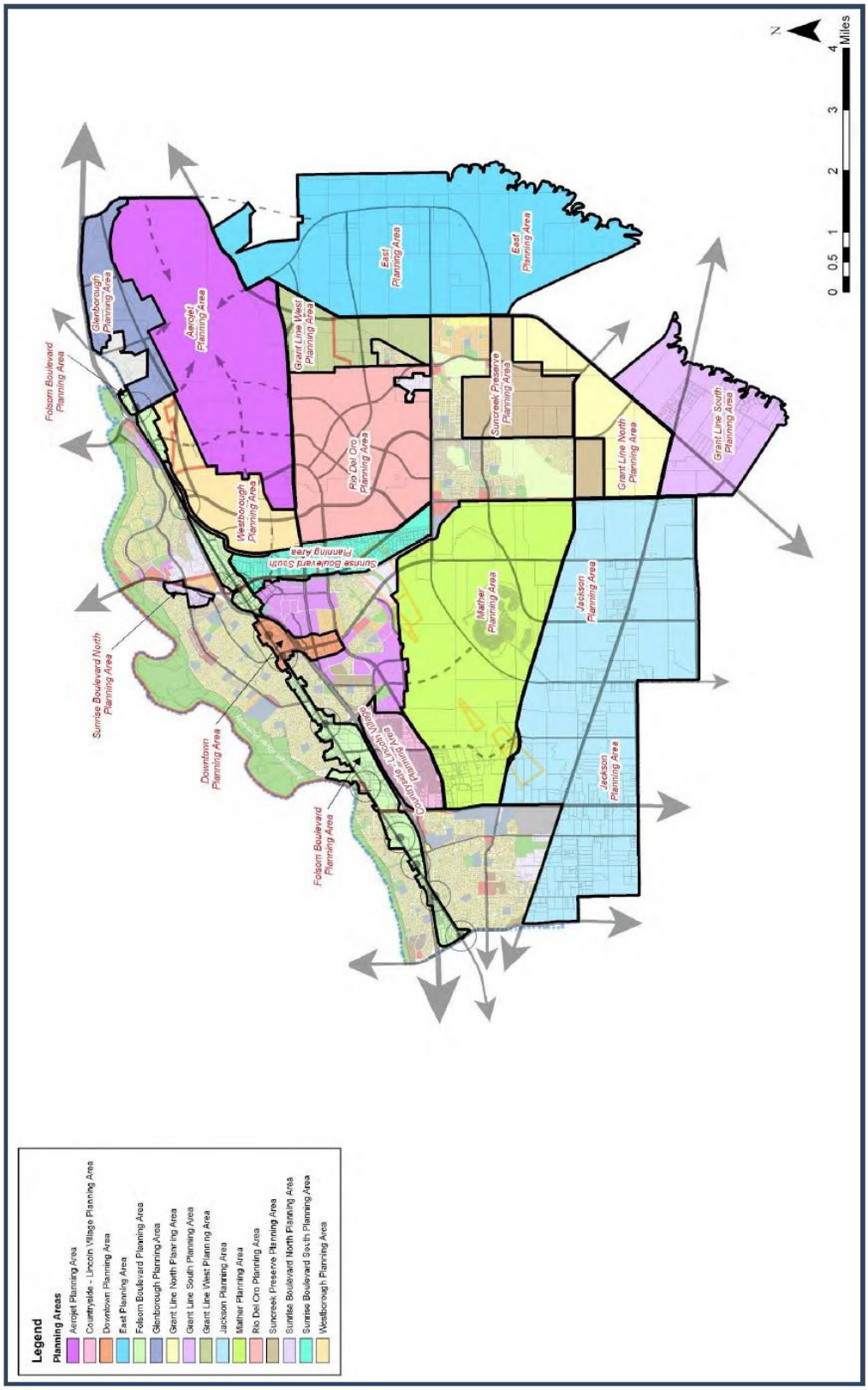
Figure E-6 identifies 16 individual planning areas within the General Plan Planning Area with unique characteristics/features that warrant more detailed planning efforts. Each of the 16 Planning Areas is listed in the Land Use Element with a description of land uses, environmental conditions, and target residential and employment populations. A few of the Planning Areas include parcel specific land use designations (Land Plans), but the majority of Planning Areas include Conceptual Land Plans and require subsequent master planning prior to development (e.g., Specific Plan, Special Planning Area). Conceptual Land Plans are not discrete land uses like the land use categories plotted in Figure E-5; rather, they reflect the City's Building Block concepts and relevant goals, policies, and actions applied to known constraints/opportunities and act as place holders for more detailed land planning.

Figure E-5 City of Rancho Cordova Land Use Map



Source: City of Rancho Cordova General Plan Land Use Element (2015)

Figure E-6 City of Rancho Cordova Land Use Map Planning Areas



Source: City of Rancho Cordova General Plan Land Use Element (2015)

Development since 2016 Plan

As discussed in Section 4.3.1 of the Base Plan, future development has occurred in the County since the last plan. Some of this has occurred in hazard prone areas. The City Building & Safety Division tracked total building permits issued since 2016 for the City. These are tracked by total development, permit type, and hazard risk area. These are shown in Table E-12 and Table E-13.

Table E-12 City of Rancho Cordova – Total Development Since 2016

Permit Type	2016	2017	2018	2019	2020
Commercial/Industrial New/Rep/TI	146	154	156	167	138
Commercial/Industrial Misc.	134	181	168	144	106
Exterior Signage	71	79	89	48	46
Demolition (Commercial/Industrial /Residential)	61	41	47	39	32
New Homes	173	140	229	550	572
Plumbing, Mechanical, Electrical (Commercial/Industrial /Residential)	1468	1290	1199	1324	1234
Pools (Commercial/Industrial /Residential)	52	51	66	68	82
Residential Remodels/Repairs/Additions	51	80	140	140	100
Residential Misc.	576	514	451	488	616
Re-Roofing (Commercial/Industrial /Residential)	267	405	301	365	351
Total:	**2,999**	**2,935**	**2,846**	**3,333**	**3,417**

Source: City of Rancho Cordova Building & Safety Division

Table E-13 City of Rancho Cordova – Development in Hazard Areas since 2016

Permit Type	1% Annual Chance Flood	Levee Protected Area	Wildfire Risk Area [1]
Commercial/Industrial New/Rep/TI	1	4	69
Commercial/Industrial Misc.	6	24	49
Exterior Signage	2	3	26
Demolition (Commercial/Industrial /Residential)	0	7	10
New Homes	0	0	1,508
Plumbing, Mechanical, Electrical (Commercial/Industrial /Residential)	18	421	561
Pools (Commercial/Industrial /Residential)	2	4	236
Residential Remodels/Repairs/Additions	7	21	71
Residential Misc.	5	92	881

Permit Type	1% Annual Chance Flood	Levee Protected Area	Wildfire Risk Area [1]
Re-Roofing (Commercial/Industrial /Residential)	6	95	48
Total	**47**	**671**	**3,459**

Source: City of Rancho Cordova Building & Safety Division

[1]Moderate or higher wildfire risk area

In Ranch Cordova, development occurred in the flood, levee, and wildfire risk areas. While the data shows changes in development in the City since the 2016, including development in mapped hazard areas, all development is subject to current building standards to include any requirements for building in hazard areas which act to mitigate hazard exposure. Further development in hazard areas is only one factor of many that contribute to an overall change in hazard vulnerability. Based on these considerations, it cannot be definitively stated as to whether the development or even lack of development contributed to an increase or decrease in vulnerability for Rancho Cordova.

Future Development

The Sacramento Council on (of) Governments (SACOG) modeled population projections for the City of Rancho Cordova and other areas of the region in 2012 for a Metropolitan Transportation Plan/Sustainable Communities Strategy report. This forecast uses a 2008 base year estimate with projections to 2020 and 2035 for population, housing units, households and employment. SACOG estimated the City population in 2020 and 2035 to be 79,305 and 126,112 respectively.

More general information on growth and development in Sacramento County as a whole can be found in "Growth and Development Trends" in Section 4.3.1 Sacramento County Vulnerability and Assets at Risk of the Base Plan.

The City provided areas which it plans on growing in the upcoming years. The City provided the following future development zones, zoning descriptions, specific plan or special plan area, and parcel counts for analysis. Table E-14 serves as the basis for the GIS analysis for future development in this document.

Table E-14 City of Rancho Cordova – Future Development Area Parcel Counts and Specific or Special Plan Areas

Zone	Zoning Description	Specific Plan or Special Planning Area	Parcel Count
BP (RDOSP)	Business Park	Rio Del Oro	6
BP (ZSPA)	Business and Professional Office	Zinfandel	16
GC	General Commercial	(blank)	12
LI (ZSPA)	Light Industrial	Zinfandel	27
LTC (RDOSP)	Local Town Center	Rio Del Oro	1
M-1	Light Industrial/Manufacturing	(blank)	12
MP (RDOSP)	Industrial Park	Rio Del Oro	3

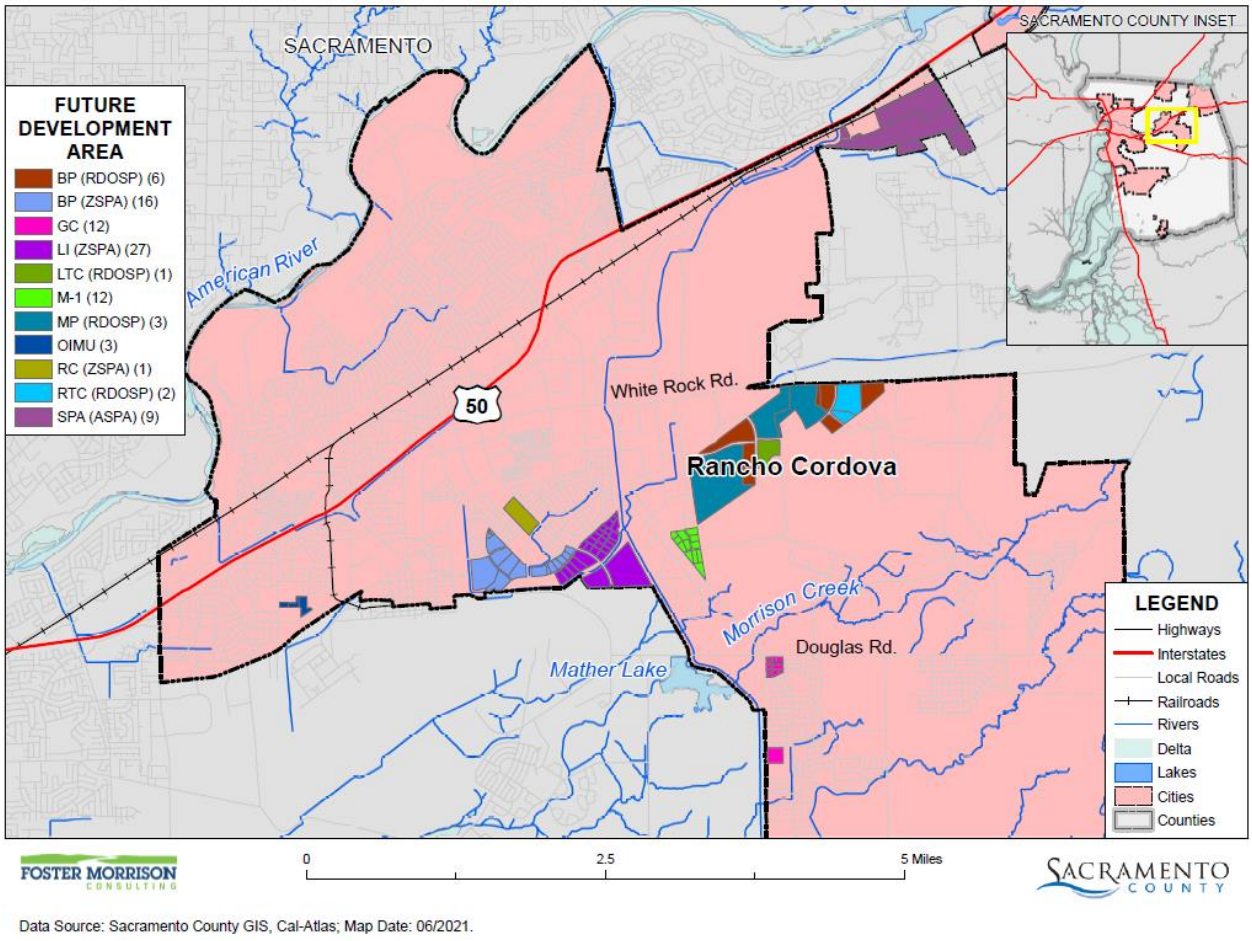
Zone	Zoning Description	Specific Plan or Special Planning Area	Parcel Count
BP (RDOSP)	Business Park	Rio Del Oro	6
OIMU	Office Industrial Mixed Use	(blank)	3
RC (ZSPA)	Retail Commercial	Zinfandel	1
RTC (RDOSP)	Regional Town Center	Rio Del Oro	2
SPA (ASPA)	AeroJet Special Planning Area	AeroJet	9
Grand Total			**92**

Source: City of Rancho Cordova

GIS Analysis

The City of Rancho Cordova provided a list of projects that the City is seeing be developed. Using GIS, the following methodology was used in determining parcel counts and acreages with future development projects in the City. Future development areas in the City were provided in mapped format by the City. Using the GIS parcel spatial file for each of these areas, the areas associated with future development projects for which the analysis was to be performed were identified. Utilizing the future development project spatial layer, the parcel centroid data was intersected to determine the parcel counts within each area. Figure E-7 shows the locations of future development areas the City is planning to develop. Table E-15 shows the summary of parcels and acreages of each future development area in the City. More information as to the names and specific and special plan areas these fall into can be found in Table E-14.

Figure E-7 City of Rancho Cordova – Future Development Areas



Data Source: Sacramento County GIS, Cal-Atlas; Map Date: 06/2021.

Table E-15 City of Rancho Cordova – Future Development Areas with Acre and Parcel Counts

Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
BP (ZSPA)	16	3	105
GC	12	0	25
LI (ZSPA)	27	0	141
M-1	12	1	33
MP (RDOSP)	12	0	390
OIMU	3	0	11
RC (ZSPA)	1	0	25
SPA (ASPA)	9	2	213
Grand Total	**92**	**6**	**944**

Source: City of Rancho Cordova

E.5.3. Vulnerability to Specific Hazards

This section provides the vulnerability assessment, including any quantifiable loss estimates, for those hazards identified above in Table E-6 as high or medium significance hazards. Impacts of past events and vulnerability of the City to specific hazards are further discussed below (see Section 4.1 Hazard Identification in the Base Plan for more detailed information about these hazards and their impacts on the Sacramento County Planning Area). Methodologies for evaluating vulnerabilities and calculating loss estimates are the same as those described in Section 4.3 of the Base Plan.

An estimate of the vulnerability of the City to each identified priority hazard, in addition to the estimate of likelihood of future occurrence, is provided in each of the hazard-specific sections that follow. Vulnerability is measured in general, qualitative terms and is a summary of the potential impact based on past occurrences, spatial extent, and damage and casualty potential. It is categorized into the following classifications:

- **Extremely Low**—The occurrence and potential cost of damage to life and property is very minimal to nonexistent.
- **Low**—Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal.
- **Medium**—Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- **High**—Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread. Hazards in this category may have occurred in the past.
- **Extremely High**—Very widespread with catastrophic impact.

Depending on the hazard and availability of data for analysis, this hazard specific vulnerability assessment also includes information on values at risk, populations at risk, critical facilities and infrastructure, and future development.

Power Outage/Power Failure

An impact of almost all hazards below relates to power outages and/or power failures. The US power grid crisscrosses the country, bringing electricity to homes, offices, factories, warehouses, farms, traffic lights and even campgrounds. According to statistics gathered by the Department of Energy, major blackouts are on the upswing. Incredibly, over the past two decades, blackouts impacting at least 50,000 customers have increased 124 percent. The electric power industry does not have a universal agreement for classifying disruptions. Nevertheless, it is important to recognize that different types of outages are possible so that plans may be made to handle them effectively. In addition to blackouts, brownouts can occur. A brownout is an intentional or unintentional drop in voltage in an electrical power supply system. Intentional brownouts are used for load reduction in an emergency. Electric power disruptions can be generally grouped into two categories: intentional and unintentional. More information on types of power disruptions can be found in Section 4.3.2 of the Base Plan.

Public Safety Power Shutoff (PSPS)

A new intentional disruption type of power shortage/failure event has recently occurred in California. In recent years, several wildfires have started as a result of downed power lines or electrical equipment. This was the case for the Camp Fire in 2018. As a result, California's three largest energy companies (including PG&E), at the direction of the California Public Utilities Commission (CPUC), are coordinating to prepare all Californians for the threat of wildfires and power outages during times of extreme weather. To help protect customers and communities during extreme weather events, electric power may be shut off for public safety in an effort to prevent a wildfire. This is called a PSPS. More information on PSPS criteria can be found in Section 4.3.2 of the Base Plan.

There has been zero PSPS events impacting the City of Rancho Cordova in the last five years.

SMUD's Power System Operators (PSO) have the authority to de-energize portions or all of the Valley and Upper American River Project (UARP) transmission line(s) for safety, reliability, conditions beyond design criteria, threat of wildfires and during emergency conditions when requested by local law enforcement or fire officials. Per existing protocols, planned de-energizations are coordinated with interconnected agencies.

During active fire season as declared by CAL FIRE the PSO is authorized to de-energize portions or all of the Valley and UARP transmission line(s) when there is imminent fire danger, mandatory fire orders are in effect, and/or the transmission system is experiencing conditions beyond design criteria. The PSO will take a combination of many factors into consideration when implementing de-energization procedures, which include the triggers listed below, as well as power system knowledge and potential community impacts. De-energization decisions require a balancing of all these factors as well as a knowledge of the area and operation of the power system; no single element is determinative. These factors include:

- Extreme fire danger threat levels, as classified by the National Fire Danger Rating System
- A RFW declaration by the National Weather Service
- Low humidity levels lower than what is required for a Red Flag Warning (RFW)
- Sustained winds exceeding design standards
- Site-specific conditions such as temperature, terrain and local climate
- Critically dry vegetation that could serve as fuel for a wildfire
- On-the-ground, real-time observation from SMUD or other agency field staff

The PSO utilizes various operational and situational awareness tools to determine when de-energization is appropriate. The tools are listed below:

- Weather data telemetered into SMUD's Energy Management System; such as wind speed, wind direction, air temperature, barometric pressure, relative humidity
- US Forest Service – Wildland Fire Assessment System, https://www.wfas.net/
- CAL FIRE Incidents Information, http://cdfdata.fire.ca.gov/incidents/incidents_statsevents
- CAL FIRE California Statewide Fire Map, http://www.fire.ca.gov/general/firemaps
- National Weather Service, https://www.weather.gov/
- Indji Watch real time operational tool
- Geographic Information System (GIS) based tools
- ALERTWildfire, http://www.alertwildfire.org/tahoe/index.html

Transmission line inspections

SMUD's transmission lines are grouped in two inspection areas. The UARP region includes all lines east of Folsom going up to the hydro-electric facilities in the Sierras. The Valley region comprises of all transmission lines in SMUD's service territory.

Distribution line inspections

SMUD performs various inspections on distribution lines to ensure safety, reliability and consistency with standards in California Public Utility Commission (CPUC) General Order (GO) 95, GO 128 and GO 165.

Distribution substation inspections

SMUD performs various inspections on substations to ensure safety and reliability. SMUD inspections meet or exceed standards in CPUC GO 174.

Climate Change

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile and Problem Description

Climate change adaptation is a key priority of the State of California. The 2018 State of California Multi-Hazard Mitigation Plan stated that climate change is already affecting California. Sea levels have risen by as much as seven inches along the California coast over the last century, increasing erosion and pressure on the state's infrastructure, water supplies, and natural resources. The State has also seen increased average temperatures, more extreme hot days, fewer cold nights, a lengthening of the growing season, shifts in the water cycle with less winter precipitation falling as snow, and earlier runoff of both snowmelt and rainwater in the year. In addition to changes in average temperatures, sea level, and precipitation patterns, the intensity of extreme weather events is also changing.

Location and Extent

Climate change is a global phenomenon. It is expected to affect the whole of the City, Sacramento County, and State of California. There is no scale to measure the extent of climate change. Climate change exacerbates other hazards, such as drought, extreme heat, flooding, wildfire, and others. The speed of onset of climate change is very slow. The duration of climate change is not yet known, but is feared to be tens to hundreds of years.

Past Occurrences

Climate change has never been directly linked to any declared disasters. While the City noted that climate change is of concern, no specific impacts of climate change could be recalled. The City and HMPC members noted that the strength of storms does seem to be increasing and the temperatures are getting hotter. The City Planning Tam noted that they had not noticed any notable changes or issues associated with climate change.

Vulnerability to and Impacts from Climate Change

The California Adaptation Planning Guide (APG) prepared by California OES and CNRA was developed to provide guidance and support for local governments and regional collaboratives to address the unavoidable consequences of climate change. California's APG: Understanding Regional Characteristics has divided California into 11 different regions based on political boundaries, projected climate impacts, existing environmental setting, socioeconomic factors and regional designations. Sacramento County falls within the North Sierra Region characterized as a sparsely settled mountainous region where the region's economy is primarily tourism-based. The region is rich in natural resources, biodiversity, and is the source for the majority of water used by the state. This information can be used to guide climate adaptation planning in the City and Sacramento County Planning Area.

The California APG: Understanding Regional Characteristics identified the following impacts specific to the North Sierra region in which the Sacramento County Planning Area is part of:

- Temperature increases
- Decreased precipitation
- Reduced snowpack
- Reduced tourism
- Ecosystem change
- Sensitive species stress
- Increased wildfire

Future Development

The City could see population fluctuations as a result of climate impacts relative to those experienced in other regions, and these fluctuations are expected to impact demand for housing and other development.

Dam Failure

Likelihood of Future Occurrence–Unlikely
Vulnerability–High

Hazard Profile and Problem Description

Dams are manmade structures built for a variety of uses including flood protection, power generation, agriculture, water supply, and recreation. When dams are constructed for flood protection, they are usually engineered to withstand a flood with a computed risk of occurrence. For example, a dam may be designed to contain a flood at a location on a stream that has a certain probability of occurring in any one year. If prolonged periods of rainfall and flooding occur that exceed the design requirements, that structure may be overtopped or fail. Overtopping is the primary cause of earthen dam failure in the United States.

Location and Extent

Dam failure is a natural disaster from two perspectives. First, the inundation from released waters resulting from dam failure is related to naturally occurring floodwaters. Second, a total dam failure would most

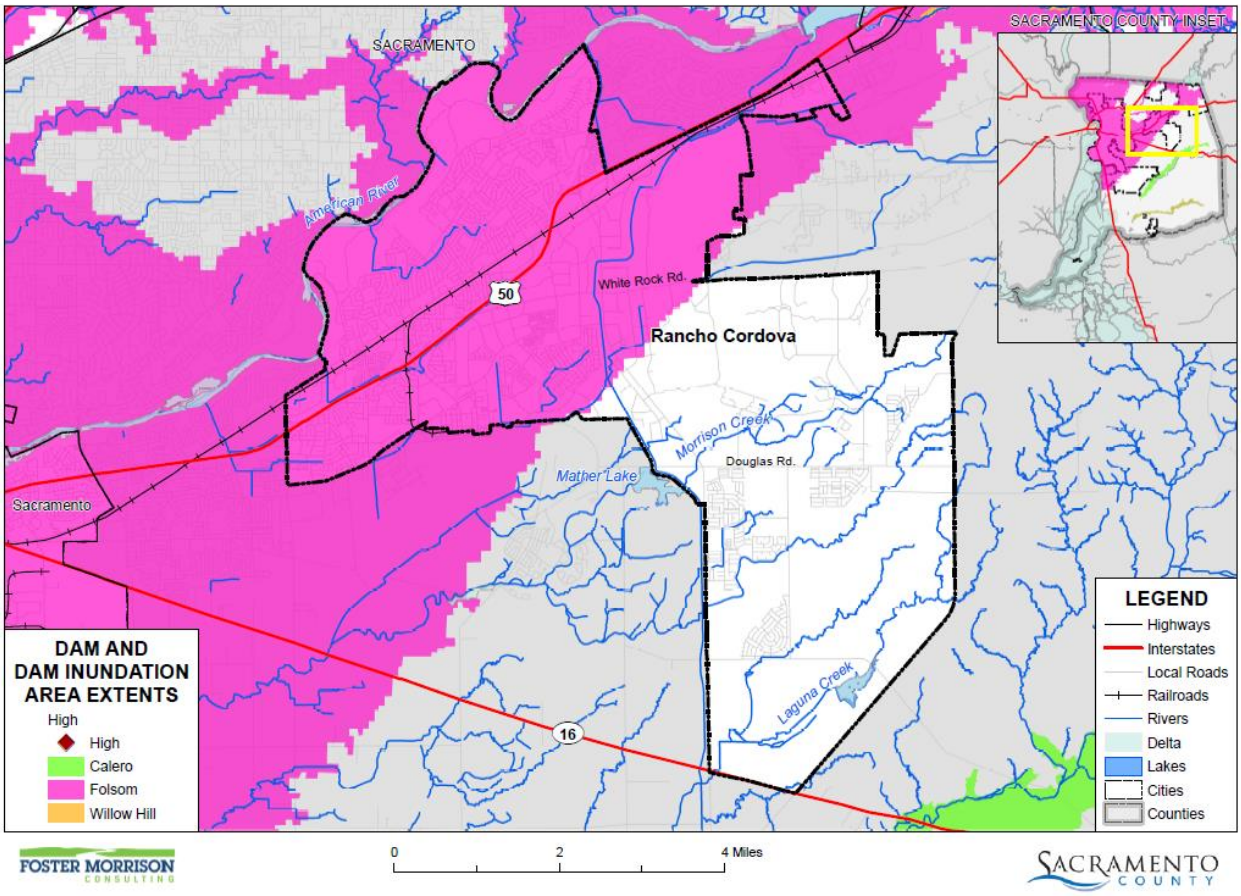
probably happen as a consequence of the natural disaster triggering the event, such as an earthquake. There is no scale with which to measure dam failure. However, Cal DWR Division of Safety of Dams (DOSD) assigns hazard ratings to dams within the State that provides information on the potential impact should a dam fail. The following two factors are considered when assigning hazard ratings: existing land use and land use controls (zoning) downstream of the dam. Dams are classified in four categories that identify the potential hazard to life and property: Low, Significant, High, and Extremely High. These were discussed in more detail in Section 4.3.7 of the Base Plan.

While a dam may fill slowly with runoff from winter storms, a dam break has a very quick speed of onset. The duration of dam failure is generally not long – only as long as it takes to empty the reservoir of water the dam held back. The City would be affected for as long as the flood waters from the dam failure took to drain downstream.

Based on available data, the City falls within the inundation areas of Folsom and Oroville dams. The City also falls in the Folsom Dam 235,000 cfs scenario, as discussed in Section 4.3.7 of the Base Plan. Geographic flood extent from the DWR DSOD and Cal OES dam inundation areas is shown on Figure E-8 for dams inside the County, Figure E-9 for dams outside the County, Figure E-10 for the Folsom Dam 235,000 scenario, and summarized for all these dams in Table E-16.

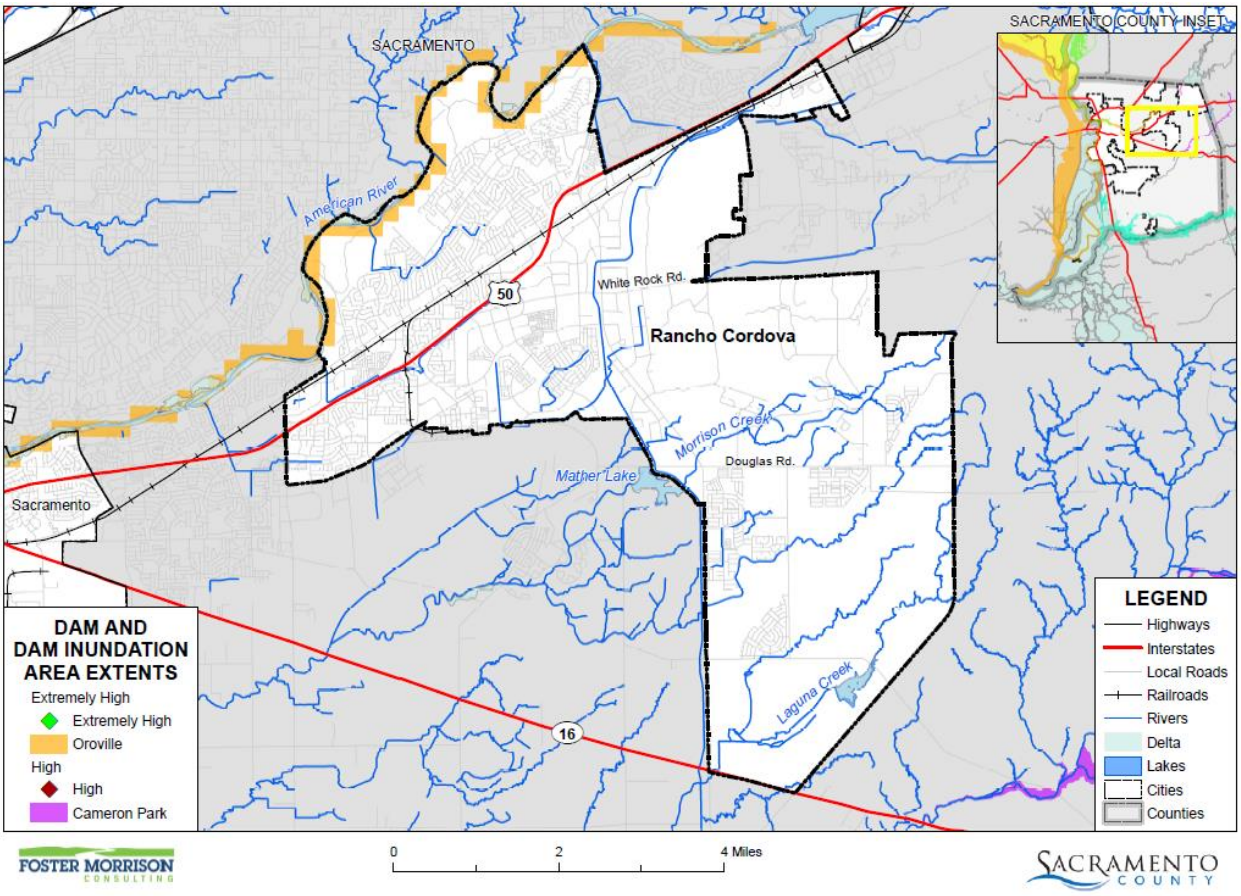
Note: the Cal OES and DSOD dam inundation data did not include inundation mapping of all dams that could affect the Sacramento County Planning Area and the City; thus, the below analysis reflects information based on available data. Other dams may be identified as a concern to the City.

