



A.1 Community Profile

A.1.1 Mitigation Planning History and 2019 Process

This annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan update. This Jurisdictional Annex builds upon the previous version of the Multi-Jurisdictional Local Hazard Mitigation Plan for the Cities of Arroyo Grande, Grover Beach as well as the Lucia Mar Unified School District and South San Luis Obispo County Sanitation District; completed in December 2014 and approved by FEMA in December 2015; that previous mitigation plan was not incorporated into the City's General Plan, as this updated mitigation plan will be. The City has used the previous mitigation plan as a basis for the Emergency Operations Plan. A review of jurisdictional priorities found no significant changes in priorities since the last update.

The City's Local Planning Team (LPT), listed in Table A.1 holds responsibility for implementation and maintenance of the plan. Members are noted below. The Fire Chief for the Five Cities Fire Authority was the City's primary liaison to the County HMPC.

Table A.1 Arroyo Grande Hazard Mitigation Plan Revision Planning Group

Department or Stakeholder	Title
Five Cities Fire Authority	Fire Chief
Community Development - Engineering Division	Program Analyst
Community Development – Planning Division	Planning Manager

More details on the planning process follow and how the jurisdictions, service districts and stakeholders participated can be found in Chapter 3 Planning Process of the Base Plan, along with how the public was involved during the 2019 update.

A.1.2 Geography and Climate

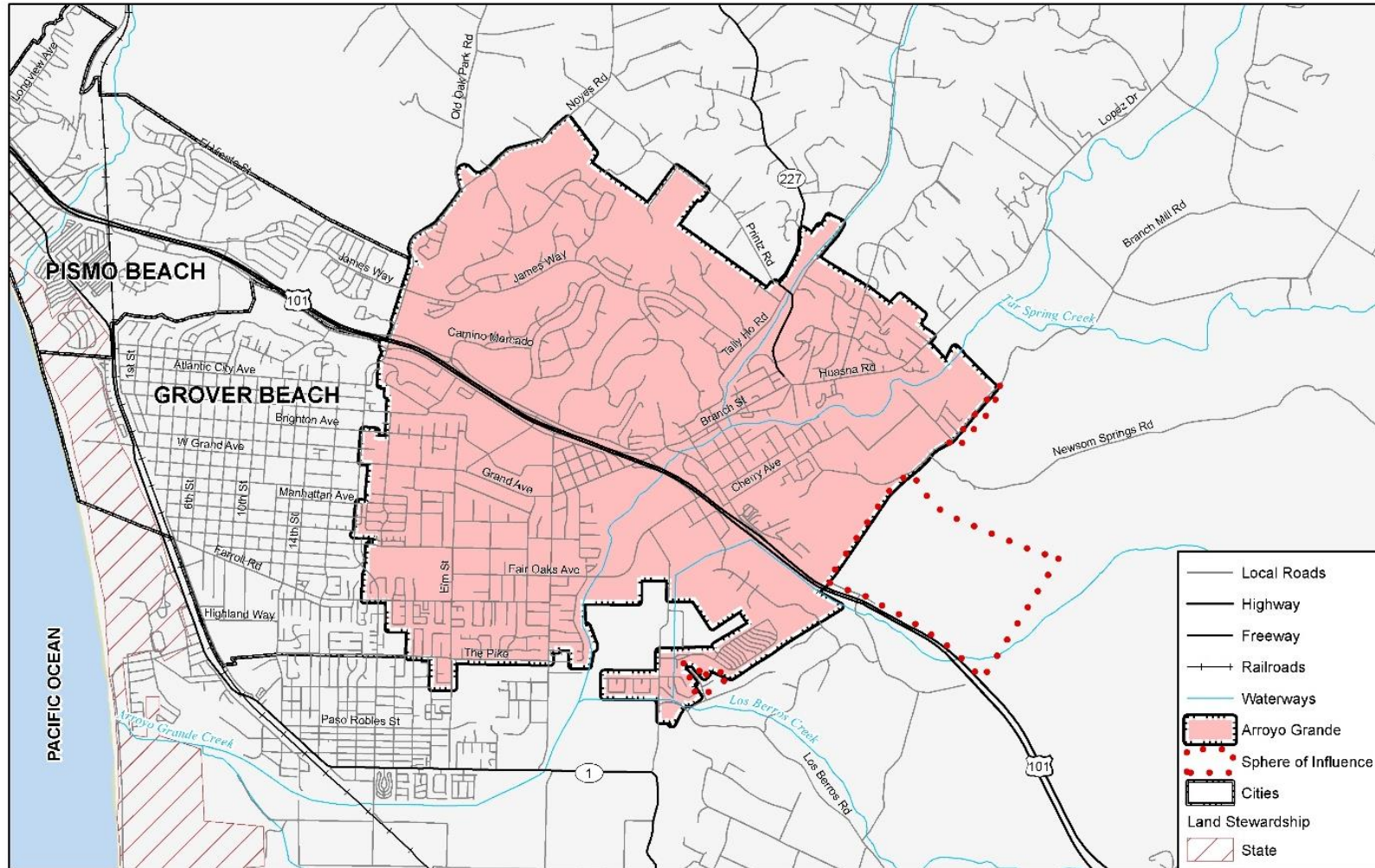
The City of Arroyo Grande is located in the south county area of San Luis Obispo County. Highway 101 traverses the City, which is located midway between the Cities of Los Angeles and San Francisco. The Cities of Pismo Beach and Grover Beach border Arroyo Grande to the northwest and west. The unincorporated community of Oceano borders on the southwest and agricultural lands border the City on the north, east and south. This area is known as the Five Cities. Arroyo Grande is the largest community in the Five Cities area, encompassing a total of 5.45 square miles. The Arroyo Grande Creek is another dominate feature that runs north-south in the eastern portion of the City and has been a source of flooding issues in the past (refer to the Vulnerability Assessment in Section A.3). Figure A.1 displays a map the Arroyo Grande planning area.

Arroyo Grande has an average high temperature (July) of 72°F and low temperature of 42°F (January). The jurisdiction receives 16.0 inches of rain annually. While the average temperature is relatively temperate, summer and winter months bring unique weather patterns to the region. Refer to the Adverse Weather Section of the HIRA in the Base Plan (Chapter 5) for general details on the climate in this area.





Figure A.1 The City of Arroyo Grande



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office



A.1.3 History

The Arroyo Grande Valley was first inhabited by the Obispena Chumash Indians. The Obispena Chumash Indians were living in the Arroyo Grande Valley when the first Spanish explorer, Juan Carbilló arrived in the Valley. In 1832, Francisco Zeba Branch purchased 17,000 acres in the Arroyo Grande Valley and started successful cattle ranching business. By 1840, colonial settlement of California led to the Arroyo Grande Valley to be divided into two major ranchos, granted by the Mexican government. In the mid 1860’s a severe drought event in the Valley led to Branch’s cattle population to diminish drastically. As a result, the two large ranchos were divided into smaller lots and sold to new settlers for agricultural uses. The Village of Arroyo Grande was developed to serve the new population. In 1862 the Arroyo Grande township was established by the San Luis Obispo Board of Supervisors, creating a flourishing community with a farm-based economy. In 1882 a railway depot was built, and businesses began to be established along Branch Street. Residents of the Arroyo Grande township voted on July 10, 1911 to incorporate and become the City of Arroyo Grande.

A.1.4 Economy

The top industries in the City are related to education, services and health as well as arts, entertainment and recreation, and accommodation and food services. The major employers are the Arroyo Grande Community Hospital (412 employees) and Lucia Mar Unified School District (1,000 employees) both of which are also in the top twenty-five (25) employers in the County of San Luis Obispo (San Luis Obispo Chamber of Commerce 2018). In addition to these employers, tourism is also large part of the City’s economic base. According the City’s 2016 Housing Element of the General Plan, 85% of residents commute out of Arroyo Grande for work.

Estimates of select economic characteristics for the City of Arroyo Grande are shown in Table A.2.

Table A.2 City of Arroyo Grande Economic Characteristics, 2013-2017

Characteristic	City of Arroyo Grande
Families below Poverty Level (%)	3.5%
All People below Poverty Level (%)	6%
Median Family Income	\$103,241
Median Household Income	\$74,654
Per Capita Income	\$38,893
Population in Labor Force	8,869
Population Employed*	8,486
Unemployment	383

Source: CA Department of Finance U.S. Census Bureau American Community Survey 2013-2017 5-Year Estimates, www.census.gov/

*Excludes armed forces

Table A.3 and Table A.4 show how the City of Arroyo Grande’s labor force breaks down by occupation and industry based on estimates from the 2013-2017 five-year American Community Survey.





Table A.3 City of Arroyo Grande’s Employment by Occupation, 2013-2017

Occupation	# Employed	% Employed
Management, Business, Science, and Arts occupations	3,591	42%
Service occupations	1,482	18%
Sales and Office occupations	1,988	23%
Natural Resources, Construction and Maintenance occupations	789	9%
Production, Transportation and Material Moving occupation	627	7%
Total	8,486	100%

Source: U.S. Census Bureau American Community Survey 2013-2017 5-Year Estimates, www.census.gov/

*Excludes armed forces

Table A.4 City of Arroyo Grande’s Employment by Industry, 2013-2017

Industry	# Employed	% Employed
Educational Services, and Health Care and Social Assistance	1,897	22%
Retail Trade	823	10%
Professional, Scientific, and Mgmt., and Administrative and Waste Mgmt. Services	992	12%
Manufacturing	498	6%
Arts, Entertainment, and Recreation, and Accommodation, and Food Services	1,177	14%
Construction	571	7%
Finance and Insurance, and Real Estate and Rental and Leasing	609	7%
Public Administration	563	7%
Other Services, Except Public Administration	350	4%
Wholesale Trade	164	2%
Transportation and Warehousing, and Utilities	667	8%
Agriculture, Forestry, Fishing and Hunting, and Mining	74	1%
Information	101	1%
Total	8,486	100%

Source: U.S. Census Bureau American Community Survey 2013-2017 5-Year Estimates, www.census.gov/

A.1.5 Population

In May 2019, the State Department of Finance released preliminary population data for the state to reflect wildfire-driven changes to the local population. According to the report the City of Arroyo Grande has a population of 17,876 persons and lost 4 residents from the previous year, leaving the population statically the same. Select demographic and social characteristics for the City of Arroyo Grande from the 2013-2017 American Community Survey are shown in Table A.5.





Table A.5 City of Arroyo Grande’s Demographic and Social Characteristics, 2013-2015

Characteristic	City of Arroyo Grande
Gender/Age	
Male	8,716
Female	9,255
Median age (years)	48
Under 5 years	930
Under 18 years	3,366
65 years and over	4,132
Race/Ethnicity	
White	15,877
Asian	1,022
Black or African American	119
American Indian/Alaska Native	52
Hispanic or Latino (of any race)	2,980
Education	
% High school graduate or higher	95%
Disability Status	
% of Population 5 years and over with a disability	11%

Source: CA Department of Finance, U.S. Census Bureau American Community Survey 2013-2017 5-Year Estimates, www.census.gov/

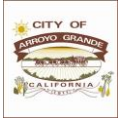
The following table with information from the American Community Survey 5-year estimates (2013-2017) is related to housing occupancy in the City of Arroyo Grande.

Table A.6 Housing Occupancy and Units

Housing Characteristic	Estimate	Percentage
Housing Occupancy		
Total Housing Units	7,847	100%
Units Occupied	7,192	92%
Vacant	655	8%
Housing Units		
1-unit detached	5,155	66%
1-unit attached	750	10%
2 units	273	4%
3 or 4 units	206	3%
5-9 units	215	3%
10-19 units	271	4%
20 or more units	442	6%
Mobile Home	519	7%
Boat, RV, van etc.	16	0.2%
Housing Tenure		
Owner Occupied	5,023	70%
Renter Occupied	2,169	30%

Source: CA Department of Finance, U.S. Census Bureau American Community Survey 2013-2017 5-Year Estimates, www.census.gov/





A.1.6 Development Trends

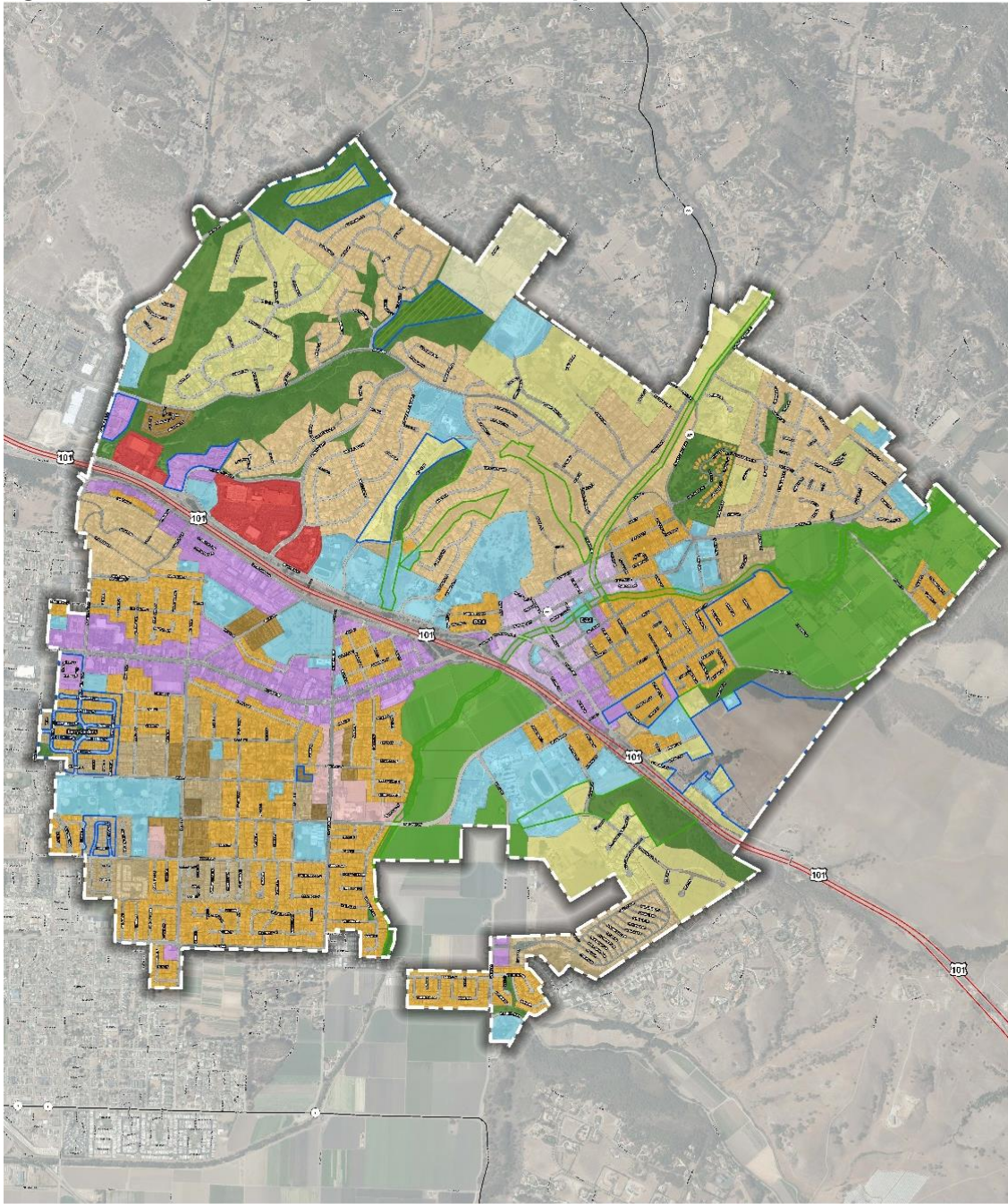
The dominant land use in the City of Arroyo Grande as shown in Figure A.2 below is residential. As can be seen in the housing table above, a majority of the residential use is single family (1-unit detached) homes that are owner occupied (70%). There are very few vacant parcels within the City's boundaries and due to the community's strong feelings toward the preservation of "prime" agricultural land, it is projected that future development will be infill and revitalization of existing parcels. According to the 2001 General Plan the infill development should be located in the following areas: East Grande Avenue, El Camino Real, and south and east of the Historic Village area. The Sphere of Influence for the City includes a 185-acre agricultural parcel along the City's southeastern boundary.

Between 2000 and 2016, the City's population grew at a similar rate to the County as a whole, adding 1,880 residents or an annual growth rate of 0.74 percent over a 16-year period. Population growth slowed down in between 2010 and 2016 with the addition of 500 residents in a 6-year period. The estimated buildout population for the City of Arroyo Grande is 20,000 by 2040. Due to water availability the City has a population growth cap of 20,000 by 2021 and is estimated to grow its population to 18,288 by 2020 (SLO County Council of Governments 2017). The availability of both the short-term and the long-term water source is the primary limitation of how the City can grow in the future. According to the City's Urban Water Management Plan (2015) the City's projected water supply should exceed its projected water demand through the year 2035.





Figure A.2 City of Arroyo Grande Land Use Map



LAND USE CATEGORIES

- | | | |
|-------------------------|-------------------------|---------------------|
| Agriculture | SFR Low-Medium Density | Mixed-Use |
| Conservation Open Space | SFR Medium Density | Village Core |
| Community Facilities | MFR Medium-High Density | Office Professional |
| SFR Very Low Density | MFR High Density | Regional Commercial |
| SFR Low Density | MFR Very High Density | |

LAND USE OVERLAYS

- | |
|----------------------------|
| Conservation/Open Space |
| Specific Plan |
| Neighborhood Plan |
| Planned Development |
| Planned Development (C/OS) |

1 in = 800 ft

Last Updated September 2018

Source: City of Arroyo Grande September 2018 <https://www.arroyogrande.org/142/Planning-Division>





A.2 Hazard Identification and Summary

The City of Arroyo Grande Planning Team 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 A.7). There are no hazards that are unique to Arroyo Grande. The overall hazard significance takes into account the geographic area, probability and magnitude as a way to identify priority hazards for mitigation purposes. This is discussed further in the Vulnerability Assessment Section.

Table A.7 City of Arroyo Grande – Hazard Summaries

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Dam Incidents	Extensive	Unlikely	Catastrophic	Medium
Drought and Water Shortage	Significant	Likely	Limited	Medium
Earthquake	Significant	Highly Likely	Critical	High
Flood	Significant	Highly Likely	Limited	Medium
Wildfire	Significant	Occasional	Limited	Medium
Human Caused: Hazardous Materials	Significant	Highly Likely	Negligible	Medium
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		

A.3 Vulnerability Assessment

The intent of this section is to assess Arroyo Grande’s vulnerability separate from that of the planning area as a whole, which has already been assessed in Section 5.3 Risk Assessment in the Base Plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area.





The information to support the hazard identification and risk assessment was based on a combination of the previous LHMP for the City and County and jurisdiction specific information collected during the 2019 update. A Local Hazard Mitigation Plan Update Guide and associated worksheets was distributed to each participating municipality or special district to complete during update process in 2019. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact 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 5.2). However, the hazard summary rankings for each jurisdictional annex may vary due to specific hazard risk 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.

Note: The hazard "Significance" reflects overall ranking for each hazard and is based on the City of Arroyo Grande's Planning Team member input from the Data Collection Guide and the risk assessment developed during the planning process (see Chapter 5 of the Base Plan), which included a more detailed qualitative and quantitative analysis with best available data.

The hazard summaries in Table A.7 above reflect the hazards that could potentially affect City. The discussion of vulnerability for each of the following hazards is located in Section A.3.2 Estimating Potential Losses. Based on this analysis, the priority hazard (High Significance) for mitigation is earthquake. Those of Medium or High significance for the City of Arroyo Grande are identified below.

- Dam Incidents
- Drought and Water Shortage
- Earthquake
- Flood
- Hazardous Materials Incident
- Wildfire

Other Hazards

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 in this plan and are not assessed individually for specific vulnerabilities in this section. In the City of Arroyo Grande, those hazards include: land subsidence, agricultural pests and infestation, biological agents, adverse weather and landslides.

Additionally, the City's committee members decided to rate several hazards as Not Applicable (N/A) to the planning area due to a lack of exposure, vulnerability, and no probability of occurrence. Coastal hazards (coastal storm/coastal erosion/sea level rise and tsunamis) are Not Applicable (N/A) to the City of Arroyo Grande.

A.3.1 Assets at Risk

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

Values at Risk

The following data on property exposure is derived from the San Luis Obispo County 2019 Parcel and Assessor data. This data should only be used as a guideline to overall values in the City as the information has some limitations. The most significant limitation is created by 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 likely low and does not reflect current market value of properties. 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 A.8 shows the exposure of properties (e.g., the values at risk) broken down by property type for the City of Arroyo Grande.

Table A.8 2019 Property Exposure for the City of Arroyo Grande by Property Types

Property Type	Parcel Count	Improved Value	Content Value	Total Value
Agricultural	4	\$95,432	\$95,432	\$190,864
Commercial	325	\$179,293,623	\$179,293,623	\$358,587,246
Government/Utilities	80	--	--	\$0
Other/Exempt/Misc.	185	\$49,935,239	--	\$49,935,239
Residential	5,225	\$1,143,804,006	\$571,902,003	\$1,715,706,009
Multi-Family Residential	511	\$116,469,141	\$58,234,571	\$174,703,712
Mobile/Manufactured Homes	8	\$9,155,399	\$4,577,700	\$13,733,099
Residential: Other	328	\$100,039,459	\$50,019,730	\$150,059,189
Industrial	4	\$1,164,671	\$1,747,007	\$2,911,678
Vacant	23	\$8,695,079	--	\$8,695,079
Total	6,693	\$1,608,652,049	\$865,870,066	\$2,474,522,115

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor's Office data 2019

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the City of Arroyo Grande from San Luis Obispo County GIS is illustrated in Figure A.3 and described in Table A.9. A more detailed list of the critical facilities, their location square footage and values from the City's 2015 HMP can be found as an attachment in to this annex.



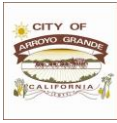
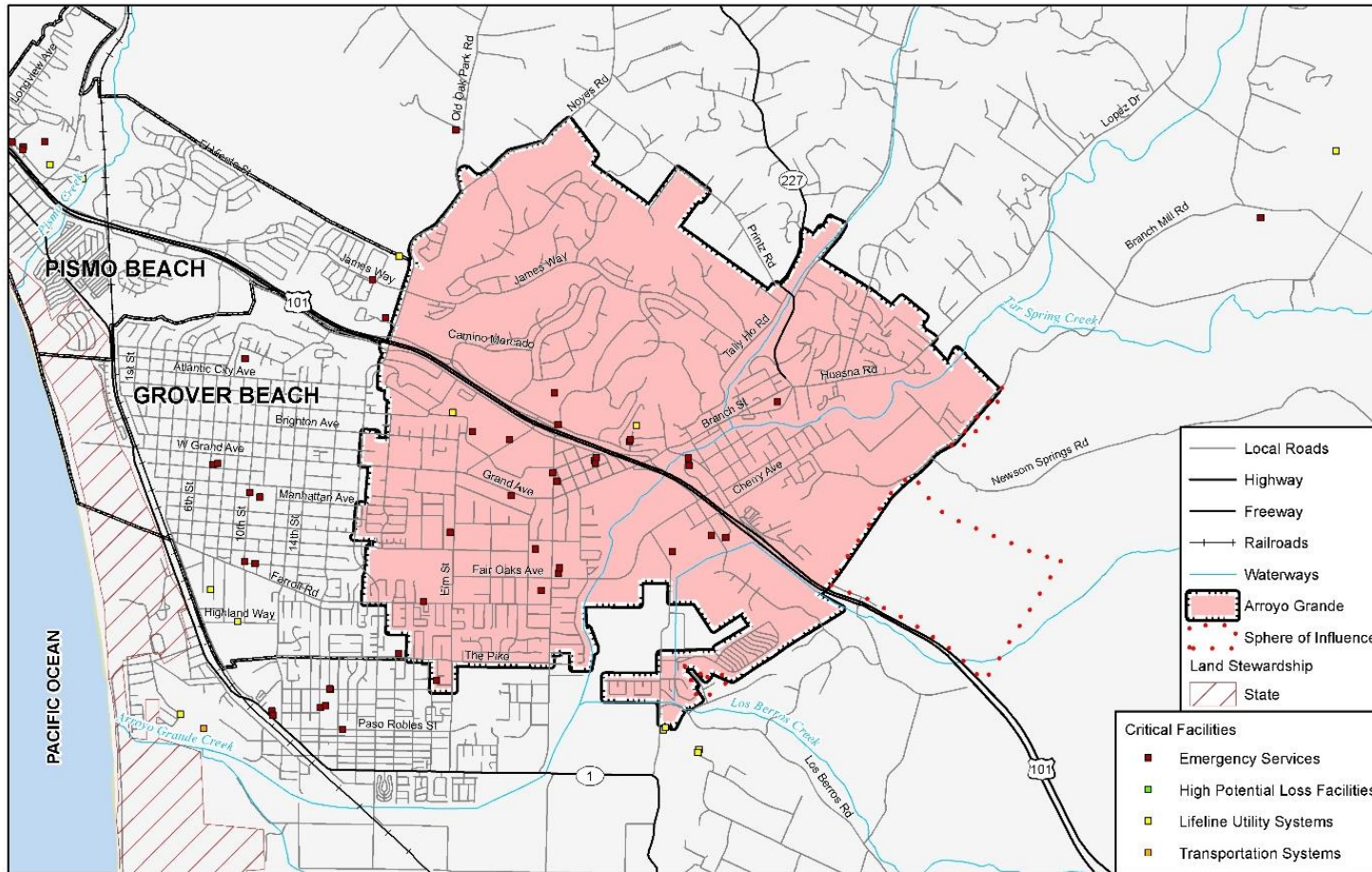


Figure A.3 City of Arroyo Grande's Critical Facilities



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCO, HIFLD



Table A.9 City of Arroyo Grande’s Critical Facilities

Facility Type	Counts
Day Care Facilities	8
Emergency Medical Service Stations	2
Fire Stations	1
Hospitals	2
Local Law Enforcement	1
Nursing Homes	2
Private Schools	4
Public Schools	5
Urgent Care	1
Power Plants	1
FM Transmission Towers	1
Paging Transmission Towers	1
Energy Commission Facilities	3
Airports	1
Total	33

Source: San Luis Obispo County Planning & Building, HIFLD 2017

Transportation and Lifeline Facilities

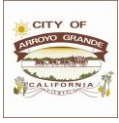
Other transportation and lifelines include Highway 101 which traverses through the City of Arroyo Grande. Damages to Highway 101 would not only impact the City of Arroyo Grande but the entire region.

Historic and Cultural Resources

Heritage tourism and Arroyo Grande historical sites have been a draw to the area. There have been several informal historical surveys that have identified potential historical sites in the City, much of which is within the Village of Arroyo Grande area. According to the Historical Context Survey completed in 2011, the following are the eleven locally designated historical resources in Arroyo Grande.

- Former City Hall – 214 East Branch Street
- Conrad House – 208 East Branch Street
- Residence – 145 West Branch Street
- Office – 139 West Branch Street
- Santa Manuela School House – Heritage Square/Nelson Green
- Ruby’s House – 134 South Mason Street
- Heritage House – 126 South Mason Street
- Swinging Bridge – Short Street, spanning Arroyo Grande Creek
- Bridge Street Bridge – Bridge Street, south of Olohan Alley
- Paulding House – 551 Crown Hill Street (California Register, 2009)
- Independent Order of Odd Fellows Hall (IOOF) – 128 Bridge Street (National Register, 1991)





The local tourism website (Visit Arroyo Grande) lists the following historic landmarks in addition to the ones identified above:

- The Barn Museum
- Rotary Bandstand
- Mason Street Bridge
- C. Loomis Building
- The Paulding History House
- The Pacific Coast Railroad Line
- Brisco Old Hotel – 129 E. Branch Olohan Building
- Hoosegow Park – LePoint Street.

Natural Resources

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. 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.

The City of Arroyo Grande is part of the Arroyo Grande and Cienga Valleys which is contains “prime” soils for agricultural productions. Despite a majority of the agricultural lands are outside of the City’s jurisdiction the Arroyo Grande community understands the importance of agricultural both to the local and the countywide economy, have chosen to protect these lands, through development regulations, that border their community on the north, east, and south.

Economic Assets

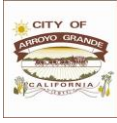
Arroyo Grande has two of the largest employers in the County located in the City’s jurisdiction. The Arroyo Grande Community Hospital employees over 400 persons and is located in a dam inundation zone which would have devastating impacts not only on the local economy but also the ability for the community to respond and recovery during and after a disaster. As noted above, the Village of Arroyo Grande contains several historic structures and is a draw for tourism, a major contributor to the local economy.

A.3.2 Estimating Potential Losses

Note: This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to LPT member input) it differs from that of the overall County.

Table A.8 above shows Arroyo Grande’s exposure to hazards in terms of number and value of structures. San Luis Obispo County’s parcel and assessor data was used to calculate the improved value of parcels. The most vulnerable structures are those in the floodplain (especially those that have been flooded in the past), unreinforced masonry buildings, and buildings built prior to the introduction of modern-day building codes. Impacts of past events and vulnerability to specific hazards are further discussed below (see Section 5.1 Hazard Identification for more detailed information about these hazards and their impacts on San Luis Obipso County as a whole).

Note: The risk and vulnerability related to adverse weather hazards, agricultural pest infestation and disease and biological agents in Arroyo Grande do not differ from those of the County at large. Please refer to Chapter 5 Risk Assessment of the Base Plan for more details on these hazards.



Dam Incidents

While there have been no past dam incidents or failures in the jurisdiction of the City of Arroyo Grande, the City is among the most vulnerable communities in San Luis Obispo to the risk of dam failure. The Lopez Dam, a high hazard earthen dam located upstream from the community, poses the greatest risk to Arroyo Grande if an incident was to occur. A total of 8,273 persons and 3,565 properties could be inundated if the Lopez Dam was to fail. Failure of the Lopez Dam would follow the Arroyo Grande Creek in a westerly direction approximately 3,000 feet in each direction of the centerline of the creek channel. Refer to the Dam Inundation Estimate Losses by Jurisdiction and Dam table in Chapter 5 of the Base Plan for additional details on estimated losses in Arroyo Grande. A majority of properties at risk are residential as shown in the table below. There are also 13 critical facilities within the inundation zone for the Lopez Dam including Fire Station 1, Arroyo Grande Community Hospital and City Hall. Refer to the Critical Facilities in the Lopez Dam Inundation Area, by Type of Facility table in the Base Plan for details on the type of various types of critical facilities at risk. A failure of the Lopez Dam would affect Highway 101 impeding or reducing flows of goods, people and resources potentially impacting the entire region. The Lopez Dam is also a major source of water for the City of Arroyo Grande; failure of the dam would not only have immediate impacts to property but also long-term impacts on the community's water supply. Refer to the Dam Incidents Section in Chapter 5 of the Base Plan for additional discussion on the potential impacts of dam incidents in the County.



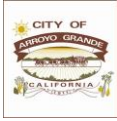
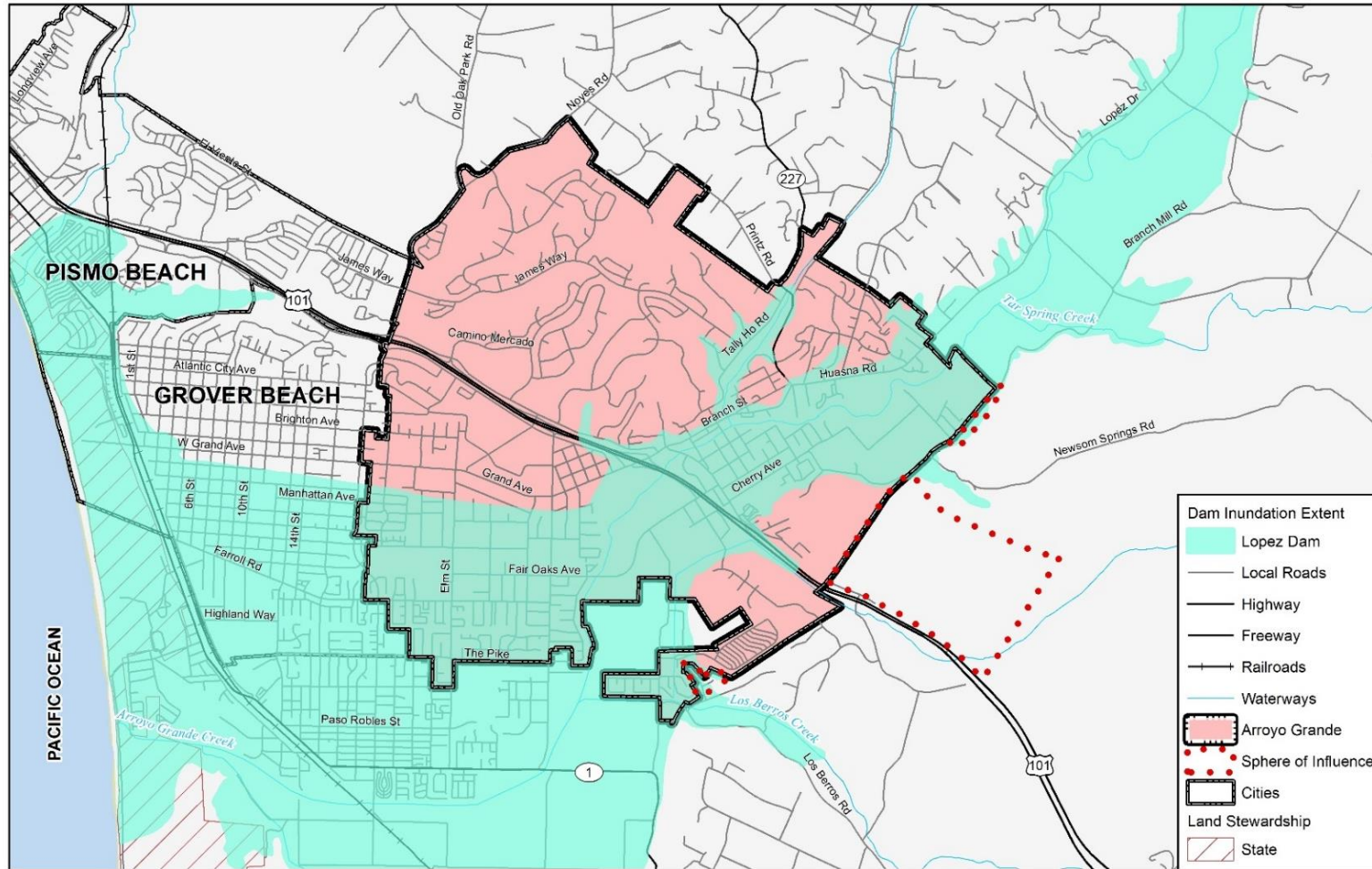


Figure A.4 Lopez Dam Inundation Zone within City of Arroyo Grande



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCO, CA DWR, NID 2018

0 1 2 Miles





Table A.10 Lopez Dam Inundation Estimate Losses by Property Type

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Agricultural	3	\$85,571	\$85,571	\$171,142	\$85,571	--
Commercial	124	\$51,205,571	\$51,205,571	\$102,411,142	\$51,205,571	--
Government/Utilities	43	--	--	\$0	\$0	--
Other/Exempt/Misc.	90	\$17,075,208	--	\$17,075,208	\$8,537,604	--
Residential	2,899	\$494,234,816	\$247,117,408	\$741,352,224	\$370,676,112	7,276
Multi-Family Residential	191	\$63,773,355	\$31,886,678	\$95,660,033	\$47,830,016	479
Mobile/Manufactured Homes	4	\$3,696,769	\$1,848,385	\$5,545,154	\$2,772,577	10
Residential: Other	202	\$47,995,307	\$23,997,654	\$71,992,961	\$35,996,480	507
Vacant	9	\$2,985,692	--	\$2,985,692	\$1,492,846	--
TOTAL	3,565	\$681,052,289	\$356,141,266	\$1,037,193,555	\$518,596,777	8,273

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Drought and Water Shortage

The City of Arroyo Grande has a variety of water sources that support the City's water supply, including groundwater, local surface water, and storm water captured for groundwater recharge, irrigation and construction water. The following figure from the City of Arroyo Grande Urban Water Management Plan (2016) depicts the current and projected water supply through the year 2035. The City is projecting to receive an increased amount of water supply from the Lopez Reservoir and from the Santa Maria Valley and Pismo Formation groundwater basins. The City recognizes the risk of being dependent on groundwater resources, and has considered other supplies such as the State Water Project and recycled water, especially during dry years or drought conditions.





Figure A.5 City of Arroyo Grande Current and Projected Water Supplies

Water Supply Sources		Projected Water Supply (afy)				
Water Source	Wholesale Supplied Volume	2015	2020	2025	2030	2035
Lopez Project	Yes	2,152	2,290	2,290	2,290	2,290
Groundwater-Santa Maria Valley Groundwater Basin	No	43	1,323	1,323	1,323	1,323
Groundwater-Pismo Formation ¹	No	44	200	200	200	200
Transfers In	No	0	0	0	0	0
Exchanges In	No	0	0	0	0	0
Recycled Water	No	0	0	0	0	0
Desalinated Water	No	0	0	0	0	0
Total		2,239	3,813	3,813	3,813	3,813

¹ Assumes 80 afy of groundwater from Well No. 9, 80 afy from Well No. 10, and 40 afy from Well No. 11 will be available as a reliable source of supply from 2016 through 2030.

Source: City of Arroyo Grande Urban Water Management Plan, 2016

Severe drought events in recent years have caused concerns on the impact to the City’s limited water supply. The City has taken steps to address drought in their community. On November 22, 2016 the City Council adopted Resolution 4766 which provides that if certain specified water supply conditions are determined to exist that additional restrictions for the declared Stage 1 “Water Shortage Emergency” will be implemented. A Drought Team was formed that consists of staff from various City departments to coordinate water use reduction strategies. The returned Data Collection Guide from the City of Arroyo Grande Planning Team noted that due to the region’s water supply being served by a mix of reservoir and pumped well water, the state-wide drought in California has led to regional impacts; this includes watering restrictions that according to the Planning Team has led to landscaping on many properties to die, which increases the risk of wildfire for some properties.

Earthquake

Earthquake events have occurred in Arroyo Grande in the past including a number of magnitudes 5.0 to 6.2 earthquakes. There are two mapped faults within the City of Arroyo Grande, the potentially active Wilmar Avenue fault and the inactive Pismo fault; refer to the figure below. The City’s downtown business district is at a greater risk from the impacts of a fault rupture compared to other part of the City due the majority of the buildings being Unreinforced Masonry. These types of buildings have shown to be unstable and have collapsed during earthquake events. The loss of buildings in the City’s business district would result in loss of commerce and a significant loss in tax revenue for the City. Arroyo Grande’s City Hall is one of the unreinforced masonry buildings located in the downtown business district. A magnitude 6.5 earthquake or greater could result in the loss of the building and the relocation of City Hall.



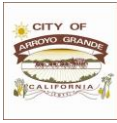
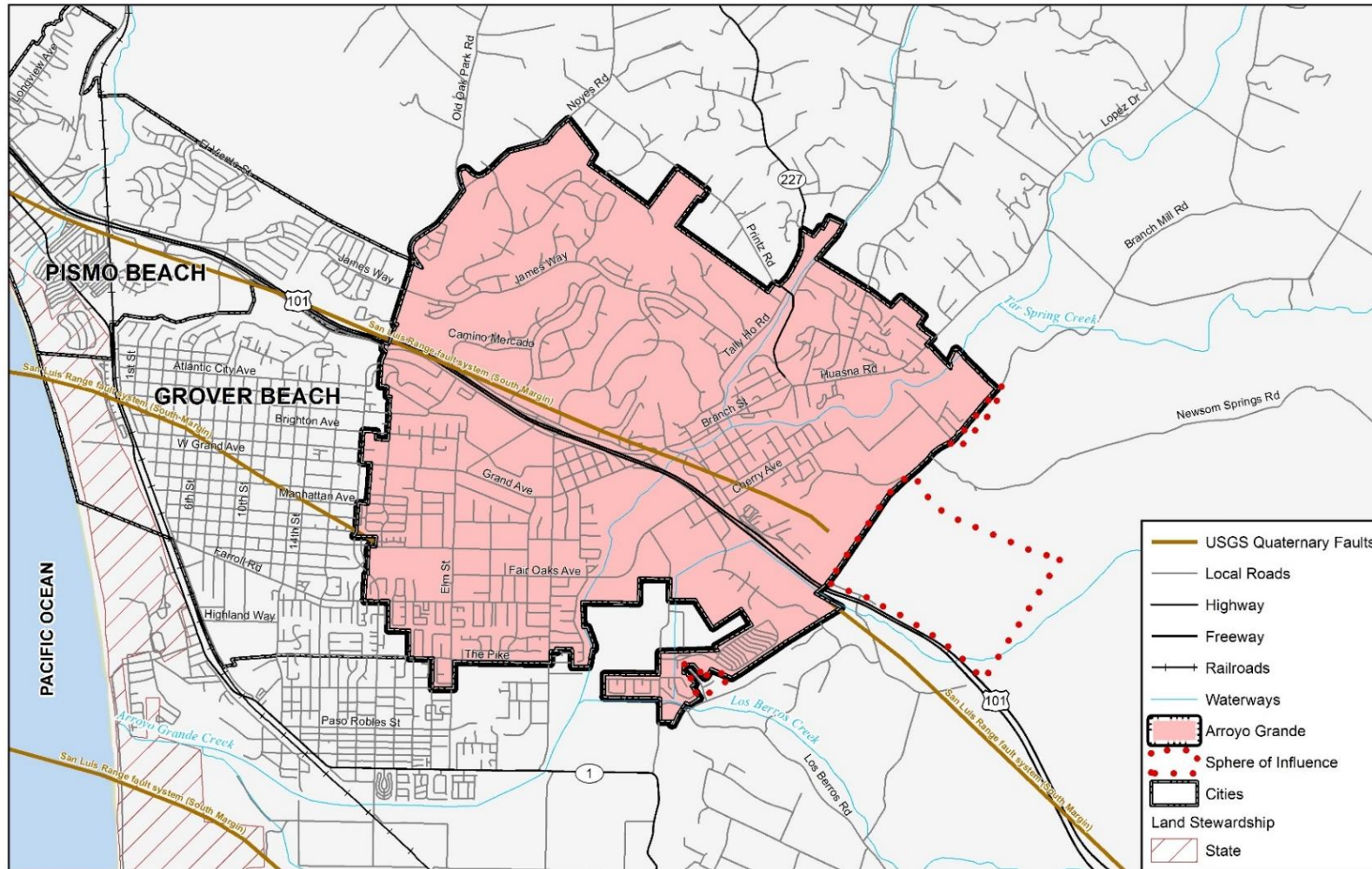


Figure A.6 City of Arroyo Grande Earthquake Faults



Map compiled 8/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, USGS





In addition to being at risk of groundshaking as a result of a fault rupture, the City of Arroyo Grande is also susceptible to the effects of liquefaction. Much of the City has soils with a moderate risk for liquefaction. According to GIS analysis conducted during this planning process, twenty-two (22) critical facilities located in the City are at risk of liquefaction. The map and table below describes in more detail locations and the types of properties at risk of liquefaction.



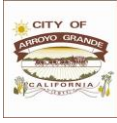
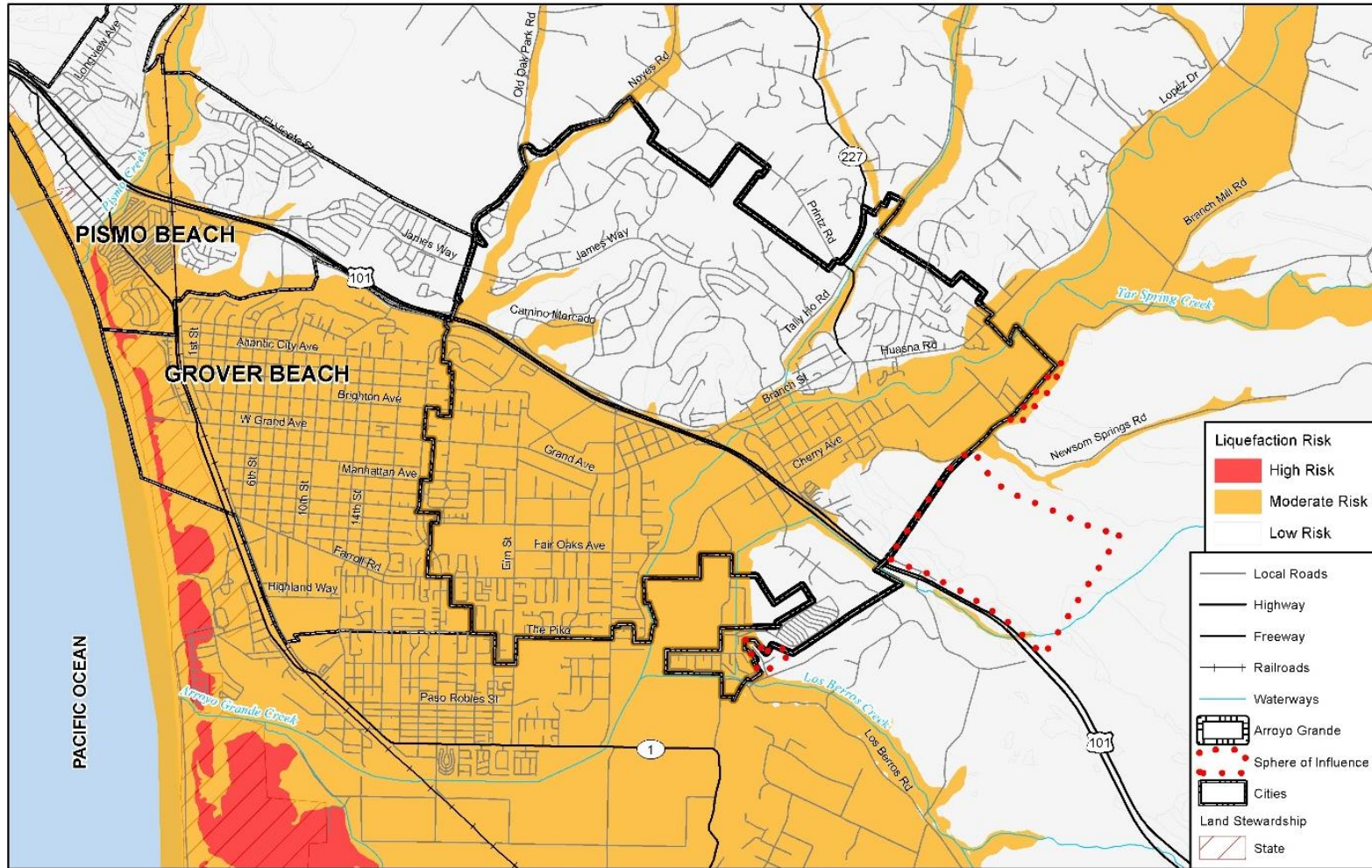


Figure A.7 Liquefaction Risk in Arroyo Grande



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office, LAFCO

0 1 2 Miles



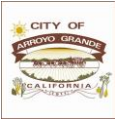


Table A.11 City of Arroyo Grande Moderate Liquefaction Risk by Property Type

Property Type	Parcel Count	Improved Value
Agricultural	3	\$85,571
Commercial	277	\$145,325,794
Government/Utilities	51	--
Other/Exempt/Misc.	116	\$24,911,019
Residential	3,451	\$581,945,398
Multi-Family Residential	346	\$92,734,024
Mobile/Manufactured Homes	6	\$4,058,028
Residential: Other	230	\$61,958,301
Industrial	4	\$1,164,671
Vacant	13	\$5,796,411
TOTAL	4,497	\$917,979,217

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

Flood

There are several creeks that traverse the City of Arroyo Grande: Canyon/Meadow Creek on the west, Corbett Canyon and Arroyo Grande Creeks on the east, and Los Berros Creek in the southeastern portion of City. All of the creeks have areas adjacent to the waterways that have a potential for flooding. The duration of flood events is dependent on the duration of rainfall as well as the tide levels outside of the City limits. Refer to the Flood section of the Base Plan for further information on the areas of that are at risk of flooding as well as past flood events that have impacted the City of Arroyo Grande.

In addition to being at risk of flooding from 100-year and 500-year storms, according FEMA’s FIS for the County (2012), Arroyo Grande is subject to sheet flow, shallow (generally less than 3 feet deep) overland flooding characterized by unpredictable flow paths or confined to streets.

Values at Risk

A flood vulnerability assessment was completed during the 2019 update, following the methodology described in Section 5 of the Base Plan. Flood hazards for the City of Arroyo Grande are shown in Figure A.8. Table A.12 and Table A.13 summarize the values at risk in the City’s 100-year and 500-year floodplain, respectively. These tables also detail loss estimates for each flood.



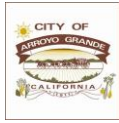
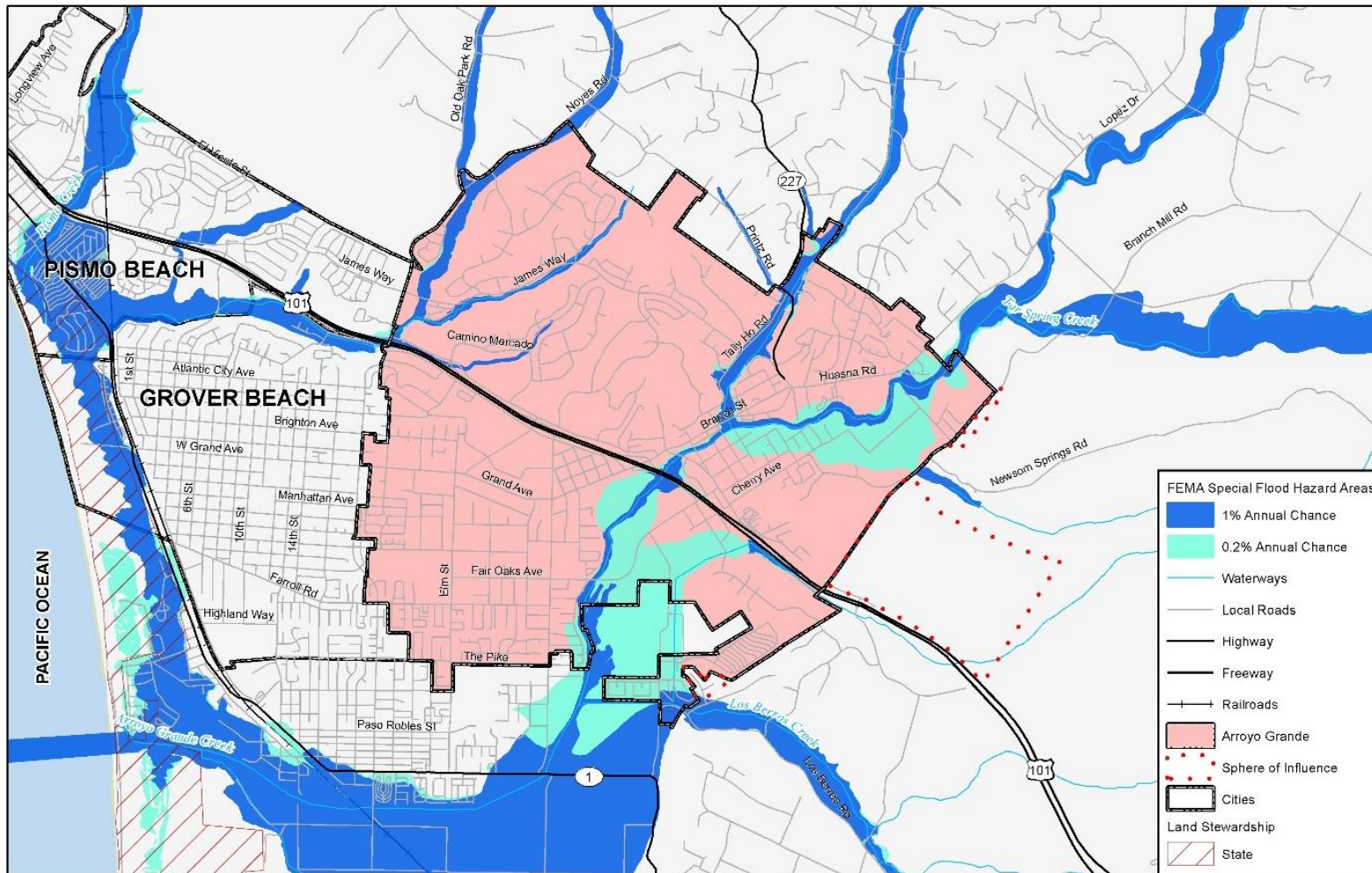


Figure A.8 City of Arroyo Grande's 100- and 500-Year Floodplains



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, FEMA NFHL

0 1 2 Miles



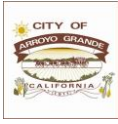


Table A.12 City of Arroyo Grande’s FEMA 1% Annual Chance Flood Hazard by Property Type

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate
Commercial	12	\$2,703,155	\$2,703,155	\$5,406,310	\$1,351,578
Government/Utilities	14	--	--	\$0	\$0
Other/Exempt/Misc.	12	\$2,088,004	--	\$2,088,004	\$522,001
Residential	125	\$21,076,591	\$10,538,296	\$31,614,887	\$7,903,722
Multi-Family Residential	15	\$2,421,310	\$1,210,655	\$3,631,965	\$907,991
Residential: Other	15	\$2,495,400	\$1,247,700	\$3,743,100	\$935,775
Vacant	3	\$264,167	--	\$264,167	\$66,042
TOTAL	196	\$31,048,627	\$15,699,806	\$46,748,433	\$11,687,108

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

Table A.13 City of Arroyo Grande’s FEMA 0.2% Annual Chance Flood Hazard by Property Type

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate
Agricultural	2	\$59,896	\$59,896	\$119,792	\$29,948
Commercial	7	\$3,728,895	\$3,728,895	\$7,457,790	\$1,864,448
Government/Utilities	16	--	--	\$0	\$0
Other/Exempt/Misc.	19	\$2,937,762	--	\$2,937,762	\$734,441
Residential	417	\$76,542,670	\$38,271,335	\$114,814,005	\$28,703,501
Multi-Family Residential	12	\$2,352,869	\$1,176,435	\$3,529,304	\$882,326
Mobile/Manufactured Homes	2	\$3,093,854	\$1,546,927	\$4,640,781	\$1,160,195
Residential: Other	1	\$460,263	\$230,132	\$690,395	\$172,599
Vacant	1	\$972	--	\$972	\$243
TOTAL	477	\$89,177,181	\$45,013,619	\$134,190,800	\$33,547,700

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

Based on this analysis, the City of Arroyo Grande has significant assets at risk to the 100-year and greater floods. There are 196 improved parcels located within the 100-year floodplain for a total value of over \$46 million. An additional 477 improved parcels valued at over \$134 million fall within the 500-year floodplain.

Applying the 25 percent damage factor as previously described in Section 5 of the Base Plan, there is a 1 percent chance in any given year of a 100-year flood causing roughly \$11 million in damage in the City of Arroyo Grande and a 0.2 percent chance in any given year of a 500-year flood causing roughly \$45 million in damage (combined damage from both floods). Figure A.9 shows the properties at risk to flooding in and around the City of Arroyo Grande in relation to the mapped floodplain, based on the parcels that have improvements and parcel centroids that intersect the flood hazard areas.



