



1 CITY OF RIVERBANK

1.1 Purpose

This Annex summarizes the hazard mitigation elements specific to the City of Riverbank. This Annex supplements the Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP); therefore the Annex is not a stand-alone plan but intended to supplement the hazard information provided in the Base Plan document. All other sections of the Stanislaus County MJHMP, or Base Plan, including the sections on the planning process, countywide risk assessment, and procedural requirements related to plan implementation and maintenance apply to the City of Riverbank. This Annex provides additional information specific to the City of Riverbank, including details on the City's profile, planning process, risk assessment, and mitigation strategy for the community.

1.2 Community Profile

1.2.1 Mitigation Planning History and 2021-2022 Process

This Annex was created during the development of the 2022 Stanislaus County MJHMP update. The City of Riverbank did not participate in Stanislaus County's 2017 Local Hazard Mitigation Plan (LHMP) process. However, the City of Riverbank did participate in a 2010-2011 Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) process with the County. This 2010 MJHMP was approved by Stanislaus County on May 4, 2011. The City of Riverbank adopted the 2010 MJHMP and the 2011 City of Riverbank LHMP Annex on October 10, 2011. However, the City elected not to include or report progress on any of the mitigation actions from the outdated and expired version of the MJHMP (a requirement only for plan updates following the release of FEMA's October 1, 2011 Local Mitigation Plan Review Guide). This Annex instead effectively represents a new plan for Riverbank based on current development, demographics, and mitigation capabilities that addresses the City's current hazards and vulnerabilities.

During the current update process, the City of Riverbank followed the planning process detailed in Chapter 3 of the Base Plan. This planning process consisted of participation in the Hazard Mitigation Planning Committee (HMPC) and the formation of a smaller internal planning team referred to as the City's Local Planning Committee (LPT). The LPT was organized to support the broader planning process, coordinate with the City departmental staff, and develop customized mitigation actions and projects specific to the City of Riverbank. The City's LPT is also responsible for the update, implementation, and maintenance of the plan. LPT members are listed in Appendix A.

1.2.2 Geography and Climate

The City of Riverbank is located in the northern portion of the San Joaquin Valley in central California along the southern bank of the Stanislaus River. The Stanislaus River, which is adjacent to Riverbank and gives the City its name, forms the boundary between Stanislaus County and San Joaquin County to the north. Near the east end of Riverbank, Stanislaus County extends north beyond the Stanislaus River. The Stanislaus River is one of the multiple rivers in the Central Valley that flow west from the Sierra Nevada mountains into the San Joaquin River.

Downtown Riverbank lies approximately seven miles north-northeast of downtown Modesto. The southern extent of Riverbank's city limits now lies approximately one mile north of the developed area of Modesto. The two cities are directly adjacent to one another along Claribel Road. The next closest major city to Riverbank is Stockton, which is approximately 25 miles northwest of Riverbank. Other incorporated cities near Riverbank include Escalon, Oakdale, Ripon, and Waterford. Unincorporated towns near Riverbank include Salida and Del Rio. Both Interstate 5 (I-5) and State Route 99 (SR 99) are situated west of the City and are major transportation corridors in the San Joaquin Valley. Other east-west highways, including SR 108 and SR 120 traverse the City and provide connections to the Sierra Nevada mountains and Yosemite National Park. Similarly, the Burlington Northern Santa Fe Railroad (BNSF) runs north and south through the City and serves as the BNSF's principal line linking Northern California with the Los Angeles-Chicago mainline.

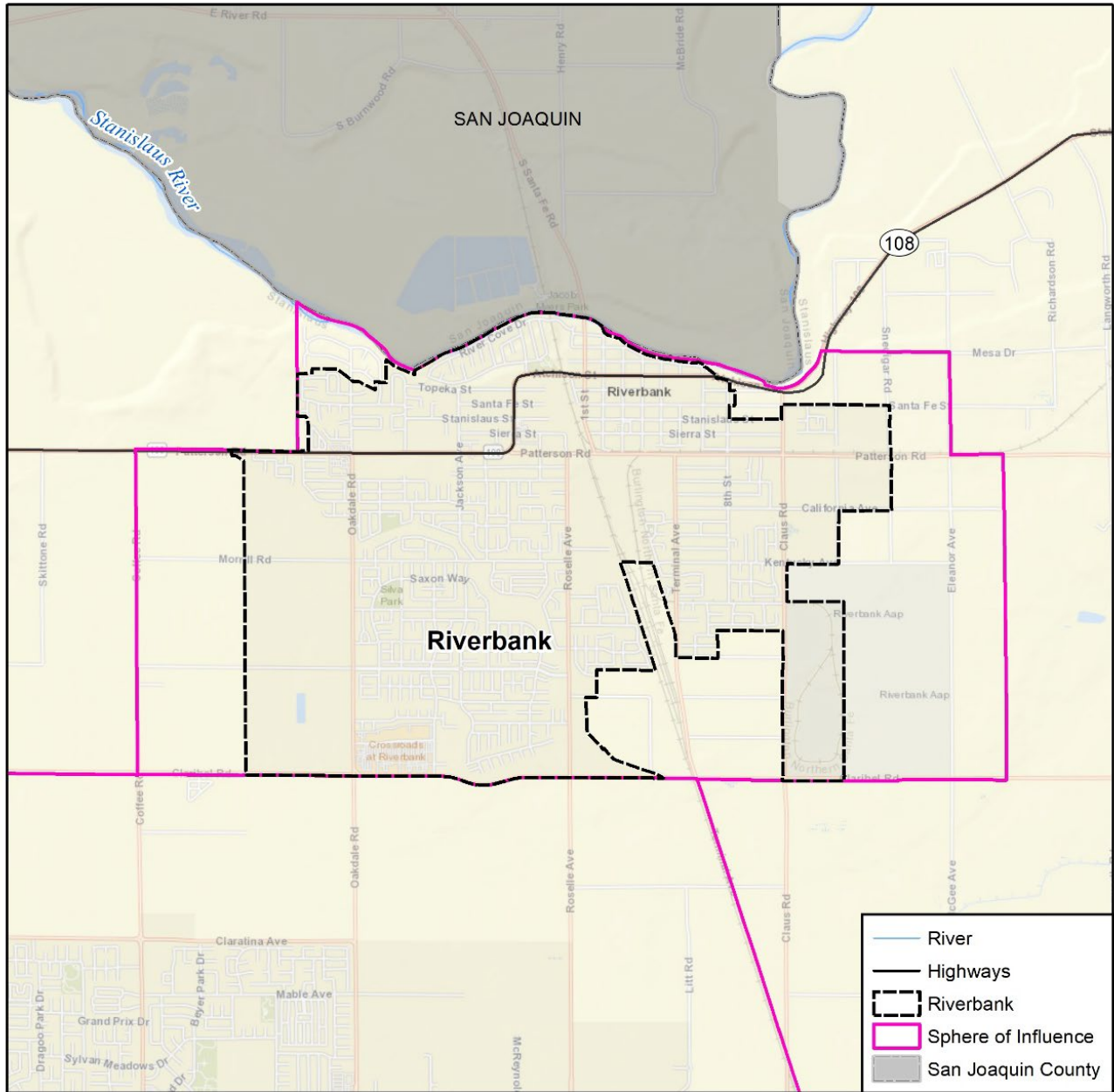


The City receives an average annual precipitation of 12.21 inches and receives most of this precipitation from November through March (WRCC 2022). The City experiences its average monthly highest temperature in July (94.3 °F), and its monthly lowest temperature in January (53.8 °F). Similar to the rest of Stanislaus County, the City of Modesto has a mild Mediterranean climate.

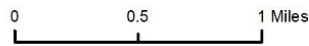
According to the City's 2005 – 2025 Riverbank General Plan, manufacturing is an important part of economic activity, but given the City is surrounded by agricultural lands, the agricultural industry still makes up a substantial portion of the City's economy. The City has also been growing and under increasing development pressure since 2005. As such, the City's 2005-2025 Riverbank General Plan helps them manage regional and local growth and maintain the quality of life for Riverbank residents. Figure 1-1 below shows the city limits and Sphere of Influence (SOI) boundary for the City of Riverbank. The City limits, or the area where the City has authority to make land-use decisions, is the City's planning area, and consists of 2,624 acres, or 4.1 square miles.



Figure 1-1 City of Riverbank



Map compiled 2/2022;
Intended for planning purposes only.
Data Source: Stanislaus County



1.2.3 History

While Riverbank was incorporated in 1922, the history of the area dates back to around the Civil War. With no road or bridges around the area at the time, Major James Burney made a ferry that took people across San Joaquin County and into Stanislaus County. James Burney then founded a small community called Burneyville that would eventually become part of Riverbank's origins. The growth of Riverbank was also influenced by the Santa Fe Railroad.



After the railroad came through the City in the 1900s, it brought with it machine shops, road houses, and water towers. By the 1940s and 1950s, the train would also support the pre-World War II residential neighborhood development that is now evident to the east, south, and west of downtown Riverbank. Post-World War II development lies predominantly to the west and south of these areas, and northwest of the downtown in the River Cove Area with mainly industrial development concentrated along the railroad corridor (City of Riverbank 2009).

1.2.4 Economy

According to the City’s 2005 – 2025 General Plan, during the 1990s and early 2000s, the residential population of Riverbank increased substantially and was not matched by job growth and business development. In many ways, the City of Riverbank reflects much of the Central Valley economy, which is still evolving and diversifying from its historical ties to the agricultural industries. In recent years, two major employers in Riverbank have closed – the California Fruit & Tomato Kitchen cannery and the Riverbank Army Munitions plant. While these closures represent a large loss of jobs, they also present new opportunities as the City considers reuse options for both sites. These projects also exemplify the challenges that face Riverbank as its economy evolves away from its traditional base industries.

The City of Riverbank has an existing base of food processing and durable manufacturing industries, but future growth opportunities focus on including other types of industries that are most likely to create new employment opportunities. The California Employment Development Department employment projections for Stanislaus County estimate that the highest growth rates will occur in the following industries: transportation, construction, mining, retail, information technology, financial services, education, health care services, and arts and entertainment. Much of the Stanislaus County economy will also continue to reflect the historic importance of agricultural production, as the City continues to diversify its economy while also accommodating agricultural support services. Agricultural support services can include industries projected for above-average growth in Stanislaus County, such as transportation and warehousing activities.

Estimates of select economic characteristics for the City of Riverbank are shown in Table 1-1.

Table 1-1 City of Riverbank Economic Characteristics, 2015-2019

Characteristic	City of Riverbank
Families below Poverty Level (%)	8.6%
All People below Poverty Level (%)	11.1%
Median Family Income	\$72,321
Median Household Income	\$70,549
Per Capita Income	\$25,776
Population in Labor Force	66.3%
Population Employed*	61.6%
Unemployment Rate**	6.8%

Source: U.S. Census Bureau, California Department of Finance, 2015-2019 American Community Survey (ACS), 5-year estimates, www.census.gov/

*Excludes armed forces. **Does not reflect unemployment numbers due to COVID-19 Pandemic

The most common industries within a five-mile radius of Riverbank are educational services and health care (a combined average of 23.1 percent of workers). Manufacturing and retail trade industries are the other two major industries, which resonates with the information regarding manufacturing being one of Stanislaus County’s major industries in Chapter 2 Community Profile of the Base Plan. The tables below show the labor force breakdown by occupations and industry based on estimates from the 2015-2019 five-year American Community Survey (ACS).