Figure E-8 City of Rancho Cordova – Dam Inundation Areas from Dams Inside the County



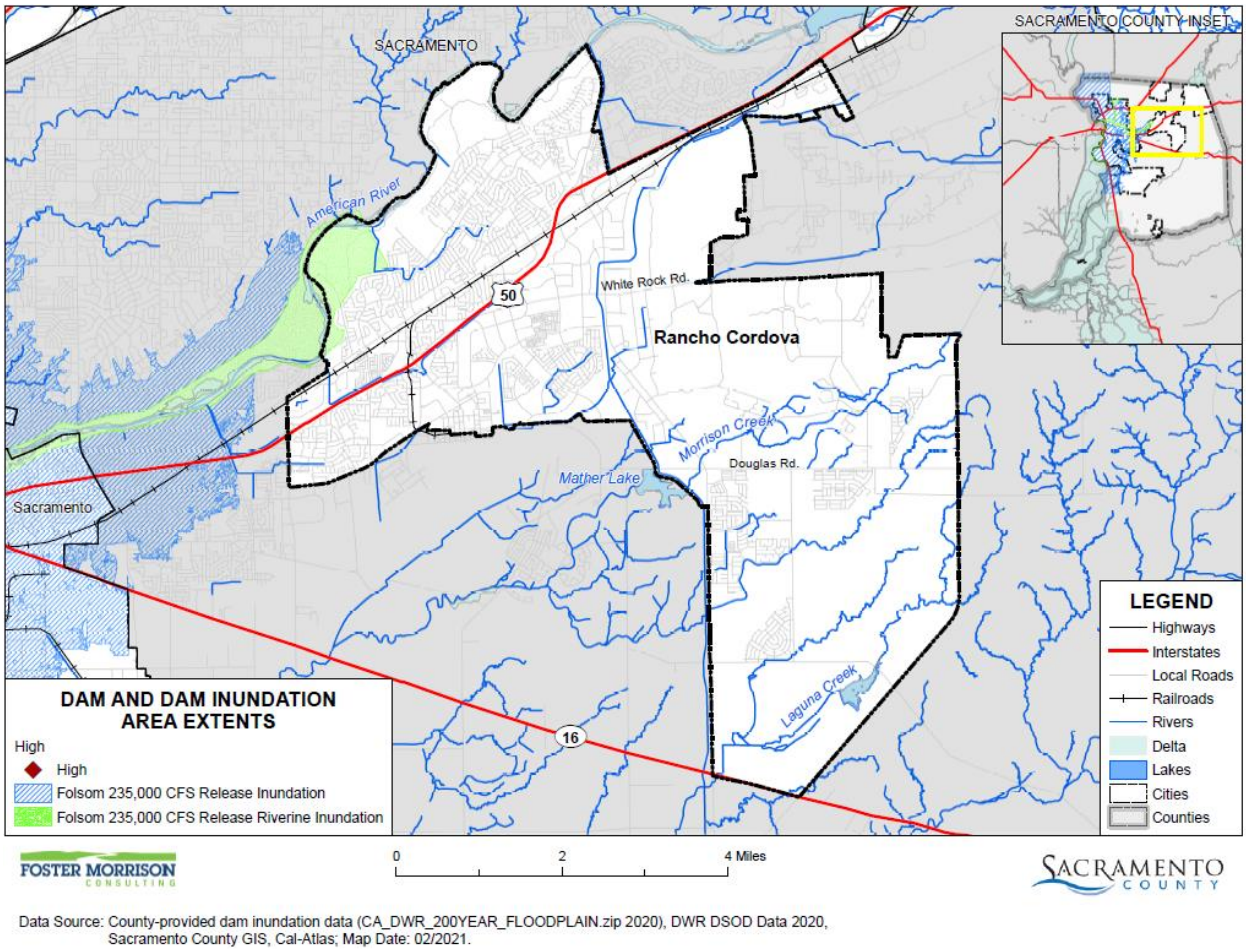
Data Source: County-provided dam inundation data (FOLSOM_DAM_INUNDATION_AREA.shp 2016), DWR DSOD Data 2020 and Cal OES Dam Status 10/2017, Sacramento County GIS, Cal-Atlas; Map Date: 2/2021.

Figure E-9 City of Rancho Cordova – Dam Inundation Areas from Dams Outside the County



Data Source: DWR DSOD Data 2020 and Cal OES Dam Status 10/2017, Sacramento County GIS, Cal-Atlas; Map Date: 9/2020.

Figure E-10 City of Rancho Cordova – Dam Inundation Areas from Folsom Dam 235,000 cfs Scenario



Data Source: County-provided dam inundation data (CA_DWR_200YEAR_FLOODPLAIN.zip 2020), DWR DSOD Data 2020, Sacramento County GIS, Cal-Atlas; Map Date: 02/2021.

Table E-16 City of Rancho Cordova – Geographical Dam Inundation Extents

Dam Inundation Areas	Jurisdiction	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
High Hazard Dams Inside the County							
Folsom	Rancho Cordova	10,507.97	49.14%	6,010.88	59.80%	4,497.09	39.68%
Folsom 235,000 cfs scenario	Rancho Cordova	429.60	2.01%	7.18	0.07%	422.42	3.73%
Extremely High Hazard Dams Outside the County							
Oroville	Rancho Cordova	477.28	2.23%	11.22	0.11%	466.06	4.11%

Source: Cal OES, DSOD

Past Occurrences

There has been no state or federal disaster declarations for dam failure in the County. The City noted no other dam failure occurrences that have affected the City.

Vulnerability to and Impacts from Dam Failure

Dam failure flooding would vary by community depending on which dam fails and the nature and extent of the dam failure and associated flooding. Warning ability is generally determined by the frequency of inspections for structural integrity, the flood wave arrival time (the time it takes for the flood wave to reach its maximum distance of inundation), or the ability to notify persons downstream and their ability to evacuate. The existence and frequency of updating and exercising an evacuation plan that is site-specific assists in warning and evacuation functions. A failure of the Folsom Dam would leave little time for evacuation of the certain parts of City of Rancho Cordova.

Impacts to the City from a dam failure flood include loss of life and injury, flooding and damage to property and structures, damage to critical facilities and infrastructure, loss of natural resources, and all other flood related impacts. Additionally, mass evacuations and associated economic losses can also be significant.

Assets at Risk

Based on the vulnerability of Rancho Cordova to the dam failure hazard, the sections that follow describes significant assets at risk in the City of Rancho Cordova. This section includes the values at risk, inundated acres, population at risk, and critical facilities at risk.

Values at Risk

GIS was used to determine the possible impacts of flooding within the City of Rancho Cordova. The methodology described in Section 4.3.9 of the Base Plan was followed in determining structures and values at risk to dam failure. Table E-17 shows the property use, improved parcel count, improved values, estimated contents, and total values that fall in dam inundation areas in the City.

Table E-17 City of Rancho Cordova – Count and Values of Parcels at Risk by Dam Inundation Area and Property Use

Dam Inundation Area/ Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Folsom Dam – High Hazard Dam Inside of County						
Care / Health	13	11	$3,130,790	$21,931,121	$21,931,121	$46,993,032
Church / Welfare	32	32	$19,175,428	$58,389,789	$58,389,789	$135,955,006
Industrial	602	575	$238,902,969	$663,580,942	$995,371,417	$1,897,855,320
Miscellaneous	358	1	$478,654	$1,085	$1,085	$480,824
Office	290	261	$269,893,286	$1,139,339,333	$1,139,339,333	$2,548,571,952

Dam Inundation Area/ Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Public / Utilities	58		$9			$9
Recreational	14	9	$7,894,394	$22,417,303	$22,417,303	$52,729,000
Residential	15,624	15,558	$1,089,919,980	$3,041,404,859	$1,520,702,439	$5,652,027,147
Retail / Commercial	256	240	$201,079,581	$375,766,578	$375,766,578	$952,612,737
Unknown	3	3		$311,254		$311,254
Vacant	289	7	$89,218,177	$716,294		$89,934,471
Rancho Cordova Total	**17,539**	**16,697**	**$1,919,693,268**	**$5,323,858,558**	**$4,133,919,065**	**$11,377,470,752**
Folsom Dam 235,000 cfs Scenario– High Hazard Dam Inside of County						
Miscellaneous	12	0	$4	$0	$0	$4
Recreational	1	0	$9	$0	$0	$9
Residential	24	24	$5,420,443	$12,428,695	$6,214,348	$24,063,486
Vacant	3	0	$451,408	$0	$0	$451,408
Rancho Cordova Total	**40**	**24**	**$5,871,864**	**$12,428,695**	**$6,214,348**	**$24,514,907**
Oroville Dam – Extremely High Hazard Dam Outside the County						
Miscellaneous	39	**0**	$20	$0	$0	$20
Recreational	1	**0**	$9	$0	$0	$9
Residential	36	36	$3,819,039	$10,953,529	$5,476,761	$20,249,331
Vacant	3	**0**	$406,602	$0	$0	$406,602
Rancho Cordova Total	**79**	**36**	**$4,225,670**	**$10,953,529**	**$5,476,761**	**$20,655,962**

Source: CAL OES, DSOD, Sacramento County 2020 Parcel/Assessor's Data

Population at Risk

The DSOD and Cal OES dam inundation areas were overlayed on the parcel layer. Those residential parcel centroids that intersect the dam inundation areas were counted and multiplied by the Census Bureau average household factors for Rancho Cordova – 2.14. This is shown in Table E-30.

Table E-18 City of Rancho Cordova – Count of Improved Residential Parcels and Population by Dam Inundation Area

Jurisdiction	Folsom Dam Inundation Area		Folsom Dam 235,000 cfs Scenario Inundation Area		Oroville Dam Inundation Area	
	Improved Residential Parcels	Population	Improved Residential Parcels	Population	Improved Residential Parcels	Population
Rancho Cordova	15,558	33,294	24	51	36	77

Source: Cal OES, DSOD, Sacramento County 2020 Parcel/Assessor's Data, US Census Bureau

Critical Facilities at Risk

An analysis was performed on the critical facility inventory in Rancho Cordova in identified dam inundation areas. GIS was used to determine whether the critical facility locations intersect a DSOD or Cal OES dam inundation area. Details of critical facilities in mapped dam inundation areas in the City of Rancho Cordova are shown in Figure E-11 for dams inside the County, Figure E-11 for dams outside the County, Figure E-12 for the Folsom Dam 235,000 cfs Scenario, and detailed in Table E-19. Details of critical facility definition, type, name and address and jurisdiction by dam inundation area are listed in Appendix F.

Figure E-11 City of Rancho Cordova – Critical Facilities in Dam Inundation Areas from Dams Inside County

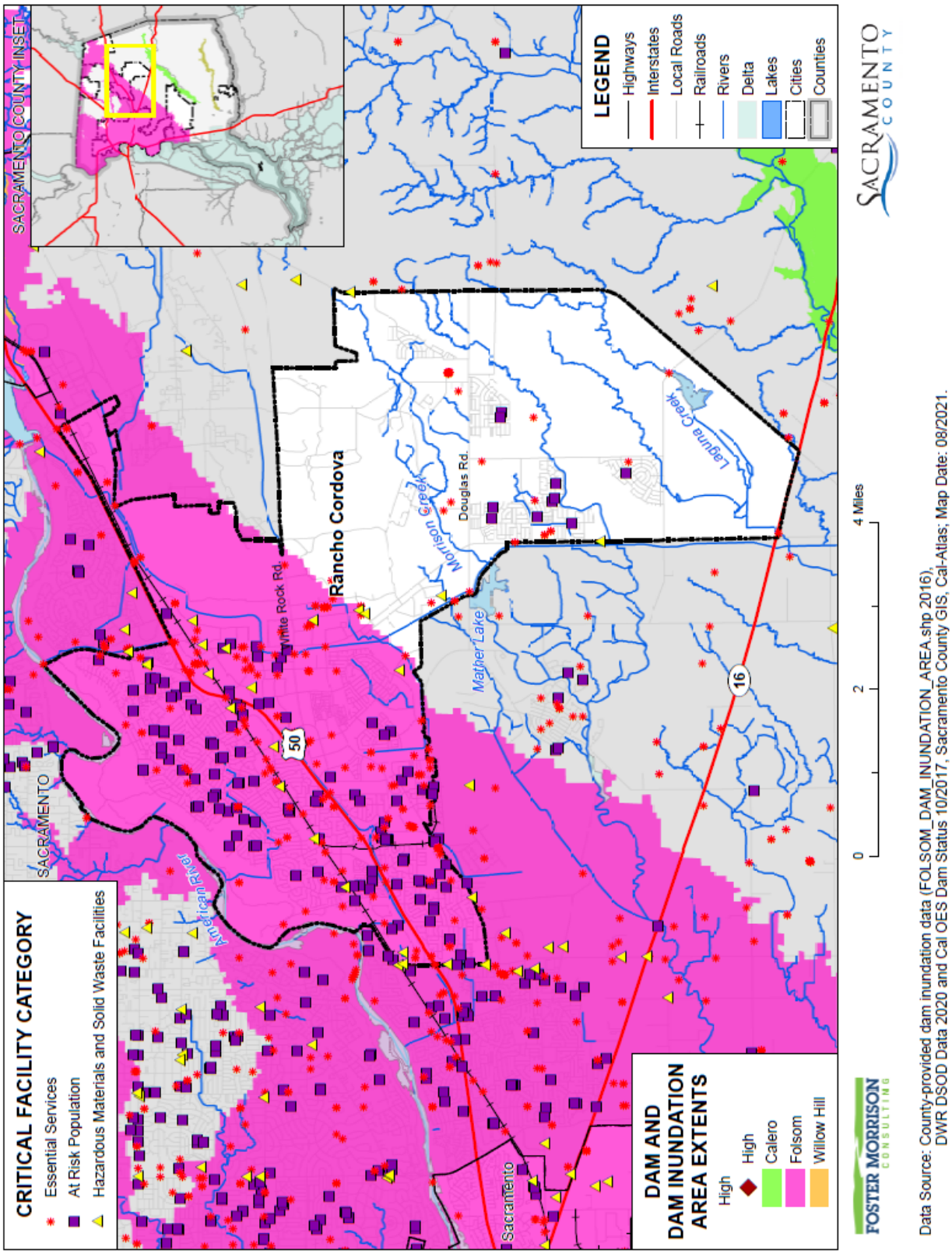


Figure E-12 City of Rancho Cordova – Critical Facilities in Dam Inundation Areas from Dams Outside County

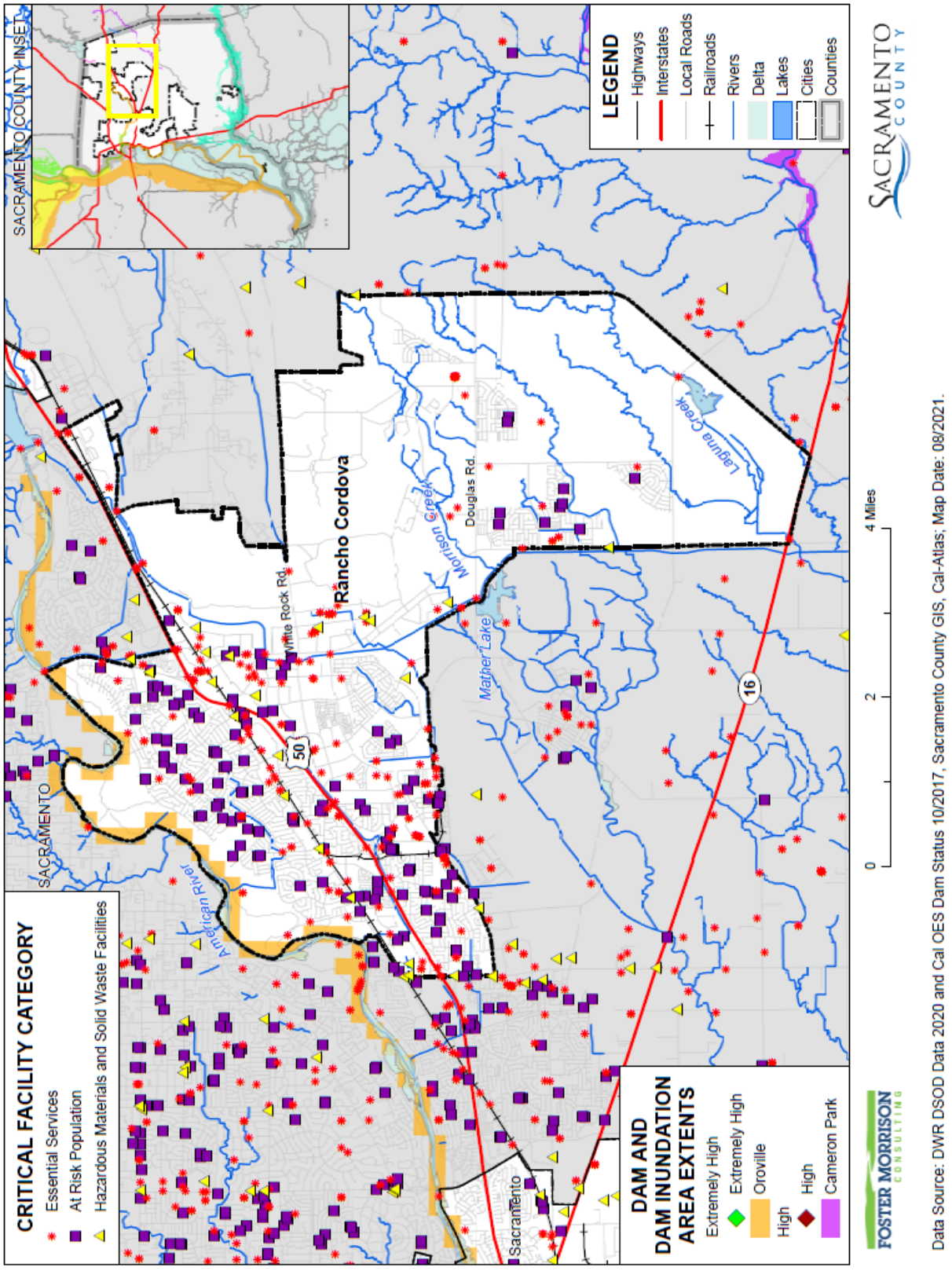


Figure E-13 City of Rancho Cordova – Critical Facilities in Folsom Dam 235,000 cfs Scenario

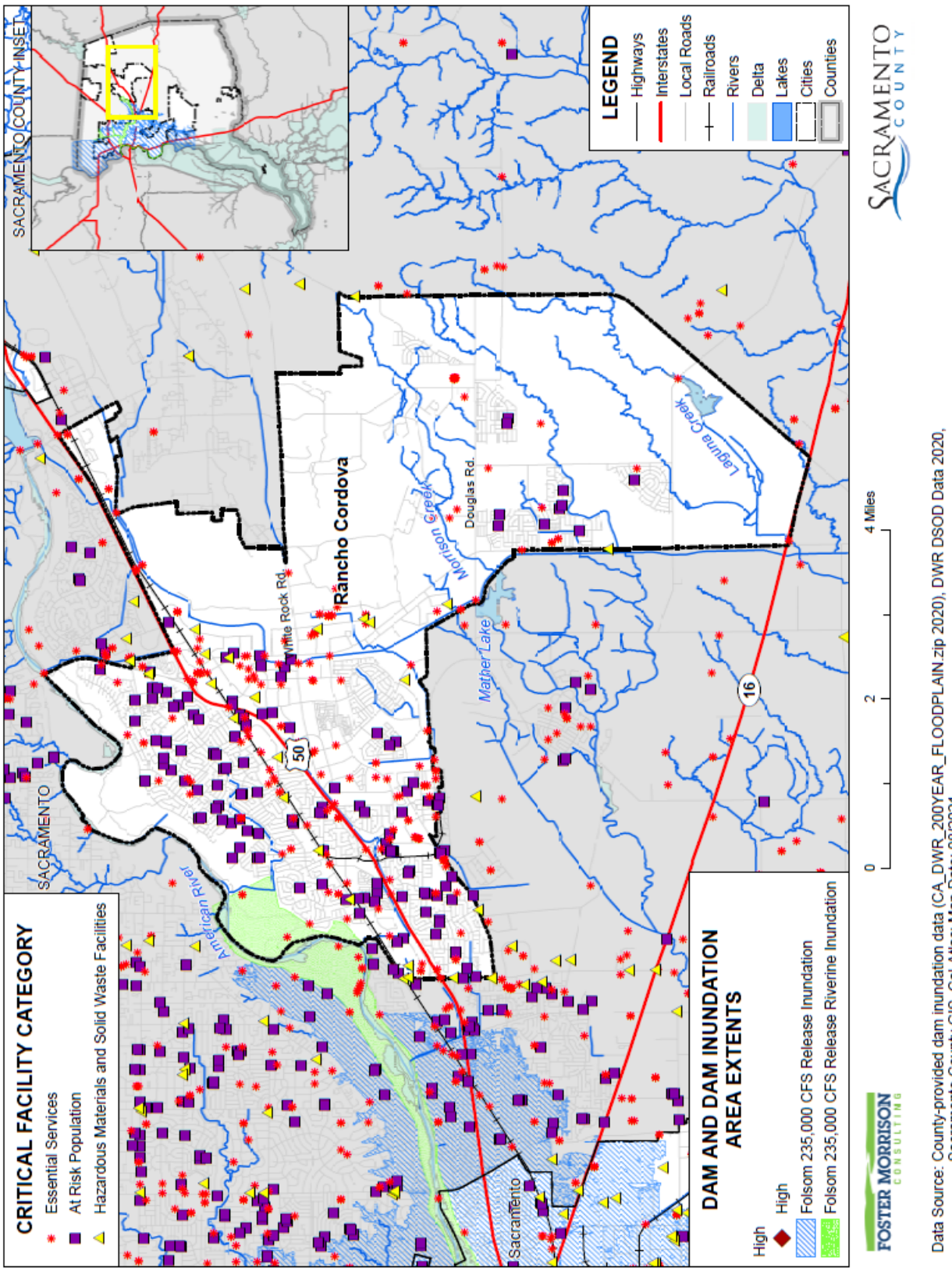


Table E-19 City of Rancho Cordova – Critical Facilities in Dam Inundation Areas by Category and Type

Dam Inundation Areas/Critical Facility Category	Critical Facility Type	Facility Count
Folsom Dam (High Hazard Dam Inside the County)		
Essential Services Facilities	Bridge	12
	Cellular Tower	11
	City Facility	5
	Drainage Pump Station	6
	Emergency Evacuation Center	6
	EMS Stations	5
	FDIC Insured Banks	10
	Fire Station	3
	Hospital or Urgent Care	4
	Law Enforcement	4
	Microwave Service Towers	59
	Power Plants	1
	Public Transit Stations	4
	State Government Building	1
	Water Well	57
	Total	**188**
At Risk Population Facilities	Colleges, Universities, and Professional Schools	3
	Community Center	4
	Day Care Center	22
	Mobile Home Park	8
	Places of Worship	71
	School	32
	Senior Living Center	3
	Total	**143**
Hazardous Materials and Solid Waste Facilities	EPA ER FRP Facility	1
	EPA ER TRI Facility	1
	Leaky Underground Storage Tank	12
	Solid Waste Facility	1
	Tank Farm	2
	Waste Transfer Station	1
	Total	**18**
Folsom Dam Total		**349**

Dam Inundation Areas/Critical Facility Category	Critical Facility Type	Facility Count
Oroville (Extremely High Hazard Dam Outside the County)		
Essential Services Facilities	Drainage Pump Station	1
	Total	**1**
At Risk Population Facilities	-	–
	Total	**0**
Hazardous Materials and Solid Waste Facilities	–	–
	Total	**0**
Oroville Dam Total		**1**
Folsom 235,000 cfs Scenario		
Essential Services Facilities	Water Well	3
	Total	**3**
At Risk Population Facilities	Places of Worship	1
	Total	**1**
Hazardous Materials and Solid Waste Facilities	–	–
	Total	**0**
Folsom Dam 235,000 cfs Scenario Total		**4**

Source: Cal OES, DSOD, Sacramento County GIS

Future Development

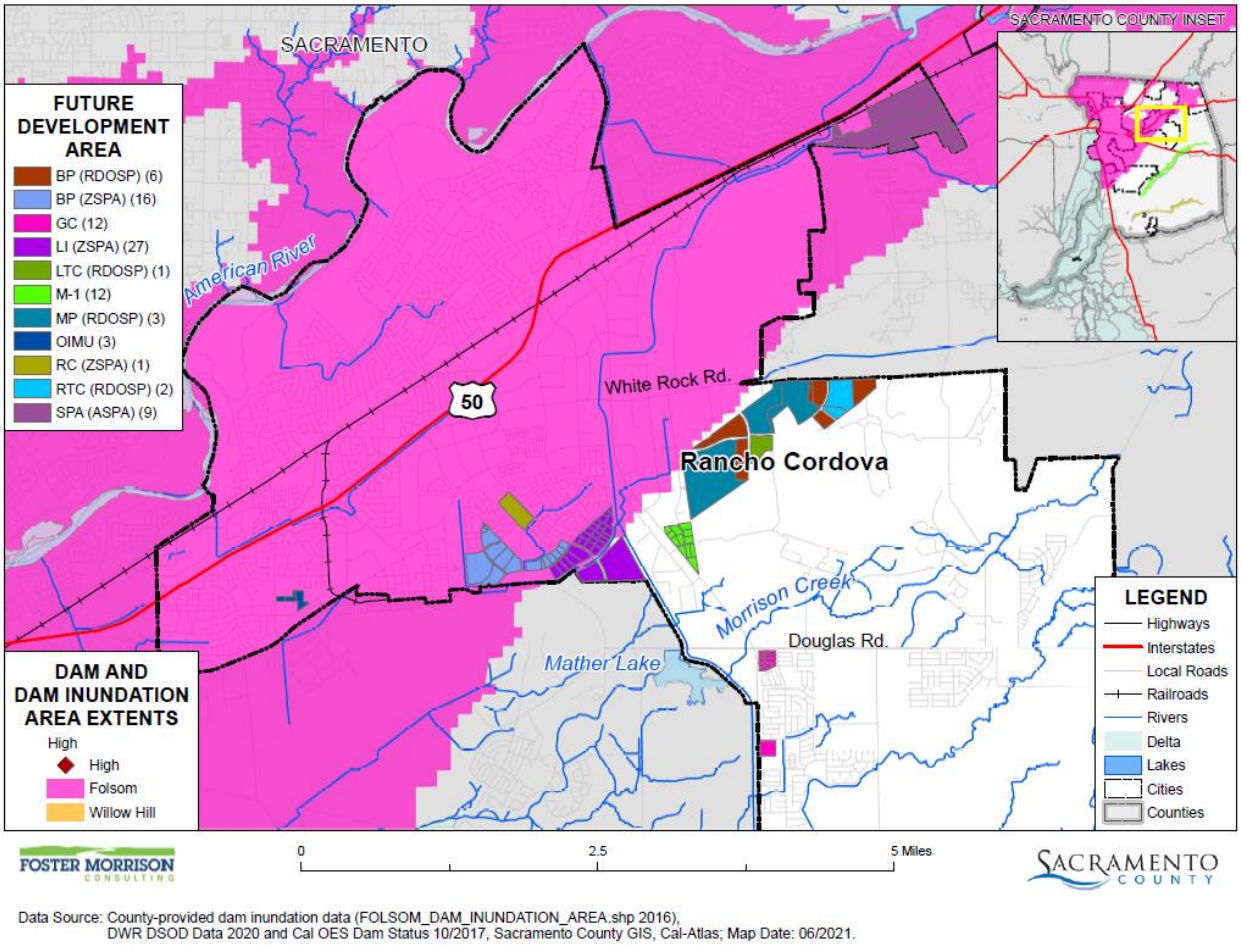
Future dam failures are considered unlikely. However, given the high number of affected parcels and the proximity of Folsom Dam, future development in the City could be affected by a dam failure and associated flooding. The City enforces it floodplain ordinance, which helps to reduce risk to flooding by requiring structures in the 1% annual chance floodplains to be above the base flood elevation, which depending on inundation depths and affected areas may provide some relief. Siting of future development areas should take dam failure flooding into account. The Folsom Dam has seen sizable improvements in recent years, which reduce the risk of a major event in the future.

