

## Annex A City of Citrus Heights

### A.1 Introduction

This Annex details the hazard mitigation planning elements specific to the City of Citrus Heights, a previously participating jurisdiction to 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 Citrus Heights, with a focus on providing additional details on the risk assessment and mitigation strategy for this community.

### A.2 Planning Process

As described above, Citrus Heights 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 A-1. Additional details on Plan participation and City representatives are included in Appendix A.

*Table A-1 City of Citrus Heights – Planning Team*

Name	Position/Title	How Participated
Dirk Medema	Associate Civil Engineer	Coordination with internal team
Eric Singer	Assistant Planner	Coordination with internal team
Casey Kempenaar	Planning Manager	Community Development Department overview
Stuart Hodgkins	City Engineer, retired 9/2020	General Service Department overview
Leslie Blomquist	City Engineer	General Service Department overview
Regina Cave	Operations Manager	General Service Department overview and Historic Data Research
Chris Boyd	City Manager	City overview
Amy Van	City Clerk	City overview
Kelly Cunningham	Program Assistant	Historic Data Research
Greg Anderson Chief Building Official Historic Data Research Alison Bermuda	Associate Planner	Project Development

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 A-2.

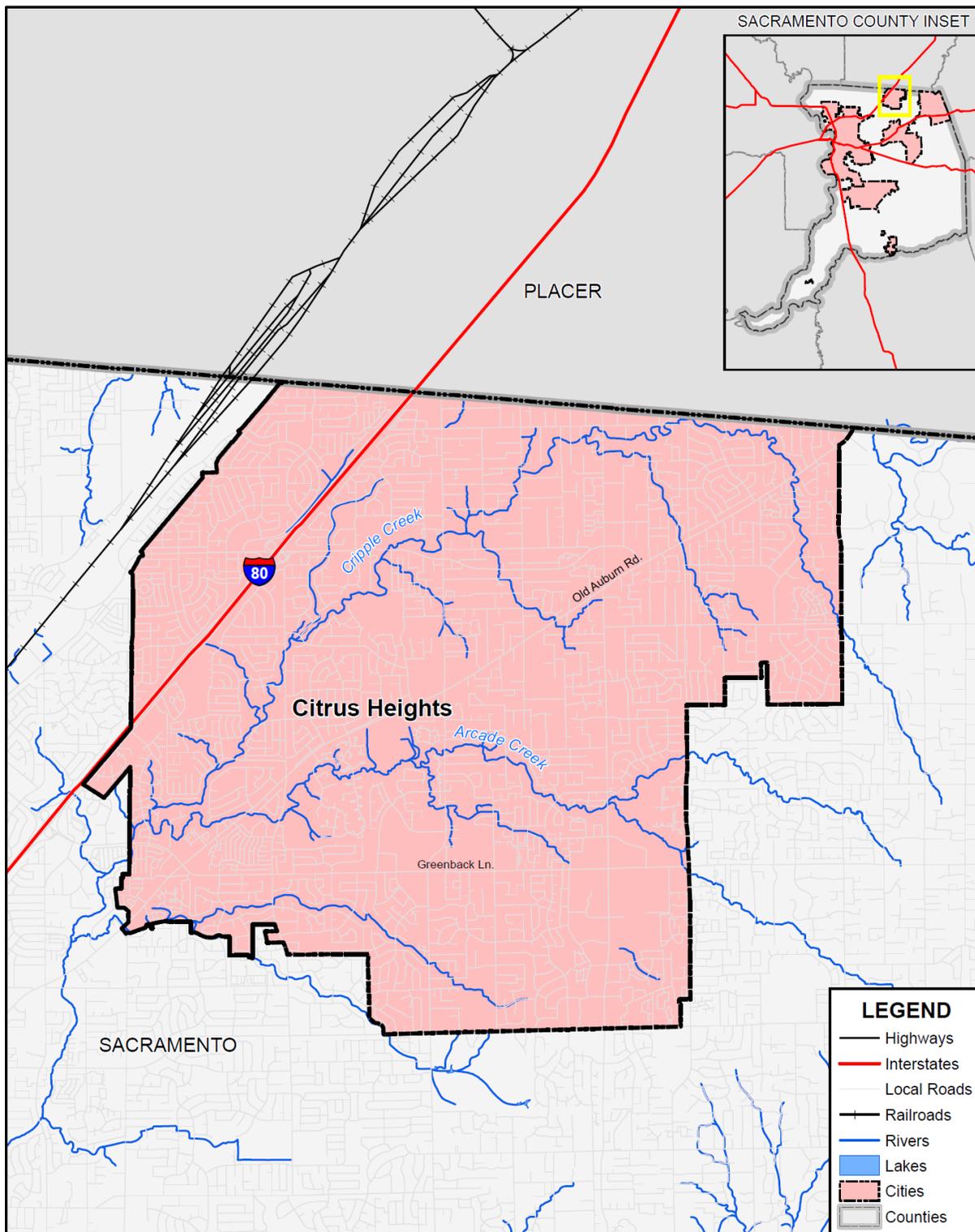
*Table A-2 2016 LHMP Incorporation*

Planning Mechanism 2016 LHMP Was Incorporated/Implemented In.	Details: How was it incorporated?
Partially incorporated	Several LHMP-related measures have been incorporated in sections of Zoning Code regarding stormwater management and restrictions on creekside development

### A.3 Community Profile

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

Figure A-1 City of Citrus Heights



**FOSTER MORRISON**  
CONSULTING

0 1 2 Miles

**SACRAMENTO**  
COUNTY

Data Source: Sacramento County GIS, Cal-Atlas; Map Date: 09/2020.

### **A.3.1. Geography and Climate**

Citrus Heights is located in a relatively flat area bordered by the north Coast Ranges to the west and the northern Sierra Nevada to the east. Air flows into the area through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento–San Joaquin Delta (Delta) from the San Francisco Bay area.

Citrus Heights is centrally located between the region’s major freeways and highways. Interstate 80, Interstate 5, U.S. Highway 50, and U.S. Highway 99 are all located from three to 11 miles from the City. The Sacramento International Airport is located approximately 20 miles from the city, while rail transportation (Amtrak) is accessible in Roseville (about 10 miles from the City).

The topography of the Citrus Heights area is characterized by flat terrain with small hills in some locations. Cripple Creek and Arcade Creek flow through the project area. The majority of the City has been developed with residential and commercial uses. Slopes within the planning area range from zero percent to 15 percent with the majority of the steeper slopes located in the southeastern portion of Citrus Heights. Elevations range from 120 feet above mean sea level near the southwestern edge of Citrus Heights to 200 feet above mean sea level near the southeastern portion of the City.

The Mediterranean climate type of the City is characterized by hot, dry summers and cool, rainy winters. During the summer, daily temperatures range from 50°F to more than 100°F. The inland location and surrounding mountains shelter the area from much of the ocean breezes that keep the coastal regions moderate in temperature.

Most precipitation in the area results from air masses that move in from the Pacific Ocean, usually from the west or northwest, during the winter months. More than half the total annual precipitation falls during the winter rainy season (November through February). Average winter temperatures are 49°F. Also characteristic of winters are periods of dense and persistent low-level fog, which are most prevalent between storms. The prevailing winds are moderate in speed and vary from moisture-laden breezes from the south to dry land flows from the north.

### **A.3.2. History**

Throughout most of the Spanish-Mexican period of the growth of California (1542-1848), settlement was limited to a narrow coastal strip along El Camino Real with only a few isolated frontier outposts of civilization. One of these outposts was the vast estate of John Augustus Sutter, a German-Swiss immigrant, who was granted 11-square leagues of land in the Sacramento Valley under the condition that he settle 12 other families on the land. One of these Mexican land sub-grants was the Ranch Del San Juan, an approximately 20,000-acre tract of rich farm land originally granted in 1844. This sub-grant included present-day Citrus Heights.

A schoolhouse was built in 1862, spurred on by W.A. Thomas’ conviction that Citrus Heights housed enough children to justify a school district. Mr. Thomas donated five acres of land on the northwest corner of Sylvan corners, and deemed it Sylvan School. Once completed, it became the educational, civic, social,

and religious center of the community. Community parties and church services were held in the small, one-room building, as well as daily classes.

Adolph Van Maren, successor to his father Peter Van Maren, played a leading role in community development for many years. He served on the San Juan School Board, and contributed to the development of the San Juan High School in 1915. The present site of the Citrus Heights Community Club House on Sylvan Road is on land donated by Van Maren, while the actual building is the old Sylvan School House moved after a new school facility was built in 1927.

In 1970, ground was broken for the giant Sunrise Mall, spurring a great deal of new growth in the Sunrise Boulevard-Greenback Lane area. By 1975, 101 shops, anchored by four department stores, employed 2,500 people within Sunrise Mall. Then in 1976, across Sunrise Boulevard from the Mall, rose Birdcage Walk, a collection of shops and businesses laid out along a park-like walkway. The two shopping centers spurred the construction of hundreds of businesses in the surrounding area.

In 1994, after agreement with the County was reached, the effort gained momentum and took on the challenge to raise funds to pay for the mandated Environmental Impact Report (EIR). Once accomplished, the County Board of Supervisors approved the measure for the November 1996 ballot and a full campaign was initiated. Finally, after a 12-year battle with the County of Sacramento, the Citrus Heights residents voted on the issue. The voters approved the measure to incorporate the City on November 5, 1996, effective January 1, 1997. The measure won handily, with 62.5% of the votes.

### A.3.3. Economy and Tax Base

Citrus Heights has established itself as an important suburb in the Sacramento region with its solid base of small businesses, retail chains, and food service establishments. With an ongoing commitment to providing high-quality, economical, responsive services to the local community, the City is well-positioned for future commercial redevelopment, neighborhood enhancements, and positive changes.

US Census estimates show economic characteristics for the City of Citrus Heights. These are shown in Table A-3 and Table A-4. Mean household income in the City was \$76,121. Median household income in the City was \$61,898.

*Table A-3 City of Citrus Heights – Civilian Employed Population 16 years and Over*

Industry	Estimated Employment	Percent
Agriculture, forestry, fishing and hunting, and mining	448	1.0%
Construction	4,473	10.2%
Manufacturing	1,935	4.4%
Wholesale trade	1,882	4.3%
Retail trade	6,687	15.3%
Transportation and warehousing, and utilities	2,079	4.8%
Information	564	1.3%

Industry	Estimated Employment	Percent
Finance and insurance, and real estate and rental and leasing	3,496	8.0%
Professional, scientific, and management, and administrative and waste management services	4,269	9.8%
Educational services, and health care and social assistance	8,754	20.0%
Arts, entertainment, and recreation, and accommodation and food services	4,854	11.1%
Other services, except public administration	1,619	3.7%
Public administration	2,680	6.1%

Source: US Census Bureau American Community Survey 2019 Estimates

**Table A-4 City of Citrus Heights – Income and Benefits**

Income Bracket	Percent
<\$10,000	5.8%
\$10,000 – \$14,999	2.4%
\$15,000 - \$24,9999	7.0%
\$25,000 – \$34,999	7.7%
\$35,000 – \$49,999	16.1%
\$50,000 – \$74,999	23.7%
\$75,000 – \$99,999	14.1%
\$100,000 – \$149,999	14.4%
\$150,000 – \$199,999	4.9%
\$200,000 or more	3.8%

Source: US Census Bureau American Community Survey 2019 Estimates

**Top 10 Citrus Heights Employers (Alphabetical order)**

- City of Citrus Heights
- Costco
- Sunrise Parks & Recreation District
- Lowe’s
- Macy’s
- Sam’s Club
- Stone’s Casino
- Maita Honda
- Target
- Wal-Mart

The City has a wide and varied tax base. Tax base information is tracked and maintained by the Sacramento County Assessor’s Office. Table A-5 shows the secured real property value for the City of Citrus Heights. Table A-6 breaks out the City of Citrus Heights by land use.

**Table A-5 City of Citrus Heights – Tax Roll Totals**

Jurisdiction	2015-16 Value (\$)	2016-17 Value (\$)	Current Year Change	Percent of Current Roll*
Citrus Heights	6,172,005,395	6,451,760,362	4%	4

Source: Sacramento County Assessor's Office

\*Percentages rounded to the nearest whole number

**Table A-6 City of Citrus Heights – Summary of Property Types**

Jurisdiction	Single Family with HEX*	Single Family Without HEX*	Multi-Family Residential	Vacant Land	Commercial	Agricultural	Mobile Homes	Other	Total
Citrus Heights	12,849	9,741	1,428	472	622	0	1,918	355	27,835

Source: Sacramento County Assessor's Office

\*Homeowners' Exemption

### A.3.4. Population

The California Department of Finance estimated the January 1, 2020 total population for the City of Citrus Heights was 87,811.

## A.4 Hazard Identification

Citrus Heights identified the hazards that affect the City and summarized their location, extent, likelihood of future occurrence, potential magnitude, and significance specific to Citrus Heights (see Table A-7).

**Table A-7 City of Citrus Heights—Hazard Identification Assessment**

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/Severity	Significance	Climate Change Influence
Climate Change	Extensive	Likely	Limited	Low	–
Dam Failure	Limited	Unlikely	Limited	Medium	Medium
Drought & Water Shortage	Extensive	Occasional	Critical	Low	High
Earthquake	Extensive	Unlikely	Critical	Low	Low
Earthquake Liquefaction	Limited	Unlikely	Negligible	Low	Low
Floods: 1%/0.2% annual chance	Significant	Occasional/ Unlikely	Negligible	Medium	Medium
Floods: Localized Stormwater	Significant	Likely	Limited	Medium	Medium
Landslides, Mudslides, and Debris Flow	Limited	Unlikely	Negligible	Low	Low
Levee Failure	Limited	Unlikely	Negligible	Low	Medium
Pandemic	Extensive	Likely	Critical	Low	Medium
Severe Weather: Extreme Cold and Freeze	Extensive	Likely	Critical	Low	Medium
Severe Weather: Extreme Heat	Extensive	Likely	Critical	Low	High
Severe Weather: Heavy Rains and Storms	Extensive	Likely	Critical	Low	Medium
Severe Weather: Wind and Tornado	Limited	Unlikely	Negligible	Low	Low
Subsidence	Limited	Unlikely	Negligible	Low	Medium
Volcano	Limited	Unlikely	Negligible	Low	Low
Wildfire	Limited	Unlikely	Negligible	Low	Medium
<b>Geographic Extent</b> Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area		<b>Magnitude/Severity</b> 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			
<b>Likelihood of Future Occurrences</b> 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.		<b>Significance</b> Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact			
		<b>Climate Change Influence</b> Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact			

## A.5 Hazard Profile and Vulnerability Assessment

The intent of this section is to profile Citrus Heights’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 A-7) 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.

### A.5.1. Hazard Profiles

Each hazard vulnerability assessment in Section A.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 Sacramento County Planning Area.