Table 1-2 City of Riverbank Employment by Industry, 2015-2019

Occupation	# Employed	% Employed
Educational services, and health care and social assistance	2,546	23.1%



Occupation	# Employed	% Employed
Manufacturing	2,041	18.5%
Retail trade	868	7.9%
Construction	837	7.6%
Agriculture, forestry, fishing and hunting, and mining	826	7.5%
Arts, entertainment, and recreation, and accommodation and food services	818	7.4%
Professional, scientific, and management, and administrative and waste management services	635	5.8%
Transportation and warehousing, and utilities	613	5.6%
Other services, except public administration	508	4.6%
Finance and insurance, and real estate and rental and leasing	483	4.4%
Wholesale trade	363	3.3%
Public administration	330	3.0%
Information	135	1.2%
Total	11,003	100%

Source: U.S. Census Bureau, California Department of Finance, 2015-2019 American Community Survey (ACS), 5-year estimates, www.census.gov/
*Excludes armed forces

Table 1-3 City of Riverbank Employment by Occupation, 2015-2019

Occupation	# Employed	% Employed
Management, business, science, and arts occupations	3,004	27.3%
Service occupations	1,705	15.5%
Sales and office occupations	2,047	18.6%
Natural resources, construction, and maintenance occupations	1,760	16.0%
Production, transportation, and material moving occupations	2,476	22.5%
Total	11,003	100%

Source: U.S. Census Bureau, California Department of Finance, 2015-2019 American Community Survey (ACS), 5-year estimates, www.census.gov/
*Excludes armed forces

1.2.5 Population

In May 2021, the State Department of Finance released population data for the state demographic report. According to the report the City of Riverbank has a population of 25,189 persons as of January 1, 2021 and gained 56 residents from the previous year. Select demographic and social characteristics for the City of Riverbank from the 2015-2019 American Community Survey and the California Department of Finance, are shown in Table 1-4.

Table 1-4 City of Riverbank Demographic and Social Characteristics, 2015-2019

Characteristic	City of Riverbank
Gender/Age	
Male	48.3%
Female	51.7%
Median age (years)	32.6
Under 5 years	8.2%
Under 18 years	28.6%
65 years and over	10.5%
Race/Ethnicity	



Characteristic	City of Riverbank
White	33.4%
Asian	4.9%
Black or African American	1.6%
American Indian/Alaska Native	0.6%
Hispanic or Latino (of any race)	56.9%
Native Hawaiian and Other Pacific Islander	0.4%
Some other race	0.1%
Two or more races	2%
Education*	
% High school graduate or higher	73.8%
% with Bachelor's Degree or Higher	13.9%
Social Vulnerability	
% with Disability	9%
% Language other than English spoken at home	53.1%
% Speak English less than "Very Well"	20.5%
% of households with a computer	89.9%
% of households with an Internet subscription	85.7%
% of households with no vehicle available	3.8%

Source: U.S. Census Bureau, California Department of Finance, 2015-2019 American Community Survey (ACS), 5-year estimates, www.census.gov/

* Population 25 years and over

The following table with information from the American Community Survey 5-year estimates (2015-2019) is related to housing occupancy in the City of Riverbank

Table 1-5 City of Riverbank Housing Occupancy and Units, 2015-2019

Housing Characteristic	Estimate	Percentage
Housing Occupancy		
Total Housing Units	7,361	100%
Units Occupied	7,063	96%
Vacant	298	4%
Housing Units		
1-unit detached	6,194	84.1%
1-unit attached	205	2.8%
2 units	193	2.6%
3 or 4 units	111	1.5%
5-9 units	85	1.2%
10-19 units	10	0.1%
20 or more units	268	3.6%
Mobile Home	295	4.0%
Boat, RV, van etc.	0	0%
Housing Tenure		
Owner Occupied	4,707	66.6%
Renter Occupied	2,356	33.4%



Source: U.S. Census Bureau, California Department of Finance, 2015-2019 American Community Survey (ACS), 5-year estimates, www.census.gov/DisadvantagedCommunities

There is one census tract in the eastern portion of City of Riverbank that has a higher housing burden (6099003004). Based on information from the California Office of Environmental Health Hazard Assessment (OEHHA) CalEnviroScreen tool, approximately 16% of the people residing with this census tract are housing burdened low income households. Housing-burdened low-income households are households that are both low income and highly burdened by housing costs. California has very high housing costs relative to the rest of the country, which can make it hard for households to afford housing ("CalEnviroScreen 4.0" 2021). Households with lower incomes may spend a larger proportion of their income on housing and may suffer from housing-induced poverty ("CalEnviroScreen 4.0" 2021). These households are also more likely to be adversely affected during a hazard event and less likely to recover. In other words, in Riverbank there are approximately 1,465 housing units in the census tract in the eastern portion of the City, and about 620 of them are considered low income and 235 are considered housing burdened.

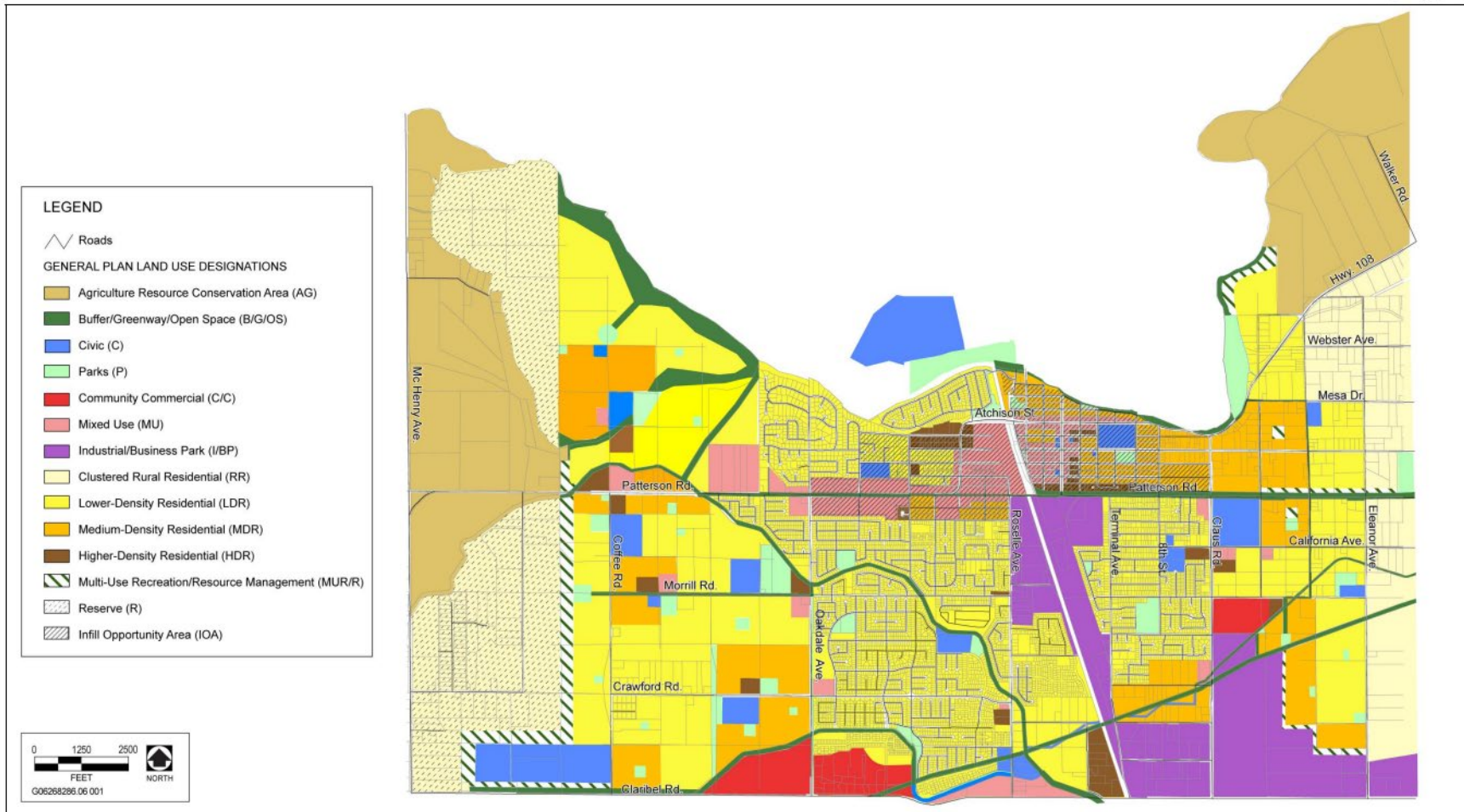
The OEHHA CalEnviroScreen tool applies a formula to generate a combined ranking score that considers 21 indicators for each census tract that cover pollution indicators, such as diesel emissions and concentrations of toxic clean-up sites and population indicators, such as poverty and unemployment rates. The census tracts with CalEnviroScreen rankings between 75 and 100 percent (i.e., a combined score in the top 25 percent of all census tracts in the State) are considered to be disadvantaged communities (DACs). The census tract in the City of Riverbank with a higher housing burden has a CalEnviroScreen ranking of 44, meaning the percent housing burdened is higher than 44% of the rest of California. The City can use this information to conduct targeted outreach and engage community members to consider what other hazards and mitigation strategies or programs should be considered to meet community needs. The City can also engage these communities to proactively prioritize hazard mitigation projects that benefit disadvantaged communities.

1.2.6 Development Trends

According to the City's General Plan Land Use Element, the City's future development needs to be balanced and there needs to be a locally appropriate match between housing and jobs. An appropriate balance between economic, environmental, and social goals in managing land-use change is also encouraged by the City. The City's Infill Opportunity Area is an already-developed portion of the Riverbank Planning Area, but many properties within this area are vacant or otherwise underutilized. Given the vacant properties, the Infill Opportunity Area is where the City will focus reinvestment, redevelopment, and revitalization efforts. By focusing on development activity in the Infill Opportunity Area, the City can employ public-private partnerships, strategic public investment, infill incentives, and other strategies to promote redevelopment into the City. Figure 1-2 depicts the land uses for the City of Riverbank.



Figure 1-2 City of Riverbank General Plan (2009) – Land Use Diagram



Source: City of Riverbank 2010



At buildout (2025), the City would accommodate a population of approximately 52,500, which is an increase of approximately 140 percent over the estimated 2008 population of 21,757. Approximately 10,700 new dwelling units could be accommodated during the buildout time horizon, as well as schools, parks, retail and commercial services, industrial and office development, and other land uses. Approximately 3,300,000 square feet of commercial building space could also be accommodated during the buildout time horizon (including retail, service, office, industrial, and other commercial uses). Table 1-6 below shows the land-use change under the General Plan.

Table 1-6 Land Use Change under 2005 – 2025 City of Riverbank General Plan

Land Use Change under 2005 – 2025 Riverbank General Plan				
Land Use Category	Acres	Dwelling Units	Population	Building (square feet)
Agricultural / Resource Conservation Area	1,220	0	0	0
Buffer/Greenway/Open Space	350	0	0	0
Clustered Rural Residential	1,230	250	770	0
Community Commercial	90	0	0	678,980
Higher-Density Residential	80	940	2,030	0
Industrial / Business Park	270	0	0	1,999,540
Infill Opportunity Area	400	490	1,050	226,850
Lower-Density Residential	1,260	4,410	13,680	0
Medium-Density Residential	640	4,470	13,420	0
Multi-Use Recreation / Resource Management	140	0	0	0
Mixed Use	70	170	370	410,630
Parks	140	0	0	0
Civic	170	0	0	0
Total	6,010	10,700	31,300	3,315,990

Source: Riverbank General Plan 2009

The General Plan’s Land Use element also established goals, policies and implementation strategies to address various aspects of the arrangement, orientation, and planning of land use in the City. Urban growth is also managed so that it benefits the entire community and there is balanced and diverse uses of land. The City also aims to provide a full range of public services and facilities for all areas of the community.