GIS Analysis

The City provided future development areas were used as the basis for the inventory of future development areas for the City. Using the GIS parcel spatial file for each of these areas, the areas and parcels associated with future development projects for which the analysis was to be performed were identified. Utilizing the future development project spatial layer, the parcel centroid data was intersected to determine the parcel counts within each area. Figure E-14 shows the locations of future development areas the City is planning to develop on the dam inundation zones from dams inside the County. Figure E-15 shows the locations of future development areas the City is planning to develop on the dam inundation zones from dams outside the County. Figure E-16 shows the locations of future development areas the City is planning to develop on the dam inundation zones from the Folsom Dam 235,000 cfs scenario. Table E-20 shows the parcels and acreages of each future development area in the City in the dam inundation areas inside the County.

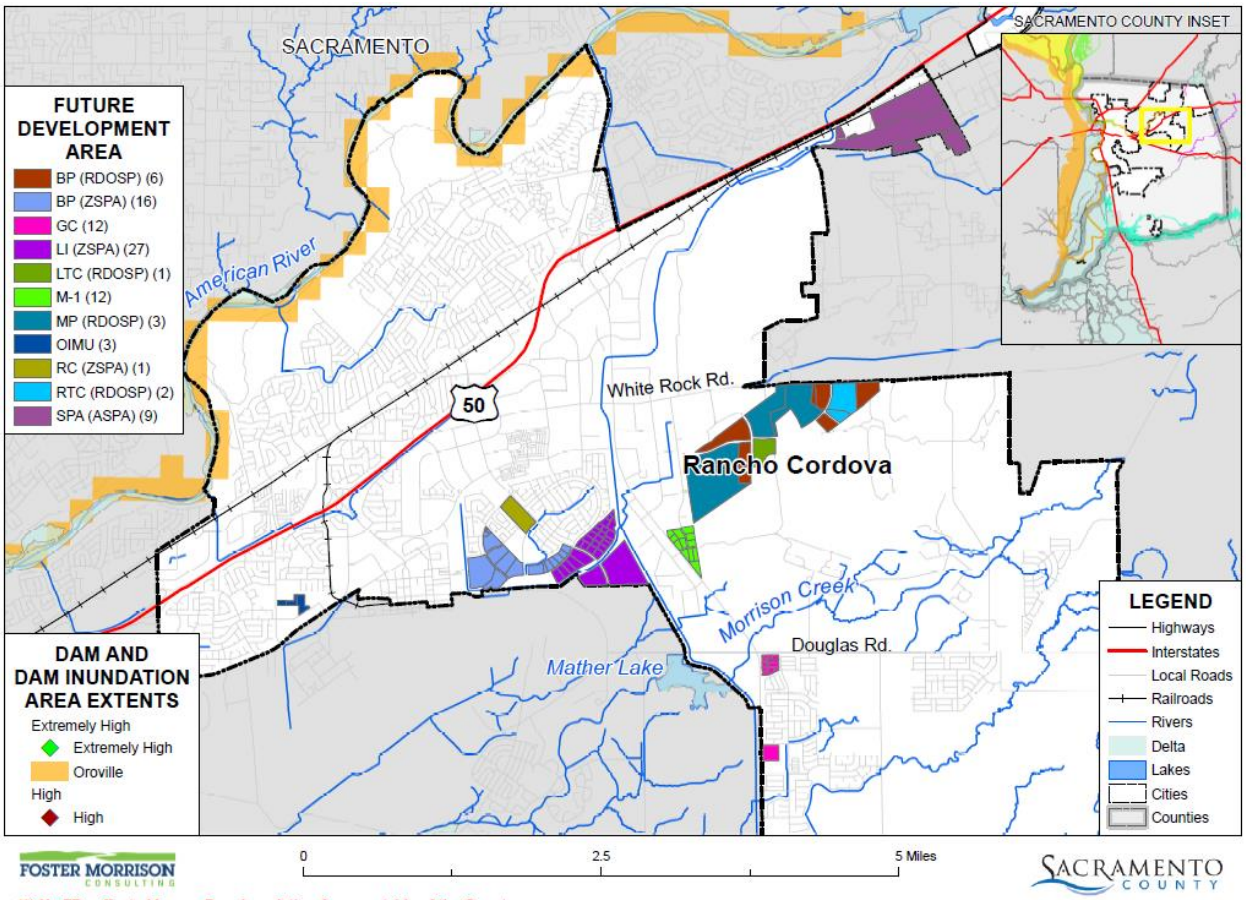
More information as to the names and specific and special plan areas these fall into can be found in Table E-14.

Figure E-14 City of Rancho Cordova – Future Development and Dam Inundation Areas from Dams Inside County



Data Source: County-provided dam inundation data (FOLSOM_DAM_INUNDATION_AREA.shp 2016), DWR DSOD Data 2020 and Cal OES Dam Status 10/2017, Sacramento County GIS, Cal-Atlas; Map Date: 06/2021.

Figure E-15 City of Rancho Cordova – Future Development and Dam Inundation Areas from Dams Outside County



*** No FDs affected by any Dam Inundation Areas outside of the County.
Data Source: DWR DSOD Data 2020 and Cal OES Dam Status 10/2017, Sacramento County GIS, Cal-Atlas; Map Date: 06/2021.

Figure E-16 City of Rancho Cordova – Future Development and Dam Inundation Areas from Folsom Dam 235,000 cfs Scenario

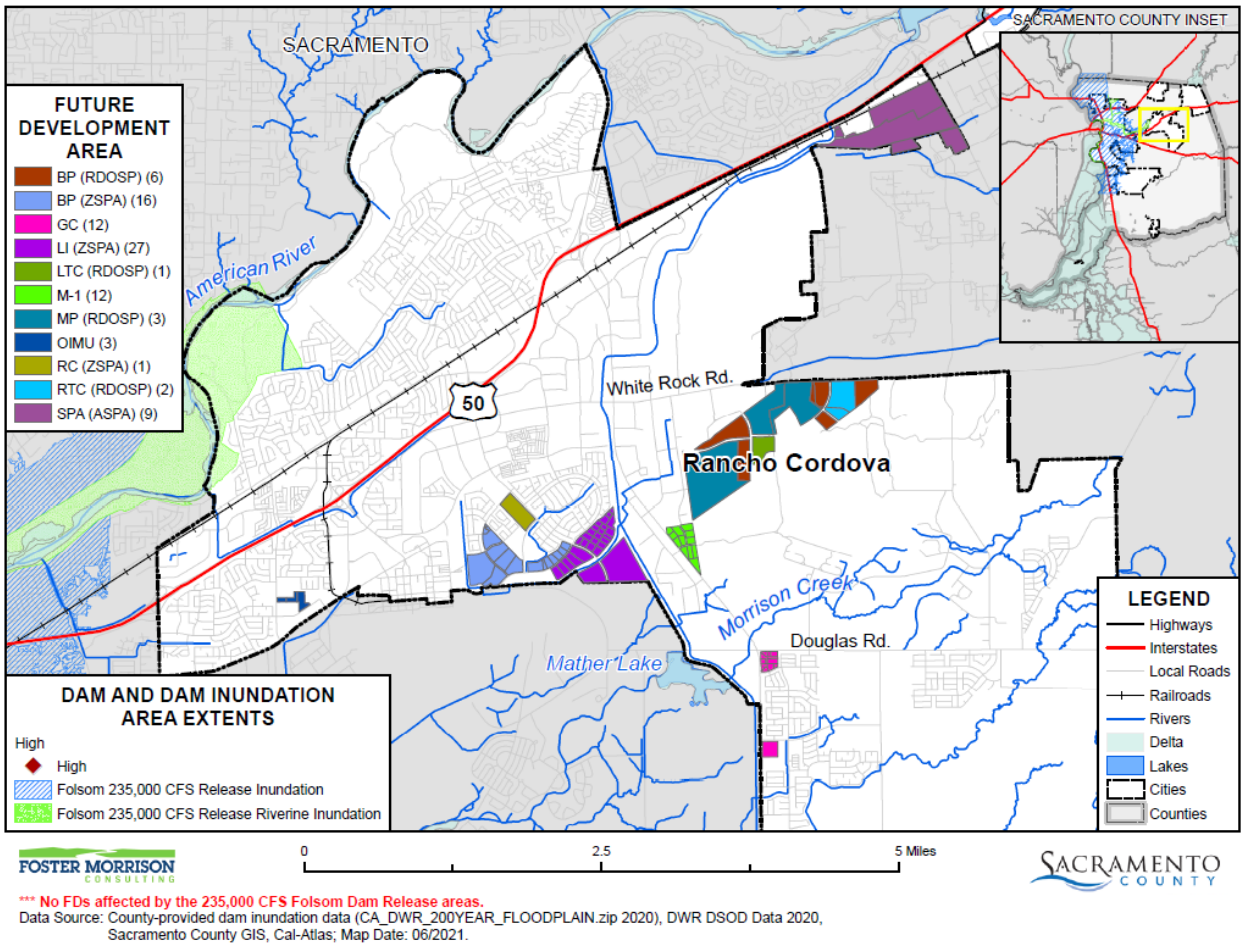


Table E-20 City of Rancho Cordova – Future Development Parcels and Acres in Dam Inundation Areas

Dam Inundation Area/ Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
Folsom			
BP (ZSPA)	16	3	105
LI (ZSPA)	25	0	71
OIMU	3	0	11
RC (ZSPA)	1	0	25
SPA (ASPA)	9	2	213
Folsom Total	**54**	**5**	**426**

Source: City of Rancho Cordova, Cal OES, DSOD

Drought & Water Shortage

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile and Problem Description

Drought is a complex issue involving many factors—it occurs when a normal amount of precipitation and snow is not available to satisfy an area's usual water-consuming activities. Drought can often be defined regionally based on its effects. Drought is different than many of the other natural hazards in that it is not a distinct event and usually has a slow onset. Drought can severely impact a region both physically and economically. Drought affects different sectors in different ways and with varying intensities. Adequate water is the most critical issue and is critical for agriculture, manufacturing, tourism, recreation, and commercial and domestic use. As the population in the area continues to grow, so will the demand for water.

Location and Extent

Drought and water shortage are regional phenomenon. The whole of the County, as well as the whole of the City, is at risk. The US Drought Monitor categorizes drought conditions with the following scale:

- None
- D0 – Abnormally dry
- D1 – Moderate Drought
- D2 – Severe Drought
- D3 – Extreme drought
- D4 – Exceptional drought

Drought has a slow speed of onset and a variable duration. Drought can last for a short period of time, which does not usually affect water shortages and for longer periods. Should a drought last for a long period of time, water shortage becomes a larger issue. Current drought conditions in the City and the County are shown in Section 4.3.8 of the Base Plan.

Past Occurrences

There have been two state and one federal disaster declaration from drought. This can be seen in Table E-21.

Table E-21 Sacramento County – State and Federal Drought Disaster Declarations 1950-2020

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Drought	2	2008, 2014	1	1977

Source: Cal OES, FEMA

Since drought is a regional phenomenon, past occurrences of drought for the City are the same as those for the County and includes 4 multi-year droughts since 1950. Details on past drought occurrences can be found in Section 4.3.8 of the Base Plan.

The City Planning Team noted that from 2014 to 2016, water restrictions were put in place such as, No watering yards on certain days and times. New residential front yard landscaping and non- residential landscaping to include landscape strips along the streets and road eliminated turf and were replaced with bark, rock, and/or drought tolerant shrubs/grasses.

Vulnerability to and Impacts from Drought and Water Shortage

Based on historical information, the occurrence of drought in California, including the City, is cyclical, driven by weather patterns. Drought has occurred in the past and will occur in the future. Periods of actual drought with adverse impacts can vary in duration, and the period between droughts can be extended. Although an area may be under an extended dry period, determining when it becomes a drought is based on impacts to individual water users. Water shortages in the future may be worsened by drought, as the City relies on surface water and groundwater for its water source.

The vulnerability of the City to drought is City-wide, but impacts may vary and include reduction in water supply and an increase in dry fuels. The potential for a reduction in water supply during drought conditions generally leads to both mandated and voluntary conservations measures during extended droughts. During these times, the costs of water can also increase. The increased dry fuels and fuel loads associated with drought conditions can also result in an increased fire danger. In areas of extremely dry fuels, the intensity and speed of fires can be significant. Water supply and flows for fire suppression can also be an issue during extended droughts.

Other qualitative impacts associated with drought in the City and Sacramento County Planning Area are those related to water intensive activities such as, municipal usage, commerce, tourism, recreation and agricultural use. Drought conditions can also cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding.

With more precipitation likely falling as rain instead of snow in the Sierra's, and warmer temperatures causing decreased snowfall to melt faster and earlier, water supply is likely to become more unreliable. In addition, drought and water shortage is predicted to become more common. This means less water available for use over the long run, and additional challenges for water supply reliability, especially during periods of extended drought.

Future Development

As the population in the area continues to grow, so will the demand for water. Water shortages in the future may be worsened by drought, as the City relies on surface water and groundwater for its water source. Ongoing planning will be needed by the City and water agencies to account for population growth and increased future water demands.

Earthquake

Likelihood of Future Occurrence–Unlikely
Vulnerability–Medium

Hazard Profile and Problem Description

An earthquake is caused by a sudden slip on a fault. Stresses in the earth's outer layer push the sides of the fault together. Stress builds up, and the rocks slip suddenly, releasing energy in waves that travel through the earth's crust and cause the shaking that is felt during an earthquake. Earthquakes can cause structural damage, injury, and loss of life, as well as damage to infrastructure networks, such as water, power, gas, communication, and transportation. Earthquakes may also cause collateral emergencies including dam and levee failures, seiches, hazmat incidents, fires, avalanches, and landslides. The degree of damage depends on many interrelated factors. Among these are: the magnitude, focal depth, distance from the causative fault, source mechanism, duration of shaking, high rock accelerations, type of surface deposits or bedrock, degree of consolidation of surface deposits, presence of high groundwater, topography, and the design, type, and quality of building construction.

Location and Extent

Since earthquakes are regional events, the whole of the City is at risk to earthquake. Rancho Cordova and the surrounding area are at limited risk from significant seismic and geologic hazards. Geological literature indicates that no major active faults transect the County; however, there are several subsurface faults in the Delta. The Midland fault, buried under alluvium, extends north of Bethel Island in the Delta to the east of Lake Berryessa and is considered inactive but possibly capable of generating a near 7.0 (Richter Scale) earthquake. This magnitude figure is speculative based on an 1895 earthquake measuring 6.9 on the Richter Scale with an epicenter possibly in the Midland Fault vicinity. However, oil and gas companies exploring the area's energy potential have identified several subsurface faults, none of which show any recent surface rupture. A second, presumably inactive, fault is in the vicinity of Citrus Heights near Antelope Road. This fault's only exposure is along a railroad cut where offsetting geologic beds can be seen. Neither the lateral extent of the trace, the magnitude of the offset, nor the age of faulting has been determined. To the east, the Bear Mountain fault zone trends northwest-southeast through Amador and El Dorado Counties. Geologists believe this series of faults has not been active in historic time.

The amount of energy released during an earthquake is usually expressed as a magnitude and is measured directly from the earthquake as recorded on seismographs. An earthquake's magnitude is expressed in whole numbers and decimals (e.g., 6.8). Seismologists have developed several magnitude scales, as discussed in Section 4.3.9 of the Base Plan.

Another measure of earthquake severity is intensity. Intensity is an expression of the amount of shaking at any given location on the ground surface. Seismic shaking is typically the greatest cause of losses to structures during earthquakes. The City is located in an area where few earthquakes of significant magnitude occur, so both magnitude and intensity of earthquakes are expected to remain low. Seismic shaking maps for the area show Sacramento County and the City fall within a low to moderate shake risk.

Past Occurrences

The City noted no past occurrences of earthquakes or that affected the City in any meaningful way.

Vulnerability to and Impacts from Earthquake

The combination of plate tectonics and associated California coastal mountain range building geology generates earthquake as a result of the periodic release of tectonic stresses. Sacramento County lies in the center of the North American and Pacific tectonic plate activity. There have been earthquakes as a result of this activity in the historic past, and there will continue to be earthquakes in the future.

Fault ruptures itself contributes very little to damage unless the structure or system element crosses the active fault; however, liquefaction can occur further from the source of the earthquake. In general, newer construction is more earthquake resistant than older construction due to enforcement of improved building codes. Manufactured housing is very susceptible to damage because their foundation systems are rarely braced for earthquake motions. Locally generated earthquake motions and associated liquefaction, even from very moderate events, tend to be more damaging to smaller buildings, especially those constructed of unreinforced masonry (URM) and soft story buildings. The City Planning Team noted none of these types of building exist in the City.

The Uniform Building Code (UBC) identifies four seismic zones in the United States. The zones are numbered one through four, with Zone 4 representing the highest level of seismic hazard. The UBC establishes more stringent construction standards for areas within Zones 3 and 4. All of California lies within either Zone 3 or Zone 4. The City of Rancho Cordova is within the less hazardous Zone 3.

Earthquake vulnerability is primarily based on population and the built environment. Urban areas in high seismic hazard zones are the most vulnerable, while uninhabited areas are less vulnerable.

Impacts from earthquake in the City will vary depending on the fault that the earthquake occurs on, the depth of the earthquake strike, and the intensity of shaking. Large events could cause damages to infrastructure, critical facilities, residential and commercial properties, and possible injuries or loss of life.

Earthquake Analysis

Due to the regional effects of an earthquake, a Hazus earthquake analysis was performed on a countywide basis. This can be found in Section 4.3.11 of the Base Plan. While these runs were not done specific to the City, maps showing damage in the County show greater areas of damage near the cities in the County.

Future Development

Although new growth and development corridors would fall in the area affected by earthquake, given the small chance of major earthquake and the building codes in effect, development in areas prone to earthquakes will continue to occur. The City enforces the state building code, which mandates construction techniques that minimize seismic hazards. Future development in the City is subject to these building codes.

Flood: 1%/0.2% Annual Chance

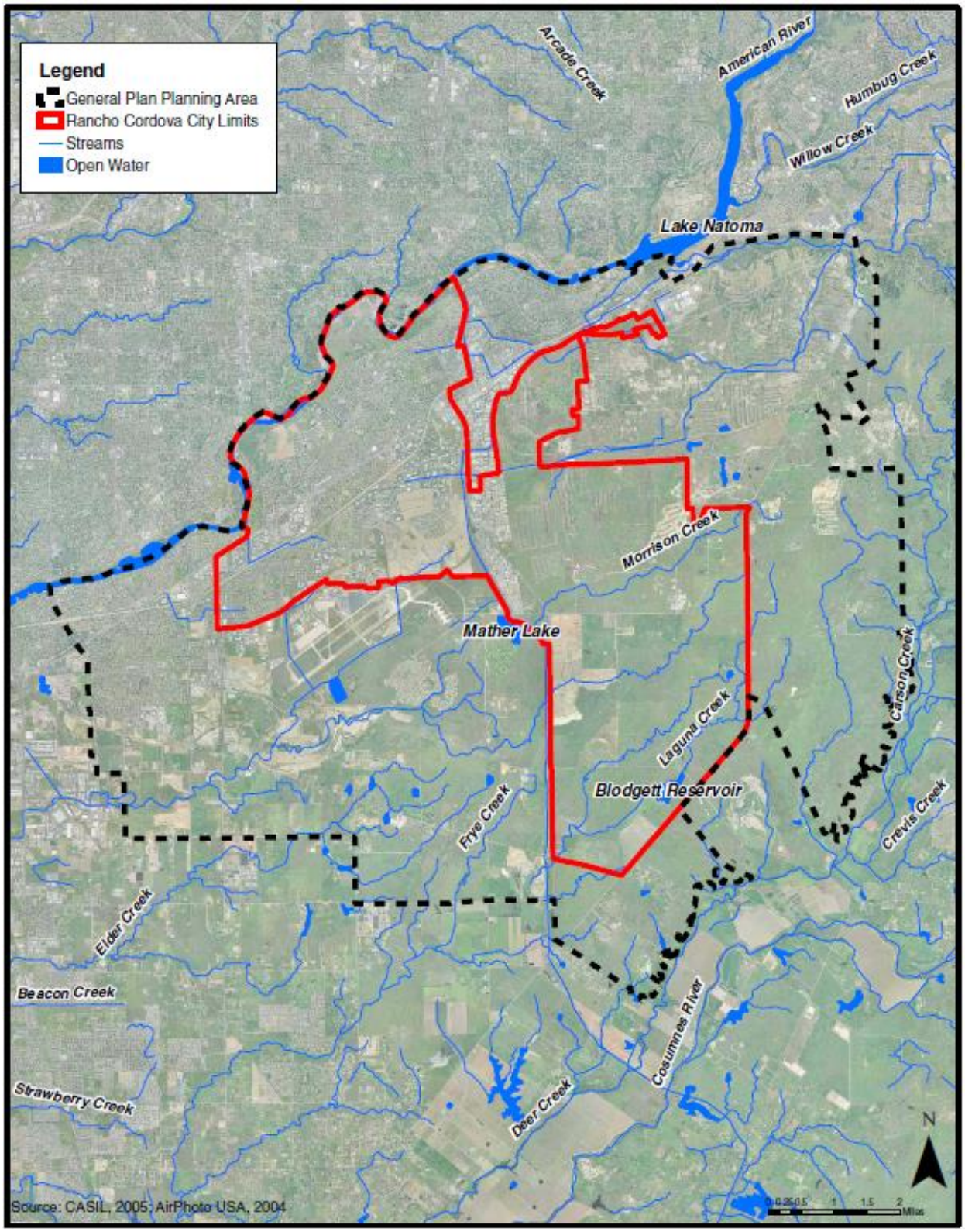
Likelihood of Future Occurrence–Occasional
Vulnerability–Medium

Hazard Profile and Problem Description

This hazard analyzes the FEMA DFIRM 1% and 0.2% annual chance floods. These tend to be the larger floods that can occur in the County or in the City, and have caused damages in the past. Flooding is a significant problem in Sacramento County and the City. Historically, the City has been at risk to flooding primarily during the winter and spring months when river systems in the County swell with heavy rainfall and snowmelt runoff. Normally, storm floodwaters are kept within defined limits by a variety of storm drainage and flood control measures. Occasionally, extended heavy rains result in floodwaters that exceed normal high-water boundaries and cause damage. Flooding has occurred both within the 1% and 0.2% annual chance floodplains and in other localized areas.

Major surface waters in the vicinity of Rancho Cordova include the American River, Folsom Reservoir, and Lake Natoma to the north; the Sacramento River to the west; and the Consumnes River to the southeast. Other surface waters within the Rancho Cordova include the Folsom South Canal, Cordova Creek, Deer Creek, and the Morrison Creek Stream Group (Morrison, Laguna, Elder, Gerber, Unionhouse, Florin, Buffalo, and Frye Creek, as well as Rebel Hill Ditch) which generally flow in a southwesterly direction southeast of the City, as illustrated in Figure E-17. The topography within the City includes gently rolling terrain, such as that found in the eastern Great Central Valley interrupted by numerous seasonal creeks and streams. These creeks and streams are largely ephemeral and intermittent, which is typical of areas that experience dry summers and cool, wet winters, as in this part of the Central Valley.

Figure E-17 City of Rancho Cordova Waterways and Drainage

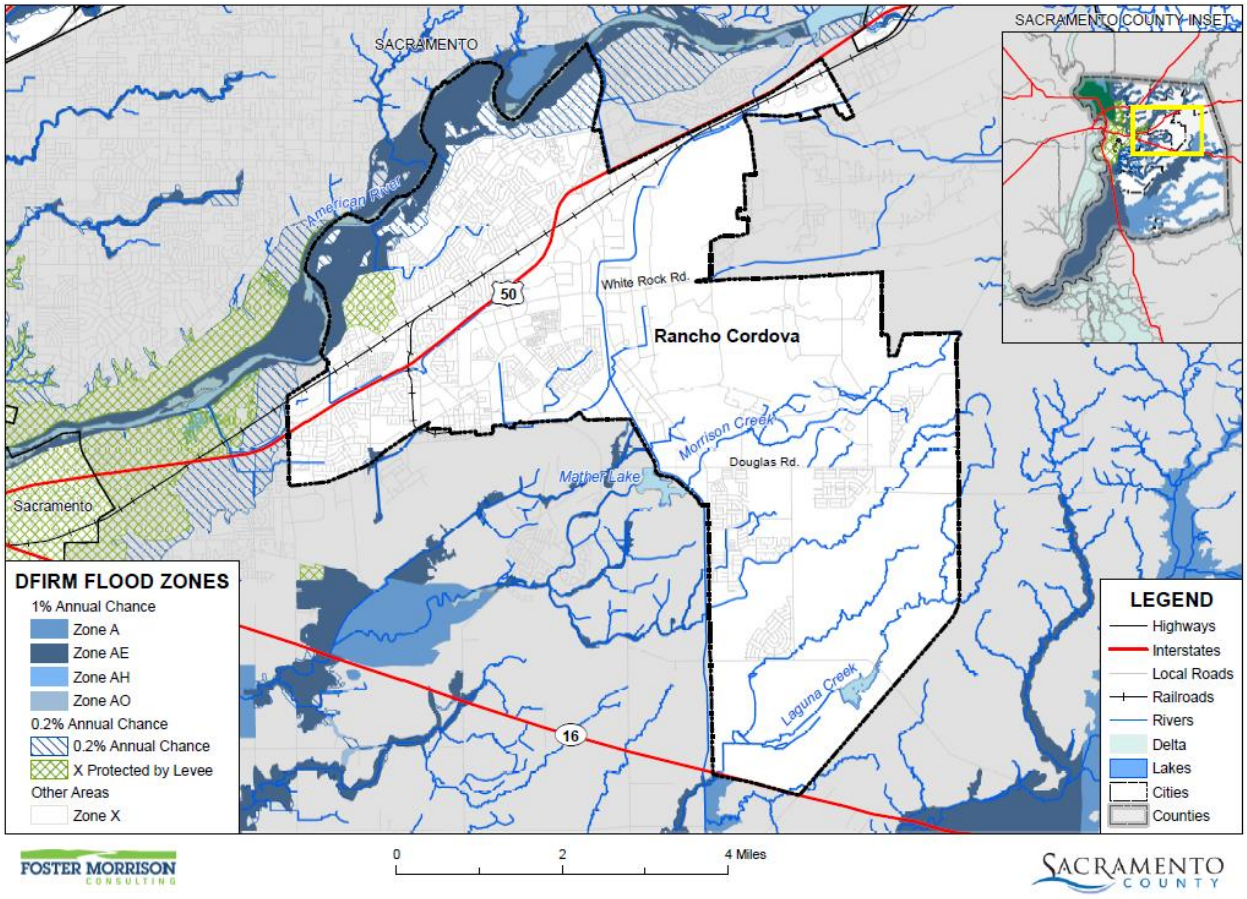


Source: City of Rancho Cordova General Plan Environmental Impact Report (2006)

Location and Extent

The City of Rancho Cordova has areas located in the 1% and 0.2% annual chance flood zones. This is seen in Figure E-18. Table E-22 details the DFIRM mapped flood zones located within the City.

Figure E-18 City of Rancho Cordova – FEMA DFIRM Flood Zones



Data Source: FEMA NFHL 07/19/2018, Sacramento County GIS, Cal-Atlas; Map Date: 09/2020.

Table E-22 City of Rancho Cordova– DFIRM Flood Hazard Zones

Flood Zone	Description	Flood Zone Present in City
A	1% annual chance flooding: No base flood elevations provided. Mandatory flood insurance purchase requirements and floodplain management standards apply.	
AE	1% annual chance flooding: Base flood elevations provided. Mandatory flood insurance purchase requirements and floodplain management standards apply.	X
AH	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between one and three feet. Base Flood Elevations (BFEs) derived from detailed hydraulic analyses are shown in this zone. Mandatory flood insurance purchase requirements and floodplain management standards apply.	

Flood Zone	Description	Flood Zone Present in City
AO	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. Average flood depths derived from detailed hydraulic analyses are shown in this zone. Mandatory flood insurance purchase requirements and floodplain management standards apply.	
A99	Areas subject to inundation by the 1-percent-annual-chance flood event, but which will ultimately be protected upon completion of an under-construction Federal flood protection system. These are areas of special flood hazard where enough progress has been made on the construction of a protection system, such as dikes, dams, and levees, to consider it complete for insurance rating purposes. Zone A99 may only be used when the flood protection system has reached specified statutory progress toward completion. No Base Flood Elevations (BFEs) or depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.	
Shaded X	0.2% annual chance flooding: The areas between the limits of the 1% annual chance flood and the 0.2-percent-annual-chance (or 500-year) flood. Flood insurance is not mandatory but is available.	X
X Protected by Levee	Areas protected by levees from 1% annual chance flood event. Levee protection places these areas in the 0.2% annual chance flood zone. Flood insurance is not mandatory but is available.	X
X (unshaded)	No flood hazard	X

Source: FEMA

Additionally, flood extents can generally be measured in volume, velocity, and depths of flooding. Expected flood depths in the City vary, depending on the nature and extent of a flood event; specific depths are unknown. Flood durations in the City tend to be short to medium term, or until either the storm drainage system can catch up or flood waters move downstream. Flooding in the City tends to have a shorter speed of onset, due to the amount of water that flows through the City.