### A.5.2. Vulnerability Assessment and Assets at Risk

This section identifies Citrus Heights’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 A-8 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 A-8 City of Citrus Heights – 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	0	0	\$0	\$0	\$0	\$0
Care/Health	37	29	\$16,430,609	\$73,652,597	\$73,652,597	\$163,735,803
Church/Welfare	45	39	\$9,351,283	\$46,214,191	\$46,214,191	\$101,779,665
Industrial	22	19	\$11,535,364	\$17,589,132	\$26,383,698	\$55,508,194
Miscellaneous	353	0	\$627,387	\$0	\$0	\$627,387
Office	151	142	\$55,647,981	\$121,241,584	\$121,241,584	\$298,131,149
Public/Utilities	24	1	\$27,054	\$3,837	\$3,837	\$34,728
Recreational	6	4	\$2,578,894	\$12,938,386	\$12,938,386	\$28,455,666
Residential	25,437	25,218	\$1,809,237,816	\$4,654,812,476	\$2,327,406,306	\$8,791,456,521
Retail/Commercial	366	350	\$325,606,703	\$537,181,077	\$537,181,077	\$1,399,968,857
Unknown	4	3	\$34,193	\$271,996	\$0	\$306,189
Vacant	332	16	\$46,160,118	\$4,649,535	\$0	\$50,809,653
<b>Citrus Heights Total</b>	<b>26,777</b>	<b>25,821</b>	<b>\$2,277,237,402</b>	<b>\$5,468,554,811</b>	<b>\$3,145,021,676</b>	<b>\$10,890,813,812</b>

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:

**PLACE**

### *Natural Resources*

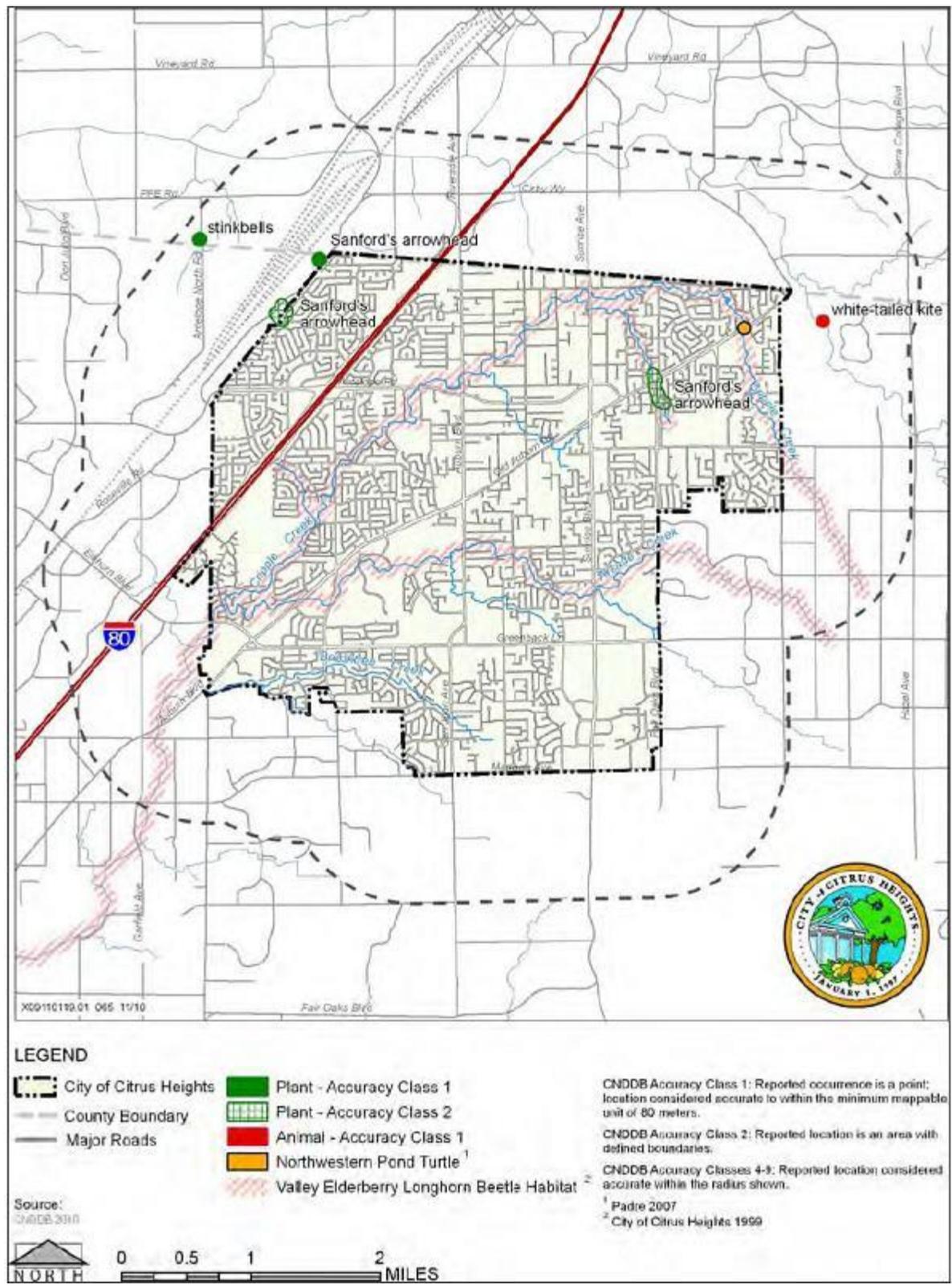
Natural resources are unique to each area and are difficult to replace. Should a natural disaster occur, these species and locations are at risk. The City of Citrus Heights has a variety of natural resources of value to the community. Table A-9 and Table A-10 depict special status plant and animal species in the City. Figure A-2 shows the location of each of the species.

**Table A-9 Special-Status Plant Species Known to Occur or Potentially Occurring in Citrus Heights**

Species	Status <sup>1</sup>			Habitat
	USFWS	DFG	CNPS <sup>1, 2</sup>	
Bigscale balsam root <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	–	–	1B.2	Could occur; suitable habitat in open areas that support California annual grassland. The nearest known occurrence is approximately five miles away.
Stinkbells <i>Fritillaria agrestis</i>	–	–	4.2	Known to occur; suitable habitat in California annual grassland habitat
Sanford’s arrowhead <i>Sagittaria sanfordii</i>	–	–	1B.2	Known to occur; suitable habitat in freshwater marsh along creeks and streams in valley foothill riparian habitat as well slow-moving drainages and ditches
<p>Notes:            USFWS = US Fish and Wildlife Service, DFG = Department of Fish and Game, CNPS = California Native Plant Society  <sup>1</sup>CNPS Categories:            1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)            4 Plants species of limited distribution or infrequent throughout a broader area in California (vulnerability or susceptibility to threat appears low). Uncommon enough that their status should be monitored regularly  <sup>2</sup>CNPS Extensions:            2 Fairly endangered in California (20% to 80% of occurrences are threatened).</p>				

Source: City of Citrus Heights General Plan Environmental Impact Report (2011)

Figure A-2 Special Status Species Location in Citrus Heights



Source: City of Citrus Heights General Plan Environmental Impact Report (2011)

**Table A-10 Special-Status Wildlife Species Known or Potentially Occurring in Citrus Heights**

Species	Status <sup>1</sup>		Habitat
	USFWS	DFG	
<b>Invertebrates</b>			
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T	–	Could occur; elderberry shrubs are present in valley foothill riparian habitat along Arcade and Cripple creeks
<b>Reptiles</b>			
Northwestern pond turtle <i>Actinemys marmorata marmorata</i>	–	CSC	Known to occur; suitable habitat is present in freshwater marshes, rivers, streams, and irrigation ditches within valley foothill riparian habitat.
<b>Birds</b>			
White-tailed kite <i>Elanus leucurus</i>	–	FPS	Known to occur; suitable habitat is present for nesting in trees within the valley foothill riparian and interior live oak habitats and foraging in annual grassland habitat
<b>Mammals</b>			
Palid bat <i>Antrozous pallidus</i>	–	CSC	Could occur; suitable habitat for roosting and foraging is present in valley foothill riparian, interior live oak habitats and annual grassland habitats.
Notes: DFG = California Department of Fish and Game; USFWS = U.S. Fish and Wildlife Service <sup>1</sup> Legal Status Definitions			
Federal Listing Categories (USFWS) E Endangered T Threatened (legally protected) C Candidate		State Listing Categories (DFG) E Endangered T Threatened (legally protected) CSC Species of Special Concern FPS Fully Protected Species	

Source: City of Citrus Heights General Plan Environmental Impact Report (2011)

### **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.

Euro-American settlement of Citrus Heights began in the mid-19th century with a Mexican land grant of 11 square leagues of land in the Sacramento Valley to John Sutter, including the Rancho Del San Juan subgrant. This subgrant area occupied 20,000 acres, including the modern-day Citrus Heights area. The area developed as an agricultural community consisting of families settling small farms surrounding the Sylvan Corners area, located at the present-day intersection of Sylvan Road, Auburn Boulevard, and Old Auburn Road. The 20th Century saw a boom in urbanization of the area, particularly after World War II, when subdivisions began springing up to accommodate an influx of new residents to the area. The area continued to grow, in part as the rocket manufacturing plant at Aerojet in nearby Citrus Heights attracted employees and their families to the region. As this new development occurred, many older structures throughout the community were demolished and replaced by tract housing and new commercial development to serve the booming population. As this shift occurred, Citrus Heights saw its historical character change to a more urbanized, suburban community, losing its character as a rural agricultural community.

Despite the urbanization of the community, several historic buildings remain intact today. However, many have been altered in such ways as to possibly lose their historic integrity. Some of these structures may no longer qualify for protection under historic preservation regulations. 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 A-11 lists the historical buildings in the City.

*Table A-11 City of Citrus Heights – Historical Resources*

Name (Landmark Plaque Number)	National Register	State Landmark	California Register	Point of Interest	Date Listed	City/Area
Rusch Home (P737)				X	2/11/1991	Citrus Heights

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 Citrus Heights that define the community and represent the City’s history. Some of the historical sites of importance to Citrus Heights are listed below and shown in Figure A-3.

### 14 Mile/Van Maren House

In 1851, the original 14 Mile House was constructed as a roadhouse and way station for teamsters hauling supplies to country mining camps. It is located on Auburn Boulevard approximately halfway between Greenback Lane and Van Maren Lane. The property is surrounded by a modern apartment complex on three sides. The roadhouse was acquired by the Van Maren family and renovated in 1920 to serve as a family residence. An historic survey evaluation completed in 2002 suggests that this may be the oldest wood frame building in Sacramento County. The house is potentially eligible for listing in the California Register of Historical Resources and in the National Register of Historic Places for its potential to yield information as an historic archeological site. The house itself has an information potential regarding early construction in California. The area in the immediate vicinity of the house has potential for deposits associated with the 1850s roadhouse.

### Rusch Home

The Rusch Home, built by Citrus Heights pioneers Fred and Julia Rusch, is located in the northwest section of Rusch Park, along Antelope Road. The existing structure was rebuilt in 1914 following a fire that

destroyed the original structure. The home and the surrounding land was donated to the community, which led to the establishment of Rusch Park, the City's largest and most prominent park, and the Sunrise Recreation and Park District offices. The home is listed with the State Office of Historic Preservation as a California Point of Historical Interest (SAC-012).

### **Dekay/Sunrise Ranch Home**

The Dekay/Sunrise Ranch home was constructed in 1868 as part of the Sunrise Ranch property in the northern portion of the existing City, along current-day Sunrise Boulevard, named after the property. The home is currently used as a private residence and is one of the oldest residential structures in the area. However the building has been substantially altered and is not eligible for listing in the California Register of Historical Resources or the National Register of Historic Places due to a lack of historical integrity.

### **Sylvan School/Citrus Heights Community Club**

The old Sylvan School, located south of Sylvan Corners, was initially constructed in 1862, and consisted of a single classroom and two small broom or hat halls. The school was also used as a civic, social, and religious center that supported church services, dancing parties, and local voting discussions. In 1927, the school was moved to another located on Sylvan Road, and the building remains in use as a community meeting hall. The building has been modified, which has resulted in a loss of historic integrity which makes listing in the California Register questionable. However the historic resources survey done by Rowland Nawi Associates in 2006 found that this property may be suitable for listed as a Point of Historic Interest.

### **Sylvan Cemetery**

Sylvan Cemetery, located along Auburn Boulevard north of Sylvan Corners, was established on land donated in 1862, and first broke ground in 1864. The cemetery has been expanded over the years and currently occupies 18 acres. The site is not currently listed on the National or California Register of Historic Places, and further research would be necessary to determine its eligibility, particularly since cemeteries must meet special requirements for listing on the National Register.

### **San Juan High School**

San Juan High School was the first secondary school established in Citrus Heights and the northeast part of Sacramento County. San Juan High School is eligible for listing in the National Register of Historic Places and the California Register of Historical Resources as a key institution representing the growth and development of the area of Citrus Heights and as the first high school in the northeast county. It is located at the intersection of Greenback Lane and Mariposa Avenue.

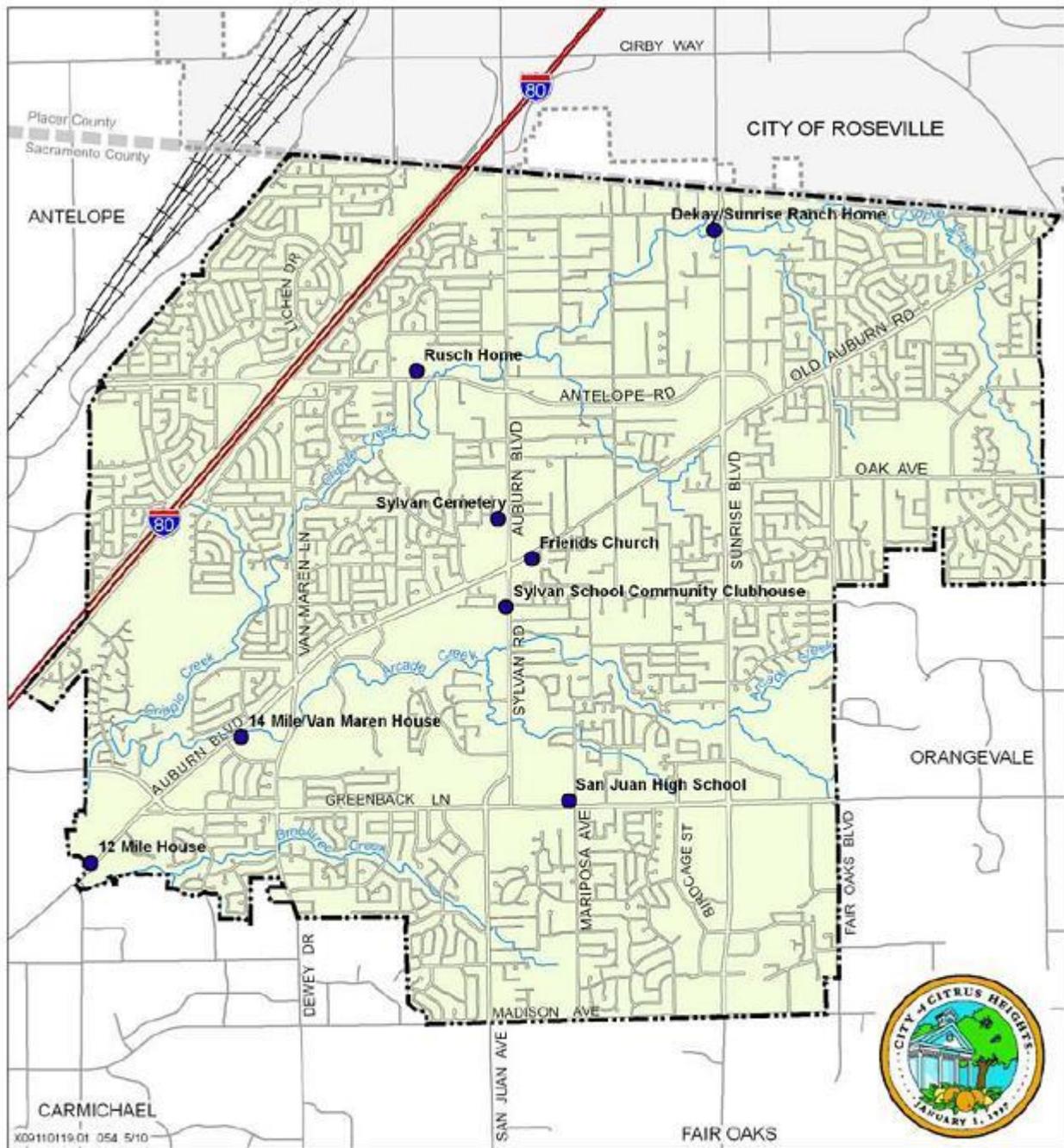
### **Friends Church**

The Friends Church was constructed in 1921, just east of the intersection of Sylvan Road, Auburn Boulevard, and Old Auburn Road. It was the first church built within Citrus Heights. The church has been remodeled twice since its construction and looks different from its original appearance. However, both remodels took place more than 50 years ago, so it is eligible for listing in the California Register of Historical Resources.