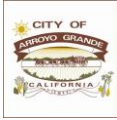
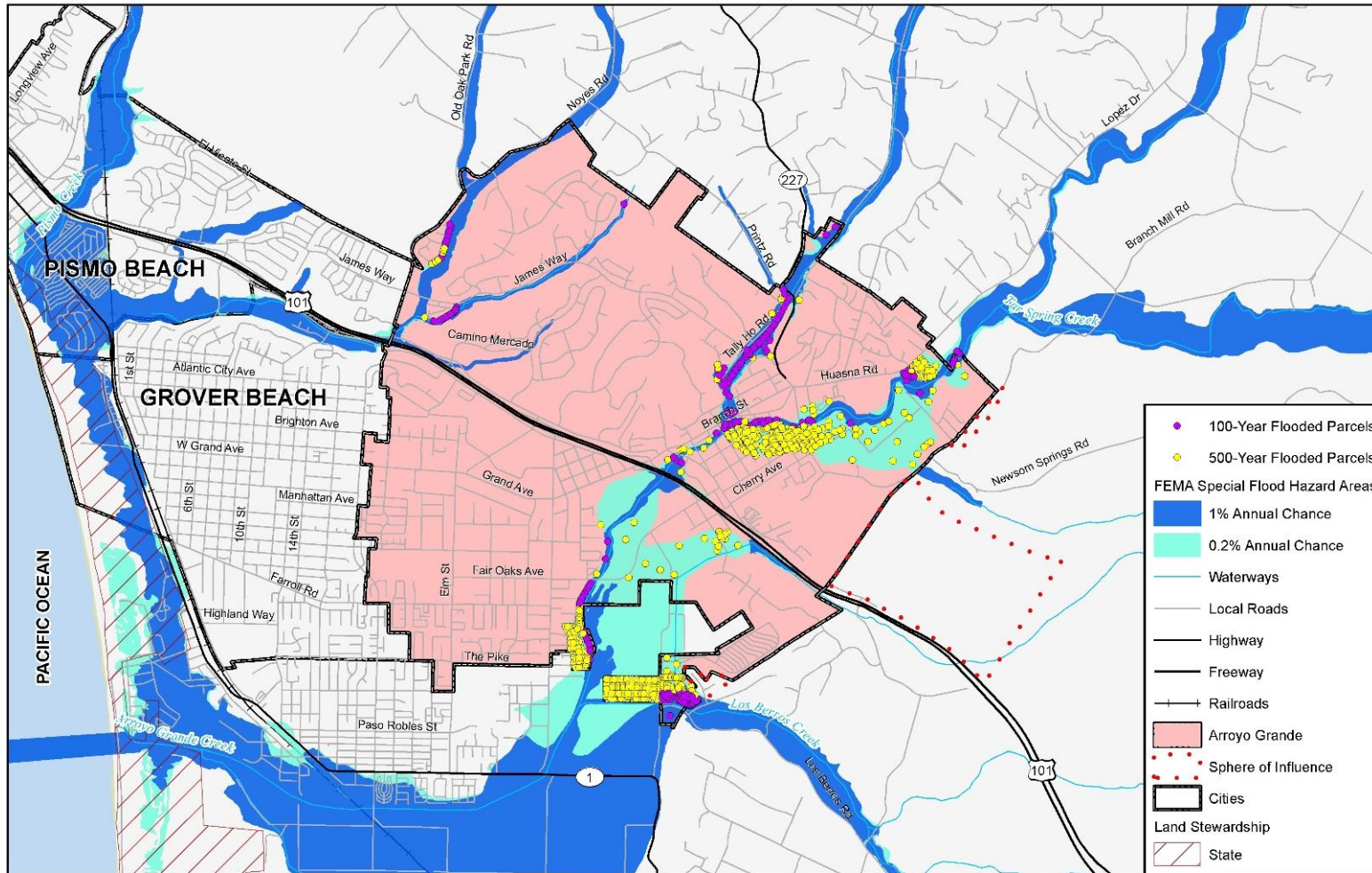
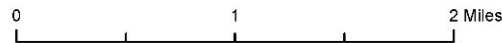
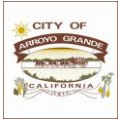


Figure A.9 Properties at Risk of Flood



Map compiled 6/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCO, FEMA NFHL, ParcelQuest





Limitations: This model may include structures in the floodplains that are elevated at or above the level of the base-flood elevation, which will likely mitigate flood damage. Also, the assessed values are well below the actual market values. Thus, the actual value of assets at risk may be significantly higher than those included herein.

Population at Risk

Using parcel data from the County and the digital flood insurance rate map, population at risk was calculated for the 100-year and 500-year floods based on the number of residential properties at risk and the average number of persons per household (2.47). The following are at risk to flooding in the City of Arroyo Grande:

- 100-year flood— 389 people
- 500-year flood— 1,084 people
- **Total flood**— 1,473 people

Insurance Coverage, Claims Paid, and Repetitive Losses

The City of Arroyo Grande joined the National Flood Insurance Program (NFIP) on September 19, 1984. NFIP Insurance data indicates that as of April 18, 2019, there were 110 flood insurance policies in force in the City with \$30,278,600 of coverage. Of the 110 policies, 105 were residential (101 for single-family homes and 4 for 2-4-unit homes) and 5 were nonresidential. There are 48 polices in A01-30 & AE zone and 2 policies in A zones. The remaining 60 are in B, C, and X zones.

There have been 19 historical claims for flood losses totaling \$412,456.68. All claims were for residential properties; 9 were in A zones and 2 were in B, C or X zones; and 10 were pre-FIRM structures (the one post-FIRM structure with a reported loss was in a B, C, or X zone). According to the FEMA Community Information System accessed 4/3/2019, the City has two Repetitive Loss properties and two Severe Repetitive Loss properties, which together are responsible for \$203,239 in payments.

Critical Facilities at Risk

Critical facilities are those community components that are most needed to withstand the impacts of disaster as previously described. There are no critical facilities in the City's 100-year floodplain, but according to the risk assessment floods in Arroyo Grande tend to be more severe during a 500-year event. Thus, it is particularly important to note that the critical facilities in the 500-year floodplain are all facilities that serve vulnerable populations and thus should be given special attention. Table A.14 lists the critical facilities in the City's 500-year floodplains. The impact to the community could be great if these facilities are damaged or destroyed during a flood event.

Table A.14 Critical Facilities in the 500-year Floodplain: City of Arroyo Grande

Critical Facility Type	500-Year Floodplain
Day Care Facilities	1
Public Schools	2
TOTAL	3

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis





Wildfire

The City’s mild climate and foggy days and nights typically help to maintain fuel moisture levels to a point that limits the potential for rapid fire spread. Despite the temperate climate, there have been past wildfire events that have put the City at risk. In 1985, the Los Pilitas Fire burned 84,271 acres in the mountains north of the City. The fire spread quickly, resulting in 10 homes being destroyed. Although the threat was short lived, if the correct combination of weather, topography and fuel existed, the potential for a wildfire within the City limit is possible. CAL FIRE has designated the City of Arroyo Grande as being at increased risk from wildfires, based on Fire Hazard Severity Zone mapping. Following the methodology described in the wildfire hazard Section 5 of the Base Plan, a wildfire vulnerability analysis for the City of Arroyo Grande was completed (see Figure A.10).

There are 11 properties in City of Arroyo Grande that are located within the moderate to very high severity zones (5 in the Moderate Severity Zone, 2 in the High Severity Zone, and 4 in the Very High Severity Zone), with a combined value of \$3,346,227 and impacting an estimated 18 persons (5 in the Moderate Severity Zone and 6 in the High and Very High Severity Zone). The following table quantifies the potential losses by wildfire severity zones and property type. There are no critical facilities in wildfire threat zones in Arroyo Grande.

Table A.15 Properties Within Wildfire Severity Zones

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate
Moderate Severity SRA Zone					
Other/Exempt/Misc.	2	\$1,686,663	--	\$1,686,663	\$1,686,663
Residential	3	\$434,648	\$217,324	\$651,972	\$651,972
Total	5	\$2,121,311	\$217,324	\$2,338,635	\$2,338,635
High Severity SRA Zone					
Government/Utilities	1	--	--	--	--
Other/Exempt/Misc.	1	--	--	--	--
Total	2	\$0	\$0	\$0	\$0
Very High Severity SRA Zone					
Residential	4	\$671,728	\$335,864	\$1,007,592	\$1,007,592
Total	4	\$671,728	\$335,864	\$1,007,596	\$1,007,596
Grand Total	11	\$2,793,039	\$553,188	\$3,346,231	\$3,346,231

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

The following map depicts the Fire Hazard Severity Zones in the City of Arroyo Grande.



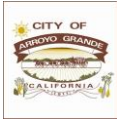
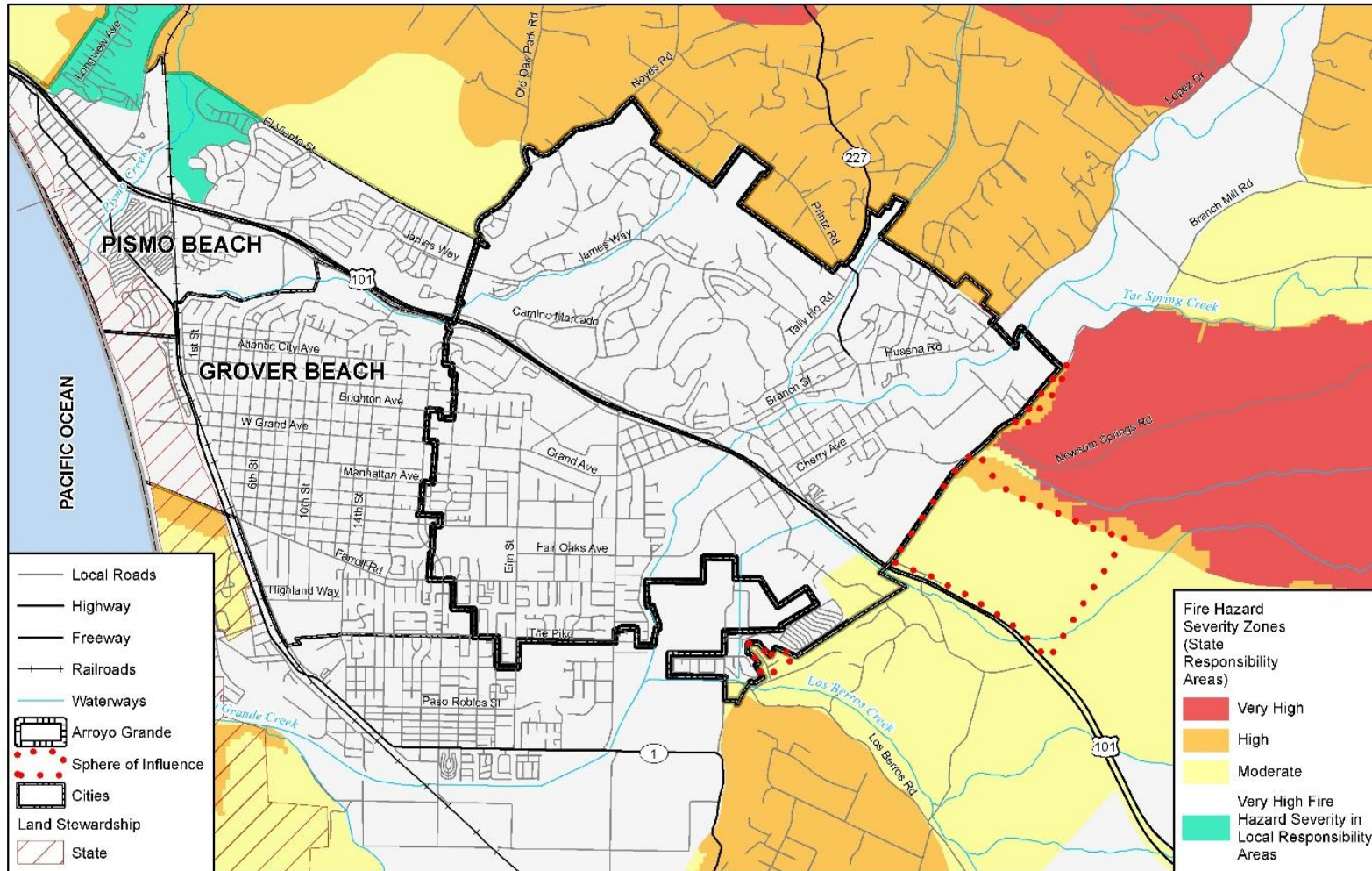


Figure A.10 City of Arroyo Grande's Fire Hazard Severity Zones



Map compiled 5/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, CalFire

0 1 2 Miles





Human Caused: Hazardous Materials

The Cal OES Warning Center reports 161 hazardous materials incidents in the City of Arroyo Grande from 1994 through October 24, 2018; as noted in Section 5 of the County plan, this likely excludes a large number of unreported minor spills. This constitutes 9% of the hazardous materials incidents reported countywide during the same time frame and averages out to roughly 6.4 incidents per year. As noted in Section 5, only around 6% of reported hazardous materials incidents result in injuries, fatalities, or evacuations.

As shown in Figure 5-84 in the Base Plan, there are two EPA Risk Management Plan (RMP) facilities and three CalARP regulated facilities located in the City. Additionally, Arroyo Grande sits within the Emergency Planning Zone for the Diablo Canyon Nuclear Power Plant.

The Five Cities Fire Authority has located all petroleum, natural gas, combustible fuel pipelines and integrated that information into the City of Arroyo Grande Emergency Operations Plan. All personnel in the Five Cities Fire Authority have been trained to handle hazardous materials incidents in addition to having three Hazardous Materials Specialists on staff.

A.4 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 jurisdictional planning representatives reviewed a matrix of common mitigation activities to inventory which of these policies or programs, and shared any updates or changes through the Arroyo Grande 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 jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The City of Arroyo Grande's capabilities are summarized below.



A.4.1 Regulatory Mitigation Capabilities

Table A.16 City of Arroyo Grande Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	Yes	
Zoning ordinance	Yes	
Subdivision ordinance	Yes	
Growth management ordinance	No	Limited to Sphere of Influence
Floodplain ordinance	Yes	
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	Stormwater Ordinance
Building code	Yes	
Fire department ISO rating	Yes	
Erosion or sediment control program	Yes	
Stormwater management program	Yes	
Site plan review requirements		
Capital improvements plan	Yes	
Economic development plan	Yes	
Local emergency operations plan	Yes	Under revision
Other special plans	Yes	Mills Act Ordinance; Climate Action Plan (2014)
Flood Insurance Study or other engineering study for streams	Yes	
Elevation certificates (for floodplain development)	Yes	

A.4.2 Administrative/Technical Mitigation Capabilities

Table A.17 identifies the personnel responsible for activities related to mitigation and loss prevention in Arroyo Grande.

Table A.17 City of Arroyo Grande Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	Community Development Department: Assistant Planner, Planning Manager, Community Development Director
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Community Development Department: City Engineer, Building Official
Planner/engineer/scientist with an understanding of natural hazards	Yes	Community Development Department: Planning Manager
Personnel skilled in GIS	Yes	Community Development Department: Program Analyst
Full time building official	Yes	Community Development Department: Building Official
Floodplain manager	Yes	City Engineer
Emergency manager	Yes	City Manager
Grant writer	No	
GIS Data Resources	Yes	Program Analyst





Personnel Resources	Yes/ No	Department/Position
(Hazard areas, critical facilities, land use, building footprints, etc.)		
Warning systems/services (Reverse 9-11, outdoor warning signals, social media)	Yes	Police Department, Fire Department, Deputy City Clerk

A.4.3 Fiscal Mitigation Capabilities

Table A.18 identifies financial tools or resources that the City could potentially use to help fund mitigation activities.

Table A.18 City of Arroyo Grande Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes/No – gas and electric fees
Impact fees for new development	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

A.4.4 Mitigation Outreach and Partnerships

The City is currently working with the Five Cities Fire Authority, County and FireSafe Council to develop a city-specific Community Wildfire Protection Plan (CWPP). Mitigation efforts identified include education/outreach.

A.4.5 Other Mitigation Efforts

Through development of the Cherry Creek Estates, the City improved the Newsom Springs drainage, which now allows drainage through the Cherry Creek Estates development to Arroyo Grande Creek. Additionally, the City has been working with the Clark family on Highway 227 to develop a siltation area to allow easier removal of sediment in Tally Ho Creek and keep sediment from being delivered in Tally Ho Creek.

The City has also conducted fuel reduction projects to reduce wildfire threat.

A.4.6 Opportunities for Enhancement

Based on the capabilities assessment, the City of Arroyo Grande has several existing mechanisms in place that already help to mitigate hazards. In Arroyo Grande’s 2015 LHMP the City conducted a “self-assessment of capability” in which they rated (limited to high) the degree of capability they believed the community had. The City noted having a high degree of capability for planning and regulatory capabilities, administrative and technical capabilities and political capability but a moderate rating for their fiscal capabilities. This may be an opportunity for the City to expand or improve on their fiscal capabilities and further protect the community. Other future improvements may include providing training for staff members related to hazards or hazard





mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform City staff members on how best to integrate hazard information and mitigation projects into their departments. Continuing to train City staff on mitigation and the hazards that pose a risk to the City of Arroyo Grande will lead to more informed staff members who can better communicate this information to the public.

A.5 Mitigation Strategy

A.5.1 Mitigation Goals and Objectives

The City of Arroyo Grande Planning Team determined the four goals from the 2015 HMP continue to be appropriate for this plan update, with the addition of a fifth goal specific to drought events. The following are the City of Arroyo Grande's 2019 mitigation goals:

- Goal 1 – Minimize the level of damage and losses due to flooding
- Goal 2 - Minimize the level of damage and losses due to earthquakes
- Goal 3 – Minimize the level of damage and losses due to wildland and structure fires
- Goal 4 – Minimize impacts to the community from dam inundation
- Goal 5 – Minimize impacts to the community from prolonged drought events

Continued Compliance with the National Flood Insurance Program

The City has been an NFIP participating community since 1984. 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 Community Development Department City Engineer. This includes ongoing activities such as enforcing local floodplain development regulations, including issuing permits for appropriate development in Special Flood Hazard Areas and ensuring that this development 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.

A.5.2 Completed 2015 Mitigation Actions

During the 2019 planning process the City of Arroyo Grande Planning Team reviewed all the mitigation actions from the 2015 plan. During the 2019 planning process the Planning Team identified that of their sixteen (16) mitigation actions from 2015, six (6) of the actions are implemented annually and four (4) were noted as being in progress, demonstrating ongoing progress and building the community's resiliency to disasters.

A.5.3 Mitigation Actions

Table A. 18 below describes all the annual implementation and in progress actions, the actions that were determined should be deferred as well new actions developed by the Planning Team. Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. Actions that mitigate losses to future development are denoted by an '*' in the table.



Table A. 19 City of Arroyo Grande’s Mitigation Action Plan

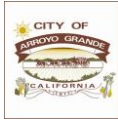
ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
AG.1	Flood	Residential-Commercial-Government Flood smart projects Residential: relocate, revise, building codes, and provide mitigation assistance	Recreation Maintenance Services, Community Development, Emergency Preparedness	\$100,000 to \$500,000	PDM Grant, General Funds, Capital Improvement Funds, Staff Time	High	Annual	Annual Implementation
AG.2	Flood	Residential-Commercial-Government Flood smart projects Commercial: relocate, revise, building codes, and provide mitigation assistance	Recreation Maintenance Services, Community Development, Emergency Preparedness	\$100,000 to \$500,000	PDM Grant, General Funds, Capital Improvement Funds, Staff Time	High	Annual	Annual Implementation
AG.3*	Flood	Conduct a cost to benefit analysis to consider expanding the capacity of the retention basins at various locations in the City of Arroyo Grande	Recreation Maintenance Services, Community Development, Emergency Preparedness	\$100,000 to \$500,000	PDM Grant, General Funds, Capital Improvement Funds, Staff Time	High	Deferred	Deferred; Limited availability of land to expand basins has resulted in deferral. Future analysis will focus on increasing depth of existing basins. Staff and fiscal constraints are ongoing.
AG.4*	Flood	Creation of Bio-Swaales for water conservation	Recreation Maintenance Services, Community Development, Emergency Preparedness	\$10,000 to \$50,000	PDM Grant, General Funds, Capital Improvement Funds, Staff Time	High	Annual	Annual Implementation





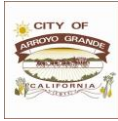
ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/Implementation Notes
AG.5	Flood	Determine cost effective mitigation strategies for Newsom Springs area	Recreation Maintenance Services, Community Development, Emergency Preparedness	Little to no cost	PDM Grant, General Funds, Capital Improvement Funds, Staff Time	High	Deferred	Deferred; Limited CIP funding has been allocated to this project. In a catastrophic flood event, this area will be negatively impacted. Staff and fiscal constraints are ongoing.
AG.6	Flood	Conduct a cost to benefit analysis of a flood water diversion system for the City of Arroyo Grande's critical infrastructure and the flood vulnerable Commercial District	Recreation Maintenance Services, Community Development, Emergency Preparedness,	Less than \$10,000	PDM Grant, General Funds, Capital Improvement Funds, Staff Time	High	Deferred	Deferred; Limited availability of staff and fiscal resources.
AG.7	Earthquake	Identify and catalog seismically vulnerable structures	Emergency Preparedness	Little to no cost	PDM Grant, General Funds, Capital Improvement Funds, Staff Time	High	Deferred	Deferred; URM Buildings in the Village area should have been completely retrofitted. Unknown cataloging of potentially other structures throughout the city. Staff and fiscal constraints ongoing.





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/Implementation Notes
AG.8*	Earthquake	Notify public of location of earthquake faults	Emergency Preparedness	Little to no cost	PDM Grant, General Funds, Capital Improvement Funds, Staff Time	High	1 year	In progress; Link County of SLO OES Earthquake Plan to Fire Department & City websites.
AG.9	Earthquake	Notify public of location of Seismic vulnerable structures	Emergency Preparedness	Little to no cost	PDM Grant, General Funds, Capital Improvement Funds, Staff Time	High	1 year	In progress; Will be released upon completion of cataloging.
AG.10*	Fire	Encourage the 100' Defensible Space around structures in the Wildland Urban Interface	Fire Department, Community Development	Little to no cost	California Fire Safe Council, General Fund, Fire Prevention Grant	High	1 year	In progress; Adoption of Countywide Community Wildfire Protection Plan (CWPP). Pursue grant funding to complete city-specific CWPP Limited availability of staff and fiscal resources.
AG.11	Fire	Continue weed abatement program	Fire Department, Community Development	Little to no cost	California Fire Safe Council, General Fund, Fire Prevention Grant	High	Annual	Annual implementation
AG.12*	Fire	Enforce building codes and ordinances that eliminate the use of wood shake roofs	Fire Department,	Little to no cost	California Fire Safe Council, General Fund,	High	Annual	Annual implementation





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/Implementation Notes
			Community Development		Fire Prevention Grant			
AG.13 *	Fire	Enforce codes and ordinances that require fire sprinkler fire systems in all new structures constructed.	Fire Department, Community Development	Little to no cost	California Fire Safe Council, General Fund, Fire Prevention Grant	High	Annual	Annual implementation
AG.14	Dam Failure	Create a community specific Evacuation Plan, including public outreach and education and identify public warning mechanisms and strategies.	Emergency Preparedness /Arroyo Grande Police Department	Less than \$10,000	PDM Grant, General Funds, Capital Improvement Funds, Staff Time	High	3-5 yrs.	In progress; Existing county-wide plans with evacuation components. County Fire Chiefs have identified community-specific evacuation plans as a strategic priority.
AG.15	Dam Failure	Exercise Evacuation Plan for effectiveness, including public warning elements.	Emergency Preparedness /Arroyo Grande Police Department	Less than \$10,000	PDM Grant, General Funds, Capital Improvement Funds, Staff Time	High	3-5 yrs.	Deferred; Will be considered upon community-specific evacuation plans.
AG.16	Dam Failure	Revise Evacuation plan as appropriate	Emergency Preparedness /Arroyo Grande Police Department	Less than \$10,000	PDM Grant, General Funds, Capital Improvement Funds, Staff Time	High	3-5 yrs.	Deferred; Will be considered upon community-specific evacuation plans.





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/Implementation Notes
AG.17	Drought	Mitigate Drought Risk Through Water Availability Insurance. Continue to monitor well levels to prevent seawater intrusion while pursuing opportunities for regional recycled water projects that will result in groundwater injection.	Public Works; Community Development Department	\$30 million-\$50 million regionally; city's portion currently unknown	PDM Grant, General Funds, Capital Improvement Funds, Staff Time	Medium	Annual	New Benefits: Avoiding seawater intrusion; ensuring adequate water supply of the 5-cities region





A.6 Implementation and Maintenance

Moving forward, the City will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Chapter 8 in the Base Plan.

A.6.1 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 Engineering Division may utilize the hazard information when implementing the City's Community Investment Program and the Planning and Building Divisions may utilize the hazard information when reviewing a site plan or other type of development applications. The City will also incorporate this LHMP into the Safety Element of their General Plan, as recommended by Assembly Bill (AB) 2140.

As noted in Chapter 7.0 Plan Implementation, the HMPC representatives from Arroyo Grande 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 HMPC plan review meeting.

A.6.2 Monitoring, Evaluation and Updating the Plan

The City will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Chapter 8 of the Base Plan. The City will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The Fire Chief for the Five Cities Fire Authority will be responsible for representing the City in the County HMPC, 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.



B.1 Community Profile

B.1.1 Mitigation Planning History and 2019 Process

This annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan update. This Jurisdictional Annex builds upon the previous version of the City of Atascadero Local Hazard Mitigation Plan completed in September 2015. That previous mitigation plan was not incorporated into the City's General Plan, Municipal Code, or Fire Department Master Plan; however this updated mitigation plan will be integrated into those documents. A review of jurisdictional priorities found no significant changes in priorities since the last update.

The City's Local Planning Team (LPT) held responsibility for implementation and maintenance of the plan. The City Fire Chief is responsible for updating the plan.

Table B.1 Atascadero Hazard Mitigation Plan Revision Planning Group

Department or Stakeholder	Title
Atascadero Fire Department	Fire Chief
Atascadero Fire Department	Fire Marshal

More details on the planning process follow and how the jurisdictions, service districts and stakeholders participated, as well as how the public was involved during the 2019 update, can be found in Chapter 3 of the Base Plan.

B.1.2 Geography and Climate

Atascadero is located 17 miles inland from the Pacific coast and lies midway between Los Angeles and San Francisco on U.S. Highway 101 (US 101), about 220 miles from each city. The City is one of seven incorporated communities in San Luis Obispo County. The City consists of 26.15 square miles, is 879' above sea level and is located 40 miles west of the San Andreas Fault.

The City is situated in the southern portion of the Salinas River Valley. The Salinas River flows along the eastern City limits from south to north. Steep hills and canyons border the community on the west, and open rolling hills surround the City center. The City lies within an agricultural area where ranchlands are becoming vineyards to support the growing wine industry. Suburban residential development approved by San Luis Obispo County borders the City on the southern and eastern edges, and lower-density residential development lies to the north and west.

Atascadero is bordered on the west by the rugged mountainous ridges of the Santa Lucia Coastal Range, on the east by the low hills of the La Panza and Temblor Ranges, and on the north by the low hills and flat-topped mesas of the Diablo Range. The highest elevations in the vicinity are within the Santa Lucia Coastal Range, where many peaks are 2,000 to 3,400 feet above mean sea level.

The area has a Mediterranean climate with a wet season from October to early April and a dry summer season with low humidity. The City has an average annual precipitation of 17.31 inches. In winter, the average high temperatures range from the 50s to the 60s, with lows in the 30s. In summer, the average daily highs are in the 90s, with some days exceeding 100. Summertime lows are typically in the 60s and 70s.





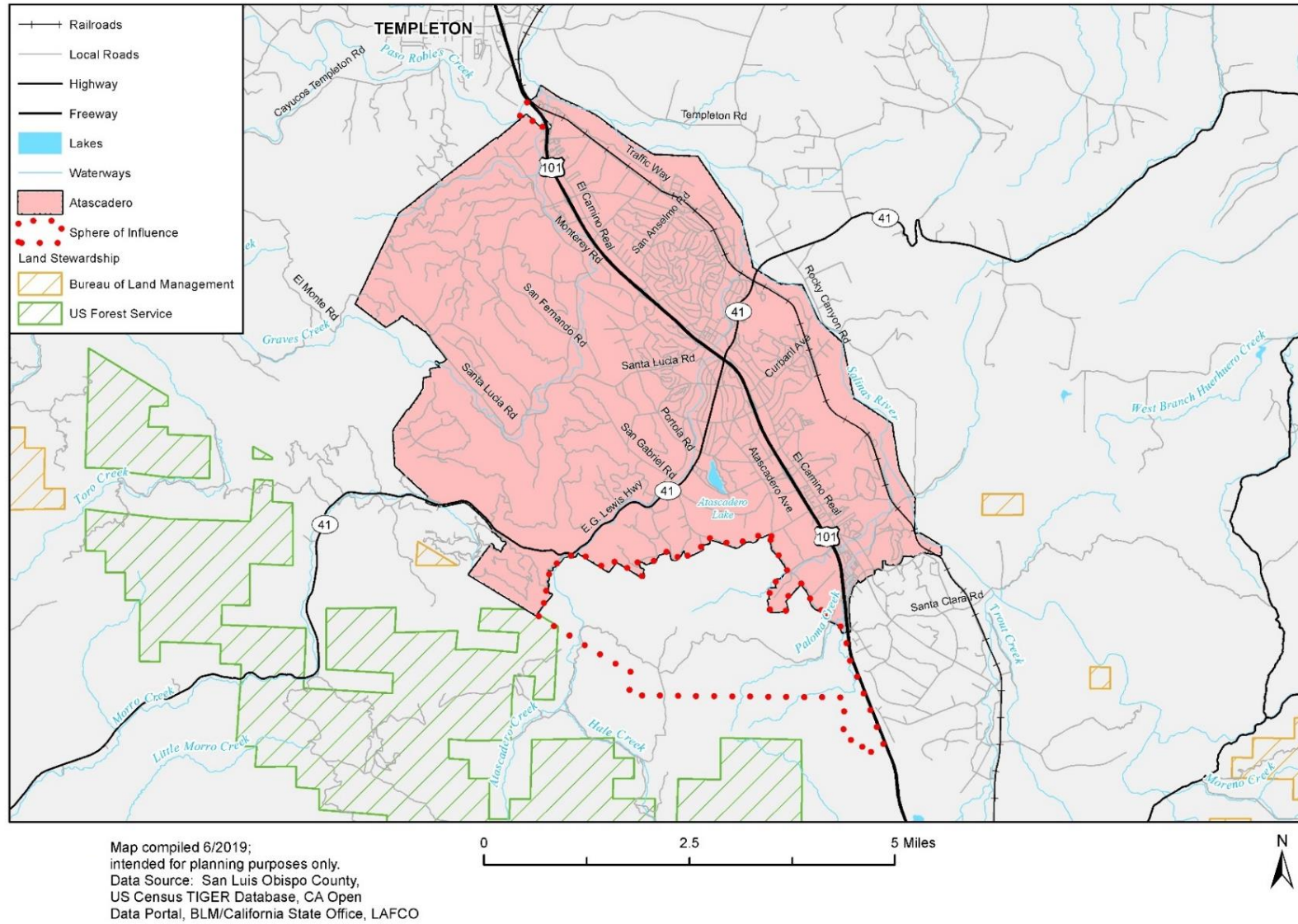
Atascadero is a General Law City operating within rules established by the California Legislature. The organizational structure of the local government is of the City Council–City Manager form. The City Manager, hired by the City Council, is responsible for planning, organizing, and directing all administrative activities such as enforcing municipal laws, directing the daily operations of the City, and preparing and observing the municipal budget. The City Council is composed of a Mayor and four City Council members elected at large by the citizens of Atascadero. The City Council acts upon all legislative matters concerning Atascadero, approving and adopting all ordinances, resolutions, contracts, and other matters requiring overall policy decisions and leadership.

Figure B.1 displays a map of the City of Atascadero planning area.





Figure B.1 The City of Atascadero





The U.S. Census Bureau estimated Atascadero’s 2017 population as 29,797, a 3.5% increase from 28,792 in 2014. Table B.2 shows an overview of the City’s key social and demographic characteristics taken from the California Department of Finance and the U.S. Census Bureau’s American Community Survey.

Table B.2 Atascadero Demographic and Social Characteristics, 2014-2017

City of Atascadero	2014	2017	% Change
Population	28,792	29,797	3.5%
Median Age	42.2	38.2	-8.8%
Total Housing Units	11,559	12,106	4.7%
Housing Occupancy Rate	94.4%	96.9%	2.6%
% of Housing Units with no Vehicles Available	4%	3.9%	0%
Median Home Value	\$380,000	\$433,900	14.2%
Unemployment	3.3%	3.2%	0%
Mean Travel Time to Work (minutes)	22.8	22.9	0%
Median Household Income	\$66,342	\$72,240	9%
Per Capita Income	\$32,602	\$36,131	10.8%
% of Individuals Below Poverty Level	8.3%	7.5%	-9.6%
# of Households	11,065	11,431	3.3%
Average Household Size	2.5	2.5	0%
% of Population Over 25 with High School Diploma	92.1%	94.7%	2.8%
% of Population Over 25 with Bachelor’s Degree or Higher	28.2%	32.4%	4.2%
% with Disability	15.2%	12.4%	-18%

Source: U.S. Census Bureau American Community Survey 2014-2017 3-Year Estimates, www.census.gov/

Table B.3 shows how Atascadero’s labor force breaks down by occupation and industry estimates from the U.S. Census Bureau’s 2017 American Community Survey.





Table B.3 Atascadero Employment by Industry (2017)

Industry	# Employed
Population (2017)	29,797
In Labor Force	15,296
Agriculture, forestry, fishing and hunting, and mining	4,576
Armed Forces	1,195
Construction	1,641
Manufacturing	1,312
Wholesale trade	1,306
Retail trade	961
Transportation and warehousing, and utilities	1,024
Information	727
Finance and insurance, and real estate and rental and leasing	492
Professional, scientific, and management, and administrative and waste management services	673
Educational services, and health care and social assistance	563
Arts, entertainment, and recreation, and accommodation and food services	219
Other services, except public administration	305
Public administration	279
Unemployed	23

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

B.1.3 History

The area was originally home to the Salinan Indians. In the late 18th Century and early 19th Century, Spanish missionaries established 21 missions along the California coast, including the nearby Mission San Miguel Arcángel, and Mission San Luis Obispo de Tolosa. When Mexico won its independence from Spain, and California became a Mexican province, the Mexican government secularized the mission lands. Rancho Atascadero was granted to Trifon Garcia in 1842, and Rancho Asuncion was granted to Pedro Estrada in 1845.

Toward the end of the 19th century, J.H. Henry consolidated a number of tracts into the 23,770-acre Atascadero Ranch, which included all of the present planning area, except for Baron von Schroeder's Eaglet, now part of Eagle Ranch. In 1913, E.G. Lewis founded Atascadero as California's first planned community, consisting of 26.15 square miles of the original 38 square miles of the historic Atascadero Ranch, later known as the Colony.

The Atascadero Fire Department was first established as an all-volunteer department in 1915. In 1922 the Atascadero Fire Protection District was founded on the heels of a disastrous 5,000-acre wildland fire near the Eagle Ranch property. Originally the District was 7 square miles in area with a population less than 3,000. On February 4, 1926 Atascadero's first paid fire department was established.

In June 1979 the residents of Atascadero voted in favor of incorporation. The Fire District dissolved in 1979 when the department became an official part of the newly incorporated City. The 1980 General Plan became the first major planning document adopted by the newly incorporated City of Atascadero. In 1983, a new zoning ordinance was adopted to implement that plan.





B.1.4 Economy

Based on the 2017 American Community Survey (ACS) Atascadero’s labor force is estimated to be 15,297 persons. The City’s economic base primarily consists of employees within the educational services, health care and social services, which accounts for 29.9% of jobs. The City’s largest employers include the Atascadero State Hospital and the Atascadero Unified School District (AUSD). The second largest type of industry in the City is the retail trade and services sector at 10.7% of employment. Unemployment has dropped from a historic high of 8.5% in 2010 due to the economic recession, to only 3.2% in 2017.

All consumable goods must be transported to the City via trucks utilizing U. S. Highway 101. It should be noted there are two rail spurs located in the undeveloped area of the County adjacent to the City. There is no airport in the City.

Table B.4 shows how Atascadero’s labor force breaks down by occupation and industry based on estimates from the U.S. Census Bureau’s 2017 American Community Survey.

Table B.4 City of Atascadero Employment by Industry (2017)

Industry	# Employed
Population (2017)	29,797
In Labor Force	15,296
Agriculture, forestry, fishing and hunting, and mining	219
Armed Forces	23
Construction	1,306
Manufacturing	961
Wholesale trade	305
Retail trade	1,641
Transportation and warehousing, and utilities	673
Information	279
Finance and insurance, and real estate and rental and leasing	563
Professional, scientific, and management, and administrative and waste management services	1,312
Educational services, and health care and social assistance	4,576
Arts, entertainment, and recreation, and accommodation and food services	1,195
Other services, except public administration	727
Public administration	1,024
Unemployed	492

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

B.1.5 Population

The U.S. Census Bureau estimated the City’s 2017 population as 29,797, up from 28,310 at the 2010 census. Table B.3 shows an overview of key social and demographic characteristics of the City taken from the U.S. Census Bureau’s American Community Survey.





Table B.5 City of Atascadero Demographic and Social Characteristics, 2012-2017

City of Atascadero	2012	2017	% Change
Population	28,441	29,797	+4.8%
Median Age	41.9	38.2	-8.8%
Total Housing Units	11,559	12,106	4.7%
Housing Occupancy Rate	92.0%	96.9%	+4.9%
% of Housing Units with no Vehicles Available	4.1%	4.2%	+0.1%
Median Home Value	\$394,400	\$433,900	+10.0%
Unemployment	7.9%	3.2%	-4.7%
Mean Travel Time to Work (minutes)	21.1	22.9	+8.5%
Median Household Income	\$66,603	\$72,240	+8.5%
Per Capita Income	\$31,443	\$36,131	+14.9%
% of Individuals Below Poverty Level	10.7%	7.5%	-3.2%
# of Households	11,112	11,431	+2.9%
Average Household Size	2.46	2.57	+4.5%
% of Population Over 25 with High School Diploma	92.0%	94.7%	+2.7%
% of Population Over 25 with Bachelor's Degree or Higher	28.2%	32.4%	+4.2%
% with Disability	12.0%	11.6%	-0.4%
% Speak English less than "Very Well"	3.8%	2.8%	-1.0%

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

Note that the City's median household and per capita income are both above average for the County and the State, although the median home price is slightly below average for the County. The percentage of individuals living below the poverty level (7.5%) is almost half that of the County (13.8%), or California as a whole (15.1%). The number of individuals who speak English less than very well is also significantly below the County and State averages (6.8% and 18.4% respectively).

B.1.6 Development Trends

Prior to the City's incorporation, San Luis Obispo County guided growth in the unincorporated County through its General Plan. San Luis Obispo County adopted the General Plan in 1968 and by 1972 developed more stringent growth standards in accordance with State of California (State) planning standards. With the incorporation of Atascadero in 1979, the newly formed Planning Commission adopted the 1980 General Plan and subsequently, in 1983, a new zoning ordinance. The City updated the General Plan in the mid-1980s and adopted a revised version in 1992.

The General Plan 2025, adopted in 2002, is the most recent version of the City's Plan. This version readopted the Guiding Community Goals and introduced the Smart Growth Principles and General Plan Framework Principles. In addition, the Preferred General Plan Land Use Alternatives identified a build-out population of approximately 36,000.

The majority of commercial activity, including 3 million square feet of commercial and industrial buildings, takes place along El Camino Real, Morro Road, and near US 101 interchanges. The historic downtown, located in the City center, is surrounded by residential neighborhoods (with approximately 8,000 dwelling units) that transition into low-density rural areas west of US 101 and open space, public recreation, and public facilities east of US 101 (Figure B.2).



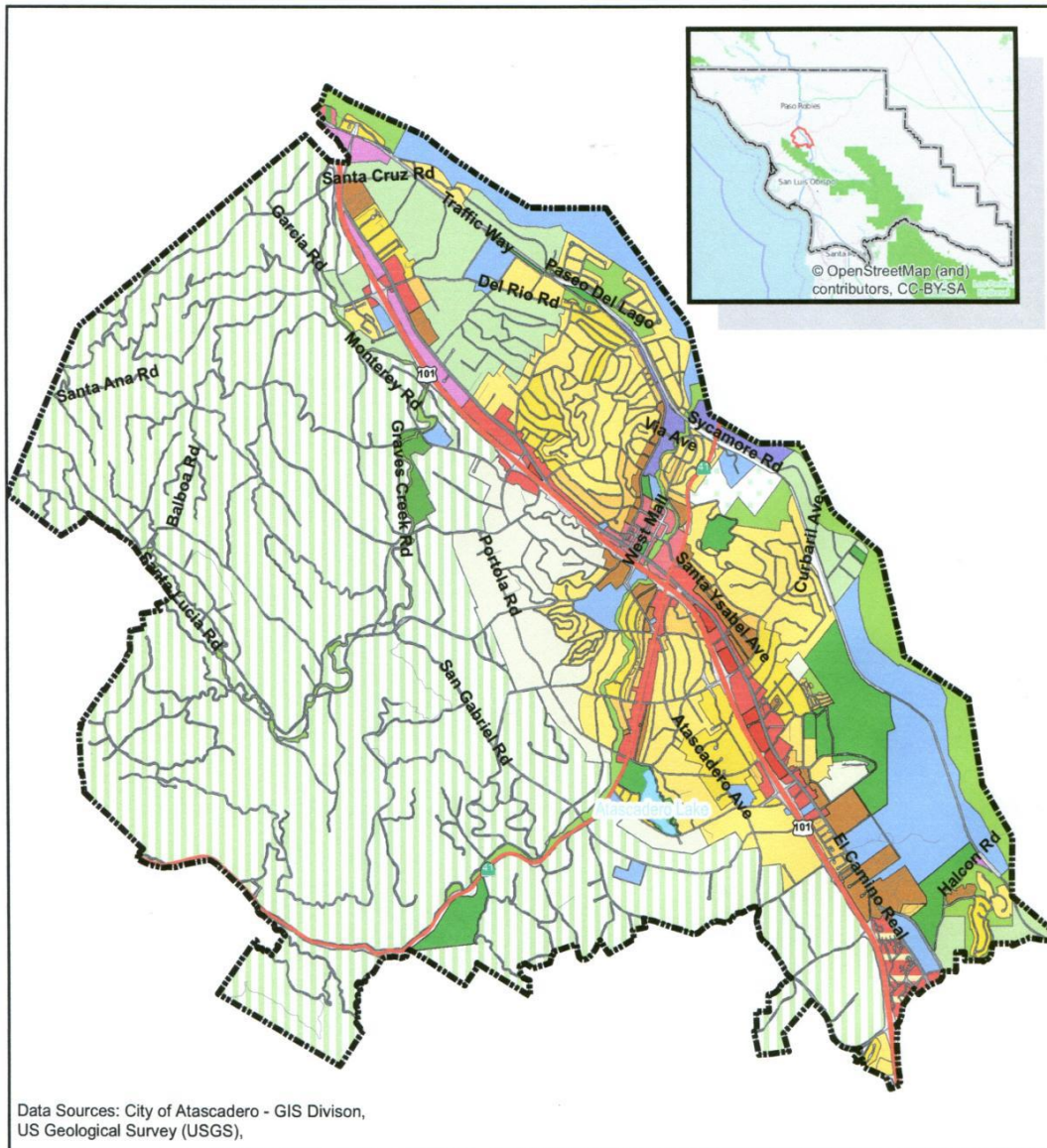


The General Plan 2025 identifies approximately 400 acres of the Eagle Ranch area as the primary area of future growth. The area is located outside of the current City's western boundaries but within the Urban Reserve Line, an area within the Colony boundary that is planned for urban and suburban uses with City services and facilities. In addition to the Eagle Ranch development project, the General Plan 2025 identifies small residential and commercial development projects in the northern and southeastern portions of the City limits (Figure B-3).





Figure B.2 City of Atascadero Land Use Map



Data Sources: City of Atascadero - GIS Division, US Geological Survey (USGS),

Legend	
City Limits	D: Downtown
RR: Rural Residential	MU-PD: Mixed Use
RE: Rural Estates (2.5 - 10 acre lot min)	CPK: Commercial Park
SE: Suburban Estates (2.5 - 10 acre lot min)	I: Industrial
SFR-Z: Single Family Residential (1.5 - 2.5 acre lot min)	CREC: Commercial Recreation
SFR-Y: Single Family Residential (1.0 acre lot min)	REC: Public Recreation
SFR-X: Single Family Residential (0.5 acre lot min)	OS: Open Space
MDR: Medium Density Residential (10 units / ac)	A: Agriculture
HDR: High Density Residential (16 units / ac)	P: Public Facilities
GC: General Commercial	Unincorporated
SC: Service Commercial	Right-of-Way

Miles
1:70,216

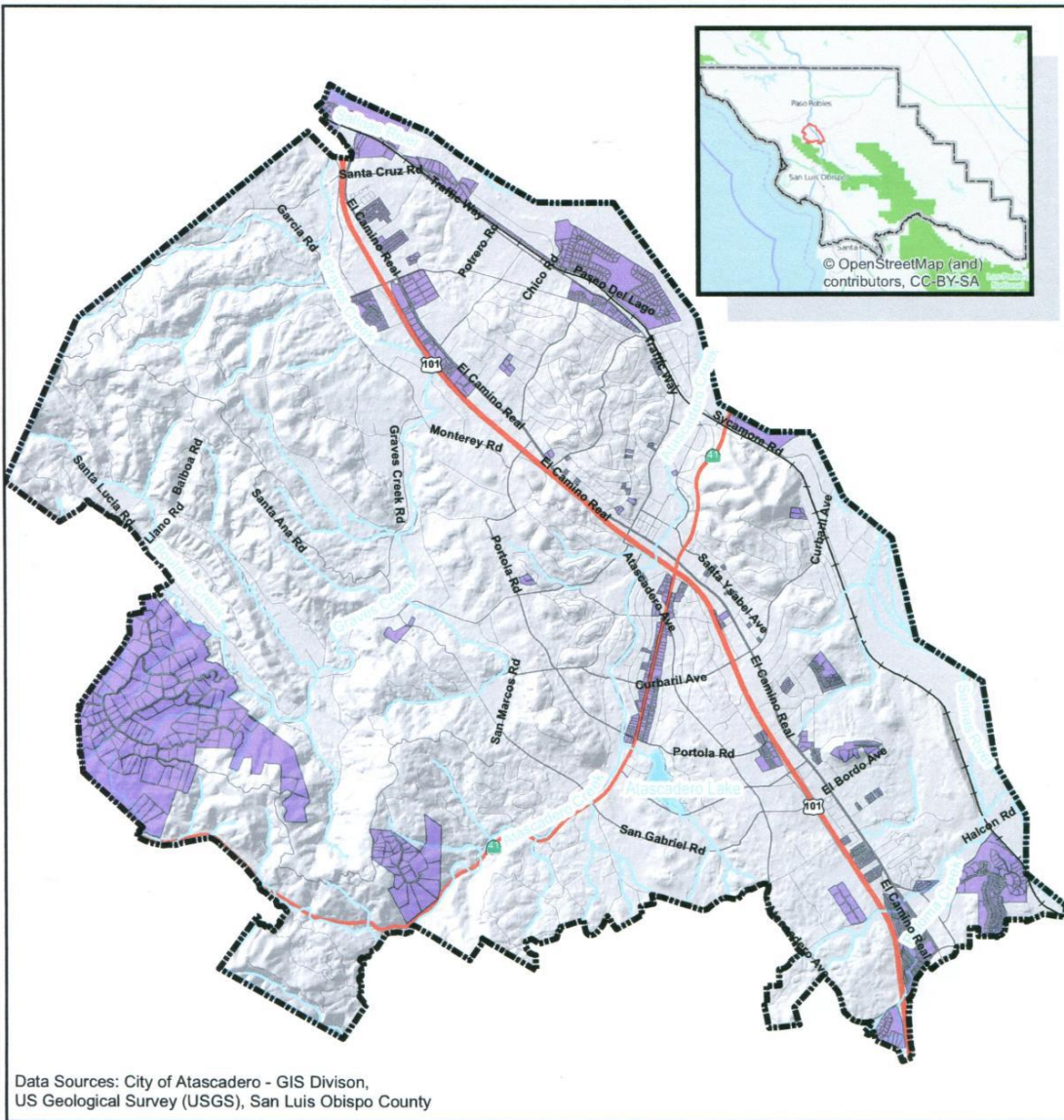
**City of Atascadero
Local Hazard Mitigation Plan**

Figure B-2. Land Use

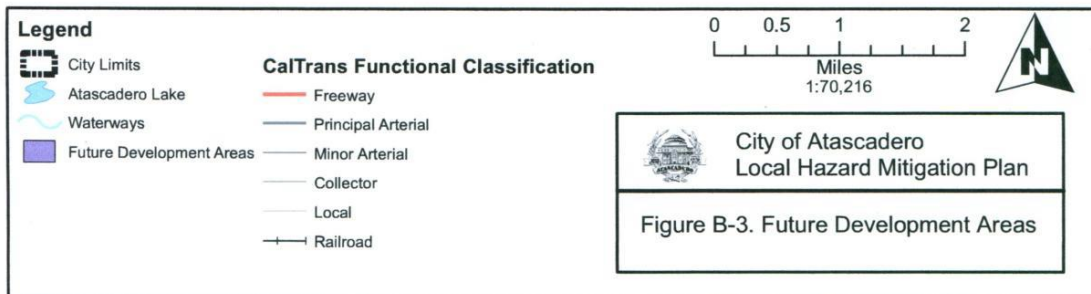
Source: City of Atascadero 2014 Local Hazard Mitigation Plan



Figure B.3 City of Atascadero Future Development Areas



Data Sources: City of Atascadero - GIS Division, US Geological Survey (USGS), San Luis Obispo County



Source: City of Atascadero 2014 Local Hazard Mitigation Plan





B.2 Hazard Identification and Summary

The Atascadero planning team 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 B.6). There are no hazards that are unique to Atascadero. The overall hazard significance takes into account the geographic area, probability and magnitude as a way to identify priority hazards for mitigation purposes. 'NI' in the table means not identified. This is discussed further in the Vulnerability Section.

Table B.6 City of Atascadero – Hazard Summaries

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Adverse Weather: Thunderstorm/Heavy Rain/Hail/Lighting/Dense Fog/Freeze	NI	NI	NI	NI
Adverse Weather: High Wind/Tornado	Extensive	Likely	Limited	Low
Adverse Weather: Extreme Heat	NI	NI	NI	NI
Agricultural Pest Infestation and Disease	Limited	Highly Likely	Negligible	Medium
Biological Agents (naturally occurring)	Extensive	Occasional	Critical	Medium
Coastal Storm/Coastal Erosion/Sea Level Rise	N/A	N/A	N/A	N/A
Dam Incidents	Limited	Unlikely	Limited	Low
Drought and Water Shortage	Extensive	Likely	Limited	Medium
Earthquake	Limited	Unlikely	Limited	Low
Flood	Significant	Occasional	Critical	Medium
Landslides and Debris Flow	Significant	Likely	Significant	Medium
Subsidence	Significant	Likely	Negligible	Low
Tsunami and Seiche	N/A	N/A	N/A	N/A
Wildfire	Extensive	Likely	Critical	High
Human Caused: Hazardous Materials	Significant	Highly Likely	Negligible	Medium
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.		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		





<p>Unlikely: Less than 1% chance of occurrence in next 100 years or has a recurrence interval of greater than every 100 years.</p>	<p>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</p> <p>Significance</p> <p>Low: minimal potential impact</p> <p>Medium: moderate potential impact</p> <p>High: widespread potential impact</p>
--	--

B.3 Vulnerability Assessment

The intent of this section is to assess Atascadero’s vulnerability separately from that of the planning area as a whole, which has already been assessed in Section 5.3 Risk Assessment in the main plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area.

The information to support the hazard identification and risk assessment was based of the City’s previous LHMP. A Local Hazard Mitigation Plan Update Guide and associated worksheets was distributed to each participating municipality or special district to complete during update process in 2019. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact 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 5-2). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction. Identifying these differences helps the reader to differentiate the jurisdiction’s risk and vulnerabilities from that of the overall County.

Note: The hazard “Significance” reflects overall ranking for each hazard and is based on the City of Atascadero’s HMPC member input from the Data Collection Guide and the risk assessment developed during the planning process (see Section 5.1 of the Base Plan), which included a more detailed qualitative analysis with best available data.

The hazard summaries in Table B.6 above reflect the hazards that could potentially affect the City. The discussion of vulnerability for each of the following hazards is located in Section B.3.2 Estimating Potential Losses. Based on this analysis, the priority hazard (High Significance) for mitigation is wildfire. Those of Medium or High significance for the City of Atascadero are identified below.

- Agricultural Pest Infestation and Disease
- Biological Agents (naturally occurring)
- Drought or Water Shortage
- Flood
- Landslide and Debris Flow
- Human Caused: Hazardous Materials

Other Hazards

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 in this plan and are not assessed individually for specific vulnerabilities in this section. In the City of Atascadero, those hazards include dam incidents, earthquakes, and land subsidence.





Additionally, the City’s Committee members decided to rate several hazards as Not Applicable (N/A) to the planning area due to a lack of exposure, vulnerability, and/or no probability of occurrence. Those hazards deemed not applicable to the City of Atascadero include coastal storm/coastal erosion/sea level rise, and tsunami/seiche.

B.3.1 Assets at Risk

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

Values at Risk

The following data on property exposure is derived from the San Luis Obispo County 2019 Parcel and Assessor data. This data should only be used as a guideline to overall values in the City as the information has some limitations. The most significant limitation is created by 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 likely low and does not reflect current market value of properties. 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. Table B.7 shows the exposure of properties (e.g., the values at risk) broken down by property type for the City of Atascadero.

Table B.7 2019 Property Exposure for the City of Atascadero by Property Types

Property Type	Parcel Count	Improved Value	Content Value	Total Value
Commercial	565	\$191,651,882	\$191,651,882	\$383,303,764
Government/Utilities*	152	\$840	--	\$840
Other/Exempt/Misc.	327	\$57,551,872	--	\$57,551,872
Residential	7,661	\$1,670,488,610	\$835,244,305	\$2,505,732,915
Multi-Family Residential	1,083	\$252,413,520	\$126,206,760	\$378,620,280
Mobile/Manufactured Homes	131	\$13,702,740	\$6,851,370	\$20,554,110
Residential: Other	264	\$96,286,718	\$48,143,359	\$144,430,077
Industrial	29	\$10,189,075	\$15,283,613	\$25,472,688
Vacant	86	\$19,001,171	--	\$19,001,171
Total	10,298	\$2,311,286,428	\$1,223,381,289	\$3,534,667,717

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor’s Office data 2019;

* Improved value is not accurate as these properties are exempt in the assessor’s data.





Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the City of Atascadero from San Luis Obispo County GIS is provided in Table B.8 and illustrated in Figure B.3.

Table B.8 City of Atascadero’s Critical Facilities

Facility Type	Counts
Day Care Facilities	13
Emergency Medical Service Stations	2
Fire Stations	3
Hospitals	1
Local Law Enforcement	1
Nursing Homes	8
Private Schools	2
Public Schools	9
Supplemental Colleges	1
Urgent Care	1
Power Plants	2
Microwave Service Towers	2
TV Analog Station Transmitters	1
Energy Commission Facilities	1
Total	47

Source: San Luis Obispo County Planning & Building, HIFLD 2017

Table B.9 below lists additional critical facilities and infrastructure identified by the planning team.