Riverbank continues to see development in both the housing and economic development areas. New homes on both the east and west ends of the City have been designed to be conveniently near dining, shopping, transportation corridors, great schools, and entertainment. The new Crossroads West shopping Center will be anchored by major box stores and will include businesses that will offer a diverse range of services and shopping experiences to City residents and the surrounding cities. The City has also finalized updates to its residential zoning code that fully comply with State Laws SB 1069 and AB 2299 that will allow for Accessory Dwelling Units (ADUs) to be developed on most single-family lots. These new regulations will allow homeowners to play a significant role in the State’s housing shortage over the coming years. The development of the North County Corridor will also help improve regional network circulation, relieve existing traffic congestion, reduce traffic delays, accommodate future traffic on SR 108, support efficient movement of goods and services and enhance traffic safety.

1.2.7 Future Development

The areas located in the SOI shown in Figure 1-1 are areas each City plans to grow into and are potentially slated for future development. Understanding the potential hazard exposure in the area can help to mitigate the impacts of events before development occurs in those areas.



The City regularly updates its building codes to meet minimum standards in the California Building Code (CBC) last updated in 2019. Compliance with the 2019 CBC ensures construction standards are met and hazards risks related to earthquake, landslides, flood, severe weather, and wildfire are minimized. The City also complies with the National Flood Insurance Program (NFIP) and all development must meet minimum flood protection standards set forth by FEMA. Participation in the 2021-2022 MJHMP update planning process also ensures the City of Riverbank continually reviews and updates hazard information and takes this information into account when reviewing development applications. This process will help the City make better decisions on where, when, and how future development occurs.

During this plan update process parcel analysis was conducted using the SOI and overlaid with available hazard risk layers to determine where future development may be at risk of natural hazard events. The results of the analysis have been integrated into the applicable hazard sections: dam incidents and flood hazards. Table 1-7 is the summary of the SOI total exposure for the City of Riverbank.

Table 1-7 Sphere of Influence Total Exposure Summary

Property Type	Improved Parcel Count	Improved Value	Estimated Content Value	Total Value
Commercial	8	\$1,199,256	\$1,199,256	\$2,398,512
Industrial	2	\$59,411	\$89,117	\$148,528
Residential	144	\$33,188,410	\$16,594,205	\$49,782,615
Residential-Income	25	\$2,945,393	\$1,472,697	\$4,418,090
Rural, Farm, Agricultural	218	\$33,754,620	\$33,754,620	\$67,509,240
Unclassified	1	\$136,015	\$136,015	\$272,030
Vacant Commercial	2	\$22,882	\$22,882	\$45,764
Vacant Residential	1	\$2,450	\$1,225	\$3,675
Total	401	\$71,308,437	\$53,270,016	\$124,578,453

Source: Stanislaus County Assessor, Wood analysis

2 HAZARD IDENTIFICATION AND SUMMARY

The City of Riverbank LPT identified the hazards that affect the City and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to their community (see Table 2-1). There are no hazards that are unique to Riverbank, although the hazard risk in the City varies and is distinct from the hazard risk in the County's planning area. The purpose of this section is to profile the City of Riverbank's hazards and assess the City's specific vulnerabilities.

The hazards profiled in the County MJHMP Base Plan discuss the overall impacts to the County's planning area. This information is summarized in the hazard description, geographic extent, magnitude/severity, previous occurrences, and probability of future occurrences sections. The information in the City of Riverbank's risk assessment summarizes only those hazards that vary from the County's planning area. The hazard profile information is organized in a similar format here as a way to identify priority hazards for mitigation purposes.

Table 2-1 summarizes the hazards profiled in the County's planning area and risk assessment to provide a way for the LPT to evaluate which hazards are addressed in their General Plan Safety Element and which hazards are relevant and priority hazards for the City. The City's General Plan Safety Element addresses safety issues including dam failure, geologic hazards, flooding hazards, fire hazards, and hazardous materials. Among these hazards in the General Plan Safety Element, dam failure and flood hazards are further addressed in this Annex, while earthquake, flood, landslide and wildfire hazards are further addressed in the Base Plan.



Table 2-1 City of Riverbank —Hazard Profiles

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance	Priority Hazard?
Agriculture Pest and Disease	Extensive	Likely	Negligible	Low	No
Aquatic Invasive Species	Limited	Likely	Negligible	Low	No
Cyber Threats	Significant	Likely	NA	Medium	No
Dam Incidents	Significant	Unlikely	Limited	Medium	Yes
Drought	Extensive	Likely	Critical	High	Yes
Earthquake	Extensive	Occasional	Critical	Medium	Yes
Extreme Heat	Extensive	Highly Likely	Critical	Medium	No
Flood	Limited	Likely	Negligible	Low	Yes
Landslide, Mud/Debris Flow, Rockfall	Limited	Occasional	Negligible	Medium	Yes
Public Health Hazards: Pandemic/Epidemic	Extensive	Occasional	Critical	High	Yes
Severe Weather: Dense Fog	Extensive	Likely	Critical	Medium	No
Severe Weather: Hail, Heavy Rain, Thunderstorms, Lightning	Extensive	Highly Likely	Critical	High	No
Severe Weather: High Wind/Tornado	Extensive	Highly Likely	Critical	High	No
Wildfire	Limited	Occasional	Negligible	Low	No
Geographic Area Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area Probability of Future Occurrences Highly Likely: Near 100% chance of occurrence in next year or happens every year. Likely: Between 10 and 100% chance of occurrence in next year or has a recurrence interval of 10 years or less. Occasional: Between 1 and 10% chance of occurrence in the next year or has a recurrence interval of 11 to 100 years. Unlikely: Less than 1% chance of occurrence in next 100 years or has a recurrence interval of greater than every 100 years.		Magnitude/Severity (Extent) Catastrophic—More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths Critical—25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability Limited—10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability Negligible—Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid Significance Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact			

2.1 Vulnerability Assessment

The intent of this section is to assess Riverbank’s vulnerability that is separate from that of the planning area as a whole, which has been assessed in Section 4 Hazard Identification and Risk Assessment in the Base Plan. For dam incidents and flood hazards, the vulnerability assessment analyzes the population, property, and other assets at risk. For the other hazard profiles, the City described the specific vulnerabilities in the community by developing problem statements that qualitatively summarize areas of concern associated with the hazards that vary from other parts of the County planning area. These specific vulnerabilities are referred to as “problem statements” in the risk assessment. The problem statements are based on the risk assessment mapping and modeling and where spatial data and maps are not available, they are based on specific input from the City LPT. With this information mitigation actions were then developed to address these specific vulnerabilities; this process provides the connection between the problem statement and the mitigation action.



The information to support the hazard identification and risk assessment was based on a combination of the previous LHMP for the County and jurisdiction-specific information collected during the 2021 update. A Data Collection Guide and associated worksheets were distributed to each participating jurisdiction to complete during the update process in 2021. Information collected was analyzed and summarized to identify and rank all the hazards that could occur anywhere within the County, as well as to rank the hazards and identify the related vulnerabilities unique to each jurisdiction.

Each participating jurisdiction was in support of the main hazard summary identified in the Base Plan (see Table 4-2). However, as previously noted the hazard summary rankings for each jurisdictional Annex may vary due to specific hazard risks and vulnerabilities unique to that jurisdiction. The information in this Annex helps differentiate the jurisdiction’s risk and vulnerabilities from that of the overall County, where applicable.

Note: The hazard “Significance” reflects the overall ranking for each hazard and is based on a combination of the City of Riverbank’s LPT input from the Data Collection Guide, the risk assessment developed during the planning process (see Section 4 of the Base Plan), and the set of problem statements developed by the City LPT. The hazard significance summaries in Table 2-1 above reflect the hazards that could potentially affect City. The discussion of vulnerability for each of the following hazards is located in Section 2.3 Estimating Potential Losses, which includes and an overview on the local issues and areas of concern associated with the hazard, a problem statement for the priority hazard, and a quantitative risk assessment, where spatial data is available. Based on this analysis, the priority hazards for mitigation purposes for the City of Riverbank are identified below.

- Dam Incidents
- Drought
- Earthquake
- Flood
- Landslide

Cyber Attack, Extreme Temperatures: Freeze and Extreme Heat, Pandemic/Epidemic, and Severe Weather hazards were ranked significant hazards but are not addressed further in this vulnerability assessment as the risk and exposure are similar to the overall County risk and exposure, and the potential for losses are difficult to quantify specific to the City of Riverbank. Additionally, hazards assigned a significance rating of Low and which do not differ significantly from the County ranking (e.g., Low vs. High) are not addressed further and are not assessed individually for specific vulnerabilities in this Annex. In the City of Riverbank, those hazards include: Agriculture Pests and Disease, Aquatic Invasive Species, and Wildfire. For example, wildfire hazard was assessed for the City, and based on the analysis and mapping, wildfire hazard did not result in significant vulnerabilities or impacts.

2.2 Assets

This section considers Riverbank’s assets at risk, including values at risk, critical facilities and infrastructure, historic assets, economic assets and growth and development trends.

2.2.1 Property Exposure

The following data on property exposure is derived from the Stanislaus County 2021 Parcel and Assessor data. This data should only be used as a guideline for overall values in the City as the information has some limitations. It is also important to note that 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 and is not included in the values below. Table 2-2 shows the exposure of properties (e.g., the values at risk) broken down by property type for the City of Riverbank.

Table 2-2 City of Riverbank Property Exposure by Type

Property Type	Improved Parcel Count	Improved Value	Estimated Content Value	Total Value
Commercial	242	\$134,243,147	\$134,243,147	\$268,486,294



Property Type	Improved Parcel Count	Improved Value	Estimated Content Value	Total Value
Industrial	36	\$36,455,827	\$54,683,741	\$91,139,568
Non-Assessable	1	\$16,336	\$16,336	\$32,672
Residential	6,294	\$1,144,317,711	\$572,158,856	\$1,716,476,567
Residential-Income	51	\$7,178,599	\$3,589,300	\$10,767,899
Rural, Farm, Agricultural	22	\$2,897,415	\$2,897,415	\$5,794,830
Unclassified	93	\$79,144,886	\$79,144,886	\$158,289,772
Vacant Commercial	14	\$591,499	\$591,499	\$1,182,998
Vacant Residential	4	\$181,037	\$90,519	\$271,556
Total	6,757	\$1,405,026,457	\$847,415,697	\$2,252,442,154

Source: Stanislaus County Assessor, Wood analysis

2.2.2 Critical Facilities and Infrastructure

For the purposes of this plan, a critical facility is defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA sorts critical facilities into seven lifeline categories as shown in Figure 4-1 in the Base Plan.

Table 2-3 shows a summary of the critical facilities within the City of Riverbank. Critical facilities and other community assets as important to protect in the event of a disaster.

Table 2-3 Critical Facilities within the City of Riverbank

Lifeline	# of Critical Facilities
Communication	3
Energy	1
Food, Water, Shelter	8
Hazardous Materials	1
Health and Medical	5
Safety and Security	5
Transportation	7
Total	30

Within the City of Riverbank, the following are considered critical facilities:

- Stanislaus Consolidated Fire Protection District Station 36
- Water supply lines and wells
- Wastewater treatment plant, pumping stations, and trunk lines
- Major electrical transmission lines and substations
- Major communication lines and microwave transmission facilities
- Major public and private schools
- Emergency shelter
- Public Library
- Hospital facilities, nursing homes and dialysis centers
- Bridges

There are also several designated shelters in Riverbank for use in an emergency event including Riverbank Scout Hall, Assembly of God Church, Riverbank Community Center, Riverbank Community Gym, and Riverbank High School Gym.

It is important to note that the Wastewater Treatment Plant for Riverbank is located north of the City, across the Stanislaus River, and in the County of San Joaquin. Although outside the City limits this critical facility is owned and operated by the City of Riverbank. This facility is included in this Annex to the



Stanislaus County MJHMP and the City Emergency Operation Plans (the City maintains a collaborative partnership with both San Joaquin County and the City of Escalon).