## 12 Mile House

Like the 14 Mile House, the original 12 Mile House was also constructed in the 1800s as a teamster way station. It was located on the south bed of Cripple Creek near present-day DeVechi Road but was rebuilt in the 1920s to accommodate an expansion of Auburn Road. The new 12 Mile House, located at the extreme southwest corner of the planning area, was built and operated as a bar until 1998. The structure is one of the oldest commercial structures in Citrus Heights, and although it has been modified since its construction, this has not significantly compromised its architectural integrity. In addition, the building retains its historical associations to the late 1940s and so appears to be eligible for listing in the California Register of Historical Resources.

Figure A-3 Historic Resources in the City of Citrus Heights



**Legend**

-  City of Citrus Heights
-  County Boundary
-  Historical Locations
-  Freeway
-  Creeks

Source: City of Citrus Heights General Plan Environmental Impact Report (2011)

***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 Citrus Heights General Plan 2013-2021 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. Citrus Heights has generally seen steady growth, with recent tapering of growth. Citrus Heights has seen growth rates as shown in Table A-12.

*Table A-12 City of Citrus Heights – Population Changes Since 1970*

Year	Population	Change	% Change
1970	31,015	–	–
1980	63,848	32,833	105.9%
1990	82,045	18,197	28.5%
2000	85,071	3,026	3.7%
2010 <sup>1</sup>	88,115	3,044	3.6%
2020 <sup>2</sup>	87,811	-304	-0.35%

Source: <sup>1</sup>US Census Bureau, <sup>2</sup>California Department of Finance

**Special Populations and Disadvantaged Communities**

The 2018 Census data reports the City Population of citizens aged 65 and over is 14,031 or 16% of the City’s total. Approximately 29% of these seniors are “Frail Elderly”. According to the 2018 American Community Survey, 8,330 persons or 11% of persons 5 years of age or older in the City of Citrus Heights has a disability. According to the 2018 American Community Survey, approximately 6,176 persons in the City of Citrus Heights above the age of 5 have a Mental Disability of some kind. According to the California Department of Developmental Services, a total of 919 Citrus Heights residents are considered developmentally disabled, with the majority being over 18 years of age. None of these special populations are located in hazard areas.

**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 Citrus Heights Municipal Code provides detailed land use and development standards for development. Currently, Citrus Heights is about 97 percent built out, meaning not much vacant land remains to be developed. As shown in Table A-13, about three-quarters of the City’s remaining vacant land is residential in nature.

**Table A-13 Vacant Land Inventory**

Current Land Use/Zoning	Vacant Acres
Residential*	149
Commercial**	46
Total Land Area	195

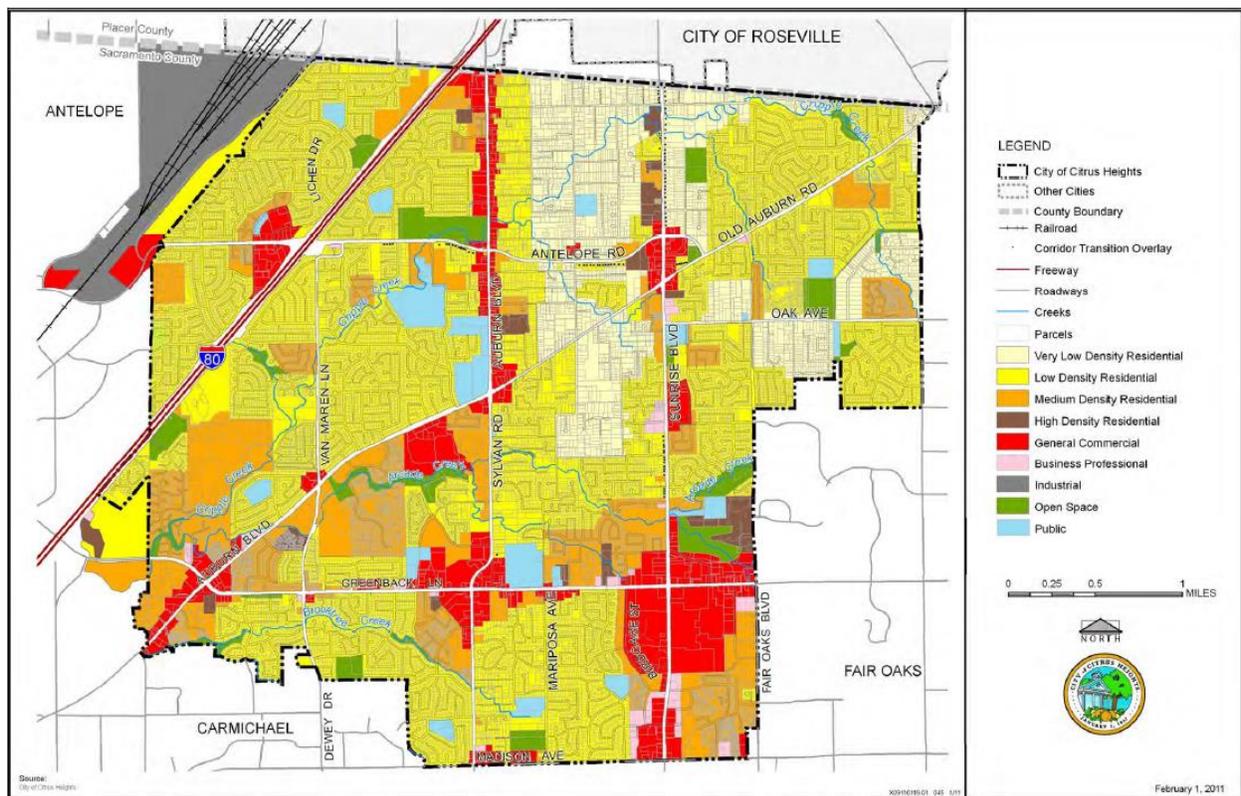
Notes:

\* Based on Vacant Land and Pending Development Inventory (2007), City of Citrus Heights

\*\* Based on Sacramento County Assessor Data

Figure A-4 designates land uses for the Citrus Heights Area. The land use diagram employs a series of residential and nonresidential land use designations. The land use diagram identifies locations of the land use designations to indicate where certain types of land uses may occur.

**Figure A-4 City of Citrus Heights Land Use**



Source: City of Citrus Heights General Plan Environmental Impact Report (2011)

### Development since 2016 Plan

As discussed in Section 4.3.1 of the Base Plan, future development has occurred in the County since the 2016 LHMP. Some of this has occurred in hazard prone areas. The City Building Department tracked total building permits issued since 2016 for the City. These are tracked by total development, property use type, and hazard risk area. These are shown in Table A-14 and Table A-15.

*Table A-14 City of Citrus Heights – Total Development Since 2016*

Property Use	2016	2017	2018	2019	2020
Agricultural	0	0	0	0	0
Commercial	3	2	0	1	3
Industrial	0	0	0	0	0
Residential	5	11	20	19	34
Unknown	0	0	0	0	0
<b>Total</b>	<b>8</b>	<b>13</b>	<b>20</b>	<b>20</b>	<b>37</b>

Source: City of Citrus Heights Building Department

*Table A-15 City of Citrus Heights – Development in Hazard Areas since 2016*

Property Use	1% Annual Chance Flood	Levee Protected Area	Wildfire Risk Area <sup>1</sup>	Other
Agricultural	0	0	0	0
Commercial	0	0	0	0
Industrial	0	0	0	0
Residential	0	0	0	0
Unknown	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Source: City of Citrus Heights Building Department

<sup>1</sup>Moderate or higher wildfire risk area

## Future Development

The Sacramento Council on Governments (SACOG) modeled population projections for the City of Citrus Heights 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 86,057 and 94,242 respectively.

## Future Annexation

The City and County cannot agree on mutual terms for annexation and no further attempts at annexation are currently planned.

## GIS Analysis

### PLACE

### A.5.3. Vulnerability to Specific Hazards

This section provides the vulnerability assessment, including any quantifiable loss estimates, for those hazards identified above in Table A-7 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.

### *Dam Failure*

**Likelihood of Future Occurrence**—Unlikely

**Vulnerability**—Medium

### **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)

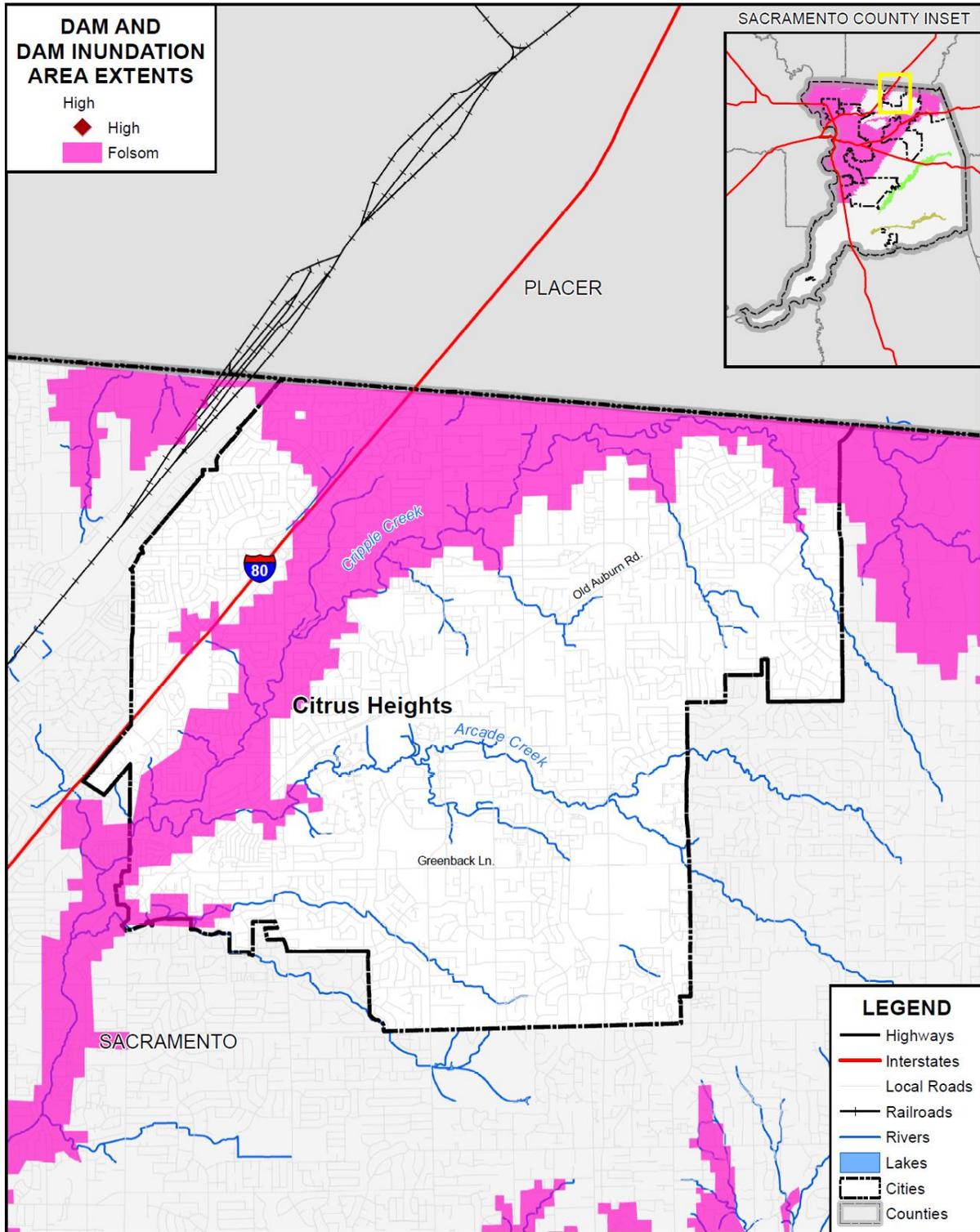
assigns hazard ratings to dams within the State that provides information on the potential impact should a dam fail. The following two factors are considered when assigning hazard ratings: existing land use and land use controls (zoning) downstream of the dam. Dams are classified in four categories that 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 dam. The City falls outside 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 A-5 for dams outside the County and summarized for all these dams in Table A-16. No dams outside the County have inundation areas that intersect the City.

**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 A-5 City of Citrus Heights – Dam Inundation Areas from Dams Outside the County



FOSTER MORRISON  
CONSULTING

0 1 2 Miles

SACRAMENTO  
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.

*Table A-16 City of Citrus Heights – 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
<b>High Hazard Dams Inside the County</b>							
Folsom	Citrus Heights	2,360.07	26.36%	2,053.12	26.42%	306.95	26.00%

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 City of Citrus Heights.

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 Citrus Heights to the dam failure hazard, the sections that follow describes significant assets at risk in the City of Citrus Heights. 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 Citrus Heights. 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 A-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 A-17 City of Citrus Heights – 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
<b>Folsom Dam – High Hazard Dam Inside of County</b>						
Care / Health	6	6	\$1,071,268	\$5,417,377	\$5,417,377	\$11,906,022
Church / Welfare	14	13	\$1,872,045	\$16,450,757	\$16,450,757	\$34,773,559
Industrial	5	4	\$1,344,275	\$1,413,412	\$2,120,118	\$4,877,805
Miscellaneous	160	0	\$291,254	\$0	\$0	\$291,254
Office	27	26	\$8,056,621	\$15,300,262	\$15,300,262	\$38,657,145
Public / Utilities	8	0	\$0	\$0	\$0	\$0
Recreational	1	1	\$478,036	\$664,746	\$664,746	\$1,807,528
Residential	8,196	8,123	\$12,205,219,115	\$13,597,441,670	\$6,798,720,814	\$32,601,381,559
Retail / Commercial	69	66	\$29,866,814	\$41,603,240	\$41,603,240	\$113,073,294
Unknown	3	3	\$0	\$271,996	\$0	\$271,996
Vacant	66	4	\$7,204,880	\$217,179	\$0	\$7,422,059
<b>Citrus Heights Total</b>	<b>8,555</b>	<b>8,246</b>	<b>\$12,255,404,308</b>	<b>\$13,678,780,639</b>	<b>\$6,880,277,314</b>	<b>\$32,814,462,221</b>

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

### *Population at Risk*

The DSOD and Cal OES dam inundation areas were overlaid 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 Citrus Heights – 2.54. This is shown in Table A-27.

*Table A-18 City of Citrus Heights – Count of Improved Residential Parcels and Population by Dam Inundation Area*

Jurisdiction	Folsom Dam Inundation Area	
	Improved Residential Parcels	Population
Citrus Heights	8,123	20,632

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 Citrus Heights 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 Citrus Heights are shown in Figure A-6 and detailed in Table A-19. Details of critical facility definition, type, name and address and jurisdiction by dam inundation area are listed in [Appendix F](#).

**Figure A-6 City of Citrus Heights – Critical Facilities in Dam Inundation Areas**

**Table A-19 City of Citrus Heights – Critical Facilities in Dam Inundation Areas**

Critical Facility Category/Dam Inundation Area	Facility Count

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 its 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*

**PLACE**

*Earthquake*

Though ranked as a low significance hazard, due to its importance in the County and the State of California, earthquake is profiled here. It remains a low significance hazard for mitigation planning purposes.

**Likelihood of Future Occurrence**–Occasional/Unlikely

**Vulnerability**–Low

**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. Citrus Heights and the surrounding area have a limited 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 City of Citrus Heights General Plan Background Report noted that although no active faults are located in the immediate vicinity of Citrus Heights, several large, active and potentially active faults are located within the surrounding region. These faults include the Dunnigan Hills Fault and other unnamed faults on the west side of the Sacramento Valley, and faults associated with the Foothills Fault System along the western slope of the Sierra Nevada. However, the probability that these faults would significantly affect Citrus Heights is considered to be small. Ground shaking felt in Citrus Heights is more likely to be the result of seismic activity along coastal faults.

The closest known active fault mapped by the California Division of Mines and Geology is the Foothills Fault Zone which is located approximately 15 miles northeast of Citrus Heights. Other active or potentially active faults that may be a hazard to the area include Green Valley-Concord, Hayward, San Andreas, and Calaveras.

Three local faults lie within approximately 20 miles of Citrus Heights, all of which are considered inactive (no activity in the Holocene period of the last 10,000 years). These include the Volcano Hill Fault, just east of Roseville, the Linda Creek Fault (which has uncertain existence and activity status) extending southeasterly along a portion of Linda Creek in the southern portion of Roseville and into Sacramento County, and a third unnamed fault. The unnamed fault is a west-east oriented fault between Rocklin and Folsom Reservoir. Portions of this fault are concealed, and may be connected to the Bear Mountain Fault Zone.