Table B.9 Critical Facilities and Infrastructure Identified by Atascadero Planning Team

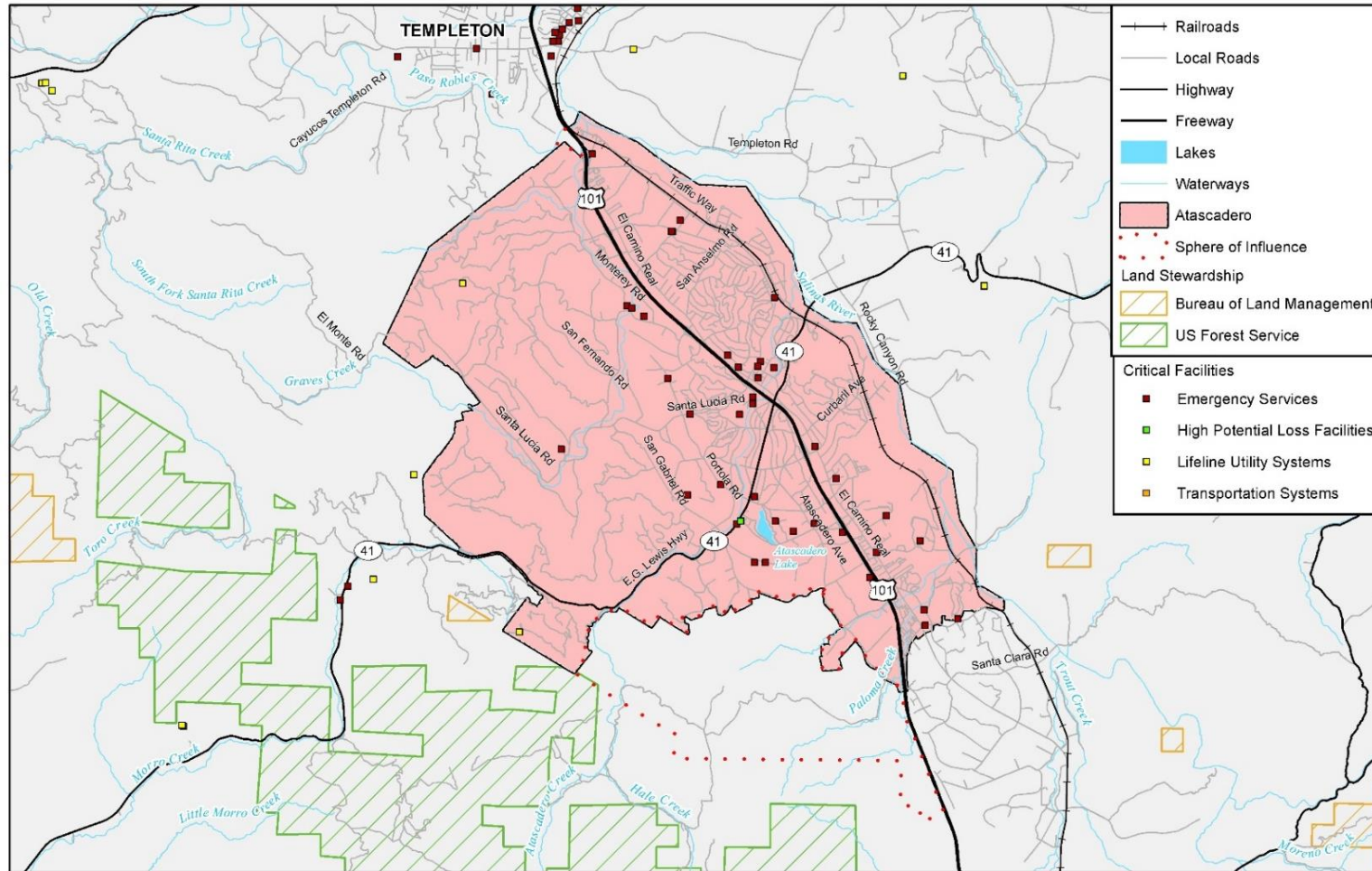
Category	Facility	Number	Estimated Value Per Structure/Mile
City Hall	City Hall	1	\$43,400,000
	City Hall Annex (now Successor Agency)	1	\$3,393,884
Police and Fire Stations	Fire Station #1	1	\$1,777,972
	Fire Station #2	1	\$1,167,090
	Atascadero Police Department	1	\$2,168,594
Other City-Owned Facilities	Lake Pavilion	1	\$2,528,924
	Charles Paddock Zoo	1	\$2,352,377
	Ranger House	1	\$ 91,689
	Youth Center	1	\$9,902,817
	Skate Park	1	\$ 850,448
	Paloma Creek Park Facilities	4	\$ 351,765
	Pine and Chalk Mountain Towers	2	\$ 517,423
Potable Water and Wastewater	Wastewater Treatment Plant	1	\$2,705,059
	Sewer Lift Stations	12	\$ 874,267
	Sewer Lift Station 5 Buildings	4	\$1,279,465
Infrastructure	State and Federal Highways (miles)	21.277	\$109,967
	Major Arterials (miles)	27.044	\$14,279
	Railroads (miles)	7.608	\$10,532
	Bridges	14	\$5,930,990

Source: City of Atascadero 2014 Local Hazard Mitigation Plan





Figure B.3 Critical Facilities in Atascadero



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCO, HIFLD

0 2.5 5 Miles





Transportation and Lifeline Facilities

Major transportation and lifeline facilities are located adjacent to US Highway 101 and State Highway 41, which traverse through Atascadero, as well as the rail line that runs through the eastern edge of the City. Damages to these transportation corridors would not only impact Atascadero but the entire region.

Historic and Cultural Resources

The National Register of Historic Places contains three sites in the City of Atascadero:

- Administration Building, Atascadero Colony, 6500 Palma Ave.
- Archeological Site 4 SLO 834, Address Restricted
- Atascadero Printery, 6351 Olmeda

There are no California State Historical Landmarks and two California Register of Historical Resources properties located in Atascadero: The Printery Building and Historic Administration Building.

Other significant historic or cultural resources identified by the planning team include the Adobe Springs on Traffic Way and numerous homes built during the Atascadero Colony era.

Natural Resources

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. 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.

Key natural assets in the City include Atascadero, Graves, Paloma, and Boulder creeks in addition to the Salinas River. The city also contains vast areas of native oak woodland.

B.3.2 Estimating Potential Losses

Note: This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to HMPC member input) it differs from that of the overall County.

Table B.7 above shows Atascadero's exposure to hazards in terms of number and value of structures. San Luis Obispo County's parcel and assessor data was used to calculate the improved value of parcels. The most vulnerable structures are those in the floodplain (especially those that have been flooded in the past), unreinforced masonry buildings, and buildings built prior to the introduction of modern-day building codes. Impacts of past events and vulnerability to specific hazards are further discussed below (see Section 4.1 Hazard Identification for more detailed information about these hazards and their impacts on San Luis Obispo County as a whole).

Agricultural Pest Infestation and Disease

The City has 57 properties at risk from tree mortality, as shown in the following table. The City does not have any critical facilities in high tree mortality areas.



Table B.10 Atascadero Properties in High Tree Mortality Areas

Property Type	Parcel Count	Improved Value
Commercial	1	\$89,244
Multi-Family Residential	8	\$343,621
Residential	48	\$14,462,885
TOTAL	57	\$14,895,750

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

Biological Agents (Naturally Occurring)

The City of Atascadero’s risk and vulnerability to this hazard does not differ substantially from that of the County overall.

Drought or Water Shortage

The Atascadero Mutual Water Company manages the City’s water supply that consists of 17 active wells that pump from the Atascadero sub-basin of the Paso Robles Groundwater Basin and both riparian and appropriated Salinas River underflow. As of 2015, maximum well production is 12.9 million gallons per day. While the primary basin, the Paso Robles Groundwater Basin, is experiencing decline in many areas, the Atascadero Sub-basin is a hydro-geologically distinct sub-basin that is separated from the primary basin by the Rinconada Fault line and has not experienced the level of decline when compared to the Paso Robles Ground Water Basin.

With approval of the Nacimiento Water Project, the AMWC has been allocated an additional 3,000 AFY, with a flow rate of 3.48 million gallons per day (mgd). The Nacimiento Water Project broke ground in 2007 and the construction of the infrastructures needed to deliver water to the Atascadero area is complete. AMWC began taking deliveries of water in the summer of 2012. The City analyzed the capacity of existing water resources and determined that given the existing water supply and that which will result from the Nacimiento Water Project, the existing water supply is not a constraint to growth in the City and is available for all vacant zones within the City to accommodate the City’s RHNA. However, as a result of the Nacimiento Water Project connection fees, water rates have increased gradually to help pay for the cost of the additional water source.

Historically, recycled water has not been used as a source of water in Atascadero.

Flood

In Atascadero, the most common type of flooding event is riverine flooding, also known as overbank flooding. Riverine floodplains range from narrow, confined channels in the steep valleys of mountainous and hilly regions, to wide, flat areas in plains and agricultural regions. The amount of water in the floodplain is a function of the size and topography of the contributing watershed, the regional and local climate, and land use characteristics. Flooding in steep, mountainous areas is usually confined, strikes with less warning time, and has a short duration. Larger rivers typically have longer, more predictable flooding sequences and broad floodplains.

In addition to riverine flooding, Atascadero is susceptible to flash flooding in smaller watersheds. Flash flood is a term widely used by experts and the general population, but there is no single definition or clear means of distinguishing flash floods from other riverine floods. Flash floods are generally understood to involve a rapid rise in water level, high velocity, and large amounts of debris, which can lead to significant damage that includes the tearing out of trees, undermining of buildings and bridges, and scouring of new channels. The intensity of flash flooding is a function of the intensity and duration of rainfall, steepness of the watershed, stream gradients, watershed vegetation, natural and artificial flood storage areas, and configuration of the streambed and





floodplain. Dam failure may also lead to flash flooding. Urban areas are increasingly subject to flash flooding due to the removal of vegetation, installation of impermeable surfaces over ground cover, and construction of drainage systems. Wildland fires that strip hillsides of vegetation and alter soil characteristics may also create conditions that lead to flash floods and debris flows.

Finally, localized flooding may occur outside of recognized drainage channels or delineated floodplains due to a combination of locally heavy precipitation, increased surface runoff, and inadequate facilities for drainage and storm water conveyance. Such events frequently occur in flat areas and in urbanized areas with large impermeable surfaces. Local drainage may result in “nuisance flooding,” in which streets or parking lots are temporarily closed; and minor property damage. Because the effects are not widespread, and damage is typically minimal, they are not studied in detail as part of the LHMP.

The most serious flood events on record in Atascadero occurred during storms in the early months of 1969, 1993, 1995, and 2001.

Flooding during 1969 was the most damaging. Two floods occurred, one at the end of January and the second at the end of February. During this two-month period, a local rain gage recorded an accumulated precipitation total of 39.79 inches. As a result of these storms, the Salinas River reached a discharge of over 28,000 cubic feet per second and reached a stage of 23.8 feet, almost 5 feet above flood stage. The San Luis Obispo Telegram-Tribune of January 25, 1969, described the Salinas Rive as “on rampage.”

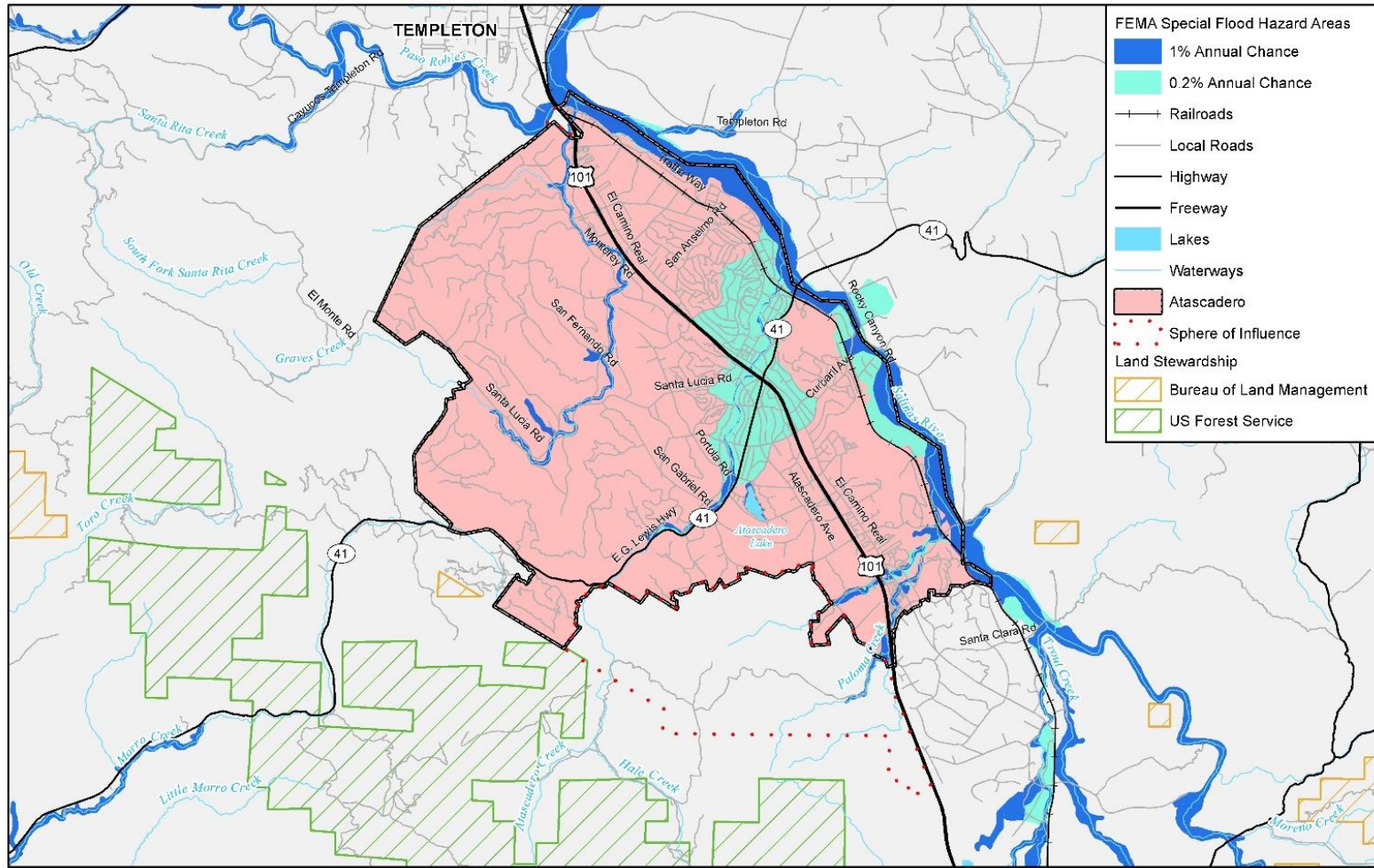
During January 1993, winter storms again delivered excessive precipitation; the monthly rainfall total at a local rain gage was nearly 14 inches. During the March 1995 flood, local rain gages recorded a monthly total of 16.48 inches of rain. In the fall of 1996 and the winter of 1997 Atascadero received 7” of rain. As a result of the 1996 Highway 58 Wildland fire the City experiences isolated minor flooding. In early 2001, rain gages recorded a total of 20.2 inches of rain over a three-month period.

Values at Risk

Following the methodology described in Section 5.3.8, a flood map for the City of Atascadero was created (see Figure B.5). Tables B.13 and B.14 summarize the values at risk in the City’s 100-year and 500-year floodplain, respectively. These tables also detail loss estimates for each flood. Note that the potential loss increases significantly with the 500-year or 0.2% annual chance flood.



Figure B.4 City of Atascadero 100- and 500-Year Floodplains



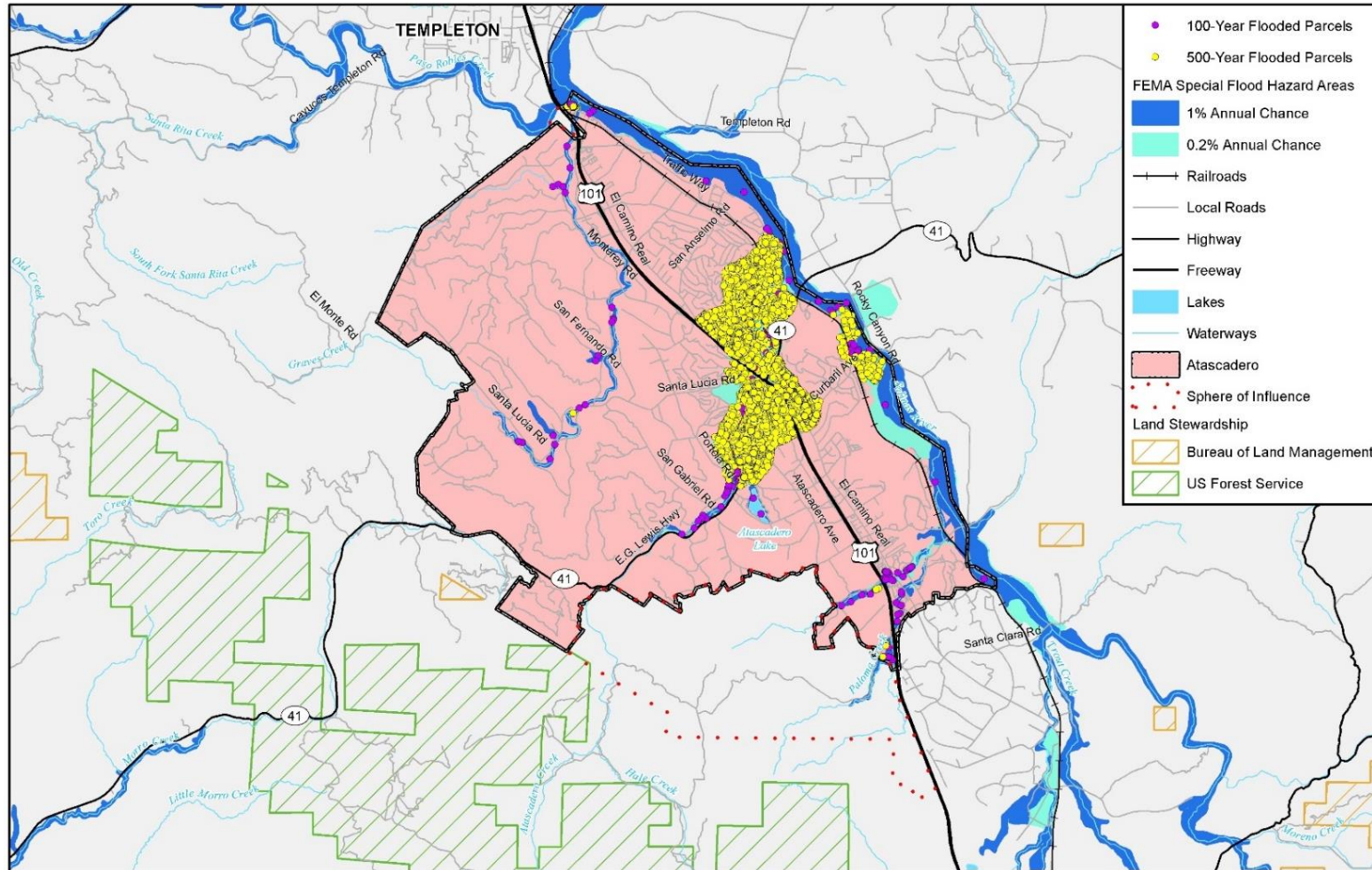
Map compiled 6/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCO, FEMA NFHL

0 2.5 5 Miles





Figure B.5 City of Atascadero Parcels at Risk of Flooding



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, FEMA NFHL, ParcelQuest

0 2.5 5 Miles





Population at Risk

Table B.11 City of Atascadero 1% (100 year) Floodplain Risk

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	8	\$2,737,870	\$2,737,870	\$5,475,740	\$1,368,935	--
Government/Utilities	21	--	--	\$0	\$0	--
Other/Exempt/Misc.	19	--	--	\$0	\$0	--
Residential	65	\$16,171,213	\$8,085,607	\$24,256,820	\$6,064,205	163
Multi-Family Residential	25	\$2,792,438	\$1,396,219	\$4,188,657	\$1,047,164	63
Industrial	2	\$1,298,159	\$1,947,239	\$3,245,398	\$811,349	--
TOTAL	140	\$22,999,680	\$14,166,934	\$37,166,614	\$9,291,654	226

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table B.12 City of Atascadero 0.2% (500 year) Floodplain Risk

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	345	\$92,955,971	\$92,955,971	\$185,911,942	\$46,477,986	--
Government/Utilities	45	--	--	\$0	\$0	--
Other/Exempt/Misc.	96	\$25,780,069	--	\$25,780,069	\$6,445,017	--
Residential	1,619	\$252,691,386	\$126,345,693	\$379,037,079	\$94,759,270	4,064
Multi-Family Residential	545	\$103,163,270	\$51,581,635	\$154,744,905	\$38,686,226	1,368
Mobile/Manufactured Homes	4	\$676,967	\$338,484	\$1,015,451	\$253,863	10
Residential: Other	128	\$29,443,443	\$14,721,722	\$44,165,165	\$11,041,291	321
Industrial	3	\$965,221	\$1,447,832	\$2,413,053	\$603,263	--
Vacant	22	\$4,602,571	--	\$4,602,571	\$1,150,643	--
TOTAL	2,807	\$510,278,898	\$287,391,336	\$797,670,234	\$199,417,558	5,763

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Insurance Coverage, Claims Paid, and Repetitive Losses

The City of Atascadero has been a participant in the National Flood Insurance Program since 1982. The Atascadero CID # is 060700. The FIRM panel identification is 06079C0831G. The City of Atascadero will continue to participate and remain in compliance with the National Flood Insurance Program. (NFIP).

Table B.13 City of Atascadero NFIP Insurance Policy Information

Policies	Insurance in Force	No. of Paid Losses	Total Losses Paid
107	\$13,507,500	18	\$259,834

Source: FEMA National Flood Insurance Program Community Information System

FEMA Community Information System shows that as of April 2019 the City of Atascadero has three Repetitive Loss (RL) properties, which have been responsible for \$190,889.43 in NFIP claims. The City does not have any Severe Repetitive Loss (SRL) properties.

Atascadero does not participate in the Community Rating System (CRS).

Critical Facilities at Risk

None of the City's identified critical facilities are located in the 1% Annual (100 year) Floodplain. Critical facilities located in the 0.2% Annual (500-year) Floodplain are shown in the following table.





Table B.14 City of Atascadero Critical Facilities in the 0.2% (500-year) Floodplain

Facility Type	Counts
Day Care Facilities	4
Emergency Medical Service Stations	1
Fire Stations	1
Local Law Enforcement	1
Nursing Homes	1
Private Schools	1
Public Schools	3
Urgent Care	1
Day Care Facilities	4
TOTAL	13

Source: San Luis Obispo County Planning & Building, HIFLD 2017

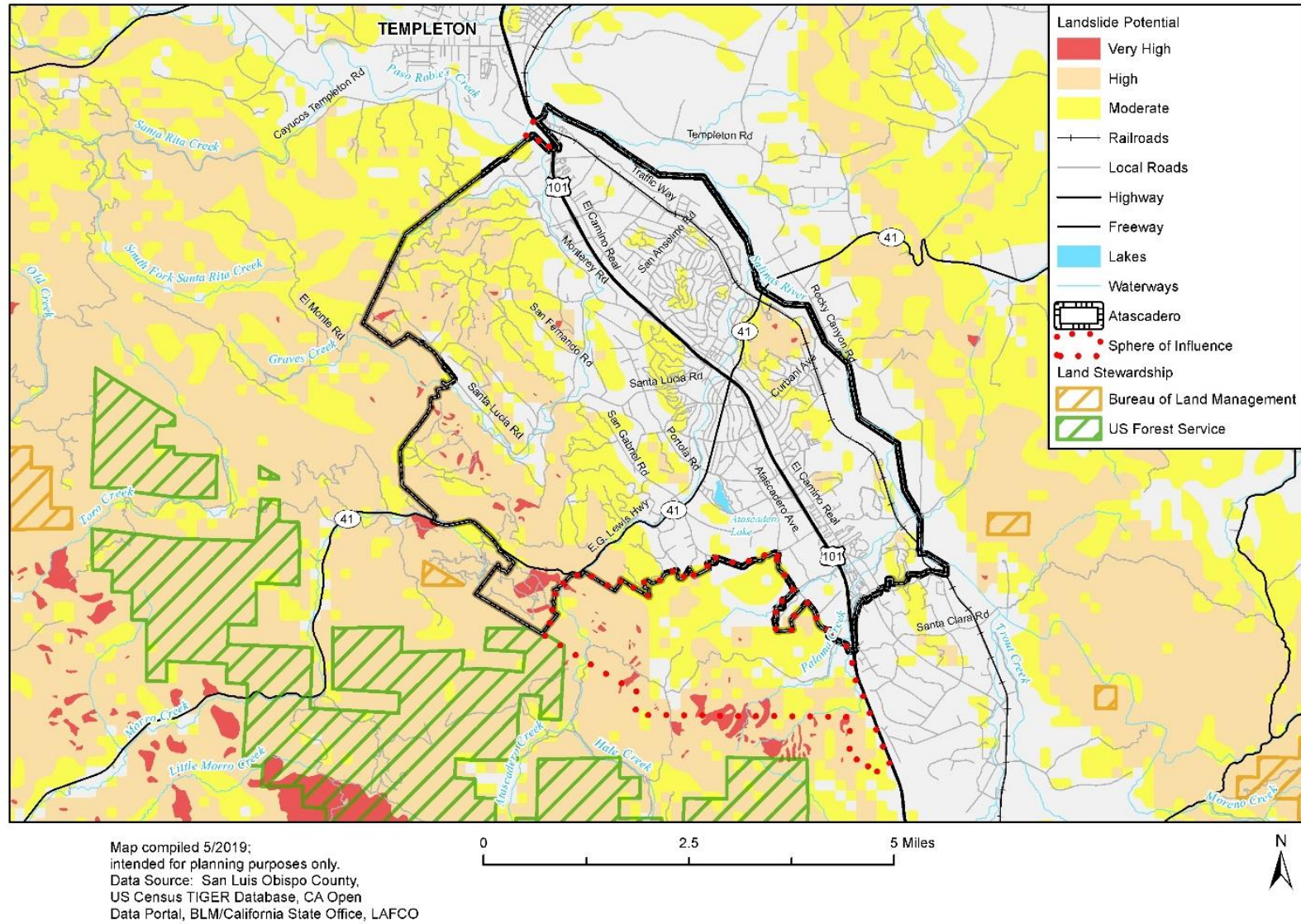
Landslide and Debris Flow

Similar to much of San Luis Obispo County, Atascadero is considered to have a moderate to high potential of landslides in certain areas of the City. Slope instability in the City generally increases with steepness and distance from the Salinas River, with areas of steep terrain that consist of fractured soil or thin layers of clay that are susceptible to erosion and land subsidence. The only areas of the City that are considered to have a very high risk of landslides are small locations in the far southwest end of the City. There are also several high and very high-risk areas outside of the City boundary that have potential to impact the City.





Figure B.6 City of Atascadero Landslide Risk



Map compiled 5/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO





Atascadero has 2,081 properties and 5 critical facilities at high or moderate risk of landslides, as shown in the following tables.

Table B.15 Atascadero Properties at High Risk of Landslide

Property Type	Property Count	Improved Value
Government/Utilities	11	--
Other/Exempt/Misc.	15	--
Residential	427	\$133,187,615
Multi-Family Residential	7	\$1,052,734
Mobile/Manufactured Homes	1	\$66,235
Vacant	8	\$1,799,933
TOTAL	469	\$136,106,517

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table B.16 Atascadero Properties at Moderate Risk of Landslide

Property Type	Property Count	Improved Value
Commercial	3	\$869,000
Government/Utilities	14	--
Other/Exempt/Misc.	12	\$14,559
Residential	1,480	\$385,770,153
Multi-Family Residential	41	\$14,871,989
Mobile/Manufactured Homes	4	\$497,938
Residential: Other	44	\$6,983,678
Vacant	14	\$1,433,068
TOTAL	1,612	\$410,440,385

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table B.17 Atascadero Critical Facilities at Risk from Landslide

Critical Facility Type	Count	Risk
TV Analog Station Transmitters	1	High
Day Care Facilities	1	Moderate
Microwave Service Towers	2	Moderate
Nursing Homes	1	Moderate
TOTAL	5	

Source: San Luis Obispo County Planning & Building, HIFLD 2017

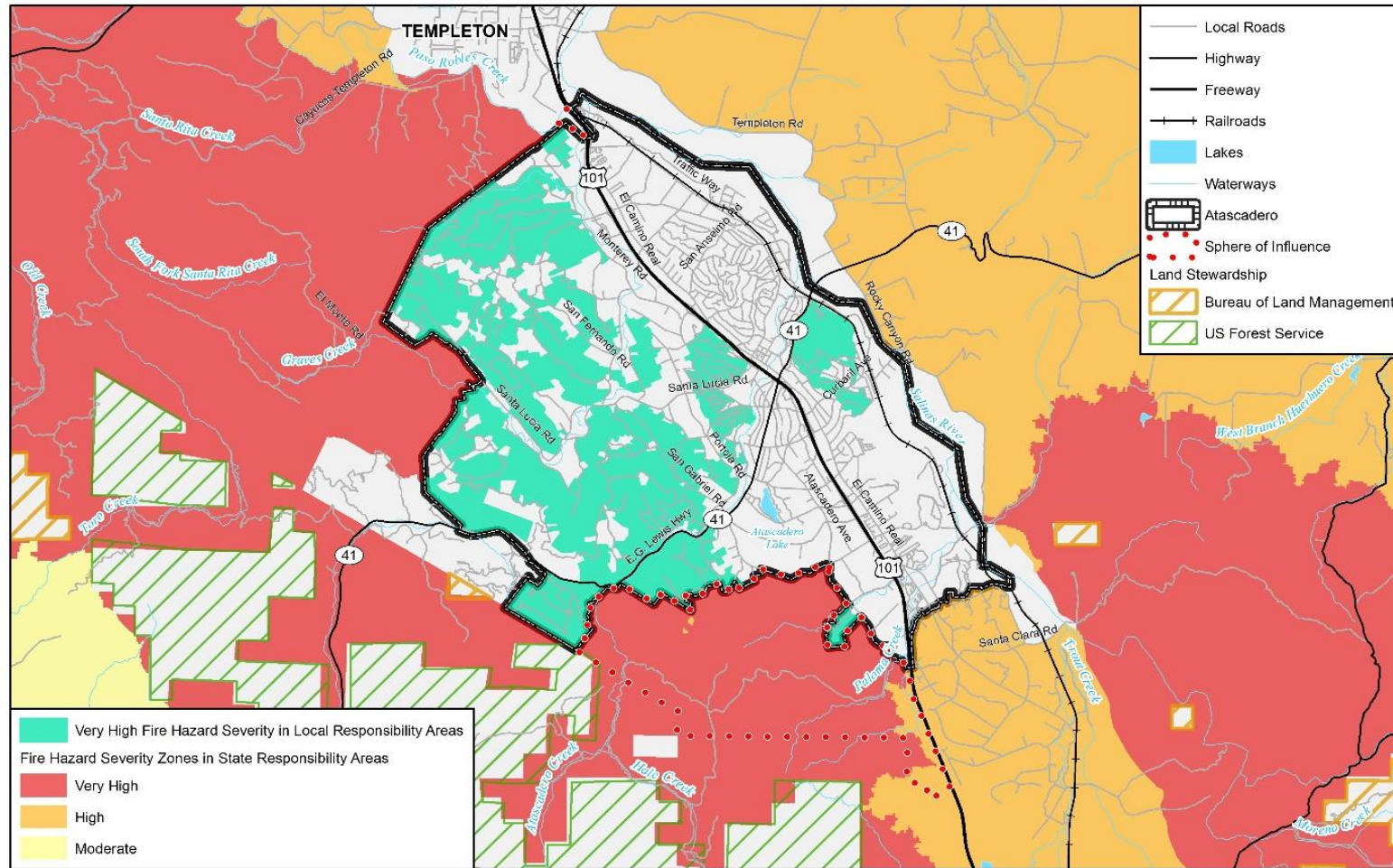
Wildfire

Wildfire is a high significance hazard for the City of Atascadero. The City has 1594 properties and three critical facilities located in High or Very High Severity SRA Zones, as shown in Figure B.7, Table B.18, and Table B.19. Additionally, the City is almost completely surrounded by high and very high severity zones, as shown in Figure B.7.





Figure B.7 City of Atascadero Fire Hazard Severity Zones



Map compiled 12/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, CalFire

0 2.5 5 Miles





Table B.18 City of Atascadero Properties in Very High Severity SRA Zones

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Government/Utilities	15	\$840	--	\$855	\$855	--
Other/Exempt/Misc.	17	\$102,000	--	\$102,017	\$102,017	--
Residential	1527	\$403,167,906	\$201,583,953	\$604,753,386	\$604,753,386	3,833
Multi-Family Residential	6	\$696,431	\$348,216	\$1,044,653	\$1,044,653	15
Mobile/Manufactured Homes	5	\$716,049	\$358,025	\$1,074,079	\$1,074,079	13
Residential: Other	2	\$739,216	\$369,608	\$1,108,826	\$1,108,826	5
Vacant	22	\$3,139,161	--	\$3,139,183	\$3,139,183	--
TOTAL	1594	\$408,561,603	\$202,659,801	\$611,222,998	\$611,222,998	3,865

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table B.19 City of Atascadero Critical Facilities at Risk from Wildfire

Critical Facility Type	Count	Risk
Nursing Homes	1	Very High
TV Analog Station Transmitters	1	Very High
Day Care Facilities	1	High
TOTAL	3	

Source: San Luis Obispo County Planning & Building, HIFLD 2017

Human Caused: Hazardous Materials

The Cal OES Warning Center reports 89 hazardous materials incidents in the City of Atascadero from 1994 through October 24, 2018; as noted in Section 5.3.13 of the County plan, this likely excludes a large number of unreported minor spills. This constitutes 5% of the hazardous materials incidents reported countywide during the same time frame and averages out to roughly 3.6 incidents per year. As noted in Section 5.3.13, only around 6% of reported hazardous materials incidents result in injuries, fatalities, or evacuations.

B.4 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory which of these policies or programs were in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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 jurisdictional planning representatives also considered their ability to expand or improve upon existing policies





and programs as potential new mitigation strategies. The City of Atascadero’s capabilities are summarized below.

B.4.1 Regulatory Mitigation Capabilities

Table B.20 City of Atascadero Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	Yes	General Plan 2025 Safety Element Establishes policies, programs, goals and objectives to protect the community from risks associated with seismic, geologic, flood, and fire hazards. The plan was originally adopted in June 2002 and most recently updated in July 2016.
Zoning ordinance	Yes	Title 9 Planning and Zoning
Subdivision ordinance	Yes	Title 11 Subdivisions
Growth management ordinance	No	
Floodplain ordinance	Yes	
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	Title 7 Public Works, Chapter 11 Flood Damage Prevention. Addresses NFIP requirements, including methods and provisions for protecting structures against flood damage at the time of initial construction; controlling the alterations of natural floodplains and filling, grading, dredging, and other development that may increase flood damage; and preventing or regulating the construction of flood barriers that will unnaturally divert floodwaters or may increase flood hazards in other areas.
Building code	Yes	Title 8 Uniform Building Code. Requires minimum standards for structural seismic resistance established primarily to reduce the risk of life loss or injury. Also requires site-specific stability studies for hillside development.
Fire department ISO rating		ISO Rating is a 3 / 3X
Erosion or sediment control program	Yes	Public Works manages the City’s MS4 Permit
Stormwater management program	Yes	City Engineering Standard Specifications Section 5 and Regional Water Quality Control Board Resolution No. R-3-2013-0032 contains the regulatory criteria and mitigations applicable to new development and redevelopment
Site plan review requirements	Yes	All development plans are reviewed, at a minimum, through the City’s permitting process.
Capital improvements plan	Yes	
Economic development plan	No	
Local emergency operations plan	Yes	Multi-Hazard Emergency Response Plan Basic Plan and Appendices A-F. Adopted in Fall 2003 and Summer 2004.
Other special plans	Yes	Fire Department Master Plan. Identifies areas of the City at higher risk for wildland fires.





Regulatory Tool	Yes/No	Comments
Flood Insurance Study or other engineering study for streams	Yes	The City Flood Damage Prevention Regulations and City Engineering Standard Specifications requires detailed hydrology and analysis of projects located within certain flood zones or where it may impact streams
Elevation certificates (for floodplain development)	Yes	FEMA Elevation Certificates are required for new structures and substantially remodeled structures within any Flood Zone A.

The City of Atascadero’s Zoning Ordinance, 9-3.600, FH (Flood Hazard) Overlay Zone, identifies areas where terrain would present new developments and their users with potential flood hazards. In addition, Ordinance No. 193, An Ordinance Adding Chapter 5 to Article 7 of the City of Atascadero Municipal Code Relating to Flood Damage Prevention, provides further guidance to reduce flood damage. It is the purpose of this ordinance to promote the public health, safety, and general welfare and to minimize public and private loses due to flood conditions. Also, Ordinance No. 304 amended Title 6, Chapter 13 of the Atascadero Municipal Code to provide a mechanism to allow the Fire Chief to order the removal of weeds, rubbish, and similar material that has the potential to become a flooding hazard.

B.4.2 Administrative/Technical Mitigation Capabilities

Table B.21 identifies the personnel responsible for activities related to mitigation and loss prevention in Atascadero.

Table B.21 City of Atascadero Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	Community Development, Public Works
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Community Development, Public Works
Planner/engineer/scientist with an understanding of natural hazards	Yes	Community Development, Public Works, Fire Department
Personnel skilled in GIS	Yes	Information Technology
Full time building official	Yes	Community Development
Floodplain manager	Yes	Public Works
Emergency manager	Yes	City Manager, alt. Police Chief and Fire Chief
Grant writer	Yes	Administrative Services
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	Information Technology

B.4.3 Fiscal Mitigation Capabilities

Table B.22 identifies financial tools or resources that the City could potentially use to help fund mitigation activities.

Table B.22 City of Atascadero Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)	Comments
---------------------	-------------------------------------	----------





Community Development Block Grants	Yes	
Capital improvements project funding	No	
Authority to levy taxes for specific purposes	Yes	Can be used for any hazard mitigation activity; however, it is only eligible for use with voter approval.
Fees for water, sewer, gas, or electric services	No	
Impact fees for new development	Yes	Can be used for both on-site and off-site capital improvements, including seismic hazard repair and maintenance, drainage, and critical facilities.
Incur debt through general obligation bonds	Yes	Can be used for any hazard mitigation activity; however, it is only eligible for use with voter approval.
Incur debt through special tax bonds	Yes	Can be used for any hazard mitigation activity; however, it is only eligible for use with voter approval.
Incur debt through private activities	Yes	Can be used for any hazard mitigation activity; however, it is only eligible for use with voter approval.
Withhold spending in hazard prone areas	No	

B.4.4 Mitigation Outreach and Partnerships

The City has an active wildfire fuel reduction and education program.

B.4.5 Opportunities for Enhancement

Based on the capabilities assessment, the City of Atascadero has several existing mechanisms in place that already help to mitigate hazards. In addition to these existing capabilities, there are also opportunities for the City to expand or improve on these policies and programs to further protect the community. Future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform City staff members on how best to integrate hazard information and mitigation projects into their departments. Continuing to train City staff on mitigation and the hazards that pose a risk to the City of Atascadero will lead to more informed staff members who can better communicate this information to the public.

B.5 Mitigation Strategy

B.5.1 Mitigation Goals and Objectives

The City of Atascadero Planning Team determined the eight goals from the 2014 HMP continue to be appropriate for this plan update. The following are the City of Atascadero 's 2019 mitigation goals and objectives:

Goal 1 – Increase public awareness of current Drought Conditions.

Objective 1 – Promote water conservation.

Objective 2 – Collaborate with the Atascadero Mutual Water Company to develop alternate water supplies via a pipeline from the Nacimiento Reservoir to achieve the maximum water allocation.





Goal 2 – Minimize the loss of property and life as the result of a Windstorm.

Objective 1 – Educate the public as to the effects of a Windstorm.

Goals 3 – Reduce the possibility of damage and losses due to Dam failure.

Objective 1 – Review and identify inundation areas due to dam failure.

Goals 4 – Reduce the possibility of damage and losses due to earthquakes.

Objective 1 – Continue to protect existing assets, as well as any future development, from the effects of earthquakes.

Goal 5 – Minimize property damage as a result of expansive unstable soil conditions.

Objective 1 – Protect future development from the effects of expansive unstable soil conditions.

Goal 6 – Reduce the possibility of damage and losses due to floods.

Objective 1 – Protect new development from floods.

Goal 7 – Reduce the possibility of damage and losses due to Land Subsidence.

Objective 1 – Protect existing assets, as well as new development, from Land Subsidence.

Goal 8 – Reduce the possibility of damage and losses due to wildland fires.

Objective 1 – Maintain and broaden current Wildland Fire protection.

Continued Compliance with the National Flood Insurance Program

The City has been an NFIP participating community since 1982. In addition to the mitigation actions identified herein the City will continue to comply with the NFIP. This includes ongoing activities such as enforcing local floodplain development regulations, including issuing permits for appropriate development in Special Flood Hazard Areas and ensuring that development is mitigated in accordance with the regulations. This will also include periodic reviews of the floodplain ordinance to ensure that it is clear, up to date, and in compliance with the Federal model ordinance (Flood Damage Prevention Regulations).

B.5.2 Completed 2015 Mitigation Actions

During the 2019 planning process the City of Atascadero Grande Planning reviewed all the mitigation actions from the 2015 plan. During the 2019 planning process the Planning Team identified that all of their fourteen (14) mitigation actions from 2015 are ongoing or implemented annually, demonstrating ongoing progress and an effort to build the community’s resiliency to disasters. Table B.23 below describes the City of Atascadero 2020 Mitigation Strategy.

B.5.3 Mitigation Actions

The planning team for the City of Atascadero 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. Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. Actions with an ‘*’ are those that mitigate losses to future development.





Table B.23 City of Atascadero’s Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
AT.1	Dam Failure	Prepare an inundation map and emergency action plan for a dam failure at Atascadero Lake. Benefits: Reduce or eliminate damages and impacts to 100+ homes and city infrastructure due to potential failure	City of Atascadero Public Works	Less than \$10,000	FEMA HMA	Medium / Low	2-3 yrs.	New
AT.2	Dam Failure	Minimize development along the Salinas River. Maintain setback and open space ordinances along the River and continue the enforcement of existing land use ordinances	Community Development / Public Works	Little to no cost	Staff Time/Dept. Budget	Medium	Annual	Annual Implementation
AT.3	Wildfire	Wildfire Evacuation Routes. Seek options to improve city road systems to become compliant with Public Resource Code 4290, designed to improve emergency access and egress and emergency evacuation times. Benefits: Improved road widths and clearance; enhanced residence evacuation times in high fire severity zones; elimination or reductions in loss of life	Atascadero Fire & Emergency Services	\$500,000 to \$1,000,000	FEMA HMA	High	More than 5 yrs.	New
AT.4	Wildfire	Continue to educate public on wildland fire safety	Fire Dept.	Little to no cost	CA Fire Safe Council, General Fund, FEMA HMA	High	Ongoing	In Progress
AT.5	Wildfire	Continue the enforcement on the Weed Abatement Ordinance	Fire Dept.	Little to no cost	CA Fire Safe Council, General Fund, FEMA HMA	High	Ongoing	In Progress
AT.6	Wildfire	Maintain and revise the CWPP	Fire Dept.	Little to no cost	CA Fire Safe Council, General Fund, FEMA HMA	High	Ongoing	In Progress





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
AT.7	Wildfire	Research emerging fuels management programs and implement where appropriate	Fire Dept.	Little to no cost	CA Fire Safe Council, General Fund, FEMA HMA	High	Ongoing	In Progress
AT.8	Wildfire	Continue fuel load reductions program by annual control burns in the WUI impacting the city	Fire Dept.	Little to no cost	CA Fire Safe Council, General Fund, FEMA HMA	High	Ongoing	In Progress
AT.9	Adverse Weather – Wind	Debris Management Plan Development. Develop a debris management plan to handle slash and leaf accumulation produced by a wind or storm event. Benefits: Reduced impacts due to debris accumulation	Public Works; Fire and Emergency Services	\$10,000 to \$50,000	FEMA HMA	High	3-5 yrs.	New
AT.10	Adverse Weather - Wind	Plan Around Forced Blackouts. Pacific Gas and Electric is implementing a forced power blackout during anticipated or actual wind events which may impact citizens at risk and residential care facilities; identify target hazards and at-risk populations in the event of a forced blackout. Benefits: Reduced impacts to at-risk populations from rolling blackouts	Public Works; Fire and Emergency Services	Little to no cost	Staff Time/Dept. Budget	High	1 yr.	New
AT.11	Earthquake	Continue to enforce Uniform Building Code (UBC) provisions pertaining to grading and construction relative to seismic hazards.	Community Development / Public Works	Little to no cost	General Fund/Staff Time/Dept. Budget	High	Ongoing	In Progress
AT.12	Earthquake	Continue to implement an Unreinforced Masonry (URM) building program that determines the structural safety of City owned critical facilities, and retrofit as necessary	Community Development / Public Works	Little to no cost	General Fund/Staff Time/Dept. Budget	High	Ongoing	In Progress
AT.13 *	Expansive Soils	Continue to require a Soils Report for all new building permits	Community Development	Little to no cost	General Fund/Staff	Medium	Ongoing	In Progress. Required for all





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
					Time/Dept. Budget			buildings over 1000 square feet
AT.14 *	Flood	During the plan check process utilize GIS to ensure the building project meets current Flood Damage Prevention Regulations prior to the issuance of building permits	Community Development / Public Works	Little to no cost	General Fund/Staff Time/Dept. Budget	High	Ongoing	In Progress
AT.15	Landslide	Require construction and maintenance of natural and/or human-made retaining structures that will help control subsidence risk in key residential and/or commercial areas	Community Development / Public Works	Little to no cost	General Fund/Staff Time/Dept. Budget	Medium	Ongoing	In Progress
AT.16	Landslide	Retrofit or implement stabilizing measures for Atascadero hillside developments that predate current best practices and codes	Community Development / Public Works	Little to no cost	General Fund/Staff Time/Dept. Budget	Medium	Ongoing	In Progress
AT.17	Landslide	Located and identify unstable soils through the use of GIS and soil maps	Community Development / Public Works	Little to no cost	General Fund/Staff Time/Dept. Budget	Medium	Ongoing	In Progress
AT.18 *	Landslide	Focus on proposed new developments to determine if soils stabilization is economically feasible. If the soils stabilization is not economically feasible deny, the proposed development or rezone	Community Development / Public Works	Little to no cost	General Fund/Staff Time/Dept. Budget	Medium	Ongoing	In Progress
AT.19	Drought and Water Shortage	Implement the water demand management strategies outlined in the Atascadero Mutual Water Company Urban Water Management Plan	Community Development / Public Works/ Atascadero Mutual Water Company	Variable	General Fund/Staff Time/Dept. Budget	Medium	3-5 yrs.	New





B.6 Implementation and Maintenance

Moving forward, the City will use the mitigation action table in the previous section to track progress on implementation of each project. As illustrated in Section 7.3.1 of the County plan, much progress has been made since the plan was originally developed. Implementation of the plan overall is discussed in Chapter 8 of the main plan.

B.6.1 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 Engineering Division may utilize the hazard information when implementing the City's Community Investment Program and the Planning and Building Divisions may utilize the hazard information when reviewing a site plan or other type of development applications. The City will also incorporate this LHMP into the Safety Element of their General Plan, as recommended by Assembly Bill (AB) 2140.

As noted in Chapter 7.0 Plan Implementation, the HMPC representatives from Atascadero 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 HMPC plan review meeting.

B.6.2 Monitoring, Evaluation and Updating the Plan

The City will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Chapter 8 of the Base Plan. The City will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The Fire Chief will be responsible for representing the City in the County HMPC, 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.



C.1 Community Profile

C.1.1 Mitigation Planning History and 2019 Process

This annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan update. This Jurisdictional Annex builds upon the previous version of the Multi-Jurisdictional Local Hazard Mitigation Plan for the cities of Grover Beach, Arroyo Grande as well as the Lucia Mar Unified School District and South San Luis Obispo County Sanitation District completed in December 2014 and approved by FEMA in December 2015; that previous mitigation plan was not incorporated into the City’s General Plan, as this updated mitigation plan will be. The City has used the previous mitigation plan as a basis for the Emergency Operations Plan. A review of jurisdictional priorities found no significant changes in priorities since the last update.

The City’s Local Planning Team (LPT) held responsibility for implementation and maintenance of the plan; members are noted below. The Police Chief for Grover Beach Police is responsible for updating the plan.

Table C.1 Grover Beach Hazard Mitigation Plan Revision Planning Group

Department or Stakeholder	Title
Police Department	Chief of Police
Public Works	Public Works Director / City Engineer
Community Development	Community Development Director

More details on the planning process followed and how the jurisdictions, service districts and stakeholders participated can be found in Chapter 3 of the Base Plan, as well as how the public was involved during the 2019 update.

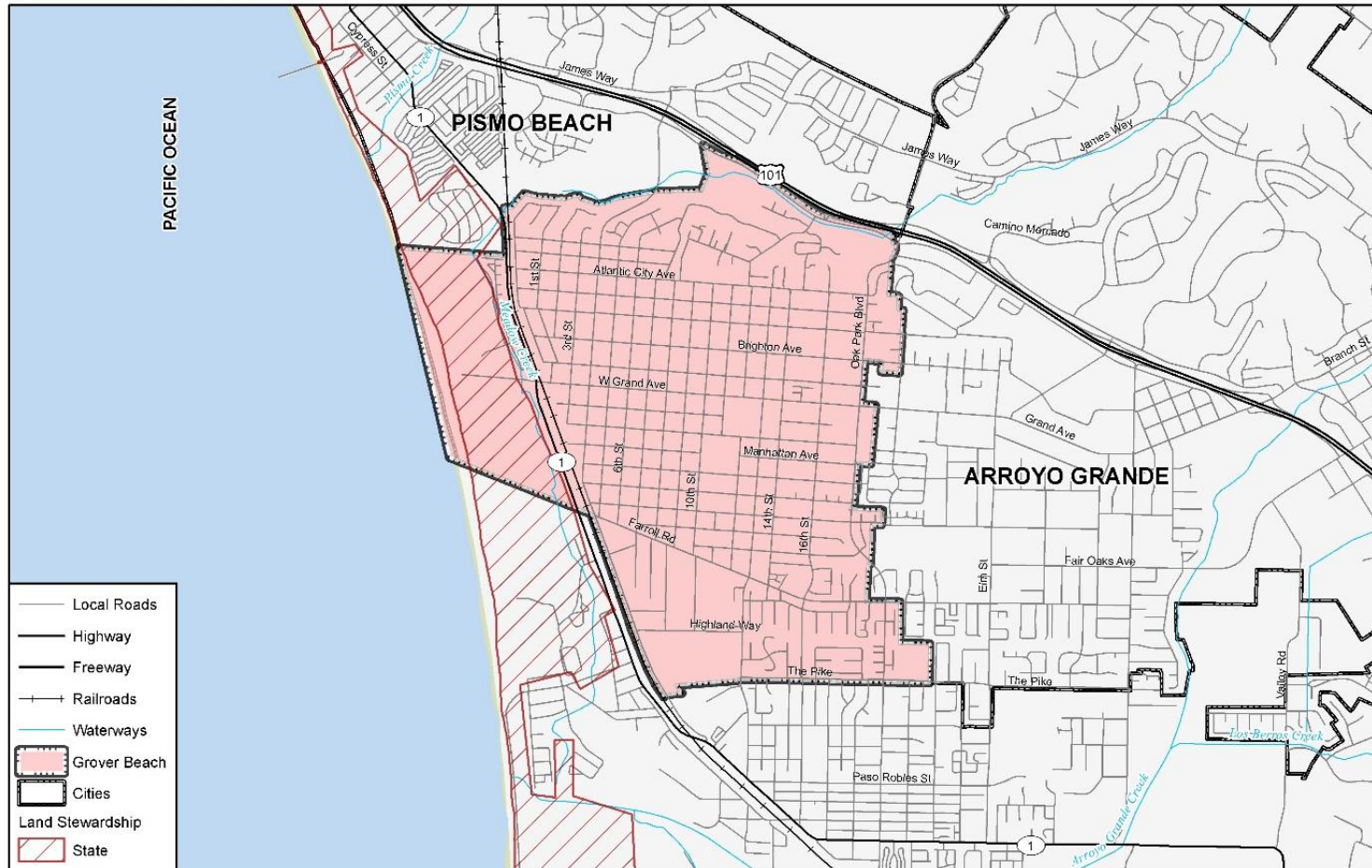
C.1.2 Geography and Climate

The City of Grover Beach is a coastal community located in the south county area of San Luis Obispo County. Grover Beach has wide sandy beaches with coastal dunes and is a gateway to Pismo State Beach and Oceano Dunes State Vehicular Recreational Area. According to the City’s 2015 LHMP, Grover Beach has an average high temperature (July) of 70°F and low temperature of 62°F (January). The jurisdiction receives 17.1 inches of rainfall in an average year. While the average temperature is relatively temperate, summer and winter months bring unique weather patterns to the region. Figure C.1 displays a map and the location within San Luis Obispo County of the City of Grover Beach planning area.





Figure C.1 The City of Grover Beach



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO





C.1.3 History

On August 1, 1887 Dwight William Grover founded the Town of Grover after purchasing the land for \$22,982.20 in gold from John Michael Price, the founder of Pismo Beach. Grover promoted his town as “the place where the tide lands and the rails meet” and had a vision of a community that had a hotel and a train station near the beach. Grover and his partner George Gates laid out a street grid pattern and promoted the community as Grover City, the “grandest summer and winter seaside resort on the Pacific Coast.”

Development didn’t flourish in Grover City until 1935 when Horace V. Bagwell bought 1,100 acres and advertised Grover City as the “home of the average man” with land prices affordable to the working man. People and development began to happen and by the mid-1940’s the first store opened in Grover City followed by the first post office. The Fair Oaks Fire District and the Grover City Water District were formed in 1949 and supported a boom in population throughout the 1950’s. On December 21, 1959 the people of Grover City voted to incorporate and become the City of Grover City. In 1992, the City had become more established and the residents of Grover City decided to rename the community to “Grover Beach”. By 1996 the train station Dwight William Grover dreamed of became a reality when Amtrak began rail service at a newly constructed Grover Beach Train Station.

C.1.4 Economy

Select estimates of economic characteristics for the City of Grover Beach are shown in Table C.2.

Table C.2 City of Grover Beach Economic Characteristics, 2013-2017

Characteristic	City of Grover Beach
Families below Poverty Level (%)	10%
All People below Poverty Level (%)	14%
Median Family Income	\$65,250
Median Household Income	\$61,482
Per Capita Income	\$30,873
Population in Labor Force	6,613
Population Employed*	6,260
Unemployment	309

Source: CA Department of Finance U.S. Census Bureau American Community Survey 2013-2017 5-Year Estimates, www.census.gov/

*Excludes armed forces

Table C.3 show how the City of Grover Beach’s labor force breaks down by industry based on estimates from the 2013-2017 five-year American Community Survey.



**Table C.3 City of Grover Beach's Employment by Industry, 2013-2017**

Industry	# Employed	% Employed
Educational Services, and Health Care and Social Assistance	1,640	26%
Retail Trade	572	9%
Professional, Scientific, and Mgmt., and Administrative and Waste Mgmt. Services	789	13%
Manufacturing	245	4%
Arts, Entertainment, and Recreation, and Accommodation, and Food Services	786	13%
Construction	520	8%
Finance and Insurance, and Real Estate and Rental and Leasing	286	5%
Public Administration	251	4%
Other Services, Except Public Administration	240	4%
Wholesale Trade	234	4%
Transportation and Warehousing, and Utilities	439	7%
Agriculture, Forestry, Fishing and Hunting, and Mining	57	1%
Information	192	3%
Total	6,251	26%

Source: U.S. Census Bureau American Community Survey 2013-2017 5-Year Estimates, www.census.gov/

C.1.5 Population

According to data extracted by the California Department of Finance from U.S. Census Bureau's American Community Survey 5-Year Estimates (2013-2017), the total population for the City of Grover Beach was estimated at 13,524 persons. Select demographic and social characteristics for the City of Grover Beach from the 2013-2017 American Community Survey are shown in Table C.4.