Geographical flood extents for the City from the FEMA DFIRMs are shown in Table E-23.

Table E-23 City of Rancho Cordova – Geographical DFIRM Flood Zone Extents

Flood Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
1% Annual Chance	1,149	5.37%	23	0.23%	1,125	9.93%
0.2% Annual Chance	973	4.55%	660	6.57%	313	2.76%
Other Areas	19,264	90.08%	9,368	93.20%	9,896	87.31%
Total	**21,386**	**100.00%**	**10,051**	**100.00%**	**11,334**	**100.00%**

Source: FEMA DFIRM 11/2/2018

Past Occurrences

A list of state and federal disaster declarations for Sacramento County from flooding is shown on Table E-24. These events also likely affected the City to some degree.

Table E-24 Sacramento County – State and Federal Disaster Declarations from Flood 1950-2020

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Flood (including heavy rains and storms)	19	1950, 1955, 1958 (twice), 1963, 1969, 1982 (twice), 1983, 1986, 1995 (twice), 1996, 1997, 1998, 2008, 2017 (three times)	14	1955, 1958, 1964, 1969, 1983, 1986, 1995 (twice), 1997, 1998, 2006, 2017 (three times)

Source: Cal OES, FEMA

Other than localized flooding of streets, there have been no significant flooding events within the City.

Vulnerability to and Impacts from Flood

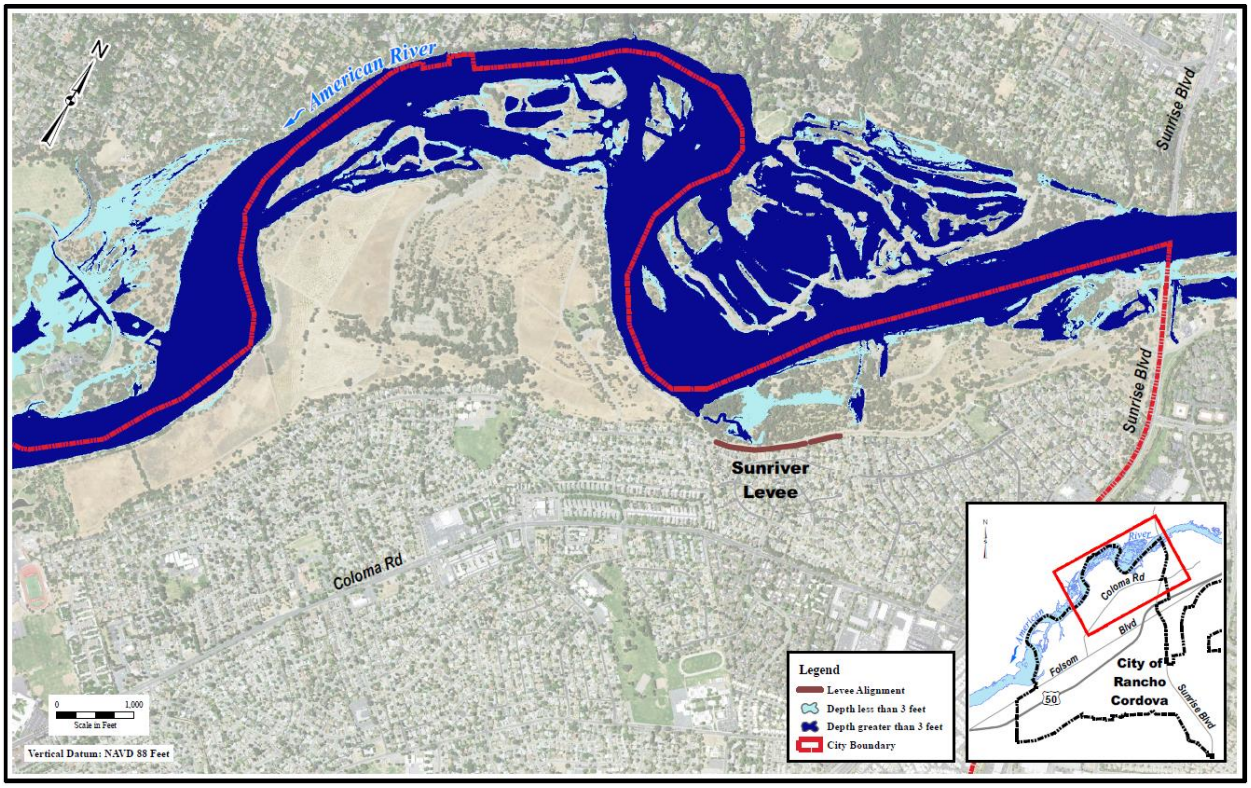
Floods have been a part of the City's historical past and will continue to be so in the future. During winter months, long periods of precipitation and the timing of that precipitation are critical in determining the threat of flood, and these characteristics further dictate the potential for widespread structural and property damages. Predominantly, the effects of flooding are generally confined to areas near the waterways of the County. As waterways grow in size from local drainages, so grows the threat of flood and dimensions of the threat. This threatens structures in the floodplain. Structures can also be damaged from trees falling as a result of water-saturated soils. Electrical power outages happen, and the interruption of power causes major problems. Loss of power is usually a precursor to closure of governmental offices and community businesses. Public schools may also be required to close or be placed on a delayed start schedule. Roads can be damaged and closed, causing safety and evacuation issues. People may be swept away in floodwaters, causing injuries or deaths.

Floods are among the costliest natural disasters in terms of human hardship and economic loss nationwide. Floods can cause substantial damage to structures, landscapes, and utilities as well as life safety issues. Floods can be extremely dangerous, and even six inches of moving water can knock over a person given a strong current. During a flood, people can also suffer heart attacks or electrocution due to electrical equipment short outs. Floodwaters can transport large objects downstream which can damage or remove stationary structures. Ground saturation can result in instability, collapse, or other damage. Objects can also be buried or destroyed through sediment deposition. Floodwaters can also break utility lines and interrupt services. Standing water can cause damage to crops, roads, foundations, and electrical circuits. Direct impacts, such as drowning, can be limited with adequate warning and public education about what to do during floods. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, loss of environmental resources, and economic impacts.

To satisfy the requirements of ULOP, the City has developed a 200-yr floodplain map based on the proposed Folsom Dam improvements by the US Army Corps of Engineers. These are shown in Figure E-19 and

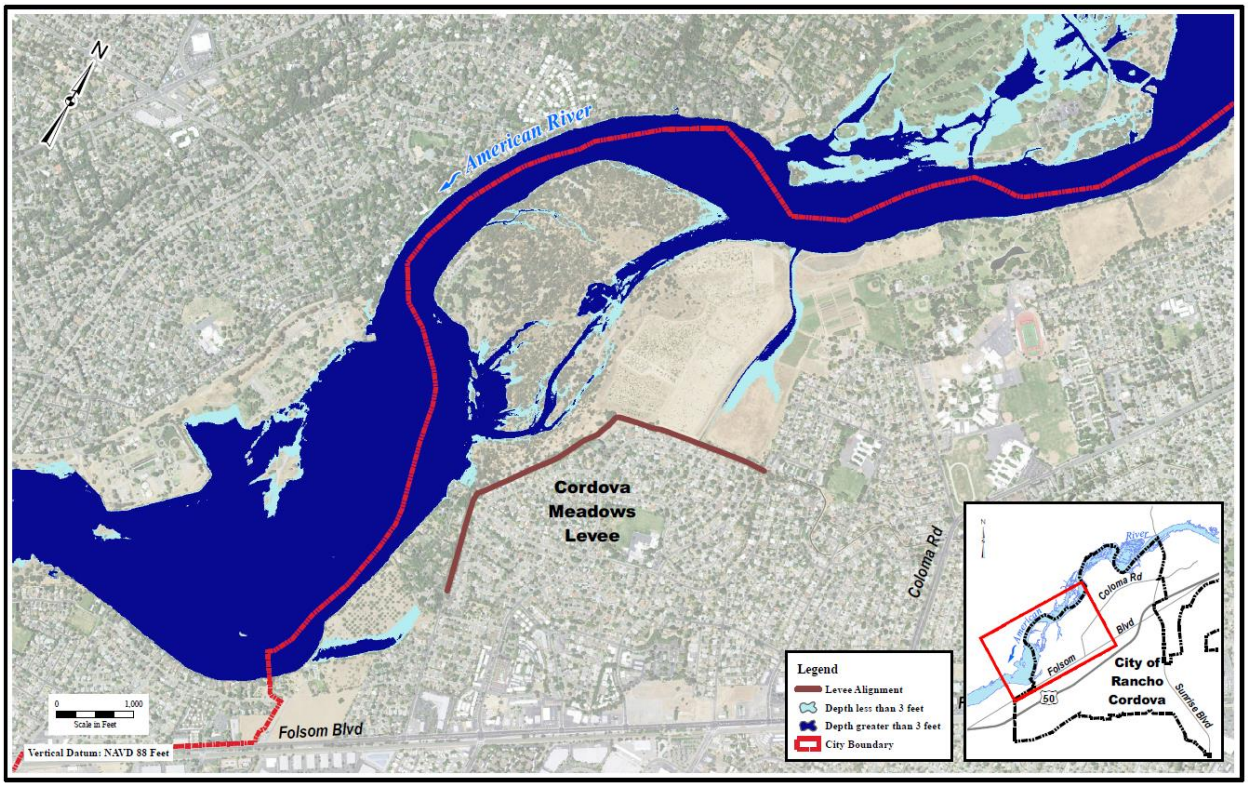
Figure E-20. These improvements include the Joint Federal Project to improve the dam spillway and the future dam raise to increase flood storage. In conjunction with the new 200-yr map, the City has made changes to its General Plan and zoning code that will guide development within the 200-yr Urban Level of Flood Protection. The map and associated code changes were adopted by the City Council in the Summer of 2016.

Figure E-19 City of Rancho Cordova – 200-year Flood Depth with Folsom Dam Raise (Upstream)



Source: City of Rancho Cordova, 2016

Figure E-20 City of Rancho Cordova – 200-year Flood Depth with Folsom Dam Raise (Downstream)



Source: City of Rancho Cordova, 2016

The City's biggest concern associated with floods includes severe local flooding and street flooding and any potential impacts to residential neighborhoods and businesses.

Assets at Risk

Based on the vulnerability of Rancho Cordova to the flood hazard, the sections that follow describes significant assets at risk in the City of Rancho Cordova. This section includes the values at risk, flooded acres, population at risk, and critical facilities at risk.

Values at Risk

GIS was used to determine the possible impacts of flooding within the City of Rancho Cordova. The methodology described in Section 4.3.12 of the Base Plan was followed in determining structures and values at risk to the 1% (100-year) and 0.2% (500-year) annual chance flood event. Table E-25 is a summary table for the City of Rancho Cordova. Parcel counts, values, estimated contents, and total values in the City are shown for the 1% and 0.2% annual chance flood zones, as well as for those properties that fall outside of the mapped FEMA DFIRM flood zones. Table E-26 breaks down Table E-25 and shows the property use, improved parcel count, improved values, estimated contents, and total values that fall in FEMA flood zones in the City.

Table E-25 City of Rancho Cordova – Count and Value of Parcels at Risk in Summary DFIRM Flood Zones*

Flood Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
1% Annual Chance Flood Hazard	58	19	$6,117,986	$10,358,719	$5,179,359	$21,656,064
0.2% Annual Chance Flood Hazard**	1,972	1,920	$134,045,116	$382,757,390	$199,010,254	$715,812,763
Other Areas	21,755	19,593	$2,556,793,512	$6,435,032,495	$4,794,431,555	$13,786,257,438
City of Rancho Cordova Total	**23,785**	**21,532**	**$2,696,956,614**	**$6,828,148,604**	**$4,998,621,168**	**$14,523,726,265**

Source: FEMA 11/2/2018 DFIRM, Sacramento County 2020 Parcel/Assessor's Data

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

Table E-26 City of Rancho Cordova – Count and Values of Parcels at Risk by Detailed Flood Zone and Property Use*

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
1% Annual Chance Flood Hazard						
Zone AE						
Agricultural	0	0	$0	$0	$0	$0
Care/Health	0	0	$0	$0	$0	$0
Church/Welfare	0	0	$0	$0	$0	$0
Industrial	0	0	$0	$0	$0	$0
Miscellaneous	35	0	$14	$0	$0	$14
Office	0	0	$0	$0	$0	$0
Public/Utilities	0	0	$0	$0	$0	$0
Recreational	1	0	$9	$0	$0	$9
Residential	19	19	$4,041,261	$10,358,719	$5,179,359	$19,579,339
Retail/ Commercial	0	0	$0	$0	$0	$0
Unknown	0	0	$0	$0	$0	$0
Vacant	3	0	$2,076,702	$0	$0	$2,076,702
Zone AE Total	**58**	**19**	**$6,117,986**	**$10,358,719**	**$5,179,359**	**$21,656,064**
1% Annual Chance Flood Hazard Total	**58**	**19**	**$6,117,986**	**$10,358,719**	**$5,179,359**	**$21,656,064**

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
0.2% Annual Chance Flood Hazard**						
0.2% Annual Chance						
Agricultural	0	0	$0	$0	$0	$0
Care/Health	0	0	$0	$0	$0	$0
Church/Welfare	2	2	$258,840	$6,135,993	$6,135,993	$12,530,826
Industrial	0	0	$0	$0	$0	$0
Miscellaneous	11	0	$10	$0	$0	$10
Office	2	2	$1,601,838	$2,829,553	$2,829,553	$7,260,944
Public/Utilities	2	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	1,118	1,116	$69,274,972	$199,416,216	$99,708,110	$368,399,289
Retail/ Commercial	3	3	$4,328,392	$4,556,056	$4,556,056	$13,440,504
Unknown	0	0	$0	$0	$0	$0
Vacant	7	1	$1,159,230	$156,528	$0	$1,315,758
0.2% Annual Chance Total	**1,145**	**1,124**	**$76,623,282**	**$213,094,346**	**$113,229,712**	**$402,947,331**
X Protected by Levee						
Agricultural	0	0	$0	$0	$0	$0
Care/Health	3	3	$306,918	$1,565,802	$1,565,802	$3,438,522
Church/Welfare	0	0	$0	$0	$0	$0
Industrial	0	0	$0	$0	$0	$0
Miscellaneous	14	0	$15,996	$0	$0	$15,996
Office	0	0	$0	$0	$0	$0
Public/Utilities	2	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	807	792	$56,836,783	$167,764,962	$83,882,460	$308,484,217
Retail/ Commercial	1	1	$262,137	$332,280	$332,280	$926,697
Unknown	0	0	$0	$0	$0	$0
Vacant	0	0	$0	$0	$0	$0
X Protected by Levee Total	**827**	**796**	**$57,421,834**	**$169,663,044**	**$85,780,542**	**$312,865,432**
0.2% Annual Chance Flood Hazard Total	**1,972**	**1,920**	**$134,045,116**	**$382,757,390**	**$199,010,254**	**$715,812,763**
Other Areas						
Zone X						

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Agricultural	24	3	$22,818,860	$142,065	$142,065	$23,102,990
Care/Health	10	8	$2,823,872	$20,365,319	$20,365,319	$43,554,510
Church/Welfare	31	30	$18,916,597	$52,253,796	$52,253,796	$123,424,189
Industrial	743	706	$304,286,152	$758,045,202	$1,137,067,811	$2,199,399,156
Miscellaneous	465	1	$729,505	$1,085	$1,085	$731,675
Office	290	261	$268,694,290	$1,137,029,622	$1,137,029,622	$2,542,753,534
Public/Utilities	55	0	$19	$0	$0	$19
Recreational	15	10	$8,063,746	$22,999,996	$22,999,996	$54,063,738
Residential	18,487	18,312	$1,479,298,945	$4,035,107,429	$2,017,553,726	$7,531,959,985
Retail/ Commercial	262	246	$206,640,650	$407,018,135	$407,018,135	$1,020,676,920
Unknown	3	3	$0	$311,254	$0	$311,254
Vacant	1,370	13	$244,520,876	$1,758,592	$0	$246,279,468
Zone X Total	**21,755**	**19,593**	**$2,556,793,512**	**$6,435,032,495**	**$4,794,431,555**	**$13,786,257,438**
Other Areas Total	**21,755**	**19,593**	**$2,556,793,512**	**$6,435,032,495**	**$4,794,431,555**	**$13,786,257,438**
Rancho Cordova Total	**23,785**	**21,532**	**$2,696,956,614**	**$6,828,148,604**	**$4,998,621,168**	**$14,523,726,265**

Source: FEMA 11/2/2018 DFIRM, Sacramento County 2020 Parcel/Assessor's Data

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

Table E-27 summarizes Table E-26 above and shows City of Rancho Cordova loss estimates and improved values at risk by FEMA 1% and 0.2% annual chance flood zones.

Table E-27 City of Rancho Cordova – Flood Loss Estimates

Flood Zone	Total Parcel Count*	Improved Parcel Count*	Improved Structure Value	Estimated Contents Value	Total Value	Loss Estimate	Loss Ratio
1% Annual Chance Flood	58	19	$10,358,719	$5,179,359	$15,538,078	$3,107,616	0.00%
0.2% Annual Chance Flood**	1,972	1,920	$382,757,390	$199,010,254	$581,767,644	$116,353,529	0.06%
Grand Total	**2,030**	**1,939**	**$393,116,109**	**$204,189,613**	**$597,305,722**	**$119,461,145**	**0.06%**

Source: FEMA 11/2/2018 DFIRM, Sacramento County 2020 Parcel/Assessor's Data

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

According to Table E-26 and Table E-27, the City of Rancho Cordova has 58 parcels and $15.5 million of structure and contents values or values in the 1% annual chance flood zone, and 1,920 improved parcels and $581.8 million of structure and contents values in the 0.2% annual chance flood zone. These values can be refined a step further. Applying the 20 percent damage factor as previously described in Section 4.3.11 of the Base Plan, there is a 1% chance in any given year of a flood event causing $3.1 million in damage and a 0.2% chance in any given year of a flood event causing $116.4 million in damage in the City of Rancho Cordova. The loss ratio of 0.00% and 0.06% indicates that flood losses for 1% and 0.2% annual chance flooding, respectively, would be relatively minor and the City would be able to recover relatively quickly.

Flooded Acres

Also of interest is the land area affected by the various flood zones. The following is an analysis of flooded acres in the City in comparison to total area within the City limits. The same methodology, as discussed in Section 4.3.12 of the Base Plan, was used for the City of Rancho Cordova as well as for the County as a whole. Table E-28 represents a summary analysis of total acres for each FEMA DFIRM flood zone in the City. Table E-29 represents a detailed analysis of total acres by property use in each FEMA DFIRM flood zone.

Table E-28 City of Rancho Cordova – Flooded Acres by Flood Zone

Flood Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
1% Annual Chance Flood Hazard	1,149	0.18%	23	0.01%	1,125	0.40%
0.2% Annual Chance Flood Hazard*	973	0.15%	660	0.18%	313	0.11%
Other Areas	19,264	2.99%	9,368	2.59%	9,896	3.49%
Rancho Cordova Total	**21,386**	**3.32%**	**10,051**	**2.78%**	**11,334**	**4.00%**

Source: FEMA 11/2/2018 DFIRM

*This acre count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all acres in the 1% annual chance flood zone.

Table E-29 City of Rancho Cordova – Flooded Acres by Flood Zone and Property Use

Flood Zone/ Property Use	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
1% Annual Chance Flood Hazard						
Zone AE						
Agricultural	0	0.00%	0	0.00%	0	0.00%

Flood Zone/ Property Use	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Care/Health	0	0.00%	0	0.00%	0	0.00%
Church/Welfare	0	0.00%	0	0.00%	0	0.00%
Industrial	0	0.00%	0	0.00%	0	0.00%
Miscellaneous	1,080.1	0.17%	0	0.00%	1,080.1	0.38%
Office	0.1	0.00%	0.1	0.00%		
Public/Utilities	1.3	0.00%	0	0.00%	1.3	0.00%
Recreational	8.8	0.00%	0	0.00%	8.8	0.00%
Residential	23.0	0.00%	23.0	0.01%	0	0.00%
Retail/ Commercial	0	0.00%	0	0.00%	0	0.00%
Unknown	0	0.00%	0	0.00%	0	0.00%
Vacant	35.2	0.01%	0	0.00%	35.2	0.01%
Zone AE Total	**1,148.6**	**0.18%**	**23.1**	**0.01%**	**1,125.5**	**0.40%**
1% Annual Chance Flood Hazard Total	**1,148.6**	**0.18%**	**23.1**	**0.01%**	**1,125.5**	**0.40%**
0.2% Annual Chance Flood Hazard*						
0.2% Annual Chance						
Agricultural	0	0.00%	0	0.00%	0	0.00%
Care/Health	0	0.00%	0	0.00%	0	0.00%
Church/Welfare	5.4	0.00%	5.4	0.00%	0	0.00%
Industrial	1.8	0.00%	0	0.00%	1.8	0.00%
Miscellaneous	243.5	0.04%	0	0.00%	243.5	0.09%
Office	2.3	0.00%	2.3	0.00%		
Public/Utilities	21.9	0.00%	0	0.00%	21.9	0.01%
Recreational	1.2	0.00%	0	0.00%	1.2	0.00%
Residential	465.4	0.07%	462.1	0.13%	3.3	0.00%
Retail/ Commercial	15.4	0.00%	15.4	0.00%	0	0.00%
Unknown	0	0.00%	0	0.00%	0	0.00%
Vacant	19.6	0.00%	0.2	0.00%	19.4	0.01%
0.2% Annual Chance Total	**776.5**	**0.12%**	**485.3**	**0.13%**	**291.2**	**0.10%**
X Protected by Levee						
Agricultural	0	0.00%	0	0.00%	0	0.00%
Care/Health	1.5	0.00%	1.3	0.00%	0.2	0.00%
Church/Welfare	0	0.00%	0	0.00%	0	0.00%

Flood Zone/ Property Use	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Industrial	0	0.00%	0	0.00%	0	0.00%
Miscellaneous	6.9	0.00%	0	0.00%	6.9	0.00%
Office	0.1	0.00%	0.1	0.00%		
Public/Utilities	10.0	0.00%	0	0.00%	10.0	0.00%
Recreational	0	0.00%	0	0.00%	0	0.00%
Residential	175.1	0.03%	171.4	0.05%	3.7	0.00%
Retail/ Commercial	2.0	0.00%	2.0	0.00%	0	0.00%
Unknown	0	0.00%	0	0.00%	0	0.00%
Vacant	1.2	0.00%			1.2	0.00%
X Protected by Levee Total	**196.8**	**0.03%**	**174.8**	**0.05%**	**22.0**	**0.01%**
0.2% Annual Chance Flood Hazard Total	**973.3**	**0.15%**	**660.2**	**0.18%**	**313.2**	**0.11%**
Other Areas						
Zone X						
Agricultural	3,365.2	0.52%	946.4	0.26%	2,418.7	0.85%
Care/Health	10.7	0.00%	7.2	0.00%	3.5	0.00%
Church/Welfare	107.2	0.02%	97.4	0.03%	9.8	0.00%
Industrial	3,829.2	0.59%	3,466.5	0.96%	362.6	0.13%
Miscellaneous	1,740.4	0.27%	0.0	0.00%	1,740.4	0.61%
Office	834.7	0.13%	724.2	0.20%	110.5	0.04%
Public/Utilities	304.4	0.05%	0	0.00%	304.4	0.11%
Recreational	70.0	0.01%	32.2	0.01%	37.8	0.01%
Residential	3,685.8	0.57%	3,564.8	0.99%	121.0	0.04%
Retail/ Commercial	445.5	0.07%	426.4	0.12%	19.0	0.01%
Unknown	0.1	0.00%	0.1	0.00%	0	0.00%
Vacant	4,870.6	0.76%	102.7	0.03%	4,768.0	1.68%
Zone X Total	**19,263.7**	**2.99%**	**9,368.0**	**2.59%**	**9,895.7**	**3.49%**
Other Areas Total	**19,263.7**	**2.99%**	**9,368.0**	**2.59%**	**9,895.7**	**3.49%**
Rancho Cordova Total	**21,385.6**	**3.32%**	**10,051.3**	**2.78%**	**11,334.4**	**4.00%**

Source: FEMA 11/2/2018 DFIRM

*This acre count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all acres in the 1% annual chance flood zone.

Population at Risk

The DFIRM flood zones were overlayed on the parcel layer. Those residential parcel centroids that intersect the flood zones were counted and multiplied by the 2010 Census Bureau average household factors for Rancho Cordova – 2.14. According to this analysis, there is a total population of 41 and 2,388 residents of the City at risk to flooding in the 1% and 0.2% annual chance floodplains, respectively. This is shown in Table E-30.

Table E-30 City of Rancho Cordova – Count of Improved Residential Parcels and Population by Flood Zone

Jurisdiction	1% Annual Chance		0.2% Annual Chance	
	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk
Rancho Cordova	19	41	1,116	2,388

Source: FEMA DFIRM 11/2/2018, Sacramento County 2020 Parcel/Assessor's Data, US Census Bureau

Critical Facilities at Risk

An analysis was performed on the critical facility inventory in Rancho Cordova in identified DFIRM flood zones. GIS was used to determine whether the critical facility locations intersect a DFIRM flood zone, and if so, which flood zone they intersect. Details of critical facilities in DFIRM flood zones in the City of Rancho Cordova are shown in Figure E-21 for and detailed by dam inundation in Table E-31. Details of critical facility definition, type, name, and address and jurisdiction by DFIRM flood zones are listed in Appendix F.

Figure E-21 City of Rancho Cordova – Critical Facilities in DFIRM Flood Zones

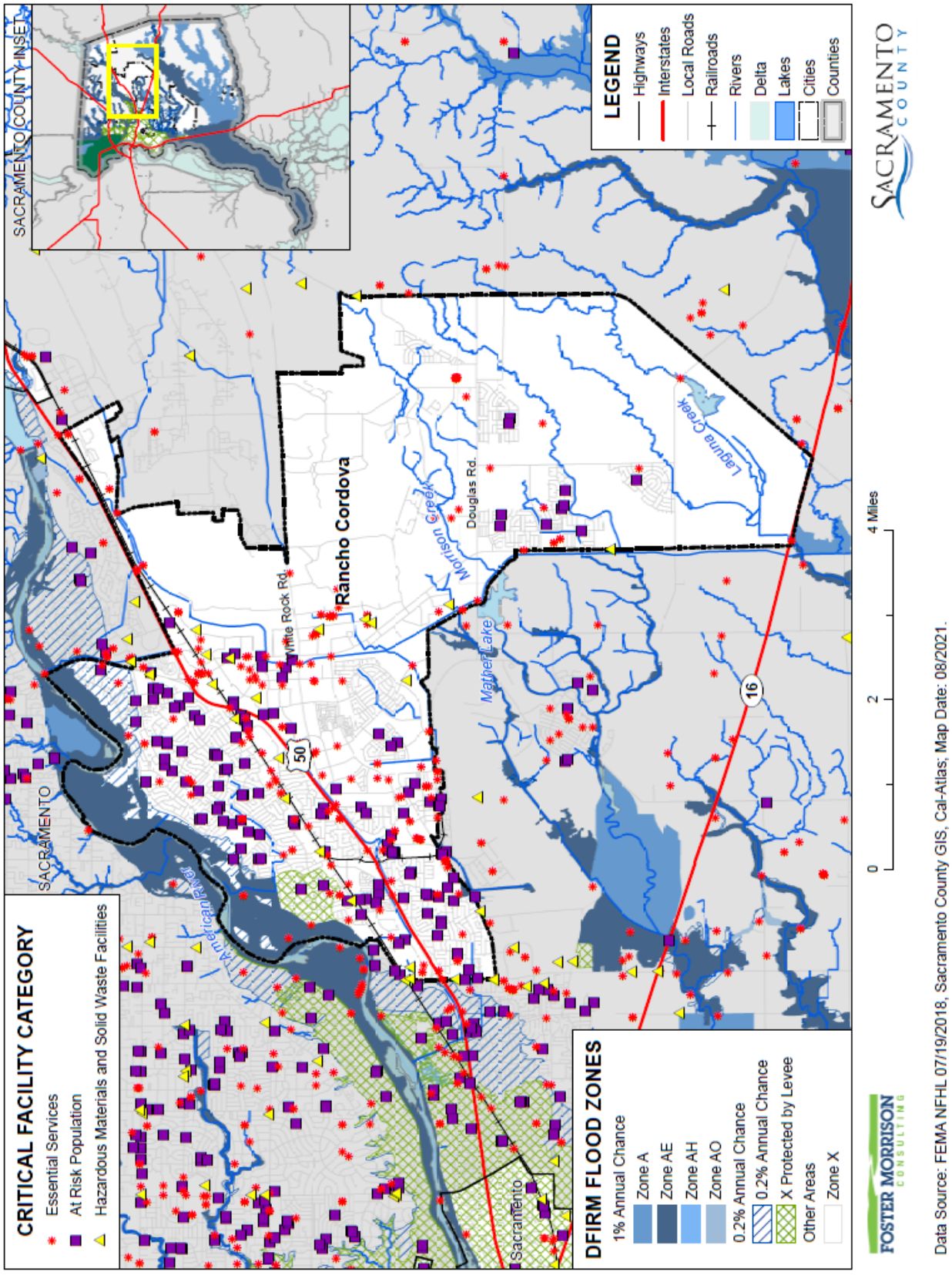


Table E-31 City of Rancho Cordova – Critical Facilities in DFIRM Flood Zones by Category and Type

Flood Zone Critical Facility Category	Critical Facility Type	Facility Count
1% Annual Chance Flood Hazard		
Essential Services Facilities	Water Well	3
	Total	**3**
1% Annual Chance Flood Hazard Total		**3**
0.2% Annual Chance Flood Hazard		
Essential Services Facilities	Drainage Pump Station	2
	Emergency Evacuation Center	1
	Water Well	2
	Total	**5**
At Risk Population Facilities	Community Center	1
	Day Care Center	1
	Places of Worship	3
	School	1
	Total	**6**
0.2% Annual Chance Flood Hazard Total		**11**
Other Areas		
Essential Services Facilities	Bridge	16
	Cellular Tower	14
	City Facility	5
	Drainage Pump Station	4
	Emergency Evacuation Center	5
	EMS Stations	6
	FDIC Insured Banks	11
	Fire Station	4
	Hospital or Urgent Care	4
	Law Enforcement	4
	Microwave Service Towers	77
	Power Plants	1
	Public Transit Stations	4
	State Government Buildings	1
	Water Well	61
	Total	**217**
At Risk Population Facilities	Colleges, Universities, and Professional Schools	3
	Community Center	4

Flood Zone Critical Facility Category	Critical Facility Type	Facility Count
	Day Care Center	22
	Mobile Home Parks	8
	Places of Worship	74
	School	33
	Senior Living or Other Living	3
	Total	**147**
Hazardous Materials and Solid Waste Facilities	EPA ER FRP Facility	1
	EPA ER TRI Facility	2
	Leaky Underground Storage Tank	12
	Solid Waste Facility	2
	Tank Farm	2
	Waste Transfer Station	1
	Total	**20**
Other Areas Total		**384**
Rancho Cordova Total		**398**

Source: Sacramento County GIS, FEMA 7/19/2018 DFIRM

Insurance Coverage, Claims Paid, and Repetitive Losses

Standard property insurance does not include flood coverage because of the relatively high risk. The National Flood Insurance Program (NFIP) provides flood insurance to residents in those communities that participate in the NFIP. Federal financial assistance requires the purchase of flood for structures located within a 100-year floodplain – a requirement that affects nearly all mortgages financed through commercial lending institutions. Flood insurance is also recommended for all structures protected by levees, even if not mapped within a floodplain.