2.2.3 Historic, Cultural and Natural Resources

The following historical resources are located in the City of Riverbank:

Property Name	Register	Jurisdiction	Date Listed
Riverbank Branch Library	National	Riverbank	10/10/1996

Natural resources are important to include in benefit-cost analyses for future projects and may be used to leverage additional funding for projects that also contribute to community goals for protecting sensitive natural resources. According to the City's General Plan Conservation and Open Space element, there are isolated wetlands in the Riverbank Planning Area, as well as wetlands and riparian habitats associated with the Stanislaus River. The Stanislaus River corridor is an important area for sensitive habitats and wildlife. Awareness of natural assets can lead to opportunities for meeting multiple objectives. For instance, protecting wetlands areas protects sensitive habitat as well as attenuates and stores floodwaters.

2.3 Estimating Potential Losses

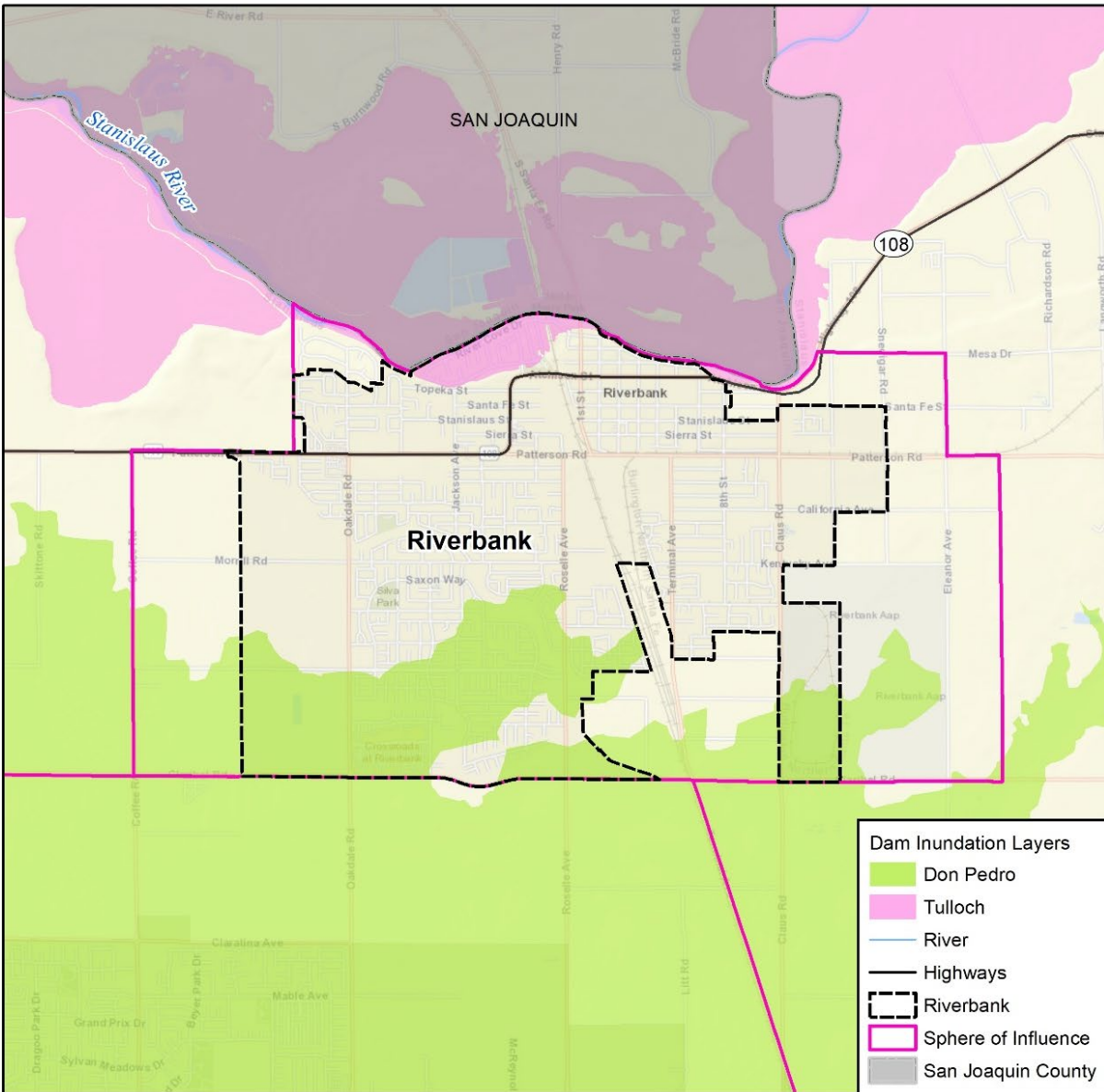
2.3.1 Dam Incidents

Protection from flood hazards created by dam failures is critical to the safety and well-being of Riverbank residents. A dam vulnerability assessment was completed during the 2021 update, following the methodology described in Section 4 of the Base Plan. Dam inundation areas from the Don Pedro and Tulloch dams within the City of Riverbank are shown in Figure 2-1. Don Pedro and Tulloch dams are all rated as high hazard. Don Pedro and Tulloch dams are also rated as Extremely High by the California Department of Water Resources (DWR), Division of Safety of Dams (DSOD). Extremely High rated dams are expected to cause considerable loss of human life or result in an inundation area with a population of 1,000 or more. Some southern parts of the City and also a small portion of the City's northern part are vulnerable to dam incidents. The northern portion of the City would experience substantial damage if Don Pedro dam were to breach. A total of three critical facilities are located within the various dam inundation areas.

An area of primary concern in a dam incident in Riverbank is the impact to the City's Waste Water Treatment Plant (WWTP), located just north of the City limits and Stanislaus River, in San Joaquin County. The City's WWTP includes ponds used for treatment and storage of wastewater, as well as infiltration basins used for disposal of treated effluent. The collection system consists of 6-inch to 36-inch diameter collection piping and nine lift/pump stations; all wastewater is conveyed from the collection system to the WWTP through a 27-inch gravity line located on a trestle over the Stanislaus River. Given the proximity of the WWTP along the Stanislaus River, any natural or human-caused event that can cause damage to the trestle could be detrimental to the City, the Stanislaus River, the surrounding agricultural lands, Jacob Myers Park, and downstream wildlife.



Figure 2-1 City of Riverbank Potential Dam Inundation Areas



Map compiled 2/2022;
Intended for planning purposes only.
Data Source: Stanislaus County,
Department of Water Resources,
Division of Safety of Dams (DSOD)

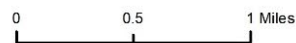


Table 2-4 summarizes the values at risk within Don Pedro dam's inundation area.



Table 2-4 Don Pedro Dam Inundation

Property Type	Improved Parcel County	Building Count
Commercial	14	
Non-Assessable	1	
Residential	1320	4,541
Residential-Income	8	28
Rural, Farm, Agricultural	2	
Unclassified	4	
Vacant Commercial	3	
Vacant Residential	3	
Total	1,355	4,569

Source: California DSOD, National Inventory of Dams, Stanislaus County Assessor's Office

Future Development

The results of the SOI and dam analysis are shown in Table 2-5.

Table 2-5 Sphere of Influence Areas Exposed to Don Pedro Inundation

Property Type	Improved Parcel Count	Population
Commercial	1	
Residential	45	131
Residential-Income	1	3
Rural, Farm, Agricultural	4	
Total	51	134

Source: Stanislaus County Assessor, Wood analysis

2.3.2 Drought

The City supplies potable water to all the residential, commercial, and institutional/governmental water users within City limits. The City also supplies water to several residential locations and complexes outside of the city limits, but within the SOI (City of Riverbank 2020). The City relies exclusively on groundwater from the Modesto Groundwater Subbasin. The City's supply is provided through a pressurized distribution system comprised of nine groundwater wells and pump stations, two one-million gallon storage tanks with booster pumps, and over 68 miles of pipelines. The City's projected production capacity is approximately 4,646 acre-feet per year (City of Riverbank 2020). Surface water applications are limited to natural recharge to the groundwater supply and proposed water supply strategies for the City do not currently consider the use of surface water from the Stanislaus River given such uses are limited to natural groundwater recharge. The nearest surface water provider is Oakdale Irrigation District (OID). OID diverts water from the Stanislaus River and Goodwin Dam into the Joint Main Canal on the north side of the river and the South Main Canal on the south side. The OID service area encompasses approximately 82,000 acres and provides irrigation and domestic water service to areas outside of the City. If OID initiates a program in the future of supplying treated surface water for municipal uses, the City will have an opportunity to purchase surface water and diversify their water portfolio.

From 2007 through 2013, the City's annual pumping decreased, even though there was a steady population increase within the City's SOI. The reduction is in part due to conservation efforts and the effect of the economic downturn in the region during the same time period. However, based on the City's 2020 Urban Water Management Plan (UWMP), long-term pumping has impacted the aquifer in the Modesto Groundwater Subbasin and the vicinity of the City. During the extended drought years from 1987 to 1992, water levels dropped up to 30 feet, when compared to water levels that existed in the 1950s. Nevertheless, increases in annual precipitation, coupled with the reduction of groundwater pumping and conservation efforts within the City, have allowed water levels to recover in 2013 and again from 2015 to 2016. The historical trends and projected static and pumping levels suggest that the City will not



experience a decline in water availability and that the existing wells will have sufficient capacity to continue to meet existing and near-term projected demands.

The lack of a diversified water supply for the City indicates that climate change could impact the City due to the potential reduction in groundwater recharge and runoff, increases in groundwater overdrafts, and declining water quality. As such the City's UWMP addresses climate change by incorporating a combination of adaptation and mitigation strategies that include Best Management Practices (BMPs). The City recently completed a water meter replacement and water metering program, which will help reduce water demands, reduce groundwater pumping, and conserve energy. The City is in compliance with SB X7-7, which ensures that the City is prepared to conserve water and energy in the future (City of Riverbank 2020). Furthermore, the City is committed to identifying areas in the Modesto Groundwater Subbasin that may be drastically affected by climate change and complete steps to prevent undesirable groundwater overdraft conditions over the next 50 years.

In addition, based on the UWMP's Drought Risk Assessment, the City's groundwater is not significantly reduced in dry years. The supply is also expected to be maintained through efforts to increase sustainability and groundwater recharge in coordination with the regional Groundwater Sustainability Agency (GSA). Conservation methods such as conservation planning as well as public education and outreach can promote additional water savings for the City and the community. The City's LPT noted that community concerns are increasing regarding the ongoing drought in the Central Valley and the related health-issues caused by flow water flows and water quality, poor air quality, and environmental impacts to the regional ecosystems. However, the City has dedicated staff and resources, such as a Water Conservation Coordinator, to better manage water resources and implement programs to address community concerns (City of Riverbank 2020).

2.3.3 Earthquake

The City of Riverbank and surrounding areas' historical earthquake activity is below California's state average. The Great Valley Thrust Fault System is 20 miles southwest of the City. The Great Valley Thrust Fault System belongs to the Ortigalita Fault Zone, which is designated as an Alquist-Priolo Earthquake Fault Zone. This fault has not been active in historic times; however, there is no guarantee that it will never become active again. San Joaquin Fault, which is 34 miles south-southwest of Riverbank, is also in the vicinity. Other nearby regional faults include the San Andreas fault zone, which is one of the longest and most active faults in California; the Hayward fault located east of San Francisco Bay to where it merges with the Calaveras Fault north of Hollister, and the Riverbank Pass fault.

There is no record of any seismic activity originating within the City since 1881; however, the County of Stanislaus has been shaken by earthquakes that originated elsewhere. There is documented evidence of seven earthquakes that shook the Stanislaus County area, those of 1872, 1906, 1952, 1966, 1984, and 1989, and more recently in 2021 when residents felt the 6.0 magnitude earthquake centered in the Little Antelope Valley along the California/Nevada border (Modesto Bee 2021). Minor damage has been recorded throughout the County from earthquakes with epicenters in surrounding areas, though major damage occurred from the 1906 Los Banos earthquake. The City of Riverbank Sewer Division also operates and maintains the City's sewer collection system. The collection system consists of 66 miles of gravity pipe and 10 sewer pump stations. The City also maintains a trestle over the Stanislaus River that connects the City's sewer system to their Wastewater Treatment Plant (WWTP) located north of the City. Given this main sewer trunk line traverses a major waterway adjacent to the City, a major earthquake has the potential to damage the City's sewer collection system, specifically the main sewer trunk line. If the sewer line is impacted it would result in secondary environmental and hazard impacts on the adjacent water ways and the nearby neighborhoods.