**Table C.4 City of Grover Beach’s Demographic and Social Characteristics, 2013-2015**

Characteristic	City of Grover Beach
Gender/Age	
Male	6,687
Female	6,837
Median age (years)	36
Under 5 years	1,236
Under 18 years	3,435
65 years and over	1,875
Race/Ethnicity	
White	7,952
Asian	393
Black or African American	316
American Indian/Alaska Native	101
Hispanic or Latino (of any race)	4,279
Native Hawaiian and Other Pacific Islander	126
Education	
% High school graduate or higher	85%
Disability Status	
% of Population 5 years and over with a disability	15%

Source: CA Department of Finance, U.S. Census Bureau American Community Survey 2013-2017 5-Year Estimates, www.census.gov/

C.1.6 Development Trends

The City’s General Plan Land Use Element (2010) recognizes that a majority of the City has been developed and future development will be concentrated on vacant properties and redevelopment of underutilized properties. The following figures from the San Luis Obispo County Council of Governments (COG), 2050 Regional Growth Forecast for San Luis Obispo County show the projected population and housing unit growth between 2010 and 2050. According to the COG’s document the City’s population is projected to increase to over 15,000 residents by 2050.



**Figure C.2 City of Grover Beach Population Projections, 2010 to 2050**

Jurisdiction	2010	2015	2020	2025	2030	2035	2040	2045	2050
Arroyo Grande	17,252	17,678	18,288	18,956	19,505	19,930	20,158	20,293	20,449
Atascadero	28,310	30,401	31,384	32,240	33,043	33,703	34,063	34,278	34,538
Grover Beach	13,156	13,340	13,751	14,183	14,536	14,804	14,934	15,001	15,091
Morro Bay	10,234	10,640	11,025	11,401	11,715	11,961	12,092	12,169	12,261
Paso Robles	29,793	31,348	32,755	34,314	35,582	36,561	37,130	37,487	37,858
Pismo Beach	7,655	8,068	8,642	9,122	9,486	9,753	9,901	9,989	10,079
San Luis Obispo	45,119	45,950	47,214	48,601	49,759	50,659	51,105	51,347	51,672
<i>Incorporated Cities</i>	<i>151,519</i>	<i>157,425</i>	<i>163,059</i>	<i>168,817</i>	<i>173,626</i>	<i>177,371</i>	<i>179,383</i>	<i>180,564</i>	<i>181,948</i>
Unincorporated Area	118,118	118,950	123,597	128,279	132,066	134,975	136,539	137,461	138,534
Regional Total:	269,637	276,375	286,657	297,095	305,692	312,346	315,922	318,025	320,482

Source: U.S. Census Bureau (2010 Census), State of California, Department of Finance (2015), Beacon Economics (forecast years)

Source: 2050 Regional Growth Forecast for San Luis Obispo County, San Luis Obispo Council of Governments and Beacon Economics, June 2017

Figure C.3 City of Grover Beach Housing Unit Projections, 2010 to 2050

Jurisdiction	2010	2015	2020	2025	2030	2035	2040	2045	2050
Arroyo Grande	7,628	7,740	8,228	8,541	8,767	8,949	9,054	9,122	9,186
Atascadero	11,505	11,875	12,845	13,553	14,077	14,501	14,767	14,995	15,120
Grover Beach	5,748	5,770	6,102	6,274	6,409	6,531	6,610	6,670	6,728
Morro Bay	6,320	6,378	6,785	7,010	7,190	7,325	7,384	7,409	7,433
Paso Robles	11,426	11,706	12,343	12,949	13,452	13,843	14,071	14,215	14,342
Pismo Beach	5,585	5,649	6,089	6,227	6,364	6,517	6,629	6,707	6,768
San Luis Obispo	20,553	20,887	21,786	22,165	22,388	22,534	22,655	22,658	22,816
<i>Incorporated Cities</i>	<i>68,765</i>	<i>70,005</i>	<i>74,178</i>	<i>76,719</i>	<i>78,646</i>	<i>80,200</i>	<i>81,170</i>	<i>81,775</i>	<i>82,395</i>
Unincorporated Area	48,550	49,692	50,672	52,449	53,814	54,929	55,486	55,888	56,244
Regional Total:	117,315	119,697	124,850	129,168	132,460	135,129	136,657	137,664	138,640

Source: U.S. Census Bureau (2010 Census), State of California, Department of Finance (2015), Beacon Economics (forecast years)

Source: 2050 Regional Growth Forecast for San Luis Obispo County, San Luis Obispo Council of Governments and Beacon Economics, June 2017

The California Department of Finance State Demographic Report released on May 1, 2019 indicated the current population of 13,533 and between January 1, 2018 and 2019 the City of Grover Beach lost 0.6 percent of its population. Statewide, California's 2018 population growth rate (0.47%) was the slowest in the State's history.

C.2 Hazard Identification and Summary

The Grover Beach Planning Team identified the hazards that affect the City and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to Grover Beach (see Table C.5). There are no hazards that are unique to Grover Beach. The overall hazard significance takes into account the geographic area, probability and magnitude as a way to identify priority hazards for mitigation purposes. This is discussed further in the Vulnerability Assessment Section.





Table C.5 City of Grover Beach – Hazard Summaries

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Coastal Storm/Coastal Erosion/Sea Level Rise	Limited	Occasional	Limited	Low
Dam Incidents	Significant	Unlikely	Limited	Low
Drought and Water Shortage	Extensive	Likely	Limited	High
Earthquake	Extensive	Occasional	Critical	High
Flood	Limited	Occasional	Limited	Low
Tsunami and Seiche	Limited	Occasional	Limited	Low
Wildfire	Limited	Occasional	Limited	Low
Human Caused: Hazardous Materials	Limited	Occasional	Negligible	Low
<p>Geographic Area Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area</p> <p>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.</p>		<p>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</p> <p>Significance Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact</p>		





C.3 Vulnerability Assessment

The intent of this section is to assess Grover Beach's vulnerability separate from that of the County as a whole, which has already been assessed in Section 5.3 Risk Assessment in the Base Plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area.

The information to support the hazard identification and risk assessment was based of the previous LHMP for the City. A Local Hazard Mitigation Plan Update Guide and associated worksheets was distributed to each participating municipality or special district to complete during the 2019 update process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact 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 5.2). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction. Identifying these differences helps the reader to differentiate the jurisdiction's risk and vulnerabilities from that of the overall County.

Note: The hazard "Significance" reflects overall ranking for each hazard and is based on the City of Grover Beach's Planning Team member input from the Data Collection Guide and the risk assessment developed during the planning process (see Chapter 5 of the Base Plan), which included a more detailed qualitative analysis with best available data.

The hazard summaries in Table C.5 reflect the hazards that could potentially affect the City. The discussion of vulnerability for each of the following hazards is located in C.3.2 Estimating Potential Losses. Based on this analysis, the priority hazard (High Significance) for mitigation is earthquake. Those of Medium or High significance for the City of Grover Beach are identified below.

- Drought and Water Shortage
- Earthquake

Other Hazards

Hazards assigned a significance rating of Low or which do not differ significantly from the County ranking (e.g., Low vs. High) are not addressed further in this plan and are not assessed individually for specific vulnerabilities in this section. Those hazards include agricultural hazards, biological agents, adverse weather hazards, wildfires, and landslides.

C.3.1 Assets at Risk

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

Values at Risk

The following data on property exposure is derived from the San Luis Obispo County 2019 Parcel and Assessor data. This data should only be used as a guideline to overall values in the City as the information has some limitations. The most significant limitation is created by 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 likely low and does not reflect current market value of properties. 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. Table C.6 shows the exposure of properties (e.g., the values at risk) broken down by property type for the City of Grover Beach.

Table C.6 2019 Property Exposure for the City of Grover Beach by Property Types

Property Type	Parcel Count	Improved Value	Content Value	Total Value
Agricultural	1	\$3,139	\$3,139	\$6,278
Commercial	242	\$71,707,475	\$71,707,475	\$143,414,950
Government/Utilities	37	\$21,533	--	\$21,533
Other/Exempt/Misc.	135	\$31,280,820	--	\$31,280,820
Residential	3,054	\$506,840,814	\$253,420,407	\$760,261,221
Multi-Family Residential	600	\$135,833,108	\$67,916,554	\$203,749,662
Mobile/Manufactured Homes	39	\$2,752,757	\$1,376,379	\$4,129,136
Residential: Other	550	\$102,234,078	\$51,117,039	\$153,351,117
Industrial	27	\$11,177,087	\$16,765,631	\$27,942,718
Vacant	28	\$4,325,265	--	\$4,325,265
Total	4,713	\$866,176,076	\$462,306,623	\$1,328,482,699

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor's Office data 2019

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the City of Grover Beach from San Luis Obispo County GIS is provided in Table C.7 and illustrated in Figure C.4. A more detailed list of the critical facilities, their location square footage and values from the City's 2015 HMP can be found as an attachment to this Annex.

Table C.7 City of Grover Beach's Critical Facilities

Facility Type	Counts
Multi-modal Center (Amtrak Station)	1
Community Centers (evacuation centers including City Hall)	3
Fire Stations	1
Local Law Enforcement	1
Private Schools	1
Public Schools	3
Emergency Communications Facility	1
Sewer Lift Stations	3
Storm Basin Pump Station	1
Water Booster Pumps	1
Water Reservoirs	3
Water Wells & Treatment Facilities	4
Total	23

Source: San Luis Obispo County Planning & Building, HIFLD 2017





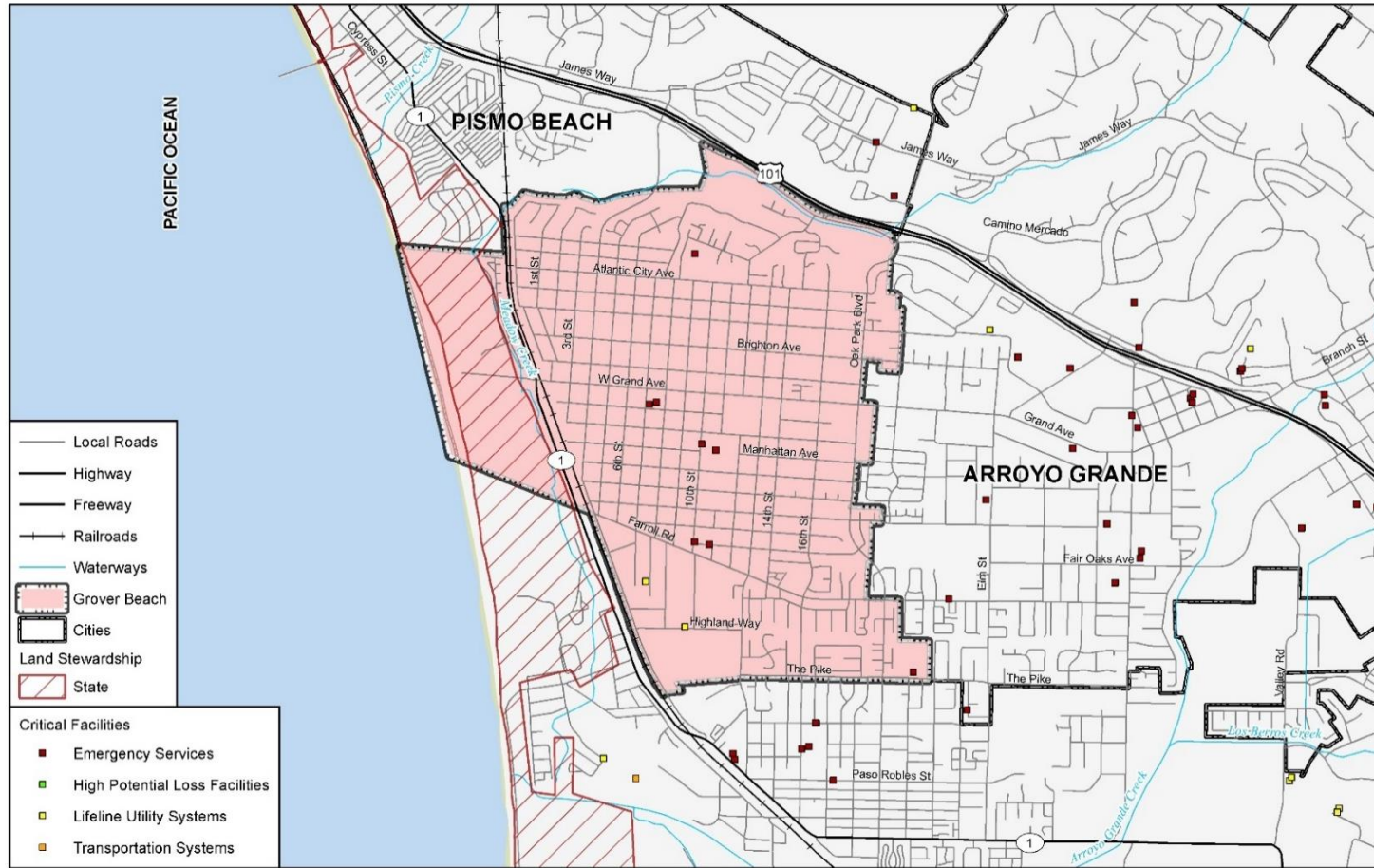
Transportation and Lifeline Facilities

State Route 1 and U.S. Highway 101 border the City of Grover Beach on the west and the northeast of the City limits. Route 1 serves as a two-lane arterial for the City and merges with Highway 101 north of the City. In addition to these major transportation routes adjacent to Grover Beach, the City also offers multi-modal transportation options for residents including bike lanes, bus routes and the Grover Beach Train Station. According to the City's 2015 LHMP the Grover Beach Train Station is listed as being vulnerable to earthquakes, flooding, wildfire and tsunami hazards. Other vulnerable City owned transportation and lifeline facilities were noted in the 2015 plan with a combined value of nearly \$50 million. The complete list of vulnerable transportation and lifeline facilities can be found in an attachment to this Annex.





Figure C.4 City of Grover Beach Critical Facilities



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, HIFLD

0 1 2 Miles





Historic and Cultural Resources

While the City of Grover Beach has no registered state or federal historic sites, there are several assets within Grover Beach that define the community and represent the City's history. Many of the historical sites of importance to Grover Beach have been converted into different uses but the historic buildings still stand. In honor of the City's 50th Anniversary a self-guided tour pamphlet was created and lists the following historic sites.

- Grover Beach City Hall – 154 South 8th Street
- Precision Automotive (now Grover Beach Fire Station) – 701 Rockaway Avenue
- Grover City Hall/Fire Department (now Exploration Station) – 967 Ramona Avenue
- Grover City Development (now Spoon Trade Restaurant) – 295 West Grand Avenue
- White's Malt Shop (now Enterprise Rental Car) – 502 West Grand Avenue
- The Keen Agency (now Taco De Mexico) – 791 West Grand Avenue
- Marshall – Spoo Sunset Funeral Chapel – 1239 Longbranch Avenue
- Yeackel's / Fairlane Department Store (now Ron's Nursery) – 850 West Grand Avenue
- Grover City Shoe – (now South County Sanitary) – 866 West Grand Avenue
- Greg's Restaurant (DarWish Cuisine) – 967 West Grand Avenue
- Grover City Pharmacy (now Green Bargain) – 901 West Grand Avenue
- First Southern Baptist Church (now Beacon Chiropractic) 902 West Grand Avenue
- Grover City Feed Store (now Ben's Computer Outlet) – 983 West Grande Avenue
- Blinking Owl (now Villa Del Mar) – 110 West Grand Avenue
- Pizza Fresh – 1301 West Grand Avenue;
- Mobile Station (now Nan's Bookstore) – 1328 West Grand Avenue
- Spears Residence (now Salon Dee) – 122 North 16th Street This is now Hogge Insurance Services
- A&W Root Beer (now Higher Grounds) – 1754 Grande Avenue this is now Crossroads Cafe

Source: City of Grover Beach Historic Self-Guided Tour <http://www.grover.org/DocumentCenter/Home/View/1455>

Natural Resources

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. The City of Grover Beach has designated areas on the coast as Coastal Open Space Zone; according to the City of Grover Beach Local Coastal Program (2014) this zone is designed to protect and preserve sensitive natural areas including but not limited to those containing significant habitat areas, rare or endangered plant and animal species, and erosion-prone lands. Awareness of natural assets and designated natural areas can lead to opportunities for meeting multiple objectives. For instance, protecting wetlands areas protects sensitive habitat as well as attenuates and stores floodwaters.

Economic Assets

Tourism and the industries that support tourists and tourism activities are one of the greatest economic assets in the City of Grover Beach. Additionally, the commercial cannabis industry has taken off and has become a critical economic asset for the City in terms of tax revenue. The City is located close to multiple destinations including Pismo State Beach, Oceano Dunes State Recreation Area, and the Guadalupe-Nipomo Dunes National Wildlife Refuge.

The HMPC reviewed the economic strengths and competitive advantages listed in the City of Grover Beach Final Economic Development Strategy (April 11, 2017), and identified the following:





- Grover Beach is one of the few areas within the Southern SLO County area that has undeveloped industrial land, however these properties are quickly transforming into developed industrial and commercial holdings.
- Growth in commercial cannabis. The commercial cannabis industry has played a major role in the last few years in redeveloping properties, as well as new industrial construction within the undeveloped industrial zone. The City will continue to be a future “synergy” location for commercial cannabis within San Luis Obispo County with testing labs, manufacturing, warehousing, and retail sales of commercial cannabis.
- Transient occupancy tax revenue recovered quickly following the Great Recession. The development of additional lodging facilities including the Grover Beach Lodge, the Northeast Grover Beach Mixed-Use Development, and 950 El Camino Real. Development of these hotels will provide Grover Beach with an opportunity to increase tourism to the community.
- Higher quality retail and food service establishments have entered the market and increased the City’s regional draw
- Grover Beach has a reputation as a business-friendly community with a local government that is fairly easy to work with, compared to other communities.

C.3.2 Estimating Potential Losses

Note: This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to Planning Team member input) it differs from that of the overall County.

Table C.6 above shows Grover Beach’s exposure to hazards in terms of number and value of structures. San Luis Obispo County’s parcel and assessor data was used to calculate the improved value of parcels. The most vulnerable structures are those in the floodplain (especially those that have been flooded in the past), unreinforced masonry buildings, and buildings built prior to the introduction of modern-day building codes. Impacts of past events and vulnerability to specific hazards are further discussed below. (See Section 5.1 for more detailed information about these hazards and their impacts on San Luis Obispo County as a whole.)

Dam Incidents

The Lopez Dam, a high hazard earthen dam located upstream from the community, poses the greatest risk to Grover Beach if an incident was to occur. Failure of the Lopez Dam would follow the Arroyo Grande Creek in a westerly direction approximately 3,000 feet in each direction of the centerline of the creek channel. A total of 5,319 persons and 2,392 properties would be inundated in the City of Grover Beach if the Lopez Dam was to fail. Note that the Lopez Dam inundation mapping used to arrive at this information came from the County of San Luis Obispo’s Planning & Building/GIS Departments.

A majority of properties at risk are residential (2,119 properties) and have a combined value of \$539,526,282 (refer to Table C.8 below). Refer to the Critical Facilities in the Lopez Dam Inundation Area, by Type of Facility table, in the Base Plan for details on the type of various types of critical facilities at risk. A failure of the Lopez Dam would also affect Highway 101 impeding or reducing flows of goods, people and resources into and out of Grover Beach and potentially impacting the entire region. There have been no past dam incidents or failures in the jurisdiction of the City of Grover Beach. Refer to the Dam Incidents Section in Chapter 5 of the Base Plan for additional discussion on the potential impacts of dam incidents in the County.

This information was derived from the most recent dam inundation mapping, parcel, and critical facility data available to the County of San Luis Obispo. The Grover Beach planning team added the following comments related to dam failure and inundation hazards:





- Lopez Dam failure would result in overtopping of Arroyo Grande Creek which would cause a backwater condition in Meadow Creek, primarily along Highway 1 and the Union Pacific Railroad tracks.
- There are two facilities deemed critical to the City which are at risk from this flooding: The Train Station and the Front Street Sanitary Sewer Lift Station. However, neither of these was originally included in the countywide critical facility dataset and as such were not mapped or included in tables or summary results.
- Grover Beach would be surrounded by flood waters and Highway 101 would be impassible at Oak Park Boulevard if the Lopez Dam were to cause inundation downstream, which would limit ingress/egress to Highway 101 to the northwest and significantly restrict access by emergency services from outside the city.

Table C.8 Lopez Dam Inundation Estimate Losses by Property Type

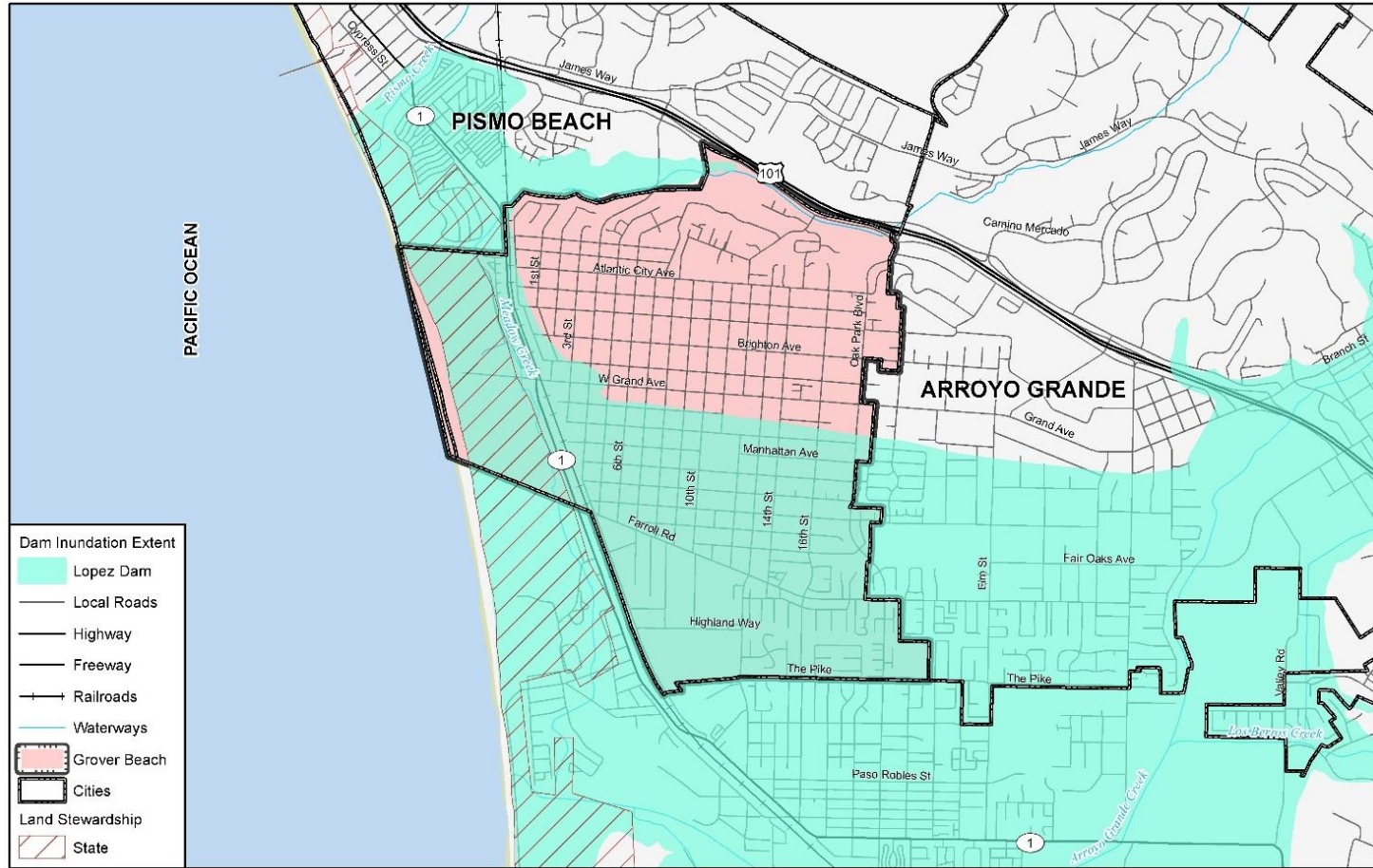
Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Agricultural	1	\$3,139	\$3,139	\$6,278	\$3,139	--
Commercial	120	\$24,487,269	\$24,487,269	\$48,974,538	\$24,487,269	--
Government/Utilities	29	--	--	\$0	\$0	--
Other/Exempt/Misc.	84	\$21,487,616	--	\$21,487,616	\$10,743,808	--
Residential	1,488	\$234,335,647	\$117,167,824	\$351,503,471	\$175,751,735	3,735
Multi-Family Residential	316	\$74,162,097	\$37,081,049	\$111,243,146	\$55,621,573	793
Mobile/Manufactured Homes	2	\$391,213	\$195,607	\$586,820	\$293,410	5
Residential: Other	313	\$50,795,230	\$25,397,615	\$76,192,845	\$38,096,423	786
Industrial	21	\$8,932,723	\$13,399,085	\$22,331,808	\$11,165,904	--
Vacant	18	\$2,764,023	--	\$2,764,023	\$1,382,012	--
TOTAL	2,392	\$417,358,957	\$217,731,586	\$635,090,543	\$317,545,272	5,319

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis





Figure C.5 City of Grover Beach Dam Inundation Extent



Map compiled 6/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCO, CA DWR, NID 2018

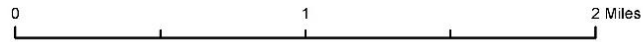
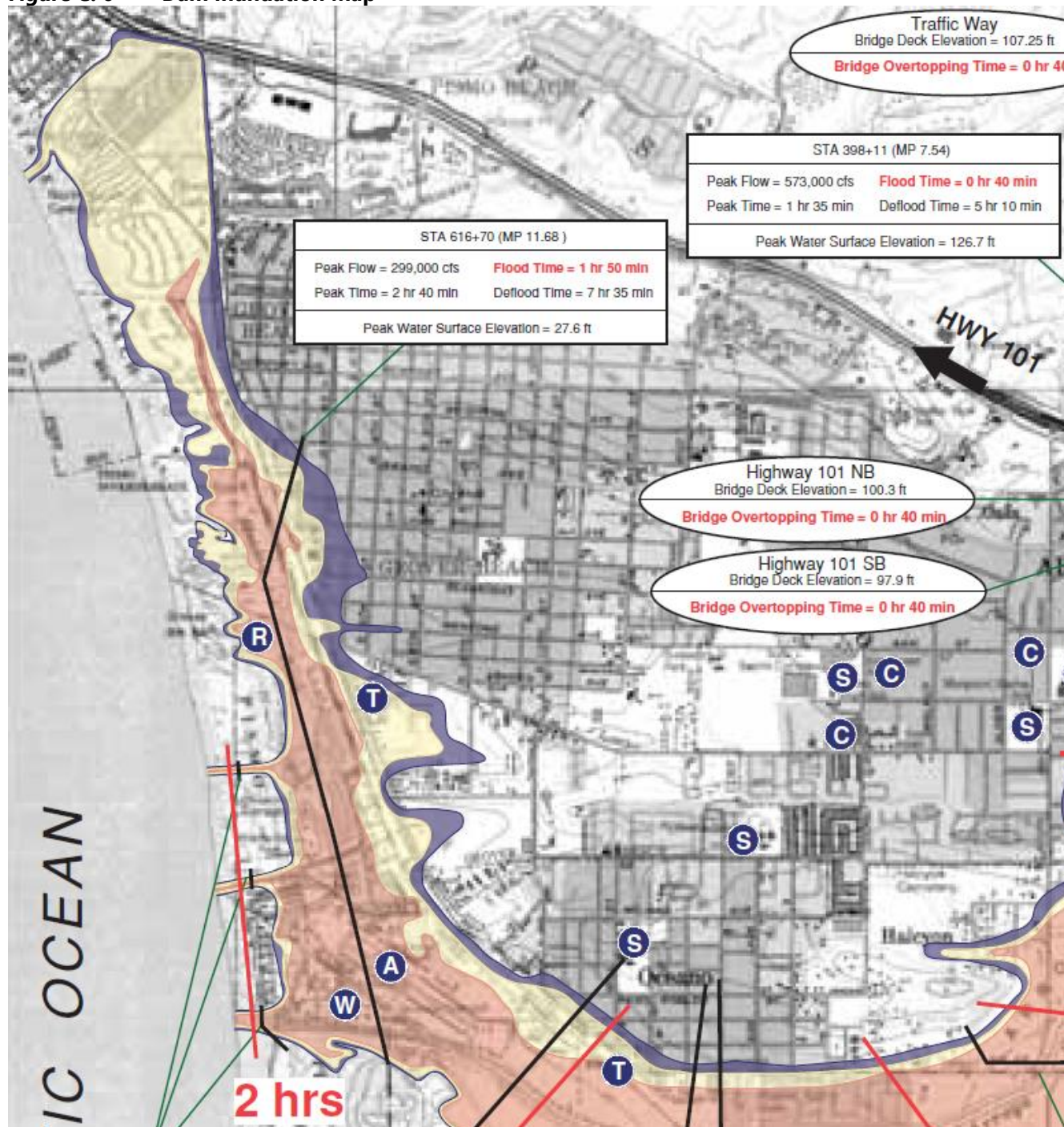




Figure C. 6 Dam Inundation Map



Source San Luis Obispo County





Drought and Water Shortage

The City of Grover Beach’s main water supplies are from surface water and groundwater. The surface water supply source is Lake Lopez or the Lopez Project, which is also the main supply for the other communities in the Five Cities Area. Grover Beach has an entitlement of 800 acre-feet per year (afy) from the Lopez Project. Grover Beach also receives a portion of its water supply (1,198 afy) from the Arroyo Grande Plain of the Tri-Cities Mesa Subbasin of the Santa Maria Valley Groundwater Basin which also supplies water for the cities of Arroyo Grande, Pismo Beach and the Oceano CSD. A majority of water consumption is by residential properties. According to the San Luis Obispo Council of Government (COG) report, 2050 Regional Growth Forecast for San Luis Obispo County (2017), the figure below shows the projected water demand in the City of Grover Beach from 2015 to 2030. The City of Grover Beach’s population is not expected to grow dramatically by 2035 and as a result the water demand is not projected to increase over the next 20 to 30 years.

Figure C.7 Projected Water Demand in Grover Beach, 2015 to 2030

Water Supply and Demand and Beacon Projections	2015	2020	2025	2030	2035
Projected Supply Utilization	2,207	2,207	2,207	2,207	2,207
Projected Demand	1,149	1,186	1,223	1,254	1,227
Beacon Demand Projection	1,099	1,153	1,201	1,237	1,209
Supply Less Demand	1,108	1,054	1,006	970	998

Source: City of Grover Beach, 2010 Urban Water Management Plan, personal communications with Grover Beach staff, Beacon Economics (population projections)

Source: 2050 Regional Growth Forecast for San Luis Obispo County, San Luis Obispo Council of Governments and Beacon Economics, June 2017

Severe drought events in recent years have caused concerns on the impact on the City’s limited water supply. In 2006 the City of Grover Beach adopted the Water Shortage Contingency Plan which defines what constitutes a recommendation for a water shortage proclamation, provides specific triggers for actions stages and designated responsibilities of City Council and Departments. The Grover Beach City Council annually reviews rainfall and other information on water amounts, and determines the appropriate actions to take. In 2014, with the below average rainfall and low storage levels in Lopez Lake, City Council determined the City’s water supplies were headed towards a condition of severe water shortage. As a result, on June 16, 2014 the City Council declared a Stage III Water Shortage and mandatory water conservation measures. The City had previously been under a Stage II Declaration for two years that placed voluntary prohibitions on water usage. The Declaration required those voluntary prohibitions become mandatory and all customers to reduce their water usage by 10 percent. Stage III also gave the City the authority to impose penalties for failure to comply with water reduction or use prohibitions.

The returned Data Collection Guide from the City of Grover Beach Planning Team noted that due to the region’s water supply being served by a mix of reservoir and pumped well water, the state-wide drought in California has led to regional impacts, including watering restrictions that according to the Planning Team has led to landscaping on many properties to die, increasing the risk of wildfire for some properties.





Earthquake

The City of Grover Beach is vulnerable to various types of seismic hazards including fault rupture, groundshaking and liquefaction. The Wilmar Avenue fault is the only mapped fault near the City of Grover Beach. The fault runs along the northern portion of the City limits. The Wilmar Avenue fault is exposed in the sea cliff near Pismo Beach and buried portions are generally aligned along the Highway 101. The fault is considered potentially active and a moderate fault rupture hazard to the City of Grover Beach.

In addition to the Wilmar Avenue fault there are a number of active and potentially active faults in proximity of the Grover Beach that are capable of producing strong groundshaking within the City limits. According to the Technical Background Report of the County Safety Element (1999), the San Andreas fault and the offshore Hosgri fault present the most likely sources of groundshaking for Grover Beach. The following table from the Technical Background Report and recreated for the 2019 Hazard Mitigation Plan, show the potential sources of groundshaking and approximate distance from Grover Beach.

Table C.9 Sources of Groundshaking in the Vicinity of Grover Beach

Fault	Approximate Distance (kilometers)*	Maximum Earthquake	Maximum Probable Earthquake	Anticipated Acceleration Range (g)
Wilmar Avenue	1	6.5	4	0.1-0.7
Blind Thrust Point San Luis	3	7.5	6	0.3-0.7
Los Osos	9	7	5	0.1-0.4
Pecho	6	6.3	3	<0.1-0.3
Casmalia-Orcutt- Little Pine	19	7.5	6	0.1-0.4
Hosgri	21	7.5	6.5	0.2-0.3
Rinconada	23	7.5	6.3	0.1-0.3
Los Alamos- Base Line	27	7	5.8	0.1-0.2
San Andreas	66	8.3	8	0.1-0.2

*Measured from Grand Avenue and North 8th

Source: San Luis Obispo County Safety Element Technical Background Report, December 1999

As a coastal community, portions of Grover Beach are underlain by layers of unconsolidated sand and young alluvium which have a high potential to become liquefied during groundshaking events. The following table shows the various property types in the City of Grover Beach at risk of liquefaction. Based on this analysis residential property types, including mobile and manufactured homes, are at the greatest risk of liquefaction in Grover Beach compared to other types of properties in the community. There are 4,243 residential properties at risk with a combined improved value of \$747,660,747. Figure C.8 below depicts the areas of Grover Beach at risk of liquefaction.



**Table C.10 City of Grover Beach Moderate Liquefaction Risk by Property Type**

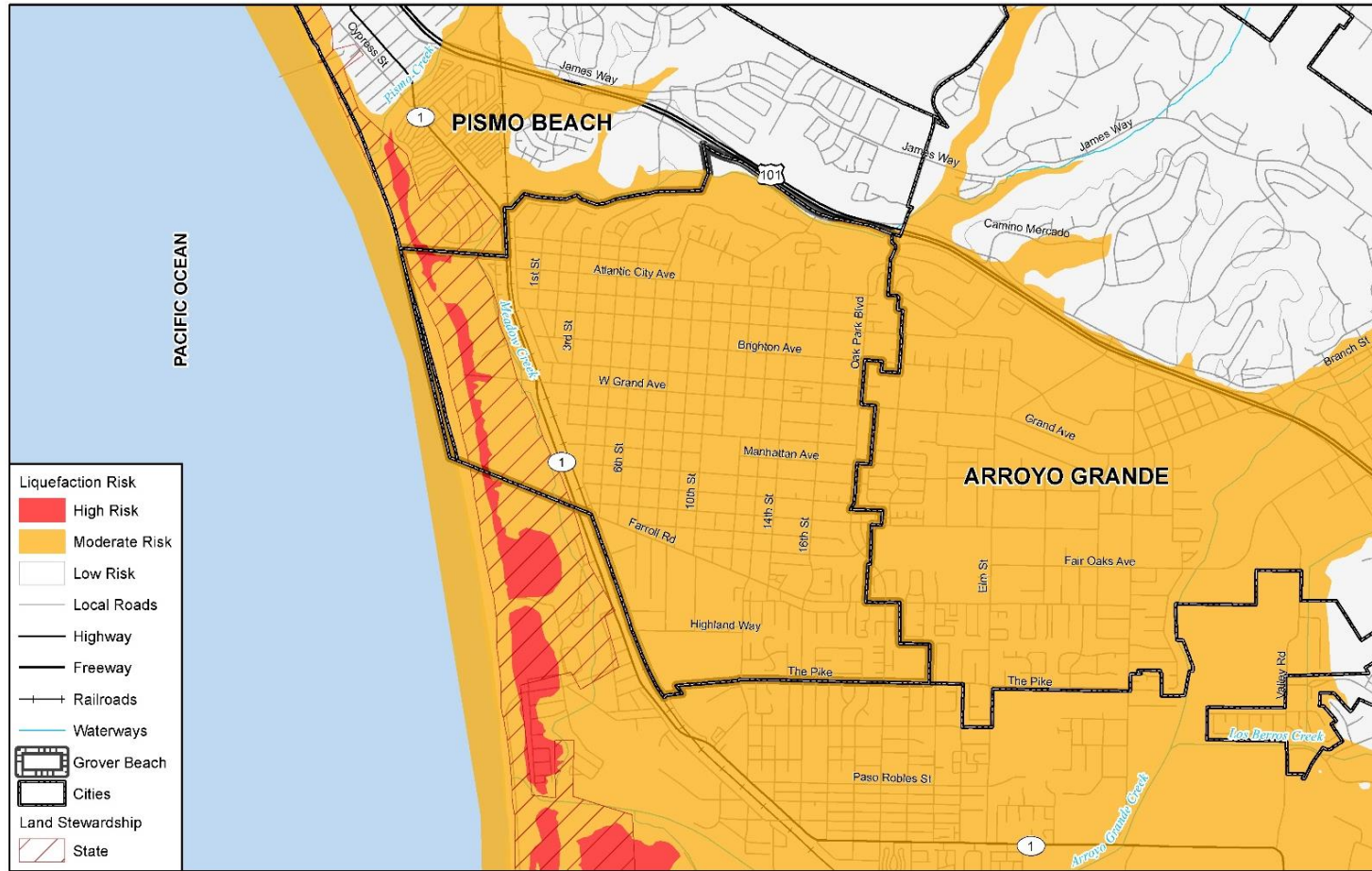
Property Type	Parcel Count	Improved Value
Agricultural	1	\$3,139
Commercial	242	\$71,707,475
Government/Utilities	37	\$21,533
Other/Exempt/Misc.	135	\$31,280,820
Residential	3,054	\$506,840,814
Multi-Family Residential	600	\$135,833,108
Mobile/Manufactured Homes	39	\$2,752,757
Residential: Other	550	\$102,234,078
Industrial	27	\$11,177,087
Vacant	27	\$4,262,765
Total	4,712	\$866,113,576

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis





Figure C.8 Areas of the City of Grover Beach at Risk of Liquefaction



Map compiled 6/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office, LAFCO

0 1 2 Miles





Flood

The City of Grover Beach suffers from regular flooding in isolated areas. Flooding generally occurs after heavy rainfall events and overtopping of creeks and rivers. The Arroyo Grande Creek poses a risk of overtopping and causes Meadow Creek to flood along the western and northern portions of the City. Flooding along Meadow Creek has caused roads to be blocked by flood waters, causing difficulties in access to and egress from portions of the City. According to the City’s Safety Element, northern and western portions of the City adjacent to Meadow Creek are at the greatest risk of being impacted by a 100-year flood. The areas at risk of flooding in the northern portions of the City are isolated to an area south of U.S. 101 and north of Nacimiento Avenue where a mobile home subdivision is located. The South Grover Beach and West Grover Beach neighborhoods are also reported to experience flooding issues. Flooding in the western portion of the City is isolated to areas west of the Union Pacific Railroad tracks and areas just east of the railroad tracks in the southwest corner of the City where drainage is trapped by the railroad grade.

The City’s 2015 LHMP notes two properties located below street level that are subject to local flooding issues. One parcel located at South 5th Street and Manhattan Avenue is subject to flooding from a 50-year storm event when sandbags are not used or if cars are parked on the street. The second parcel is located at 6th Street and Mentone Avenue is subject to a 75-100-year storm event, but after an asphalt berm was constructed flooding was alleviated under storms of lesser magnitude. Refer to the Flood Section in the Base Plan for further information on the areas of that are at risk of flooding as well as past flood events that have impacted the City of Grover Beach.

Values at Risk

A flood vulnerability assessment was completed during the 2019 update, following the methodology described in Section 5 of the Base Plan. Table C.11 and Table C.12 summarize the values at risk in the City’s 100-year and 500-year floodplain, respectively. These tables also detail loss estimates for each flood.

Table C.11 City of Grover Beach’s FEMA 1% Annual Chance Flood Hazard by Property Type

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate
Commercial	1	\$751,181	\$751,181	\$1,502,362	\$375,591
Government/Utilities	4	--	--	\$0	\$0
Other/Exempt/Misc.	1	--	--	\$0	\$0
Residential	6	\$928,659	\$464,330	\$1,392,989	\$348,247
Mobile/Manufactured Homes	21	\$1,087,774	\$543,887	\$1,631,661	\$407,915
Total	33	\$2,767,614	\$1,759,398	\$4,527,012	\$1,131,753

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

Table C.12 City of Grover Beach’s FEMA 0.2% Annual Chance Flood Hazard by Property Type

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate
Government/Utilities	1	--	--	\$0	\$0
Other/Exempt/Misc.	1	\$137,118	--	\$137,118	\$34,280
Mobile/Manufactured Homes	1	\$116,341	\$58,171	\$174,512	\$43,628
Vacant	1	\$62,500	--	\$62,500	\$15,625
Total	4	\$315,959	\$58,171	\$374,130	\$93,532

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis





Based on this analysis, the City of Grover Beach has significant assets at risk to the 100-year and greater floods. There are 33 improved parcels located within the 100-year floodplain for a total value of over \$4 million. An additional 4 improved parcels valued at \$374,130 fall within the 500-year floodplain.

Applying the 25 percent damage factor as previously described in Section 5 of the Base Plan, there is a 1 percent chance in any given year of a 100-year flood causing roughly \$1 million in damage in the City of Grover Beach, and a 0.2 percent chance in any given year of a 500-year flood causing \$1,225,285 in damages (combined damage from both floods). The tables above show the properties at risk to flooding in the City of Grover Beach in relation to the mapped floodplain, based on the parcels that have improvements and parcel centroids that intersect the flood hazard areas.

Limitations: This model may include structures in the floodplains that are elevated at or above the level of the base-flood elevation, which will likely mitigate flood damage. Also, the assessed values are well below the actual market values. Thus, the actual value of assets at risk may be significantly higher than those included herein.

Population at Risk

Using parcel data from the County and the digital flood insurance rate map, population at risk was calculated for the 100-year and 500-year floods based on the number of residential properties at risk and the average number of persons per household (2.47). The following are at risk to flooding in the City of Grover Beach:

- 100-year flood— 68 people
- 500-year flood— 3 people
- **Total flood**— 71 people

Insurance Coverage, Claims Paid, and Repetitive Losses

The City of Grover Beach joined the National Flood Insurance Program (NFIP) on August 1, 1984. NFIP Insurance data indicates that as of April 18, 2019, there were 36 flood insurance policies in force in the City with \$9,940,700 of coverage. All 36 policies were residential (32 for single-family homes, 2 for 2-4-unit homes and 2 for all other residential). There are 8 policies in A01-30 & AE zones and no policies in A zones. The remaining 28 are in B, C, and X zones.

There have been 2 historical claims for flood losses totaling \$14,881.56. Both claims were for residential properties (1 single family and 1 2-4 family) and were in B, C or X zones; According to the FEMA Community Information System accessed 4/18/2019 there are no Repetitive Loss or Severe Repetitive Loss properties located in the jurisdiction.

Critical Facilities at Risk

Critical facilities are those community components that are most needed to withstand the impacts of disaster as previously described. Based on GIS analysis of the provided critical facility dataset by the County of San Luis Obispo combined with the HIFLD dataset, there are no critical facilities at risk of flooding in a 100-year or 500-year storm event. However, the Planning Team notes that the City's Train Station as well as the Nacimiento Sanitary Sewer Lift Station (and possibly other critical facilities not included in the countywide dataset used for analysis) should be at risk of flooding of the 100-year event, as they fall within the AE special flood hazard areas.

Coastal Storm/Coastal Erosion/Sea Level Rise

The City of Grover Beach is characterized by its sandy beaches backed by low sand dunes covered with dense vegetation. The sandy beaches provide structures and development with moderate protection from storm





waves, although active erosion of beaches and dunes currently impacts low-lying coastal recreation uses (i.e. golf course), commercial, and residential (i.e. mobile homes) structures. The City has been impacted by storm wave hazards in the past; during a winter storm in 1983, timber beach access ramps were damaged by storm waves. Refer to Section 5 of the Base Plan for more information on the risk that coastal hazards pose to San Luis Obispo County and the City of Grover Beach.

As part of the 2019 HMP planning effort, a sea level rise risk assessment was completed to determine how sea level rise may affect coastal jurisdictions and critical facilities and how coastal flooding might be exacerbated in the future. Table C.13 and Table C.14 summarize the properties at risk of inundation by sea level rise and sea level rise combined with a 1% annual chance coastal flood. The area of inundation by sea level rise and sea level rise combined with the 1% coastal flood are shown in Figure C.9 and Figure C.10, respectively. No critical facilities were determined to be at risk in the sea-level rise scenarios. See Section 5.3.4 Coastal Storm/Coastal Erosion/Sea Level Rise in the base plan for more details on the scenarios and data sources used for this analysis.

Table C.13 Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Commercial	--	--	6	--	--	6
Government/Utilities	--	--	4	--	--	7
Other/Exempt/Misc.	--	--	4	--	--	9
Residential	--	--	2	--	--	15
Multi-Family Residential	--	--	3	--	--	9
Mobile/Manufactured Homes	--	--	--	--	--	1
Industrial	--	--	1	--	--	3
Total	--	--	20	--	--	50

Source: Wood analysis with USGS CoSMoS 3.1 data

Table C.14 Improved Values of Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

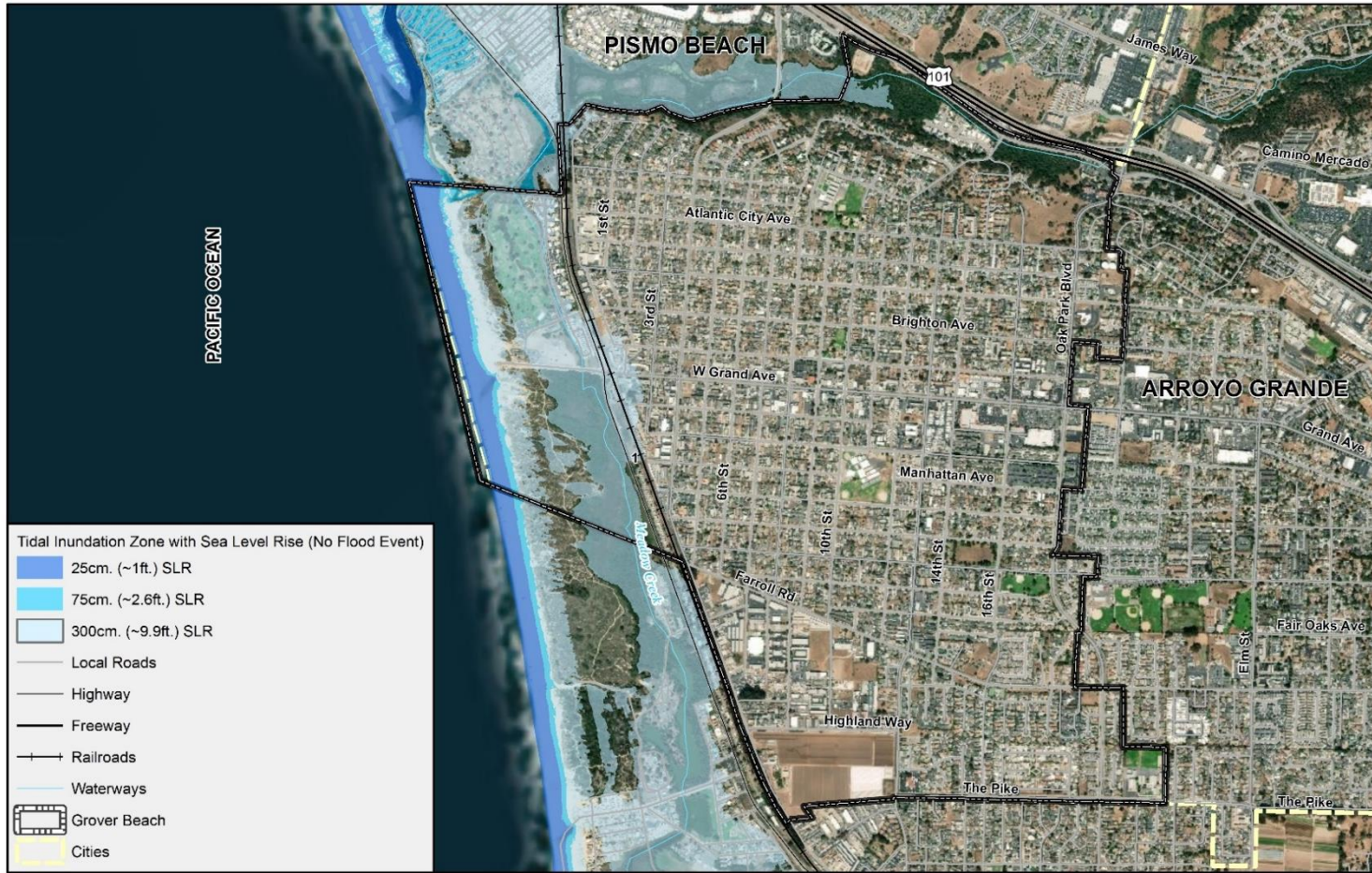
Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Commercial	--	--	\$834,388	--	--	\$834,388
Government/Utilities	--	--	--	--	--	--
Other/Exempt/Misc.	--	--	\$3,181,722	--	--	\$3,883,627
Residential	--	--	\$198,637	--	--	\$1,675,517
Multi-Family Residential	--	--	\$971,575	--	--	\$3,466,989
Mobile/Manufactured Homes	--	--	--	--	--	\$305,343
Industrial	--	--	\$62,392	--	--	\$107,956
Total	--	--	\$5,248,714	--	--	\$10,273,820

Source: Wood analysis with USGS CoSMoS 3.1 data





Figure C.9 Grover Beach Sea Level Rise Scenario Analysis: Tidal Inundation Only



Map compiled 8/2019;
 Intended for planning purposes only.
 Data Source: USGS CoSMoS v3.1.
 San Luis Obispo County, US Census TIGER
 Database, CA Open Data Portal, LAFCO.
 Note: SLR = Sea Level Rise

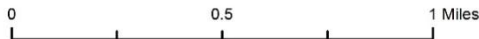
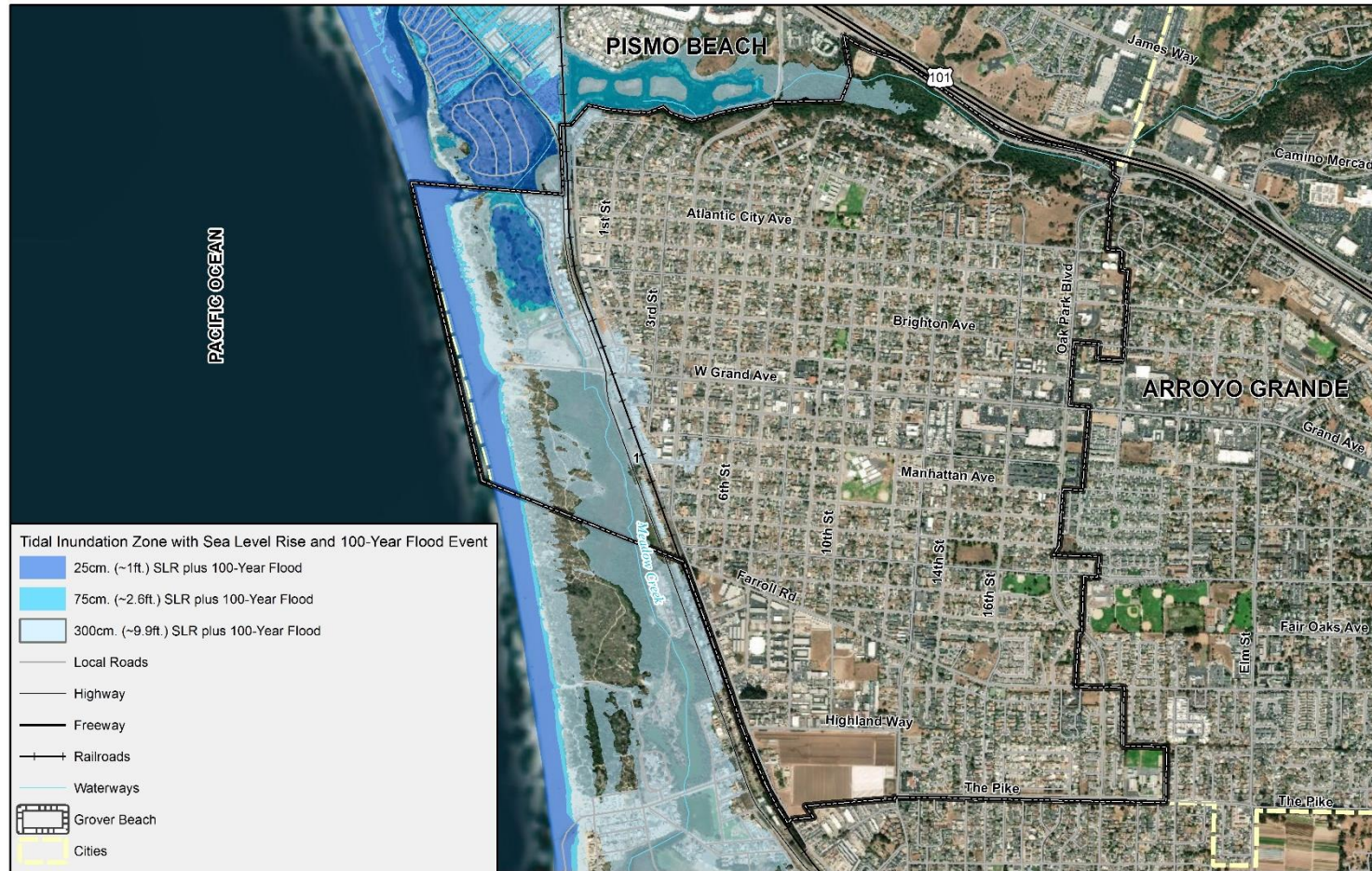




Figure C.10 Grover Beach Sea Level Rise Scenario Analysis: Tidal Inundation and 1% Annual Chance Flood



Map compiled 8/2019;
intended for planning purposes only.
Data Source: USGS CoSMoS v3.1.
San Luis Obispo County, US Census TIGER
Database, CA Open Data Portal, LAFCO.
Note: SLR = Sea Level Rise

0 0.5 1 Miles





Tsunami and Seiche

Tsunami inundation poses a risk to all coastal communities in the County of San Luis Obispo. Offshore faults and related seismic activity could cause a tsunami event off the coast of Grover Beach, even if the faults are thousands of miles away. Grover Beach's wide beaches and coastal dunes in general provide protection from coastal hazards, although the low-lying areas where Meadow Creek meets the ocean is considered to be at moderate risk of tsunami hazards. Based on the GIS analysis there is one critical facility, a water treatment facility, that is at risk of tsunami inundation. According to the City's 2015 LHMP the areas shown on Figure C.8 are vulnerable to tsunami hazards.

Table C.13 below breaks down the tsunami risk in the City of Grover Beach by property type.