The City of Rancho Cordova joined the National Flood Insurance Program (NFIP) on September 15, 2004. The City does not participate in CRS program. NFIP data indicates that as of March 24, 2020, there were 229 flood insurance policies in force in the City with $6,937,000 of coverage. Of the 229 policies, 224 were residential (single-family homes) and 5 were non-residential buildings. Of the 229 policies, 13 were in A zones, while 216 were in B, C, and X zones. There has been no historical claim for flood losses. NFIP data further indicates that there are no repetitive loss (RL) or severe repetitive loss (SRL) buildings in Rancho Cordova.

Based on this analysis of insurance coverage, the City has values at risk to the 1% annual chance and greater floods. Of the 19 improved parcels within the 1% annual chance flood zone, only 13 (or 68.4 percent) of those parcels maintain flood insurance. This can be seen on Table E-32.

Table E-32 City of Rancho Cordova – Percentage of Policy Holders to Improved Parcels in the 1% Annual Chance Floodplain

Jurisdiction	Improved Parcels in SFHA (1% Annual Chance) Floodplain*	Insurance Policies in the SFHA (1% Annual Chance) Floodplain	Percentage of 1% Annual Chance Floodplain Parcels Currently Insured
City of Rancho Cordova	19	13	68.4%

Source: FEMA DFIRM 11/2/2018, Sacramento County 2020 Parcel/Assessor's Data, NFIP CIS data 3/2020.

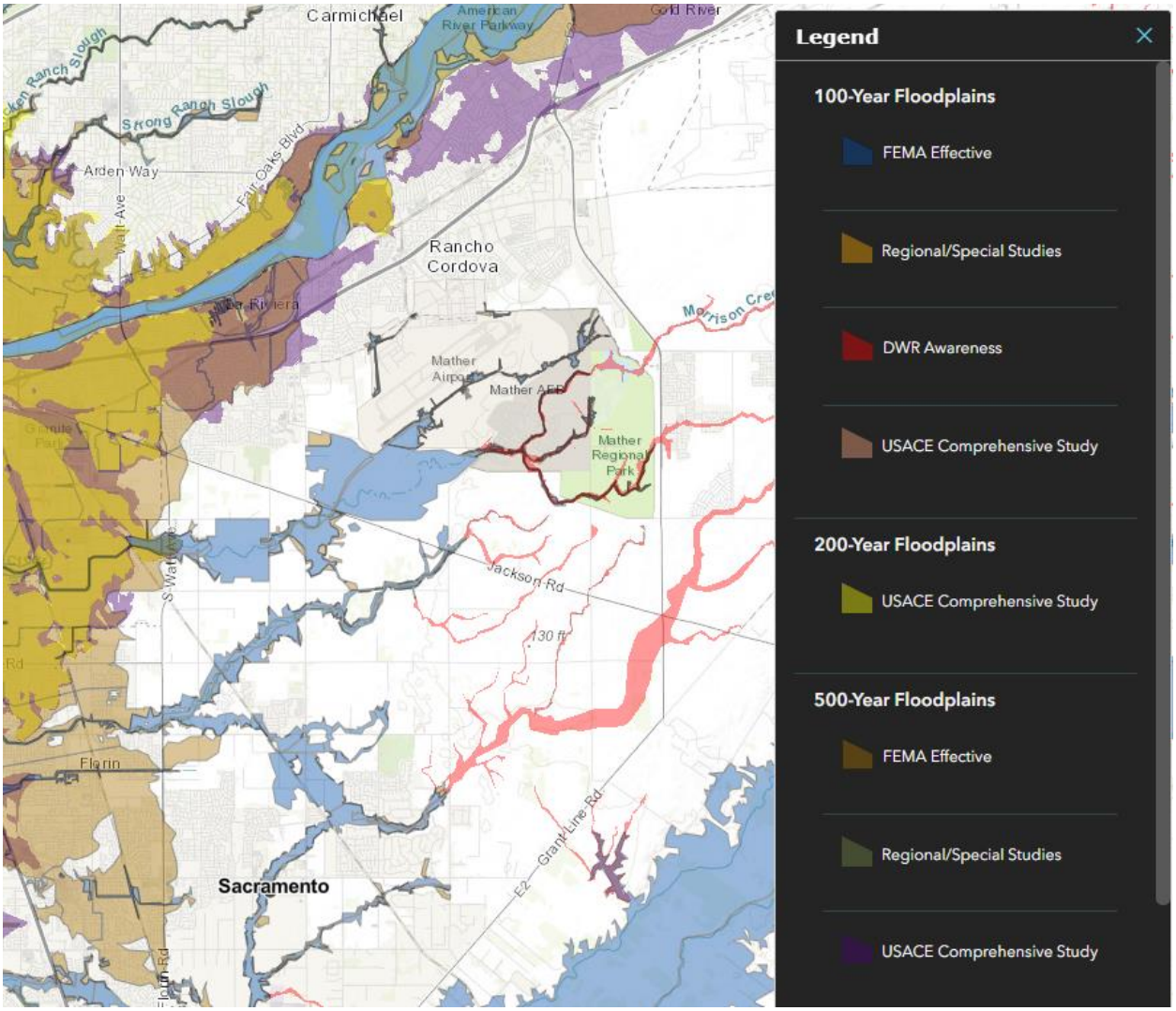
California Department of Water Resources Best Available Maps (BAM)

The FEMA regulatory maps provide just one perspective on flood risks in Sacramento County. Senate Bill 5 (SB 5), enacted in 2007, authorized the California DWR to develop the Best Available Maps (BAM) displaying 100- and 200-year floodplains for areas located within the Nevada-San Joaquin (SAC-SJ) Valley watershed. This effort was completed by DWR in 2008. DWR has expanded the BAM to cover all counties in the State and to include 500-year floodplains.

Different than the FEMA DFIRMs which have been prepared to support the NFIP and reflect only the 100-year event risk, the BAMs are provided for informational purposes and are intended to reflect current 100-, 200-(as applicable), and 500-year event risks using the best available data. The 100-year floodplain limits on the BAM are a composite of multiple 100-year floodplain mapping sources. It is intended to show all currently identified areas at risk for a 100-year flood event, including FEMA's 100-year floodplains. The BAM are comprised of different engineering studies performed by FEMA, Corps, and DWR for assessment of potential 100-, 200-, and 500-year floodplain areas. These studies are used for different planning and/or regulatory applications, and for each flood frequency may use varied analytical and quality control criteria depending on the study type requirements.

The value in the BAMs is that they provide a bigger picture view of potential flood risk to the City than that provided in the FEMA DFIRMs. The BAM map for Rancho Cordova is shown in Figure E-22.

Figure E-22 City of Rancho Cordova – Best Available Map



Source: California DWR

Legend explanation: Blue - FEMA 1%, Orange – Local 1% (developed from local agencies), Red – DWR 1%r (Awareness floodplains identify the 1% annual chance flood hazard areas using approximate assessment procedures.), Pink – USACE 1% (2002 Sac and San Joaquin River Basins Comp Study), Yellow – USACE 0.5% (2002 Sac and San Joaquin River Basins Comp Study), Tan – FEMA 0.2%, Grey – Local 0.2% (developed from local agencies), Purple – USACE 0.2% (2002 Sac and San Joaquin River Basins Comp Study).

Future Development

The potential for flooding may increase as floodwaters are channeled due to land development. Such changes can exacerbate flooding problems inside and outside of natural floodplains by altering or confining natural drainage channels. Floodplain modeling and master planning should be based on build out property use to ensure that all new development remains safe from future flooding. While local floodplain management, stormwater management, and water quality regulations and policies address these changes on a site-by-site basis, their cumulative effects can have a negative impact on the overall floodplain.

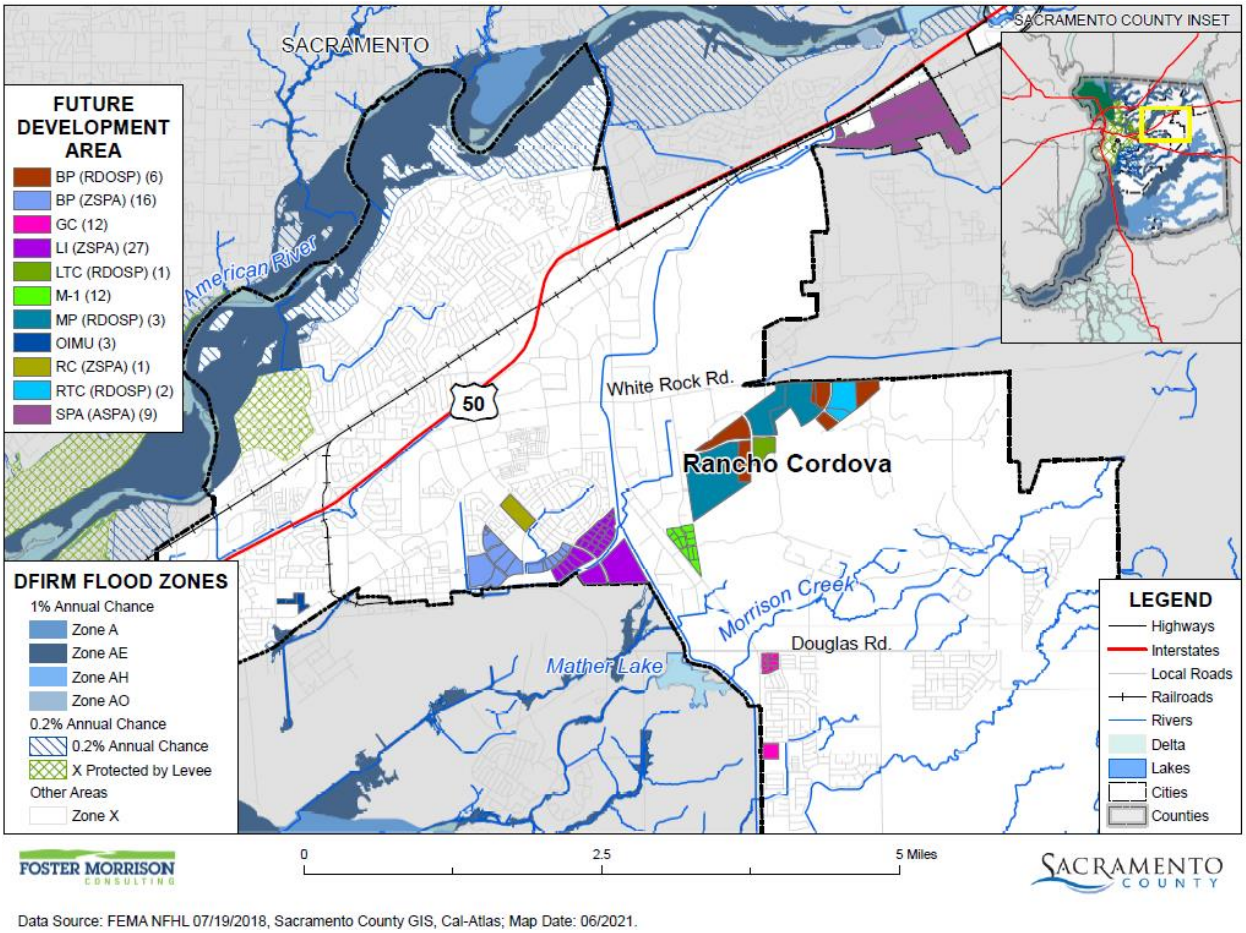
The City enforces the floodplain ordinance. If any development is to occur in the floodplain, it would have to conform to the elevation standards of the floodplain ordinance. No development is expected in the floodplain in the future. If applicable, any development proposed in a FEMA floodplain will be required to comply with the City's Floodplain Ordinances, FEMA Region 9 regulations, and the Central Valley Flood Protection Board.

GIS Analysis

The City provided future development areas were used as the basis for the inventory of future development areas for the City. Using the GIS parcel spatial file for each of these areas, the areas and parcels associated with future development projects for which the analysis was to be performed were identified. Utilizing the future development project spatial layer, the parcel centroid data was intersected to determine the parcel counts within each area. Figure A 13 shows the locations of future development areas the City is planning to develop on the DFIRM flood zones, with a legend of these locations shown on Figure E-23. Table E-33 shows the parcels and acreages of each future development area in the City in the DFIRM flood zones.

More information as to the names and specific and special plan areas these fall into can be found in Table E-14.

Figure E-23 City of Rancho Cordova – Future Development and FEMA DFIRM Flood Zones



Data Source: FEMA NFHL 07/19/2018, Sacramento County GIS, Cal-Atlas; Map Date: 06/2021.

Table E-33 City of Rancho Cordova – Future Development Parcels and Acres by FEMA DFIRM Flood Zones

Flood Zone/ Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
Other Areas			
Zone X			
BP (ZSPA)	16	3	105
GC	12	0	25
LI (ZSPA)	27	0	141
M-1	12	1	33
MP (RDOSP)	12	0	390
OIMU	3	0	11
RC (ZSPA)	1	0	25
SPA (ASPA)	9	2	213
Zone X Total	**92**	**6**	**944**
Other Areas Total	**92**	**6**	**944**
Grand Total	**92**	**6**	**944**

Source: City of Rancho Cordova, FEMA 7/19/2018 DFIRM

Flood: Localized Stormwater Flooding

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile and Problem Description

Flooding occurs in areas other than the FEMA mapped 1% and 0.2% annual chance floodplains. Flooding may be from drainages not studied by FEMA, lack of or inadequate drainage infrastructure, or inadequate maintenance. Localized, stormwater flooding occurs throughout the County during the rainy season from November through April. Prolonged heavy rainfall contributes to a large volume of runoff resulting in high peak flows of moderate duration.

Location and Extent

The City of Rancho Cordova is subject to localized flooding throughout the City. Flood extents are usually measured in areas affected, velocity of flooding, and depths of flooding. Expected flood depths in the City vary by location. Flood durations in the City tend to be short to medium term, or until either the storm drainage system can catch up or flood waters move downstream. Localized flooding in the City tends to have a shorter speed of onset, especially when antecedent rainfall has soaked the ground and reduced its capacity to absorb additional moisture.

Currently the City experiences localized flooding issues associated with undersized drainage facilities in existing developed and developing areas. This includes existing drainage issues along Sunrise Boulevard south of White Rock Road where surface water flows exceed the capacity of drainage facilities (siphons and overchutes) of the Folsom South Canal. Existing 100-year peak flows are exceeded in several of these facilities and result in localized flooding along Sunrise Boulevard as well as discharge of drainage into the Folsom South Canal.

The City tracks localized flooding areas. Affected localized flood areas identified by the City of Rancho Cordova are summarized in Table E-34.

Table E-34 City of Rancho Cordova – List of Localized Flooding Problem Areas

Road Name	Flooding	Pavement Deterioration	Washout	High Water	Landslide/ Mudslide	Debris	Downed Trees
Bradshaw Rd, near southern city limits	x						
Coloma Rd and McGregor Dr	x						
Coloma Rd, just west of Sunrise Blvd	x						
Douglas Rd, West of Sunrise Blvd	x						
Ellenwood Ave and Routier Rd	x						
Folsom Blvd and Don Juan Dr	x						
International Dr between S White Rock Rd and Data Dr	x						
Kiefer Blvd	x						
Malaga Way	x						
Mills Tower Dr	x						
Sunrise Blvd near Monier Circle, Recycle Rd	x						
Trade Center Dr and Sunrise Blvd	x						

Source: City of Rancho Cordova

Past Occurrences

The City noted the following past occurrences of localized flooding:

February 2015 - Widespread rainfall of 3 to 6 inches fell causing river flooding and urban flooding in poor drainage areas. A power outage left 8,000 customers without power in Sacramento, KCRA-TV reported. The outage was attributed to lightning after a Sacramento Municipal Utility District was damaged. The SMUD said 14,000 additional customers were left without power in the Carmichael-Rancho Cordova area.

Vulnerability to and Impacts from Localized Flooding

Historically, much of the growth in the City and County has occurred adjacent to streams, resulting in significant damages to property, and losses from disruption of community activities when the streams overflow. Additional development in the watersheds of these streams affects both the frequency and duration of damaging floods through an increase in stormwater runoff.

Primary concerns associated with stormwater flooding include impacts to infrastructure that provides a means of ingress and egress throughout the community. Ground saturation can result in instability, collapse, or other damage to trees, structures, roadways and other critical infrastructure. Objects can also be buried or destroyed through sediment deposition. Floodwaters can break utility lines and interrupt services. Standing water can cause damage to road, and foundations. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, losses of environmental resources, and certain health hazards.

Future Development

Future development in the City will add more impervious surfaces causing an increase in stormwater runoff and the continued need to drain these waters. The City will need to be proactive to ensure that increased development has proper siting and drainage for stormwaters. The risk of localized flooding to future development can also be minimized by accurate recordkeeping of repetitive localized storm activity. Another factor that will reduce local flooding is implementing the City's Hydromodification Management and Low Impact Development requirements, which helps reduce runoff from new development areas. Mitigating the root causes of the localized stormwater flooding will reduce future risks of losses.

Pandemic

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile and Problem Description

According to the World Health Organization (WHO), a disease epidemic occurs when there are more cases of that disease than normal. A pandemic is a worldwide epidemic of a disease. A pandemic may occur when a new virus appears against which the human population has no immunity. A pandemic occurs when a new virus emerges for which people have little or no immunity, and for which there is no vaccine. This disease spreads easily person-to-person, causes serious illness, and can sweep across the country and around the world in a very short time. The U.S. Centers for Disease Control and Prevention has been working closely with other countries and the WHO to strengthen systems to detect outbreaks of that might cause a pandemic and to assist with pandemic planning and preparation. An especially severe a pandemic could lead to high levels of illness, death, social disruption, and economic loss.

Location and Extent

During a pandemic, the whole of the City, County, and surrounding region is at risk, as pandemic is a regional, national, or international event. The speed of onset of pandemic is usually short, while the

duration is variable, but can last for more than a year as shown in the 1918/1919 Spanish Flu. There is no scientific scale to measure the magnitude of pandemic. Pandemics are usually measured in numbers affected by the pandemic, and by number who die from complications from the pandemic.

Past Occurrences

There has been one state and federal disaster declaration due to pandemic, as shown in Table E-35.

Table E-35 Sacramento County – State and Federal Pandemic Disaster Declarations 1950-2020

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Pandemic	1	2020	1	2020

Source: Cal OES, FEMA

The 20th century saw three outbreaks of pandemic flu.

- The **1918-1919 Influenza Pandemic (H1N1)**
- The **February 1957-1958 Influenza Pandemic (H2N2)**
- The **1968 Influenza Pandemic (H3N2)**

To date, the 21st century has seen two acknowledged pandemics.

- **2009 Swine Flu (H1N1**)
- **2019/2020 COVID 19**

Vulnerability to and Impacts from Pandemic

Pandemic has and will continue to have impacts on human health in the region. A pandemic occurs when a new virus emerges for which there is little or no immunity in the human population; the virus causes serious illness and spreads easily from person-to-person worldwide. There are several strategies that public health officials can use to combat a pandemic. Constant surveillance regarding current pandemic, use of infection control techniques, and administration of vaccines once they become available. Citizens can help prevent spread of a pandemic by staying home, or "self-quarantining," if they suspect they are infected. Pandemic does not affect the buildings, critical facilities, and infrastructure in the City. Pandemic can have varying levels of impact to the citizens of the City and greater County, depending on the nature of the pandemic.

Impacts could range from school and business closings to the interruption of basic services such as public transportation, health care, and the delivery of food and essential medicines. Hospitalizations and deaths can occur, especially to the elderly or those with pre-existing underlying conditions. As seen with Covid-19, multiple businesses were forced to close temporarily (some permanently) an unemployment rose significantly. Supply chains for food can be interrupted. Prisons may need to release prisoners to comply with social distance standards.

Future Development

Future development is not expected to be significantly impacted by this hazard, though population growth in the City could increase exposure to a pandemic, and increase the ability of each disease to be transmitted among the population of the City. If the median age of City residents continues to increase, vulnerability to pandemic diseases may increase, due to the fact that these diseases are often more deadly to senior citizens.

Severe Weather: Extreme Heat

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile and Problem Description

According to FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and lasts for several weeks. Heat kills by taxing the human body beyond its abilities. In extreme heat and high humidity, evaporation is slowed, and the body must work extra hard to maintain a normal temperature." Most heat disorders occur because the victim has been overexposed to heat or has over-exercised for his or her age and physical condition. Older adults, young children, and those who are sick or overweight are more likely to succumb to extreme heat.

In addition to the risks faced by citizens of the City, there are risk to the built environment from extreme heat. While extreme heat on its own does not usually affect structures, extreme heat during times of drought can cause wildfire risk to heighten. Extreme heat can lead to power outages and when combined with high winds, to Public Safety Power Shutdown (PSPS) events, creating significant issues in the City. However, PSPS events in the City have not occurred with SMUD's reliable system and PG&E's refined system for shutting power off in high wildfire risk areas.

Location and Extent

Heat is a regional phenomenon and affects the whole of the City. Heat emergencies are often slower to develop, taking several days of continuous, oppressive heat before a significant or quantifiable impact is seen. Heat waves do not strike victims immediately, but rather their cumulative effects slowly affect vulnerable populations and communities. Heat waves do not generally cause damage or elicit the immediate response of floods, fires, earthquakes, or other more "typical" disaster scenarios.

The NWS has in place a system to initiate alert procedures (advisories or warnings) when extreme heat is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. The NWS HeatRisk forecast provides a quick view of heat risk potential over the upcoming seven days. The heat risk is portrayed in a numeric (0-4) and color (green/yellow/orange/red/magenta) scale which is similar in approach to the Air Quality Index (AQI) or the UV Index. This can be seen in Section 4.3.3 of the Base Plan.

Past Occurrences

The City Planning Team noted that since extreme heat is a regional phenomenon, events that affected the County also affected the City. Those past occurrences were shown in the Base Plan in Section 4.3.3.

The City opened cooling centers within the last five years on the following dates:

- September 6-8, 2020
- August 14-21, 2020
- August 14-16, 2019
- August 28-September 2, 2017
- August 1, 2017
- June 18-22, 2017
- July 26-29, 2016
- June 27-29, 2016
- June 2-4, 2016
- September 9-11, 2015
- July 28-30, 2015

Vulnerability to and Impacts from Extreme Heat

The City experiences temperatures in excess of 100°F during the summer and fall months. The temperature moves to 105-115°F in rather extreme situations. During these times, drought conditions may worsen and the City may see an increase in dry fuels. Also, power outage and PSPS events may occur during these times as well. Health issues are the primary concern with this hazard, although economic impacts can also be an issue.

The elderly and individuals below the poverty level are the most vulnerable to extreme temperatures. Nursing homes and elder care facilities are especially vulnerable to extreme heat events if power outages occur and air conditioning is not available. In addition, individuals below the poverty level may be at increased risk to extreme heat if use of air conditioning is not affordable. This is especially true of homeless people and the transient population.

Days of extreme heat have been known to result in medical emergencies, and unpredictable human behavior. Periods of extended heat and dryness (droughts) can have major economic, agricultural, and water resources impacts. Extreme heat can also dry out vegetations, making it more vulnerable to wildfire ignitions.

Future Development

Future development of new buildings in the City will likely not be affected by extreme heat. Extreme heat is more likely to affect vulnerable populations. Vulnerability to extreme heat will increase as the average age of the population in each City shifts. It is encouraged that nursing homes and elder care facilities have emergency plans or backup power to address power failure during times of extreme heat and in the event of a PSPS. Low income residents and homeless populations are also vulnerable. Cooling centers for these populations should be utilized when necessary.

Severe Weather: Heavy Rains and Storms

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile and Problem Description

Storms in the City occur annually and are generally characterized by heavy rain often accompanied by strong winds and sometimes lightning and hail. Approximately 10 percent of the thunderstorms that occur each year in the United States are classified as severe. A thunderstorm is classified as severe when it contains one or more of the following phenomena: hail that is three-quarters of an inch or greater, winds in excess of 50 knots (57.5 mph), or a tornado. Heavy precipitation in the City falls mainly in the fall, winter, and spring months. Wind often accompanies these storms; hail and lightning are rare in the City.

Location and Extent

Heavy rain events occur on a regional basis. Rains and storms can occur in any location of the City. All portions of the City are at risk to heavy rains. Most of the severe rains occur during the fall, winter, and spring months. There is no scale by which heavy rains and severe storms are measured. Magnitude of storms is measured often in rainfall and damages. The speed of onset of heavy rains can be short, but accurate weather prediction mechanisms often let the public know of upcoming events. Hail and lightning are rare in the City and Sacramento County. Duration of severe storms in California, Sacramento County, and the City can range from minutes to hours to days. Information on precipitation extremes can be found in Section 4.3.4 of the Base Plan.

Past Occurrences

According to historical hazard data, severe weather, including heavy rains and storms, is an annual occurrence in the City. This is the cause of many of the federal disaster declarations related to flooding.

Vulnerability to and Impacts from Heavy Rain and Storms

Heavy rain and severe storms are the most frequent type of severe weather occurrences in the City. These events can cause significant and localized flooding. Elongated events, or events that occur during times where the ground is already saturated can cause 1% and 0.2% annual chance flooding. Wind often accompanies these storms and has caused damage in the past. Hail and lightning are rare in the City, but also can cause damage, with lightning occasionally igniting wildfires.

Actual damage associated with the effects of severe weather include impacts to property, critical facilities (such as utilities), and life safety. Power outages may also occur. Heavy rains and storms often result in flooding creating significant issues. Roads can become impassable and ground saturation can result in instability, collapse, or other damage to trees, structures, roadways and other critical infrastructure. Floodwaters and downed trees can break utilities and interrupt services.

Future Development

Building codes in the City ensure that new development is built to current building standards, which should reduce the risk to future development in the City from heavy rains and storms. New critical facilities such as communications towers and others should be built to withstand hail damage, lightning, and thunderstorm winds. With adherence to development standards, future losses to new development should be minimal.

Severe Weather: High Winds and Tornadoes

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile and Problem Description

High winds, as defined by the NWS glossary, are sustained wind speeds of 40 mph or greater lasting for 1 hour or longer, or winds of 58 mph or greater for any duration. High winds can cause significant property and crop damage, threaten public safety, and have adverse economic impacts from business closures and power loss. High winds can also cause PSPS events.

Tornadoes are rotating columns of air marked by a funnel-shaped downward extension of a cumulonimbus cloud whirling at destructive speeds of up to 300 mph, usually accompanying a thunderstorm. Tornadoes form when cool, dry air sits on top of warm, moist air. Tornadoes are the most powerful storms that exist. Tornadoes, though rare, are another severe weather hazard that can affect areas of the Sacramento County Planning Area, primarily during the rainy season in the late fall, winter, and early spring.

Location and Extent

The entire City is subject to significant, non-tornadic (straight-line), winds. Each area of the County and City is at risk to high winds. Magnitude of winds is measured often in speed and damages. These events are often part of a heavy rain and storm event, but can occur outside of storms. The speed of onset of winds can be short, but accurate weather prediction mechanisms often let the public know of upcoming events. Duration of winds in California is often short, ranging from minutes to hours. The Beaufort scale is an empirical 12 category scale that relates wind speed to observed conditions at sea or on land. Its full name is the Beaufort Wind Force Scale. The Beaufort Scale was shown in Section 4.3.5 of the Base Plan.