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 of the California north coastal mountain region.

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. There are none of these building 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 Citrus Heights is located 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/Unlikely

**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

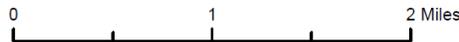
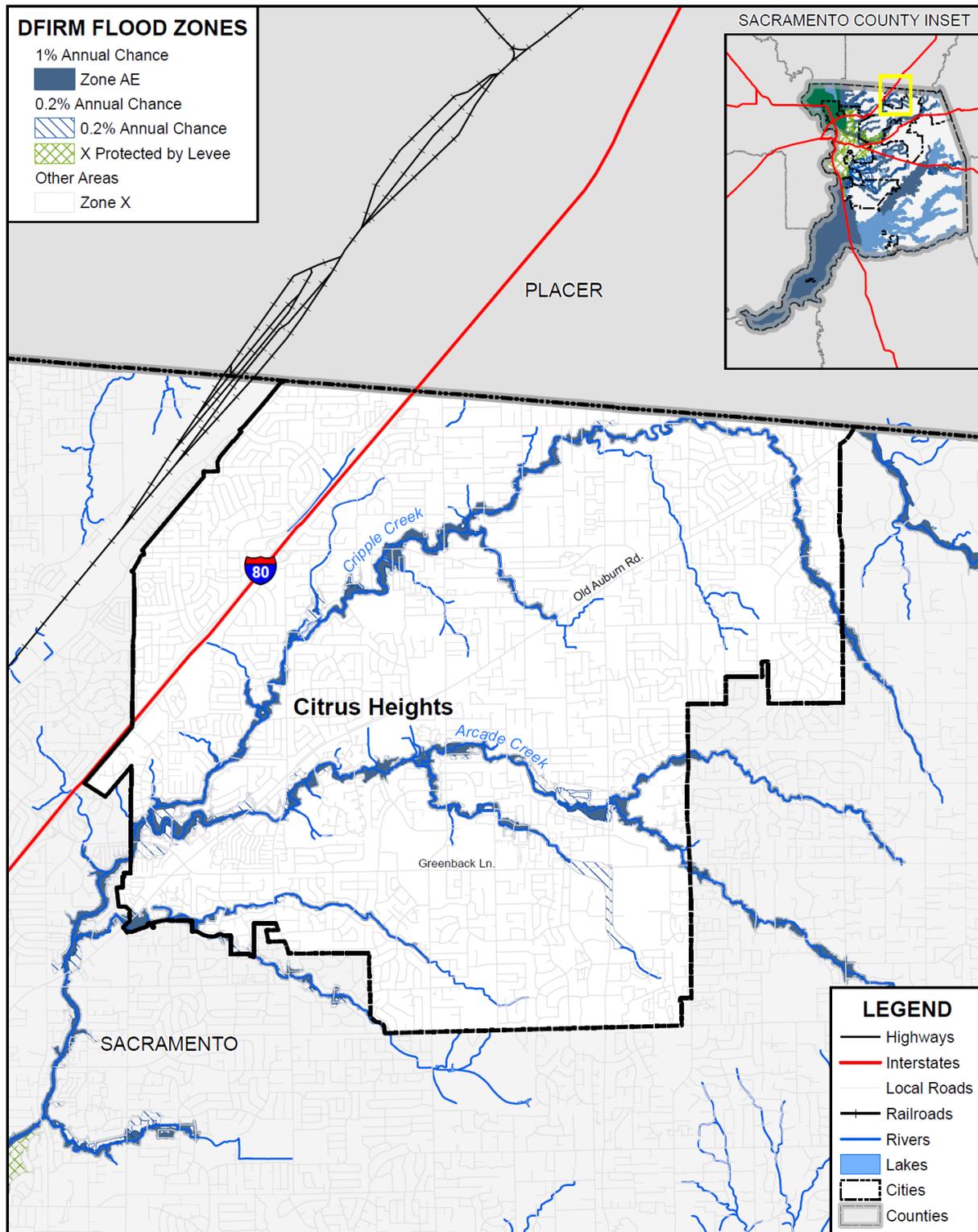
significant problem in Sacramento County and the City of Citrus Heights. Historically, the City has been at risk to flooding primarily during the winter and spring months when river systems in the County swell with heavy rainfall and snowmelt runoff. Normally, storm floodwaters are kept within defined 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.

As previously described in Section 4.3.11 of the Base Plan, the Sacramento County Planning Area and the City of Citrus Heights have been subject to historical flooding. Citrus Heights is traversed by several stream systems and is at risk to the 1% and 0.2% flood.

### **Location and Extent**

The City of Citrus Heights has areas located in the 1% and 0.2% annual chance flood zones. This is seen in Figure A-7.

Figure A-7 City of Citrus Heights – FEMA DFIRM Flood Zones



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

Table A-20 details the DFIRM mapped flood zones located within the City.

*Table A-20 City of Citrus Heights– 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.	
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 (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 A-21.

*Table A-21 City of Citrus Heights – 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	432	4.83%	248	3.19%	184	15.62%
0.2% Annual Chance	209	2.34%	169	2.18%	40	3.38%
Other Areas	8,308	92.83%	7,352	94.63%	956	81.01%
<b>Total</b>	<b>8,950</b>	<b>100.00%</b>	<b>7,770</b>	<b>100.00%</b>	<b>1,180</b>	<b>100.00%</b>

Source: FEMA DFIRM 11/2/2018

\*Percentage of total acres is the percent of total acres of the entire County Planning Area, not the total acres of the jurisdiction

The City has 26 miles of natural creek channels within its 14 square miles. Cripple Creek, Arcade Creek, San Juan Creek, Mariposa Creek, Coyle Creek and Brooktree Creek traverse the City and are at risk to bank erosion. All the natural creek channels within the City suffer from suburban runoff causing deep incisions and erosion.

The City has had to implement a couple projects to protect and restore the creek bank that had become a potential hazard to public health and welfare.

- Brooktree Creek Rehabilitation at Paroaks Project
  - ✓ In 2016, the City released an emergency creek bank restoration project. Brooktree Creek had eroded the bank next to 6017 Paroaks Drive. Approximately 100' of Geoweb retaining wall installed along with 130' of rock stabilized channel and check dams.
- Mariposa Avenue Slope Repair Project
  - ✓ In 2016, the City had a contractor construct 50' of concrete poured in drilled hole retaining wall and 100' of guardrail along Cripple Creek. The erosion had threatened the roadway.

Those are the 2 erosion control projects from the previous 5 years. Prior events in the City include.

- Matheny Drainage Project
  - ✓ In 2003, the City released an emergency creek bank restoration project. Arcade Creek had eroded the bank next to Matheny Way and caused the street to crack open. Approximately 250' of gabion baskets were installed along the creek bank just outside the shoulder of the road.
- Stock Ranch Drainage Project
  - ✓ In 2011, the City had a contractor rock the banks along Arcade Creek at a major pedestrian bridge and restore an outfall for a sedimentation basin next to the bridge. Over 30' of bank had been eroded over a 5-year time span. The erosion had threatened the bridge piers and partially collapsed a concrete outfall.

### Past Occurrences

A list of state and federal disaster declarations for Sacramento County from flooding is shown on Table A-22. These events also likely affected the City to some degree.

*Table A-22 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

While the state and region have experienced flooding events in the past 5 years, judicious creek maintenance in the City has protected the community from past occurrences of flooding. There have been occurrences of minor localized flooding of roadways, but no impacts beyond normal operations.

**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.

**Assets at Risk**

Based on the vulnerability of Citrus Heights to the flood hazard, the sections that follow describes significant assets at risk in the City of Citrus Heights. 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 Citrus Heights. 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 A-23 is a summary table for the City of Citrus Heights. 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 A-24 breaks down Table A-23 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 A-23 City of Citrus Heights – 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	264	171	\$16,613,142	\$39,944,477	\$25,347,062	\$81,904,679
0.2% Annual Chance Flood Hazard	372	344	\$45,438,707	\$69,451,717	\$42,174,438	\$157,064,851
Other Areas	26,141	25,306	\$2,215,185,553	\$5,359,158,617	\$3,077,500,176	\$10,651,844,282
<b>City of Citrus Heights Total</b>	<b>26,777</b>	<b>25,821</b>	<b>\$2,277,237,402</b>	<b>\$5,468,554,811</b>	<b>\$3,145,021,676</b>	<b>\$10,890,813,812</b>

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 A-24 City of Citrus Heights – 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
<b>1% Annual Chance Flood Hazard</b>						
<b>Zone AE</b>						
Agricultural	0	0	\$0	\$0	\$0	\$0
Care/Health	0	0	\$0	\$0	\$0	\$0
Church/Welfare	4	3	\$327,823	\$4,523,907	\$4,523,907	\$9,375,637
Industrial	0	0	\$0	\$0	\$0	\$0
Miscellaneous	62	0	\$11,688	\$0	\$0	\$11,688
Office	1	1	\$499,392	\$697,068	\$697,068	\$1,893,528
Public/Utilities	0	0	\$0	\$0	\$0	\$0
Recreational	0	0	\$0	\$0	\$0	\$0

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Residential	176	160	\$12,799,237	\$29,071,695	\$14,535,851	\$56,406,781
Retail/ Commercial	6	6	\$2,107,730	\$5,590,236	\$5,590,236	\$13,288,202
Unknown	1	1	\$0	\$61,571	\$0	\$61,571
Vacant	14	0	\$867,272	\$0	\$0	\$867,272
<b>Zone AE Total</b>	<b>264</b>	<b>171</b>	<b>\$16,613,142</b>	<b>\$39,944,477</b>	<b>\$25,347,062</b>	<b>\$81,904,679</b>
<b>1% Annual Chance Flood Hazard Total</b>	<b>264</b>	<b>171</b>	<b>\$16,613,142</b>	<b>\$39,944,477</b>	<b>\$25,347,062</b>	<b>\$81,904,679</b>
<b>0.2% Annual Chance Flood Hazard</b>						
<b>0.2% Annual Chance</b>						
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	15	0	\$21,293	\$0	\$0	\$21,293
Office	7	6	\$1,384,989	\$4,458,819	\$4,458,819	\$10,302,627
Public/Utilities	0	0	\$0	\$0	\$0	\$0
Recreational	0	0	\$0	\$0	\$0	\$0
Residential	335	329	\$36,327,318	\$54,403,179	\$27,201,600	\$117,932,086
Retail/ Commercial	8	8	\$7,287,000	\$10,514,019	\$10,514,019	\$28,315,038
Unknown	1	1	\$0	\$75,700	\$0	\$75,700
Vacant	6	0	\$418,107	\$0	\$0	\$418,107
<b>0.2% Annual Chance Total</b>	<b>372</b>	<b>344</b>	<b>\$45,438,707</b>	<b>\$69,451,717</b>	<b>\$42,174,438</b>	<b>\$157,064,851</b>
<b>0.2% Annual Chance Flood Hazard Total</b>	<b>372</b>	<b>344</b>	<b>\$45,438,707</b>	<b>\$69,451,717</b>	<b>\$42,174,438</b>	<b>\$157,064,851</b>
<b>Other Areas</b>						
<b>Zone X</b>						
Agricultural	0	0	\$0	\$0	\$0	\$0
Care/Health	37	29	\$16,430,609	\$73,652,597	\$73,652,597	\$163,735,803
Church/Welfare	41	36	\$9,023,460	\$41,690,284	\$41,690,284	\$92,404,028
Industrial	22	19	\$11,535,364	\$17,589,132	\$26,383,698	\$55,508,194
Miscellaneous	276	0	\$594,406	\$0	\$0	\$594,406
Office	143	135	\$53,763,600	\$116,085,697	\$116,085,697	\$285,934,994
Public/Utilities	24	1	\$27,054	\$3,837	\$3,837	\$34,728

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Recreational	6	4	\$2,578,894	\$12,938,386	\$12,938,386	\$28,455,666
Residential	24,926	24,729	\$1,760,111,261	\$4,571,337,602	\$2,285,668,855	\$8,617,117,654
Retail/ Commercial	352	336	\$316,211,973	\$521,076,822	\$521,076,822	\$1,358,365,617
Unknown	2	1	\$34,193	\$134,725	\$0	\$168,918
Vacant	312	16	\$44,874,739	\$4,649,535	\$0	\$49,524,274
<b>Zone X Total</b>	<b>26,141</b>	<b>25,306</b>	<b>\$2,215,185,553</b>	<b>\$5,359,158,617</b>	<b>\$3,077,500,176</b>	<b>\$10,651,844,282</b>
<b>Other Areas Total</b>	<b>26,141</b>	<b>25,306</b>	<b>\$2,215,185,553</b>	<b>\$5,359,158,617</b>	<b>\$3,077,500,176</b>	<b>\$10,651,844,282</b>
<b>Citrus Heights Total</b>	<b>26,777</b>	<b>25,821</b>	<b>\$2,277,237,402</b>	<b>\$5,468,554,811</b>	<b>\$3,145,021,676</b>	<b>\$10,890,813,812</b>

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 A-25 summarizes Table A-24 above and shows City of Citrus Heights loss estimates and improved values at risk by FEMA 1% and 0.2% annual chance flood zones.

*Table A-25 City of Citrus Heights – 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 Hazard	264	171	\$39,944,477	\$25,347,062	\$65,291,539	\$13,058,308	0.01%
0.2% Annual Chance Flood Hazard	372	344	\$69,451,717	\$42,174,438	\$111,626,155	\$22,325,231	0.01%
<b>Grand Total</b>	<b>636</b>	<b>515</b>	<b>\$109,396,194</b>	<b>\$67,521,500</b>	<b>\$176,917,694</b>	<b>\$35,383,539</b>	<b>0.02%</b>

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 A-24 and Table A-25, the City of Citrus Heights has 171 parcels and \$65.3 million of structure and contents values or values in the 1% annual chance flood zone, and 344 improved parcels and

\$111.6 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 4.3.10 of the Base Plan, there is a 1% chance in any given year of a flood event causing \$13.1 million in damage and a 0.2% chance in any given year of a flood event causing \$22.3 million in damage in the City of Citrus Heights. The loss ratio of 0.01% and 0.01% indicates that flood losses for 1% and 0.2% annual chance flooding, respectively, would be minimal and somewhat easy to recover from.

***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 Citrus Heights as well as for the County as a whole. Table A-26 represents a detailed and summary analysis of total acres for each FEMA DFIRM flood zone in the City.