Based on the earthquake shaking potential mapped for Stanislaus County and the City of Riverbank, due to the proximity to the Great Valley Thrust Fault System, Ortigalita Fault Zone and the San Joaquin Fault, and the history of shaking with no surface rupture, means the probability of damaging seismic ground shaking in the City of Riverbank is considered as occasional. The City does not keep an inventory of unreinforced masonry (URM) constructed buildings, but this is because there are few URM buildings in the City and most of this construction is located downtown. The City has also encouraged downtown revitalization and the integration of seismic retrofitting of these buildings.



Another primary concern for the City during an earthquake in the region is the impact of ground shaking on the City's WWTP, located north of the City limits and Stanislaus River, in San Joaquin County. As previously noted, the WWTP includes ponds used for treatment and storage of wastewater, as well as infiltration basins used for disposal of treated effluent. The collection system consists of 6-inch to 36-inch diameter collection piping and nine lift/pump stations; all wastewater is conveyed from the collection system to the WWTP through a 27-inch gravity line located on a trestle over the Stanislaus River. A major earthquake event with substantial ground shaking could cause damage to the trestle, which could be detrimental to the Stanislaus River, the surrounding agricultural land, and the wildlife downstream. Other concerns noted by the City's LPT included potential damage to critical infrastructure such as Pacific Gas and Electric (PG&E) and Merced Irrigation District (MID) electrical and gas lines, water lines, sewer lines, storm drains, wells, lift pumps, and storage and collection tanks at the Riverbank Industrial Complex, and Hetch-Hetchy- San Joaquin Pipeline System. Significant earthquake events could also severely damage the railroad tracks in the City.

The most likely impact to the City of Riverbank may be the indirect effects of major earthquake activity on a fault system adjacent to Stanislaus or San Joaquin County. While the direct damage may be minimal in the City, the indirect effect of mass relocation, mutual aid activities support activities, and collateral damage could severely tax the capabilities of local City resources. In summary, the activity of major faults outside Stanislaus County suggests that the City could be subject to the direct effects of an earthquake in the future, but most likely the City would be impacted by indirect effects. Other hazards associated with earthquake activity, such as lateral spreading, surface cracking or differential setting, are considered unlikely to occur, although no studies have been conducted to determine the likelihood of these hazards.

2.3.4 Flood

The primary types of flood events in Stanislaus County that may impact the City of Riverbank are riverine and local urban flooding. Regardless of the type of flood, the cause is often the result of severe weather and excessive rainfall, either in the flood area, upstream, or from winter snowmelt.

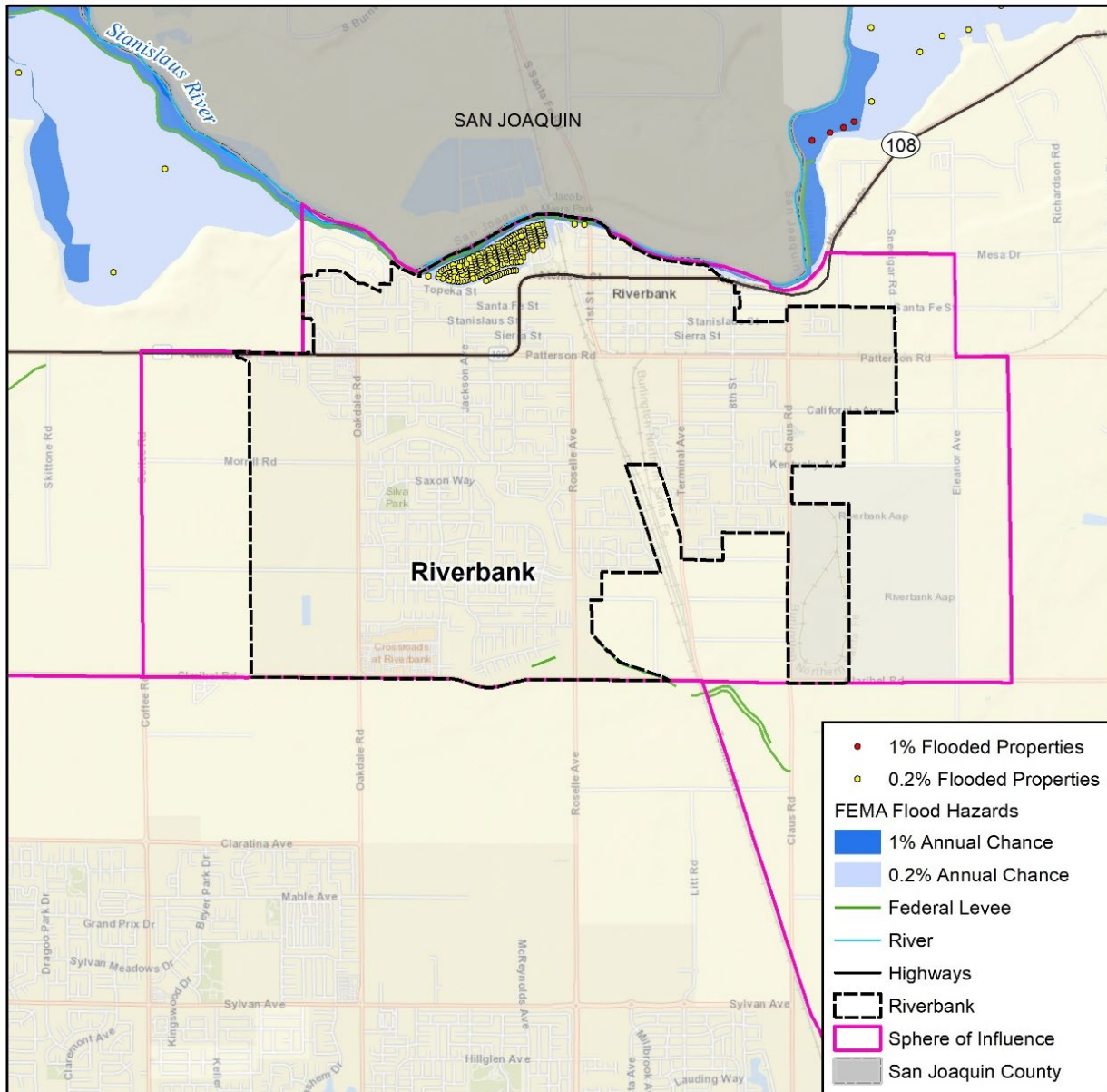
Areas in the northern part of the City of Riverbank have been determined to be in the FEMA 0.2% annual chance floodplain. The physical risks associated with potential flooding and the regulatory requirements for floodplain management are important considerations when decisions are being made regarding future land use throughout the City. Parts of the City may also be vulnerable to localized stormwater flooding during severe storms. The rest of Riverbank lies outside the FEMA 0.2% and 1% annual chance floodplains. Based on the history of flooding in the County of Stanislaus, the City of Riverbank and surrounding areas are considered likely to have the hazard potential for future flooding.

A flood vulnerability assessment was completed during the 2021 update, following the methodology described in Section 4 of the Base Plan. FEMA 0.2% annual chance floodplains within the City are shown in

Figure 2-2. There are no FEMA 1% annual chance floodplains within the city limits. Table 2-6 summarizes the values at risk in the City's 0.2% annual chance floodplains.



Figure 2-2 City of Riverbank FEMA 1% & 0.2% Annual Chance Floodplains



wood. Map compiled 2/2022;
Intended for planning purposes only.
Data Source: Stanislaus County,
FEMA NFHL 8/24/2021

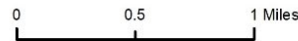


Table 2-6 City of Riverbank FEMA 0.2% Annual Chance Flood Hazard, by Property Type

Property Type	Improved Parcel Count	Improved Value	Estimated Content Value	Total Value	Estimated Loss	Population
Residential	210	\$37,517,249	\$18,758,625	\$56,275,874	\$14,068,968	722
Total	210	\$37,517,249	\$18,758,625	\$56,275,874	\$14,068,968	722

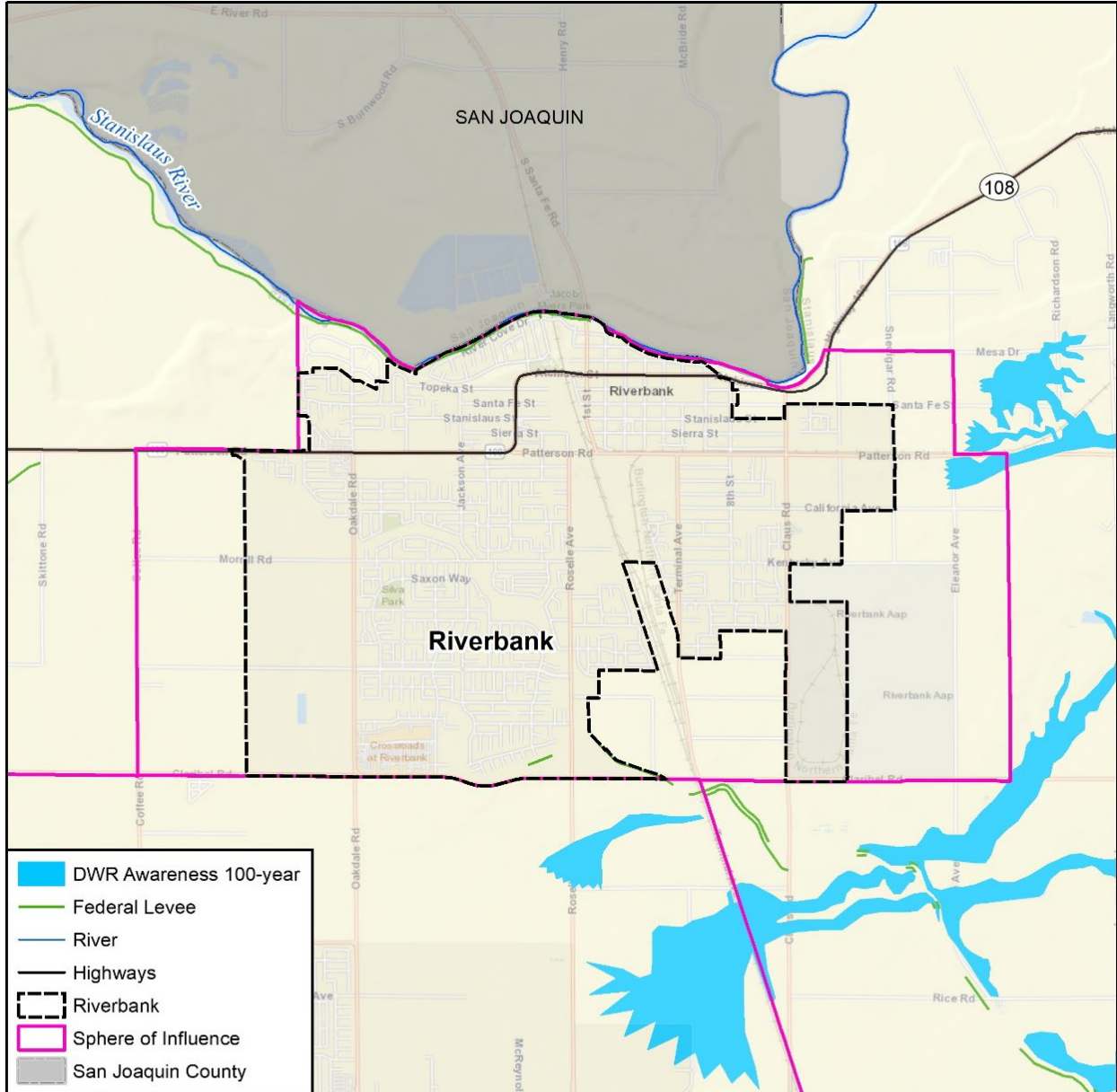
Source: Stanislaus County Assessor's Office; National Flood Hazard Layer Effective 8/24/2021; FEMA; Wood analysis



Based on this analysis, the City of Riverbank has 210 improved parcels located within the 0.2% annual chance floodplain for a total value of around \$56.3 million. The potential loss is estimated at around \$14.1 million if these areas were inundated by the 0.2% annual chance flood. The population at risk was calculated for 0.2% annual chance floodplains based on the number of residential properties at risk and the average number of persons per household (3.44). There are an estimated 722 persons at risk to 0.2% annual chance flood in the City of Riverbank.