Tornadoes, while rare, can occur at any location in the County and City. Prior to February 1, 2007, tornado intensity was measured by the Fujita (F) scale. This scale was revised and is now the Enhanced Fujita scale. Both scales are sets of wind estimates (not measurements) based on damage. The new scale (EF) provides more damage indicators (28) and associated degrees of damage, allowing for more detailed analysis and better correlation between damage and wind speed. It is also more precise because it considers the materials affected and the construction of structures damaged by a tornado. The F Scale and EF Scale are shown in Section 4.3.5 of the Base Plan.

Past Occurrences

There has been no federal or state disaster declarations in the County for winds and tornadoes. The City noted that since high winds is a regional phenomenon, events that affected the lower elevations of the City also affected the City. Those past occurrences were shown in the Base Plan in Section 4.3.5.

Vulnerability to and Impacts from Severe Weather: Wind and Tornado

High winds are common occurrences in the City throughout the entire year. Straight line winds are primarily a public safety and economic concern. Windstorm can cause damage to structures and power lines which in turn can create hazardous conditions for people. Debris flying from high wind events can shatter windows in structures and vehicles and can harm people that are not adequately sheltered. High winds can impact critical facilities and infrastructure and can lead to power outages. Wind can also drive wildfire flames, spreading wildfires quickly During periods of high winds and dry vegetation, wildfire risk increases. High winds that occur during periods of extreme heat can cause PSPS events to be declared in the County and City. More information on power shortage and failure can be found in the Severe Weather: Extreme Heat Section above, as well as in Section 4.3.3 of the Base Plan.

Impacts from high winds in the City will vary. Future losses from straight line winds include:

- Downed trees
- Power line impacts and economic losses from power outages
- Increased PSPS events
- Occasional building damage, primarily to roofs

Future Development

Future development projects will consider wind hazards at the planning, and design stage with the goal of reducing vulnerability. The City enforces the state building code and other ordinances, which regulate construction techniques that minimize damage from windstorms. Future development in the City is subject to these building codes. New critical facilities should also consider adding generators for times of PSPS.

Wildfire

Likelihood of Future Occurrence–Highly Likely
Vulnerability–High

Hazard Profile and Problem Description

Wildland fire and the risk of a conflagration is an ongoing concern for the City of Rancho Cordova. Throughout California, communities are increasingly concerned about wildfire safety as increased development in the foothills and mountain areas and subsequent fire control practices have affected the natural cycle of the ecosystem. Wildland fires affect grass, forest, and brushlands, as well as any structures located within them. Where there is human access to wildland areas the risk of fire increases due to a greater chance for human carelessness and historical fire management practices. Historically, the fire season extends from early spring through late fall of each year during the hotter, dryer months; however, in recent years, the risk of wildfire has become a year around concern. Fire conditions arise from a combination of

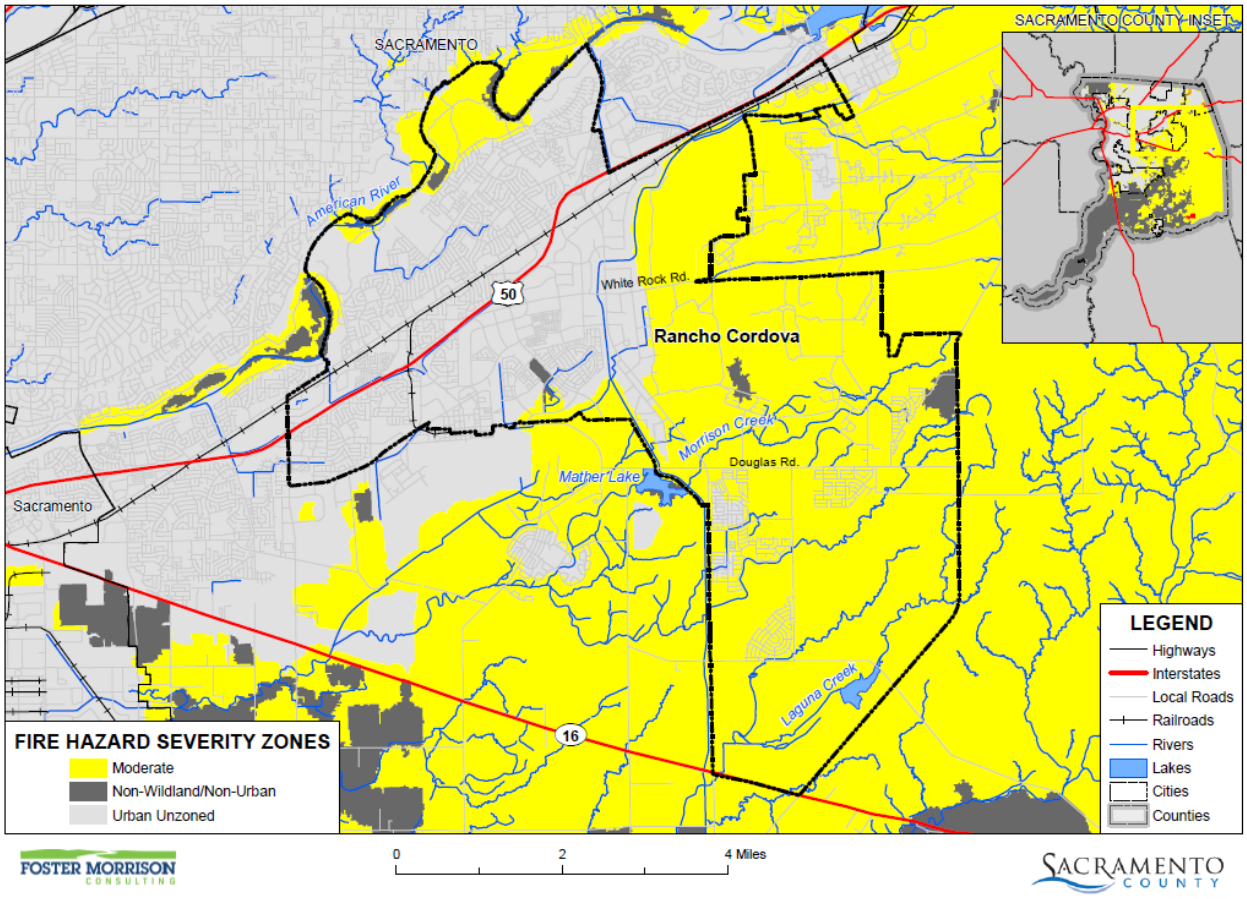
high temperatures, low moisture content in the air and fuel, accumulation of vegetation, and high winds. These high winds can result in red flag days, and can result in PSPS events in the City. While wildfire risk has predominantly been associated with more remote forested areas and wildland urban interface (WUI) areas, significant wildfires can also occur in more populated, urban areas.

The Sacramento Metropolitan Fire District (SMFD) provides fire protection and prevention, fire safety education, and emergency medical response services to the citizens of Rancho Cordova. The City cooperates with SMFD to ensure adequate service levels for the City's residents.

Location and Extent

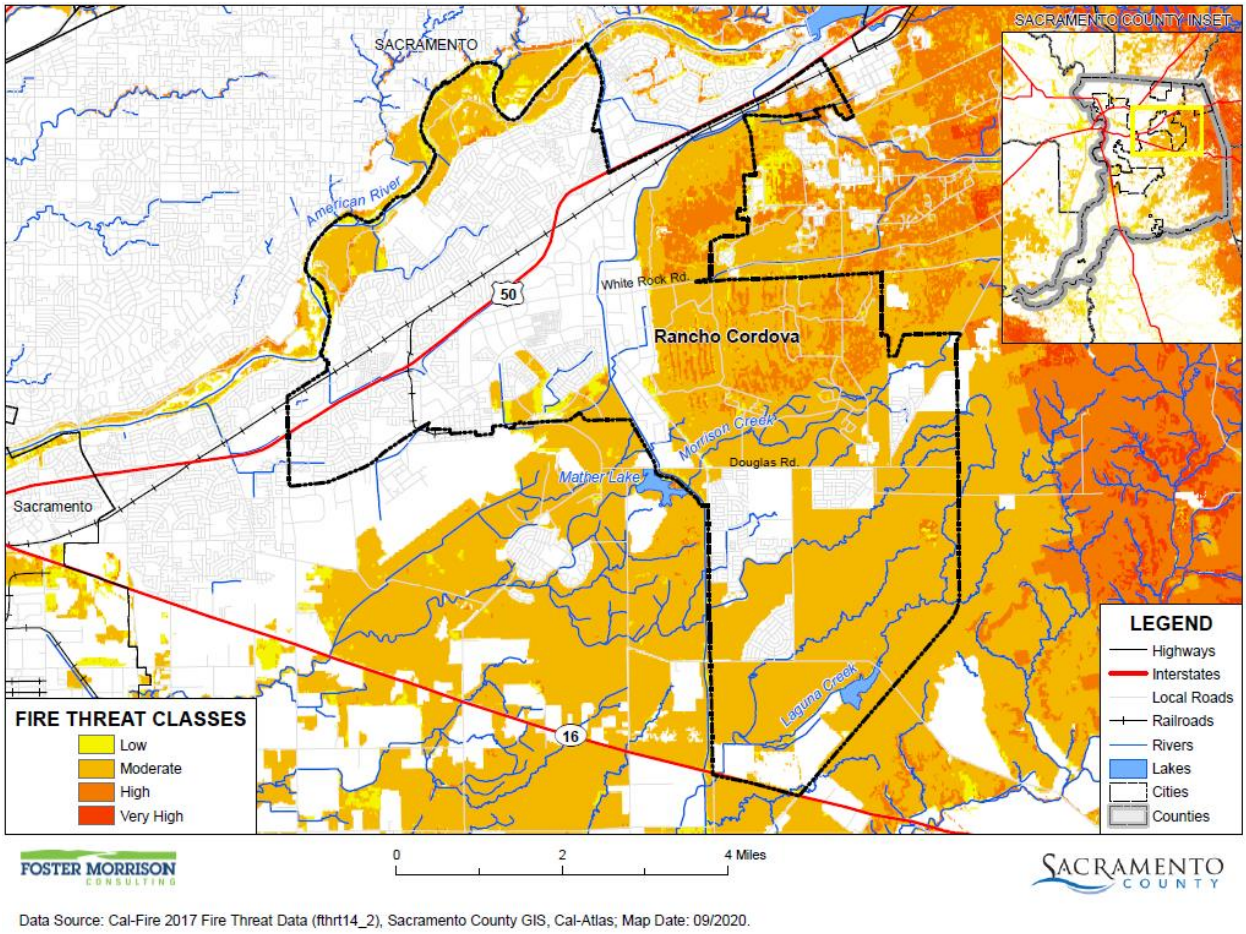
Wildfire can affect all areas of the City. CAL FIRE has estimated that the risk varies across the City and has created maps showing risk variance. Following the methodology described in Section 4.3.19 of the Base Plan, wildfire maps for the City of Rancho Cordova were created. Figure E-24 shows the CAL FIRE Fire Hazard Severity Zones (FHSZs) in the City. As shown on the maps, FHSZs within the City range from Urban Unzoned to Moderate. Figure E-25 shows the CAL FIRE Fire Threat Areas in the City. As shown on the maps, fire threat within the City ranges from No Threat to High.

Figure E-24 City of Rancho Cordova – Fire Hazard Severity Zones



Data Source: Cal-Fire 2017 (Draft 9/2007 - c34fhszl06_1, Adopted 11/2007 - fhsz06_3_34, Recommended 10/2008 - c34fhszl06_3), Sacramento County GIS, Cal-Atlas; Map Date: 09/2020.

Figure E-25 City of Rancho Cordova – Fire Threat Areas



Wildfires tend to be measured in structure damages, injuries, and loss of life as well as on acres burned. Fires can have a quick speed of onset, especially during periods of drought or during hot dry summer months. Fires can burn for a short period of time, or may have durations lasting for a week or more. Geographical FHSZ extent from CAL FIRE is shown in Table E-36. Geographical Fire Threat Area extents from CAL FIRE are shown on Table E-37.

Table E-36 City of Rancho Cordova – Geographical FHSZ Extents

Fire Hazard Severity Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Very High	0	0.00%	0	0.00%	0	0.00%
High	0	0.00%	0	0.00%	0	0.00%
Moderate	12,957.3	60.59%	3,986.7	39.66%	8,970.6	79.14%
Non-Wildland/non-Urban	293.3	1.37%	5.6	0.06%	287.7	2.54%

Fire Hazard Severity Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Urban Unzoned	8,135.0	38.04%	6,059.0	60.28%	2,076.1	18.32%
Total	**21,385.6**	**100.00%**	**10,051.3**	**100.00%**	**11,334.4**	**100.00%**

Source: CAL FIRE

Table E-37 City of Rancho Cordova – Geographical Fire Threat Area Extents

Fire Hazard Severity Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Very High	0	0.00%	0	0.00%	0	0.00%
High	1,122.4	5.25%	402.4	4.00%	720.1	6.35%
Moderate	9,953.4	46.54%	2,238.3	22.27%	7,715.0	68.07%
Low	459.0	2.15%	56.2	0.56%	402.8	3.55%
No Threat	9,850.8	46.06%	7,354.3	73.17%	2,496.4	22.03%
Total	**21,385.6**	**100.00%**	**10,051.3**	**100.00%**	**11,334.4**	**100.00%**

Source: CAL FIRE

Past Occurrences

There has been no state and one federal disaster declaration due to fire, as shown in Table E-38. It should be noted that this fire disaster was from an explosion in Roseville, and not from an actual wildfire.

Table E-38 Sacramento County – State and Federal Wildfire Disaster Declarations 1950-2020

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Fire	1	1973	0	–

Source: Cal OES, FEMA

In **June of 2020**, the Grant Fire affected the City of Rancho Cordova. A wind-stoked grass fire quickly charred more than 5,000, prompting evacuations and road closures in a sparsely populated area of east Sacramento County between Rancho Cordova and Folsom. The fire mostly burned grasslands, which allowed firefighters to extinguish the blaze before it got close to Rancho Cordova. One outbuilding was destroyed in the unincorporated County, and no injuries or damages were reported.

Vulnerability to and Impacts from Wildfire

Fuel loads in the County and Cities, along with geographical and topographical features, create the potential for both natural and human-caused fires that can result in loss of life and property. These factors, combined with natural weather conditions common to the area, including periods of drought, high temperatures, low relative humidity, and periodic winds, can result in frequent and sometimes catastrophic fires. The more urbanized areas within the County are not immune from fire. The dry vegetation and hot and sometimes windy weather, combined with continued growth in the WUI areas, results in an increase in the number of

ignitions. Any fire, once ignited, has the potential to quickly become a large, out-of-control fire. As development continues throughout the County and City, especially in these interface areas, the risk and vulnerability to wildfires will likely increase.

Rancho Cordova is not immune to numerous types of grass and brush fires and any one of them may accelerate into an urban interface wildfire. Such a situation could lead to evacuation of large portions of the population and the potential for significant loss of personal property, structures, and rangeland. The natural fuels available in or near the City vary greatly in the rate and intensity of burning. Fires in heavy brush and stands of trees burn with great intensity but more slowly than in dry grass and leaves. Dense fuels will propagate fire better than sparse fuels.

In addition to fire related hazards from structures in urbanized areas, the Ranch Cordova General Plan Safety Element (2018) noted that the main source of wildland fire in the City occurs where natural resource and habitat areas interface with urbanized development (e.g., along the American River Parkway and northern boundary of the City). Additionally, several of the new and proposed developments in the City contain large wetland preserves with natural vegetation, which have the potential to ignite and pose safety risks to adjacent and surrounding developments.

Potential impacts from wildfire include loss of life and injuries; damage to structures and other improvements, natural and cultural resources, croplands, and timber; and loss of recreational opportunities. Wildfires can cause short-term and long-term disruption to the City. Fires can have devastating effects on watersheds through loss of vegetation and soil erosion, which may impact the City by changing runoff patterns, increasing sedimentation, reducing natural and reservoir water storage capacity, and degrading water quality. Fires can also affect air quality in the City; smoke and air pollution from wildfires can be a severe health hazard.

Although the physical damages and casualties arising from wildland-urban interface fires may be severe, it is important to recognize that they also cause significant economic impacts by resulting in a loss of function of buildings and infrastructure. Economic impacts of loss of transportation and utility services may include traffic delays/detours from road and bridge closures and loss of electric power, potable water, and wastewater services. Schools and businesses can be forced to close for extended periods of time. Recently, the threat of wildfire, combined with the potential for high winds, heat, and low humidity, has caused PG&E to initiate a PSPS which can also significantly impact a community through loss of services, business closures, and other impacts associated with loss of power for an extended period. In addition, catastrophic wildfire can create favorable conditions for other hazards such as flooding, landslides, and erosion during the rainy season.

Assets at Risk

Based on the vulnerability of Rancho Cordova to the wildfire hazard, the sections that follow describes significant assets at risk in the City of Rancho Cordova. This section includes the values at risk, population at risk, and critical facilities at risk.

Values at Risk in Fire Hazard Severity Zones

GIS was used to determine the possible impacts of wildfire within the City of Rancho Cordova. The methodology described in Section 4.3.19 of the Base Plan was followed in determining structures and values at risk in fire hazard severity zones. Summary analysis results for Rancho Cordova are shown in Table E-39, which summarizes total parcel counts, improved parcel counts and their structure values by fire hazard severity zone. Table E-40 breaks out the Table E-39 by adding the property use details by fire hazard severity zone for the City.

Table E-39 City of Rancho Cordova – Count and Value of Parcels by Fire Hazard Severity Zone

Fire Hazard Severity Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Moderate	6,018	4,547	$717,507,511	$1,392,960,061	$795,178,643	$2,905,646,250
Non-Wildland/Non-Urban	11	2	$6,904,882	$428,132	$214,066	$7,547,080
Urban Unzoned	17,756	16,983	$1,972,544,221	$5,434,760,411	$4,203,228,459	$11,610,532,935
Rancho Cordova Total	**23,785**	**21,532**	**$2,696,956,614**	**$6,828,148,604**	**$4,998,621,168**	**$14,523,726,265**

Source: Sacramento County 2020 Parcel/Assessor's Data, CAL FIRE

Table E-40 City of Rancho Cordova – Count and Value of Parcels by Fire Hazard Severity Zone and Property Use

Fire Hazard Severity Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Moderate						
Agricultural	23	3	$22,734,349	$142,065	$142,065	$23,018,479
Care/Health	0	0	$0	$0	$0	$0
Church/Welfare	1	0	$9	$0	$0	$9
Industrial	97	90	$43,293,600	$80,935,544	$121,403,318	$245,632,460
Miscellaneous	183	0	$266,649	$0	$0	$266,649
Office	1	1	$400,000	$390,000	$390,000	$1,180,000
Public/Utilities	1	0	$10	$0	$0	$10
Recreational	2	0	$19	$0	$0	$19
Residential	4,566	4,437	$480,339,049	$1,274,206,793	$637,103,367	$2,391,649,246
Retail / Commercial	10	10	$10,151,598	$36,139,893	$36,139,893	$82,431,384
Unknown	0	0	$0	$0	$0	$0
Vacant	1,134	6	$160,322,228	$1,145,766	$0	$161,467,994
Moderate Total	**6,018**	**4,547**	**$717,507,511**	**$1,392,960,061**	**$795,178,643**	**$2,905,646,250**

Fire Hazard Severity Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Non-Wildland/Non-Urban						
Agricultural	1	0	$84,511	$0	$0	$84,511
Care/Health	0	0	$0	$0	$0	$0
Church/Welfare	0	0	$0	$0	$0	$0
Industrial	0	0	$0	$0	$0	$0
Miscellaneous	7	0	$19	$0	$0	$19
Office	0	0	$0	$0	$0	$0
Public/Utilities	0	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	2	2	$198,731	$428,132	$214,066	$840,929
Retail / Commercial	0	0	$0	$0	$0	$0
Unknown	0	0	$0	$0	$0	$0
Vacant	1	0	$6,621,621	$0	$0	$6,621,621
Non-Wildland/Non-Urban Total	**11**	**2**	**$6,904,882**	**$428,132**	**$214,066**	**$7,547,080**
Urban Unzoned						
Agricultural	0	0	$0	$0	$0	$0
Care/Health	13	11	$3,130,790	$21,931,121	$21,931,121	$46,993,032
Church/Welfare	32	32	$19,175,428	$58,389,789	$58,389,789	$135,955,006
Industrial	646	616	$260,992,552	$677,109,658	$1,015,664,493	$1,953,766,696
Miscellaneous	335	1	$478,857	$1,085	$1,085	$481,027
Office	291	262	$269,896,128	$1,139,469,175	$1,139,469,175	$2,548,834,478
Public/Utilities	58	0	$9	$0	$0	$9
Recreational	14	10	$8,063,736	$22,999,996	$22,999,996	$54,063,728
Residential	15,863	15,800	$1,128,914,181	$3,138,012,401	$1,569,006,222	$5,835,932,655
Retail / Commercial	256	240	$201,079,581	$375,766,578	$375,766,578	$952,612,737
Unknown	3	3	$0	$311,254	$0	$311,254
Vacant	245	8	$80,812,959	$769,354	$0	$81,582,313
Urban Unzoned Total	**17,756**	**16,983**	**$1,972,544,221**	**$5,434,760,411**	**$4,203,228,459**	**$11,610,532,935**
Rancho Cordova Total	**23,785**	**21,532**	**$2,696,956,614**	**$6,828,148,604**	**$4,998,621,168**	**$14,523,726,265**

Source: Sacramento County 2020 Parcel/Assessor's Data, CAL FIRE

Values at Risk in Fire Threat Areas

GIS was used to determine the possible impacts of wildfire within the City of Rancho Cordova. The methodology described in Section 4.3.19 of the Base Plan was followed in determining structures and values at risk in fire threat area. Summary analysis results for Rancho Cordova are shown in Table E-41, which summarizes total parcel counts, improved parcel counts and their structure values by fire threat area. Table E-42 breaks out the Table E-41 by adding the property use details by threat areas for the City.

Table E-41 City of Rancho Cordova – Count and Value of Parcels by Fire Threat Area

Jurisdiction / Fire Threat Class	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Very High	0	0	$0	$0	$0	$0
High	12	2	$1,063,212	$1,129,950	$1,564,925	$3,758,087
Moderate	1,275	268	$203,019,166	$89,618,589	$61,131,735	$353,769,501
Low	175	71	$17,185,898	$35,417,063	$41,930,608	$94,533,581
No Threat	22,323	21,191	$2,475,688,338	$6,701,983,002	$4,893,993,900	$14,071,665,096
Rancho Cordova Total	**23,785**	**21,532**	**$2,696,956,614**	**$6,828,148,604**	**$4,998,621,168**	**$14,523,726,265**

Source: Sacramento County 2020 Parcel/Assessor's Data, CAL FIRE

Table E-42 City of Rancho Cordova – Count and Value of Parcels by Fire Threat Area and Property Use

Fire Threat Class / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
High						
Agricultural	0	0	$0	$0	$0	$0
Care/Health	0	0	$0	$0	$0	$0
Church/Welfare	0	0	$0	$0	$0	$0
Industrial	2	1	$855,392	$999,950	$1,499,925	$3,355,267
Miscellaneous	1	0	$0	$0	$0	$0
Office	0	0	$0	$0	$0	$0
Public/Utilities	0	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	1	1	$55,096	$130,000	$65,000	$250,096
Retail/ Commercial	0	0	$0	$0	$0	$0
Unknown	0	0	$0	$0	$0	$0
Vacant	8	0	$152,724	$0	$0	$152,724
High Total	**12**	**2**	**$1,063,212**	**$1,129,950**	**$1,564,925**	**$3,758,087**

Fire Threat Class / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Moderate						
Agricultural	20	1	$21,853,389	$13,698	$13,698	$21,880,785
Care/Health	0	0	$0	$0	$0	$0
Church/Welfare	0	0	$0	$0	$0	$0
Industrial	4	3	$14,453,904	$941,778	$1,412,666	$16,808,349
Miscellaneous	86	0	$21,721	$0	$0	$21,721
Office	0	0	$0	$0	$0	$0
Public/Utilities	0	0	$0	$0	$0	$0
Recreational	1	0	$9	$0	$0	$9
Residential	322	254	$26,611,707	$57,893,826	$28,946,908	$113,452,451
Retail/ Commercial	9	9	$8,816,355	$30,758,463	$30,758,463	$70,333,281
Unknown	0	0	$0	$0	$0	$0
Vacant	833	1	$131,262,081	$10,824	$0	$131,272,905
Moderate Total	**1,275**	**268**	**$203,019,166**	**$89,618,589**	**$61,131,735**	**$353,769,501**
Low						
Agricultural	0	0	$0	$0	$0	$0
Care/Health	0	0	$0	$0	$0	$0
Church/Welfare	0	0	$0	$0	$0	$0
Industrial	2	2	$4,124,243	$24,222,083	$36,333,124	$64,679,450
Miscellaneous	15	0	$94	$0	$0	$94
Office	0	0	$0	$0	$0	$0
Public/Utilities	0	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	75	69	$4,853,710	$11,194,980	$5,597,484	$21,646,186
Retail/ Commercial	0	0	$0	$0	$0	$0
Unknown	0	0	$0	$0	$0	$0
Vacant	83	0	$8,207,851	$0	$0	$8,207,851
Low Total	**175**	**71**	**$17,185,898**	**$35,417,063**	**$41,930,608**	**$94,533,581**
No Threat						
Agricultural	4	2	$965,471	$128,367	$128,367	$1,222,205
Care/Health	13	11	$3,130,790	$21,931,121	$21,931,121	$46,993,032
Church/Welfare	33	32	$19,175,437	$58,389,789	$58,389,789	$135,955,015
Industrial	735	700	$284,852,613	$731,881,391	$1,097,822,096	$2,114,556,090
Miscellaneous	423	1	$723,710	$1,085	$1,085	$725,880

Fire Threat Class / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Office	292	263	$270,296,128	$1,139,859,175	$1,139,859,175	$2,550,014,478
Public/Utilities	59	0	$19	$0	$0	$19
Recreational	15	10	$8,063,746	$22,999,996	$22,999,996	$54,063,738
Residential	20,033	19,915	$1,577,931,448	$4,343,428,520	$2,171,714,263	$8,093,074,097
Retail/ Commercial	257	241	$202,414,824	$381,148,008	$381,148,008	$964,710,840
Unknown	3	3	$0	$311,254	$0	$311,254
Vacant	456	13	$108,134,152	$1,904,296	$0	$110,038,448
No Threat Total	**22,323**	**21,191**	**$2,475,688,338**	**$6,701,983,002**	**$4,893,993,900**	**$14,071,665,096**
Rancho Cordova Total	**23,785**	**21,532**	**$2,696,956,614**	**$6,828,148,604**	**$4,998,621,168**	**$14,523,726,265**

Source: Sacramento County 2020 Parcel/Assessor's Data, CAL FIRE

Population at Risk

The FHSZ dataset was overlayed on the parcel layer. Those residential parcel centroids that intersect the FHSZs were counted and multiplied by the 2010 Census Bureau average household factors for the City of Rancho Cordova – 2.14. According to this analysis, there is a total population of 9,495 residents of Rancho Cordova at risk to moderate or higher FHSZs, while there is a total of 546 in the moderate or higher fire threat areas. This is shown in Table E-43 and Table E-44, respectively.

Table E-43 City of Rancho Cordova – Count of Improved Residential Parcels and Population by Fire Hazard Severity Zone

Jurisdiction	Very High		High		Moderate	
	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk
Rancho Cordova	0	0	0	0	4,437	9,495

Source: CAL FIRE, US Census Bureau Average Household Sizes: Rancho Cordova (2.14)

Table E-44 City of Rancho Cordova – Count of Improved Residential Parcels and Population by Fire Threat Area

Jurisdiction	Very High		High		Moderate	
	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk
Rancho Cordova	0	0	1	2	254	544

Source: CAL FIRE, US Census Bureau Average Household Sizes: Rancho Cordova (2.14)

Critical Facilities at Risk

An analysis was performed on the critical facility inventory in Rancho Cordova in identified FHSZs. Critical facilities in a FHSZ in the City of Rancho Cordova are shown in Figure E-26 and detailed in Table E-45. Critical facilities in a fire threat area in the City of Rancho Cordova are shown in Figure E-27 and detailed in Table E-46. Details of critical facility definition, type, name and address and jurisdiction by fire hazard severity zone are listed in Appendix F.