***Table A-26 City of Citrus Heights – Flooded Acres by Flood Zone***

Flood Zone/ Property Use	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
<b>1% Annual Chance Flood Hazard</b>						
<b>Zone AE</b>						
Agricultural	0.0	0.00%	0.0	0.00%	0.0	0.00%
Care/Health	0.1	0.00%	0.1	0.00%	0.0	0.08%
Church/Welfare	11.3	0.13%	10.4	0.13%	0.9	0.00%
Industrial	0	0.00%	0	0.00%	0.0	10.84%
Miscellaneous	127.9	1.43%	0	0.00%	127.9	0.23%
Office	4.5	0.05%	1.8	0.02%	2.7	0.05%
Public/Utilities	0.6	0.01%	0	0.00%	0.6	0.00%
Recreational	0.0	0.00%	0.0	0.00%	0.0	2.30%
Residential	254.2	2.84%	227.1	2.92%	27.2	0.00%
Retail/ Commercial	8.5	0.10%	8.5	0.11%	0.0	0.00%
Unknown	0.0	0.00%	0.0	0.00%	0.0	2.12%
Vacant	25.1	0.28%	0.0	0.00%	25.1	15.62%
<b>Zone AE Total</b>	<b>432.3</b>	<b>4.83%</b>	<b>248.0</b>	<b>3.19%</b>	<b>184.3</b>	<b>15.62%</b>
<b>1% Annual Chance Flood Hazard Total</b>	<b>432.3</b>	<b>4.83%</b>	<b>248.0</b>	<b>3.19%</b>	<b>184.3</b>	<b>15.62%</b>
<b>0.2% Annual Chance Flood Hazard</b>						
Agricultural	0	0.00%	0	0.00%	0.0	0.00%
Care/Health	0.1	0.00%	0.1	0.00%	0.0	0.00%
Church/Welfare	4.5	0.05%	4.2	0.05%	0.2	0.02%

Flood Zone/ Property Use	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Industrial	0.0	0.00%	0.0	0.00%	0.0	0.00%
Miscellaneous	23.2	0.26%	0.0	0.00%	23.2	1.97%
Office	6.6	0.07%	5.8	0.08%	0.7	0.06%
Public/Utilities	1.0	0.01%	0.0	0.00%	1.0	0.09%
Recreational	0.0	0.00%	0.0	0.00%	0	
Residential	144.5	1.61%	134.7	1.73%	9.8	0.83%
Retail/ Commercial	24.5	0.27%	24.5	0.32%	0.0	0.00%
Unknown	0.0	0.00%	0.0	0.00%	0.0	0.00%
Vacant	4.8	0.05%	0.0	0.00%	4.8	0.41%
<b>0.2% Annual Chance Flood Hazard Total</b>	<b>209.3</b>	<b>2.34%</b>	<b>169.5</b>	<b>2.18%</b>	<b>39.9</b>	<b>3.38%</b>
<b>Other Areas</b>						
<b>Zone X</b>						
Agricultural	0	0.00%	0	0.00%	0	0.00%
Care/Health	116.2	1.30%	92.6	1.19%	23.5	1.99%
Church/Welfare	112.7	1.26%	105.9	1.36%	6.8	0.58%
Industrial	25.9	0.29%	23.3	0.30%	2.6	0.22%
Miscellaneous	291.3	3.25%	0.0	0.00%	291.3	24.68%
Office	183.1	2.05%	162.7	2.09%	20.3	1.72%
Public/Utilities	141.6	1.58%	0.1	0.00%	141.5	11.99%
Recreational	23.1	0.26%	8.0	0.10%	15.1	1.28%
Residential	6,665.1	74.47%	6,429.5	82.75%	235.6	19.96%
Retail/ Commercial	528.0	5.90%	519.7	6.69%	8.3	0.71%
Unknown	3.3	0.04%	0.0	0.00%	3.3	0.28%
Vacant	218.1	2.44%	10.3	0.13%	207.8	17.60%
<b>Zone X Total</b>	<b>8,308.4</b>	<b>92.83%</b>	<b>7,352.2</b>	<b>94.63%</b>	<b>956.3</b>	<b>81.01%</b>
<b>Other Areas Total</b>	<b>8,308.4</b>	<b>92.83%</b>	<b>7,352.2</b>	<b>94.63%</b>	<b>956.3</b>	<b>81.01%</b>
<b>Citrus Heights Total</b>						
<b>Citrus Heights Total</b>	<b>8,950.1</b>	<b>100.0%</b>	<b>7,769.6</b>	<b>100.0%</b>	<b>1,180.5</b>	<b>100.0%</b>

Source: FEMA 11/2/2018 DFIRM

### *Population at Risk*

The DFIRM flood zones were overlaid 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 Citrus Heights – 2.54. According to this analysis, there is a total population of 406 and 836 residents of the City at risk to flooding in the 1% and 0.2% annual chance floodplains, respectively. This is shown in Table A-27.

*Table A-27 City of Citrus Heights – 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
Citrus Heights	160	406	329	836

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

### *Critical Facilities at Risk*

**PLACE**

### **Insurance Coverage, Claims Paid, and Repetitive Losses**

The City of Citrus Heights joined the National Flood Insurance Program (NFIP) on October 15, 1997. The City does not participate in CRS program. NFIP data indicates that as of March 24, 2020, there were 337 flood insurance policies in force in the City with \$91,063,800 of coverage. Of the 337 policies, 331 were residential (single-family homes) and 6 were non-residential. Of the 337 policies, 130 were in A zones, while 207 were in B, C, and X zones. There has been 15 historical claims for flood losses totaling \$335,680.89. NFIP data further indicates that there are 5 repetitive loss (RL) or and 0 severe repetitive loss (SRL) buildings in Citrus Heights. There have been 2 substantial damage claims since 1978.

Based on this analysis of insurance coverage, the City has values at risk to the 1% annual chance and greater floods. Of the 171 improved parcels within the 1% annual chance flood zone, 130 (or 76.0 percent) of those parcels maintain flood insurance. This can be seen on Table A-28.

*Table A-28 City of Citrus Heights – 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 Citrus Heights	171	130	76.0%

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

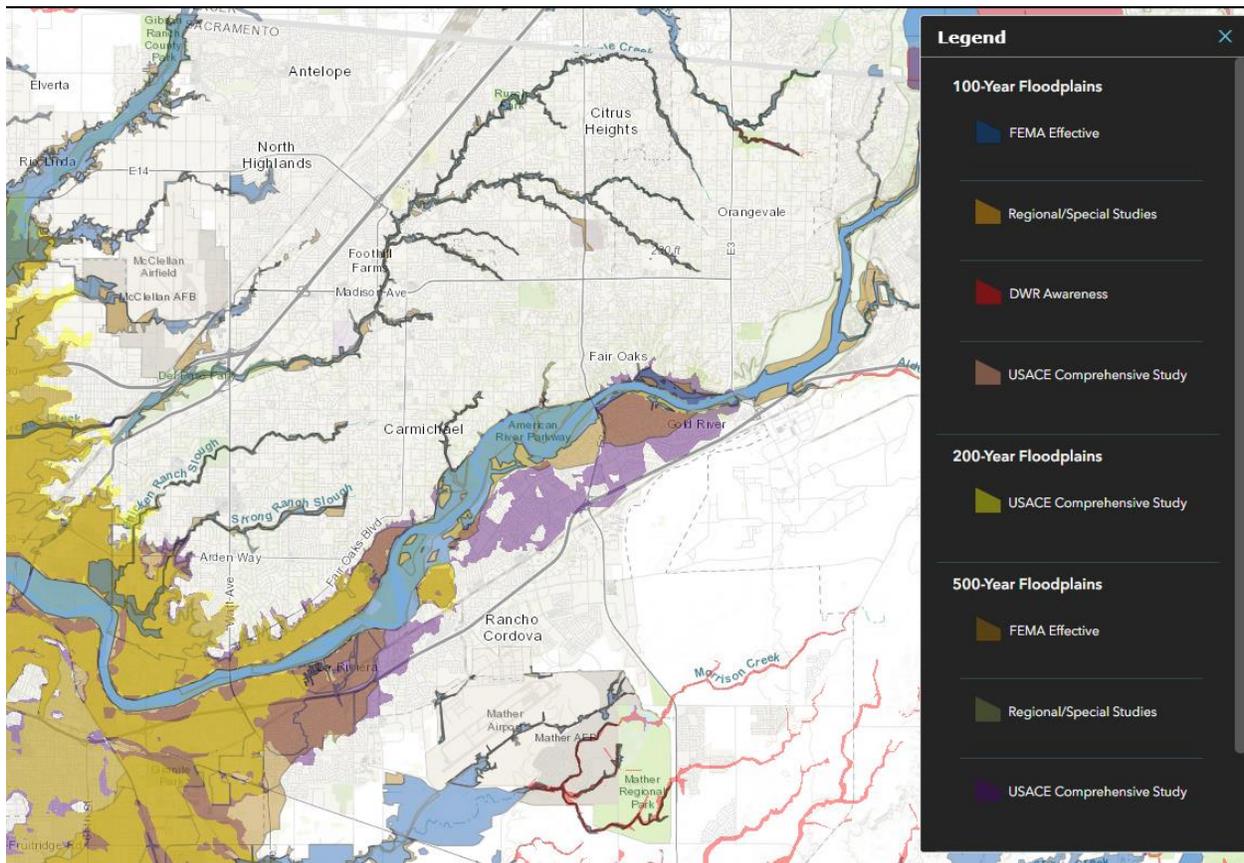
## California Department of Water Resources Best Available Maps (BAM)

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 Citrus Heights is shown in Figure A-8.

*Figure A-8 City of Citrus Heights – Best Available Map*



Source: California DWR

Legend explanation: Blue - FEMA 1%, Orange – Local 1% (developed from local agencies), Red – DWR 1% (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 and, through the zoning code, has restricted building in the floodplain to only replacing existing structures with conforming structures. 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.

The City of Citrus Heights General Plan Background Report (2011) noted that development (structures, bridges, fill) within the 100-year floodplain is evaluated to ensure consistency with the restrictions of the Zoning Code. Development within a floodplain could increase the flood hazard to adjacent properties by raising upstream floodplain elevations and/or increasing downstream flow and water velocities. A raised upstream floodplain can occur with downstream displacement of flood storage, which occurs when a floodplain is filled. Such floodplain disturbance can result in a constriction in the natural flow of water which increases the speed of water traveling downstream. The Citrus Heights Zoning Code prohibits new construction within the 100-year floodplain except for fences. The Zoning Code also includes minimum creek setbacks for development adjacent to creeks. For existing properties that are entirely in the floodplain and comply with the City’s Drainage and Development Policy, development may occur, provided that each structure is designed to have the habitable finished floor elevation a minimum of two feet above the 100-year floodplain.

## *GIS Analysis*

**PLACE**

### *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 Citrus Heights 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.

### **Past Occurrences**

The City noted the following past occurrences of localized flooding:

Between 2006 and 2011, the City experienced 3 occurrences of severe localized flooding caused by a combination of a heavy rain cell and in 2 of the instances excessive tree leaves plugging inlets. In the 3 occurrences, anywhere from a half dozen to as many as 20+ homes flooded. The dates of the 3 events included February 24, 2011; December 12, 2012 and December 3, 2014. House flooding in each of the events never exceeded a foot in depth within the home or business and in every case, the water receded within 45 minutes of flooding the home.

Between 2016 and 2021, there have been eight storm events resulting 178 reports from the public of minor localized flooding of roadways, but no impacts beyond normal operations. The City primarily attributes this to judicious creek maintenance by City staff and contracts.

### **Vulnerability to and Impacts from Localized Flooding**

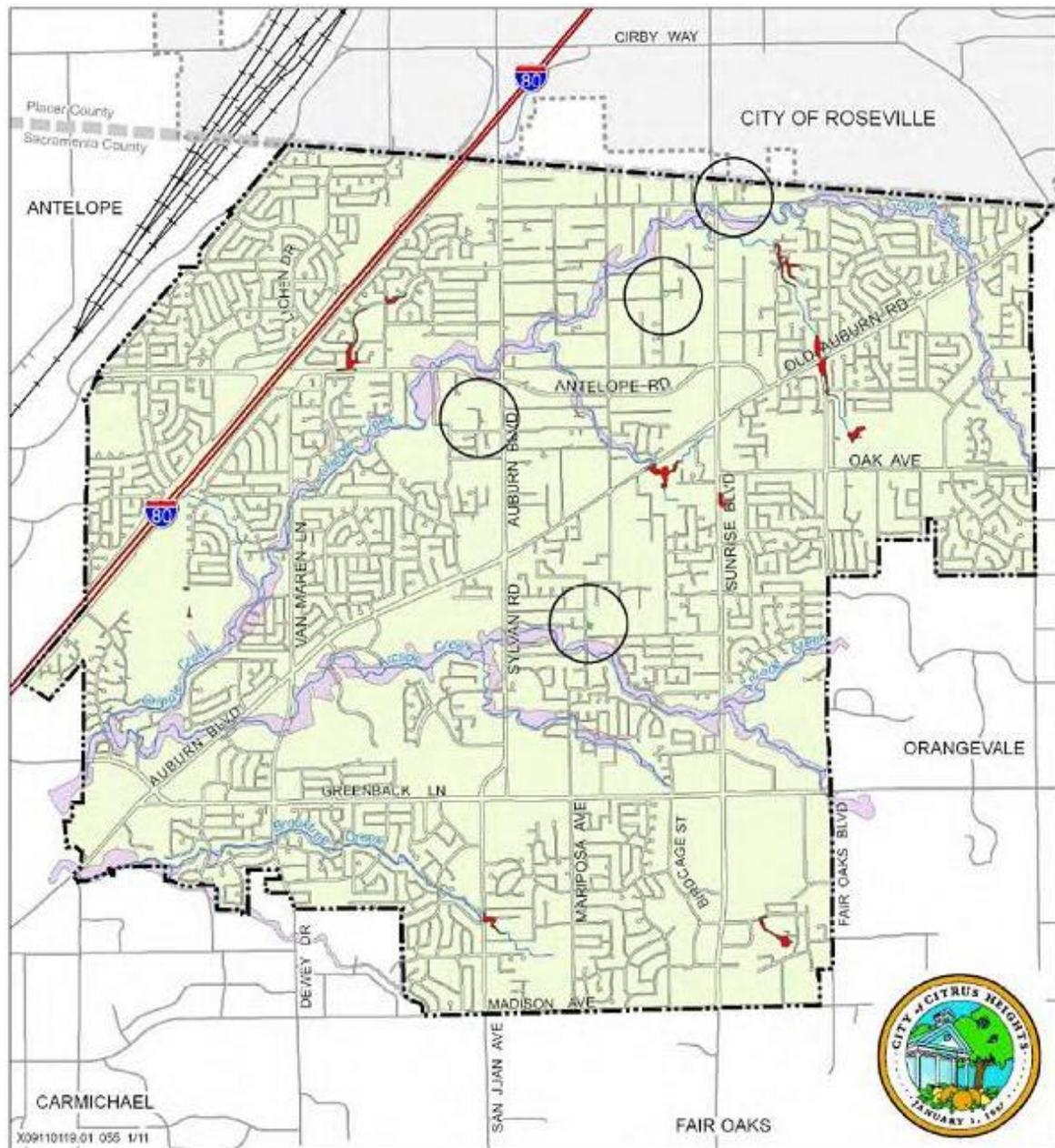
Historically, much of the growth in the City and County has occurred adjacent to streams, resulting in significant damages to property, and losses from disruption of community activities when the streams overflow. Additional development in the watersheds of these streams affects both the frequency and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

The City experiences recurring flooding problems predominantly in the months of November and December. Rain cells in one-hour duration with a hydraulically measured 30 year + occurrence will pick up leaves from the yards and push them into the street and plug up the inlets. Many times the rainwater will crown the road and enter different drainage basin areas to cause flooding. The severe rain cells will hit random areas of the City. As such, except for extra street sweeping of leaves in the leaf drop season, no drainage projects are contemplated to correct the problem.

The General Services Department maintains a citywide list of past chronic flooding within the City. This list includes flood complaints registered with the General Services Department using data from the past several years. Figure A-9 depicts known ponding and street flooding locations in the City. This map is an initial inventory of key problem areas and is not intended to be a complete inventory of all problems and

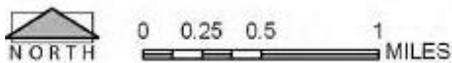
locations associated with severe weather events and localized flooding in the City of Citrus Heights. Damage estimates due to flooding at these locations was unavailable.

Figure A-9 Localized Flooding Map for the City of Citrus Heights



LEGEND

- City of Citrus Heights
- Other Cities
- County Boundary
- Railroad
- Freeway
- Roadways
- Creeks
- Known Ponding Areas
- Known Street Flood Area
- FEMA 100-year Flood Plain



Source: City of Citrus Heights General Plan Environmental Impact Report (2011)

Table A-29 identifies known and past occurrences of such areas and the associated problems encountered. This list is an initial inventory of key problem areas and is not intended to be a complete inventory of all problems and locations associated with severe weather events and localized flooding in the City of Citrus Heights.

*Table A-29 City of Citrus Heights’s Road List of Localized Flooding Problem Areas*

Road Name	Flooding	Pavement Deterioration	Washout	High Water	Landslide/ Mudslide	Debris	Downed Trees
Auburn Bl @ Grand Oaks Bl	X						
Auburn Bl @ Greenback Bl	X						
Bremen (6500)							
Brookdale Dr (7400)	X						
Carriage (7200)							
Greenbback Ln (6529)	X						
Greenback Ln (7548)	X						
Greenback Bl @ Dewey							
Greenback Bl @ Patterson							
Sunrise Bl (5406)	X						
Sunrise Bl (5900)	X						
Sylvan Oak Wy (7960)	X						
Tiara Wy (7856)	X						
Viscount Wy (6531)	X						

Source: City of Citrus Heights

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 crops, roads, 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. Mitigating the root causes of the localized stormwater flooding will reduce future risks of losses.