Table C.15 Properties at Risk of Tsunami Inundation

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	64	\$11,703,763	\$11,703,763	\$23,407,526	\$23,407,526	--
Government/Utilities	14	--	--	\$0	\$0	--
Other/Exempt/Misc.	34	\$15,190,469	--	\$15,190,469	\$15,190,469	--
Residential	59	\$6,180,075	\$3,090,038	\$9,270,113	\$9,270,113	148
Multi-Family Residential	31	\$8,830,232	\$4,415,116	\$13,245,348	\$13,245,348	78
Mobile/Manufactured Homes	1	\$305,343	\$152,672	\$458,015	\$458,015	3
Residential: Other	8	\$1,100,411	\$550,206	\$1,650,617	\$1,650,617	20
Industrial	14	\$5,461,004	\$8,191,506	\$13,652,510	\$13,652,510	--
Vacant	8	\$1,859,350	--	\$1,859,350	\$1,859,350	--
Total	233	\$50,630,647	\$28,103,300	\$78,733,947	\$78,733,947	249

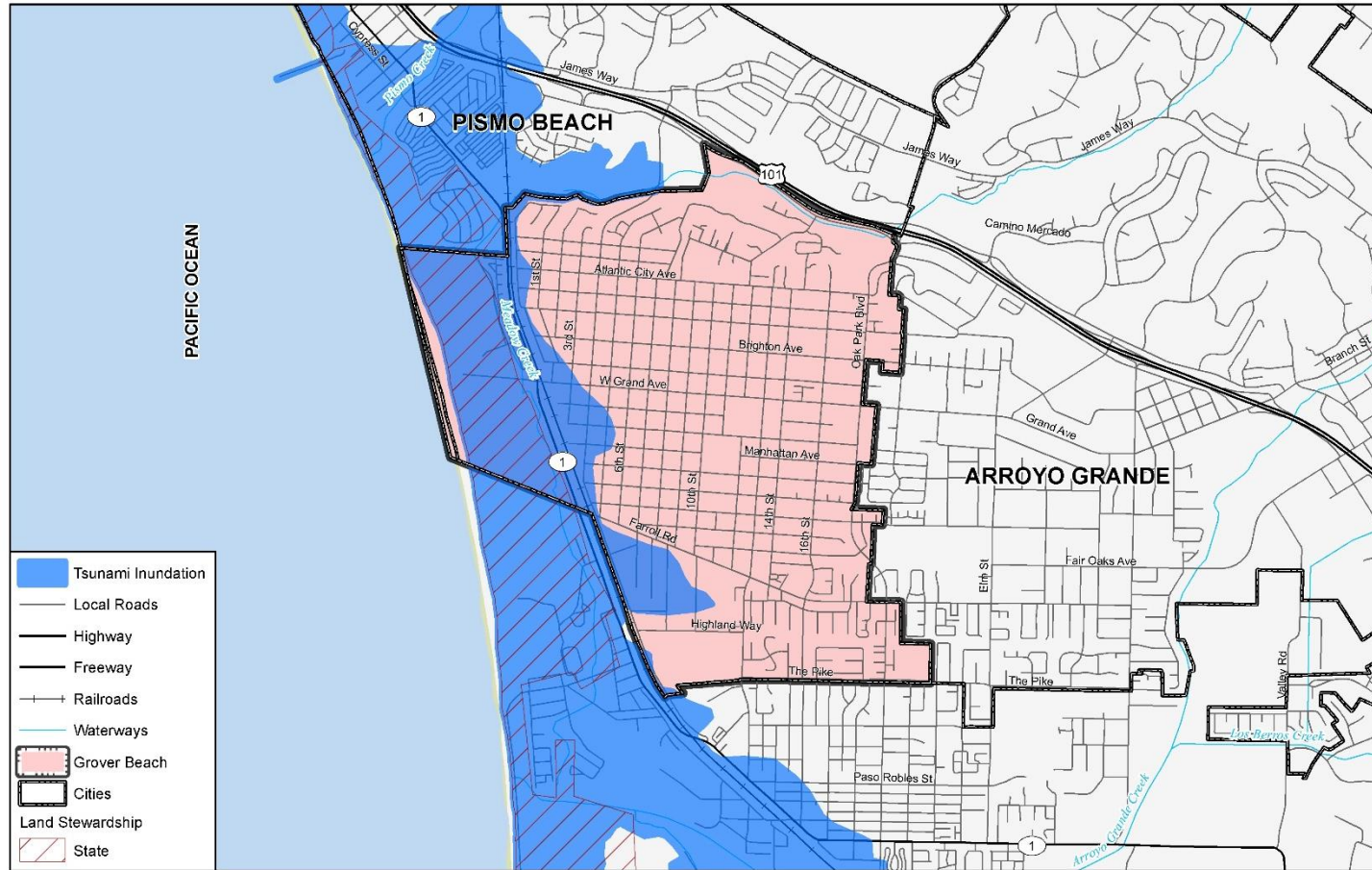
Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Based on this analysis there are 233 properties with a combined value of over \$78 million vulnerable to the impacts of a tsunami. Of the properties at risk, 99 are residential properties (including mobile/manufactured homes) and have a combined loss estimate of over \$16 million and 64 are commercial properties.





Figure C.11 Areas of City of Grover Beach at Risk to Tsunami Inundation



Map compiled 6/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCO, CA Dept. of Conservation





The area along Highway 1 is also expected to be in the tsunami inundation zone, which would have cascading impacts on people being able to evacuate. The LPT noted that Grover Beach swells with beachgoing tourists including an estimated 10,000 to 40,000 visitors to the Oceano Dune State Park on a busy summer weekend or holiday; these visitors may not be familiar with the risk posed by tsunamis, leading them to ignore warnings. Refer to Section 5 of the Base Plan for additional information related to the past tsunami events and analysis on future vulnerability.

Human Caused: Hazardous Materials

The Cal OES Warning Center reports 21 hazardous materials incidents in the City of Grover Beach from 1994 through October 24, 2018; as noted in Section 5.3.13 of the county plan, this likely excludes a large number of unreported minor spills. This constitutes 1% of the hazardous materials incidents reported countywide during the same time frame and averages out to roughly 0.8 incidents per year. As noted in Section 5.3.13, only around 6% of reported hazardous materials incidents result in injuries, fatalities, or evacuations. As shown in Base Plan there are no significant hazardous materials facilities located in the City. However, Grover Beach sits within the Emergency Planning Zone for the Diablo Canyon Nuclear Power Plant.

C.4 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory which of these policies or programs were in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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 jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The City of Grover Beach's capabilities are summarized below.





C.4.1 Regulatory Mitigation Capabilities

Table C.16 City of Grover Beach Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	Yes	
Zoning ordinance	Yes	
Subdivision ordinance	Yes	
Growth management ordinance	Yes	
Floodplain ordinance	Yes	Chapter 5 Development Code, 2012
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	Stormwater only
Building code	Yes	
Fire department ISO rating	Yes	3
Erosion or sediment control program	Yes	
Stormwater management program	Yes	
Site plan review requirements	Yes	
Capital improvements plan	Yes	
Economic development plan	Yes	City of Grover Beach Final Economic Development Strategy April 11, 2017
Local emergency operations plan	Yes	
Other special plans	Yes	Local Coastal Program (Aug. 15, 2014), Open Space Management Plan, Continuity of Operations Plan; Recovery Plan
Flood Insurance Study or other engineering study for streams	Yes	
Elevation certificates (for floodplain development)	Yes	

C.4.2 Administrative/Technical Mitigation Capabilities

Table C.17 identifies the personnel responsible for activities related to mitigation and loss prevention in Grover Beach





Table C.17 City of Grover Beach Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/ No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	Community Development, Public Works Director/Engineer
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Public Works Director/Engineer, Building official (contract)
Planner/engineer/scientist with an understanding of natural hazards	Yes	Public Works Director/Engineer, Building official (contract)
Personnel skilled in GIS	Yes	Community Development
Full time building official	No	Contract
Floodplain manager	Yes	Public Works Director/Engineer (?)
Emergency manager	Yes	
Grant writer	No	
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	
Warning systems/services (Reverse 9-11, outdoor warning signals)	Yes	

C.4.3 Fiscal Mitigation Capabilities

Table C.18 identifies financial tools or resources that the City could potentially use to help fund mitigation activities.

Table C.18 City of Grover Beach Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes (As needed)
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

C.4.4 Opportunities for Enhancement

Based on the capabilities assessment, the City of Grover Beach has several existing mechanisms in place that already help to mitigate hazards. In Grover Beach’s 2015 LHMP the City conducted a “self-assessment of capability” in which they rated (limited to high) the degree of capability they believed the community had. The City noted having a high degree of capability for planning and regulatory capabilities and political capability, but a moderate rating for their administrative, technical, and fiscal capabilities. This may be an opportunity for the City to expand or improve on these policies and programs to further protect the community. Future





improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform City staff members on how best to integrate hazard information and mitigation projects into their departments. Continuing to train City staff on mitigation and the hazards that pose a risk to the City of Grover Beach will lead to more informed staff members who can better communicate this information to the public.

C.5 Mitigation Strategy

C.5.1 Mitigation Goals and Objectives

During the 2019 Planning Process the Grover Beach Planning Team reviewed the mitigation goals and objectives from the 2015 LHMP and determined the existing number and intent of the goals and objectives continue to be appropriate, and no revisions or additions were necessary. The City of Grover Beach's 2019 hazard mitigation goals and objectives are the following:

Goal 1. Minimize the level of damages and losses due to earthquake.

Objective 1.a - Develop a comprehensive approach to reducing the level of damage and losses due to earthquakes.

Objective 1.b – Perform a safety review of all current City structures and facilities, paying close attention to disaster proofing all facilities. Convene a group of department heads to prioritize the needs and research funding strategies.

Objective 1.c – Develop disaster preparedness caches of supplies, tools, and equipment for use by City employees, so that they may continue to perform their duties during a major emergency.

Goal 2. Minimize the level of damage and losses due to flooding.

Objective 2.a – Research and identify flooding vulnerability within the City of Grover Beach.

Goal 3. Minimize the level of damage and losses to people due to wildland and structure fires.

Objective 3.a – Educate the public about wildland and structure fire danger.

Goal 4. Minimize the level of damage and losses to people and surrounding areas due to tsunami events and increase understanding and response to tsunamis.

Objective 4.a – Increase the understanding and response to tsunamis within the community by working with Federal and State agencies to better understand and prepare for the hazards of tsunamis, and improve the ability to respond to tsunami warnings provided by NOAA's West Coast and Alaska Tsunami Warning Center.

Goal 5. Minimize the potential for dam failure and the impacts from such incidents.

Objective 5.a – Work with regional partners to reduce the negative impact on the community as a result of a dam incident or failure through proper planning and infrastructure maintenance and improvement.

Objective 5.b – Develop a public outreach program to educate residents and businesses in the dam failure inundation areas on their responsibilities and emergency preparedness.





Objective 5.c – Develop a dam failure emergency response plan.

Objective 5.d – Develop a hazard alert system to allow the city and regional partners to contact and alert our residents and businesses about the possibility of a dam failure and flooding caused by a dam failure.

Continued Compliance with the National Flood Insurance Program

The City has been an NFIP participating community since 1984. In addition to the mitigation actions identified herein the City will continue to comply with the NFIP. This includes ongoing activities such as enforcing local floodplain development regulations, including issuing permits for appropriate development in Special Flood Hazard Areas 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.

C.5.2 Completed 2015 Mitigation Actions

Grover Beach has not completed any of the mitigation actions from the 2015 LHMP, although of Grover Beach's thirteen mitigation actions, nine (9) are implemented annually and two (2) are in progress to be completed. These actions that are implemented annually help to reduce vulnerability to hazards and increase local capability to implement additional mitigation actions.

C.5.3 Mitigation Actions

The planning team for the City of Grover Beach 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. Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. Actions with an '*' are those that mitigate losses to future development.





Table C. 19 City of Grover Beach’s Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
GB.1	Adverse Weather: Wind, Rain, Heat	Reduce the negative impact on the community due to weather-related incidents that could include heavy rain, high winds and extreme heat. Benefits: Improved water runoff in low-lying areas, reduced pooling and low impact street flooding; tree trimming, and removal of old trees will reduce falling limbs and trees	Public Works Department	\$125,000 - \$250,000	PDM grants; general funds; capital improvement funds; staff time	Low	3-5 yrs.	New
GB.2	Agricultural Pest Infestation and Disease	Help reduce the negative impact on the agricultural community due to pest infestation and disease. Benefits: Through community development and planning, work with existing agricultural property owners to develop safeguards to protect against pest infestation and disease	Community Development Department	Little to no Cost	Private funding and staff time	Medium	3-5 yrs.	New
GB.3*	Coastal Storm, Erosion and Sea Level Rise	Work in partnership with the State of California and County of San Luis Obispo to identify community impacts associated with coastal erosion through sea level rise and storms. In coordination with the State and County, map areas of the City that may be affected by sea level rise. Benefits: Lessen the impacts on the community from the effects of sea level rise and coastal erosion	Public Works Department; Community Development; Emergency Preparedness	Less than \$10,000	PDM grants; general funds; capital improvement funds; staff time	Medium	More than 5 yrs.	New
GB.4*	Dam Failure	In collaboration with state, county and other local governments, reduce the negative impact on the community as a result of a dam incident or failure through proper planning and infrastructure maintenance and improvement. City Staff will map areas of potential inundation via its Geographic Informational System and continue to implement the San Luis Obispo County Office of Emergency Services (OES) Emergency Plan. Benefits: Lessen the potential	Public Works Department; Community Development; Emergency Preparedness	Less than \$10,000	PDM grants; general funds; capital improvement funds; staff time	Medium	3-5 yrs.	New





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
		for dam failure and reduce the likelihood of this hazard occurring						
GB.5*	Drought	In collaboration with state, county and other local governments, reduce the negative impact of drought on the community through proper planning and infrastructure maintenance and improvement; continue to monitor well levels to prevent seawater intrusion while pursuing opportunities for regional recycled water projects that will result in groundwater injection; implement water efficient landscaping. Benefits: Avoid sea water intrusion; lessen potential negative impacts on the community as a result of drought or water shortage	Public Works; Community Development Department	Less than \$10,000	PDM grants; general funds; capital improvement funding; staff time	Medium	More than 5 yrs.	New
GB.6	Earthquake	Identify and catalog seismically vulnerable structures	Emergency Preparedness	Less than \$10,000	PDM Grant, General Funds, Capital Improvement funds, Staff time	High	More than 5 yrs.	Deferred. Limited URM structures. Limited staff and fiscal resources
GB.7*	Earthquake	Implement policies, procedures and regulations which reduce the exposure to earthquake hazards	Emergency Preparedness	Little to no cost	PDM Grant, General Funds, Capital Improvement funds, Staff time	High	More than 5 yrs.	Annual Implementation. Building and Fire Codes
GB.8	Earthquake	Protect the improved property and infrastructure vulnerable to earthquake hazards	Emergency Preparedness	Less than \$10,000	PDM Grant, General Funds, Capital Improvement	High	More than 5 yrs.	Annual Implementation. Building and Fire Codes





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
					funds, Staff time			
GB.9	Fire	Encourage the 100' Defensible Space around structures in the Wildland Urban Interface	Fire Department	Little to no cost	California Fire Safe Council, Fire Prevention Grant Funding, PDM Grant, General Funds, Capital Improvement funds, Staff Time	Medium	Annual	Annual Implementation
GB.10	Fire	Continue weed abatement program	Fire Department	Little to no cost	California Fire Safe Council, Fire Prevention Grant Funding, PDM Grant, General Funds, Capital Improvement funds, Staff Time	Medium	Annual	Annual Implementation
GB.11 *	Fire	Enforce building codes and ordinances that eliminate the use of wood shake roofs	Fire Department	Little to no cost	California Fire Safe Council, Fire Prevention	Medium	Annual	Annual Implementation





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
					Grant Funding, PDM Grant, General Funds, Capital Improvement funds, Staff Time			
GB.12 *	Fire	Enforce codes and ordinances that require fire sprinkler systems in all new structures constructed	Fire Department	Little to no cost	California Fire Safe Council, Fire Prevention Grant Funding, PDM Grant, General Funds, Capital Improvement funds, Staff Time	Medium	Annual	Annual Implementation
GB.13 *	Fire	Create a Fire-Smart Community by developing a comprehensive approach to reducing damage and loss due to fires; encourage the 100' defensible space around structures in the Wildland-Urban Interface (WUI); continue weed abatement program to reduce the threat of fire around open spaces; enforce building codes and ordinances that eliminate the use of wood shake roofs; enforce codes and ordinances that require fire sprinkler systems consistent with the California Building Code	Fire Department; Community Development; Emergency Preparedness	Little to no cost	California Fire Safe Council; Fire Prevention Grants; PDM Grants; FEMA funding; General Funding; Capital Improvement	Medium	More than 5 yrs.	New





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
					Funds; Staff Time			
GB.14 *	Flood	Implement policies procedures and regulations which reduce the exposure to flood hazards; protect the improved property, natural resources and life vulnerable to flood hazards; reduce the vulnerability of community assets, particularly research and identify flooding vulnerability within the city by identifying flood vulnerability within the city by identifying parcels with flood zones; identify funding needs and funding sources; apply for pre-disaster mitigation grants and commence mitigation projects; conclude mitigation projects; evaluate effectiveness of mitigation actions and critical facilities located in the 100-year floodplain	Public Works; Parks and Recreation; Community Development; Emergency Preparedness	Little to no cost	PDM grants; general funds; capital improvement funds; staff time	Medium	More than 5 yrs.	New
GB.15 *	Flood	Implement policies, procedures and regulations which reduce the exposure to flood hazards	Recreation and Maintenance Services, Public Works and Emergency Preparedness	Little to no cost	PDM Grant, General Funds, Capital Improvement funds, Staff time	High	More than 5 yrs.	Annual Implementation
GB.16	Flood	Protect the improved property and infrastructure vulnerable to flood hazards	Recreation and Maintenance Services, Public Works and Emergency Preparedness	\$500,000 to \$1,000,000	PDM Grant, General Funds, Capital Improvement funds, Staff time	High	More than 5 yrs.	Annual Implementation





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
GB.17	Flood	Reduce the vulnerability of community assets, particularly critical facilities, located in the 100-year floodplain	Recreation and Maintenance Services, Public Works and Emergency Preparedness	\$500,000 to \$1,000,000	PDM Grant, General Funds, Capital Improvement funds, Staff time	High	More than 5 yrs.	Annual Implementation
GB.18	Hazardous Materials	Require businesses that use, store or transport hazardous materials to ensure that adequate measures are taken to protect public health and safety; coordinate with allied agencies to prepare for hazmat incidents; support training and exercises in response to hazmat incidents; coordinate responses and investigations with the county hazmat team and Five Cities Fire; add gas pipeline mapping to the City's GIS resources; continue to monitor the manufacture, storage, transport of hazardous materials by working with environmental health and public safety agencies to identify effective mitigation actions or requirements that will help reduce the risk of incidents, including the spread of released materials; coordinate with the rail line industries to prepare for train-related hazmat incidents	Fire Department; Community Development; Emergency Preparedness	Less than \$10,000	California Fire Safe Council; Fire Prevention Grants; PDM Grants; FEMA funding; General Funding; Capital Improvement Funds; Staff Time	Medium	3-5 yrs.	New
GB.19	Tsunami	Develop a comprehensive action plan to reduce damage from a tsunami; display standardized and easy to read signs alerting community members of tsunami hazard zones, evacuation routes and evacuation sites; review tsunami inundation areas and educational needs; review emergency policies and training needs; review tsunami maps and evacuation plans	Public Works; Community Development; Emergency Services	\$10,000 to \$50,000	PDM grants; general funds; capital improvement funds; staff time	Medium	3-5yrs.	New





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
GB.20	Tsunami	Review Tsunami inundation areas and educational needs	Police Department	Little to no costs	PDM Grant, General Funds, Capital Improvement funds, Staff time	Medium	3-5 yrs.	In progress. Countywide Tsunami Plan, and identification of local resource needs. Staff and fiscal constraints
GB.21	Tsunami	Review emergency policies and training needs	Police Department	Little to no costs	PDM Grant, General Funds, Capital Improvement funds, Staff time	Medium	Annual	Annual Implementation
GB.22	Tsunami	Review Tsunami plans, maps, and evacuation plans	Police Department	Little to no costs	PDM Grant, General Funds, Capital Improvement funds, Staff time	Medium	3-5 yrs.	In progress. Countywide Tsunami Plan, and identification of local resource needs. County Fire Chiefs identified city-specific evacuation plans as a strategic priority. Staff and fiscal constraints
GB.23	Dam Failure	Work with our regional partners to reduce the negative impact on the community as a result of a dam incident or failure through proper planning and infrastructure maintenance and improvement.	Public Works Department, Community Development Department,	\$50,00 - \$100,000	PDM Grant, FEMA grant, General Funds, Capital Improvement	Medium	5 yrs	New





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
			Emergency Preparedness		funds, Staff time			
GB.24	Dam Failure	Develop a public outreach program to educate residents and businesses in the dam failure inundation areas on their responsibilities and emergency preparedness.	Public Works Department, Community Development Department, Emergency Preparedness	\$2,500 - \$5,000	PDM Grant, FEMA grant, General Funds, Capital Improvement funds, Staff time	Medium	2-3 yrs	New
GB.25	Dam Failure	Develop a dam failure emergency response plan.	Public Works Department, Community Development Department, Emergency Preparedness	\$5,000 to \$10,000	PDM Grant, FEMA grant, General Funds, Capital Improvement funds, Staff time	Medium	2-3 yrs	New
GB.26	Dam Failure	Develop a hazard alert system to allow the city and regional partners to contact and alert our residents and businesses about the possibility of a dam failure and flooding caused by a dam failure.	Public Works Department, Community Development Department, Emergency Preparedness	Less than \$1,000,000	PDM Grant, FEMA grant, General Funds, Capital Improvement funds, Staff time	Low - Medium	5 yrs	New

* mitigates losses to future development





C.6 Implementation and Maintenance

Moving forward, the City will use the mitigation action table in the previous section to track progress on implementation of each project. As illustrated in Section 7.3.1 of the Base Plan, much progress has been made since the plan was originally developed. Implementation of the plan overall is discussed in Section 8 in the Base Plan.

C.6.1 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 may utilize the hazard information when designing and implementing the City's capital improvement projects, and the Planning and Building Divisions within the Community Development Department may utilize the hazard information when reviewing a site plan or other type of development applications. The City will also incorporate this LHMP into the Safety Element of their General Plan, as recommended by Assembly Bill (AB) 2140.

As described in Section 8 Implementation and Monitoring, the HMPC representatives from Grover Beach 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 HMPC plan review meeting.

C.6.2 Monitoring, Evaluation and Updating the Plan

The City will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Section 8 of the Base Plan. The City will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The Chief of Police will be responsible for representing the City in the County HMPC, 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.





D.1 Community Profile

D.1.1 Mitigation Planning History and 2019 Process

This Annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan Update. This Jurisdictional Annex builds upon the previous version of the City of Paso Robles Local Hazard Mitigation Plan completed in February 2006; that previous mitigation plan was not incorporated into the City's General Plan, as this updated mitigation plan will be. A planned review of the City's regulations and procedure to ensure they reflect the goals established in the 2006 plan did not take place, but will be conducted following the adoption of this updated plan. The Fire Department's staff represented the City of Morro Bay on the County HMPC and took the lead for developing the plan and this annex in coordination with the Morro Bay Local Planning Team (Planning Team). A review of jurisdictional priorities found no significant changes in priorities since the last update.

The Local Planning Team will be responsible for implementation and maintenance of the plan. Table D.1 summarizes the City's planning team for the plan revision process.

Table D.1 Morro Bay Hazard Mitigation Plan Revision Planning Group

Department or Stakeholder	Title
Fire Department	Fire Marshall
Fire Department	Fire Chief
Police Department	Police Chief
Harbor Department	Harbor Director
Community Development	City Engineer

More details on the planning process followed and how the jurisdictions, service districts and stakeholders participated can be found in Chapter 3 of the Base Plan (Planning Process), as well as how the public was involved during the 2019 update.

D.1.2 Geography and Climate

The City of Morro Bay (City) is located on the central coast of California, bordered by the Pacific Ocean to the west, the Los Osos Community Services District to the south, and the Cayucos Community Services District to the north. A shallow agricultural valley extends eastward from the City limits, which is surrounded by the Santa Lucia Coastal Range to the north, the Seven Sisters on the south, and the City of San Luis Obispo to the east. The City's topography varies from level coastal terrain to rolling hills and a few steeper escarpments in the North Atascadero Beach area and Southern portions on Black Mountain. The City's elevations range from sea level to a height of approximately 640 feet on Black Mountain. The highest elevations in the vicinity are located in the Santa Lucia Coastal Range where many peaks are 2,000 to 3,400 feet above mean sea level (MSL). The vegetation throughout the City includes Central California Coastal Community habitats, particularly the coastal wetland habitat with diverse tree species and native chaparral communities.

The City of Morro Bay is a small coastal town in a rural setting. Morro Bay's harbor provides a port of refuge, a working waterfront, commercial fishing and recreational boating facilities, shopping and sightseeing, bird watching, and eco-tourism. In 1994, the Governor established Morro Bay as California's first State Estuary, and in October 1995 it was accepted into the National Estuary Program (NEP).





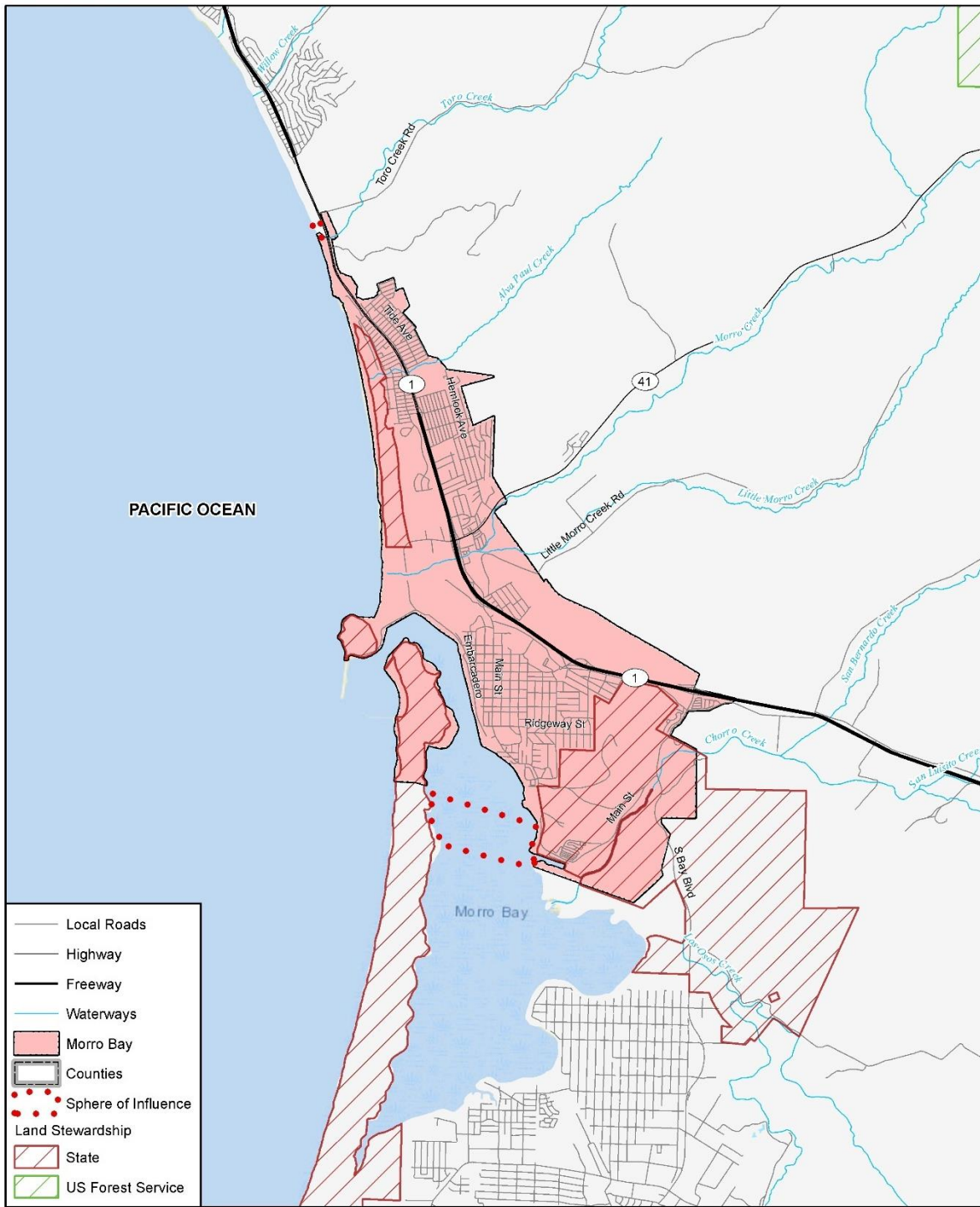
This portion of the central coast of California generally has cool, foggy summers and low rainfall. The Pacific Ocean exerts a tremendous influence on temperature. The area is characterized by a Coastal climate with a wet season from October to early April. In the City of Morro Bay, the total annual precipitation is approximately 20 to 25 inches. In winter, the average high temperatures range from the 50's to the 60's, with lows seldom reaching into the 30's. In summer, the average daily highs are in the 60's and 70's, while lows are typically in the 50's and 60's.

Figure D.1 below shows the location and geographic context of the City of Morro Bay.





Figure D.1 The City of Morro Bay



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County, US Census
 TIGER Database, CA Open Data Portal,
 BLM/California State Office, LAFCO, HIFLD





The City of Morro Bay 's existing Sphere of Influence is approximately 100+/- acres beyond the City limits and includes two general areas, one within the bay south of town adjacent to the marina and the other north of town along the beach (City of Morro Bay, 2017).

D.1.3 History

The City of Morro Bay is a small coastal town in a rural setting. What makes Morro Bay unique is an image reminiscent of California fishing ports in the 1950's and 1960's, a fishing village nestled in a rural setting around a bay and harbor with Morro Rock towering over the entrance. Morro Bay's harbor provides a port of refuge, a working waterfront, commercial fishing and recreational boating facilities, shopping and sightseeing, bird watching, and eco-tourism, all of which make it a unique tourist and recreation destination.

Archaeological evidence suggests that Native Americans including the Chumash Tribe settled in northern Santa Barbara County and San Luis Obispo County more than 9,000 years ago (City of Morro Bay Local Hazard Mitigation Plan, 2012). Following an annual cycle of hunting, fishing, fowling, and harvesting, the Native American peoples adapted to changing environmental conditions and grew into a large, complex society. In 1542, Juan Rodriguez Cabrillo, a Portuguese navigator, sailed into the bay named "Los Esteros." He is acknowledged as the first European to discover the land of Upper California, including the area now known as Estero Bay and Morro Bay. In 1870, the township of Morro Bay was established with a population of approximately 200.

Until the Second World War, the area was relatively undeveloped. Most of the small community of Morro Bay was built on the bluff tops. In 1942, the Department of the Navy initiated a national defense project to construct an amphibious training base in Morro Bay. From 1942 to 1944, the north and south breakwaters, the two T-Piers, and the inner harbor revetment from Coleman Beach to the sandspit were constructed. In addition, the federal government dredged the current Navy and Morro Channels and deposited the dredge spoils behind the inner harbor revetment to create the current Embarcadero Road area on what had previously been tidal flats.

In 1994, the Governor established Morro Bay as California's first State Estuary. In October 1995 Morro Bay was accepted into the National Estuary Program (NEP) primarily because of long-term grass-roots efforts and because it was the first ever State Estuary. The Morro Bay National Estuary Program (MBNEP) is one of 28 national programs currently working to safeguard the health of some of the nation's most important coastal areas. Like the NEP, the City of Morro Bay desires to protect and conserve the bay that bears its name.

D.1.4 Economy

In 2014, 80.4% of the 4,342 residents of Morro Bay were employed outside of the City limits (Morro Bay Economic Development Roadmap, 2017). Morro Bay is a largely built-out community with limited space for residential, commercial, and industrial growth; only 1.25% of the area is considered undeveloped, which limits the City's potential economic growth. Morro Bay contains four economic activity centers: Downtown, Embarcadero, Quintana, and North Main. Each of these economic centers have the opportunity for renovation and enhancement of space and development. Since Dynegy decommissioned their natural gas-burning power plant facility in 2015, the City's economic base has been driven mainly by commercial fishing and tourism.

The utilities infrastructure in the City includes water provision, and wastewater collection and treatment (City of Morro Bay Local Hazard Mitigation Plan, 2012). The public services infrastructure in the City include fire protection and emergency services, police protection, public schools, libraries, the harbor and its associated infrastructure, and solid waste collection and disposal.





Select estimates of economic characteristics for the City of Morro Bay are shown in Table D.2 below. Table D.3 and Table D.4 show the occupational and industry breakdown of the City of Morro Bay's labor force based on estimates from the 2013-2017 American Community Survey.

Table D.2 City of Morro Bay Economic Characteristics

Characteristic	City of Morro Bay
Population Estimates (as of 2018)	10,581
Population Percent Change (2010-2018 estimates)	3.4%
Persons under 5 Years, Percent	3.8%
Persons over 65 Years, Percent	27.7%
Foreign born Person, Percent (2013-2017)	10.5%
Median Gross Rent (2013-2017)	\$1,387
Median value of owner-occupied housing units (2013-2017)	\$535,300
High School Graduate or Higher, Percent (2013-2017)	91.4%
Mean Travel to Work in Minutes (2013-2017)	21.8
Median Household Income (in 2017 dollars, for 2013-2017)	\$61,690
Persons in Poverty, Percent	10.1%

Source: U.S. Census Bureau American Community Survey 2018 - <https://www.census.gov/quickfacts/morrobaycitycalifornia>

Table D.3 City of Morro Bay Employment by Occupation

Occupation	% Employed	# Employed
Sales and Office Occupations	22.6%	1,048
Management, Business, Science, and Arts Occupations	38.6%	1,792
Service Occupations	18.7%	869
Production, Transportation, and Material Moving Occupations	10.8%	501
Natural Resources, Construction, and Maintenance Occupations	9.3%	433
Total		4,643

Source: U.S. Census Bureau American Community Survey 2013-2017, 5-Year Estimates www.census.gov



**Table D.4 City of Morro Bay Employment by Industry**

Industry	% Employed	# Employed
Educational Services, and Health Care and Social Assistance	25.6%	1,187
Retail Trade	13.1%	610
Professional, Scientific, and Mgmt., and Administrative and Waste Mgmt. Services	13.6%	631
Manufacturing	4.5%	208
Arts, Entertainment, and Recreation, and Accommodation, and Food Services	13.5%	626
Construction	8.1%	377
Finance and Insurance, and Real Estate and Rental and Leasing	3.7%	171
Public Administration	3.2%	150
Other Services, Except Public Administration	5.8%	268
Wholesale Trade	2.0%	94
Transportation and Warehousing, and Utilities	3.8%	175
Agriculture, Forestry, Fishing and Hunting, and Mining	1.0%	48
Information	2.1%	98
Total		4,643

Source: U.S. Census Bureau American Community Survey 2013-2017, 5-Year Estimates www.census.gov

D.1.5 Population

In May 2019, the State Department of Finance released preliminary population data for the State to reflect wildfire-driven changes to local populations. According to the report, the City of Morro Bay had a population of 10,439 persons as of January 2019, which accounts for approximately 26.9% of the County's population. This is slightly less than accounted for in the 2018 U.S. Census Bureau estimates from 2018, possibly due to small migration amounts following the 2018 fires. Table D.5 below summarizes a few key population characteristics for the City of Morro Bay.



**Table D.5 City of Morro Bay Demographic and Social Characteristics**

Characteristic	City of Morro Bay
Gender/Age	
Male	5,228
Female	5,340,
Median age	49.4
Under 5 years	400
Under 18 years	1,508
65 years and over	2,929
Race/Ethnicity	
White	9,620
Asian	317
Black or African American	140
American Indian/Alaska Native	82
Hispanic or Latino (of any race)	1,362
Education	
High school graduate or higher	7,472
Disability Status	
Population with a disability	1,334

Source: U.S. Census Bureau American Community Survey 2013-2017 5-Year Estimates, www.census.gov

D.1.6 Development Trends

Measure F, a voter initiative imposing a hard population cap of 12,200 to preserve Morro Bay's small coastal town character, passed in 1984 (City of Morro Bay Local Hazard Mitigation Plan, 2012). Measure F estimated a population of 12,200 would be reached by the year 2000. In actuality, the population of Morro Bay has not reached said predictions and is currently approximated at 10,439 despite the addition of hundreds of housing units in Morro Bay during the period since passage of Measure F.

Despite the addition of many housing units and the lack of significant population pressure, housing prices in Morro Bay increased from \$146,000 for a median priced home in 1996 to a median price of over \$600,000 back in 2006. The median housing cost decreased in 2017 to approximately \$535,300, based on the U.S. Census Bureau estimates. Increased prices and decreased building opportunities has resulted in impacts to the cost of housing in the City. There are few vacant parcels within the City's boundaries, and due to the community's strong feelings toward the preservation of a small population size it is projected that future development will be infill and revitalization of existing parcels.

D.2 Hazard Identification and Summary

Morro Bay's planning team identified the hazards that affect the City and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to Morro Bay (Table D.6). There are no hazards that are unique to Morro Bay. The overall hazard significance considers the geographic area, probability and magnitude as a way to identify priority hazards for mitigation purposes. This is discussed further in the sections below.





Table D.6 City of Morro Bay – Hazard Summaries

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Adverse Weather: Thunderstorm/Heavy Rain/Hail/Lightning/Dense Fog/Freeze	Extensive	Highly Likely	Limited	High
Adverse Weather: High Wind/Tornado	Significant	Highly Likely	Limited	Medium
Adverse Weather: Extreme Heat	Significant	Highly Likely	Limited	Medium
Coastal Storm/Coastal Erosion/Sea Level Rise	Extensive	Likely	Critical	High
Earthquake and Liquefaction	Significant	Occasional	Catastrophic	High
Flood	Extensive	Highly Likely	Critical	High
Hazardous Trees	Extensive	Highly Likely	Limited	High
Landslides and Debris Flow	Limited	Occasional	Limited	Medium
Tsunami and Seiche	Extensive	Occasional	Catastrophic	High
Wildfire	Extensive	Highly Likely	Catastrophic	High
Human Caused: Hazardous Materials	Limited	Occasional	Negligible	Medium
<p>Geographic Area Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area</p> <p>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.</p>		<p>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</p> <p>Significance Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact</p>		





D.3 Vulnerability Assessment

The intent of this section is to assess the City of Morro Bay's vulnerability separately from that of the County, which has already been assessed in Section 5 Hazard Identification and Risk Assessment (HIRA) in the Base Plan. This vulnerability assessment analyzes the population, property, and other assets (e.g. critical facilities) at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area.

The key information to support the HIRA for this Annex was collected through a Data Collection Guide, which was distributed to each participating municipality, community services district, or special district to complete during the planning process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact anywhere within the County, as well as to rank the hazards and identify the related vulnerabilities unique to each jurisdiction/district. In addition, the Morro Bay planning team was asked to share information on past hazard events that have affected the district.

Each participating jurisdiction or district was in support of the main hazard summary identified in the Base Plan (See Table 5.1). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction (see Table D.6). Identifying these differences helps the reader to differentiate the district's risk and vulnerabilities from that of the overall County.

Note: The hazard "Significance" reflects overall ranking for each hazard and is based on the Morro Bay planning team input from the Data Collection Guide and the risk assessment developed during the planning process (see Chapter 5 of the Base Plan), which included more detailed quantitative and qualitative analyses with best available data for all hazards in the County.

The hazard summaries in Table D.6 reflect the hazards that could potentially affect the district in major ways. Based on this analysis, the priority hazards are listed below. The discussion of vulnerability for each of the assessed hazards is contained in the following sections. Hazards of Medium or High significance for Morro Bay are summarized below.

- Adverse Weather
- Earthquake and Liquefaction
- Flood
- Landslides and Debris Flow
- Coastal Storm/Coastal Erosion/Sea Level Rise
- Tsunami and Seiche
- Wildfire
- Human Caused: Hazardous Materials

Other Hazards

Hazards assigned a significance rating of Low may not be assessed at all within this annex. However, based on quantitative or historic occurrence proof of posing a risk to the community, certain hazards will be addressed for specific vulnerabilities in this annex (though perhaps in a limited capacity due to the Planning Team assigning a lower priority to said hazards). The hazards to the planning area which were rated by the Planning Committee are listed below. The majority were given minimum priority due to a lack of exposure, vulnerability, and/or no probability of occurrence or previous history or losses, though some will still contain a loss estimate discussion based again on potential risk to the district (if noted).

- Agricultural Pests and Plant Diseases





- Dam Incidents
- Drought and Water Shortage
- Land Subsidence

D.3.1 Assets at Risk

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

Values at Risk

Parcel geometry data was provided by ParcelQuest, a third-party service working alongside the San Luis Obispo County Assessor’s Office to compile property information. The overall parcel data provided the baseline for an inventory of the total exposure of developed parcels within the County and helps to ensure that the updated Plan reflects changes in development. This data should only be used as a guideline to 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 improvements that is of concern or at risk; generally, the land itself is not a loss. Table D.7 shows the exposure of properties (e.g., the values at risk based on improvement values, content values, and total values which are calculated by adding improvement and content values), broken down by parcel type for the City of Morro Bay

Table D.7 Parcel Exposure Values for the City of Morro Bay, by Parcel Types

Property Type	Parcel Count	Improved Value	Content Value	Total Value
Agricultural	1	\$4,833	\$4,833	\$9,666
Commercial	251	\$71,138,657	\$71,138,657	\$142,277,314
Government/Utilities	80	\$374,774	--	\$374,774
Other/Exempt/Misc.	131	\$19,391,746	--	\$19,391,746
Residential	4,060	\$799,126,269	\$399,563,135	\$1,198,689,404
Multi-Family Residential	568	\$127,309,679	\$63,654,840	\$190,964,519
Mobile/Manufactured Homes	16	\$2,971,790	\$1,485,895	\$4,457,685
Residential: Other	164	\$84,847,578	\$42,423,789	\$127,271,367
Industrial	8	\$757,564	\$1,136,346	\$1,893,910
Vacant	41	\$7,604,763	--	\$7,604,763
Total	5,320	\$1,113,527,653	\$579,407,494	\$1,692,935,147

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor’s Office data 2019

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation.

An inventory of critical facilities in the District based on San Luis Obispo County GIS data as well as structures obtained from the Homeland Infrastructure Foundation-Level Dataset (HIFLD) is provided in Table D.8 as well as illustrated in Figure D.2. The four types of Critical Facilities categorized by San Luis Obispo County and its jurisdictions’ and districts’ planning teams are: Emergency Services, High Potential Loss Facilities, Lifeline Utility Systems, and Transportation Systems. Refer to Section 5.2 of the Base Plan for more information on the Assets





used throughout this annex, including the definitions and categories of critical facilities, and the County-wide analyses.

Table D.8 City of Morro Bay’s Critical Facilities

Facility Category	Facility Type	Counts
Emergency Services	Day Care Facilities	4
	Emergency Medical Service Stations	2
	Fire Stations	2
	Local Law Enforcement	1
	Nursing Homes	2
	Public Schools	2
High Potential Loss Facilities	Power Plants	1
Lifeline Utility Systems	Microwave Service Towers	2
	Wastewater Treatment Plants	1
	Energy Commission Facilities	1
Total		18

Source: San Luis Obispo County Planning and Building; LAFCO; HIFLD; Wood Plc analysis

Table D.9 Details on the City of Morro Bay’s Critical Facilities

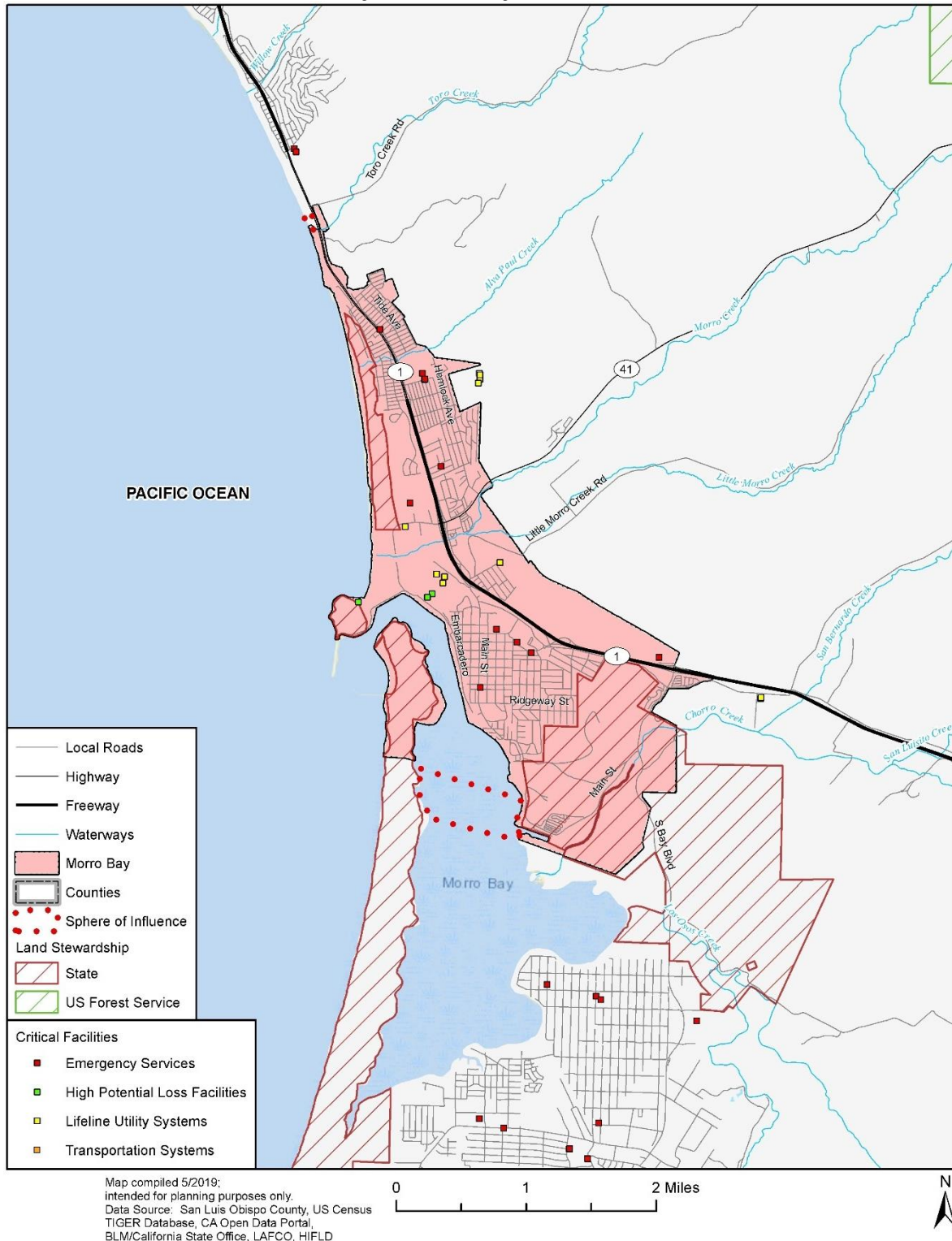
Facility Type	Name
Day Care Facilities	California State Preschool at Del Mar
	Capslo - Sequoia Child Development Center
	Central Coast Montessori
	Morro Bay United Methodist Children’s Center
EMS Stations	Morro Bay Fire Department Station 1
	Morro Bay Fire Department Station 2
Fire Stations	Morro Bay Fire Department Station 1
	Morro Bay Fire Department Station 2
Local Law Enforcement	Morro Bay Police Department
Microwave Service Towers	--
Nursing Homes	Casa De Flores/ Bay Side Care Center
	Garden House
Public Schools	Del Mar Elementary
	Morro Bay High School
Wastewater Treatment Plant	Morro Bay/Cayucos Wastewater Treatment Plant
Power Plants	Dynegy, Inc.
Energy Commission Facilities	Morro Bay PG&E
Total	21

Source: San Luis Obispo County Planning and Building; LAFCO; HIFLD





Figure D.2 Critical Facilities in the City of Morro Bay





High Potential Loss Facilities

High potential loss facilities are considered critical facilities that present significant risks if damaged and include nuclear power plants, dams, and military installations. The City has one classified high potential loss facility: Dynergy's Morro Bay Power Plant.

Transportation Systems

The City of Morro Bay contains portions of Highway 41 and Highway 1, which are main sources of transportation access for the City and region. However, no critical facilities classified as part of essential/critical transportation systems were noted.

Lifeline Facilities

Lifeline Utility Systems include 2 Microwave Service Towers, 1 Wastewater Treatment Plant, and 1 Energy Commission Facilities for a total of 4 lifeline utility critical facilities.

Emergency Service Facilities

The City contains 13 Emergency Services facilities aimed at providing for the health and welfare of the entire community. These include day care facilities, emergency medical service stations, fire stations, local law enforcement stations, nursing homes, and schools as noted in Table D.8 and Table D.9.

Additional Critical Facilities

Additional Essential Infrastructures and Vulnerable Facilities to the district were noted by the Planning Team, which may or may not have been noted in the previous lists and tables. The 10 are summarized below along with their estimated replacement values (per the planning team input):

- City Hall - \$2.5 million
- Police Station - \$2.6 million
- Fire Station - \$5 million
- Water Treatment Plant - \$7.3 million
- Wastewater Treatment Plant - \$129 million
- Community Center - \$6.2 million
- Corporate Yard - \$1.6 million
- Harbor Department - \$4.5 million
- Public Works - \$1.25 million
- Veterans Hall - \$1.1 million

Historic and Cultural Resources

One of the most visually prominent historic natural landmarks immediately vulnerable to coastal hazards and sea level rise is Morro Rock. Morro Rock stands approximately 576 feet tall and was created from a volcanic plug. The area is a significant cultural and religious monument, as it was once the site of Chumash sacred rituals (City of Morro Bay 2018). Morro Rock is a protected State Historic Landmark (#821) that also provides nesting habitat for peregrine falcons, a previously endangered and currently fully protected species (Department of Fish and Wildlife 2019).

The City of Morro Bay has no registered federal historic sites; however, the State registered historical site, Morro Rock, is within the City Limits (State of California Office of Historic Preservation, 2019). Other historical sites of importance to the County of San Luis Obispo in Morro Bay are listed below.





- Filipino Landing - Coleman Park
- Morro Bay State Park - 20 State Park Road
- Morro Rock - Coleman Drive

Natural Resources

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. Awareness of natural assets can lead to opportunities for meeting multiple objectives. For instance, the Morro Bay coast is fronted by large sand dunes from Atascadero State Beach and continuing south through much of Montaña de Oro State Park that provide protection for developments located on terrace materials behind the sand dunes. The beach has widened about 250 feet near San Jacinto Avenue and almost 500 feet in front of Morro Bay High School in the past 50 years. This sandbar protects development in this region.

One of the most visually prominent historic natural landmarks immediately vulnerable to coastal hazards and sea level rise is Morro Rock. Morro Rock is a protected State Historic Landmark as mentioned above that also provides nesting habitat for peregrine falcons, a previously endangered and currently fully protected species.

Economic Assets

Morro Bay is the home of two of the largest agile manufactures in the Central Valley—PELCO (1,600 employees) and Anlin (350 employees). Loss of either employer would have the net result of almost 2,000 displaced employees and sales tax revenue in the millions of dollars.

D.3.2 Estimating Potential Losses

This section details vulnerability to specific hazards of medium or high significance, where quantifiable, noted by the Planning Team, and/or where it differs significantly from that of the overall County. Impacts of past events and vulnerability to specific hazards are further discussed below, though refer to Section 5 of the Base Plan for more details on the County's HIRA findings and hazard profiles.

Adverse Weather

Heavy rains and adverse storms occur in Morro Bay primarily during the late fall and winter but have a chance of occurring in every month of the year. According to information obtained from the Western Regional Climate Center (WRCC) the majority of precipitation is produced by storms during January and other winter months. Precipitation during the summer months is in the form of rain showers and is rare. Snowstorms, and hailstorms occur infrequently in San Luis Obispo County, and severe occurrences of any of these are very rare. Dense fog in Morro Bay reduces visibility making driving more dangerous during fog events. A fog advisory issued for San Luis Obispo County in October 2011 warned visibility could be as low as a quarter mile and reduce suddenly with denser patches. In March 2012 another fog advisory anticipated less than ¼ of normal visibility. Freeze events are a hazard to human populations as well as economic production. For example, historical records indicate in 1998 a winter cold air mass resulted in \$5.4 million in crop damage harming agricultural interests in the City.

Of specific concern for Morro Bay is the combination of high winds, winter storms and the resultant high surf. Coastal communities in the County face increased hazards to high wind and extreme wind storms. The surfing industry of Morro Bay, which attracts visitors and tourists, could be at risk due to the hazard to human safety in the event of increasing unsafe wind events.





The climate of the County is influenced by the effects of the Santa Lucia Range, the Pacific Ocean, and routine climate patterns such as El Niño. Extreme heat events can have severe impacts on human health and mortality, natural ecosystems, the agriculture sector and other economic sectors. Coastal communities including Morro Bay on average have lower temperatures compared to communities in inland areas of the County and may be less at risk to extreme temperatures, although they may be potentially less acclimatized to high temperatures if the event of occurrence.

Loss of life is uncommon but could occur during severe storms depending on secondary effects or impacts. Immobility can occur when roads become impassable due to dense fog, heavy rains causing flooding, and even downed trees (often referred to as hazardous trees due to the threat they pose). Overall, the Morro Bay planning team has rated adverse weather hazards as holding **High Significance**.

Earthquake and Liquefaction

The greatest threat to Morro Bay from a natural hazard is considered to be a significant earthquake (City of Morro Bay, 2012; City Planning Team). The northwest trending Cambria Fault zone is within the City limits of Morro Bay (US Quaternary Fault 2019). Within the surrounding area, the East Hausna, La Panza, Los Osos, Edna, Nacimiento, Rinconada, San Andres, and San Simeon- Hosgri Faults are considered to pose a potential hazard to the City in catastrophic and cascading effects (City of Morro Bay 2012). Earthquake-event associated impacts have occurred in Morro Bay in the past including a number of magnitude 5.0 to 7.7 earthquakes. The City's residential area consists predominantly of framed-type structures, which contain some material flexibility allowing the structures to withstand larger seismicity impacts in earthquake events than masonry buildings. Structure's weak areas are between sill plates and the foundation especially in homes constructed prior to 1950. In any earthquake, the primary consideration is saving lives. Time and effort must also be dedicated to providing for mental health by reuniting families, providing shelter to displaced persons, and restoring basic needs and services. Major efforts will be required to remove debris and clear roadways, demolish unsafe structures, assist in reestablishing public services and utilities, and provide continuing care and temporary housing for affected citizens.

In addition to being at risk of groundshaking as a result of a fault rupture, the City of Morro Bay is also susceptible to the effects of liquefaction. Much of the City has soils with a moderate risk for liquefaction. A majority of the City is underlain by beach and sand dune sediments and alluvial soils. Areas along the Embarcadero are known to have been filled in over the years with a variety of fill materials, and when combined with the high-water table in the area, these areas are of some concern. The number of active or potentially active fault systems throughout the County and historical records of past earthquakes in the area caused a probability of earthquake-related damage to the City of Morro Bay as medium. Table D.10 below summarizes the parcels at risk of liquefaction (moderate and high risk), broken up by parcel type, while Figure D.3 displays the City's liquefaction zones as a map. Overall, the City has over \$488 million of parcel improved values at risk from both risk categories, and a total of 4,193 exposed parcels.

A total of 17 critical facilities are found in either moderate or high-risk liquefaction zones in the City. These are listed in Table D.11 by facility type.

Earthquake and liquefaction hazards pose a **High Significance** for the City of Morro Bay.