Figure E-26 City of Rancho Cordova – Critical Facilities in Fire Hazard Severity Zones

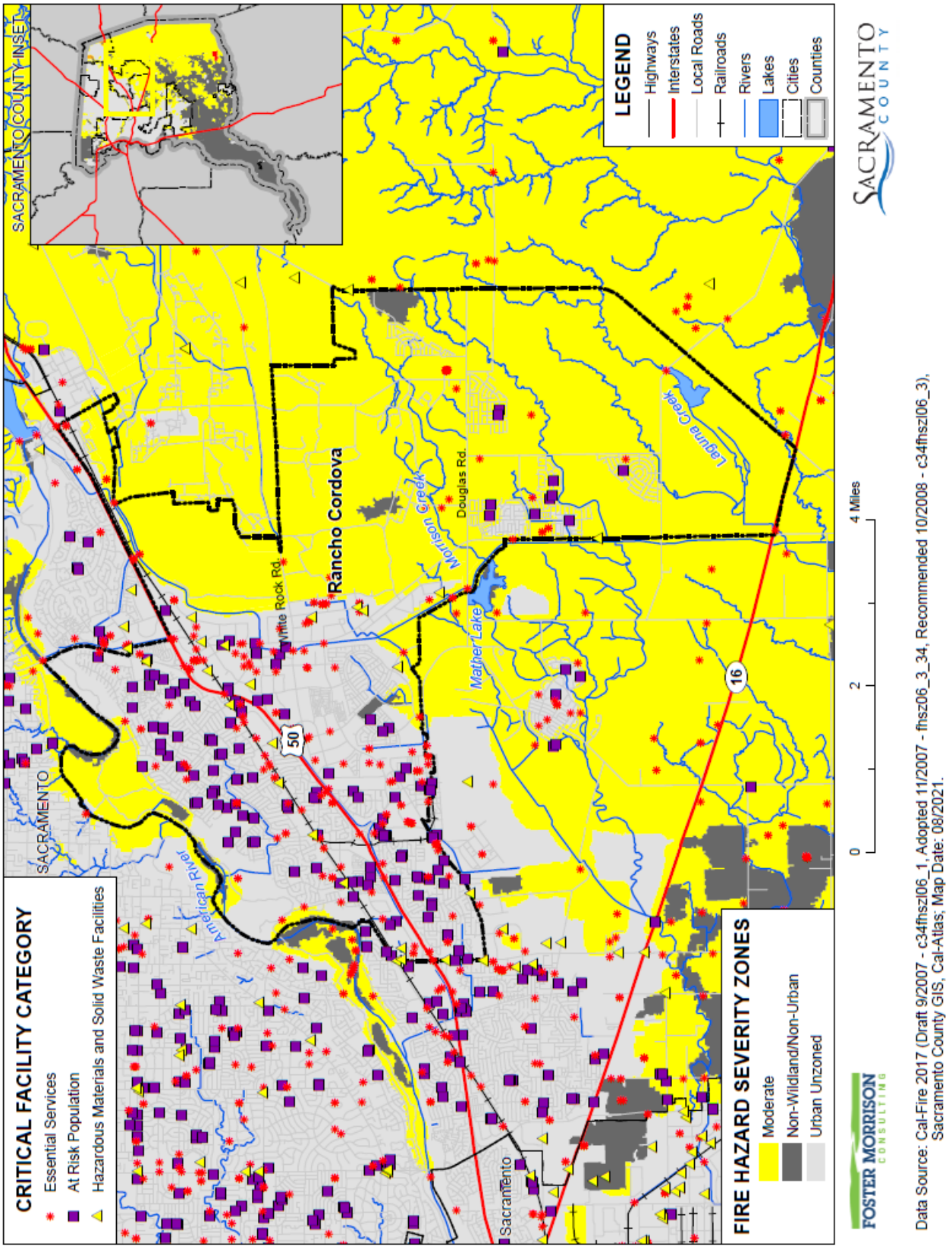


Table E-45 City of Rancho Cordova – Critical Facilities in Fire Hazard Severity Zone by Category and Type

Fire Hazard Severity Zone/Critical Facility Category	Critical Facility Type	Facility Count
Moderate		
Essential Services Facilities	Bridge	4
	Cellular Tower	2
	City Facility	1
	Drainage Pump Station	3
	EMS Stations	1
	FDIC Insured Banks	1
	Fire Station	1
	Microwave Service Towers	20
	Water Well	14
	Total	**47**
At Risk Population Facilities	Community Center	2
	Day Care Center	1
	Places of Worship	5
	School	3
	Total	**11**
Hazardous Materials and Solid Waste Facilities	Solid Waste Facility	1
	Total	**1**
Moderate Total		**59**
Urban Unzoned		
Essential Services Facilities	Bridge	12
	Cellular Tower	12
	City Facility	4
	Drainage Pump Station	3
	Emergency Evacuation Center	6
	EMS Stations	5
	FDIC Insured Banks	10
	Fire Station	3
	Hospital or Urgent Care	4
	Law Enforcement	4
	Microwave Service Towers	57
	Power Plants	1
	Public Transit Stations	4
	State Government Buildings	1

Fire Hazard Severity Zone/Critical Facility Category	Critical Facility Type	Facility Count
	Water Well	52
	Total	**178**
At Risk Population Facilities	Colleges, Universities, and Professional Schools	3
	Community Center	3
	Day Care Center	22
	Mobile Home Parks	8
	Places of Worship	72
	School	31
	Senior Living or Other Living	3
	Total	**142**
Hazardous Materials and Solid Waste Facilities	EPA ER FRP Facility	1
	EPA ER TRI Facility	2
	Leaky Underground Storage Tank	12
	Solid Waste Facility	1
	Tank Farm	2
	Waste Transfer Station	1
	Total	**19**
Urban Unzoned Total		**339**
Rancho Cordova Total		**398**

Source: CAL FIRE, Sacramento County

Figure E-27 City of Rancho Cordova – Critical Facilities in Fire Threat Areas

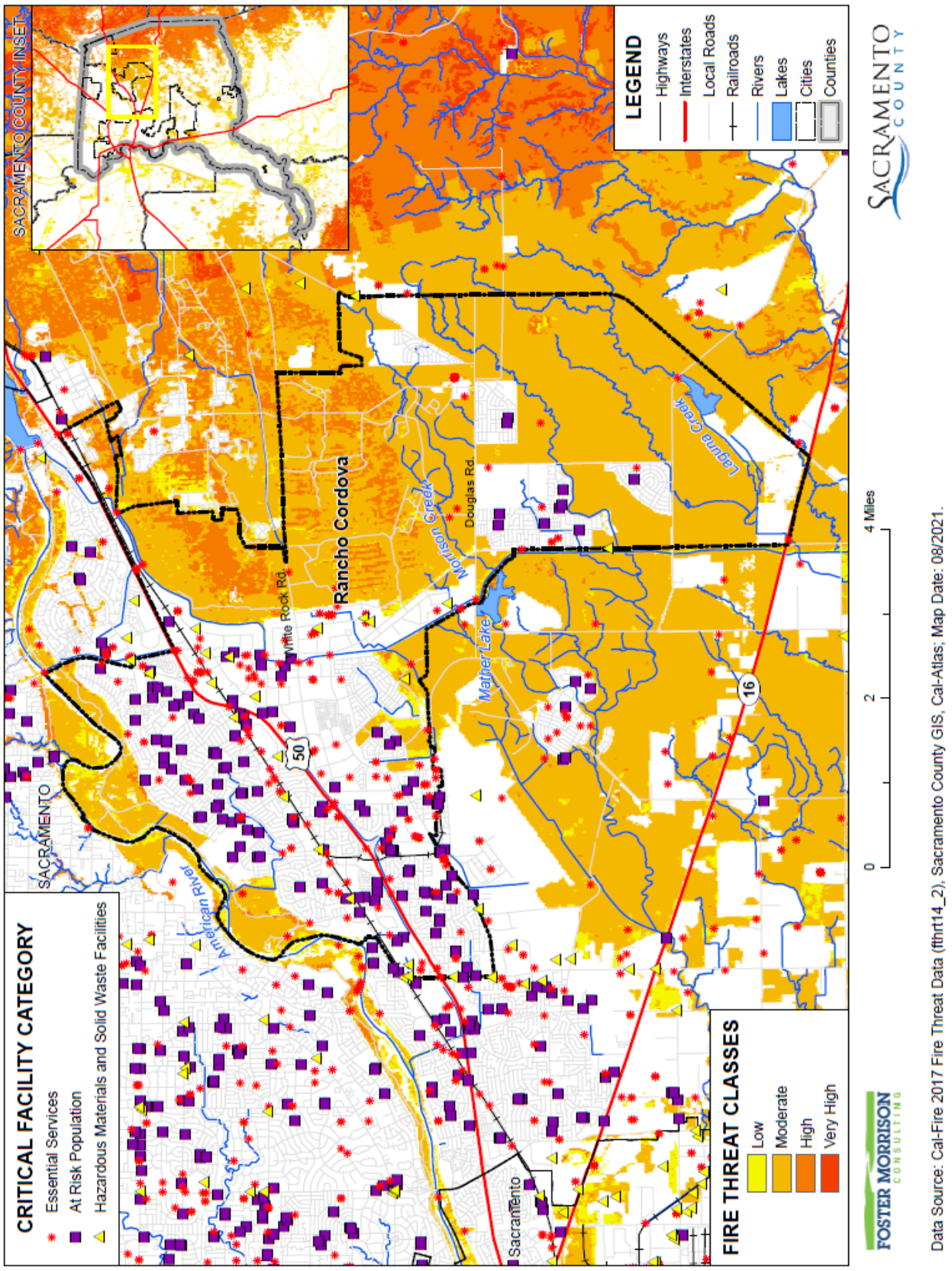


Table E-46 City of Rancho Cordova – Critical Facilities in Fire Threat Areas by Category and Type

Fire Threat/ Critical Facility Category	Critical Facility Type	Facility Count
Low		
Essential Services Facilities	Water Well	1
	Total	**1**
Low Total		**1**
Moderate		
Essential Services Facilities	Bridge	2
	Drainage Pump Station	1
	Water Well	11
	Total	**14**
Hazardous Materials and Solid Waste Facilities	Solid Waste Facility	1
	Total	**1**
Moderate Total		**15**
No Threat		
Essential Services Facilities	Bridge	14
	Cellular Tower	14
	City Facility	5
	Drainage Pump Station	5
	Emergency Evacuation Center	6
	EMS Stations	6
	FDIC Insured Banks	11
	Fire Station	4
	Hospital or Urgent Care	4
	Law Enforcement	4
	Microwave Service Towers	77
	Power Plants	1
	Public Transit Stations	4
	State Government Buildings	1
	Water Well	54
	Total	**210**
At Risk Population Facilities	Colleges, Universities, and Professional Schools	3
	Community Center	5
	Day Care Center	23
	Mobile Home Parks	8
	Places of Worship	77

Fire Threat/ Critical Facility Category	Critical Facility Type	Facility Count
	School	34
	Senior Living or Other Living	3
	Total	**153**
Hazardous Materials and Solid Waste Facilities	EPA ER FRP Facility	1
	EPA ER TRI Facility	2
	Leaky Underground Storage Tank	12
	Solid Waste Facility	1
	Tank Farm	2
	Waste Transfer Station	1
	Total	**19**
No Threat Total		**382**
Rancho Cordova Total		**398**

Source: CAL FIRE, Sacramento County

Future Development

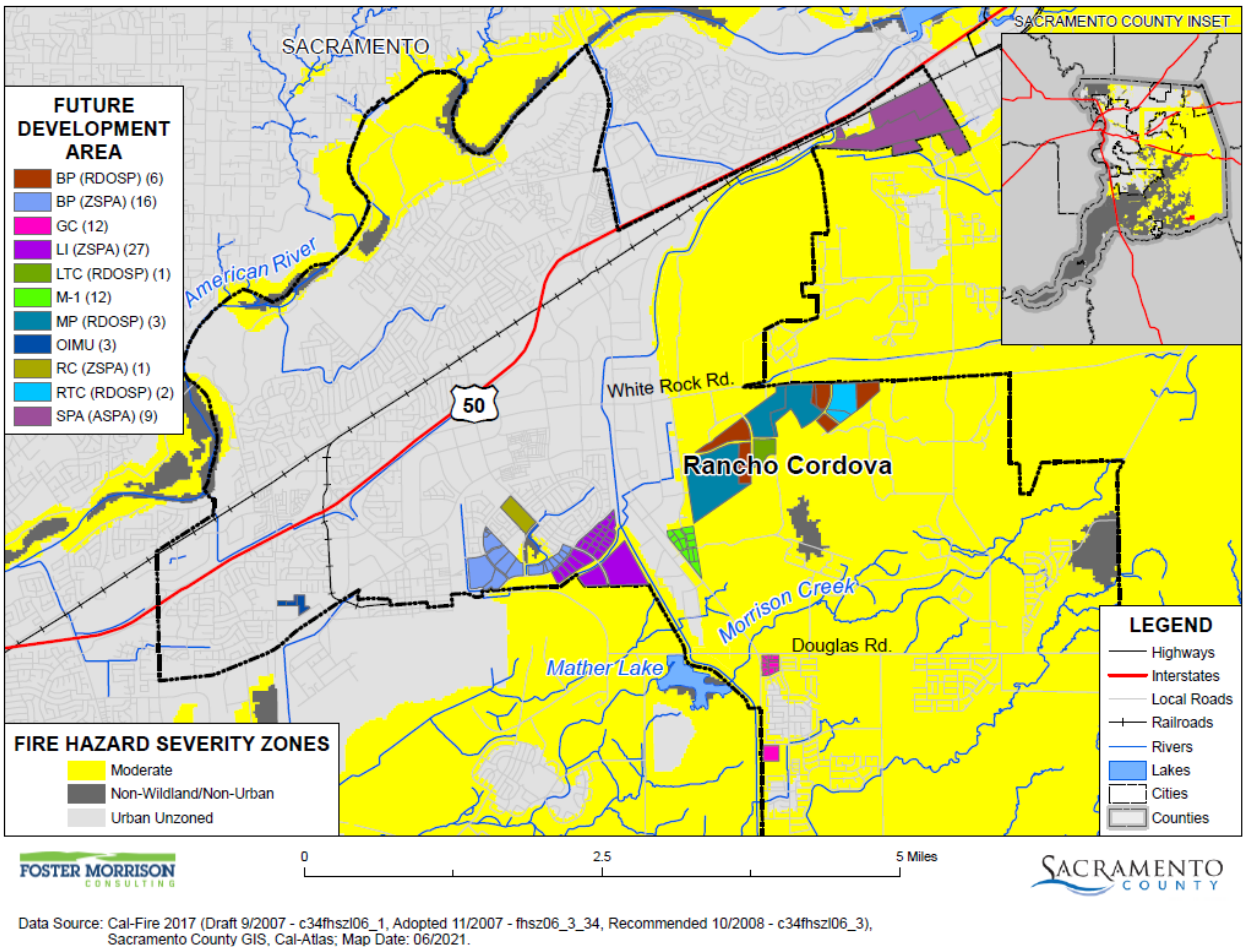
Additional growth and development within moderate or higher fire hazard severity zones in the City would place additional values at risk to wildfire. City building codes are in effect and should continue to be updated as appropriate to reduce this risk. Municipal Code, Chapter 17.12 requires that all dry grass, brush, vines or other dry vegetation shall be cleared for an area of not less than 30 feet from all structures, combustible fences, vehicles and combustible storage.

GIS Analysis

The City provided future development areas were used as the basis for the inventory of future development areas for the City. Using the GIS parcel spatial file for each of these areas, the areas and parcels associated with future development projects for which the analysis was to be performed were identified. Utilizing the future development project spatial layer, the parcel centroid data was intersected to determine the parcel counts within each area. Table E-47 shows the locations of future development areas the City is planning to develop on the FHSZs. Figure E-28 shows the parcels and acreages of each future development area in the City in each FHSZ. Figure E-29 shows the locations of future development areas the City is planning to develop on the Fire Threat Area. Table E-48 shows the parcels and acreages of each future development area in the City in each Fire Threat Area.

More information as to the names and specific and special plan areas these fall into can be found in Table E-14.

Figure E-28 City of Rancho Cordova – Future Development in FHSZs



Data Source: Cal-Fire 2017 (Draft 9/2007 - c34fhszl06_1, Adopted 11/2007 - fhsz06_3_34, Recommended 10/2008 - c34fhszl06_3), Sacramento County GIS, Cal-Atlas; Map Date: 06/2021.

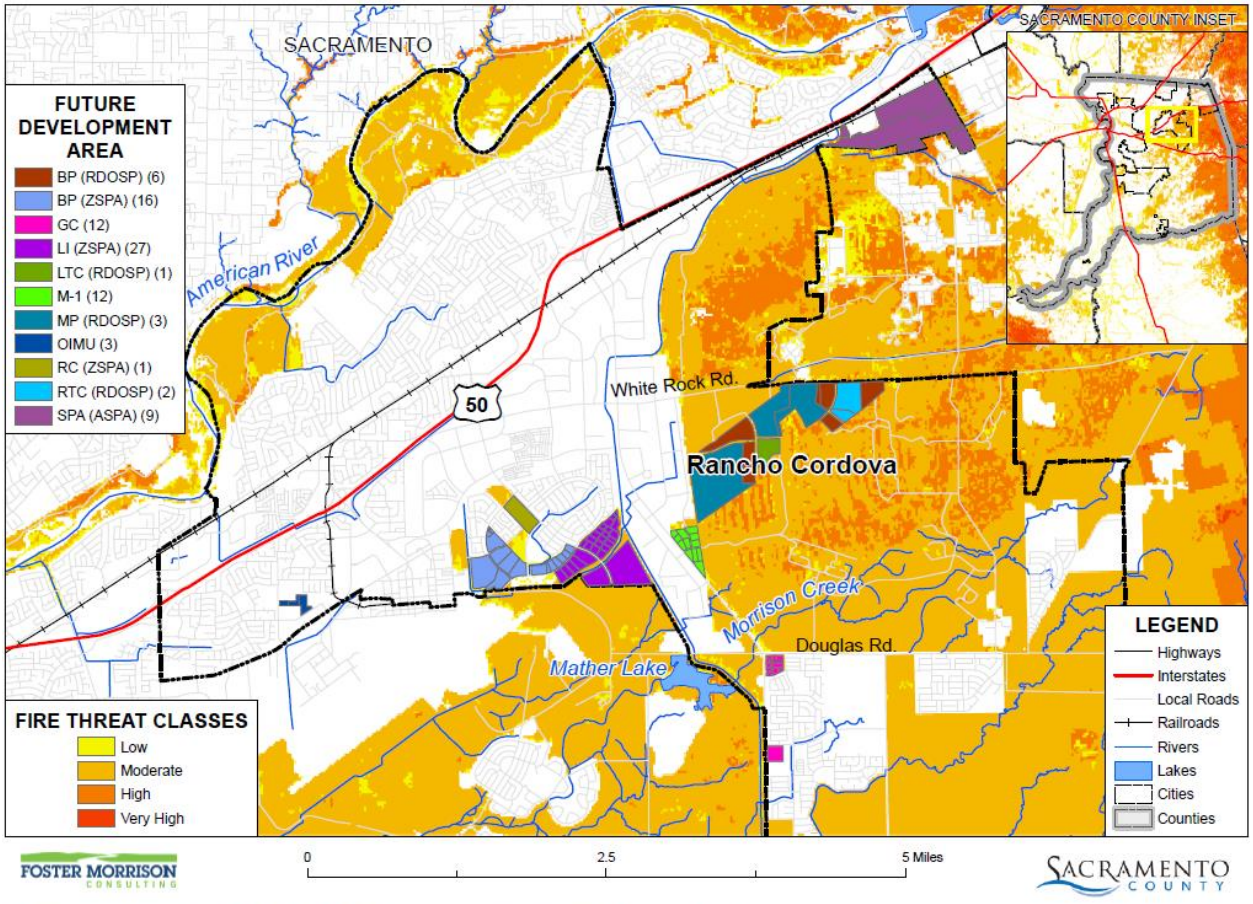
Table E-47 City of Rancho Cordova – Future Development Parcels and Acres in FHSZs

Fire Hazard Severity Zone/Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
Moderate			
BP (ZSPA)	6	1	34
GC	12	0	25
LI (ZSPA)	11	0	101
M-1	12	1	33
MP (RDOSP)	12	0	390
SPA (ASPA)	8	2	212
Moderate Total	**61**	**4**	**795**
Non-Wildland/Non-Urban			
RC (ZSPA)	1	0	25

Fire Hazard Severity Zone/Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
Non-Wildland/Non-Urban Total	**1**	**0**	**25**
Urban Unzoned			
BP (ZSPA)	10	2	72
LI (ZSPA)	16	0	40
OIMU	3	0	11
SPA (ASPA)	1	0	1
Urban Unzoned Total	**30**	**2**	**124**
Grand Total	**92**	**6**	**944**

Source: City of Rancho Cordova, CAL FIRE

Figure E-29 City of Rancho Cordova – Future Development and Fire Threat Areas



Data Source: Cal-Fire 2017 Fire Threat Data (fthrt14_2), Sacramento County GIS, Cal-Atlas; Map Date: 06/2021.

Table E-48 City of Rancho Cordova – Future Development Parcels and Acres in Fire Threat Areas

Fire Threat/ Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
High			
LI (ZSPA)	1	0	2
MP (RDOSP)	7	0	141
SPA (ASPA)	4	1	104
High Total	**12**	**1**	**246**
Moderate			
BP (ZSPA)	5	0	66
GC	11	0	14
LI (ZSPA)	12	0	109
M-1	5	0	15
MP (RDOSP)	5	0	249
RC (ZSPA)	1	0	25
SPA (ASPA)	3	0	108
Moderate Total	**42**	**0**	**586**
Low			
BP (ZSPA)	7	1	28
LI (ZSPA)	13	0	29
M-1	7	1	18
Low Total	**27**	**2**	**75**
No Threat			
BP (ZSPA)	4	2	12
GC	1	0	11
LI (ZSPA)	1	0	1
OIMU	3	0	11
SPA (ASPA)	2	1	1
No Threat Total	**11**	**3**	**37**
Grand Total	**92**	**6**	**944**

Source: City of Rancho Cordova, CAL FIRE

E.6 Capability Assessment

Capabilities are the programs and policies currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. This capabilities assessment is divided into five sections:

regulatory mitigation capabilities, administrative and technical mitigation capabilities, fiscal mitigation capabilities, mitigation education, outreach, and partnerships, and other mitigation efforts.

E.6.1. Regulatory Mitigation Capabilities

Table E-49 lists regulatory mitigation capabilities, including planning and land management tools, typically used by local jurisdictions to implement hazard mitigation activities and indicates those that are in place in the City of Rancho Cordova.

Table E-49 City of Rancho Cordova Regulatory Mitigation Capabilities

Plans	Y/N Year	Does the plan/program address hazards? Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan/General Plan	Y 2006	The General Plan does identify and address hazards in the Safety element with Goals and Policies. The General Plan does not identify projects to include in the mitigation strategy. The General Plan sets Goals and Policies in a broad sense. A more appropriate place for implementation of mitigation strategy/action items is the Zoning Ordinance
Capital Improvements Plan	Y 2016	The CIP does identify hazards and projects to include in the mitigation actions (stormwater, dam, back-up generators) to include in the mitigation strategy. The Plan can be used to implement mitigation actions
Economic Development Plan	N	Currently the City does not have a Plan adopted. The City is currently working on a Plan.
Local Emergency Operations Plan	Y 2013	
Continuity of Operations Plan		
Transportation Plan	Y	
Stormwater Management Plan/Program	Y	
Engineering Studies for Streams	Y	
Community Wildfire Protection Plan	N	
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)		
Building Code, Permitting, and Inspections	**Y/N**	**Are codes adequately enforced?**
Building Code	Y	2019 California Building Code as amended by municipal code
Building Code Effectiveness Grading Schedule (BCEGS) Score	N	Score:
Fire department ISO rating:	Y	Rating: 3/8 (urban/rural)
Site plan review requirements	Y	Codes are enforced.

Land Use Planning and Ordinances	Y/N	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance	Y 2013	Ordinance is an effective measure and is enforced.
Subdivision ordinance	Y 2013	Ordinance is an effective measure and is enforced.
Floodplain ordinance	Y 2013	Ordinance is an effective measure and is enforced.
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	Y	Ordinance is an effective measure and is enforced.
Flood insurance rate maps	Y 2012	Ordinance is an effective measure and is enforced.
Elevation Certificates	Y	Ordinance is an effective measure and is enforced.
Acquisition of land for open space and public recreation uses	Y	Ordinance is an effective measure and is enforced.
Erosion or sediment control program	Y	Ordinance is an effective measure and is enforced.
Other		
How can these capabilities be expanded and improved to reduce risk?		
The City will continue to revise ordinances and enhance enforcement policies as needed to continue to reduce risks.		

Source: City of Rancho Cordova

City of Rancho Cordova General Plan (2006)

The City of Rancho Cordova General Plan serves as a blueprint for future growth and development and provides comprehensive planning for the future. It encompasses what the City currently is and what it intends to be. It provides the general framework to achieve the desired future condition.

The General Plan includes a Safety Element that focuses on safety issues to be considered in planning for the present and future development for the City. Mitigation related goals of the City of Rancho Cordova General Plan Safety Element are:

- Goal S.1: Establish Rancho Cordova as a safe community and environment for all persons.
- Goal S.2: Reduce the possibility of a flooding or drainage issue causing damage to urban land uses within the City.
- Goal S.3: Reduce the risk of adverse effects to residents or businesses as a result of geologic or seismic instability.
- Goal S.4: Safe railroad crossings for pedestrians, bicyclists, or motorists.
- Goal S.5: Reduce the possibility of serious harm to residents, employees, or the environment as the result of an accidental release of toxic or hazardous substances.
- Goal S.6: Protect the community from potential harm associated with Mather Airport operations.
- Goal S.7: Design neighborhoods and buildings in a manner that prevents crime and provides security and safety for people and property.
- Goal S.8: Maintain effective and community-oriented law enforcement.
- Goal S.9: Reduce the probability of fire damage to all of the City's structures.

The City of Rancho Cordova Disaster Debris Management Plan (July 2016)

The Disaster Debris Management Plan is designed to guide the City of Rancho Cordova's General Services Department during the debris removal planning and post-event operations. The Plan identifies tools to assist the City in addressing debris removal following a debris generating event. The City intends to utilize this Plan to reduce the cost associated with a debris generating event. The Plan incorporates a methodology that has been tested in many regions throughout the U.S. and meets the needs of the City and its residents.

This Plan is intended to guide the City in response to a natural or manmade debris generating event. This Plan is designed to identify agencies and activities that are involved in debris operations to ensure a coordinated response that achieves removal, storage, reduction and final disposition of debris deposited along or immediately adjacent to public rights-of-way.

The City is a contract city, and some of the Public Works' staff works under contract. The City participates as an active member of the Solid Waste Working Group and the Operational Area Council, and will work closely in these settings to execute the procurement of a private hauling company for debris collection and removal services and debris monitoring services, and provide disaster services in event of a disaster.

The Plan's purpose is the following:

- Establish and provide a centralized repository of information critical to developing and operating a disaster debris management program (including location of community drop-off stations, Temporary Debris Storage and Reduction Site (TDSRS), site criteria for locating new TDSRS, boundary map, flood plain maps, etc.);
- Identify the rules, regulations and guidelines enacted by Cal OES, CDAA, FEMA and other agencies governing the disaster debris removal process;
- Establish and provide reference and contact information for key personnel;
- Identify the roles and responsibilities of all involved parties; and
- Establish language and a protocol for pertinent public information such as press releases and other debris management information.

E.6.2. Administrative/Technical Mitigation Capabilities

Table E-50 identifies the City department(s) responsible for activities related to mitigation and loss prevention in Rancho Cordova.

Table E-50 City of Rancho Cordova's Administrative and Technical Mitigation Capabilities

Administration	Y/N	Describe capability Is coordination effective?
Planning Commission	N	
Mitigation Planning Committee	Y	Was formed for this LHMP Update. Coordination is expected to be effective in the future when yearly plan review is performed.
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Y	The City has an ongoing maintenance program to storm drainpipes, structures, channels and basins.

Mutual aid agreements	Y	The City contracts to remove debris around the City in the event of flooding.
Other		
Staff	**Y/N FT/PT**	**Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?**
Chief Building Official	Y	Staffing is adequate and staff are trained. Coordination occurs between agencies.
Floodplain Administrator	Y	Staffing is adequate and staff are trained. Coordination occurs between agencies.
Emergency Manager	Y	Staffing is adequate and staff are trained. Coordination occurs between agencies.
Community Planner	Y	Staffing is adequate and staff are trained. Coordination occurs between agencies.
Civil Engineer	Y	Staffing is adequate and staff are trained. Coordination occurs between agencies.
GIS Coordinator	Y	Staffing is adequate and staff are trained. Coordination occurs between agencies.
Other		
Technical		
Warning systems/services (Reverse 911, outdoor warning signals)	Y	
Hazard data and information	Y	
Grant writing	Y	
Hazus analysis		
Other		
How can these capabilities be expanded and improved to reduce risk?		
Floodplain Manager to obtain Floodplain Management certification, continue close coordination with other local and regional agencies.		

Source: City of Rancho Cordova

E.6.3. Fiscal Mitigation Capabilities

Table E-51 identifies financial tools or resources that the City could potentially use to help fund mitigation activities.

Table E-51 City of Rancho Cordova's Fiscal Mitigation Capabilities

Funding Resource	Access/ Eligibility (Y/N)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Y	Yes. It funds drainage improvements to reduce flooding
Authority to levy taxes for specific purposes	Y	

Funding Resource	Access/ Eligibility (Y/N)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Fees for water, sewer, gas, or electric services	N	
Impact fees for new development	Y	Yes, to fund storm water infrastructure projects
Storm water utility fee	Y	Yes, to fund drainage improvements to reduce flooding
Incur debt through general obligation bonds and/or special tax bonds	Y	Requires special election.
Incur debt through private activities	Y	
Community Development Block Grant	Y	
Other federal funding programs	Y	
State funding programs	Y	
Other		
How can these capabilities be expanded and improved to reduce risk?		
The City will explore opportunities to apply for grant funding to help fund flood control projects and reduce flooding risk.		