Changes in the regional approach for clean water and mitigation of flooding has set standards for future development in the County. The standards include hydromodification to be put in place by the development,

though hydromodification requirements were mapped out of the vast majority of the City of Citrus Heights, though Low Impact Development (LID) is still required in some circumstances. This usually translates into recessed landscape areas to pond the runoff and clean the runoff. Developments have also been using pervious pavements and street projects have added recessed landscape areas to collect and clean the runoff.

## *Wildfire*

**Likelihood of Future Occurrence**–Unlikely

**Vulnerability**–Low

Though ranked as a low significance hazard by the City of Citrus Heights, due to its importance in the County and the State of California, wildfire is profiled here. It remains a low significance hazard for mitigation planning purposes for the City.

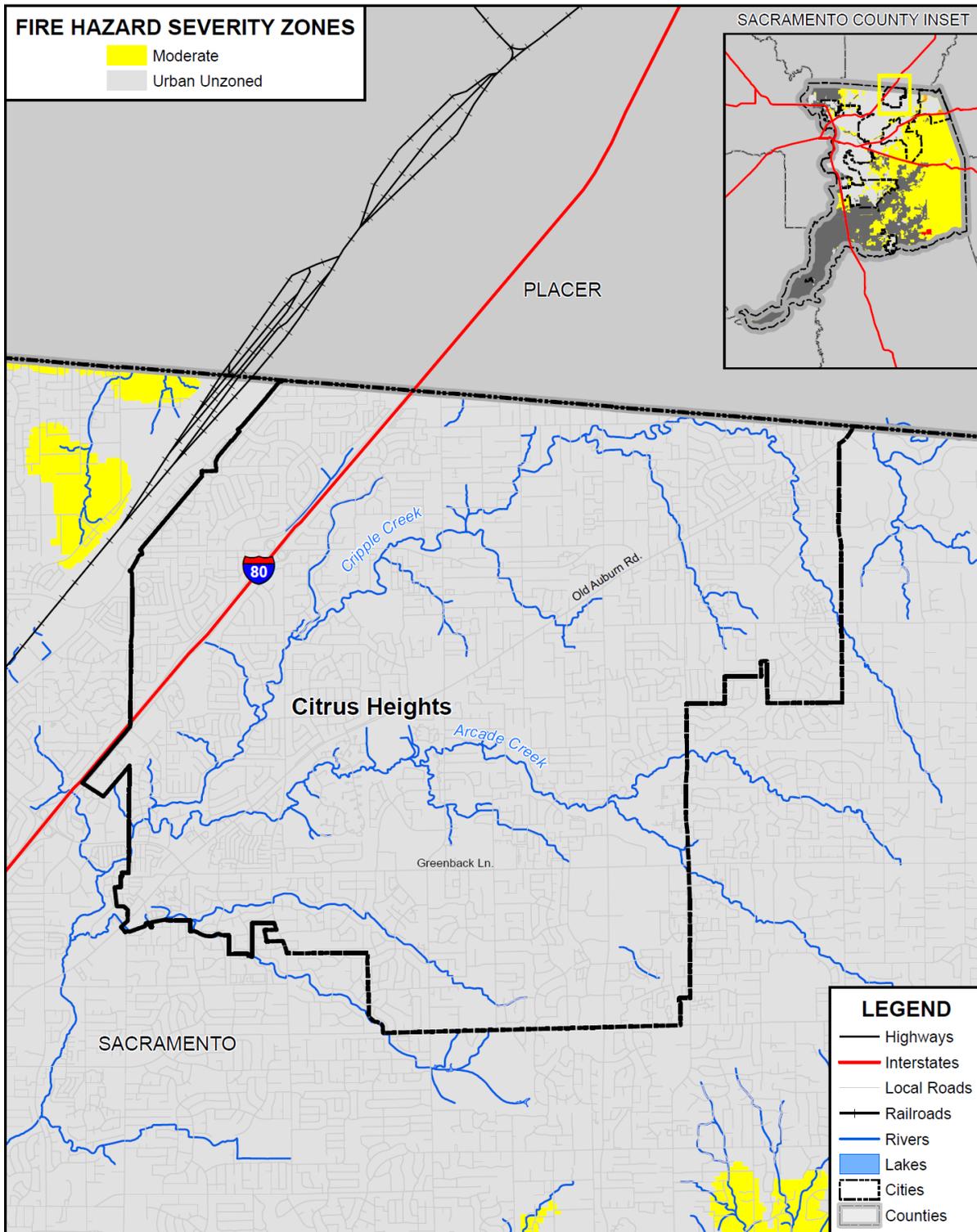
## **Hazard Profile and Problem Description**

Wildland fire and the risk of a conflagration is an ongoing concern for the City of Citrus Heights. 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 Public Safety Power Shutoff (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.

## **Location and Extent**

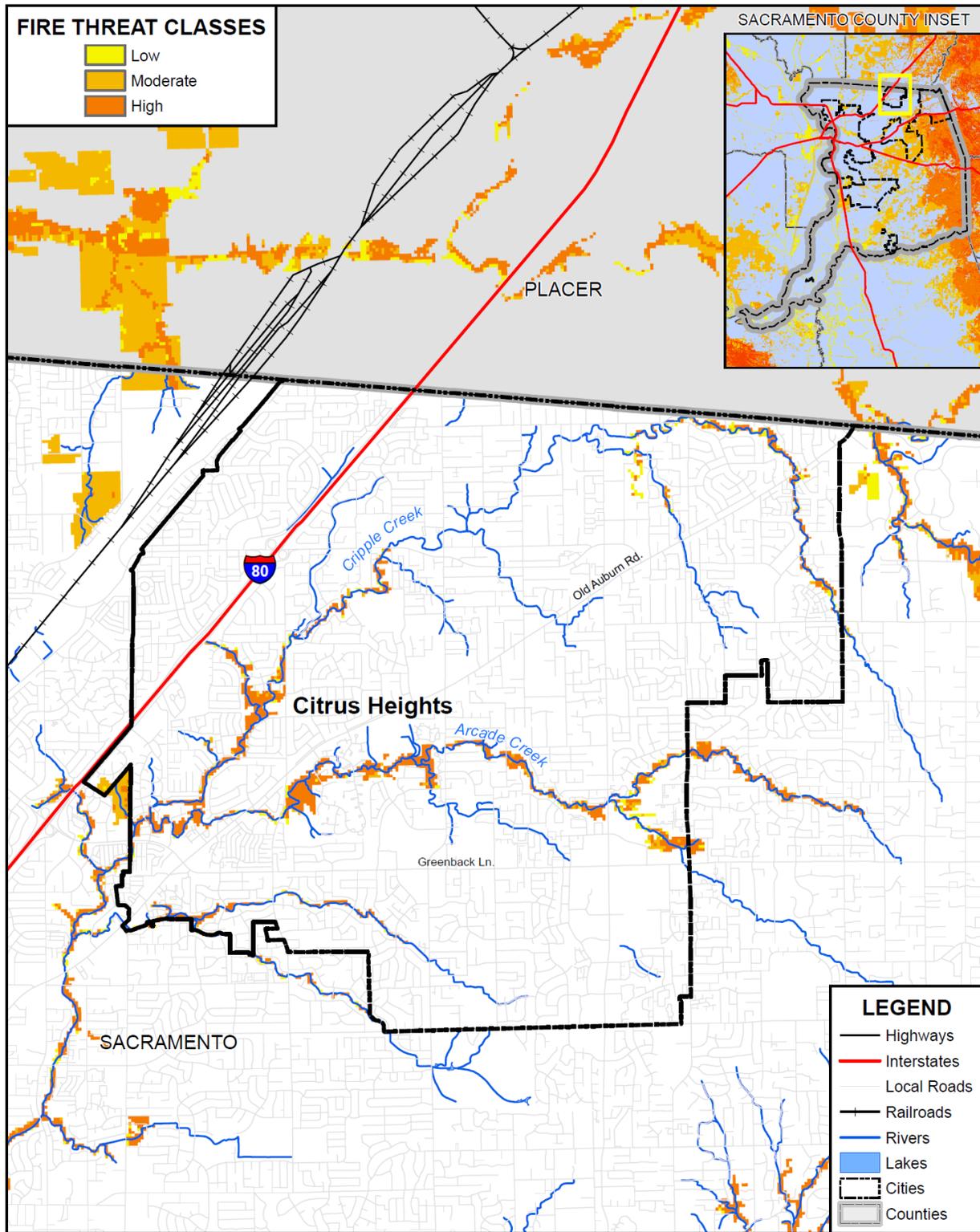
Wildfire can affect all areas of the City. CAL FIRE has estimated that the risk varies across the City and has created maps showing risk variance. Following the methodology described in Section 4.3.19 of the Base Plan, wildfire maps for the City of Citrus Heights were created. Figure A-10 shows the CAL FIRE Fire Hazard Severity Zone (FHSZ) in the City. As shown on the maps, the City is in the Urban/Unzoned FHSZ. Figure A-11 shows the CAL FIRE Fire Threat Areas in the City. As shown on the maps, the Fire Threat Areas in the City range from No Threat to High.

Figure A-10 City of Citrus Heights – 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 A-11 City of Citrus Heights – Fire Threat Areas



Data Source: Cal-Fire 2017 Fire Threat Data (fthrt14\_2), Sacramento County GIS, Cal-Atlas; Map Date: 09/2020.

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 extents from CAL FIRE are shown in Table A-30. Geographical Fire Threat Area extents from CAL FIRE are shown on Table A-31.

*Table A-30 City of Citrus Heights – 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	0	0.00%	0	0.00%	0	0.00%
Non-Wildland/non-Urban	0	0.00%	0	0.00%	0	0.00%
Urban Unzoned	8,950.1	100.0%	7,769.6	100.0%	1,180.5	100.0%
<b>Total</b>	<b>8,950.1</b>	<b>100.0%</b>	<b>7,769.6</b>	<b>100.0%</b>	<b>1,180.5</b>	<b>100.0%</b>

Source: CAL FIRE

\*Percentage of total acres is the percent of total acres of the entire County Planning Area, not the total acres of the jurisdiction

*Table A-31 City of Citrus Heights – 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	290.6	3.25%	127.5	1.64%	163.2	13.82%
Moderate	35.5	0.40%	15.6	0.20%	19.9	1.69%
Low	48.8	0.55%	23.7	0.31%	25.0	2.12%
No Threat	8,575.2	95.81%	7,602.8	97.85%	972.4	82.37%
<b>Total</b>	<b>8,950.1</b>	<b>100.00%</b>	<b>7,769.6</b>	<b>100.00%</b>	<b>1,180.5</b>	<b>100.00%</b>

Source: CAL FIRE

\*Percentage of total acres is the percent of total acres of the entire County Planning Area, not the total acres of the jurisdiction

## Past Occurrences

There has been no state and one federal disaster declaration due to fire, as shown in Table A-32. It should be noted that this fire disaster was from an explosion in Roseville, and not from an actual wildfire.

*Table A-32 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

The City has not experienced fire events within the city in the past, but has experienced events that occurred outside the city. The City rendered mutual aid during the Paradise fire in 2017, the Oroville Dam evacuation in 2017, and air quality was severely impacted in the city as well as most of the state during the fire storms of 2020, and September in particular.

### 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.

Citrus Heights 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.

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 Citrus Heights to the wildfire hazard, the sections that follow describes significant assets at risk in the City of Citrus Heights. 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 Citrus Heights. 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 Citrus Heights are shown in Table A-33, which summarizes total parcel counts, improved parcel counts and their structure values by fire hazard severity zone. As previously stated, the City falls fully in the Urban Unzoned FHSZ

*Table A-33 City of Citrus Heights – 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
Urban Unzoned	26,777	25,821	\$2,277,237,402	\$5,468,554,811	\$3,145,021,676	\$10,890,813,812
<b>Citrus Heights Total</b>	<b>26,777</b>	<b>25,821</b>	<b>\$2,277,237,402</b>	<b>\$5,468,554,811</b>	<b>\$3,145,021,676</b>	<b>\$10,890,813,812</b>

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

Table A-34 breaks out the Table A-33 by adding the property use details by fire hazard severity zone for the City. As shown in both of these tables, the City has no properties in the very high or high fire hazard severity zone. All of the City falls within the Urban Unzoned FHSZs.

*Table A-34 City of Citrus Heights – 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
<b>Urban Unzoned</b>						
Agricultural	0	0	\$0	\$0	\$0	\$0
Care/Health	37	29	\$16,430,609	\$73,652,597	\$73,652,597	\$163,735,803
Church/Welfare	45	39	\$9,351,283	\$46,214,191	\$46,214,191	\$101,779,665
Industrial	22	19	\$11,535,364	\$17,589,132	\$26,383,698	\$55,508,194
Miscellaneous	353	0	\$627,387	\$0	\$0	\$627,387
Office	151	142	\$55,647,981	\$121,241,584	\$121,241,584	\$298,131,149
Public/Utilities	24	1	\$27,054	\$3,837	\$3,837	\$34,728
Recreational	6	4	\$2,578,894	\$12,938,386	\$12,938,386	\$28,455,666
Residential	25,437	25,218	\$1,809,237,816	\$4,654,812,476	\$2,327,406,306	\$8,791,456,521
Retail / Commercial	366	350	\$325,606,703	\$537,181,077	\$537,181,077	\$1,399,968,857

Fire Hazard Severity Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Unknown	4	3	\$34,193	\$271,996	\$0	\$306,189
Vacant	332	16	\$46,160,118	\$4,649,535	\$0	\$50,809,653
<b>Urban Unzoned Total</b>	<b>26,777</b>	<b>25,821</b>	<b>\$2,277,237,402</b>	<b>\$5,468,554,811</b>	<b>\$3,145,021,676</b>	<b>\$10,890,813,812</b>
<b>Citrus Heights Total</b>	<b>26,777</b>	<b>25,821</b>	<b>\$2,277,237,402</b>	<b>\$5,468,554,811</b>	<b>\$3,145,021,676</b>	<b>\$10,890,813,812</b>

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 Citrus Heights. The methodology described in Section 4.3.19 of the Base Plan was followed in determining structures and values at risk in Fire Threat Areas. Summary analysis results for Citrus Heights are shown in Table A-35, which summarizes total parcel counts, improved parcel counts and their structure values by Fire Threat Area. Table A-36 breaks out the Table A-35 by adding the property use details by fire threat areas for the City. As opposed to the FHSZs, the City has areas in the Moderate and High Fire Threat Areas.