The DWR Awareness 100-year floodplains within the City of Riverbank are shown in Figure 2-3.

Figure 2-3 City of Riverbank DWR Awareness 100-Year Floodplains



Map compiled 2/2022;
Intended for planning purposes only.
Data Source: Stanislaus County, DWR

0 0.5 1 Miles

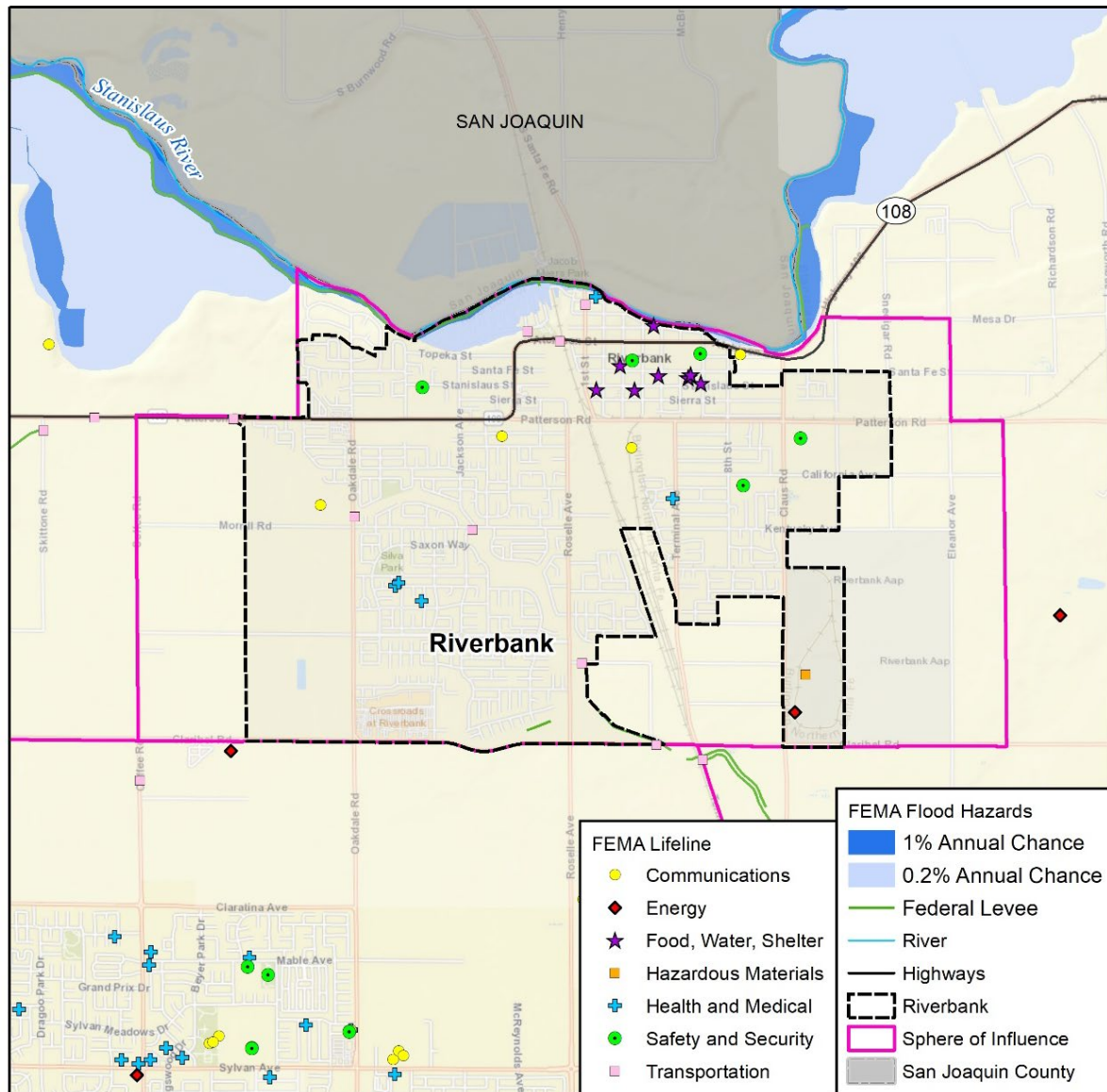




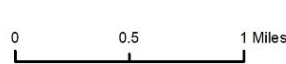
Critical Facilities at Risk

Critical facilities are those community components that are most needed to withstand the impacts of disaster as previously described. Figure 2-4 shows the geographic relationship between the City's critical facilities and the FEMA 1% and 0.2% annual percent chance floodplains in the vicinity. None of the City's critical facilities are located directly in any FEMA floodplains, although a few facilities in the northern part of the City are located near FEMA floodplains.

Figure 2-4 Critical Facilities at Risk of FEMA 1% & 0.2% Annual Flood Hazard



wood. Map compiled 2/2022;
Intended for planning purposes only.
Data Source: Stanislaus County,
HIFLD, NID, DWR, FEMA NFHL 8/24/2021



Insurance Coverage, Claims Paid, and Repetitive Losses

The City of Riverbank joined the National Flood Insurance Program (NFIP) on February 3, 1997. NFIP Insurance data indicates that as of April 2022, there were 19 flood insurance policies in force in the City



with \$6,305,000 of coverage. 1 of these policies is located in A-zones. All of the policies are single family residential and located in the B, C, and X zone.

There has not been any historical claims for flood losses. According to the FEMA Community Information System accessed April 6, 2022, the City has no Repetitive Loss properties or Severe Repetitive Loss properties.

Future Development

The result of the SOI and flood analysis shows that no improved parcel within the City's SOI is located in FEMA 1% or 0.2 % annual chance floodplains.

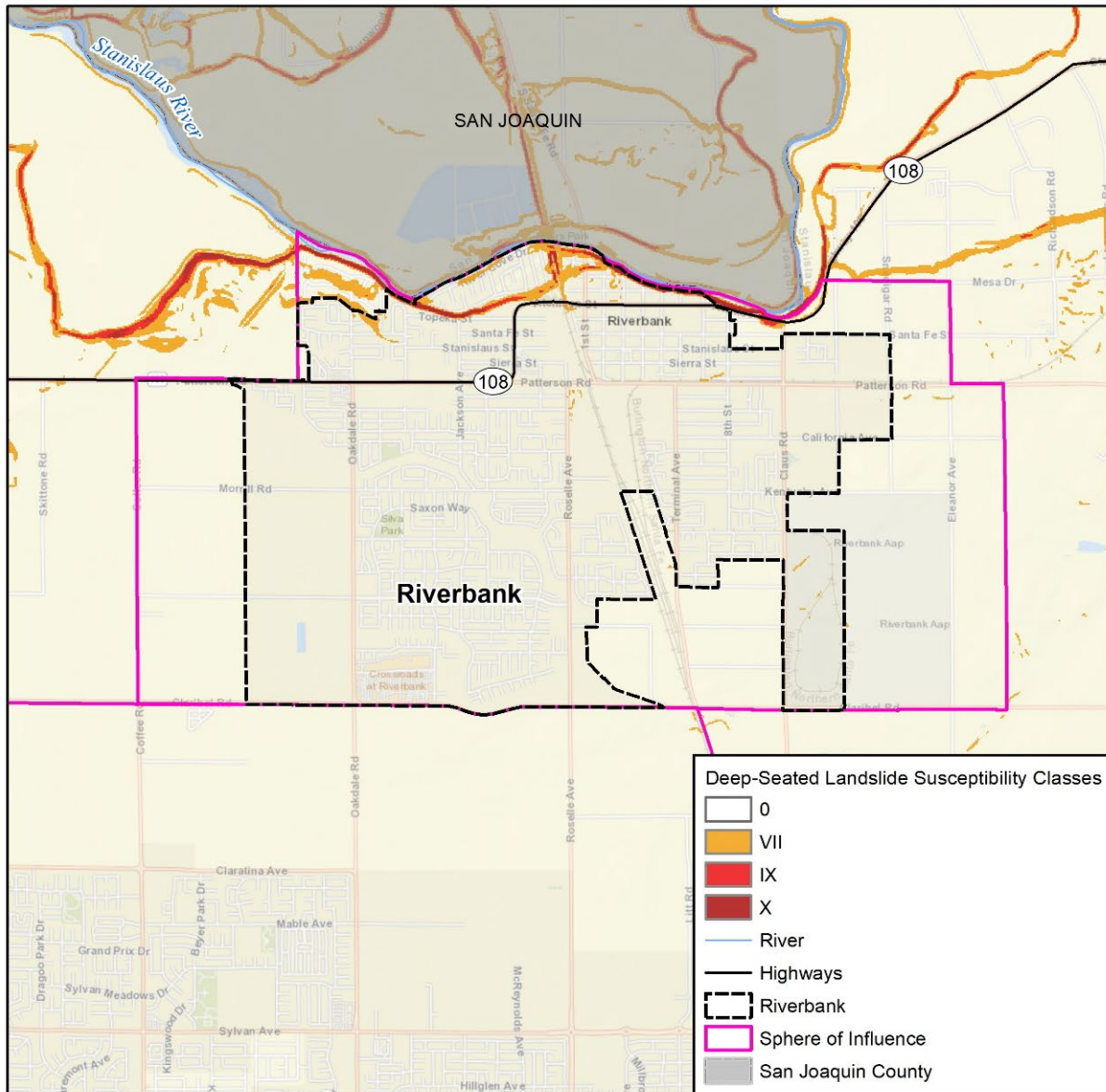
2.3.5 Landslide

Most of the City is not susceptible to deep-seated landslide hazards, although portions along the City's northern boundary and Stanislaus River and north of 7th Street along the Riverside Drive area and the northwest portion of the city limits are susceptible to deep-seated landslide, as shown in Figure 2-5. The City's LPT has also noted that the area north of Topeka Street is susceptible to soil erosion and some of erosion at some of the residential properties is impacting the conditions of the City's road system (Highway 108- East & West Route).

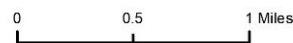
The entire north side of the City is composed of geological formations that, due to structures, slope, runoff, lack of vegetation, earthquake and human activity, are considered susceptible to failure and sliding. There is no history of landslides throughout the City, however, it is important to note that steep slopes and undesirable geology present risk in certain conditions. Areas along Highway 108, Riverside Drive, River Cove Drive, the homes along the northwest area of the River Heights area are vulnerable to landslide. As a result of these vulnerable areas, the City maintains an ongoing collaborative partnership with the California Department of Transportation (Caltrans) to monitor and mitigate these areas.



Figure 2-5 City of Riverbank Deep-Seated Landslide Susceptibility



wood Map compiled 2/2022;
Intended for planning purposes only.
Data Source: Stanislaus County,
Department of Conservation,
California Geological Survey



3 CAPABILITY ASSESSMENT

Capabilities are the programs and policies currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. This capabilities assessment is divided into five sections: regulatory mitigation capabilities, administrative and technical mitigation capabilities, fiscal mitigation capabilities, mitigation outreach and partnerships, and other mitigation efforts. To develop this capability assessment, the LPT representatives reviewed a matrix of common mitigation activities to inventory which of these policies or programs and shared any updates or changes through the Riverbank Data Collection



Guide. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contribute to reducing hazard-related losses.