Source: City of Rancho Cordova

E.6.4. Mitigation Education, Outreach, and Partnerships

Table E-52 identifies education and outreach programs and methods already in place that could be/or are used to implement mitigation activities and communicate hazard-related information.

Table E-52 City of Rancho Cordova's Mitigation Education, Outreach, and Partnerships

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Y	The City works with Sacramento SPLASH to help children understand and value their natural world
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Y	The City participates in Creek Week which is a week-long celebration focusing on the ecology of local rivers and lakes
Natural disaster or safety related school programs	N	
StormReady certification	N	
Firewise Communities certification	N	
Public-private partnership initiatives addressing disaster-related issues	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
The City will explore opportunities for public outreach and collaboration with other regional agencies on outreach campaigns.		

Source: City of Rancho Cordova

E.6.5. Other Mitigation Efforts

The City has many other completed or ongoing mitigation projects/efforts that include the following:

- The City has entered into an agreement with the County of Sacramento regarding regional disaster debris and hazardous waste removal after a disaster is declared.
- The City completed working on a Stormwater Capital Improvement Program Master Plan that identified a number of flood control projects that need to be implemented Citywide to reduce street flooding and reduce flooding risk.

E.7 Mitigation Strategy

E.7.1. Mitigation Goals and Objectives

The City of Rancho Cordova adopts the hazard mitigation goals and objectives developed by the HMPC and described in Chapter 5 Mitigation Strategy.

E.7.2. NFIP Mitigation Strategy

The City of Rancho Cordova joined the National Flood Insurance Program (NFIP) on September 15, 2004. As a participant of the NFIP, the City of Rancho Cordova has administered floodplain management regulations that meet the minimum requirements of the NFIP. The management program objective is to protect people and property within the City. The City of Rancho Cordova will continue to comply with the requirements of the NFIP in the future.

In addition, the City of Rancho Cordova actively participates with Sacramento County to address local NFIP issues through a regional approach. Many of the program activities are the same for the City of Rancho Cordova as for Sacramento County since participation at the County level includes all local jurisdictions.

The City of Rancho Cordova Public Works Department provides public outreach activities which include map information services, public awareness, public hazard disclosure, and flood protection information. This information is readily available to the public and consists of current and accurate flood mapping. In addition, the Public Works Department provides information about our stormwater management program and up-to-date information related to the maintenance of our drainage system.

The NFIP's 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 which are to reduce flood losses, facilitate accurate insurance rating, and promote the awareness of flood insurance. The City of Rancho Cordova is not a current participant in the CRS program.

More information about the floodplain administration in the City of Rancho Cordova can be found in Table E-53.

Table E-53 City of Rancho Cordova Compliance with NFIP

NFIP Topic	Comments
Insurance Summary	
How many NFIP policies are in the community? What is the total premium and coverage?	229 policies $104,534 in premiums $73,540,900 in coverage
How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	0 claims $0 in claims paid 0 substantial damage claims
How many structures are exposed to flood risk within the community?	19 in 1% annual chance 1,920 in 0.2% annual chance
Repetitive Loss (RL) and Severe Repetitive Loss Properties (SRL)	0 RL properties 0 SRL properties
Describe any areas of flood risk with limited NFIP policy coverage	None
Staff Resources	
Is the Community Floodplain Administrator or NFIP Coordinator certified?	No
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Regulate development in the floodplain to reduce impacts to life and property
What are the barriers to running an effective NFIP program in the community, if any?	None
Compliance History	
Is the community in good standing with the NFIP?	Y
Are there any outstanding compliance issues (i.e., current violations)?	N
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	CAV 9/29/2010
Is a CAV or CAC scheduled or needed?	N
Regulation	
When did the community enter the NFIP?	9/15/2004
Are the FIRMs digital or paper?	Digital
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Meet
Provide an explanation of the permitting process.	The Planning Department issues permits to build based on zoning codes and floodplain ordinances.

NFIP Topic	Comments
Community Rating System	
Does the community participate in CRS?	N
What is the community's CRS Class Ranking?	N/A
What categories and activities provide CRS points and how can the class be improved?	N/A
Does the plan include CRS planning requirements?	N/A

Source: City of Rancho Cordova, FEMA

E.7.3. Mitigation Actions

The planning team for the City of Rancho Cordova identified and prioritized the following mitigation actions based on the risk assessment. Background information and information on how each action will be implemented and administered, such as ideas for implementation, responsible office, potential funding, estimated cost, and timeline are also included. The following hazards were considered a priority for purposes of mitigation action planning:

- Climate Change
- Dam Failure
- Drought & Water Shortage
- Earthquake
- Floods: 1%/0.2% annual chance
- Floods: Localized Stormwater
- Pandemic
- Severe Weather: Extreme Heat
- Severe Weather: Heavy Rains and Storms
- Severe Weather: High Winds and Tornadoes
- Wildfire

After a review of possible mitigation actions, the following hazards were dropped to low significance for the pursuit of mitigation actions:

- Earthquake
- Pandemic

It should be noted that many of the projects submitted by each jurisdiction in Table 5-4 in the Base Plan benefit all jurisdictions whether or not they are the lead agency. Further, many of these mitigation efforts are collaborative efforts among multiple local, state, and federal agencies. In addition, the countywide public outreach action, as well as many of the emergency services actions, apply to all hazards regardless of hazard priority. Collectively, this multi-jurisdictional mitigation strategy includes only those actions and projects which reflect the actual priorities and capacity of each jurisdiction to implement over the next 5-years covered by this plan. It should further be noted, that although a jurisdiction may not have specific projects identified for each priority hazard for the five year coverage of this planning process, each jurisdiction has focused on identifying those projects which are realistic and reasonable for them to implement and would like to preserve their hazard priorities should future projects be identified where the implementing jurisdiction has the future capacity to implement.

Multi-Hazard Actions

Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan

Hazards Addressed: Multi-hazard (Climate Change, Dam Failure, Drought & Water Shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Pandemic, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Wildfire)

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Local jurisdictional reimbursement for mitigation projects and cost recovery after a disaster is guided by Government Code Section 8685.9 (AB 2140). Specifically, this section requires that each jurisdiction adopt a local hazard mitigation plan (LHMP) in accordance with the federal Disaster Mitigation Act of 2000 as part of the Safety Element of its General Plan. Adoption of the LHMP into the Safety Element of the General Plan may be by reference or incorporation.

Project Description: On October 20, 2017, the City of Rancho Cordova adopted the 2016 Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP). The LHMP assess natural hazards of concern to Sacramento County and Cities within; evaluates risk to life safety, public health, property, and the environment; and evaluates mitigation measures to reduce these risks and vulnerabilities, minimize losses, and increase community resilience.

The LHMP includes an Action Plan for each City within Sacramento County that identifies actions to be completed under the current Hazard Mitigation Plan. Adoption of the Multi-Jurisdictional Local Hazard Mitigation Plan into the City of Rancho Cordova General Plan Safety Element is identified as one of the Mitigation Action items to be completed by the end of 2018. Approval of the General Plan Amendment will complete the Hazard Mitigation Plan action item.

Other Alternatives: No action

Existing Planning Mechanisms through which Action will be Implemented: Safety Element of General Plan

Responsible Office: City of Rancho Cordova Planning Department

Priority (H, M, L): High

Cost Estimate: Jurisdictional board/staff time

Potential Funding: Local budgets

Benefits (avoided Losses): Incorporation of an adopted LHMP into the Safety Element of the General Plan will help jurisdictions maximize the cost recovery potential following a disaster.

Schedule: As soon as possible

Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness

Hazards Addressed: Multi-hazard (Climate Change, Dam Failure, Drought & Water Shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Pandemic, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Wildfire)

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: The City and County play a key role in public outreach/education efforts to communicate the potential risk and vulnerability of their community to the effects of natural hazards. A comprehensive multi-hazard public education program will better inform the community of natural hazards of concern and actions the public can take to be better prepared for the next natural disaster event.

Project Description: A comprehensive multi-hazard outreach program will ascertain both broad and targeted educational needs throughout the community. The City will work with the County and other agencies as appropriate to develop timely and consistent annual outreach messages in order to communicate the risk and vulnerability of natural hazards of concern to the community. This includes measures the public can take to be better prepared and to reduce the damages and other impacts from a hazard event. The public outreach effort will leverage and build upon existing mechanisms, will include elements to meet the objectives of Goal 3 of this LHMP Update, and will consider:

- Using a variety of information outlets, including websites, local radio stations, news media, schools, and local, public sponsored events;
- Creating and distributing (where applicable) brochures, leaflets, water bill inserts, websites, and public service announcements;
- Displaying public outreach information in County office buildings, libraries, and other public places and events;
- Developing public-private partnerships and incentives to support public education activities.

Location of Project: Citywide

Other Alternatives: Continue public information activities currently in place.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Existing County outreach programs will be reviewed for effectiveness and leveraged and expanded upon to reach the broader region.

Responsible Office: City of Rancho Cordova in partnership with the County

Priority (H, M, L): High

Cost Estimate: Annual costs to be determined, and will depend on the scope and frequency of activities and events as well as volunteer participation

Benefits (Losses Avoided): Increase residents' knowledge of potential hazards and activities required to mitigate hazards and be better prepared. Protect lives and reduce damages, relatively low cost to implement.

Potential Funding: Local budgets, grant funds

Timeline: Ongoing/Annual public awareness campaign

Action 3. Sunrise Blvd Widening Kiefer to Jackson

Hazards Addressed: Flood, Localized Flooding, Climate Change, Heavy Rains and Storms

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: A section of Sunrise Boulevard south of Kiefer and north of Jackson is subject to localized flooding (expected to be exacerbated by climate change). This project will raise the road in this area to be above the local floodplain.

Project Description: The project proposes to widen Sunrise Boulevard to four-lanes from Kiefer Boulevard to State Route 16 (Jackson Highway) and construct partial intersection improvements at Sunrise Boulevard and State Route 16. The project includes placement of a bridge on Sunrise Boulevard over Laguna Creek. Project assumes costs for the intersection at a 25% City and 75% County split, and 85% City and 15% County split for the widening.

Other Alternatives: The project is located in a rural area. Vehicles must travel several miles to avoid this location of localized flooding

Existing Planning Mechanism(s) through which Action Will Be Implemented: The project is currently listed in the City Capital Improvement Plan. City staffs are currently preparing a funding plan and exploring funding options to construct this project.

Responsible Agency/ Department/Partners: Public Works

Cost Estimate: 36 million

Benefits (Losses Avoided): Raising the road above the local flood plain will allow emergency access through the area.

Potential Funding: Federal and/or state grants. Local transportation funds

Timeline: Within 5 years (Anticipate design start in 2022.)

Project Priority (H, M, L): Medium

Action 4. City of Rancho Cordova Disaster Debris Management Plan

Hazards Addressed: Multi-hazard – Debris management for floods, fire, dam failure, earthquake, etc.

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: The plan addresses responsibilities and roles for removal, disposal and recycling of debris generated from a disaster event.

Project Description: The plan was submitted to the Office of Emergency Services for review and approval.

Other Alternatives: None

Existing Planning Mechanism(s) through which Action Will Be Implemented: None

Responsible Agency/ Department/Partners: Public Works

Cost Estimate: Varies depending on magnitude of disaster

Benefits (Losses Avoided): N/A

Potential Funding: FEMA, General Fund

Timeline: Plan completed – will work to carry out plan objectives over the next 5 years

Project Priority (H, M, L): Medium

Action 5. Transportation Interconnectivity

Hazards Addressed: Multi-hazard (dam failure, flood, wildfire, earthquake, etc.); evacuation routes

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Long range transportation

Project Description: Ensure interconnectivity and road standards are maintained for disaster preparedness/evacuation routes.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Development Process

Responsible Office/Partners: Planning/Public Works

Cost Estimate: Staff time Undetermined as a case by case basis

Benefits (Losses Avoided): Increased ability to evacuate during hazard events.

Potential Funding: Local Funds

Timeline: On-going

Project Priority: High

Action 6. Intergovernmental Agreement between the County of Sacramento and the City of Rancho Cordova

Hazards Addressed: Multi-hazard – debris management for floods, fire, earthquake, etc.

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Debris management is a significant issue in the aftermath of a disaster. The MOU with Sacramento County allows the City to expedite the execution of contracts with waste haulers for debris removal services by allowing the City to use the County's procurement program

Project Description: The MOU allows the City to use the County's procurement program to hire contractors for debris removal, disposal and recycling.

Other Alternatives: The City could procure the services independently if necessary.

Existing Planning Mechanism(s) through which Action Will Be Implemented: None

Responsible Office/Partners: Public Works

Cost Estimate: Varies depending on magnitude of disaster

Benefits (Losses Avoided): N/A

Potential Funding: FEMA, General Fund

Timeline: MOU completed

Project Priority: Medium

Action 7. Land Use (Long Range)

Hazards Addressed: Multi-hazard (environmental sensitive areas)

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Long Range Sustainability

Project Description: Land Use (Long range): As the City grows towards the south and east, cluster development and open space will be encouraged (environmentally sensitive areas to include vernal pools, creeks, and streams). Review projects for environmental sensitive areas when submitted to the City

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Development Process

Responsible Office/Partners: Planning

Cost Estimate: Staff time Undetermined as a case by case basis

Benefits (Losses Avoided): Better land use planning should help keep future development out of known hazard zones.

Potential Funding: Local Funding

Timeline: On-Going

Project Priority: High

Action 8. Post-Disaster training for staff

Hazards Addressed: Multi–hazard

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Training

Project Description: OES training and post disaster planning classes/webinars for planning staff

Other Alternatives: No action.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Classes and webinars

Responsible Office/Partners: Planning

Cost Estimate: Staff time; Cost of classes

Benefits (Losses Avoided): Increased ability of the City to respond to hazard events.

Potential Funding: Local funding

Timeline: On-going staff training

Project Priority: High

Action 9. Update/Maintain Emergency Operation Plans (EOPs)

Hazards Addressed: Multi–hazard

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Current Emergency Operations Plan was last updated in 2013 and is required to be updated every 5 years.

Project Description: Assemble key City staff to form a team to update and maintain EOPs

Other Alternatives: Maintain existing and outdated EOPs

Existing Planning Mechanism(s) through which Action Will Be Implemented: City staff will review existing EOPs and develop recommended changes/updates to the EOPs.

Responsible Office/Partners: PW Department/Facilities Division/Finance Department/Human Resources/Economic Development/Planning

Cost Estimate: $25,000 - $50,000

Benefits (Losses Avoided): N/A

Potential Funding: City funds

Timeline: Next 5 years

Project Priority: High

Action 10. Increase Everbridge Enrollment

Hazards Addressed: Multi–hazard

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: With more people using cell phones as their primary method of communication, there is an increased need to enroll citizens/groups in Everbridge. Everybridge is essentially a reverse 911 system where agencies and local jurisdiction can provide message alerts to individual citizens or groups. These messages can help the City provide citizens important information regarding natural disasters.

Project Description: Outreach to citizens/groups via news outlets/City website/kiosk to encourage enrollment. City staff will conduct periodic tests of the Everbridge system to measure its effectiveness in reaching out to enrollees.

Other Alternatives: Do Nothing

Existing Planning Mechanism(s) through which Action Will Be Implemented: Work with Public Information Officer to Outreach to groups to encourage enrollment.

Responsible Office/Partners: PIO/EOC Coordinator

Cost Estimate: $5,000

Benefits (Losses Avoided): N/A

Potential Funding: City Funding

Timeline: 2016-2017

Project Priority: Medium

Action 11. Developing and maintaining a database to track community vulnerability

Hazards Addressed: All Hazards, Gas infrastructure and facility disaster preparedness

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: The City of Rancho Cordova has at least one major gas transmission line (PG&E) and a large gasoline transfer/storage facility. Public safety and property would certainly be negatively impacted if an explosion (from wildfire, earthquake, or other hazard) were to occur on the large transmission line or gasoline storage facility. This mitigation effort would seek to collect and maintain GIS information that could be utilized to better prepare for and respond to such a disaster.

Project Description: The City of Rancho Cordova has built an enterprise GIS that houses approximately 75 GIS layers, including parcels, streets, addresses, public works infrastructure, zoning, etc. As part of this project, work would be performed to research, gather, and store GIS data relative to major gas transmission lines and facilities. This information would then be used to perform research and prepare pre-operation maps and GIS viewers that would be used for drills and an actual disaster scenario.

Other Alternatives: Rely on general hardcopy maps and Google Maps to assist during emergency operation exercises and actual events.

Existing Planning Mechanism(s) through which Action Will Be Implemented: The City of Rancho Cordova GIS staff would take on the bulk of the project work and implementation. Some support would be required from the Police and Fire Departments. Existing GIS software would be used for the collection, storage, and map creation steps. No new software is required for this project.

Responsible Office/Partners: IT Department with GIS staff, Public Works Department, Police Department, Sacramento Metro Fire Department

Cost Estimate: $5,000

Benefits (Losses Avoided): Reduces the potential impacts from a gas explosion, which would help to reduce negative impacts to property and people living and working near the gas transmission line and facility.

Potential Funding: City funding

Timeline: 1 month (staff time)

Project Priority: Medium

Action 12. Landscape and Irrigation Requirements/Retro

Hazards Addressed: Drought & Water Supply

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Landscaped areas around City owned facilities do not meet new drought standards. Developing a new drought policy will help the City conserve water and demonstrate to the community the City's commitment to promote water conservation.

Project Description: Develop a 5 year plan to upgrade City owned and operated facilities to include drought tolerant plants in landscaped areas and more efficient irrigation systems

Other Alternatives: Do nothing/remove City landscaping

Existing Planning Mechanism(s) through which Action Will Be Implemented: Include budget for projects that reduce the use of water for landscaped areas around City owned buildings.

Responsible Office/Partners: PW Department/Facilities Division/Finance Department

Cost Estimate: $25,000-$50,000

Benefits (Losses Avoided): Lower irrigation water costs

Potential Funding: City Funding

Timeline: Next Five years

Project Priority: Medium

Action 13. Landscape Ordinance and Model Water Efficient Landscape Ordinance Implementation

Hazards Addressed: Drought & Water Supply

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Proper landscape selection

Project Description: Update and maintain to incorporate proper selection, planting, and maintenance practices into landscape ordinance.

Other Alternatives: No action.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Development Process

Responsible Office/Partners: Planning

Cost Estimate: Staff time; Undetermined as a case by case basis

Benefits (Losses Avoided): Reduced drought risk in the City.

Potential Funding: Local Funds

Timeline: On-going

Project Priority: High

Action 14. Restrict Impervious Surfaces in Front Yards

Hazards Addressed: Drought & Water Shortage, Flood, Heavy Rains and Storms, Localized Flood

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Restrict impervious surface, reduce surface run-off

Project Description: Continue to limit impervious surfaces within front yard of residential lots. Zoning Code restricts impervious surface within front yard of residential lots.

Other Alternatives: No action.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Building permit review and Code enforcement issues

Responsible Office/Partners: Planning

Cost Estimate: Staff time;

Benefits (Losses Avoided): Reduced risk to localized flooding.

Potential Funding: Local Funds

Timeline: On-going

Project Priority: Medium

Action 15. Porous pavement and vegetative buffers

Hazards Addressed: Drought & Water Shortage, Flood

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Ground water retainment

Project Description: Encourage the use of porous pavement, vegetative buffers and islands in large parking areas.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Development Process

Responsible Office/Partners: Planning

Cost Estimate: Staff time; Undetermined as a case by case basis

Benefits (Losses Avoided): Reduced risk to flooding

Potential Funding: Local Funds

Timeline: On-going

Project Priority: Medium

Action 16. Storm Water Pump Station Generator Purchase and Infrastructure Upgrades

Hazards Addressed: Flood, Severe Weather: Heavy Rains and Storms, Extreme Heat, High Winds and Tornadoes

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: The City owns and operates six pump stations which serve to convey storm water during rain events. The City owns and maintains one stationary generator and one portable generator that are each dedicated to powering the pump stations during power outages. The stationary generator is located at the Bear Hollow Pump Station, and the portable generator is housed at the Mills Tower Pump Station. When compared with the other pump stations that lack a generator, the Mills Tower Pump Station has the highest risk of causing significant localized flooding in the event of a power outage. This pump station sits next to residential homes in an older neighborhood that contains undersized drainage pipes. Thus, the City has chosen to house the portable generator at this station. In the event that a power outage were to occur associated with severe weather events at one of the other pump stations that lack a generator, the portable generator at Mills Tower Pump Station would need to be transported to the station in need. Transporting the portable generator is time consuming, and the City currently relies on contractor vehicles for the transport.

Project Description: City staff will purchase four generators, each to be housed at a pump station that does not currently have one onsite. Cost estimate includes the purchase and installation of transfer switches and plugs for each of the four pump stations, which would allow for a portable generator hook-up to power the pumps.

Other Alternatives: Continue to rely on the portable generator stationed at Mills Tower Pump Station to power the other pump stations in the event of a power failure.

Existing Planning Mechanism(s) through which Action Will Be Implemented: None

Responsible Office/Partners: Public Works

Cost Estimate: $500,000

Benefits (Losses Avoided): Flood hazard mitigation and reliability of critical facilities during power outages

Potential Funding: Local Funds (Storm Water Utility Fee), Grant Funding

Timeline: To be implemented over 5 years (Analysis completed. Generator specifications developed. Awaiting to purchase generator).

Project Priority: High

Action 17. SB-5 Urban Level of Flood Protection

Hazards Addressed: 200-year Flood, Severe Weather: Heavy Rains and Storms

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: As part of Senate Bill 5, the City is required to provide a 200-yr urban level of flood protection criteria when regulating development within the 200-yr floodplain and includes amending the General Plan and Zoning Codes.

Project Description: The US Army Corps of Engineers is in the process of making improvements to the Folsom Dam spillway that would reduce the allowable release rate from the dam from into the American River from 239,000 cfs to 117,000 cfs for the 200-yr storm event. In order to accurately reflect the reduced floodplain that would result from the reduction in flow, the City has remapped the 200-yr floodplain. To satisfy the requirements of SB5, the City is in the process of updated its General Plan and incorporating the revised floodplain map into its zoning ordinance.

Other Alternatives: Do Nothing

Existing Planning Mechanism(s) through which Action Will Be Implemented: Part of Capital Improvement Program

Responsible Office/Partners: Public Works

Cost Estimate: $100,000

Benefits (Losses Avoided): Not providing a higher level of flood protection would result in an increase in property damage due to flooding.

Potential Funding: Local Funds (Stormwater Utility Fee)

Timeline: To Be Completed in 2017 (Completed in 2017)

Project Priority: High

Action 18. Channel Vegetation Management and Erosion Control Projects

Hazards Addressed: Flood, Localized Flooding, Severe Weather: Heavy Rains and Storms

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: The City has a Streambed Alteration Agreement with the California Department Fish and Wildlife for routine maintenance of vegetation in and near waterways, including creeks, channels, and basins. Various locations have been identified for erosion control improvements and excavation work to improve flow capacity and minimize the potential for blockages and localized flooding.

Project Description: Undertake projects that improve the structural integrity of channel slopes in various locations. Implement solutions that control and reduce the chances for erosion, which is usually caused by runoff from adjacent properties and burrowing animals.

Perform excavation projects that remove vegetation (e.g. cattails, bulrush, plants/trees) that impede water flow and reduce flood capacity in channels.

Other Alternatives: Continue to perform routine weed abatement activities, and complete erosion control and excavation projects as funding allows

Existing Planning Mechanism(s) through which Action Will Be Implemented: Erosion control and excavation projects will be completed by the City's contractor as funding allows.

Responsible Office/Partners: Public Works

Cost Estimate: $50,000

Benefits (Losses Avoided): Ensures flood capacity and flow capacity of streams and creeks is not diminished.

Potential Funding: Local Funding - Stormwater Utility Fee, Grant Funding

Timeline: To be implemented over 5 years

Project Priority: High

Action 19. Adoption of Hydromodification and Low Impact Development (LID) Standards

Hazards Addressed: Climate Change, Drought & Water Shortage, Localized Flooding

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: As part of the City's regionwide NPDES permit, new development and redevelopment projects will be required under certain conditions to incorporate stormwater hydromodification Management and Low Impact Development measures into their projects. Development projects that incorporate hydromodification management and LID will more closely mimic the natural hydrology of their

site which will result in less potential for flooding and erosion of stream banks due to a reduction of stormwater runoff volume into rivers, streams, pipes and culverts. Use of LIDs will also help increase water supply by increasing groundwater recharge

Project Description: Over the next several years, the City's new regionwide NPDES stormwater permit will require permittees to adopt development standards that include the use of hydromodification management and LID measures for new and redevelopment projects.

Other Alternatives: Do Nothing

Existing Planning Mechanism(s) through which Action Will Be Implemented: Identified in the City's 5-yr Capital Improvement Plan

Responsible Agency/ Department/Partners: Public Works

Cost Estimate: $10,000

Benefits (Losses Avoided): Requiring new development and redevelopment projects to implement hydromodification management and LID requirements will reduce flooding and increase groundwater recharge

Potential Funding: Local funds (Stormwater Utility Fee)

Timeline: To be implemented over 5 years. (Completed 2017)

Project Priority (H, M, L): Medium

Action 20. Implement Projects in the Stormwater Capital Improvement Program Master Plan

Hazards Addressed: Climate Change, Localized Flooding, Severe Weather: Heavy Rains and Storms

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: After assuming ownership of the City's drainage system, the City identified a need for a comprehensive master planning study of its storm drainage system and a consultant was retained to prepare this Stormwater Capital Improvement Program Master Plan. For this Master Plan, the team evaluated the existing trunk drainage facilities serving the City and developed recommendations for eliminating existing deficiencies in capacity and conditions and for enhancing stormwater quality.

Project Description: The Master Plan identified a number of flood control projects that are required to help resolve existing flooding issues and prevent future impacts from severe storm events.

Other Alternatives: Do Nothing

Existing Planning Mechanism(s) through which Action Will Be Implemented: Identified in the City's 5-yr Capital Improvement Plan

Responsible Agency/ Department/Partners: Public Works

Cost Estimate: $60,000

Benefits (Losses Avoided): Prevent damages to life and property from large flooding events and alleviate local flooding.

Potential Funding: Local funds (Stormwater Utility Fee), Grant Funding, Funding partners

Timeline: To be implemented over 20 years. (Master Plan was Completed March 2021)

Project Priority (H, M, L): Medium

Action 21. Sunrise Blvd. & Monier Circle Drainage Improvements

Hazards Addressed: Climate Change, Localized Flooding, Severe Weather: Heavy Rains and Storms

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Sunrise Blvd. floods between Monier Circle and Fitzgerald during severe rain events due to limited capacity of culverts under Sunrise Blvd and the Folsom South Canal siphons.

Project Description: Project includes utilizing a vacant lot to build a flood control detention basin and divert flows from the creek to the basin during large storm events. The project may also include replacing two undersized culverts across Sunrise Blvd between Recycle Road and Monier Circle.

Other Alternatives: Do Nothing

Existing Planning Mechanism(s) through which Action Will Be Implemented: Identified in the City's 5-yr Capital Improvement Plan

Responsible Office/Partners: Public Works

Cost Estimate: $5,000,000 - $6,000,000

Benefits (Losses Avoided): Project will allow unimpeded public access including access for emergency vehicles along Sunrise Blvd. during significant flooding events.

Potential Funding: Local Funds (Stormwater Utility Fee), Grant Funding

Timeline: To Be Implemented over the next 3 years

Project Priority: High

Action 22. Roundabouts

Hazards Addressed: High Winds and Tornadoes, Storms, Wildfires

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Traffic control can be an issue in the City, especially when power outages occur and traffic signals go out.

Project Description: Encourage round-abouts in place of traffic signals where appropriate.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Development Process

Responsible Office/Partners: Planning/Public Works

Cost Estimate: Staff time; Undetermined as a case by case basis

Benefits (Losses Avoided): Increased ability to evacuate and have traffic flow.

Potential Funding: Local funding

Timeline: On-Going

Project Priority: Medium

Action 23. Dam Failure Mitigation and Preparedness for Evacuations

Hazards Addressed: Dam Failure

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Folsom Dam Failure could impact a portion of the City of Rancho Cordova. The City would like to develop evacuation plans for areas impacted by the dam breach.

Project Description: Develop evacuation plans for areas mapped in the Folsom Dam failure zone.

Other Alternatives: None

Existing Planning Mechanism(s) through which Action Will Be Implemented: The City will hire a consultant to help the City develop the evacuation plans.

Responsible Agency/ Department/Partners: Public Works Department, Planning Department.

Cost Estimate: $25,000 - $50,000

Benefits (Losses Avoided): Better evacuations in case of dam inundation. Increased level of preparedness for City staff and citizens.

Potential Funding: City Stormwater Program, other City funding, grant funding

Timeline: Next 5 years

Project Priority (H, M, L): H

Action 24. Wildfire Weed Reduction and Resiliency

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 3, 4, 5

Issue/Background: Increase the City's resiliency to wildfires.

Project Description: Increase weed abatement and vegetation clearing activities before wildfire season.

Other Alternatives: None

Existing Planning Mechanism(s) through which Action Will Be Implemented: Erosion control and excavation projects will be completed by the City's contractor as funding allows.

Responsible Agency/ Department/Partners: Public Works Department, Code Enforcement.

Cost Estimate: $25,000 - $50,000

Benefits (Losses Avoided): Decrease fire risk from wildfires.

Potential Funding: City Stormwater Program, other City funding, grant funding

Timeline: Next 5 years

Project Priority (H, M, L): H