Table D.10 City of Morro Bay Liquefaction Risk by Parcel Type

Parcel Type	Parcel Count	Improved Value
Moderate Risk		
Agricultural	1	\$4,833
Commercial	63	\$13,853,498
Government/Utilities	26	--
Other/Exempt/Miscellaneous	32	\$4,581,431
Residential	1,660	\$302,624,739
Multi-Family Residential	154	\$28,317,154
Mobile/Manufactured Homes	4	\$736,685
Residential: Other	7	\$11,659,175
Industrial	5	\$532,904
Vacant	17	\$3,839,339
TOTAL	1,969	\$366,149,758
High Risk		
Commercial	175	\$43,257,911
Government/Utilities	40	\$278,697
Other/Exempt/Misc.	78	\$10,658,702
Residential	1,428	\$278,017,365
Multi-Family Residential	342	\$85,310,401
Mobile/Manufactured Homes	8	\$1,605,910
Residential: Other	133	\$65,889,513
Industrial	3	\$224,660
Vacant	17	\$2,864,979
TOTAL	2,224	\$488,108,138
GRAND TOTAL (from both risk categories)	4,193	\$854,257,896

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis





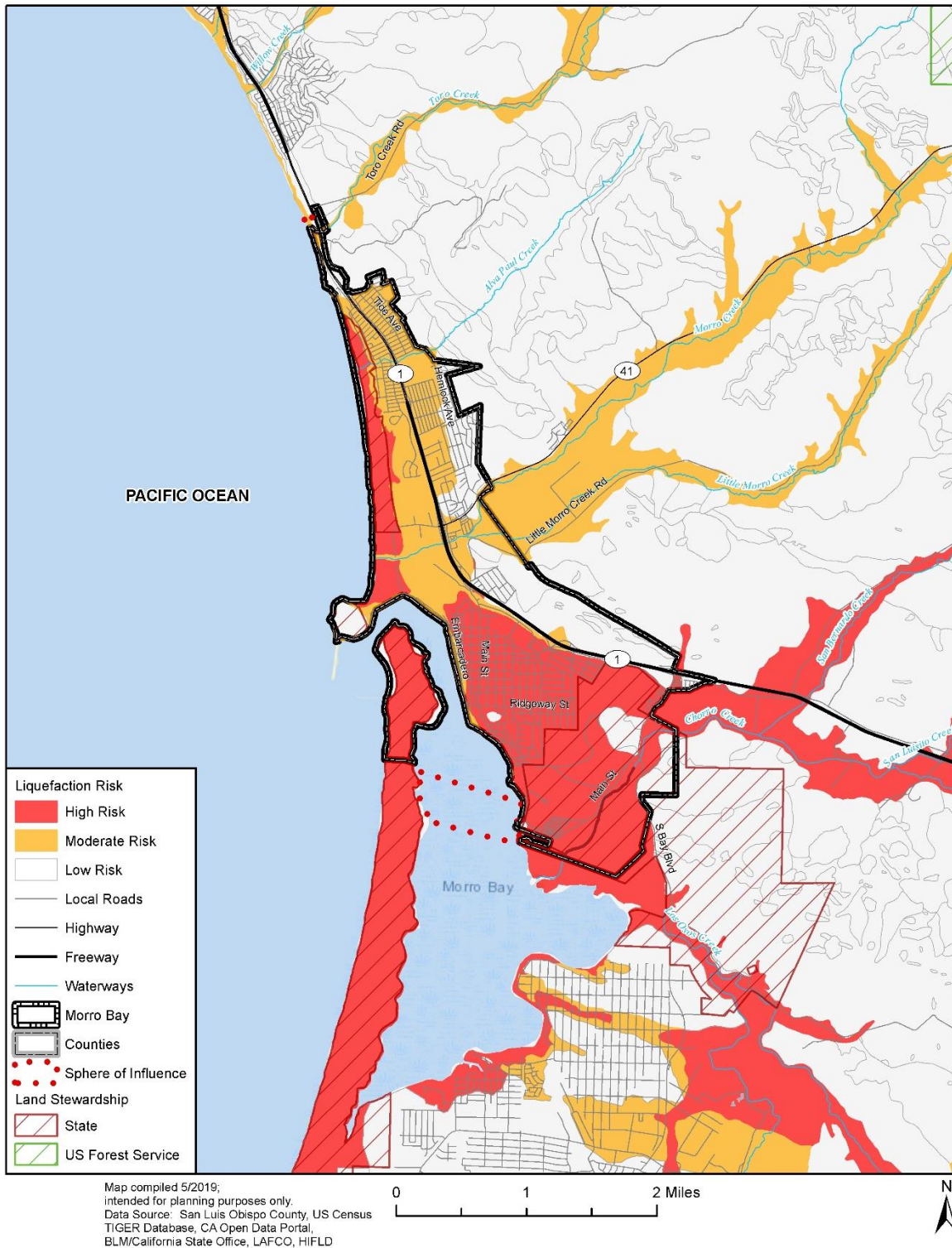
Table D.11 Critical Facilities in Liquefaction Risk Areas in Morro Bay

Facility Type	Facility Count
Moderate Risk	
Day Care Facilities	3
Emergency Medical Service Stations	1
Fire Stations	1
Microwave Service Towers	3
Public Schools	2
Wastewater Treatment Plants	1
Power Plants	1
Total	12
High Risk	
Day Care Facilities	1
Emergency Medical Service Stations	1
Fire Stations	1
Local Law Enforcement	1
Nursing Homes	1
Day Care Facilities	1
Total	6
GRAND TOTAL	18





Figure D.3 Liquefaction Risk in the City of Morro Bay



Map compiled 5/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County, US Census
TIGER Database, CA Open Data Portal,
BLM/California State Office, LAFCO, HIFLD





Flood

Historically, the City of Morro Bay has experienced severe flooding events that have resulted in extensive property damage. Areas with a history of flooding have a high probability of future flooding. Areas of concern include the following creek drainage systems: Chorro Creek, the Morro/Little Morro Creek convergence, No-Name Creek, Alva Paul Creek, Toro Creek, and San Bernardo Creek flow into and/or near the City. Chorro Creek is the largest and runs along the southern boundary of the City near two mobile home parks. Morro Creek runs parallel to Highway 41. These creeks present varying hazards and can block access to and egress from the City. When rainfall and surface run-off from a storm exceeds a drainage system's capacity to adequately channel and contain the water, flooding may occur. Potential flood areas include: The South Bay Boulevard area between Highway 1 and State Park Road; the area between Highway 41/Atascadero Road and Radcliff Avenue; low-lying sections of Island Street and Beachcomber; Highway 1, at the northern City limits; and, Highway 1 south of the City limit.

In Morro Bay, the most common type of flooding event is riverine flooding, also known as overbank flooding. Riverine floodplains range from narrow, confined channels in the steep valleys of mountainous and hilly regions, to wide, flat areas in plains and agricultural regions. The amount of water in the floodplain is a function of the size and topography of the contributing watershed, the regional and local climate, and land use characteristics. Flooding in steep, mountainous areas is usually confined, strikes with less warning time, and has a short duration. In addition to riverine flooding, Morro Bay is susceptible to flash flooding in smaller watersheds. Flash flood is a term widely used by experts and the general population, but there is no single definition or clear means of distinguishing flash floods from other riverine floods. Flash floods are generally understood to involve a rapid rise in water level, high velocity, and large amounts of debris, which can lead to significant damage that includes the tearing out of trees, undermining of buildings and bridges, and scouring of new channels. The intensity of flash flooding is a function of the intensity and duration of rainfall, steepness of the watershed, stream gradients, watershed vegetation, natural and artificial flood storage areas, and configuration of the streambed and floodplain. Urban areas are increasingly subject to flash flooding due to the removal of vegetation, installation of impermeable surfaces over ground cover, and construction of drainage systems. Wildland fires that strip hillsides of vegetation and alter soil characteristics may also create conditions that lead to flash floods and debris flows. Debris flows are may also create conditions that lead to flash floods and debris flows. Flood hazards have been determined to pose a **High Significance** risk to the City.

Values at Risk

A flood vulnerability assessment was completed during the 2019 update, following the methodology described in Section 5.2 of the Base Plan. Table D.12 summarizes the values at risk in the City's 100-year, 500-year, and coastal (zone VE) floodplains. The table also details total values, loss estimates for each flood, and potential population at risk to each flooding zone. Figure D.4 shows the flooded parcels along with the FEMA flood hazard areas which cross the boundaries of Morro Bay.





Table D.12 City of Morro Bay Parcels in the Floodplains, by Parcel Type

Parcel Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
100-Year Floodplain						
Agricultural	1	\$4,833	\$4,833	\$9,666	\$2,417	--
Commercial	21	\$6,671,912	\$6,671,912	\$13,343,824	\$3,335,956	--
Government/Utilities	18	\$96,077	--	\$96,077	\$24,019	--
Other/Exempt/ Miscellaneous	9	\$777,341	--	\$777,341	\$194,335	--
Residential	93	\$17,337,391	\$8,668,696	\$26,006,087	\$6,501,522	233
Multi-Family Residential	20	\$3,395,985	\$1,697,993	\$5,093,978	\$1,273,494	50
Mobile/Manufactured Homes	2	\$552,884	\$276,442	\$829,326	\$207,332	5
Residential: Other	2	\$2,881,233	\$1,440,617	\$4,321,850	\$1,080,462	5
Industrial	3	\$241,406	\$362,109	\$603,515	\$150,879	--
Vacant	11	\$3,456,946	--	\$3,456,946	\$864,237	--
TOTAL	180	\$35,416,008	\$19,122,601	\$54,538,609	\$13,634,652	294
500-Year Floodplain						
Commercial	5	\$550,272	\$550,272	\$1,100,544	\$275,136	--
Government/Utilities	4	--	--	\$0	\$0	--
Other/Exempt/ Miscellaneous	9	\$793,698	--	\$793,698	\$198,425	--
Residential	221	\$35,375,902	\$17,687,951	\$53,063,853	\$13,265,963	555
Multi-Family Residential	24	\$3,625,452	\$1,812,726	\$5,438,178	\$1,359,545	60
Vacant	1	\$7,290	--	\$7,290	\$1,823	--
TOTAL	264	\$40,352,614	\$20,050,949	\$60,403,563	\$15,100,891	615
Coastal (Zone VE) Floodplain						
Government/Utilities	9	--	--	\$0	\$0	--
Other/Exempt/ Miscellaneous	1	--	--	\$0	\$0	--
Vacant	1	\$5,724	--	\$5,724	\$2,862	--
TOTAL	11	\$5,724	\$0	\$5,724	\$2,862	-
GRAND TOTAL (all floodplains)	455	\$75,774,346	\$39,173,550	\$114,947,896	\$28,736,974	909

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis, FEMA NFHL





Based on this analysis, the City of Morro Bay has significant assets at risk to the 100-year, 500-year, and VE coastal floods. There are 180 properties located within the 100-year floodplain for a total value of over \$54 million. An additional 264 improved parcels valued at over \$60 million fall within the 500-year floodplain, though the estimated losses would be about just over \$13.6 million for the 100-year flood and a little over \$15 million for the 500-year flood. With regards to coastal flooding, a total of 11 parcels are found to overlap with the VE coastal zone floodplain, for a total value of \$5,724 and a loss estimate of \$2,862.

The loss estimates for the 100- and 500-year flood events were calculated by taking 25% of the total values of the parcels, which in turn were found by adding up both improvement and content values for the parcels found to overlap with each of the floodplain layers, in GIS. The loss estimates for the coastal (VE zone) floodplain were found by taking 50% of the total value from the parcel totals, as it is predicted that coastal flooding may damage properties found within its path more adversely than regular riverine flooding (such as is assumed for the 100- and 500-year flooding events).

For more information on the asset calculations, parcel analysis, and loss estimation curves based on FEMA and Hazus derived standards refer to the Base Plan (e.g. Section 5.2).

Limitations to the analysis performed and results shown: The analysis performed may include structures in the floodplains that are elevated at or above the level of the base-flood elevation, which will likely mitigate flood damage.

Population at Risk

Population at risk was estimated using the average persons per household values for the County of San Luis Obispo, based on the U.S. Census Bureau statistics. This figure is 2.51 persons per household. Then, this number was multiplied by the number of residential parcels found to overlap with the flooding layers in GIS, as it is assumed that no people live in non-residential parcels (e.g. commercial, government entities).

Insurance Coverage, Claims Paid, and Repetitive Losses

The City of Morro Bay joined the National Flood Insurance Program (NFIP) on February 15, 1974. NFIP Insurance data indicates that as of February 28, 2019, there were 175 flood insurance policies in force in the City with \$54,027,900 of coverage. Of the 175 policies, 152 were residential (143 for single-family homes, 4 for two to four-unit homes, and 5 for other residential properties) while 23 were nonresidential. There are 67 policies in A01-30 & AE zone and 7 policies in A zones. The remaining 101 are in B, C, and X zones.

There have been 17 historical claims for flood losses totaling \$243,005 that have been paid, out of 26 total cases submitted. According to the FEMA Community Information System there are no Repetitive Loss or Severe Repetitive Loss properties located in the jurisdiction.

Critical Facilities at Risk

Critical facilities are those community components that are most needed to withstand the impacts of disaster as previously described. There are seven critical facilities found in the 100-year floodplain in Morro Bay, and one critical facility (a public school) located in the City's 500-year floodplain. No critical facilities in Morro Bay are found to overlap with the coastal VE zone floodplain. It is particularly important to note that the critical facilities in the 500-year floodplain are all facilities that serve vulnerable populations and should be given special attention. Table D.13 below summarizes the critical facilities in the City's 100- and 500-year floodplains. The impact to the community could be great if these facilities are damaged or destroyed during a flood event.





Table D.13 Critical Facilities in the FEMA Flood Hazard Areas, Morro Bay

Floodplain	Critical Facility Type	Facility Count
100-year	Day Care Facilities	1
	Microwave Service Towers	3
	Wastewater Treatment Plant	1
	Energy Commission Facilities	1
	Power Plants	1
500-year	Public Schools	1
TOTAL		8

Source: San Luis Obispo County Planning and Building Dept., LAFCO, HIFLD, Wood Plc Parcel Analysis, FEMA NFHL

Landslides and Debris Flow

A well-documented history of landslide activity in the study area is present. Landslides activity is observable all along the Highway 1 corridor from San Luis Obispo, through the community of Morro Bay, and on north to San Simeon. In 1983, and again in 1995, very wet winters led to significant slope movement in the North Morro Bay area, north of Highway 41 and east of Highway 1; a number of slides caused the total destruction of homes, considerable damage to others, and damage to pipelines, driveways, and roadways. Numerous studies have documented unstable, landslide prone slopes in the Morro Bay area generally east of Highway 1 and north of Highway 4. A major landslide along the transportation routes in and out of the City of Morro Bay is a potential hazard to the heavily tourism-reliant economy.

Table D.14 summarizes the parcel counts and values exposed to landslide potential areas in the City. Figure D.5 shows, in map form, where these landslide potential areas are in and near the City. One critical facility, a Microwave Service Tower, is located within the landslide potential areas in Morro Bay. Overall, landslide and debris flow hazards pose a **Medium Significance** risk to the City of Morro Bay.

Table D.14 City of Morro Bay Landslide Potential by Parcel Type

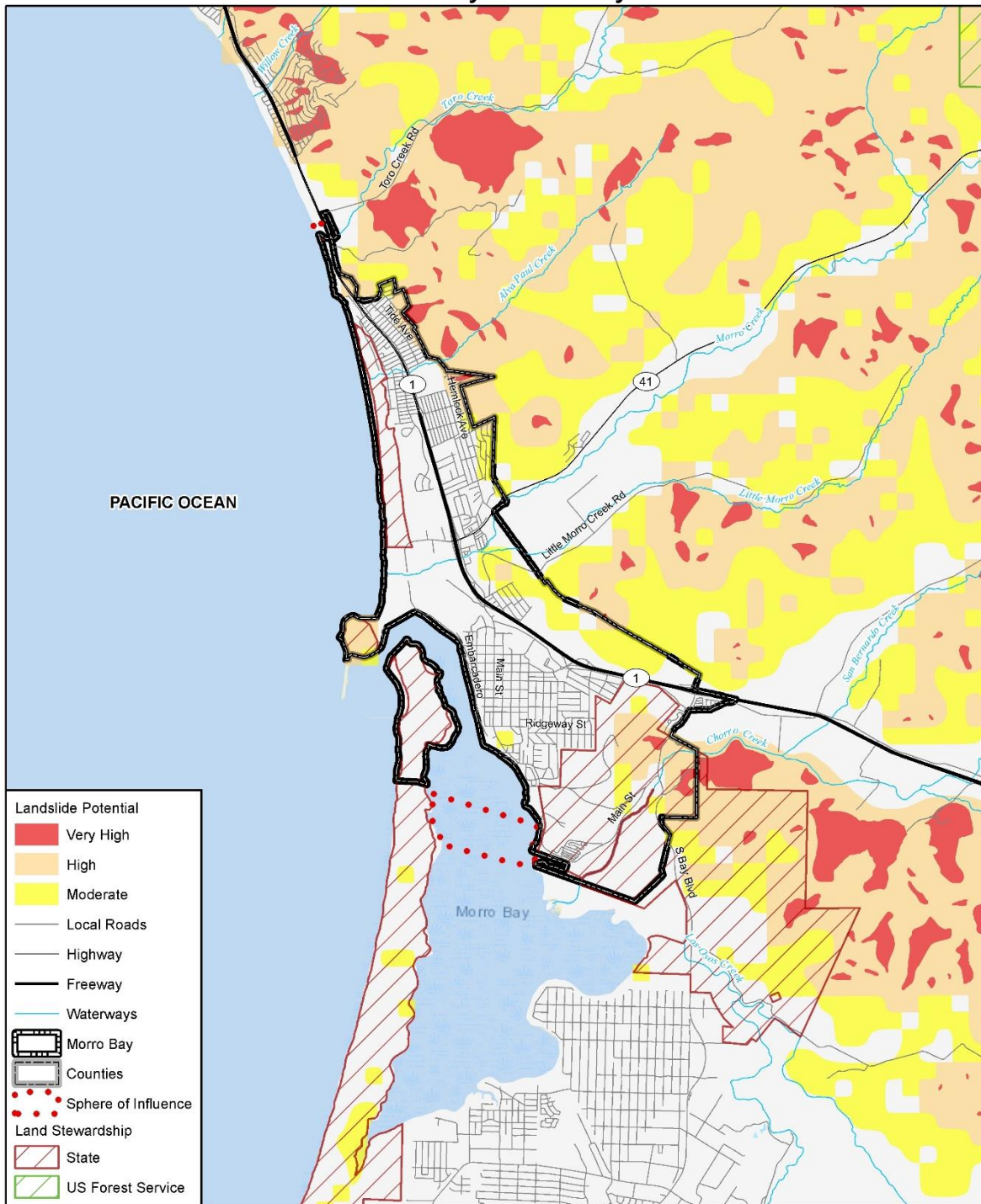
Property Type	Parcel Count	Improved Value
Moderate Landslide Potential		
Government/Utilities	4	--
Other/Exempt/Miscellaneous	1	\$10,173
Residential	361	\$93,272,094
Multi-Family Residential	5	\$1,137,135
Industrial	1	\$39,719
Vacant	6	\$643,597
TOTAL	378	\$95,102,718
High Landslide Potential		
Government/Utilities	3	--
Other/Exempt/ Miscellaneous	3	\$234,780
Residential	299	\$59,607,787
Multi-Family Residential	4	\$584,147
Vacant	1	\$136,000
TOTAL	310	\$60,562,714
GRAND TOTAL	688	\$155,665,432

Source: San Luis Obispo County Planning and Building Dept., LAFCO, Wood Plc Parcel Analysis





Figure D.5 Landslide Potential Areas in the City of Morro Bay



Map compiled 6/2019,
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO

0 1 2 Miles





Coastal Storm/Coastal Erosion/Sea Level Rise

The entire 100-mile coastline of San Luis Obispo County and existing urban development and natural resources are potentially exposed to a range of coastal hazards, including coastal storms and coastal erosion. Such hazards are projected to become more severe when combined with sea level rise (see Section 5.3.4 - Coastal Storm and Erosion). The City’s State Park, harbor, and developed and undeveloped coastal bluff trails are sources of community enhancement and the tourism-driven economy. Coastal hazards have the potential to harm the economic stability of the City. Additional areas of vulnerabilities include the low-lying development and development on higher elevated terraces in close proximity to beaches and sand dunes. The northern beach portions of Morro Bay are protected from serious erosion by a wide gentle slope, which is backed by a low series of small sand dunes. Erosion may occur each winter with the onslaught of large winter surf, however natural process returns the sand to the beach during the summer months. The infrastructure of the harbor entrance is a different matter. Large winter storms may have serious impacts on the jetties and breakwater that are an integral part of maintaining a safe navigable entrance to the harbor. The southern portions of the City and the Bay itself are protected by a wide beach and large series of tall sand dunes.

Sea level rise (SLR) has the potential to increase the frequency and severity of coastal hazards affecting coastal assets and resources in the City of Morro Bay. The City is susceptible to coastal hazards such as inundation, flooding, and bluff/dune erosion associated with extreme waves and water levels. Exposure of a coastal asset or resource to a hazard may result in varying impacts, depending on its function and its resiliency, which is its ability to withstand and recover from these events as outlined in the 2018 sea level rise adaption strategy report. These coastal storm, coastal erosion, and sea level rise hazards have been rated by the Planning Team as holding **High Significance** in the City.

As part of the 2019 HMP planning effort, a sea level rise risk assessment was completed to determine how sea level rise may affect coastal jurisdictions and critical facilities and how coastal flooding might be exacerbated in the future. Table D.15 lists the critical facilities that would be affected by sea level rise. There is no risk until the 300 cm scenario; facilities identified include the Morro Bay High School, and the Morro Bay/Cayucos wastewater treatment plan, the power plant and an PG&E substation. Table D.16 and Table D.17 summarize the other properties at risk of inundation by sea level rise and sea level rise combined with a 1% annual chance coastal flood. The area of inundation by sea level rise and sea level rise combined with the 1% coastal flood are shown in Figure D.6 and Figure D.7, respectively. See Section 5.3.4 Coastal Storm/Coastal Erosion/Sea Level Rise in the base plan for more details on the scenarios and data sources used for this analysis.

Table D.15 Critical Facilities Inundated by Sea Level Rise

Sea Level Rise	Critical Facility Type	Facility Count
300-cm	Microwave Service Towers	3
	Wastewater Treatment Plant	1
	Energy Commission Facilities	1
	Power Plants	1
	Schools	1
TOTAL		7





Table D.16 Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Commercial	--	--	12	--	1	12
Government/Utilities	1	1	19	1	3	19
Other/Exempt/Misc.	--	--	6	--	--	9
Residential	--	1	12	1	1	76
Residential: Other	--	--	3	--	1	4
Vacant	1	1	3	1	1	4
Total	2	3	55	3	7	124

Source: Wood analysis with USGS CoSMoS 3.1 data

Table D.17 Improved Values of Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Commercial	--	--	\$4,441,799	--	\$800,000	\$4,441,799
Government/Utilities	--	--	--	--	--	--
Other/Exempt/Misc.	--	--	\$74,906	--	--	\$74,906
Residential	--	\$42,463	\$3,930,417	\$42,463	\$42,463	\$30,817,911
Residential: Other	--	--	\$7,707,961	--	--	\$9,981,210
Vacant	\$5,724	\$5,724	\$3,312,145	\$5,724	\$5,724	\$3,337,145
Total	\$5,724	\$48,187	\$19,467,228	\$48,187	\$4,920,431	\$48,652,971

Source: Wood analysis with USGS CoSMoS 3.1 data



Figure D.6 Morro Bay Sea Level Rise Scenario Analysis: Tidal Inundation Only



Map compiled 8/2019;
intended for planning purposes only.
Data Source: USGS CoSMoS v3.1.
San Luis Obispo County, US Census TIGER
Database, CA Open Data Portal, LAFCO.
Note: SLR = Sea Level Rise

0 0.75 1.5 Miles





Figure D.7 Morro Bay Sea Level Rise Scenario Analysis: Tidal Inundation and 1% Annual Chance Flood





Tsunami and Seiche

Tsunami inundation poses a risk to all coastal communities in the County of San Luis Obispo including Morro Bay. Offshore faults and related seismic activity could cause a tsunami event off the coast of Morro Bay, even if the faults are thousands of miles away. Historically, significant tsunamis on the Central Coast of California have been infrequent. Few incidences have been recorded and the historical record is not extensive enough to develop accurate reoccurrence predictions. The potential tsunami hazard for the City’s coastal areas is greatest for those communities or portions of communities that are located at or below 50 feet above mean sea level. In general, much of the Coast of Morro Bay is protected from tsunami hazards by wide beaches, coastal dunes, or sea cliffs that provide protection for coastal developments. Coastal developments most vulnerable to the tsunami hazards are those located near mouths of streams that drain into the Pacific Ocean. The potential for damage to coastal structures would likely increase if the tsunami event were to coincide with a high tide, storm related waves, or large winter storm runoff. Tsunami hazards are predicted in the following locations within the City of Morro Bay: Morro Creek, Alva Paul Creek, Chorro Creek, Atascadero Beach, the harbor area, and Embarcadero.

A GIS analysis performed on the parcels and the tsunami inundation layers determined that 332 parcels with an estimated loss value of over \$145 million are at risk of this hazard. See Table D.18 for a summary of the parcel count, improved values, content values, total values, loss estimates (which in this case equal the total values), and population at risk of tsunami inundation. Figure D.8 displays these tsunami inundation areas on the coast of the City.

Critical Facilities were also overlaid with the tsunami inundation layers in GIS. This analysis yielded a total of seven facilities found at risk. These are listed in Table D.18 Tsunami and Seiche hazards have been rated by the City’s planning team as holding **High Significance**.

Table D.18 Parcels in the Tsunami Inundation Zones in the City of Morro Bay

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	19	\$5,909,664	\$5,909,664	\$11,819,328	\$11,819,328	--
Government/ Utilities	42	\$96,077	--	\$96,077	\$96,077	--
Other/Exempt/ Miscellaneous	21	\$783,694	--	\$783,694	\$783,694	--
Residential	236	\$76,829,089	\$38,414,545	\$115,243,634	\$115,243,634	592
Mobile/ Manufactured Homes	1	\$257,130	\$128,565	\$385,695	\$385,695	3
Residential: Other	3	\$8,883,394	\$4,441,697	\$13,325,091	\$13,325,091	8
Industrial	3	\$241,406	\$362,109	\$603,515	\$603,515	--
Vacant	7	\$3,361,253	--	\$3,361,253	\$3,361,253	--
TOTAL	332	\$96,361,707	\$49,256,580	\$145,618,287	\$145,618,287	602

Source: San Luis Obispo County Planning and Building Dept., LAFCO, Wood Plc Parcel Analysis, CA Department of Conservation





Table D.19 Critical Facilities in the Tsunami Inundation Zones, City of Morro Bay

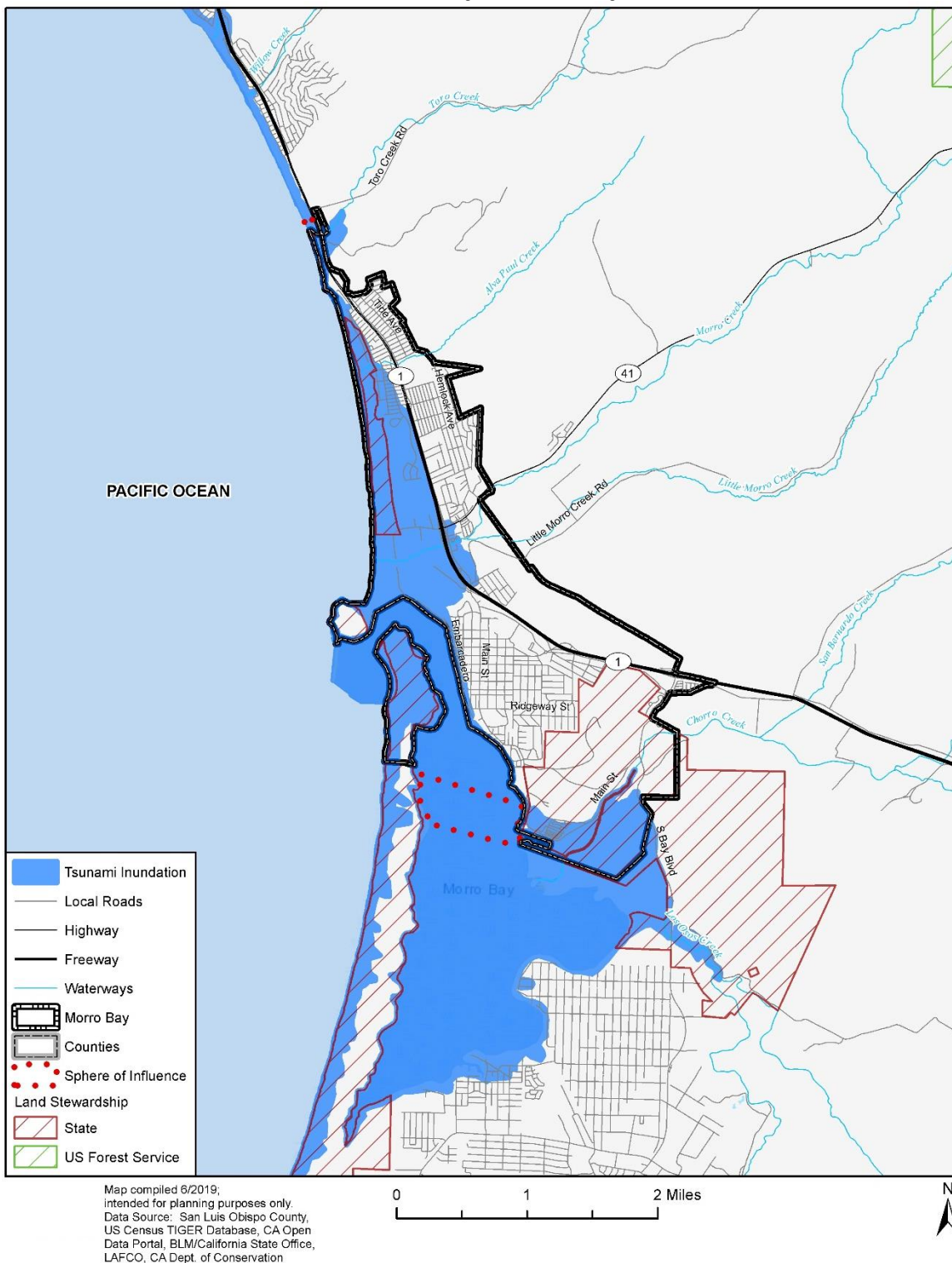
Property Type	Parcel Count
Wastewater Treatment Plant	1
Public Schools	1
Energy Commission Facilities	1
Power Plants	1
Microwave Service Towers	2
TOTAL	6

Source: San Luis Obispo County Planning and Building Dept., LAFCO, HIFLD, Wood Plc Parcel Analysis, CA Department of Conservation





Figure D.8 Tsunami Inundation Areas in the City of Morro Bay





Wildfire

Weather plays a key factor in the wildland fire potential in Morro Bay. Rain fall occurs primarily between the months of November and April, and ranges between 20 to 25 inches per year. Summers are typically cool with fog and or high humidity the norm. Wind in the area, a key factor in spread, is quite predictable and is usually moisture laden due to the close proximity of the ocean. Fall season typically shows drier and warmer days, which combine with the lack of rainfall to increase the fire hazard threat. Despite the temperate climate in the City, the lack of rainfall can lead to an increase in fire hazard threat. Fuel sources in the Morro Bay area are diverse, including everything from dead tree leaves, twigs, and branches to dead standing trees, live trees, brush, and cured grasses. The type of prevalent fuel directly influences the behavior of wildfire, and the City's planning team has identified hazardous trees as potentially increasing fuel sources.

Wildland fires can be classified as urban fires, interface or intermix fires, or prescribed fires. The following three factors contribute significantly to wildland fire behavior:

Topography: As slope increases, the rate of wildland fire spread increases. South-facing slopes are also subject to more solar radiation, making them drier and thereby intensifying wildland fire behavior. However, ridge tops may mark the end of wildland fire spread because the speed at which a fire moves downhill is much slower, sometimes resulting in a natural fire barriers.

Fuel: The type and condition of vegetation plays a significant role in the occurrence and spread of wildland fires. Certain types of plants are more susceptible to burning or will burn with greater intensity. Dense or overgrown vegetation increases the amount of combustible material available to fuel the fire (referred to as the "fuel load"). The ratio of living to dead plant matter is also important. The risk of fire is increased significantly during periods of prolonged drought as the moisture content of both living and dead plant matter decreases. The fuel's density, both horizontally and vertically, is also an important factor.

Weather: The most variable factor affecting wildland fire behavior is weather. Temperature, humidity, wind, and lightning can affect chances for ignition and spread of fire. Extreme weather, such as high temperatures and low humidity, can lead to extreme wildland fire activity. By contrast, cooling and higher humidity often signals reduced wildland fire occurrence and easier containment.

The frequency and severity of wildland fires is also dependent upon other hazards, such as lightning, drought, and infestations (such as the 2003 firestorm damage to southern California alpine forests by the pine bark beetle). If not promptly controlled, wildland fires may grow into a large scale emergency or disaster. Even small fires can threaten lives and resources and destroy improved properties. The indirect effects of wildland fires can be catastrophic. In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and enhance siltation of rivers and streams, thereby enhancing flood potential, harming aquatic life, and degrading water quality. Lands stripped of vegetation are also subject to increased debris flow hazards, as described above.

Wildland fires are common occurrences in San Luis Obispo County. The most significant wildland fires within the county have been located in the northern division of the Los Padres National Forest. In 1994, a 49,000-acre fire burned forestland from the western portion of Morro Bay to Morro Bay. In 1996, 106,000 acres burned in the Machesna Mountain Wilderness area southeast of the City before the fire was contained. A little over one year later, a 30,000-acre wildland fire burned in forestland in the southern portion of San Luis Obispo County. The





largest historical wildfire in the City limits of Morro Bay was contained to approximately seven acres. The open lands in and adjoining the City have been categorized by the California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (FRAP), as being of a Medium Fire Hazard. The areas that are at risk from a large-scale wildland fire are mostly located on the edge of the City limits. These "fringe" areas are where there is the most potential for a wild fire to cause significant property damage, however most of these lands are grazed by cattle and the fuel loads are kept to a minimum. The neighborhoods bordering the Morro Bay State Park and Black Hill area also constitute wildfire urban interface problem.

Following the methodology described in the wildfire hazard Section 5.3.12 Wildfire of the Base Plan, along with the GIS parcel analysis discussed in more detail under Section 5.2 Asset Summary, a wildfire vulnerability analysis for the City of Morro Bay was completed. The assessment was performed using GIS, and results indicate that there were neither parcels nor critical facilities in wildfire severity hazard zones within the boundaries of the City of Morro Bay. However, wildfire hazards have been rated by the City's planning team as holding **High Significance** based on the community's experience and historical evidence.

Human Caused: Hazardous Materials

The City of Morro Bay is at risk of both hazardous material incidents at fixed facilities as well as materials being transported on Highway 101 which traverse the City's jurisdiction and is considered a major transportation route for shipping hazardous materials. An incident along this Highway would expose a significant portion of the City's population as well as the local economy if Highway 101 was to be shut down for an extended period of time.

The Cal OES Warning Center reports 266 hazardous materials incidents in the City of Morro Bay from 1994 through October 24, 2018; as noted in Section 5.3.13 of the Base Plan, this likely excludes a large number of unreported minor spills. These over two hundred incidents constitute 15% of the hazardous materials incidents reported countywide during the same time frame, which in turn averages to roughly 10.6 incidents per year in or near Morro Bay. As noted in Section 5.3.13, only around 6% of reported hazardous materials incidents result in injuries, fatalities, or evacuations. Although there are no significant hazardous materials facilities located in the City, Morro Bay sits within the Emergency Planning Zone for the Diablo Canyon Nuclear Power Plant. Overall, the planning team has classified Hazardous Materials as holding **Medium Significance** for the jurisdiction.

D.4 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 capability 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory which of these policies or programs were in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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. In summarizing current capabilities and identifying gaps, the jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as





potential new mitigation strategies. The City of Morro Bay’s updated capabilities are summarized below in Table D.20.

D.4.1 Regulatory Mitigation Capabilities

Table D.20 City of Morro Bay Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	Yes	Land Use Element, Circulation Element, Housing Element, Noise Element, Safety Element, Conservation and Open Space Element, Access and Recreation Element, and Visual Resources and Scenic Highway Element
Zoning ordinance	Yes	Title 17: Zoning Regulations of the City of Morro Bay Code
Subdivision ordinance	Yes	Title 16: Subdivisions
Growth management ordinance	Yes	Ordinance No. 266
Floodplain ordinance	Yes	Chapter 14.72 General Provisions
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	Chapter 14.48 Building Regulations: Illicit Discharge and Stormwater Management Control, Chapter 13.04.345 Mandatory Water Conservation Requirements Ordinance under Emergency Water Levels
Building code	Yes	Chapter 14.03
Fire department ISO rating	Yes	Class 5
Erosion or sediment control program	Yes	Erosion and Sediment Control Manual
Stormwater management program	Yes	Chapter 14.48- Illicit Discharge and Stormwater Management Control
Site plan review requirements	Yes	Chapter 17. 40 Planned Development Overlay Zone
Capital improvements plan	No	
Economic development plan	Yes	Morro Bay Economic Development Roadmap
Local emergency operations plan	Yes	Chapter 8.08.080- Emergency Plan, County EOP (2016)
Other special plans	Yes	E.g., Downtown Waterfront Strategic Plan, Local Coastal Plan – More online
Flood Insurance Study or other engineering study for streams	Yes	2017
Elevation certificates (for floodplain development)	Yes	Section 14.72.020- Provisions for Flood Hazard Reduction

D.4.2 Administrative/Technical Mitigation Capabilities

Table D.21 identifies the personnel responsible for activities related to mitigation and loss prevention in Morro Bay.





Table D.21 City of Morro Bay Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	Community Development
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Community Development Public Works
Planner/engineer/scientist with an understanding of natural hazards	Yes	Planning/Fire Department
Personnel skilled in GIS	Yes	Technology
Full time building official	Yes	Community Development
Floodplain manager	Yes	Public Works
Emergency manager	Yes	City Manager
Grant writer	Yes	Administration Services
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	Public Works
Warning systems/services (Reverse 9-11, outdoor warning signals)	Yes	Dispatch

D.4.3 Fiscal Mitigation Capabilities

In order to achieve the goals and objectives of the Mitigation Strategy, one or more of the following funding sources could be utilized: federal and state entitlements and grants, 58 general fund, sales and property taxes, infrastructure user fees, impact fees, and new development impact fees. The City of Morro Bay has the necessary budgetary tools and practices in place to facilitate handling appropriate funds; however, funding sources are very limited. Table A.16 identifies financial tools or resources that the City could potentially use to help fund mitigation activities.

Table D.22 City of Morro Bay Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No





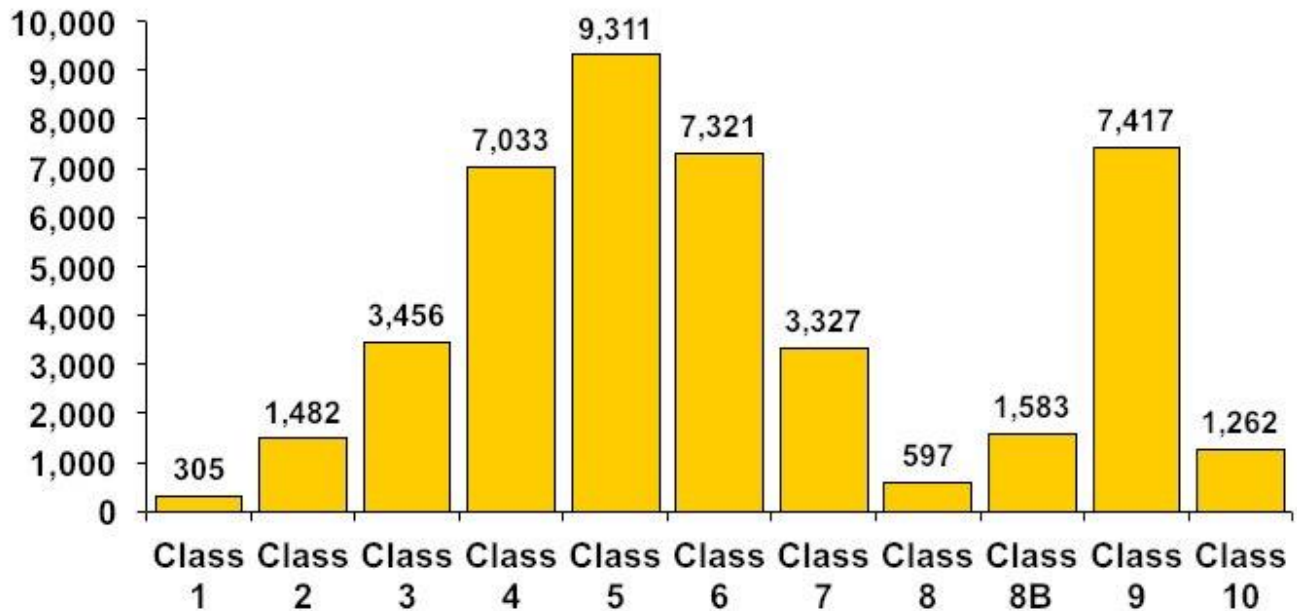
D.4.4 Mitigation Outreach and Partnerships

The County of San Luis Obispo conducted community outreach within the City limits to receive feedback from stakeholders on outlined mitigation strategies within the SLO County Multi-Jurisdictional Hazard Mitigation Plan. The City of Morro Bay maintains partnerships with the local Morro Bay, Fire, Police, and Harbor Departments to provide daily, long-term services required under the LHMP and the SLO County Multi-Jurisdictional Hazard Mitigation Plan. The City’s fire prevention and suppression services are provided by the City of Morro Bay Fire Department (MBFD), a fire and emergency service organization. As of June 2019, MBFD is staffed by 11 full time professional firefighters, 16 part time reserve firefighters, and 1 administrative assistant. The City of Morro Bay Police Department (MBPD) provides law enforcement services for the City. As of June 2019, MBPD is staffed at 17 sworn officers including the Chief and Commander and one reserve officer, for a ratio of 1.7 officers per 1,000 residents. The Harbor Department of the City of Morro Bay provides a high level of service in community education (water safety programs), public outreach, and community relations for boaters, beach users, and waterfront visitors. The Harbor Department is also involved with resource management for the City’s beaches and natural resources including coordination with state and federal regulatory agencies.

D.4.5 Other Mitigation Efforts

The Morro Bay Fire Department continuously reviews its current Insurance Service Office (ISO) Class 3 rating. The ratings calculate how well-equipped fire departments are to put out fires in that community. The ISO provides this score, often called the "ISO fire score," to homeowners insurance companies. The insurers then use it to help set homeowners insurance rates. The more well-equipped your fire department is to put out a fire, the less likely your house is to burn down. And that makes your home less risky, and therefore less expensive, to insure.

Countrywide





D.4.6 Opportunities for Enhancement

Based on the capability assessment, the City of Morro Bay has several existing mechanisms in place that help to mitigate hazards. There are also opportunities for the City to expand or improve on these policies and programs to further protect the community. Future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform City staff members on how best to integrate hazard information and mitigation projects into their departments. Continuing to train City staff on mitigation and the hazards that pose a risk to the City of Morro Bay will lead to more informed staff members who can better communicate this information to the public.

D.5 Mitigation Strategy

D.5.1 Mitigation Goals and Objectives

The City of Morro Bay's Hazard Mitigation Planning Group determined the goals from the 2012 Local Hazard Mitigation Plan continue to be appropriate for this plan update. The Group coordinated with the Fire Chief and the City Engineer to develop the following set of goals, objectives and mitigation actions for review by the City Council. The following are the City of Morro Bay's 2019 mitigation goals:

Goal 1. Promote disaster-resiliency for future development to help them become less vulnerable to hazards.

Objective 1.1 Facilitate the development (or updating) of the City's Comprehensive Plan, City General Plans, and zoning ordinances to limit (or ensure safe) development in hazard areas.

Objective 1.2: Facilitate the incorporation and adoption of building codes and development regulations that encourage disaster resistant design.

Objective 1.3: Facilitate consistent implementation of plans, zoning ordinances, and building and fire codes.

Goal 2. Enhance hazard mitigation coordination and communication.

Objective 2.1: Address data limitations identified in Hazard Profiling and Risk Assessment. Provide education to key stakeholders and the public to increase awareness of hazards and opportunities for mitigating hazards.

Objective 2.2: Increase awareness and knowledge of hazard mitigation principles and practice among local government officials.

Objective 2.3 : Participate in initiatives that have mutual hazard mitigation benefits for the City.

Objective 2.4: Encourage other organizations, within the public, private, and non-profit sectors, to incorporate hazard mitigation activities into their existing programs and plans.

Goal 3. Build and support local capacity and commitment to minimize the City's vulnerability to potential hazards.

Objective 3.1 Improve existing capabilities to warn the public of emergency situations.

Objective 3.2 Develop programs to enhance the safety of residents, students, and staff within the community.





Objective 3.3 Continue to support the applicable City departments in their ability to respond effectively to major emergencies.

Goal 4. Minimize the level of damage and losses to people as well as existing and future critical facilities and infrastructure due to flooding.

Objective 4.1 Implement policies, procedures, and regulations to reduce the exposure to flood hazards

Objective 4.2 Protect the improved property, natural resources, and life that are vulnerable to flood hazards.

Objective 4.3 Reduce the vulnerability of community assets particularly critical facilities located within the 100-year floodplain.

Objective 4.4 Continue to support and fund creek maintenance activities such as monitoring modifying property owners of hazardous conditions, as well as performing routine creek maintenance as needed and permitted by the California Department of Fish and Game.

Goal 5. Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure to tsunamis.

Objective 5.1 Develop a comprehensive approach to reducing the level of damage and losses resulting from tsunami events.

Objective 5.2 Protect the improved property, natural resources, and life vulnerable to a tsunami event.

Goal 6. Minimize the level of damage and losses to people and existing and future critical facilities and infrastructure due to wildland fires.

Objective 6.1 Develop a comprehensive approach to reducing the level of damage and losses due to wildland fires.

Objective 6.2 Protect the improved property, natural resources, and life vulnerable to the effects of wildland fires.

Objective 6.3 Educate the public about wildland fire dangers and mitigation measures.

Goal 7. Minimize the level of damage and losses to people and existing and future critical facilities and infrastructure due to earthquakes.

Objective 7.1 Develop a comprehensive approach to reducing the level of damage and losses due to earthquakes.

Objective 7.2 Protect the improved property, natural resources, and life vulnerable to the effects of earthquakes.

Goal 8. Minimize the level of damage and losses to people and existing and future critical facilities and infrastructure due to the accidental spills and releases of Hazardous Materials.

Objective 8.1 Support the existing comprehensive approach to reducing the level of damage and losses due to the accidental spills and releases of hazardous materials.

Objective 8.2 Protect the improved property, natural resources, and life vulnerable to the accidental spills and releases of hazardous materials.





Goal 9. Minimize the level of damage and losses to people and existing and future critical facilities and infrastructure due to biological agent threats.

Objective 9.1 Develop a comprehensive approach to minimizing the loss of human life and livestock and agricultural products due to biological agent threats.

Continued Compliance with the National Flood Insurance Program

The City has been an NFIP participating community since 1979. In addition to the mitigation actions identified herein the City will continue to comply with the NFIP. This includes ongoing activities such as enforcing local floodplain development regulations, including issuing permits for appropriate development in Special Flood Hazard Areas, and ensuring that this development 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.

D.5.2 Completed 2006 Mitigation Actions

During the 2019 planning process the City of Morro Bay Planning Team reviewed all the mitigation actions from the 2006 LHMP. The review indicated the City has completed eleven mitigation actions since 2006, and has made continued progress in implementing mitigation projects and building the community's resilience to disasters. The completed actions have reduced vulnerability to hazards and increased local capability to implement additional mitigation actions. Table D.23 below show the mitigation actions that have been completed since 2006.





Table D.23 City of Morro Bay Completed Mitigation Actions

Action ID	Corresponding Hazard(s)	Mitigation Action	Lead Agency	Priority	Actions Status Notes
3.B	Multi	Support the development of the County Regional Community Emergency Response Team (CERT) in the local areas.	Fire Department	Medium	completed
3.D	Multi	Task the Disaster Council with developing a Continuity of Operations Plan (COOP) for the City	Fire Department	High	completed
4.B	Flood	Maintain compliance with the National Flood Insurance Program (NFIP) requirements	Community Development/ Public Safety	Medium	continuous
4.C	Flood	Continue to participate and support the San Luis Resource Conservation District (RCD) County Flood Control Zone	Admin/ Community Development	High	continuous
4.D	Flood	Restrict construction of essential service facilities in the 100-year floodplain areas	Community Development	Medium	completed
5.D	Tsunami	Restrict construction of essential service facilities in tsunami inundation zone	Community Development	Medium	completed
6.C	Wildfire	Continue to enforce codes and ordinances that eliminate the use of wood shake roofs	Community Development Fire Department	Medium	continuous
6.D	Wildfire	Develop codes and ordinances that require fire sprinkler systems in all new structures built in the wildland urban interface areas of the City	Community Development Fire Department	Medium	continuous
7.B	Earthquake	Require property owners of URM buildings to post-approved signage on site	Public Safety	High	completed
8.A	Hazardous Materials	Establish a goal of sending one fire department employee every three years through the California Specialized Training Institute Hazardous Materials Specialist program so that they may become a member of the county's hazardous materials response team	Fire Department	Medium	completed
9.D	Biological Agents	Support establishment of a Vector Control District in San Luis Obispo County	Admin/Fire Department	Medium	continuous





D.5.3 Mitigation Actions

The Planning Team for the City of Morro Bay identified and prioritized the following future mitigation actions based on the conducted risk assessment (see Table D.24). 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. Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. Actions with an asterisk (*) are those that mitigate losses to future development.





Table D.24 City of Morro Bay 's Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
MB.1	Adverse Weather, Coastal Erosion/Sea Level Rise, Earthquake, Flood, Landslides, Tsunami, Wildfire	Educate the planning staff, City administrative staff and elected officials on the importance of keeping up to date on trends and developments in ,disaster preparedness. Attendance at seminars and lectures on the specific hazards would enable staff to make appropriate recommendations to the governing bodies as they go about the process of approving new developments.	All	Little to no cost	General Fund	Medium	Annual	Annual implementation
MB.2	Adverse Weather, Coastal Erosion/Sea Level Rise, Earthquake, Flood, Landslides, Tsunami, Wildfire	Through newsletters, advertisements, speaking engagements and other public contacts, educate the general public and key stakeholders on the issues, responsibilities, and current efforts and successes in the area of hazard mitigation and disaster preparedness.	All	Little to no cost	General Fund	Medium	Annual	Annual implementation
MB.3	Adverse Weather, Earthquake, Flood, Landslides, Tsunami, Wildfire	Train the police, harbor and fire department supervisors and officers on the activation of the County's early warning system and additional public notification systems to ensure that warning systems function as tools to mitigate potential hazard impacts to citizens.	Fire Dept/ Police Dept / Harbor Dept	Less than \$10,000	General Fund	Medium	Annual	Annual implementation





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
MB.4	Adverse Weather, Coastal Erosion/Sea Level Rise, Earthquake, Flood, Landslides, Tsunami, Wildfire	Survey the applicable department heads as to their perceived hazard mitigation and disaster preparedness needs. Convene a special meeting of the Disaster Council to prioritize these needs and develop funding strategies.	Fire Department	Little to no cost	Staff Time	High	Annual	Annual implementation
MB.5	Biological agents	Participate in the public education process of human and agricultural health related issues as available.	Admin/FD	Little to no cost	Staff Time	Medium	2-3 yrs.	In progress
MB.6	Biological agents	Encourage broad participation in County public and agricultural health associated emergency preparedness exercises	Admin/FD	Little to no cost	Staff Time	Medium	1 yr.	In progress
MB.7	Biological agents	Increase involvement of special needs populations (disabled, elderly) in education, awareness, hazard mitigation and disaster preparedness activities	Admin/FD	Little to no cost	Staff Time	Medium	1 yr.	In progress
MB.8	Earthquake	Perform a seismic safety review of all current City structures, infrastructure and facilities paying close attention to structural and non-structural mitigation of all facilities. Convene the Disaster Council to prioritize the findings of the seismic safety review and research funding strategies.	PS / Fire Department	Less than \$10,000	Staff Time	High	Annual	Annual Implementation
MB.9	Flood	Continue to work cooperatively with the state and federal flood-related agencies	All	Little to no cost	Staff Time	Medium	Annual	Annual Implementation
MB.10	Tsunami	Review the current City Tsunami Plan and update it as necessary to ensure regional consistency with the SLO County Tsunami Plan	Admin / Fire Department	Little to no cost	Staff Time	Medium	Annual	Annual Implementation





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
MB.11	Tsunami	Educate the public about tsunami dangers and appropriate response and mitigation actions	Fire Department	Little to no cost	Staff Time	Medium	Annual	Annual Implementation
MB.12	Tsunami	Evaluate the potential to maximize life safety associated with the use of route signs, tactical staging areas, tsunami safe zones, and traffic control points as outlined in the County Tsunami Plan.	Fire Department / PS	Less than \$10,000	FEMA HMA	High	1-2 years	Deferred. Current City Management is re-evaluating the regional plan to implement
MB.13	Wildfire, Hazardous Trees	Work with the California State Parks and San Luis Obispo County Fire Safe Council to initiate fuel thinning and chipping projects in the Black Mountain area within the City limits.	Fire Department	Less than \$10,000	FEMA HMA	Medium	3-5 yrs.	Annual implementation. State Parks has been a great partner providing great work to improve Black Hill
MB.14	Wildfire	Continue to support the City's weed abatement program to provide additional wildfire mitigation through vegetation management.	Fire Department	7 to 10% of Fire Marshal	PDM Grant/ Staff Time/ Dept. Budget	Medium	Annual	Annual Implementation
MB.15	Flood	Amend the Municipal Code to require flood risk disclosure and active acknowledgment of expanded flood risk in property purchases/turnovers.	Community Development	Unknown	General Fund	Medium	1-2 years	New
MB.16*	Flood	Require new development in the Sea Level Rise Hazard Overlay Zone to evaluate potential impacts to adjacent or nearby properties from all proposed structural flood protection measures to ensure that these measures will not create adverse direct and/or cumulative on-site or off-site impacts.	Community Development	Unknown	Development Fees	Medium	Annual	New





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
MB.17*	Flood	Continue to adopt and enforce the most up-to-date California Building Standards Code and California Fire Code, with appropriate local amendments.	Community Development; Fire	Unknown	General Fund	Medium	Annual	New
MB.18	Flood	Develop timing triggers for actions to address sea level rise impacts for each character area in Morro Bay based on sea level rise adaptation studies, sea level rise modeling, best available science, and the vision for each character area.	Community Development	Unknown	General Fund	Medium	3-5 yrs.	New
MB.19*	Flood	During Development Review, determine if any structures meant for human habitation are to be constructed within the 100-year floodplain or in the Sea Level Rise Hazard Overlay Zone. If necessary, evaluate each structure's safety from flood and sea level rise related hazards, and recommend remedial actions.	Development Standards/ Community Development	Unknown	General Fund, Development Fees	Medium	Annual	New

*mitigates impacts to new development





D.6 Implementation and Maintenance

Moving forward, the City will use the mitigation action table in the previous section to track progress on implementation of each project. As illustrated in the completed actions table (Table D.23), much progress has been made since the plan was originally developed. Implementation of the plan overall is discussed in Chapter 8 of the Base Plan.

D.6.1 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 Engineering Division may utilize the hazard information when implementing the City's Community Investment Program and the Planning and Building Divisions may utilize the hazard information when reviewing a site plan or other type of development applications. The City will also incorporate this LHMP into the Safety Element of their General Plan, as recommended by Assembly Bill (AB) 2140.

As noted in Chapter 8 of the Base Plan, the HMPC representatives from Morro Bay 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 HMPC plan review meeting.

D.6.2 Monitoring, Evaluation and Updating the Plan

The City will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Chapter 8 of the Base Plan. The City will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The City of Morro Bay Planning Team will be responsible for representing the City in the County HMPC, 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.





E.1 Community Profile

E.1.1 Mitigation Planning History and 2019 Process

This annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan update. This Jurisdictional Annex builds upon the previous version of the City of Paso Robles Local Hazard Mitigation Plan completed in February 2016; that previous mitigation plan is referenced several times by the City’s General Plan. A review of jurisdictional priorities found no significant changes in priorities since the last update.

The City’s Local Planning Team (LPT) held responsibility for implementation and maintenance of the plan. The City Fire Chief is responsible for updating the plan.