*Table A-35 City of Citrus Heights – Count and Value of Parcels by Fire Threat Areas*

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	154	83	\$10,944,958	\$21,098,428	\$11,115,363	\$43,158,746
Moderate	26	15	\$3,862,157	\$3,279,905	\$1,639,955	\$8,782,013
Low	20	17	\$1,456,037	\$3,126,388	\$1,563,197	\$6,145,619
No Threat	26,577	25,706	\$2,260,974,250	\$5,441,050,090	\$3,130,703,161	\$10,832,727,434
<b>Citrus Heights Total</b>	<b>26,777</b>	<b>25,821</b>	<b>\$2,277,237,402</b>	<b>\$5,468,554,811</b>	<b>\$3,145,021,676</b>	<b>\$10,890,813,812</b>

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

*Table A-36 City of Citrus Heights – 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
<b>High</b>						
Agricultural	0	0	\$0	\$0	\$0	\$0
Care/Health	0	0	\$0	\$0	\$0	\$0
Church/Welfare	2	2	\$74,763	\$1,132,289	\$1,132,289	\$2,339,341
Industrial	0	0	\$0	\$0	\$0	\$0

Fire Threat Class / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Miscellaneous	53	0	\$73,266	\$0	\$0	\$73,266
Office	0	0	\$0	\$0	\$0	\$0
Public/Utilities	0	0	\$0	\$0	\$0	\$0
Recreational	0	0	\$0	\$0	\$0	\$0
Residential	91	81	\$9,124,329	\$19,966,139	\$9,983,074	\$39,073,539
Retail/Commercial	0	0	\$0	\$0	\$0	\$0
Unknown	0	0	\$0	\$0	\$0	\$0
Vacant	8	0	\$1,672,600	\$0	\$0	\$1,672,600
<b>High Total</b>	<b>154</b>	<b>83</b>	<b>\$10,944,958</b>	<b>\$21,098,428</b>	<b>\$11,115,363</b>	<b>\$43,158,746</b>
<b>Moderate</b>						
Agricultural	0	0	\$0	\$0	\$0	\$0
Care/Health	1	0	\$80,680	\$0	\$0	\$80,680
Church/Welfare	0	0	\$0	\$0	\$0	\$0
Industrial	0	0	\$0	\$0	\$0	\$0
Miscellaneous	2	0	\$61	\$0	\$0	\$61
Office	0	0	\$0	\$0	\$0	\$0
Public/Utilities	0	0	\$0	\$0	\$0	\$0
Recreational	0	0	\$0	\$0	\$0	\$0
Residential	18	15	\$1,175,106	\$3,279,905	\$1,639,955	\$6,094,962
Retail/Commercial	0	0	\$0	\$0	\$0	\$0
Unknown	0	0	\$0	\$0	\$0	\$0
Vacant	5	0	\$2,606,310	\$0	\$0	\$2,606,310
<b>Moderate Total</b>	<b>26</b>	<b>15</b>	<b>\$3,862,157</b>	<b>\$3,279,905</b>	<b>\$1,639,955</b>	<b>\$8,782,013</b>
<b>Low</b>						
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	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	18	17	\$1,420,896	\$3,126,388	\$1,563,197	\$6,110,478
Retail/Commercial	0	0	\$0	\$0	\$0	\$0

Fire Threat Class / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Unknown	0	0	\$0	\$0	\$0	\$0
Vacant	1	0	\$35,141	\$0	\$0	\$35,141
<b>Low Total</b>	<b>20</b>	<b>17</b>	<b>\$1,456,037</b>	<b>\$3,126,388</b>	<b>\$1,563,197</b>	<b>\$6,145,619</b>
<b>No Threat</b>						
Agricultural	0	0	\$0	\$0	\$0	\$0
Care/Health	36	29	\$16,349,929	\$73,652,597	\$73,652,597	\$163,655,123
Church/Welfare	43	37	\$9,276,520	\$45,081,902	\$45,081,902	\$99,440,324
Industrial	22	19	\$11,535,364	\$17,589,132	\$26,383,698	\$55,508,194
Miscellaneous	297	0	\$554,060	\$0	\$0	\$554,060
Office	151	142	\$55,647,981	\$121,241,584	\$121,241,584	\$298,131,149
Public/Utilities	24	1	\$27,054	\$3,837	\$3,837	\$34,728
Recreational	6	4	\$2,578,894	\$12,938,386	\$12,938,386	\$28,455,666
Residential	25,310	25,105	\$1,797,517,485	\$4,628,440,044	\$2,314,220,080	\$8,740,177,542
Retail/Commercial	366	350	\$325,606,703	\$537,181,077	\$537,181,077	\$1,399,968,857
Unknown	4	3	\$34,193	\$271,996	\$0	\$306,189
Vacant	318	16	\$41,846,067	\$4,649,535	\$0	\$46,495,602
<b>No Threat Total</b>	<b>26,577</b>	<b>25,706</b>	<b>\$2,260,974,250</b>	<b>\$5,441,050,090</b>	<b>\$3,130,703,161</b>	<b>\$10,832,727,434</b>
<b>Citrus Heights Total</b>	<b>26,777</b>	<b>25,821</b>	<b>\$2,277,237,402</b>	<b>\$5,468,554,811</b>	<b>\$3,145,021,676</b>	<b>\$10,890,813,812</b>

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

### Population at Risk

The FHSZ and Fire Threat datasets were overlaid on the parcel layer. Those residential parcel centroids that intersect the FHSZs and Fire Threat Areas were counted and multiplied by the 2010 Census Bureau average household factors for the City of Citrus Heights – 2.54. According to this analysis, there is a total population of 0 residents of Citrus Heights at risk to moderate or higher FHSZs, while there is a total of 168 in the moderate or higher fire threat areas. This is shown in Table A-37 and Table A-38, respectively.

*Table A-37 City of Citrus Heights – 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
Citrus Heights	0	0	0	0	0	0

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



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

### A.6.1. Regulatory Mitigation Capabilities

Table A-41 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 Citrus Heights. **MAKE SURE TO FILL OUT THE LAST CELL – FEMA WILL NOT PASS THE PLAN WITHOUT IT!**

*Table A-41 City of Citrus Heights 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 2008	
Capital Improvements Plan	Y 2016	
Economic Development Plan		
Local Emergency Operations Plan	Y 2005	
Continuity of Operations Plan		
Transportation Plan		
Stormwater Management Plan/Program	Y 2016	
Engineering Studies for Streams		
Community Wildfire Protection Plan		
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)		
<b>Building Code, Permitting, and Inspections</b>	<b>Y/N</b>	<b>Are codes adequately enforced?</b>
Building Code	Y	Version/Year: 2013 CCR Title 24
Building Code Effectiveness Grading Schedule (BCEGS) Score		Score: 2
Fire department ISO rating:		Rating:
Site plan review requirements	Y 2004	
<b>Land Use Planning and Ordinances</b>	<b>Y/N</b>	<b>Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?</b>
Zoning ordinance	Y	Ordinance is effective, administered, and enforced.
Subdivision ordinance	Y	Ordinance is effective, administered, and enforced.

Floodplain ordinance	Y	Ordinance is effective, administered, and enforced.
Natural hazard specific ordinance (stormwater, steep slope, wildfire)		
Flood insurance rate maps		
Elevation Certificates		
Acquisition of land for open space and public recreation uses		
Erosion or sediment control program	Y	Ordinance is effective, administered, and enforced.
Other		
<b>How can these capabilities be expanded and improved to reduce risk?</b>		
<b>PROVIDE SPECIFIC DETAILS OF AREAS FOR IMPROVEMENT OF THESE TYPES OF CAPABILITIES AND HOW/WHY IT WILL HELP THE CITY</b>		

Source: City of Citrus Heights

### *The City of Citrus Heights General Plan, 2011*

California Law requires that every City and County in the state have a General Plan. The Citrus Heights General Plan, adopted in 2000, was prepared over a two-year period that included an extensive public review process. Since that time there have been several minor amendments and a major amendment in 2011 to the General Plan. The 2011 update addressed Legislation requirements and added a Greenhouse Gas Reduction Plan.

The General Plan is the most important policy and planning document in the city, and is used by virtually every department. The General Plan is the city's statement of its vision for the future. The General Plan contains policies covering every aspect of the City: Land Use (how land can be developed), circulation, noise, air quality, housing, open space and conservation, and health and safety.

### **A.6.2. Administrative/Technical Mitigation Capabilities**

Table A-42 identifies the City department(s) responsible for activities related to mitigation and loss prevention in Citrus Heights. **MAKE SURE TO FILL OUT THE LAST CELL – FEMA WILL NOT PASS THE PLAN WITHOUT IT!**

*Table A-42 City of Citrus Heights’s Administrative and Technical Mitigation Capabilities*

Administration	Y/N	Describe capability Is coordination effective?
Planning Commission	Y	Approves conditions on development based on staff’s recommendations
Mitigation Planning Committee	N	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Y	Citrus Heights contracts out tree trimming, pipe cleaning, street maintenance and other public works services.
Mutual aid agreements	Y	Metro Fire and Citrus Heights Police have agreements in place with sister agencies.
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	Staff is adequate, trained, and coordinates as necessary.
Floodplain Administrator	Y	Staff is adequate, trained, and coordinates as necessary.
Emergency Manager	Y	Staff is adequate, trained, and coordinates as necessary.
Community Planner	Y	Staff is adequate, trained, and coordinates as necessary.
Civil Engineer	Y	Staff is adequate, trained, and coordinates as necessary.
GIS Coordinator	Y	Staff is adequate, trained, and coordinates as necessary.
Other		
<b>Technical</b>		
Warning systems/services (Reverse 911, outdoor warning signals)	Y	
Hazard data and information	Y	
Grant writing	Y	
Hazus analysis	Y	
Other		
<b>How can these capabilities be expanded and improved to reduce risk?</b>		
<b>PROVIDE SPECIFIC DETAILS OF AREAS FOR IMPROVEMENT OF THESE TYPES OF CAPABILITIES AND HOW/WHY IT WILL HELP THE CITY</b>		

Source: City of Citrus Heights

### ***Flood Control/Management***

The City is provided flood control and management services from the Sacramento County Water Agency (SCWA). The SCWA, through its efforts at managing the flood control system under its jurisdiction, has created three Zones, which the City is covered under. These Zones include Zone 11, Zone 12, and Zone 13. Zone 11 is a drainage fee zone formed to provide funding for the construction of drainage facilities in Sacramento County. Fees are collected through Zone 11 from new development. Zone 12, now a separate utility, provides storm drain maintenance and improvements for Sacramento County, such as channel clearing and servicing pumping plants. Zone 13, an assessment district, provides funding for flood control and water supply planning, groundwater studies, and FEMA programs. Zone 13 collects fees from benefiting parties.

Since July 2010, the City no longer contracts with Sacramento County for the operations and maintenance of drainage facilities. The City contracts with private contractors to provide these services. The City has received many comments from long time residents indicating that flood events are less significant in the past decade. We attribute this to the focused creek maintenance efforts by city staff.

To date, the city has also developed two of four planned Neighborhood Storm Drain Master Plan. Neighborhoods 6 & 7 were previously completed, and the implementation projects for Neighborhoods 8, 9 & 10 are currently being developed and constructed. The Neighborhood 4, 5 & 11 Storm Drain Master Plan will be developed in the near future with Neighborhood 1, 2 & 3 Storm Drain Master Plan to be the last to

be developed. The city has approximately one storm drain specific capital improvement project per year with other storm drain improvements included in various other capital improvement projects.

### A.6.3. Fiscal Mitigation Capabilities

Table A-43 identifies financial tools or resources that the City could potentially use to help fund mitigation activities. **MAKE SURE TO FILL OUT THE LAST CELL – FEMA WILL NOT PASS THE PLAN WITHOUT IT!**

*Table A-43 City of Citrus Heights’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	Drainage projects, erosion projects, street projects with upgrades to Storm drain system, master planning grants
Authority to levy taxes for specific purposes	N	
Fees for water, sewer, gas, or electric services	N	
Impact fees for new development	Y	Under Sac County drainage fee program
Storm water utility fee	Y	Collecting about \$3.1 million per year to fund the drainage program
Incur debt through general obligation bonds and/or special tax bonds	N	
Incur debt through private activities	Y	
Community Development Block Grant	Y	
Other federal funding programs	N	
State funding programs	N	
Other		
<b>How can these capabilities be expanded and improved to reduce risk?</b>		
<b>PROVIDE SPECIFIC DETAILS OF AREAS FOR IMPROVEMENT OF THESE TYPES OF CAPABILITIES AND HOW/WHY IT WILL HELP THE CITY</b>		

Source: City of Citrus Heights

### A.6.4. Mitigation Education, Outreach, and Partnerships

Table A-44 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. **MAKE SURE TO FILL OUT THE LAST CELL – FEMA WILL NOT PASS THE PLAN WITHOUT IT!**

*Table A-44 City of Citrus Heights’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	CERT SSQP BERC Creek Week Green Planning Academy.
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Y	City Franchisee for Solid Waste provides education in its billing, public relations work and other collection efforts.
Natural disaster or safety related school programs		
StormReady certification		
Firewise Communities certification		
Public-private partnership initiatives addressing disaster-related issues	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		
PROVIDE SPECIFIC DETAILS OF AREAS FOR IMPROVEMENT OF THESE TYPES OF CAPABILITIES AND HOW/WHY IT WILL HELP THE CITY		

Source: City of Citrus Heights

### ***Regional Mutual Aid Plan***

The California Office of Emergency Services’ mutual aid plan for Region IV consists of the following counties: Nevada, Placer, Yolo, Sacramento, El Dorado, Alpine, Amador, San Joaquin, Calaveras, Tuolumne, and Stanislaus. The *Region IV Multi-Casualty Incident Plan* develops standard multiple casualty procedures so that jurisdictions can work together effectively in the case of a fire, explosion, chemical spill, or natural disaster that becomes a multiple casualty incident.

The purpose of the *Region IV Multi-Casualty Incident Plan* is to standardize emergency response procedures through the use of consistent response organization responsibilities, mobilization of resources, communications and documentation, patient dispersal and tracking, and regional hospital capabilities. The plan is designed to allow each agency to utilize the multiple casualty procedures both to enhance day-to-day medical response operations, and as a method to ensure that agencies efficiently share resources and communicate rapidly during multi-casualty incidents.

### **A.6.5. Other Mitigation Efforts**

The City of Citrus Heights has many other ongoing mitigation efforts that include the following:

- Drainage Master Planning with follow up projects
- Contract creek cleaning
- Drainage pipe rehab program

- Contract Pipe Cleaning
- Floodplain building policy
- Zoning Code Changes
- Hydro-modification Policy - Pre and Post Development equivalent runoffs
- Streetscape Landscaping with depressed landscape areas to absorb & clean runoff
- City Provided FEMA Elevation Certs on all residential units within a flood hazard

## **A.7 Mitigation Strategy**

### **A.7.1. Mitigation Goals and Objectives**

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

### **A.7.2. NFIP Mitigation Strategy**

The City of Citrus Heights joined the National Flood Insurance Program (NFIP) on October 15, 1997. As a participant of the NFIP, the City of Citrus Heights 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 Citrus Heights will continue to comply with the requirements of the NFIP in the future.

In addition, the City of Citrus Heights 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 Citrus Heights as for Sacramento County since participation at the County level includes all local jurisdictions.

The City of Citrus Heights General Services 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 General Services 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 Citrus Heights is not a current participant in the CRS program. More information about the floodplain administration in the City of Citrus Heights can be found in Table A-45.

**Table A-45 City of Citrus Heights Compliance with NFIP**

NFIP Topic	Comments
<b>Insurance Summary</b>	
How many NFIP policies are in the community? What is the total premium and coverage?	337 policies \$150,469 in premiums \$91,036,800 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?	15 claims \$335,680.89 in claims paid 2 substantial damage claims
How many structures are exposed to flood risk within the community?	171 in 1% annual chance 344 in 0.2% annual chance
Repetitive Loss (RL) and Severe Repetitive Loss Properties (SRL)	5 RL properties 0 SRL properties
Describe any areas of flood risk with limited NFIP policy coverage	None known
<b>Staff Resources</b>	
Is the Community Floodplain Administrator or NFIP Coordinator certified?	The Community Floodplain Administrator is not certified, but 2 reporting staff engineers are certified.
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	permit review, GIS (pending filling staff vacancy), education and outreach, inspections, engineering capability
What are the barriers to running an effective NFIP program in the community, if any?	Limited funding vs. other, more pressing needs.
<b>Compliance History</b>	
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 05/27/2014
Is a CAV or CAC scheduled or needed?	N
<b>Regulation</b>	
When did the community enter the NFIP?	10/15/1997
Are the FIRMs digital or paper?	Digital
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Exceed. The City requires 2' of freeboard where FEMA requires 1', and has greater restrictions regarding what can be built in the floodplain.
Provide an explanation of the permitting process.	Permits are routed to the development review program and reviewed by one or both staff engineers. Both engineers are CFM.
<b>Community Rating System</b>	
Does the community participate in CRS?	N

NFIP Topic	Comments
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

### A.7.3. Mitigation Actions

The planning team for the City of Citrus Heights 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:

- Dam Failure
- Floods: 1%/0.2% annual chance
- Floods: Localized Stormwater

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 (Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, and Pandemic)

**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).

**Project Description:** 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.

**Other Alternatives:** No action

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

**Responsible Office:** City of Citrus Heights 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 (Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Pandemic, 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.