During the plan update process, this inventory was reviewed by the jurisdictional planning representatives and Wood consultant team staff to update information where applicable and note ways in which these capabilities have improved or expanded. Additionally, in summarizing current capabilities and identifying gaps, the LPT representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The City of Riverbank’s capabilities are summarized below.

3.1 Regulatory Capability

The regulatory and planning capabilities table lists planning and land management tools typically used by local jurisdictions to implement hazard mitigation activities. The table below indicates those that are in place in the City of Riverbank.

Table 3-1 City of Riverbank —Regulatory and Planning Capabilities

Regulatory Tool (ordinances, codes, plans)	Yes/No	Comments
General Plan	Yes	Adopted April, 2009
Zoning ordinance	Yes	Chapter 153: Zoning
Subdivision ordinance	Yes	Chapter 152: Subdivisions
Growth management ordinance	No	No
Floodplain ordinance	Yes	Chapter 151: Flood Plain Management
Other special purpose ordinance (stormwater, steep slope, wildfire)	Yes	Chapter 53: Storm Water Management and Discharge Control
Building code	Yes	Chapter 150: Building Regulations
Fire department ISO rating	No	
Erosion or sediment control program	Yes	Chapter 155.04 General Grading/Clearing Performance Standards
Stormwater management program	No	Chapter 53: Storm Water Management and Discharge Control
Site plan review requirements	Yes	Chapter 153.072: Application Submittal and Review
Capital improvements plan	Yes	
Economic development plan	No	
Local emergency operations plan	Yes	Emergency Operations Plan; last updated in 2016.
Other special plans	No	
Flood insurance study or other engineering study for streams	Yes	Included in the County’s FIS, which was revised on August 24, 2021
Elevation certificates (for floodplain development)	Yes	Mentioned in Chapter 151: Flood Plain Management
Other		

2020 – 2025 Riverbank General Plan (2009)

The fundamental purpose of the City’s General Plan is to protect and enhance Riverbank’s quality of life and address important local concerns as the City grows and changes. The purpose of the General Plan is to achieve the vision of the community according to a set of guiding principles. These guiding principles include keeping the City’s small-town character and unique qualities, promoting different opportunities and diversity, improving the quality of life as the City grows, and building a safe and healthy environment.

Storm Drain System Master Plan (2008)

The City’s Storm Drain Master Plan serves as a basis for storm drain infrastructure and assessing the impact of new and future development. This planning tool allows the City to plan, coordinate, and phase required system upgrades with multiple developments. The plan also catalogs existing collection system deficiencies, models the existing drainage system, recommends improvements, and develops a list of capital improvements to specific storm water and drainage infrastructure.



Emergency Services, Organization and Functions Ordinance, Chapter 37

The Emergency Services Ordinance establishes the Disaster Council membership, the Disaster Council's powers and duties, which include overseeing the preparedness activities of the various County departments and other jurisdictions in the Stanislaus County operational area, including the preparation of emergency and disaster plans, policies, and procedures, and ensuring unity of purpose. The Emergency Services Ordinance also establishes the Operational Area Council. The Operational Area Council is responsible for coordinating, reviewing, and recommending for approval all emergency or disaster response policies, procedures, plans, and other influencing factors or events that would affect the Stanislaus operational area. The Operation Area Council does not have operational duties or powers during an event or emergency and is created to serve in the preparedness and planning phases only.

Fire Code, Chapter 150.11

The Stanislaus Consolidated Fire Protection District adopted the 2019 California Fire Code, Title 24, Part 9, including Appendix Chapter 4, Appendices A, B, C, D, E, F, G, H, I, and J, to provide minimum standards to safeguard life, health, property, and public welfare from fire and explosive hazards arising from the storage, handling, and use of hazardous substances, materials and devices, and from conditions hazardous to life or property in the occupancy of buildings and premises in the City of Riverbank.

Flood Plain Management, Chapter 151

The purpose of the City's Flood Plain Management Ordinance is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by legally enforceable regulations applied uniformly throughout the community to all publicly and privately owned and within flood-prone, mudslide (i.e. mudflow) or flood-related erosion areas. The Ordinance aims to protect human life and health, as well as minimize the expenditure of public money for costly flood control projects, the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public. The Ordinance is also in place to minimize prolonged business interruptions and damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, and streets and bridges located in areas of SFHAs. Moreover, the Ordinance helps maintain a stable tax base by providing for the sound use and development of areas of special flood hazard to minimize future blighted areas caused by flood damage. The Ordinance also ensures that potential buyers are notified that a property is in an SFHA and that those who occupy the areas of special flood hazard assume responsibility for their actions.

Storm Water Management and Discharge Control, Chapter 53

The purpose of this Storm Water Management and Discharge Control chapter is to protect and promote the health, safety and general welfare of the citizens of the City by controlling non-stormwater discharges to the stormwater conveyance system from spills, dumping or disposal of materials other than stormwater, and by reducing pollutants in urban stormwater discharges to the maximum extent practicable. The chapter intends to assist in the protection and enhancement of the water quality of watercourses, water bodies and wetlands in a manner consistent with the Federal Clean Water Act (33 U.S.C. §§ 1251 et seq.), by reducing pollutants in stormwater discharges to the maximum extent practicable, and through prohibiting non-stormwater discharges into the storm drain system

City of Riverbank Strategic Plan 2017 – 2021

The City's 2020-2025 Strategic Plan's purpose is to help the City prioritize its efforts, allocating both fiscal and human resources to achieve a shared vision and goals that also reflect community priorities and needs. The Plan is the result of a comprehensive review by Regional Government Services of the City's current operations and finances, interviews with staff members and discussions with City Council members. The City Council identified eight goals, including ensuring financial stability, improving public safety, improving the City's historic downtown, improving community communication, encouraging employee development, promoting economic development through manufacturing, promoting sustainable land use planning, and maintaining a high quality of life.



3.2 Administrative and Technical Capability

The table below identifies City personnel with responsibilities for activities related to mitigation and loss prevention in the City of Riverbank. Many positions are full-time and/or filled by the same person. A summary of technical resources follows.

Table 3-2 City of Riverbank —Personnel Capabilities

Personnel Resources	Yes/No	Department/Position	Comments
Planner/engineer with knowledge of land development/land management practices	Yes	Planning Division	
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Building Division	
Planner/engineer/scientist with an understanding of natural hazards	Yes	Planning Division	
Personnel skilled in GIS	No		Partner with Stanislaus County GIS
Full-time building official	Yes	Building Division	
Floodplain manager	Yes	City's Building Official (Floodplain Administrator)	
Emergency manager	Yes	City Manager (Director of Emergency Services)	
Grant writer	Yes	Administration	
Other personnel	Yes	Multiple agencies and departments with support personnel expanding capabilities for mitigation	
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	No		Data Provided by Stanislaus County GIS
Warning Systems/Services (Reverse 9-11, cable override, outdoor warning signals)	No	Alert Center	Services provided by Stanislaus County Sheriff Department & OES
Other			

City Council

The City Council consists of the Mayor who is elected citywide and serves a four-year term; Council members are seated by Districts who are elected by their respective District registered voters to serve a four-year term. The City Council also serves as the Local Redevelopment Authority Board and the Public Financing Authority Board.

City Manager

The major responsibility of the City Manager is to ensure the policies adopted by City Council are integrated into the daily operational procedures and practices of the City. This department is accountable for the day-to-day operational efficiency of all city departments and services. The City Manager continually appraises and informs the elected officials of significant issues which impact the city. In addition, the department performs human resource functions, public information, economic development, labor negotiations, and develops short and long-term organizational and planning goals. The City Manager also coordinates all community relations and functions as the City's Public Information Officer.

City Clerk

The mission of the City Clerk's Office is to ensure transparency of the people's business and to administer all responsibilities in an ethical, professional, and impartial manner. The City Clerk is the local Elections Official who administers the democratic processes in nonpartisan elections. The Custodian of Records safeguarding the City's historical and vital records and ensuring the transparency of the people's business; the Compliance Officer of federal, state, and local statutes; the Filing Officer for conflict of interest or



campaign filings; and the Recorder and Processor of the legislative actions ordered by the City Council, Commissions, or Boards.

Building Division

The City's Building Division is responsible for the enforcement of codes, laws, ordinances and regulations on commercial and residential building constructions and remodeling within the city. The Building Division provides services necessary to ensure that construction within the City is performed safely and lawfully by regulating, ADA Law, demolition of structures, energy conservation, life & safety, permit activities, seismic safety, uniform construction codes and Cal Green Building Code. The City's Chief Building Officer is also the City's Floodplain Administrator.

Development Services

The Development Services Department is composed of seven interrelated divisions dedicated to providing the residents of Riverbank with excellent customer service. These seven divisions include administration, building, capital projects/traffic engineering, code enforcement, municipal services, planning/land development and public works divisions.

Fire Department (Stanislaus Consolidated Fire Protection District)

Stanislaus Consolidated Fire Protection District provides fire protection and first response to emergencies for the City of Riverbank. Station #36 is centrally located in downtown Riverbank at 3324 Topeka Street and is staffed 24-hours a day.

Planning Division

The Planning Division assists citizens in finding the General Plan Designation and Zoning of property within the community. Planning involves more than zoning ordinances and regulations. The Planning staff works with the community and other City departments in developing strategies and plans for the development of the entire community. Planning attempts to balance the often competing economic, environmental and social needs of the community. To achieve this balance, planning provides input into development review, community goal setting and capital improvement processes.

Public Works Department

The Public Works Department's primary objective is to provide for the public's safety and to maintain and improve the City's infrastructure cost-effectively while planning to meet future infrastructure needs. It is the largest department within the City of Riverbank. The department will continue to ensure a healthy environment for the citizens by providing a safe, clean and ample supply of potable water, and an effective sewage disposal system, and streets and alleyways that are safe and structurally sound. The Department also oversees and implements the City's Storm Water Master Plan.

Planning Commission

The primary responsibility of the Planning Commission is to advise the City Council on matters of land use and the General Plan. The Commission makes recommendations for approval on planning projects and policies.

Other Commissions

The City has multiple commissions, including a Planning Commission and a Budget Advisory Committee.

3.3 Fiscal Capability

The following table identifies financial tools or resources that the City could potentially use to help fund mitigation activities. There are currently no specific funding sources for hazard mitigation.



Table 3-3 City of Riverbank —Available Financial Tools and Resources

Financial Resources	Accessible/ Eligible to Use	Has This Been Used for Mitigation in the Past?	Comments
Community Development Block Grants	Yes	No	
Capital improvements project funding	Yes	No	
Authority to levy taxes for specific purposes	Yes	No	Must be approved by voters
Fees for water, sewer, gas, or electric services, new development	Yes	No	
Incur debt through general obligation bonds	Yes	No	
Incur debt through special tax bonds	Yes	No	Requires approval by two-thirds of voters
Incur debt through private activities	Yes	No	Do not have any in place
Federal Grant Programs (Hazard Mitigation Grant Program)	Yes	No	Various Departments

3.4 Outreach and Partnerships

The Stanislaus County Office of Emergency Services (OES) Division is responsible for the day-to-day administration of Stanislaus County's disaster preparedness, mitigation, response and recovery programs. OES develops and maintains the Stanislaus County Emergency Operations Plan and its associated annexes. OES also coordinates training, planning and exercises for first responders throughout the Stanislaus Operational Area. According to Stanislaus County OES' 2021 – Emergency Management Strategic Plan, OES listed “increase number of outreach engagements (i.e. meetings, events) as an action item to achieve one of its strategic goals, which is to build a culture of preparedness. The Stanislaus County OES will work with community partners to develop agreements for mutual aid, facilitate discussion with partners regarding preparedness planning, conduct outreach activities to engage residents, and attend emergency management trainings and conferences to stay up to date with the most current practices for disaster preparedness.