Table E.1 Paso Robles Hazard Mitigation Plan Revision Planning Group

Department or Stakeholder	Title
Fire Department	Fire Chief
Finance Department	Senior Accountant
Community Services	Rec. Services Manager
Fire Department	Battalion Chief
Police Department	Commander
Public Works	Water/Street Manager
Community Development	Chief Building Official

More details on the planning process follow and how the jurisdictions, service districts and stakeholders participated, as well as how the public was involved during the 2019 update, can be found in Chapter 3 of the Base Plan.

E.1.2 Geography and Climate

Paso Robles is located in northern San Luis Obispo County, California, approximately halfway between the cities of Los Angeles and San Francisco. It is 19.4 square miles (12,534.7 acres) and 24 miles inland from the Pacific Ocean. Paso Robles is considered to be in the most northern area of Southern California.

Paso Robles is bordered on the south and west by the rugged mountainous ridges of the Santa Lucia Coastal Range, to the east by the low hills of the La Panza and Temblor Ranges, and to the north by the low hills and flat-topped mesas of the Diablo Range. The highest elevations in the vicinity are located in the Santa Lucia Coastal Range where many peaks are 2,000 to 3,400 feet above mean sea level. Substantial ridgelines are distributed throughout the western, southern, and eastern portions of the City. The Mediterranean climate of the region and coastal influence produce moderate temperatures year round, with rainfall concentrated in the winter months.

Within the City limits, the Salinas River, U.S. Highway 101 and the Union Pacific Railroad divides the City east to west at the center of the City. The City is bounded by steep hills and canyons on the west, and open rolling hills to the east. Suburban residential development frames the City on the southern and eastern edges, with lower density residential development to the north and west of the City. Agricultural uses both north and south of the





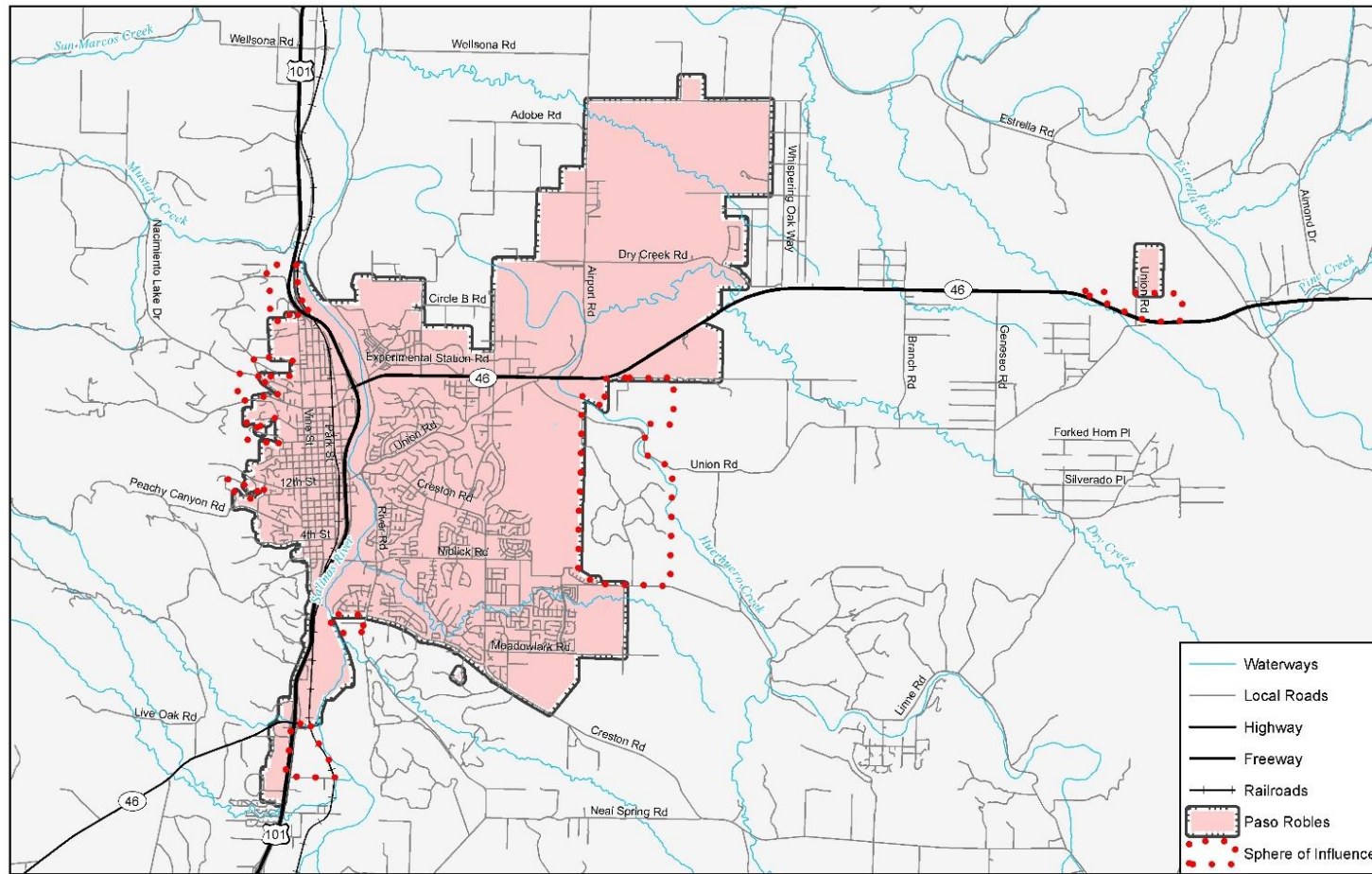
City eventually give way to the unincorporated communities of Templeton and San Miguel, approximately 5 miles south and 9 miles north, respectively.

Figure E.1 displays a map of the City of Paso Robles planning area.





Figure E.1 The City of Paso Robles



Map compiled 5/2019:
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office, LAFCO



E.1.3 History

The Paso Robles area was home to several Native American tribes for thousands of years before the mission era. In 1857, James and Daniel Blackburn purchased the Rancho Paso de Robles Mexican land grant. The land was a rest-stop for travelers of the Camino Real trail, and was known for its mineral hot springs. In 1864, the first El Paso de Robles Hotel was constructed and featured a hot mineral springs bath house. In 1886, after the coming of the Southern Pacific Railroad, work began on laying out a town site, with the resort as the nucleus.

Paso Robles incorporated as a City in 1889. That same year, construction began on the current El Paso de Robles Hotel, which opened for business in 1891.

For a time, Paso Robles was known as the "Almond City" because the local almond growers created the largest concentration of almond orchards in the world. The ranchers in the outlying areas were very important to the Paso Robles area. On these ranches were cattle and horses, grain crops (primarily wheat and barley), garden produce and fruit and nut orchards. Many of these ranch lands and orchards have become vineyards for the many wineries which currently draw tourists to the area.

Wine grapes were introduced to the Paso Robles soil in 1797 by the Spanish conquistadors and Franciscan missionaries. The first vineyardists in the area were the Padres of the Mission San Miguel, and their old fermentation vats and grapevine artwork can still be seen at the Mission, north of the City of Paso Robles. Commercial winemaking in the Paso Robles region dates back to 1882 when Andrew York, a settler from Indiana, established the Ascension Winery at what is now York Mountain Winery. Paso Robles' reputation as a premier wine region became established in the 1920s and 30s, and continues to this day.

Paso Robles has a "Council-Manager" general law form of government where the City Manager is appointed by the City Council and is the Chief Executive Officer of the Municipal Corporation. The City Council acts as the board of directors of the municipal corporation and meets in a public forum where citizens may participate in the governmental process.

The City Council consists of five members elected at-large, on a non-partisan basis. Residents elect the Mayor and four Council members, making each accountable to the entire citizenry. Council members serve four-year overlapping terms. The mayor is directly elected and serves a two-year term. The City Council establishes City policies, approves ordinances and resolutions, makes land use decisions, approves agreements and contracts, hears appeals on decisions made by City staff or advisory committees, and sets utility rates. The Mayor and City Council members receive a monthly stipend set by resolution.

The City Manager is the Chief Executive Officer of the City. The City Manager is appointed by the City Council to enforce city laws, to direct the operations of city government, to prepare and manage the municipal budget, and to implement the policies and programs initiated by the City Council. The City Manager is responsible to the City Council, and directs departments and operations.

The City Attorney is appointed by the City Council and works under contract to the City. The City Attorney is the legal advisor for the council. He or she provides general legal advice on all aspects of city business and represents the City in legal actions.

The City Clerk is an elected official. The City Clerk is charged with responsibility of maintaining records of council actions, permanent records of all city transactions and documents, and coordinating the city's elections. The Deputy City Clerk is an appointed staff position that assists the City Clerk in carrying out all duties.





The City Treasurer is an elected position responsible for the custody and investment of all city funds. The City Treasurer is also responsible for administrating the City budget.

Boards, commissions and special committees composed of local citizens are frequently appointed by the City Council to advise the City Council in one or more aspects of city government. Typical advisory committees include Parks & Recreation, Streets and Utilities, Airport, and Youth and Senior Citizens. The Planning Commission implements Council development and land use policy, and makes recommendations for policy revisions.

One of the major investments the City makes is the City’s work force. City employees perform the day-to-day functions necessary to provide services to the community. Department heads administer specific functions of city government and are responsible to the City Manager. Such positions are Public Works Director, Community Development Director, Library and Recreation Services Director, Administrative Services Director, and Police and Fire Chiefs.

E.1.4 Economy

Based on the 2017 American Community Survey (ACS) Paso Robles’ labor force is estimated to be 16,782 persons. The City has a relatively diverse economic, with no single sector or industry making up more than 20% of all jobs. The educational services, health care and social services accounts for 17.8% of jobs, followed by retail trades (12.5%); manufacturing (12.0%); and arts, entertainment and recreation, accommodation, & food services (11.7%). While the City’s manufacturing sector has declined some – as recently as 2001 it represented 23.2% of the local economy – Paso Robles is one of the few areas in the region where manufacturing still accounts for a sizable fraction of employment. By comparison, manufacturing in San Luis Obispo County as a whole is approximately 6.0%.

The City’s largest employers include Paso Robles School District, Firestone Walker, Walmart, Applied Tech., City of Paso Robles, IQMS, Joslyn-Sunbank, Zurn, Target, Lowes, and Cuesta College. At 4.5%, the City’s unemployment rate is half what is was in 2012 in the aftermath of the economic recession. This has been accompanied by a nearly 12% increase in per capita income, from \$27,199 in 2012 to \$30,446 in 2017.

Table E.2 shows how Paso Robles’ labor force breaks down by occupation and industry based on estimates from the U.S. Census Bureau’s 2017 American Community Survey.

As the leading agricultural business in the county, the area's wine industry attracts more than half a million visitors to San Luis Obispo County annually. A 2007 study of the Paso Robles and Greater San Luis Obispo County Wine and Wine Grape industries have an annual impact of \$1.8 billion on the state and local economy. This has helped the economy enjoy approximately \$113 million annually in tourism expenditures.

Table E.2 City of Paso Robles Employment by Industry (2017)

Industry	# Employed
Population (2017)	31,409
In Labor Force	16,782
Agriculture, forestry, fishing and hunting, and mining	834
Armed Forces	70
Construction	1,154
Manufacturing	2,008
Wholesale trade	339





Industry	# Employed
Retail trade	2,091
Transportation and warehousing, and utilities	694
Information	234
Finance and insurance, and real estate and rental and leasing	479
Professional, scientific, and management, and administrative and waste management services	1,070
Educational services, and health care and social assistance	2,980
Arts, entertainment, and recreation, and accommodation and food services	1,969
Other services, except public administration	900
Public administration	1,215
Unemployed	745

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

E.1.5 Population

The U.S. Census Bureau estimated the City’s 2017 population as 31,409, up from 29,793 at the 2010 census. Table E.3 shows an overview of key social and demographic characteristics of the City taken from the U.S. Census Bureau’s American Community Survey.

Table E.3 City of Paso Robles Demographic and Social Characteristics, 2012-2017

City of Paso Robles	2012	2017	% Change
Population	29,770	31,409	+5.5%
Median Age	35.1	36.8	+4.8%
Total Housing Units	11,686	12,391	+6.0%
Housing Occupancy Rate	93.9%	95.2%	+1.3%
% of Housing Units with no Vehicles Available	5.1%	4.2%	-0.9%
Median Home Value	\$369,800	\$404,700	+9.4%
Unemployment	9.0%	4.5%	-4.5%
Mean Travel Time to Work (minutes)	22.8	23.2	+1.8%
Median Household Income	\$57,977	\$61,053	+5.3%
Per Capita Income	\$27,199	\$30,446	+11.9%
% of Individuals Below Poverty Level	12.2%	12.1%	-0.1%
# of Households	10,969	11,802	+7.6%
Average Household Size	2.67	2.65	-0.7%
% of Population Over 25 with High School Diploma	85.0%	84.2%	-0.8%
% of Population Over 25 with Bachelor’s Degree or Higher	20.9%	23.8%	+2.9%
% with Disability	11.2%	9.3%	-1.9%
% Speak English less than "Very Well"	12.0%	13.6%	+1.6%

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

Despite the economic gains discussed in the previous section, the number of individuals living below the poverty level has stayed relatively constant, although it is still below average for the County (13.8%) and for California as





(15.1%). The percentage of high school graduates and college graduates are below average for the County, State, and Nation as a whole. The number of individuals who speak English less than very well is also significantly above the County averages (6.8%), though still below the State average (18.4%).

E.1.6 Development Trends

According to the 2003 General Plan Land Use Element (revised in April 2014) approximately 78.1 percent (8,639 acres) of the City’s total land area is developed as residential, commercial, mixed use and industrial land, and public facilities uses. The remaining land is made up of 2,448 acres of agriculture (7.3 percent) and parks and open space (14.5 percent).

Table E.4 shows the potential land use categories for the 2025 build-out population of 44,000 persons as identified in the City’s General Plan. However, as noted in the revised Land Use Element, it is expected that an additional 20 years (2045) or longer will be needed to reach the 44,000 persons build-out population.

Table E.4 General Plan Development Potential (2014 Update)

Land Use Category	Acreage	Percent
Commercial	1,271	10.0%
Business Park/Industrial	1,721	13.5%
Other/Public Facilities	1,947	15.3%
Agriculture & Open Space	2,572	20.0%
Residential	5,228	41.2%
Total	12,739	100%

Source: City of El Paso de Robles General Plan 2003 Land Use Element, as amended April 1, 2014

When the General Plan Update was adopted in 2003, based on the pace of development activity at that time, it was anticipated that residential build-out of the City, resulting in a population of 44,000, would occur by 2025. However, the national economic slowdown that began in 2007, coupled with the history of periodic slowdowns over prior decades, has caused the City to consider that build-out and an attendant population of 44,000 may take more than 20 additional years: to 2045 or longer, to attain.

Updated zoning and land use maps can be found on the City’s website.

E.2 Hazard Identification and Summary

The Paso Robles planning team 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 E.5). There are no hazards that are unique to Paso Robles. The overall hazard significance takes into account the geographic area, probability and magnitude as a way to identify priority hazards for mitigation purposes. ‘NI’ in the table means not identified. This is discussed further in the Vulnerability section.

Table E.5 City of Paso Robles – Hazard Summaries

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Adverse Weather: Thunderstorm/ Heavy Rain/Hail/Lighting/Dense Fog/Freeze	Significant	Highly Likely	Limited	High
Adverse Weather: High Wind	Significant	Highly Likely	Limited	High





Adverse Weather: Extreme Heat	Extensive	Highly Likely	Limited	High
Agricultural Pest Infestation and Disease	Limited	Limited	Unlikely	Low
Biological Agents (naturally occurring)	Limited	Limited	Unlikely	Low
Dam Incidents	Significant	Occasional	Limited	Low
Drought and Water Shortage	Extensive	Likely	Limited	High
Earthquake	Significant	Likely	Critical	High
Flood	Significant	Likely	Limited	High
Landslides and Debris Flow	Limited	Likely	Limited	High
Subsidence	Likely	Limited	Negligible	High
Wildfire	Extensive	Highly Likely	Critical	High
Human Caused: Hazardous Materials	Extensive	Highly Likely	Negligible	Low
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		

E.3 Vulnerability Assessment

The intent of this section is to assess Paso Robles’s vulnerability separate from that of the planning area as a whole, which has already been assessed in Section 5.3 Risk Assessment in the main plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area.

The information to support the hazard identification and risk assessment was based on the City’s previous LHMP. A Local Hazard Mitigation Plan Update Guide and associated worksheets was distributed to each participating municipality or special district to complete during update process in 2019. Information collected





was analyzed and summarized in order to identify and rank all the hazards that could impact 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 5-2). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction. Identifying these differences helps the reader to differentiate the jurisdiction's risk and vulnerabilities from that of the overall County.

Note: The hazard "Significance" reflects overall ranking for each hazard, and is based on the City of Paso Robles's HMPC member input from the Data Collection Guide and the risk assessment developed during the planning process (see Section 5.1 of the Base Plan), which included a more detailed qualitative analysis with best available data.

The hazard summaries in Table E.5 above reflect the hazards that could potentially affect the City. The discussion of vulnerability for each of the following hazards is located in Section E.3.2 Estimating Potential Losses. Based on this analysis, the priority hazards (High Significance) for mitigation are:

- Adverse Weather: Thunderstorm/Heavy Rain/Hail/Lighting/Dense Fog/Freeze
- Adverse Weather: High Wind
- Adverse Weather: Extreme Heat
- Drought and Water Shortage
- Earthquake
- Flood
- Landslides and Debris Flow
- Subsidence
- Wildfire

Other Hazards

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 in this plan, and are not assessed individually for specific vulnerabilities in this section. In the City of Paso Robles, those hazards include dam incidents and hazardous materials incidents.

Coastal hazards (coastal storm/coastal erosion/sea level rise and tsunami) are Not Applicable (N/A) to the City of Paso Robles.

E.3.1 Assets at Risk

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

Values at Risk

The following data on property exposure is derived from the San Luis Obispo County 2019 Parcel and Assessor data. This data should only be used as a guideline to overall values in the City as the information has some limitations. The most significant limitation is created by 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 likely low and does not reflect current market value of properties. 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. Table E.6 shows the exposure of properties (e.g., the values at risk) broken down by property type for the City of Paso Robles.

Table E.6 2019 Property Exposure for the City of Paso Robles by Property Types

Property Type	Parcel Count	Improved Value	Content Value	Total Value
Agricultural	25	\$47,041,880	\$47,041,880	\$94,083,760
Commercial	552	\$347,729,528	\$347,729,528	\$695,459,056
Government/Utilities	175	\$1,520,500	--	\$1,520,500
Other/Exempt/Misc.	313	\$99,728,929	--	\$99,728,929
Residential	8,281	\$1,768,587,601	\$884,293,801	\$2,652,881,402
Multi-Family Residential	728	\$223,890,340	\$111,945,170	\$335,835,510
Mobile/Manufactured Homes	326	\$42,447,085	\$21,223,543	\$63,670,628
Residential: Other	138	\$136,086,048	\$68,043,024	\$204,129,072
Industrial	71	\$101,658,828	\$152,488,242	\$254,147,070
Vacant	105	\$53,222,625	--	\$53,222,625
TOTAL	10,714	\$2,821,913,364	\$1,632,765,187	\$4,454,678,551

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor's Office data 2019

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the City of Paso Robles from San Luis Obispo County GIS is provided in Table E.7 and illustrated in Figure E.3. Table E.8 lists additional critical assets identified by the planning team.

Table E.7 City of Paso Robles's Critical Facilities

Facility Type	Counts
Colleges / Universities	1
Day Care Facilities	14
Emergency Medical Service Stations	1
Fire Stations	3
Local Law Enforcement	1
Nursing Homes	2
Private Schools	3
Public Schools	12
Supplemental Colleges	1
Urgent Care	2
Power Plants	1





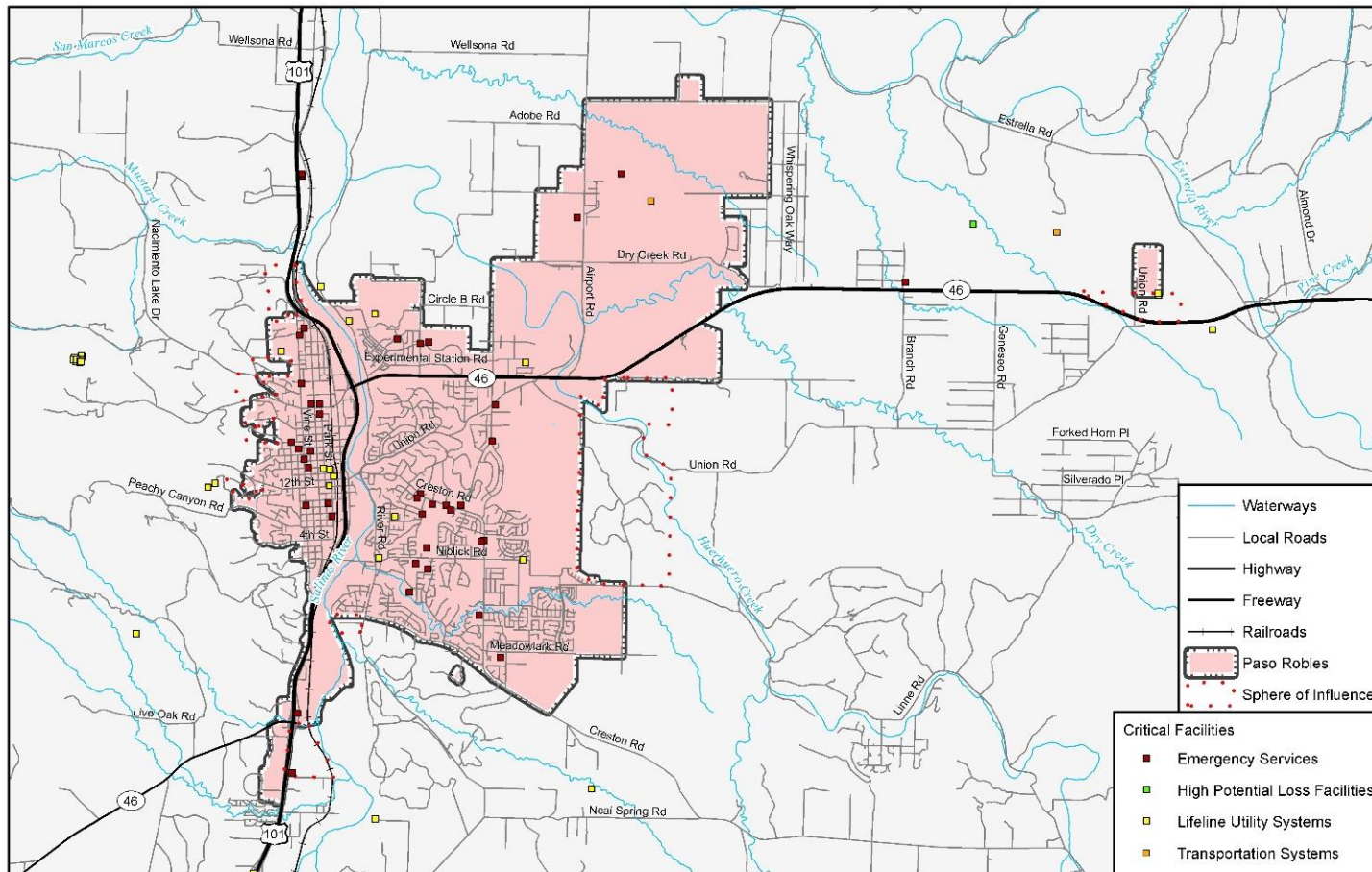
Facility Type	Counts
AM Transmission Towers	1
FM Transmission Towers	1
Microwave Service Towers	12
Water Treatment Facilities	1
Energy Commission Facilities	2
City Hall	1
Centennial Park	1
Solar Facility	1
Wastewater Treatment Facility	1
Reclaimed Water Facility	1
Senior Center	1
Airports	1
Total	64

Source: San Luis Obispo County Planning & Building, HIFLD 2017





Figure E.2 Critical Facilities in Paso Robles



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCO, HIFLD

**Table E.8 Critical Assets Identified by Paso Robles Planning Team**

Name of Asset	Type	Replacement Value
Public Safety Center	EI	\$26,617,412
Fire Station 2	EI	\$2,564,063
Fire Station 3	EI	\$569,290
City Hall / Library	EI	\$34,939,638
Water Maintenance Yard	EI	\$1,162,597
Water yard	EI	\$1,260,592
21st Reservoir	EI	\$8,135,298
Golden Hill Reservoir	EI	\$4,929,794
Merry Hill Reservoir	EI	\$849,806
Airport Complex	EI	\$9,545,306
Bus / Train Station	EI	\$2,953,766
Senior Center	EI	\$4,602,493
Veterans Bldg.	EI	\$3,234,992
Barney Schwartz Park	VF	\$14,041,296
City Park	VF	\$5,402,108
Lawrence Moore Park	VF	\$379,124
Paso Robles Municipal Pool	VF	\$3,708,901
Sherwood Forest	VF	\$1,690,419

Source: Paso Robles Planning Team.

EI: Essential Infrastructure. VF: Vulnerable Facility

Transportation and Lifeline Facilities

Major transportation and lifeline facilities are located adjacent to US Highway 101 and the Union Pacific Railroad line that traverse through the City. Damages to these transportation corridors would impact not only Paso Robles but the entire region.

Other lifelines include Niblcik Bridge, 13th Street Bridge, Highway 46E Bridge, Highway 46W and G14.

Historic and Cultural Resources

The National Register of Historic Places contains five sites in the City of Paso Robles:

- Bank of Italy (aka Old Bank of America), 1245 Park St.
- Brewster-Dutra House (aka Moye House), 1803 Vine St.
- Carnegie Library, City Park, 800 12th St.
- Lincoln School (aka Adelaida School), 9000 Chimney Rock Rd. (outside City limits)
- Paso Robles Almond Growers Association Warehouse (aka Farmers' Alliance Building), 525 Riverside Ave.

There is also one California State Historical Landmark located in Paso Robles: the Estrella Adobe Church.

Natural Resources

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. 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.

Key natural assets include the riverbed with riverwalk and open space areas throughout the City.

Economic Assets

Key economic assets include: the downtown corridor, car dealerships, Lowe's Plaza, Woodland Plaza, Target Center, Airport commercial businesses, and Commerce Road businesses.

E.3.2 Estimating Potential Losses

Note: This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to HMPC member input) it differs from that of the overall County.

Table E.6 above shows Paso Robles's exposure to hazards in terms of number and value of structures. San Luis Obispo County's parcel and assessor data was used to calculate the improved value of parcels. The most vulnerable structures are those in the floodplain (especially those that have been flooded in the past), unreinforced masonry buildings, and buildings built prior to the introduction of modern-day building codes. Impacts of past events and vulnerability to specific hazards are further discussed below (see Section 4.1 Hazard Identification for more detailed information about these hazards and their impacts on San Luis Obispo County as a whole).

Adverse Weather: Thunderstorm/Heavy Rain/Hail/Lighting/Dense Fog/Freeze

Paso Robles's risk and vulnerability to this hazard does not differ substantially from that of the County overall. Weather data for the North County Inland Area, Paso Robles Weather Station, can be found in Section 5.3.1 of the Base Plan.

Adverse Weather: High Wind/Tornado

Paso Robles's risk and vulnerability to this hazard does not differ substantially from that of the County overall.

Adverse Weather: Extreme Heat

Paso Robles's risk and vulnerability to this hazard does not differ substantially from that of the County overall. Weather data for the North County Inland Area, Paso Robles Weather Station, can be found in Section 5.3.1 of the Base Plan.

Drought and Water Shortage

The City of Paso Robles gets the majority of its water from the Paso Robles groundwater basin. The Paso Robles basin underlies approximately 640 square miles in northeastern San Luis Obispo County, and is estimated to have over 26 million acre-feet of water in storage. The basin has experienced serious declines over the years due to groundwater pumping, with the largest water use sector being agricultural uses. As a result, the State has identified the Paso Robles basin as the highest priority groundwater basin within San Luis Obispo County. The large volume of the basin means it can continue to supply water through multiple drought years, even though the increased pumping will put additional strain upon the stored groundwater resource. The perennial yield of the Paso Robles Groundwater Basin is estimated to be 89,700 acre-feet per year (AFY). Annual average change in groundwater storage for the period 1981-2011 is estimated at -2,400 AFY.





Until 2015, all water demands in the City were met with groundwater. The City of Paso Robles began using Nacimiento Project Water in 2015. The City holds a right to 6,488 AFY.

Historically, recycled water has not been used as a source of water in Paso Robles. The City is currently upgrading its water treatment system and plans to use its treated wastewater for irrigation and other non-potable uses.

Earthquake

Historically, most of the earthquakes that have occurred near Paso Robles have originated from movement along the San Andreas Fault, which is located approximately 38 miles northeast of the City limits. While no large earthquakes greater than Mw 5.0 have occurred recently within the City limits, a number of relatively large earthquakes outside Paso Robles have caused damage within the County of San Luis Obispo and neighboring counties.

The only known mapped fault within the City of Paso Robles is the Rinconada fault. The potentially active Rinconada fault is mapped through southwestern Paso Robles and crosses Highway 101 just south of Spring Street. A trace of the fault is also identified as running up Spring Street, which corresponds to a line of hot springs that once existed in this area but have since been capped and buried. As a potentially active fault, the Rinconada presents a moderate fault rupture hazard to the City. Further studies to evaluate the activity of the faults are warranted, prior to placing structures near the mapped fault traces.

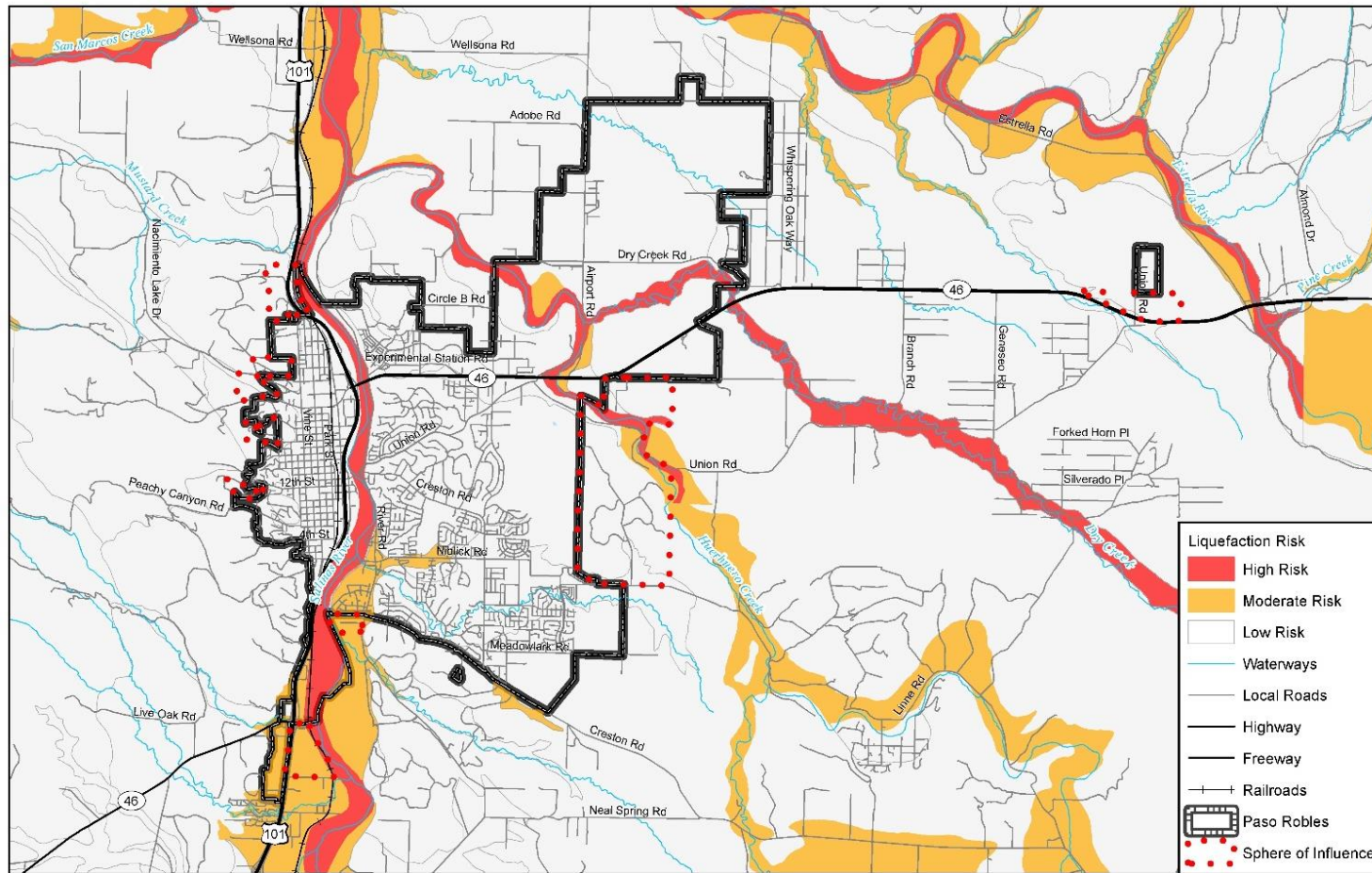
The northern end of the potentially active La Panza fault is located about 20 kilometers (12.43 miles) southeast of Paso Robles, near the town of Creston. The northwest striking La Panza fault is about 75 kilometers (46.6 miles) long. The Huerhuero fault is a possible extension of the La Panza and is mapped trending northwest along Huerhuero Creek south of Highway 46 but is not within the current City limits.

In addition to being at risk of groundshaking as a result of a fault rupture, the City is also susceptible to the effects of liquefaction. The areas of Paso Robles that have a high potential to be underlain by potentially liquefiable sediments are those areas underlain by younger alluvium. Portions of the City that are located on recent alluvium in the low-lying areas adjacent to the Salinas River (or its tributaries) appear to have the highest potential for liquefaction. Site specific studies are needed to evaluate if a geologic unit actually contains potentially liquefiable materials, and if they require mitigation for development. Refer to Section 5 of the Base Plan for additional details on the City's risk to liquefaction.





Figure E.3 City of Paso Robles Liquefaction Risk



Map compiled 6/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office, LAFCO

0 2.5 5 Miles



**Table E.9 City of Paso Robles High Liquefaction Risk by Property Type**

Property Type	Parcel Count	Improved Value
Commercial	7	\$16,318,866
Government/Utilities	14	--
Other/Exempt/Misc.	18	\$7,183,009
Residential	12	\$4,120,150
Multi-Family Residential	2	\$10,941,483
Mobile/Manufactured Homes	1	\$8,229
Industrial	3	\$5,203,845
Vacant	3	\$1,262,852
TOTAL	60	\$45,038,434

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table E.10 City of Paso Robles Moderate Liquefaction Risk by Property Type

Property Type	Parcel Count	Improved Value
Commercial	47	\$79,980,028
Government/Utilities	7	--
Other/Exempt/Misc.	8	\$14,634,770
Residential	375	\$75,137,054
Mobile/Manufactured Homes	1	\$619,485
Residential: Other	2	\$12,124,284
Industrial	5	\$16,516,884
Vacant	12	\$11,398,932
TOTAL	457	\$210,411,437

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table E.11 City of Paso Robles Critical Facilities at Risk from Liquefaction

Critical Facility Type	Count	Risk
Public Schools	1	Moderate
Urgent Care	1	Moderate
TOTAL	2	

Source: San Luis Obispo County Planning & Building, HIFLD 2017

Flood and Levee Failure

In Paso Robles, the two most common types of flooding are riverine flooding, and localized flooding. The most serious flood events on record for Paso Robles occurred during storms in the early months of 1969, 1973, 1978, 1995, 2001, 2004-2005, 2005-2006, and 2010-2011.

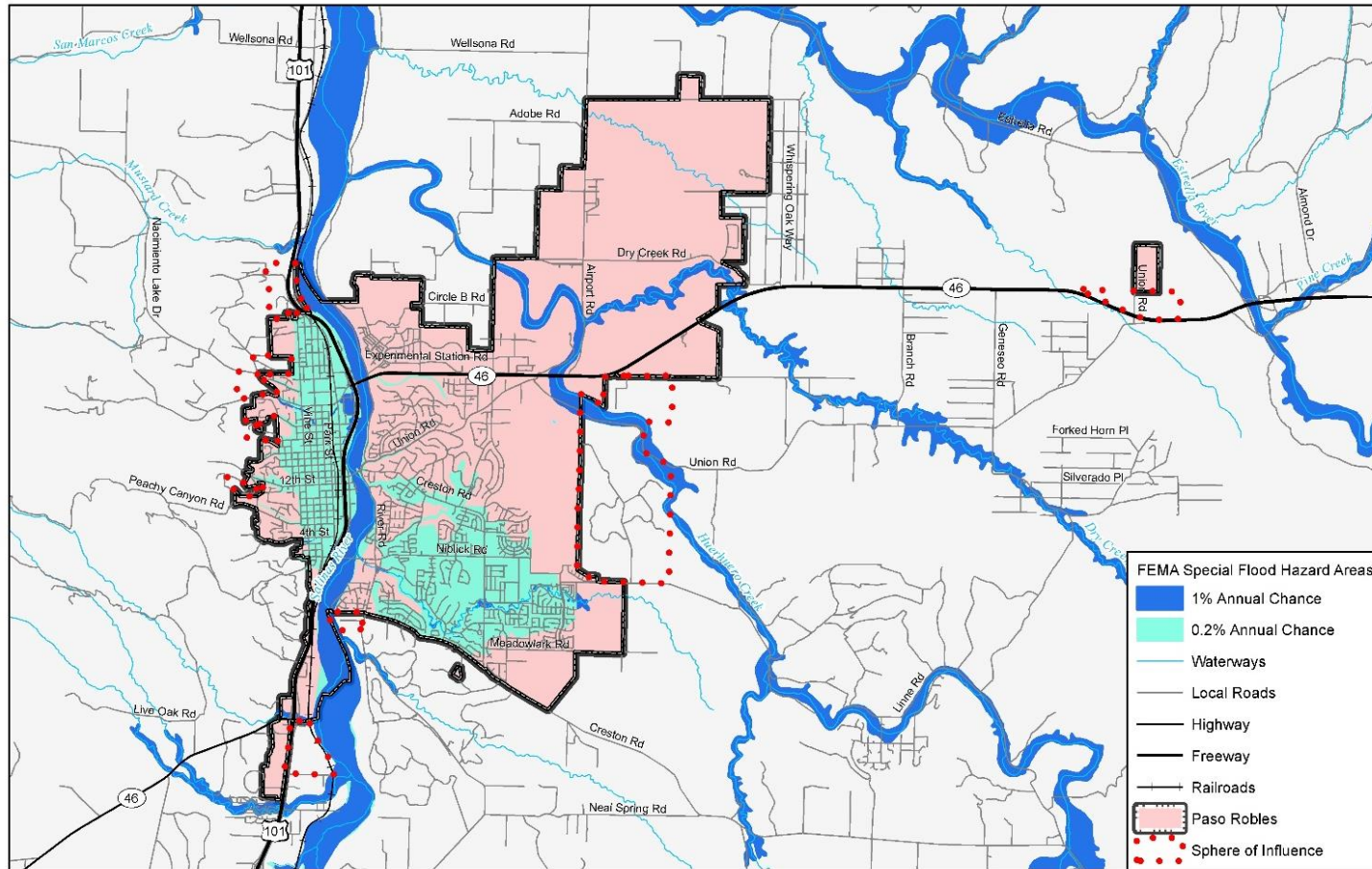
Values at Risk

Following the methodology described in Section 5.3.8, a flood map for the City of Paso Robles was created (see Figures E.4 and E.5). Tables E.11 and E.12 summarize the values at risk in the City's 100-year and 500-year floodplain, respectively. These tables also detail loss estimates for each flood. Note that the potential loss increases significantly with the 500-year or 0.2% annual chance flood.





Figure E.4 City of Paso Robles' 100- and 500-Year Floodplains



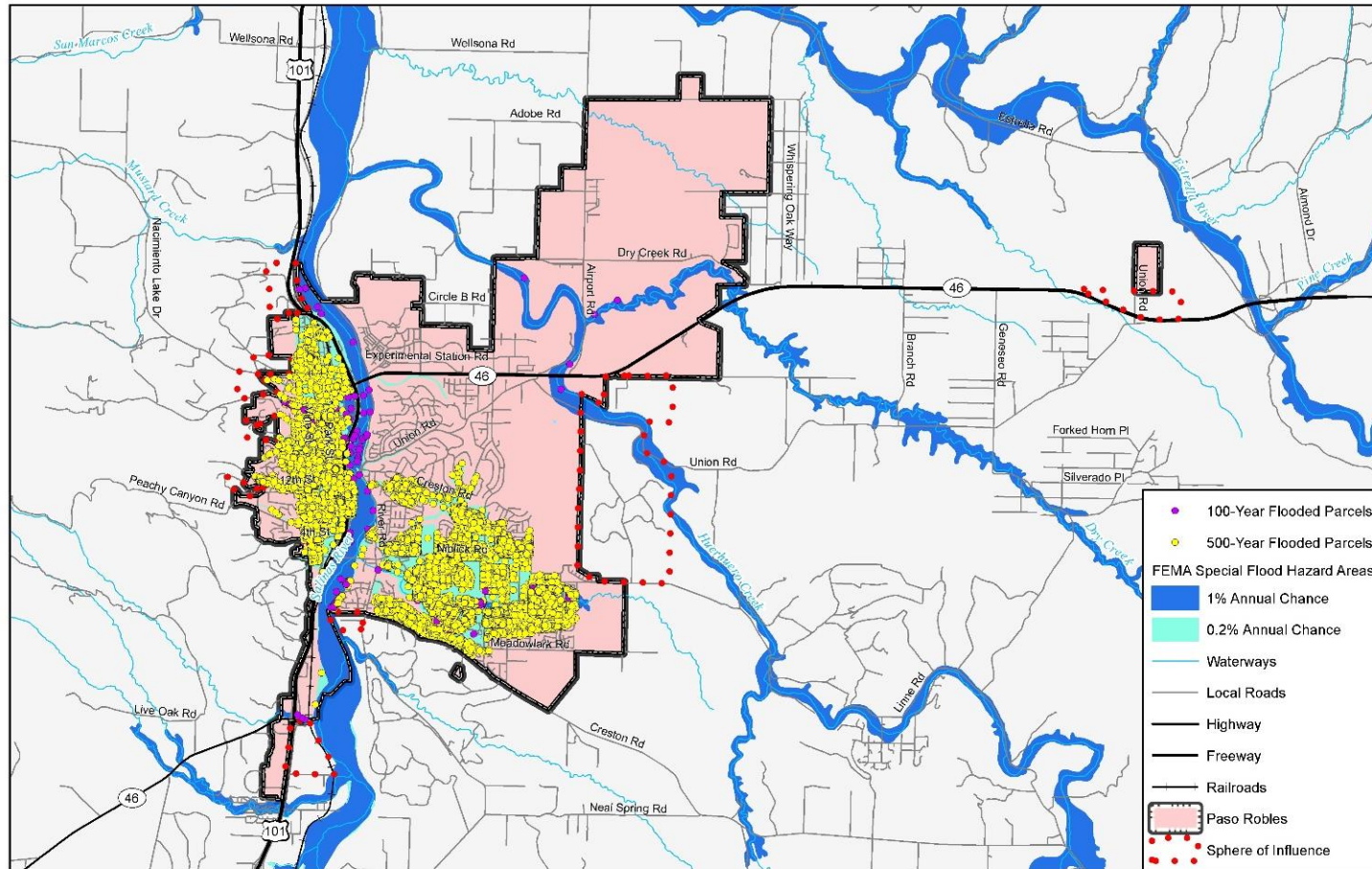
Map compiled 5/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, FEMA NFHL

0 2.5 5 Miles





Figure E.5 City of Paso Robles' Parcels at Risk of Flooding



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCO, FEMA NFHL, ParcelQuest

0 2.5 5 Miles





Population at Risk

Table E.12 City of Paso Robles 1% (100 year) Floodplain Risk

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	7	\$6,685,871	\$6,685,871	\$13,371,742	\$3,342,936	--
Government/Utilities	27	--	--	\$0	\$0	--
Other/Exempt/Misc.	25	\$7,438,009	--	\$7,438,009	\$1,859,502	--
Residential	31	\$6,036,122	\$3,018,061	\$9,054,183	\$2,263,546	78
Multi-Family Residential	31	\$25,115,004	\$12,557,502	\$37,672,506	\$9,418,127	78
Mobile/Manufactured Homes	1	\$440,283	\$220,142	\$660,425	\$165,106	3
Industrial	1	\$139,934	\$209,901	\$349,835	\$87,459	--
Vacant	3	\$43,711	--	\$43,711	\$10,928	--
TOTAL	126	\$45,898,934	\$22,691,477	\$68,590,411	\$17,147,603	158

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table E.13 City of Paso Robles 0.2% (500 year) Floodplain Risk

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Agricultural	1	\$4,994,987	\$4,994,987	\$9,989,974	\$2,497,494	--
Commercial	413	\$188,376,646	\$188,376,646	\$376,753,292	\$94,188,323	--
Government/Utilities	95	\$1,500,073	--	\$1,500,073	\$375,018	--
Other/Exempt/Misc.	160	\$42,498,954	--	\$42,498,954	\$10,624,739	--
Residential	4,049	\$679,611,889	\$339,805,945	\$1,019,417,834	\$254,854,458	10,163
Multi-Family Residential	603	\$172,240,571	\$86,120,286	\$258,360,857	\$64,590,214	1,514
Mobile/Manufactured Homes	264	\$29,355,209	\$14,677,605	\$44,032,814	\$11,008,203	663
Residential: Other	113	\$71,386,480	\$35,693,240	\$107,079,720	\$26,769,930	284
Industrial	43	\$46,126,123	\$69,189,185	\$115,315,308	\$28,828,827	--
Vacant	34	\$7,909,348	--	\$7,909,348	\$1,977,337	--
TOTAL	5,775	\$1,244,000,280	\$738,857,892	\$1,982,858,172	\$495,714,543	12,623

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Insurance Coverage, Claims Paid, and Repetitive Losses

The City of Paso Robles has been a participant in the National Flood Insurance Program since 1981, and will continue to participate and remain in compliance with the National Flood Insurance Program (NFIP).

Table E.14 City of Paso Robles NFIP Insurance Policy Information

Policies	Insurance in Force	No. of Paid Losses	Total Losses Paid
65	\$18,517,800	5	\$50,642

Source: FEMA National Flood Insurance Program Community Information System

FEMA Community Information System shows that as of April 2019 the City of Paso Robles does not have any Repetitive Loss (RL) or Severe Repetitive Loss (SRL) properties. Paso Robles does not participate in the Community Rating System (CRS).





Critical Facilities at Risk

None of the City’s identified critical facilities are located in the 1% Annual (100 year) Floodplain. Critical facilities located in the 0.2% Annual (500-year) Floodplain are shown in the following table.

Table E.15 City of Paso Robles Critical Facilities in the 0.2% (500-year) Floodplain

Facility Type	Counts
Colleges / Universities	1
Day Care Facilities	11
Emergency Medical Service Stations	1
Fire Stations	1
Local Law Enforcement	1
Microwave Service Towers	6
Nursing Homes	2
Private Schools	3
Public Schools	9
Energy Commission Facilities	1
Water Treatment Facilities	1
TOTAL	37

Source: San Luis Obispo County Planning & Building, HIFLD 2017

Landslides and Debris Flow

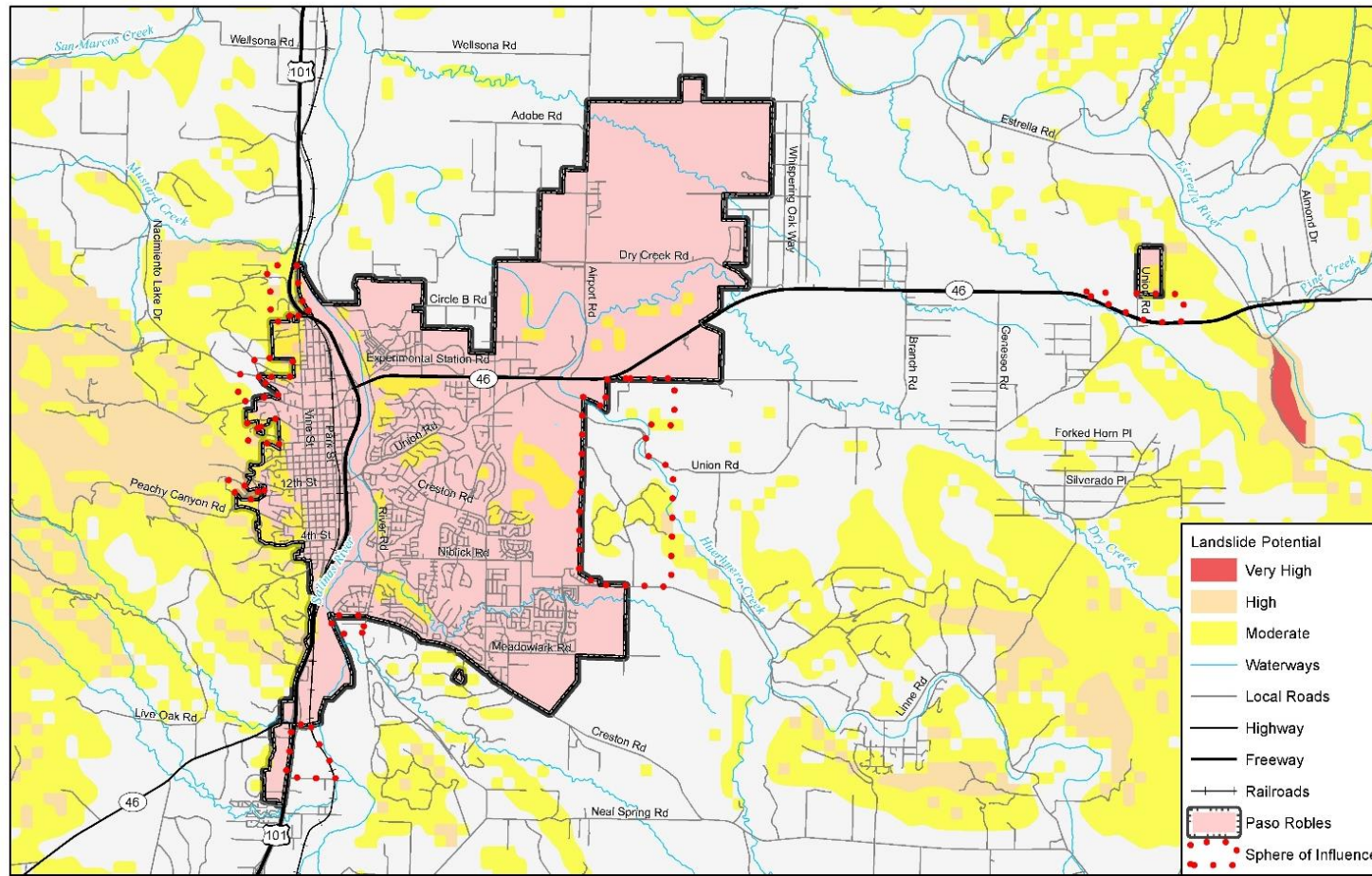
In the past twenty-five years, there have been two notable landslide events in Paso Robles. In 1995 a landslide on a hillside west of Olive Street (just north of Hilltop Drive) slid into the back of two homes after a series of winter storms. The hillside area that slid was approximately 150 wide by 40 feet high, and the slope of the hillside was about 30 percent.

December 22, 2003, numerous small landslides occurred as a result of the San Simeon Earthquake. Particularly noticeable, was a landslide along State Routes 46 and 41, east and west of downtown. The larger surficial slides were observed in the Franciscan Formation along State Route 46. Surficial slides were also observed along River Road in Paso Robles.





Figure E.6 City of Paso Robles Landslide Risk



Map compiled 6/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office, LAFCO





Paso Robles has 861 properties and 11 critical facilities at high or moderate risk of landslides, as shown in the following tables.

Table E.16 Paso Robles Properties at High Risk of Landslide

Property Type	Property Count	Improved Value
Residential	7	\$2,327,397
Multi-Family Residential	4	\$805,413
Vacant	1	\$38,500
TOTAL	12	\$3,171,310

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table E.17 Paso Robles Properties at Moderate Risk of Landslide

Property Type	Property Count	Improved Value
Agricultural	1	\$17,828,970
Commercial	4	\$10,816,442
Government/Utilities	23	--
Other/Exempt/Misc.	23	\$8,370,189
Residential	755	\$181,139,095
Multi-Family Residential	35	\$6,912,732
Vacant	8	\$1,218,988
TOTAL	849	\$226,286,416

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table E.18 Paso Robles Critical Facilities at Risk from Landslide

Critical Facility Type	Count	Risk
Microwave Service Towers	2	Moderate
Public Schools	9	Moderate
TOTAL	11	

Source: San Luis Obispo County Planning & Building, HIFLD 2017

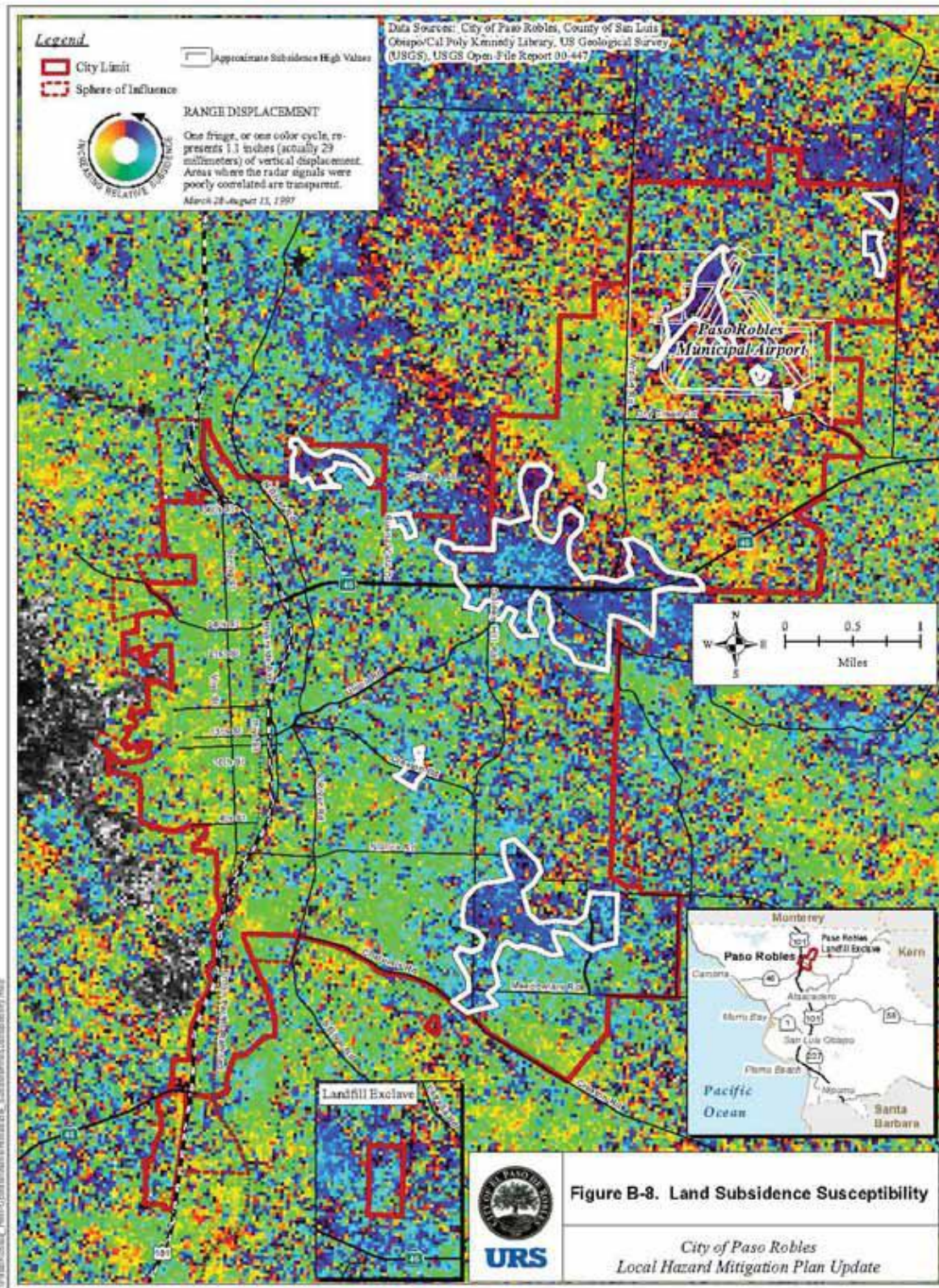
Subsidence

As shown in Figure E.5, Paso Robles has 1.90 square miles of subsidence-prone areas along the Salinas River and Huerhuero Creek, as well as in the east and especially, southeast portions of the City.