**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 Citrus Heights 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. Cable Trellis w/ Vines Shading Project***

---

**Hazards Addressed:** Climate Change, Drought & Water Shortage, Floods, Severe Weather, Wildfire

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

**Issue/Background:** There is some evidence that rising temperatures are a result of the increase in manmade surfaces acting as heat sinks, and that increased foliage can provide some relief. Trees provide relief when they are large enough to provide shade in the hard surfaces, but vines could be an alternative if trained to follow a cable lattice network over the hard surfaces.

The vegetation can also help to slow and clean storm water run-off that would otherwise fall on an quickly run-off the impervious surfaces.

**Project Description:** Trees in parking lot islands would be replaced with vertical columns filled with soil medium and vine plugs that would be trained to grow up the columns and then across cables suspended between the columns. A test locations for a pilot project would be 2 uncovered paved patio areas at municipal buildings.

**Other Alternatives:** Plant slow growing trees. Allow pavement and impervious surfaces to remain a heat sink

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Zoning Code and Design Guideline

**Responsible Agency/ Department/Partners:** CCD & GSD Staff in coordination with consultant

**Cost Estimate:** \$100K

**Benefits (Losses Avoided):** Reduced heat sink. Reduced storm water run-off

**Potential Funding:** CalOES, FEMA, CDFW, DWR, Water Board, and other grant sources

**Timeline:** 2022-2027

**Project Priority (H, M, L):** Low

***Action 4. Trash Racks and Debris Cages Project***

---

**Hazards Addressed:** Climate Change, Floods, Severe Weather, Wildfire

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

**Issue/Background:** Trash and debris can cause clogs in the storm drain system when conveyed by stormwater runoff. Trash racks and debris cages prevent debris from entering storm drain systems while still allowing water to flow through.

**Project Description:** The project would identify high impact locations in need of trash racks and debris cages, install the devices and develop a maintenance schedule.

**Other Alternatives:** No action.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** EOP, Continuity of Operation Plan

**Responsible Agency/ Department/Partners:** GSD Staff in coordination with consultant and contractor

**Cost Estimate:** \$500k

**Benefits (Losses Avoided):** Loss of property and life avoided.

**Potential Funding:** CalOES, FEMA, CDFW, DWR ... other grant sources

**Timeline:** 2022-2027

**Project Priority (H, M, L):** Medium

***Action 5. Protection of Transportation Infrastructure Project***

---

**Hazards Addressed:** Climate Change, Dam Failure, Floods, Severe Weather, Wildfire

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

**Issue/Background:** The city's roadway network consists of a combination of federal highways and state highways, and local streets. This roadway network is used extensively for personal vehicles travel.

**Project Description:** The project would retrofit all bridges in the City of Citrus Heights to current seismic standards, elevate roads and bridges above base flood elevations to maintain dry access. In some situations, the mitigation could include reconstruction with stabilization or armouring of vulnerable shoulders or embankments.

**Other Alternatives:** No action.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** EOP, Continuity of Operation Plan

**Responsible Agency/ Department/Partners:** GSD Staff in coordination with consultant and contractor

**Cost Estimate:** \$1M

**Benefits (Losses Avoided):** Enhanced bridge safety, improved evacuation reliability, reduced disaster response and recover times.

**Potential Funding:** CalOES, FEMA, CDFW, DWR, other grant sources

**Timeline:** 2022-2027

**Project Priority (H, M, L):** Medium

***Action 6. Neighborhood Storm Drain Project***

---

**Hazards Addressed:** Climate Change, Dam Failure, Drought & Water Shortage, Floods, Severe Weather, Subsidence, Wildfire

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

**Issue/Background:** Most of the City of Citrus Heights' storm drain system was constructed prior to incorporation as a city. Portions of the system had little to no design, or was designed to standards that have since been superseded. Additionally, portions of the storm drain system has passed its useful life and needs to be replaced

**Project Description:** Neighborhood Storm Drain Master Plans identify various drainage problem locations. The Neighborhood Storm Drain Project implements a solution to at a drainage problem location.

**Other Alternatives:** Allow ongoing deterioration to the storm drain system and resultant flooding

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** EOP, Continuity of Operation Plan

**Responsible Agency/ Department/Partners:** GSD Staff in coordination with consultant

**Cost Estimate:** \$1M

**Benefits (Losses Avoided):** Reduced risk to critical facilities. Reduced risk to citizens

**Potential Funding:** Stormwater Fund, CalOES, FEMA, CDFW, DWR ... other grant sources

**Timeline:** 2022-2027

**Project Priority (H, M, L):** High

***Action 7. Neighborhood Storm Drain Master Plan***

---

**Hazards Addressed:** Climate Change, Dam Failure, Drought & Water Shortage, Floods, Severe Weather, Subsidence, Wildfire

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

**Issue/Background:** Most of the City of Citrus Heights' storm drain system was constructed prior to incorporation as a city. Portions of the system had little to no design, or was designed to standards that have since been superseded. Additionally, portions of the storm drain system has passed its useful life and needs to be replaced

**Project Description:** The Neighborhood Storm Drain Master Plan evaluates drainage concerns in the city. Since the City of Citrus Heights assumed responsibility for storm drain maintenance following incorporation, a systematic evaluation of the storm drain system has been conducted to address areas of drainage concern. The city is divided into 11 neighborhoods with a group of neighborhoods being included in each master plan.

**Other Alternatives:** No Action

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** EOP, Continuity of Operation Plan

**Responsible Agency/ Department/Partners:** GSD Staff in coordination with consultant

**Cost Estimate:** \$500k

**Benefits (Losses Avoided):** Reduced risk to critical facilities. Reduced risk to citizens

**Potential Funding:** Stormwater Fund, CalOES, FEMA, CDFW, DWR ... other grant sources

**Timeline:** 2022

**Project Priority (H, M, L):** High

***Action 8. Storm Drain Inlet Retrofit Project***

---

**Hazards Addressed:** Climate Change, Dam Failure, Drought & Water Shortage, Floods, Severe Weather, Subsidence, Wildfire

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

**Issue/Background:** Storm drain inlet capacity limits have been identified as a cause of localized street flooding.

**Project Description:** The project would replace existing storm drain inlets with high capacity inlets.

**Other Alternatives:** No action.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** EOP, Continuity of Operation Plan

**Responsible Agency/ Department/Partners:** GSD Staff in coordination with consultant and contractor

**Cost Estimate:** \$250k

**Benefits (Losses Avoided):** Accident avoidance.

**Potential Funding:** CalOES, FEMA, CDFW, DWR, other grant sources, and stormwater fund.

**Timeline:** 2022-2027

**Project Priority (H, M, L):** Medium

*Action 9. Reduce Citrus Heights extreme heat events and associated hazards by Increase tree planting/canopy preservation/enhancement (this is in general plan) Project*

---

**Hazards Addressed:** Climate Change, Severe Weather

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

**Issue/Background:** Trees have many benefits, of particular importance during extreme heat events is that trees create cooler environments through the process of evapotranspiration. Evapotranspiration occurs when trees transpire, and trees transpire water to cool themselves. When the transpired water evaporates, the area surrounding the tree cools as well. The EPA notes that evapotranspiration and shade can help to lessen peak summer temperatures by 2 to 9 degrees. Planting and maintaining trees is one of the best ways to combat harmful environmental effects. Introducing more vegetation, like trees, into urban environments helps with everything from basic shade refuge to cleaner air to the reduction of energy costs. Trees and the related shading will help mitigate climate impacts particularly during extreme heat events.

**Project Description:** The project would maintain healthy urban forests; restore trees and tree canopy in commercial parking lots. Promote and increase tree planting to increase shading and to absorb CO<sub>2</sub>, PM to improve air quality, reduce urban heat islands and associated hazards.

**Other Alternatives:** No Action.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Tree Preservation Ordinance (existing) and planned update. Code enforcement efforts with commercial property owners to replace lost trees in parking lots (enforcement of parking lot tree canopy requirements). Through support from the Capital Region Climate Readiness Collaborative; monitor and support regional and State-level efforts to forecast the impact of climate change on temperatures and incidence of extreme heat events in Sacramento and the region. Create and maintain shading by sustaining municipal tree planting efforts and

continuing to maintain the health of existing trees. On-going implementation of Zoning Code and Design Guideline Tree Planting requirements and recommendations. (New) In collaboration with the Sacramento Tree Foundation, Implementation of a Neighborhood Forest Certification (NFC) program that offers guidelines and educational services on how to optimize the performance of trees in the design and build-out of new neighborhoods.

**Responsible Agency/ Department/Partners:** Planning and General Services Staff in coordination with consultant and contractor

**Cost Estimate:** \$1M

**Benefits (Losses Avoided):** Reduce Citrus Heights' vulnerability to extreme heat events and associated hazards.

**Potential Funding:** CalOES, FEMA, Tree planting: Tree Mitigation Fund, State grants, SMUD, PGE Mitigation Funding, Collaboration with Sacramento Tree Foundation, and other grant sources

**Timeline:** 2022-2027

**Project Priority (H, M, L):** Medium

*Action 10. Increase pedestrian and bicycle evacuation routes by constructing regional bike/pedestrian trail infrastructure, and expanding connection to neighborhoods (particularly in vulnerable areas) Project*

---

**Hazards Addressed:** Climate Change, Floods, Wildfire

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

**Issue/Background:** During extreme weather events and other emergencies, the public may frequently have to walk or bicycle out of areas to seek safety. In the event of an evacuation, pedestrian and bicycle trails can be used and have often served as the secondary transportation backbone.

Filling gaps in trail segments and connections and maintaining important trail infrastructure is not only an important measure for evacuation, but can also provide additional access for emergency vehicles and workers, and provide access for other mitigation work such as fuel reduction.

**Project Description:** The project would maintain existing regional and local trail systems and infrastructure. Design and construct new trail segments to better connect neighborhoods and communities. Coordinate with cities throughout the county in comprehensive planning of a well-design trail network. Coordinate with Sac Metro Fire, SMUD and others in designing trails.

**Other Alternatives:** No Action.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Coordinate between Planning and General Services in expanding trail network and connecting with public roads, easements and points of access. Coordinate between Planning and General Services in prioritizing bicycle and pedestrian

facilities and improvements, on and off street. Coordinate with other partners in trail planning and construction. Include trails and construction in Specific Plans, Subdivisions and new projects.

**Responsible Agency/ Department/Partners:** GSD & Planning Staff in coordination with Regional Parks, consultants and contractors

**Cost Estimate:** \$1M

**Benefits (Losses Avoided):** Increase evacuation options and provide a secondary transportation network.

**Potential Funding:** CalOES, FEMA, CDFW, DWR Measure A Bond Funding-Trails State Grants, Projects with partners, New Development – included in project other grant sources

**Timeline:** 2022-2027

**Project Priority (H, M, L):** Medium-High

***Action 11. Interconnected Transportation System Project***

---

**Hazards Addressed:** Climate Change, Dam Failure, Floods, Severe Weather, Wildfire

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

**Issue/Background:** Transportation routes have been shown during recent emergencies to be a limiting factor in evacuations.

**Project Description:** The project would provide the interconnection of all traffic signals to allow the traffic engineer to control signals to optimize evacuations.

**Other Alternatives:** No Action.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** EOP, Continuity of Operation Plan

**Responsible Agency/ Department/Partners:** GSD Staff in coordination with consultant and contractor

**Cost Estimate:** \$1M

**Benefits (Losses Avoided):** Uncalculated based on varied emergencies.

**Potential Funding:** CalOES, FEMA, other grant sources

**Timeline:** 2022-2027

**Project Priority (H, M, L):** Medium

**Action 12. Critical Facility Generator Project**

---

**Hazards Addressed:** Climate Change, Dam Failure, Drought & Water Shortage, Earthquakes, Floods, Severe Weather, Subsidence, Wildfire

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

**Issue/Background:** A wide variety of hazards can lead to power outage during emergencies, which hampers the city’s ability to respond to the community needs as well as the need to provide mutual aid to other agencies. The installation of emergency back-up generators allows the city to provide ongoing services during times of crisis.

**Project Description:** Install 30 kW back-up generators at critical facilities.

**Other Alternatives:** No Action, Solar back-up with batteries

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** EOP, Continuity of Operation Plan

**Responsible Agency/ Department/Partners:** Staff in coordination with SMUD, consultants, and contractors.

**Cost Estimate:** \$200k

**Benefits (Losses Avoided):** Reduced risk to critical facilities. Reduced risk to citizens

**Potential Funding:** CalOES, FEMA, ... other grant sources

**Timeline:** 2022-2027

**Project Priority (H, M, L):** High

**Action 13. Critical Street Floodproofing Project**

---

**Hazards Addressed:** Climate Change, Dam Failure, Drought & Water Shortage, Floods, Severe Weather, Subsidence, Wildfire

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

**Issue/Background:** Various arterial roadways throughout the City of Citrus Heights cross some of the 30+ miles of creeks, and are subject to periodic flooding during major rain events. Flooding of arterial roadways not only impacts the area being flooded, but also hinders the ability of safety and public service providers to respond efficiently in emergencies.

**Project Description:** The project would raise the roadway and/or increase bridge capacity so that the travel lanes are maintained above the 100 year water surface elevation.

**Other Alternatives:** Allow ongoing flooding

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** EOP, Continuity of Operation Plan

**Responsible Agency/ Department/Partners:** GSD Staff in coordination with consultant and contractor

**Cost Estimate:** \$1M

**Benefits (Losses Avoided):** Reduced risk to critical facilities. Reduced risk to citizens

**Potential Funding:** CalOES, FEMA, CDFW, DWR ... other grant sources

**Timeline:** 2022-2027

Project Priority (H, M, L): Medium

***Action 14. Creek Maintenance and Restoration Project***

---

**Hazards Addressed:** Climate Change, Dam Failure, Drought & Water Shortage, Floods, Severe Weather, Subsidence, Wildfire

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

**Issue/Background:** Various portions of the 30+ miles of creeks in the City of Citrus Heights have overgrown vegetation that creates and/or captures natural, man-made, and biological hazards in the riparian corridor. Some portions of the creek, both in the natural channel and near bridge abutments and other man-made features, also have excessive erosion due to increased flows and velocities. Additionally, the creeks historically had deep pools that provided ground water recharge and cool summertime flows for better and more reliable water supply and water quality

**Project Description:** The project would do 3 things:

1. Manage vegetation to keep the riparian corridor visually and hydraulically,
2. Protect the natural channel and man-made features along it through the use of the most natural improvements possible,
3. Restore the natural channel and floodplain that have become filled over time.

**Other Alternatives:** Allow ongoing channel and water quantity and quality degradation

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** EOP, Continuity of Operation Plan

**Responsible Agency/ Department/Partners:** GSD Staff in coordination with SRPD, consultants, and contractors.

**Cost Estimate:** \$250k

**Benefits (Losses Avoided):** Reduced risk to critical facilities. Reduced risk to citizens

**Potential Funding:** SRPD, CalOES, FEMA, CDFW, DWR, TU ... other grant sources

**Timeline:** 2022-2027

**Project Priority (H, M, L):** Medium

***Action 15. CMP Storm Drain Replacement Project***

---

**Hazards Addressed:** Climate Change, Dam Failure, Drought & Water Shortage, Floods, Severe Weather, Subsidence, Wildfire

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

**Issue/Background:** Most of the City of Citrus Heights' storm drain system was constructed prior to incorporation as a city. Portions of the system had little to no design, or was designed to standards that have since been superseded. Storm drain system at that time were commonly constructed using corrugated metal pipes (CMP), which have passed their useful life. This usually means the invert of the pipe is rusted, leading to exposed trench bedding and erosion. The CMP's need to be replaced.

**Project Description:** The project would verify the material used in all Storm Drains (some pipe material is listed as unknown), and the pipes constructed with CMP's would be cleaned, inspected, and replaced if they have rusted inverts, or placed on an accelerated review program to monitor their condition.

**Other Alternatives:** Allow ongoing deterioration until roadway or surface failure

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** EOP, Continuity of Operation Plan

**Responsible Agency/ Department/Partners:** GSD Staff in coordination with consultant

**Cost Estimate:** \$500K

**Benefits (Losses Avoided):** Reduced risk to critical facilities. Reduced risk to citizens

**Potential Funding:** CalOES, FEMA, CDFW, DWR ... other grant sources

**Timeline:** 2022-2027

**Project Priority (H, M, L):** High