Moreover, the Stanislaus County OES protects the public's safety by developing and maintaining general and specific preparedness programs for the County and its nine cities. The OES educates and informs the public in the areas of emergency preparedness and fire prevention.

During the 2021-2022 planning process the following outreach efforts were identified that the City of Riverbank could support related to hazard mitigation:

- City's Monthly Newsletter (mailed with utility bill)
- Community Voice
- Events and Clubs Webpage
- Fire Prevention School Programs
- Social Media (Facebook, Instagram)
- Riverbank Chamber of Commerce

Education and outreach efforts, as well as emergency response planning, will need to address the needs of low-income residents and the large Spanish-speaking population.

3.5 Other Mitigation Efforts

The other mitigation efforts in place at the City includes ongoing staff training, downtown revitalization efforts, and continued coordination with the Central San Joaquin Valley Risk Management Authority (CSJVRMA).



3.6 Opportunities for Enhancement

Based on the capability assessment, the City of Riverbank has existing regulatory, administrative/technical, fiscal mechanisms in place that help to mitigate hazards. In addition to these existing capabilities, there are opportunities for the City to expand or improve on these policies and programs to further protect the community. These are organized below by regulatory, administrative/technical, fiscal, and outreach opportunities.

Regulatory Opportunities

Future opportunities for regulatory enhancement should focus on compliance with Assembly Bill 2140, including amending the City of Riverbank General Plan Safety Element to incorporate the 2021-2022 Stanislaus County MJHMP and City of Riverbank Annex by reference.

Administrative/Technical Opportunities

Other future enhancements may include providing hazard training for staff or hazard mitigation grant funding in partnership with Stanislaus County and Cal OES. Existing City staff are aware of the benefits of participating in training and webinars offered by Cal OES Hazard Mitigation Assistance (HMA) Team related to HMGP opportunities, HMGP Sub application Development support, and other funding programs, such as Prepare California Jumpstart. Other opportunities may be related to coordinating and educating key stakeholders in the City. Stakeholder groups can become involved in the implementation of the LHMP and may be interested in aligning efforts related to hazard mitigation and also supporting HMGP Sub applications and other hazard mitigation trainings.

Fiscal Opportunities

The City can update other plans, such as their CIP to incorporate hazard information and include hazard mitigation actions and climate adaptation strategies that relate to infrastructure systems resiliency associated with the water and wastewater systems. Once projects related to hazard mitigation are approved, the CIP can be shared with the community on the City's webpage. Capital investments and improvements related to seismic retrofits, sewer trunk line upgrades, and WWTP improvements should all be emphasized in the outreach materials as they are related to hazard mitigation. Additionally, given the prioritization of local stormwater flooding mitigation projects, the City should apply for HMGP grants to fund implementation costs associated with key CIP projects, and related projects in the City's mitigation strategy. These fiscal capabilities may be supported by City staff or augmented with Consultant staff.

Outreach Opportunities

The City can also expand their outreach capabilities related to the implementation of the 2021-2022 Stanislaus County MJHMP and the City of Riverbank Annex. Specific enhancements may include continued public involvement through social media posts and advertisements focused on projects successes related to the Annex Mitigation Strategy and focused outreach to under-represented and special-interest groups in the City. The City can also develop outreach kits for partner organizations.

4 MITIGATION STRATEGY

4.1 Goals and Objectives

The City of Riverbank adopts the hazard mitigation goals and objectives developed by the HMPC and described in Section 5 Mitigation Strategy of the Base Plan. Like the Mitigation Strategy in the Base Plan, this section outlines the City's roadmap for future hazard mitigation administration and implementation. The purpose of the strategy is to reduce vulnerabilities from key priority hazards outlined in the risk assessment through regulatory tools and projects.



4.2 Continued Compliance with the National Flood Insurance Program

The City has been an NFIP participating community since 1997. In addition to the mitigation actions identified herein the City will continue to comply with the NFIP. Floodplain management is under the purview of the City's Building. This includes ongoing activities such as enforcing local floodplain development regulations, issuing permits for appropriate development in SFHAs and ensuring that this development is mitigated in accordance with the regulations. This will also include periodic reviews of the floodplain ordinance to ensure that it is clear and up to date and reflects new or revised flood hazard mapping.

4.3 Mitigation Actions

The LPT for the City identified and prioritized the following new mitigation actions based on risk assessments, goals, and objectives. Background information as well as information on how the action will be implemented and administered, such as ideas for implementation, responsible office, partners, potential funding, estimated cost, and timeline also are described. Because the City did not participate in the 2017 LHMP, the LPT did not have existing mitigation actions to review and did not provide status updates on past hazard mitigation planning efforts.

The mitigation strategy includes only those actions and projects which reflect the actual priorities and capacity of the jurisdiction to implement over the next five years covered by this plan. It should further be noted, that although a jurisdiction may not have specific projects identified for each significant (medium or high) 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. Should future projects be identified for priority hazards where the implementing jurisdiction has the capacity to implement, the jurisdiction would add those projects to their Annex. The City also recognizes that other mitigation actions proposed in the County's mitigation strategy will cover the significant hazards in the City that are not currently linked to a mitigation action.



Table 4-1 City of Riverbank Mitigation Action Plan

ID	Goal(s) and Lifelines	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate and Potential Funding	Priority	Timeline	Status/Implementation Notes
1	Goals 1, 3, 4 and 5; Safety and Security; Food, Water, Shelter; Energy; Communication	Dam Incidents	Promote dam safety awareness each year on May 31 as part of the National Dam Safety Awareness Day campaign, using FEMA templates and background materials coupled with information from the risk assessment.	Public Works Department, Stanislaus County Office of Emergency Services, USACE, DSOD, TID, SSJID	\$10,000 - \$50,000	Medium	1-3 years	New in 2022.
2	Goals 1, 3, 4 and 5; Safety and Security; Food, Water, Shelter; Health and Medical; Energy; Communications	Earthquake, Flood, Drought	Retrofit Potable Water Supply Wells – The City will install retrofits and security upgrades at multiple potable water supply wells, including Well #6 at 6082 Tennessee Avenue, Well #7 at 2308 McAllister Lane, Well #8 at 2402 Novi Drive, #9 at 5201 Prospector Parkway, and Well #3 at 6234 Jackson Avenue, Well #4 at 3017 High Street, Well #10 at 5200 Oakdale Road, and Well #12 at 6343 Chief Tucker.	Public Works Department, Water Utilities Department	>\$1,000,000	High	3-5 years	New in 2022. Retrofits at the well will allow the City to continue to supply drinking water.
3	Goals 1, 2, 3, 4 and 5; Safety and Security; Food, Water, Shelter; Health and Medical; Energy; Communications	Earthquake, Flood	Upgrade Waste Water Lift Stations in the City – The City needs to upgrade and retrofit several wastewater lift stations. Lift stations that need upgrades include the Silverrock Lift Station at the northwest corner of Oakdale Road and Silverrock Road, Townsend Lift Station at the northwest corner of 8 th Street and Townsend Avenue, Jackson Lift Station on the west side of Jackson Avenue and Country Manor Drive, Estelle Lift Station on the northeast corner of Colony Manor Drive and Estelle Avenue, River Cove Lift Station on the northeast corner of Royal Links Drive and River Cove Drive, Candlewood Lift Station on the south side of Candlewood Place between	Public Works Department, Water Utilities Department	\$10,000 - \$100,000	High	3-5 years	New in 2022. Upgrades will help the City continue to keep the lift station in operations during hazard events and safety move raw waste water from buildings.



ID	Goal(s) and Lifelines	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate and Potential Funding	Priority	Timeline	Status/Implementation Notes
			Arrowwood Drive and Oakdale Road, Jackson Lift Station on the west side of Jackson Avenue between Ward Avenue and Country Manor Drive, Roselle Lift Station on Roselle Avenue between Talbot Avenue and Soares Place, and Terminal Life Station at Terminal Avenue and Virginia Street.					
4	Goals 1, 2, 3, 4 and 5; Safety and Security; Food, Water, Shelter; Health and Medical; Energy	Earthquake, Flood	Protect Waste Water Truck Line – Complete a reinforcement or redesign to improve the structural integrity of the supporting trestle across the Stanislaus River to the City’s WWTP.	Public Works Department, Water Utilities Department	>\$1,000,000	High	5-10 years	This project would allow the City to continue to move raw waste water out of the City to the WWTP.
5	Goals 1, 2, 3, 4 and 5; Safety and Security	Flood	Storm Drain Outfall Improvement – Upgrade and upsize the Storm Drain Line at the end of 8 th Street at the Stanislaus River.	Public Works Department, Water Utilities Department	\$50,000 - \$100,000	High	3-5 years	New in 2022.
6	Goals 1, 3, 4 and 5; Safety and Security	Landslide	Road Stabilization Monitoring – The City will continue to coordinate with the California Department of Transportation to annually monitor and stabilize slopes along roads near or adjacent to Stanislaus River subject to landslides, soil erosion, and rock slides.	Public Works Department, Caltrans	> \$100,000	Medium	1-3 years	New in 2022.
7	Goals 1, 2, 3 and 4; Safety and Security; Health and Medical	Public Health Hazards	Collaborate with County public health experts and health-related organizations, such as senior care centers, faith-based organizations, and housing authorities to understand environmental hazards, communicable diseases, and public health data in order	City Manager’s Office, Senior Care Organizations, Housing Authorities, Community	\$10,000 - \$100,000	Medium	1-3 years	New in 2022.



ID	Goal(s) and Lifelines	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate and Potential Funding	Priority	Timeline	Status/Implementation Notes
			to explore how to address City public health goals and vulnerability to public health hazards across socially vulnerable populations, such as children, seniors, low-income communities, and other communities disproportionately affected by natural and human-health hazards.	Health Centers, Stanislaus County Health Services Agency, and Stanislaus County Public Health Department				



5 IMPLEMENTATION AND MAINTENANCE

Moving forward, the City will use the mitigation action table in the previous section to track the progress on the implementation of each project. Implementation of the plan overall is discussed in Section 6 in the Base Plan.

5.1 Incorporation into Existing Planning Mechanisms

The information contained within this plan, including results from the Vulnerability Assessment, and the Mitigation Strategy will be used by the City to help inform updates and the development of local plans, programs and policies. The Public Works Department and Sewer, Storm Water, Streets, Wastewater Treatment, and Water Divisions each may utilize the hazard information when implementing the City's CIP, UWMP Updates, and Water Supply Contingency Plan (WSCP). The City's Building Division can incorporate the hazard information and vulnerability assessment into their Building Plan Review process related to the planning, design, and construction of capital projects and private development projects. Similarly, the Development Services and Planning Division may utilize the hazard information when reviewing a site plan or other types of development applications. The City's Planning Division will also incorporate this MJHMP into the Safety Element of their General Plan, as recommended by Assembly Bill (AB) 2140.

As noted in Section 6 of the Base Plan, the LPT representatives from Riverbank will report on efforts to integrate the hazard mitigation plan into local plans, programs and policies and will report on these efforts at the annual LPT plan review meeting.

5.2 Monitoring, Evaluation and Updating the Plan

The City will follow the procedures to monitor, review, and update this plan in accordance with Stanislaus County as outlined in Section 6 of the Base Plan. The city will continue to involve the public in mitigation, as described in Section 6.2.1 of the Base Plan. The Police Chief, Planning and Building Manager, and Public Works Director will be responsible for representing the City in the County LPT, and for coordination with City staff and departments during plan updates. The City realizes it is important to review the plan regularly and update it every five years in accordance with the Disaster Mitigation Act Requirements as well as other State of California requirements.