Figure E.7 City of Paso Robles' Land Subsidence Susceptibility





Wildfire

Wildfire is a high significance hazard for the City of Paso Robles. Paso Robles has three properties and two critical facilities located in High Severity SRA Zones, as shown in Table E.11. The City does not have any parcels in Very High or Moderate Severity zones. While the number of properties in the City itself is relatively low, the City is almost completely surrounded by high and very high severity zones, as shown in the following map.

Fire seasons have grown longer and more intense in recent years, testing the City’s firefighting resources and community resilience. Using weather factors such as wind, humidity and temperature, severe fire weather occurs greater than 46 days per year, in and around the City of Paso Robles.

Many areas throughout the City are highly susceptible to large conflagrations. One area of high concern is the Salinas Riverbed corridor. The riverbed corridor encompasses over 680 acres, much of it heavily forested. The brush and dead fuels provide a significant source of fuel not able to be addressed by annual weed abatement activities, due to restrictive regulations.

Emergency Response personnel responded to 115 fires in the riverbed corridor in 2018. From January 1-June 30, 2019, Emergency Response personnel responded to 63 fires. Thus, the risk of fire in the riverbed jumping out of the bed and racing through the rest of the community is unacceptably high. Fires in the riverbed corridor threaten critical City infrastructure, nearby residential and commercial properties, and the health and safety of all residents and visitors in the area. On July 16, 2019, the City of Paso Robles proclaimed a local emergency related to the riverbed fires.

High density of wildland fire ignitions are observable within and adjacent to the City of Paso Robles. These notable concentrations are illustrated in Figure E.8.

Figure E.8 Ignition Density in the Paso Robles Area

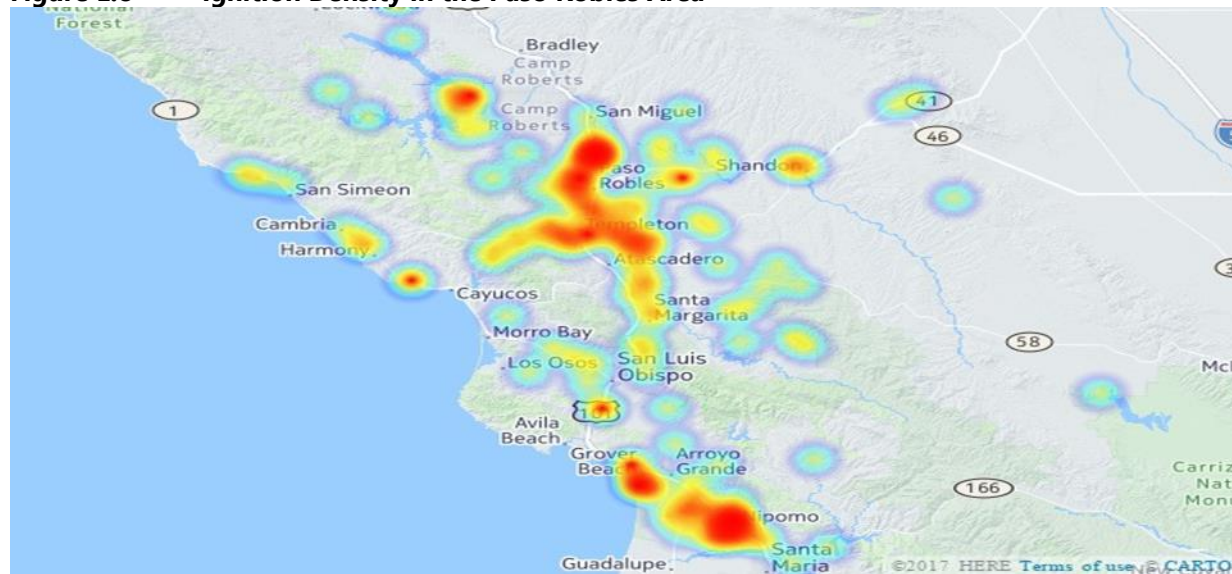
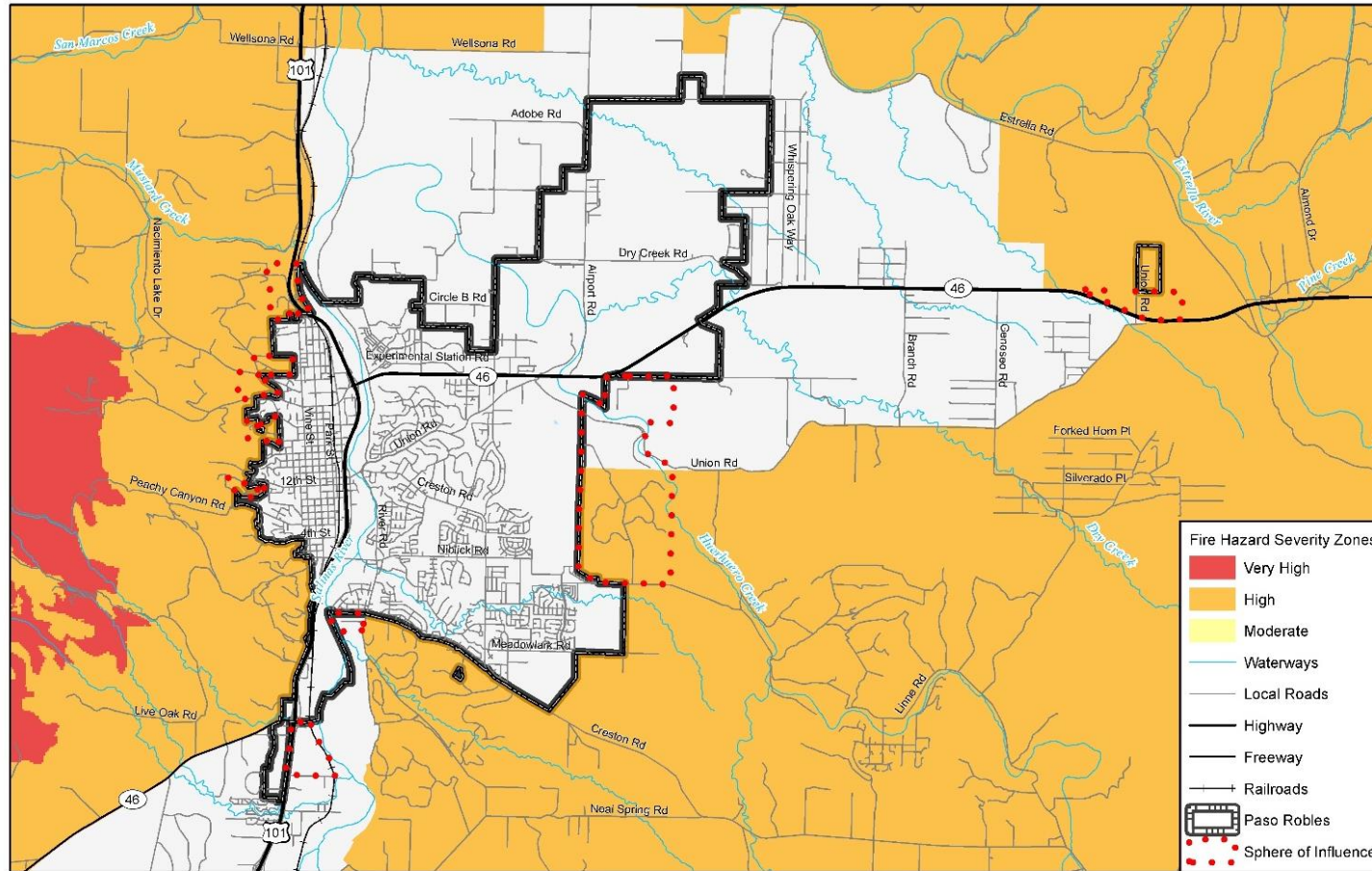




Figure E.9 Fire Hazard Severity Zones in the Paso Robles Area



Map compiled 6/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCO, CalFire



**Table E.19 City of Paso Robles Properties in High Severity SRA Zones**

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Government/Utilities	1	--	--	\$0	\$0	--
Residential	1	\$262,567	\$131,284	\$393,851	\$393,851	3
Multi-Family Residential	1	\$75,478	\$37,739	\$113,217	\$113,217	3
TOTAL	3	\$338,045	\$169,023	\$507,068	\$507,068	6

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table E.20 Paso Robles Critical Facilities at Risk from Wildfire

Critical Facility Type	Count	Risk
Microwave Service Towers	2	High
TOTAL	2	

Source: San Luis Obispo County Planning & Building, HIFLD 2017

Human Caused: Hazardous Materials

The Cal OES Warning Center reports 123 hazardous materials incidents in the City of Paso Robles from 1994 through October 24, 2018; as noted in Section 5.3.13 of the County plan, this likely excludes a large number of unreported minor spills. This constitutes 7% of the hazardous materials incidents reported countywide during the same time frame, and averages out to roughly 4.9 incidents per year. As noted in Section 5.3.13, only around 6% of reported hazardous materials incidents result in injuries, fatalities, or evacuations.

As shown in Figure 5-84 in the Base Plan, there are three EPA Risk Management Plan (RMP) facilities and five CalARP regulated facilities located in the City.

E.4 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory which of these policies or programs were in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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 jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The City of Paso Robles's capabilities are summarized below.





E.4.1 Regulatory Mitigation Capabilities

Table E.21 City of Paso Robles Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	Yes	Current General Plan on City Website
Zoning ordinance	Yes	Updated September 2018
Subdivision ordinance	Yes	See City Website.
Growth management ordinance	Yes	See City Website
Floodplain ordinance	Yes	Floodplain Management Ordinance (2008)
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	Hazardous Fuels Reduction Ordinance (2019) Storm Water Management Ordinance (2013)
Building code	Yes	2016 California Building Code, Title 17 Municipal Code (See Website)
Fire department ISO rating	Yes	ISO Rating 03/3X
Building Department ISO Rating	Yes	ISO Rating 2/3
Erosion or sediment control program	Yes	Ongoing Public Works/ Development Review Process
Stormwater management program	Yes	Public Works
Site plan review requirements	Yes	Ongoing Development Review Process
Capital improvements plan	Yes	Revolving Five Year Program
Economic development plan	No	
Local emergency operations plan	Yes	EOC Emergency Plan and Annexes
Other special plans	No	
Flood Insurance Study or other engineering study for streams	Yes	FEMA LOMR by project when applicable, City Engineer
Elevation certificates (for floodplain development)	Yes	FEMA/ Floodplain Development requirements ongoing, City Engineer

E.4.2 Administrative/Technical Mitigation Capabilities

Table E.22 identifies the personnel responsible for activities related to mitigation and loss prevention in Paso Robles.





Table E.22 City of Paso Robles Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/ No	Department/ Position	Comments
Planner/engineer with knowledge of land development/land management practices	Yes	Community Development Department (Planning Division)	Develops and maintains the General Plan, Including the Safety Element. Develops area plans based on the General Plan, to provide more detailed guidance for the development of more specific areas. Reviews private development projects and proposed capital improvements projects and other physical projects involving property for consistency and conformity with the General Plan. Anticipates and acts on the need for new plans, policies, and Code changes. Applies the approved plans, policies, code provisions, and other regulations to proposed land uses.
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Community Development Department (Building Division)	Oversees the effective, efficient, fair, and safe enforcement of the California Building Code.
Planner/engineer/scientist with an understanding of natural hazards	Yes	Community Development (Building and Engineering Divisions)	Reviews Grading and Building Plans to ensure that development is in compliance with existing policies and codes relating to mitigation of natural hazards.
Personnel skilled in GIS	Yes	Administrative Services GIS	
Full time building official	Yes	Community Development Department/Building Official	
Floodplain manager	Yes	Community Development Department (Engineering Division)	Reviews and ensures that new development proposals do not increase flood risk, and that new developments are not located below the 100-year flood level. In addition, the Floodplain Administrator is responsible for planning and managing flood risk reduction projects throughout the City.
Emergency manager	Yes	Emergency Services (Fire Chief)	Coordinates local response and relief activities within the Emergency Operation Center, and works closely with county, state, and federal partners to support planning and training and to provide information and coordinate assistance.
Grant writer	Yes	Emergency Services	
Other personnel			





Personnel Resources	Yes/ No	Department/ Position	Comments
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	GIS	
Warning Systems/Services (Reverse 9-11, cable override, outdoor warning signals)	Yes	Reverse 911 and EAS activated through Sherriff's Department	
Procurement Services Manager	Yes	Administrative Services	Provides a full range of municipal financial services and administers several licensing measures.

E.4.3 Fiscal Mitigation Capabilities

Table E.23 identifies financial tools or resources that the City could potentially use to help fund mitigation activities.

Table E.23 City of Paso Robles Fiscal Mitigation Capabilities

Financial Resources	Accessible/ Eligible to Use (Yes/No)	Comments
Community Development Block Grants	N	
Capital improvements project funding	Y	
Authority to levy taxes for specific purposes	Y	
Fees for water, sewer, gas, or electric services	Y	
Impact fees for new development	Y	
Incur debt through general obligation bonds	Y	
Incur debt through special tax bonds	Y	
Incur debt through private activities	N	
Withhold spending in hazard prone areas	N	

E.4.4 Mitigation Outreach and Partnerships

The City conducts several ongoing public education or information programs, such as for fire safety, disaster preparedness, wildland preparedness, responsible water use, FOG (fats, oils and greases), and storm water public education.

E.4.5 Other Mitigation Efforts

Other mitigation efforts the City has conducted include:

- Riverbed Hazardous Fuels Reduction Program
- Weed Abatement Program
- Fuel Breaks
- Un-reinforced Masonry Building Retrofit Ordinance (retrofits completed)





E.4.6 Opportunities for Enhancement

Based on the capabilities assessment, the City of Paso Robles has several existing mechanisms in place that already help to mitigate hazards. In addition to these existing capabilities, there are also opportunities for the City to expand or improve on these policies and programs to further protect the community. Future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform City staff members on how best to integrate hazard information and mitigation projects into their departments. Continuing to train City staff on mitigation and the hazards that pose a risk to the City of Paso Robles will lead to more informed staff members who can better communicate this information to the public.

E.5 Mitigation Strategy

E.5.1 Mitigation Goals and Objectives

The City of Paso Robles Planning Team determined the two goals from the 2014 HMP continue to be appropriate for this plan update. The following are the City of Paso Robles's 2019 mitigation goals and objectives:

Goal 1 – Minimize loss of life, injury, and damage to property, the economy, and the environment from the hazards identified in the 2016 LHMP.

Goal 2 – Build and enhance local mitigation capabilities to reduce the hazards identified in the 2016 LHMP. This will help ensure individual safety, reduce damage to public and private buildings and guarantee continuity of emergency services.

Continued Compliance with the National Flood Insurance Program

The City has been an NFIP participating community since 1981. In addition to the mitigation actions identified herein the City will continue to comply with the NFIP. This includes ongoing activities such as enforcing local floodplain development regulations, including issuing permits for appropriate development in Special Flood Hazard Areas and ensuring that this development 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.

E.5.2 Completed 2016 Mitigation Actions

During the 2019 planning process the City of Paso Robles Planning Team reviewed all the mitigation actions from the 2016 plan. During the 2019 planning process the Planning Team identified that of their fifteen (15) mitigation actions from 2016, thirteen (13) were deferred and two (2) of the actions are in progress demonstrating the ongoing progress of building the community's resiliency to disasters.

E.5.3 Mitigation Actions

The planning team for the City of Paso Robles 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. Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. Actions with an '*' are those that mitigate losses to future development.





Table E. 24 City of Paso Robles 's Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
PR.1*	Drought, Flood, Landslide, Wildfire, Subsidence	Integrate the hazard analysis and mitigation strategy into the General Plan's Safety Element.	CMO	Little to no cost	Staff Time/Dept. Budget	Low	TBD	Deferred
PR.2*	Flood, Landslide, Wildfire, Subsidence	Create a GIS-based pre-application review for new construction and major remodels in hazard areas, such high wildfire severity zones, moderate landslide susceptibility areas, and dam failure inundation zones.	Community Development Department/ Department of Emergency Services	Less than \$10,000	FEAM HMA/Staff Time/Dept. Budget	Low	3-5 yrs.	Deferred
PR.3	Flood, Landslide, Wildfire	Establish a county evacuation and re-population plan. Make sure this plan works with other municipalities so that people are not receiving conflicting information about where to evacuate to. Benefit: Reduce death and injury; organized and systemic approach to evacuation of area with predesignated locations on where to go	Emergency Services Department	Less than \$10,000	General fund; FEMA HMA	High	1 yr.	New
PR.4	Dam Failure	Develop a public outreach program that informs property owners located in the dam inundation areas about voluntary flood insurance.	Public Works Department	Little to no cost	Staff Time/Dept. Budget	Low	2-3 yrs.	Deferred
PR.5	Drought	Develop a drought contingency plan to provide an effective and systematic means of assessing drought conditions, develop mitigation actions and programs to reduce risks in advance of drought, and develop response options that minimize hardships during drought.	Public Works Department	\$10,000 to \$50,000	FEMA HMA	High	3-5 yrs.	Deferred
PR.6	Drought	Develop measures to achieve a higher level of irrigation efficiency with respect to plant water requirements, through assistance programs to customers.	Public Works Department	Little to no cost	Staff Time/Dept. Budget	Low	2-3 yrs.	Deferred





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
PR.7	Extreme Heat	Initiate an extreme heat public awareness and educational campaign to discuss the dangers of extreme heat, steps each individual can personally take during periods of extreme heat and ways to reduce energy consumption during periods of extreme heat.	Emergency Services Department	Little to no cost	Staff Time/Dept. Budget	Low	1 yr.	Deferred
PR.8	Flood	Acquire, relocate, elevate, and/or floodproof public works critical facilities that are located within the 100-year floodplain.	Public Works Department	\$500,000 to \$1,000,000	FEMA HMA	High	More than 5 yrs.	Deferred
PR.9	Flood	Reinforce roads from flooding through protection activities, including elevating the road and installing/widening culverts beneath the road or upgrading storm drains.	Public Works Department	\$500,000 to \$1,000,000	FEMA HMA	High	More than 5 yrs.	Deferred
PR.10	Flood	Develop a public outreach program that educates property owners about voluntary flood insurance (targeted at areas that historically flood, but are not acknowledged on FEMA flood insurance rate maps)	Public Works Department	Little to no cost	Staff Time/Dept. Budget	Low	2-3 yrs.	Deferred
PR.11	Flood	Partner with propane companies and regulating agencies to secure tanks located in special flood hazard areas.	Emergency Services Department	Little to no cost	Staff Time/Dept. Budget	Low	1 yr.	Deferred
PR.12	Flood	Increase participation in the NFIP by entering the Community Rating System program which through enhanced floodplain management activities would allow property owners to receive a discount on their flood insurance.	Public Works Department	Little to no cost	Staff Time/Dept. Budget	Low	1 yr.	Deferred
PR.13	Hazardous Materials	Continue to monitor the manufacture, storage, and transport of hazardous materials by working with environmental health and public safety agencies to identify effective mitigation actions or requirements that will help reduce the risk of incidents, including the spread of released materials.	Emergency Services Department	Little to no cost	Staff Time/Dept. Budget	Low	Ongoing	Deferred





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
PR.14 *	Multi: Landslide, Subsidence	Establish local zoning regulations that require the stabilization of landslide-prone areas and land subsidence hazard areas before new development can occur, through stability improvement measures such as the inclusion of interceptor drains, in-situ soil piles, drained earth buttresses, and subdrains.	Community Development Department	Little to no cost	Staff Time/Dept. Budget	Low		Completed on an ongoing basis
PR.15	Wildfire	Create a new vegetation management program that provides vegetation management services to elderly, disabled, or low-income property owners who lack the resources to remove flammable vegetation from around their homes.	Emergency Services Department	Less than \$10,000	FEMA HMA	High	3-5 yrs.	Deferred
PR.16 *	Wildfire	Implement a fuel modification program for new construction by requiring builders and developers to submit their plans, complete with proposed fuel modification zones, to the local fire department for review and approval prior to beginning construction.	Community Development Department/ Emergency Services Department	Less than \$10,000	FEMA HMA	High	2-3 yrs.	In progress
PR.17	Wildfire	Ability to fast track cleanup efforts in the Salinas Riverbed with approvals through Fish and Wildlife, or other agencies involved in environmentally sensitive areas	Emergency Services Department	Less than \$10,000	General funds; FEMA HMA	High	1 yr.	New
PR.18	Earthquake	Implement Digital "Collector" App for damage inspection program (DINS)	Information Technology (GIS)	Already Purchased	General Fund	Medium	2 Years	New
PR.19	Earthquake	Implement Applied Technology Council Placards and Evaluation Forms	Community Development Department	Little to No Cost	General Fund	Medium	2 Years	New
PR.20	Earthquake	Develop an inventory of public and community building that may be particularly vulnerable to earthquake damage, including pre-1940's homes and with cripple wall foundations	Information Technology (GIS)	Little to No Cost	General Fund	Medium	2 Years	New





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
PR.21	Adverse Weather: Thunderstorm/ Heavy Rain/Hail/Lighting/Dense Fog/Freeze/ High Wind	Through newsletters, advertisements, speaking engagements and other public contacts, educate the general public and key stakeholders on the issues, responsibilities, and current efforts and successes in the area of hazard mitigation and disaster preparedness related to adverse weather.	Community Development Department/ Emergency Services Department	Little to no cost	General Fund	Medium	Annual	New





E.6 Implementation and Maintenance

Moving forward, the City will use the mitigation action table in the previous section to track progress on implementation of each project. As illustrated in Section 7.3.1 of the County plan, much progress has been made since the plan was originally developed. Implementation of the plan overall is discussed in Chapter 8 of the main plan.

E.6.1 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 Engineering Division may utilize the hazard information when implementing the City's Community Investment Program and the Planning and Building Divisions may utilize the hazard information when reviewing a site plan or other type of development applications. The City will also incorporate this LHMP into the Safety Element of their General Plan, as recommended by Assembly Bill (AB) 2140.

As noted in Chapter 7.0 Plan Implementation, the HMPC representatives from Paso Robles 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 HMPC plan review meeting.

E.6.2 Monitoring, Evaluation and Updating the Plan

The City will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Chapter 8 of the Base Plan. The City will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The Fire Chief will be responsible for representing the City in the County HMPC, 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.





F.1 Community Profile

F.1.1 Mitigation Planning History and 2019 Process

This annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan update. This Jurisdictional Annex builds upon the previous version of the Local Hazard Mitigation Plan for the City of Pismo Beach, which was completed and adopted by the City Council on July 15, 2014 and approved by FEMA in June 2015. That previous mitigation plan was not incorporated into the City’s General Plan, Public Information and Outreach, Capital Improvement Plan, and Emergency Operations Plan; however this updated mitigation plan will be referenced in those documents and referenced in the update of the City’s Local Coastal Plan. A review of jurisdictional priorities found no significant changes in priorities since the last update.

The City’s Local Planning Team (LPT) held responsibility for implementation and maintenance of the plan. The Associate Planner for City of Pismo Beach is responsible for updating the plan.

Table F.1 Pismo Beach Hazard Mitigation Plan Revision Planning Group

Department or Stakeholder	Title
Community Development -Planning Division	Community Development Director
Community Development -Planning Division	Associate Planner
Fire Department (CAL FIRE)	Captain – Prevention
Public Works – Engineering Division	Public Works Director

More details on the planning process followed and how the jurisdictions, service districts, and stakeholders participated can be found in Chapter 3 of the Base Plan, as well as how the public was involved during the 2019 update.

F.1.2 Geography and Climate

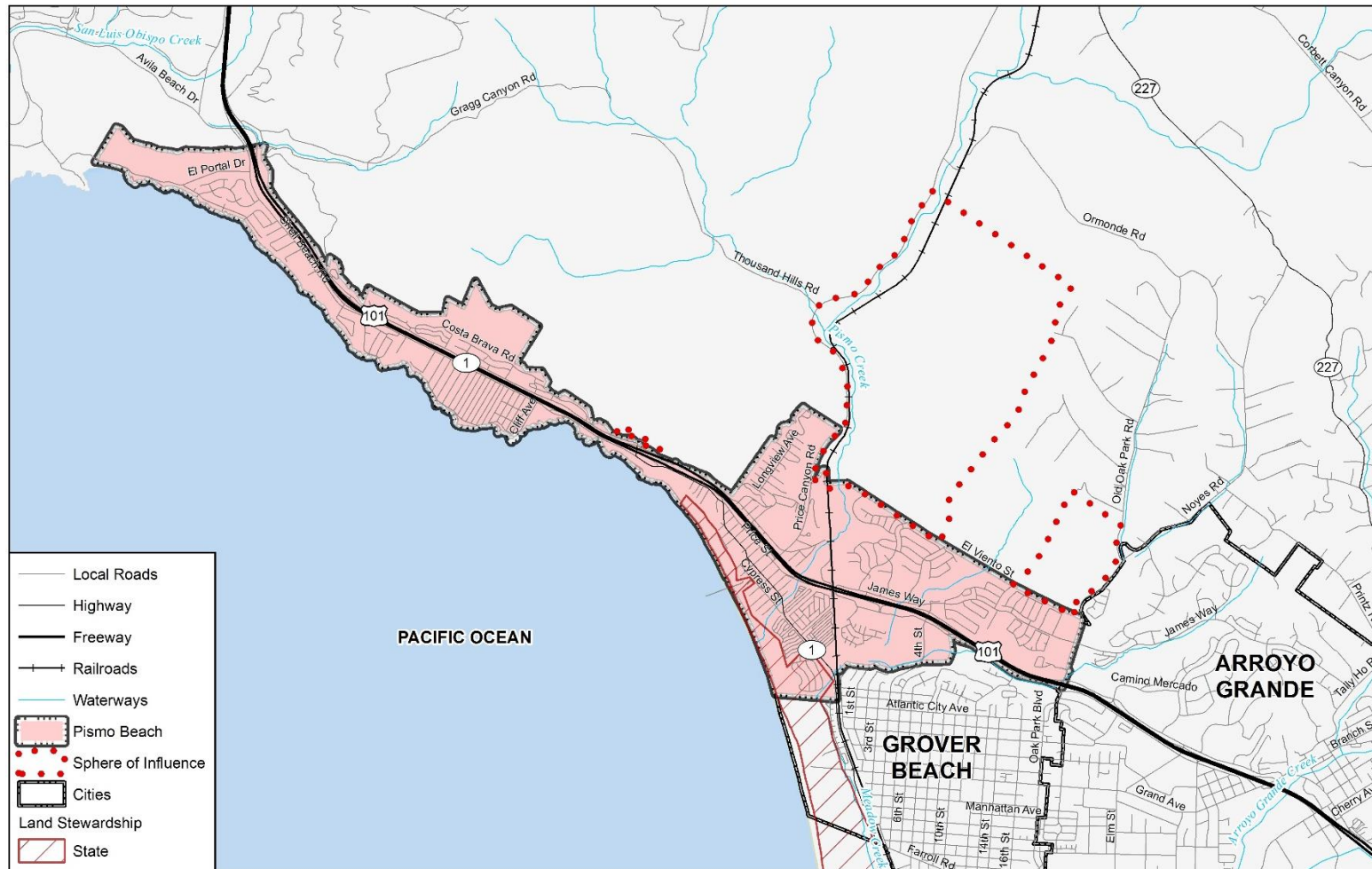
The City of Pismo Beach is a coastal community located in the south county area of the San Luis Obispo. U.S. Highway 101 traverses the City limits along the Pacific Ocean. The City of Pismo Beach, encompassing 3.6 miles, is one of the communities in the area known as the Five Cities. The Cities of Grover Beach and Arroyo Grande border Pismo Beach on the south, and the unincorporated community of Avila Beach borders Pismo Beach to the North. The City of Pismo Beach has varying topography with elevations ranging from 0 feet above mean sea level (msl) to 600 feet msl, as can be seen from the community’s sandy beaches and sand dune to cliffs and bluffs ranging from 10 to 100 feet in height. Figure F.1 displays a map and the location within San Luis Obispo County of the City of Arroyo Grande planning area.

According to the Western Regional Climate Center, Pismo Beach has an average high temperature (June) of 70°F and low temperature of 42°F (January). The jurisdiction receives 17.14 inches of rain annual. While the average temperature is relatively temperate, summer and winter months bring unique weather patterns to the region.





Figure F.1 The City of Pismo Beach



- Local Roads
- Highway
- Freeway
- Railroads
- Waterways
- ▭ Pismo Beach
- Sphere of Influence
- ▭ Cities
- ▨ Land Stewardship
- ▨ State

Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO

0 1.5 3 Miles





F.1.3 History

The City of Pismo Beach consists of 3.6 square miles of the original 13.8 square miles of Rancho Pismo. The historic Pismo Beach was founded in 1840 by Jose Ortega and was purchased by John Price in the mid-1850's. Price hired a surveyor to plan and plat a town which would be known as "El Pismo". The town consisted of a wharf, warehouse, school districts, post office, and beach hotel, and quickly establishing itself as a tourist destination. The original town site of El Pismo continues to be the downtown area of the City. The community changed the its name from "El Pismo" to "Pismo Beach" in 1923. Tourism continued to be a draw to Pismo Beach as the community-built tourist attractions such as the pier at Pismo Beach, which continues to be an attraction to this day. In 1926 the community attempted to incorporate but was unsuccessful until 1939. The following year, in 1940 with fears of increased taxes under the newly incorporated City, the Community voted to disincorporate the City. The City was again incorporated on April 25, 1946. Shell Beach was annexed into the City of Pismo Beach in 1964 followed by the annexation of Sunset Palisades in 1970.

F.1.4 Economy

The City of Pismo Beach has a robust economy that's been built around the tourism and retail industries. The 5-year estimates (2013-2017) from the U.S. Census Bureau's American Community Survey show the majority of those employed work in the educational services and health care and social assistance industry (23%); arts, entertainment and recreation and accommodation and food services (17%); professional, scientific and management (13%); and retail trade (11%). Refer to Table F.3 below for a complete breakdown of the labor force by industry, based on the estimate from the 2013-2017 five-year American Community Survey.

Select estimates of economic characteristics for the City of Pismo Beach are shown in Table F.2.

Table F.2 City of Pismo Beach Economic Characteristics, 2013-2017

Characteristic	City of Pismo Beach
Families below Poverty Level (%)	2.2%
All People below Poverty Level (%)	8.4%
Median Family Income	\$90,069
Median Household Income	\$77,316
Per Capita Income	\$50,762
Population in Labor Force	4,175
Population Employed*	4,012
Unemployment	163

Source: CA Department of Finance U.S. Census Bureau American Community Survey 2013-2017 5-Year Estimates, www.census.gov/

*Excludes armed forces





Table F.3 City of Pismo Beach Employment by Industry, 2013-2017

Industry	# Employed
Agriculture, forestry, fishing and hunting, and mining	55
Construction	186
Manufacturing	77
Wholesale trade	442
Retail trade	174
Transportation and warehousing, and utilities	47
Information	252
Finance and insurance, and real estate and rental and leasing	560
Professional, scientific, and management, and administrative and waste management services	953
Educational services, and health care and social assistance	716
Arts, entertainment, and recreation, and accommodation and food services	221
Other services, except public administration	201
Public Adm	55
Total	4,012

Source: U.S. Census Bureau American Community Survey 2013-2017 5-Year Estimates, www.census.gov/

F.1.5 Population

The U.S. Census Bureau estimated the City’s 2017 population as 8,060, up from 7,655 at the 2010 census. Table F.4 shows an overview of key social and demographic characteristics of the City taken from the U.S. Census Bureau’s American Community Survey.

Table F.4 City of Pismo Beach’s Demographic and Social Characteristics, 2012-2017

City of Pismo Beach	2012	2017	% Change
Population	7,721	8,060	4.4%
Median Age	51.3	54.1	5.5%
Total Housing Units	5,290	5,622	6.3%
Housing Occupancy Rate	68.5%	72.6%	4.1%
% of Housing Units with no Vehicles Available	4.9%	6.4%	1.5%
Mean Travel Time to Work (minutes)	4.9%	8.4%	3.5%
# of Households	3,626	4,081	12.5%
Average Household Size	2.13	1.97	-7.5%
% of Population Over 25 with High School Diploma	95.9%	96.3%	0.4%
% of Population Over 25 with Bachelor’s Degree or Higher	35.3%	45.2%	9.9%
% with Disability	13.1%	13.1%	0.0%
% Speak English less than "Very Well"	3.7%	2.2%	-1.5%

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/





F.1.6 Development Trends

A majority of development within the City of Pismo Beach is residential. According to the LPT, the City of Pismo Beach is fairly built out, with vacant properties available to be developed for housing in the Sunset Palisades and Freeway Foothill Planning Areas. Other areas of the City are experiencing infill and redevelopment activity. New hotels near the City Pier have been developed, which the LPT has concerns will expose an increased number of visitors to hazards such as tsunamis. Most of the City is within the Coastal Zone, although as noted in the 2015 LHMP, recent development has extended into the foothills beyond the Coastal Zone. Development within the City falls under two zoning codes: the 1983 zoning codes applies to the Coastal Zone, while the 1998 zoning code applies to properties outside the Coastal Zone.

F.2 Hazard Identification and Summary

The Pismo Beach Planning Team identified the hazards that affect the City and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to Pismo Beach (see Table F.5). There are no hazards that are unique to the City. The overall hazard significance takes into account the geographic area, probability and magnitude as a way to identify priority hazards for mitigation purposes. This is discussed further in the Vulnerability Assessment section below.





Table F.5 City of Pismo Beach – Hazard Summaries

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Coastal Erosion	Significant	Highly Likely	Limited	Medium
Coastal Storm	Limited	Occasional	Limited	Medium
Sea Level Rise	Significant	Occasional	Limited	Medium
Dam Incidents	Limited	Occasional	Critical	Medium
Drought and Water Shortage	Extensive	Likely	Negligible	Medium
Flood	Significant	Likely	Limited	Medium
Earthquake	Extensive	Occasional	Limited	Medium
Landslide	Significant	Likely	Limited	Medium
Tsunami	Significant	Occasional	Critical	Medium
Wildfire	Significant	Occasional	Critical	Medium
Human Caused: Hazardous Materials	Limited	Likely	Limited	Medium
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		





F.3 Vulnerability Assessment

The intent of this section is to assess Pismo Beach's vulnerability separate from that of the planning area as a whole, which has already been assessed in Section 5 of the Base Plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance, or that may vary from other parts of the planning area.

The information to support the hazard identification and risk assessment was based on the previous LHMP for the City. A Local Hazard Mitigation Plan Update Guide and associated worksheets were distributed to each participating municipality or special district to complete during the 2019 update process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact 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 5.2). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction (See Table F.5). Identifying these differences helps the reader to differentiate the jurisdiction's risk and vulnerabilities from that of the overall County.

Note: The hazard "Significance" reflects overall ranking for each hazard, and is based on the City of Pismo Beach's Planning Team member input from the Data Collection Guide and the risk assessment developed during the planning process (see Section 5 of the Base Plan), which included a more detailed qualitative analysis with best available data.

The hazard summaries in Table F.5 reflect the hazards that could potentially affect City. The discussion of vulnerability for each of the following hazards is located in F.3.2 Estimating Potential Losses. Based on this analysis, there are no hazards ranked as High significance. The following hazards were given a Medium significance for the City of Pismo Beach.

- Coastal Storm/Coastal Erosion/Sea Level Rise
- Dam Incidents
- Drought and Water Shortage
- Earthquake
- Flood
- Landslide
- Tsunami
- Wildfire
- Hazardous Materials

Other Hazards

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 in this plan and are not assessed individually for specific vulnerabilities in this section. In the City of Pismo Beach, those hazards include: adverse weather, agricultural pests and plant diseases, biological agents, debris flow, subsidence, and seiches.

F.3.1 Assets at Risk

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





Values at Risk

The following data on property exposure is derived from the San Luis Obispo County 2019 Parcel and Assessor data. This data should only be used as a guideline to overall values in the City as the information has some limitations. The most significant limitation is created by 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 likely low and does not reflect current market value of properties. 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. Table F.6 shows the exposure of properties (e.g., the values at risk) broken down by property type for the City of Pismo Beach.

Table F.6 2019 Property Exposure for the City of Pismo Beach by Property Types

Property Type	Parcel Count	Improved Value	Content Value	Total Value
Commercial	157	\$114,852,343	\$114,852,343	\$229,704,686
Government/Utilities	80	\$23,467	--	\$23,467
Other/Exempt/Misc.	199	\$13,450,476	--	\$13,450,476
Residential	3,366	\$922,174,106	\$461,087,053	\$1,383,261,159
Multi-Family Residential	851	\$188,228,183	\$94,114,092	\$282,342,275
Mobile/Manufactured Homes	5	\$20,491,650	\$10,245,825	\$30,737,475
Residential: Other	200	\$162,579,999	\$81,290,000	\$243,869,999
Vacant	27	\$17,273,561	--	\$17,273,561
Total	4,885	\$1,439,073,785	\$761,589,312	\$2,200,663,097

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor's Office data 2019

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the City of Pismo Beach from San Luis Obispo County GIS is provided in Table F.7 and illustrated in Figure F.2. A more detailed list of the critical facilities was provided by the Planning team that includes the name of the asset, replacement value and hazard specific issues can be found as an Attachment at the end of this Annex.





Table F.7 City of Pismo Beach’s Critical Facilities

Facility Type	Counts
Day Care Facilities	2
Emergency Medical Service Stations	2
Fire Stations	3
Local Law Enforcement	1
Public Schools	2
Urgent Care	1
Microwave Service Towers	6
Wastewater Treatment Plants	1
Airports	1
Total	19

Source: San Luis Obispo County Planning & Building, HIFLD 2017

Transportation and Lifeline Facilities

The City of Pismo Beach is a “highway-oriented” community, with U.S. Highway 101 traversing through the center of the City along its entire length. There are several bridges within the City limits that cross Highway 101, and which the Planning Team noted as being vulnerable to an earthquake event; in some cases, the bridges are also at risk of other hazards such as tsunami inundation or inundation from the Lopez Dam. In addition to Highway 101 there are two regionally significant roads that cross the City of Pismo Beach: Price Canyon Road and State Road 1. The City’s 2015 notes the limited transportation route options as a concern if evacuation was required.

Other transportation facilities within or near the City of Pismo Beach include, Oceano County Airport and the San Luis Obispo County Regional Airport. Both airports are outside the City limits of Pismo Beach but could impact the City of Pismo Beach if these facilities were impacted by a disaster.

There are seven lifeline utility systems within the City of Pismo Beach, including six microwave service towers and one wastewater treatment plant. Based on the GIS analysis there are two microwave service towers that are at moderate to high risk from landslide events. Refer to the landslide section under F.3.2 Estimating Potential Losses.

Emergency Services

Based on the GIS analysis the City of Pismo Beach has eleven emergency services facilities that will be important to remain operable during an emergency or after a disaster. A majority of these emergency services facilities are located near Highway 101. According to the Planning Team, Fire Stations 63 and 64 as well as the Police Annex, and Police Department/EOC are vulnerable to an earthquake event. The two public schools in the City of Pismo Beach, Judkins Middle School, and Shell Beach Elementary as well as the Happy Time Cooperative Preschool are all considered by the Planning Team to be vulnerable to earthquake hazards.

Historic and Cultural Resources

The National Register of Historic Places lists one historic site in the City of Pismo Beach: the John Price House, Also known as the Price Anniversary House, which is the oldest building in Pismo Beach. The Planning Team lists the following resources as community assets for Pismo Beach.





- Ira Lease Park
- Mary Herrington Park
- Old City Hall
- Pismo Beach Pier
- Pismo Veterans' Hall
- Price Anniversary House
- Meherin House
- Price Adobe
- Shell Beach Veterans' Hall

Natural Resources

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. Awareness of natural assets can lead to opportunities for meeting multiple objectives. For instance, protecting the dunes and bluffs along the coast of Pismo Beach is important both for continuing to attract tourists but also as a form of natural protection against coastal storms for the entire community of Pismo Beach. The City of Pismo Beach is home to several parks and natural areas, including the Monarch Butterfly Grove and the Dinosaur Cave Park, which encompasses 11-acres of ocean-front, bluff-top park. The over 900-acre Pismo Preserve is another natural attraction in the City with over 10 miles of existing ranch roads and trails that meander through the Preserve. The Land Conservancy of San Luis Obispo County has been working with the County, San Luis Obispo Council of Governments, and the City of Pismo Beach to fund and construct public amenities for the Pismo Preserve. The Pismo Preserve is currently closed, and initial construction has begun. The Land Conservancy is anticipating opening the Preserve by the end of 2019.

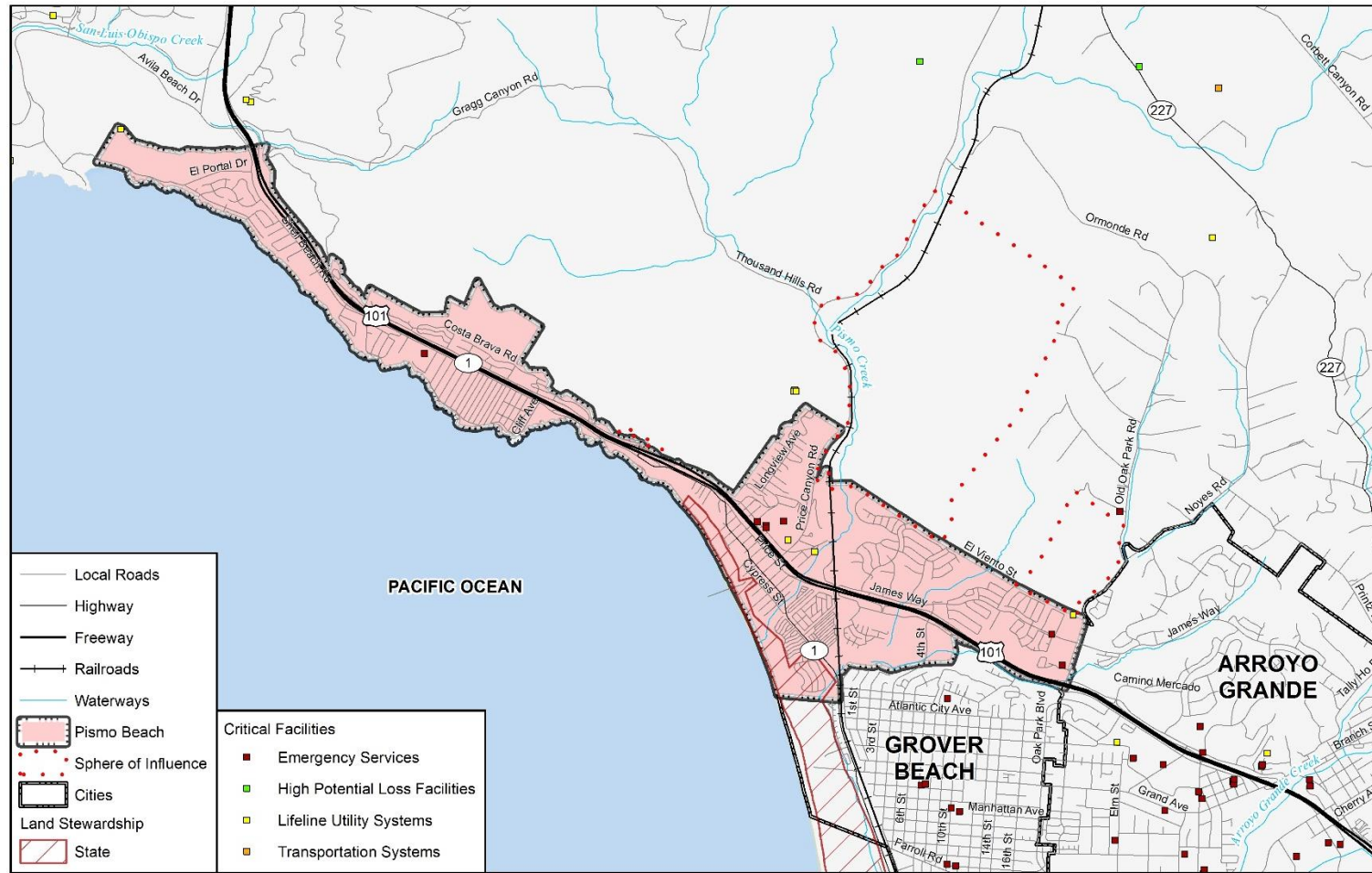
Economic Assets

The local economy for Pismo Beach is oriented around tourism. Many of the historic, cultural and natural resources noted above help to attract visitors to the City. According to the City's Housing Element (2007), the Pismo Beach's primary industries relate to service industry such as lodging, food service, and retail. With tourism being the greatest economic asset, if a disaster event was to occur within or near the City of Pismo Beach there is also a risk of the public's perception of safety after the event that could impact the number of tourists or visitors to the City in the years following the event.

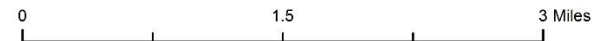




Figure F.2 City of Pismo Beach's Critical Facilities



Map compiled 12/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, HIFLD





F.3.2 Estimating Potential Losses

Note: This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to HMPC member input) it differs from that of the overall County.

Table F.6 above shows Pismo Beach’s exposure to hazards in terms of number and value of structures. San Luis Obispo County’s parcel and assessor data was used to calculate the improved value of parcels. The most vulnerable structures are those unreinforced masonry buildings, and buildings built prior to the introduction of modern-day building codes. Impacts of past events and vulnerability to specific hazards are further discussed below (see Section 5 for more detailed information about these hazards and their impacts on San Luis Obispo County as a whole).

Note: The risk and vulnerability related to biological agents in Pismo Beach do not differ from those of the County at large. Please refer to Section 5 of the Base Plan for more details on this hazard.

Coastal Storm/Coastal Erosion/Sea Level Rise

As a low-lying coastal community Pismo Beach is exposed to a range of coastal hazards, including coastal storms and coastal erosion. As described in the Base Plan (refer to Section 5), these hazards are projected to become more severe when combined with sea level rise.

Coastal storms include tidal flooding, storm surge and wave action, sometimes in combination with high tide and strong winds. Coastal storms can cause high winds and strong storm surges that would affect low-lying “vulnerable” coastal resources and infrastructure located in urban areas. All coastal development in proximity to the shoreline is threatened by landward retreat of the shoreline due to beach and bluff erosion, which are exacerbated by coastal storm events. A coastal storm during the 1982/83 El Niño season caused significant damage to coastal structures at Pismo Beach, including the Pier, RV park, access trail, and seawall. An estimated replacement cost of over \$5.5 million was reported.

The following table shows the parcels by property type that are risk of coastal flooding events.

Table F.8 City of Pismo Beach Coastal Flooding Risk by Property Type

Property Type	Parcel Count	Improved Value	Content Value	Total Value
Government/Utilities	9	--	--	\$0
Other/Exempt/Misc.	1	--	--	\$0
Total	10	\$0	\$0	\$0

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor’s Office data 2019

The City of Pismo Beach’s topography varies from sandy beaches and sand dunes to cliffs and bluffs ranging from 10 to 100 feet in height along five miles of the northwest portion of the City’s shoreline. Erosion of the beach and dunes threaten residential, commercial, and recreational development. There have been several erosion events in the City’s history that have caused damage including the following events. Refer to the Adverse Weather profile of Section 5 for additional events that have impacted the Pismo Beach planning area.

1978 – A severe storm led to bluff erosion and resulted in the damage to eight (8) homes.

1998 – Five coastal bluff failures affected City roads. Increased sea-wave erosion, surface-water erosion, and urban irrigation contributed to failures.





2009 and 2011 – Beginnings of bluff failures prompted emergency work to stabilize the impacted areas to prevent the erosion of a frontage road by Highway 1 and damage to the sewage pumping station at Shell Beach.

According to the City of Pismo Beach 1992 Bluff Erosion Study Update, bluff erosion rates average 2 inches per year where bedrock is present in locations such as Park Place, South Point and Price Street. Up to 12 inches per year is possible in areas with limited bedrock such as Indio Drive. The same study states that past studies have found that more than 60 homes are within the bluff retreat hazard zone and may be subject to damage or destruction by 2100, without accounting for accelerated bluff retreat associated with sea level rise. Refer to Section 5 of the Base Plan for additional information, including pictures of past bluff erosion events that have occurred in Pismo Beach

Rising sea levels as a result of climate change are projected to increase the intensity of coastal storms, flooding, inundation, and erosion along the Pismo Beach coast. The areas with the highest potential of experiencing coastal hazards include portions of the City that are either low-lying or located atop eroding coastal bluffs. If sea levels continue to rise at higher projected rates, episodic coastal erosion and coastal flooding impacts that already occur during large storm wave events could become more frequent, as predictable high tides may regularly inundate public beaches and low-lying coastal infrastructure.

As part of the 2019 HMP planning effort, a sea level rise risk assessment was completed to determine how sea level rise may affect coastal jurisdictions and critical facilities and how coastal flooding might be exacerbated in the future. Table F.9 Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood and

Table F.10 summarize the properties at risk of inundation by sea level rise and sea level rise combined with a 1% annual chance coastal flood. The area of inundation by sea level rise and sea level rise combined with the 1% coastal flood are shown in Figure F.3 and Figure F.4, respectively. No critical facilities were determined to be at risk in the sea-level rise scenarios. See Section 5.3.4 Coastal Storm/Coastal Erosion/Sea Level Rise in the base plan for more details on the scenarios and data sources used for this analysis.





Table F.9 Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Commercial	--	--	9	2	4	9
Government/Utilities	1	1	12	4	5	13
Other/Exempt/Misc.	--	1	18	1	6	22
Residential	1	2	37	2	9	41
Multi-Family Residential	--	--	93	--	6	104
Mobile/Manufactured Homes	--	--	3	--	2	3
Residential: Other	--	--	7	--	--	13
Total	2	4	179	9	32	205

Source: Wood analysis with USGS CoSMoS 3.1 data

Table F.10 Improved Values of Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

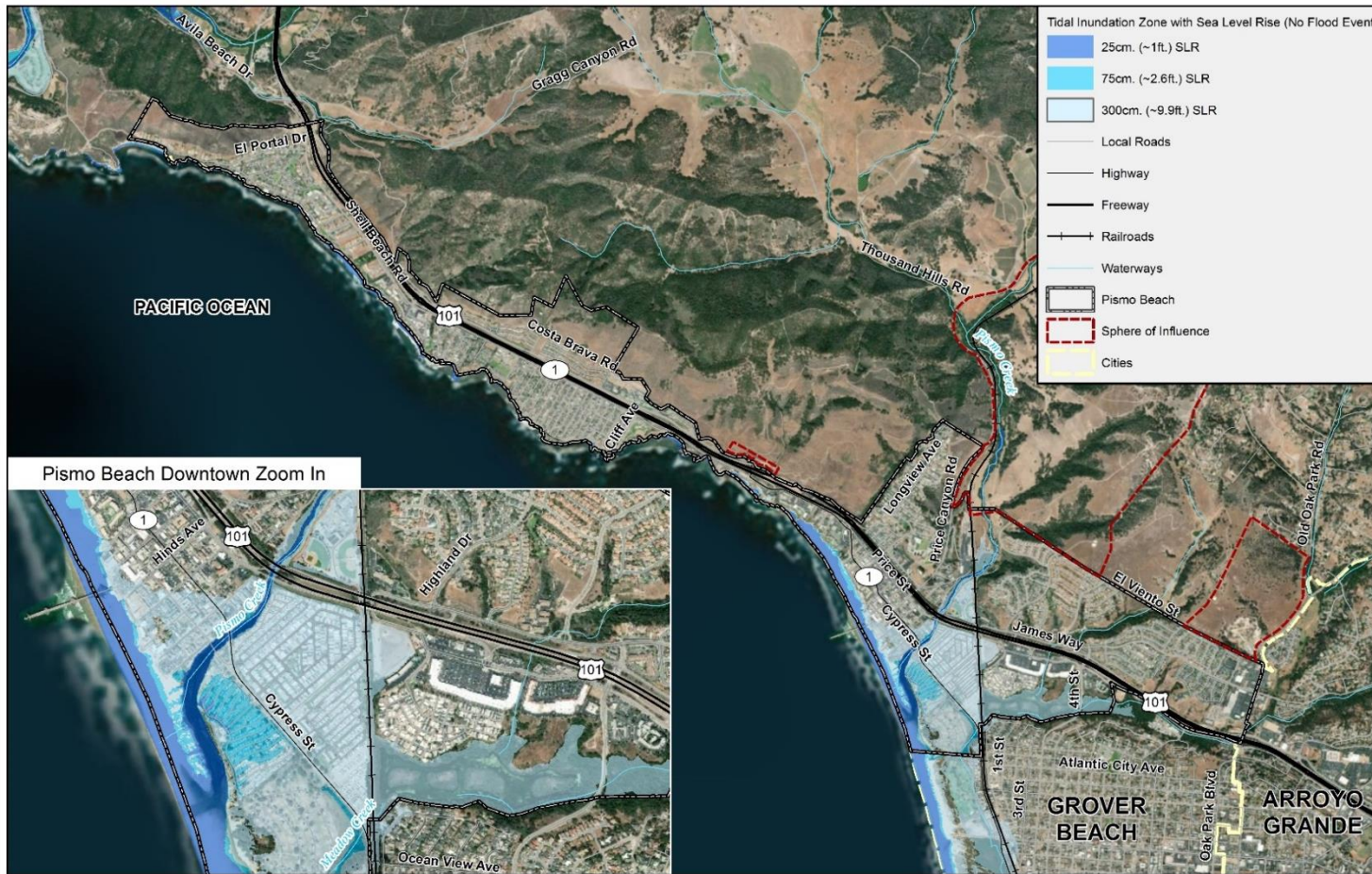
Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Commercial	--	--	\$3,931,762	\$255,000	\$330,726	\$3,931,762
Government/Utilities	--	--	--	--	--	--
Other/Exempt/Misc.	--	\$2,214,828	\$3,727,316	\$2,214,828	\$2,349,497	\$3,727,316
Residential	\$174,047	\$176,839	\$6,468,297	\$176,839	\$3,056,157	\$6,933,545
Multi-Family Residential	--	--	\$55,908,703	--	\$1,255,367	\$24,617,998
Mobile/Manufactured Homes	--	--	\$17,059,909	--	\$16,215,406	\$17,059,909
Residential: Other	--	--	\$13,124,415	--	--	\$17,033,080
Total	\$174,047	\$2,391,667	\$67,220,402	\$2,646,667	\$23,207,153	\$73,303,610

Source: Wood analysis with USGS CoSMoS 3.1 data





Figure F.3 Pismo Beach Sea Level Rise Scenario Analysis: Tidal Inundation Only



Map compiled 8/2019;
intended for planning purposes only.
Data Source: USGS CoSMoS v3.1
San Luis Obispo County, US Census TIGER
Database, CA Open Data Portal, LAFCO.
Note: SLR = Sea Level Rise

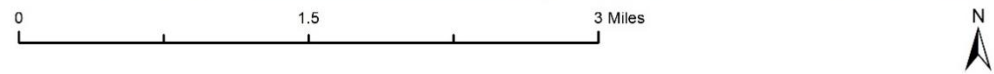
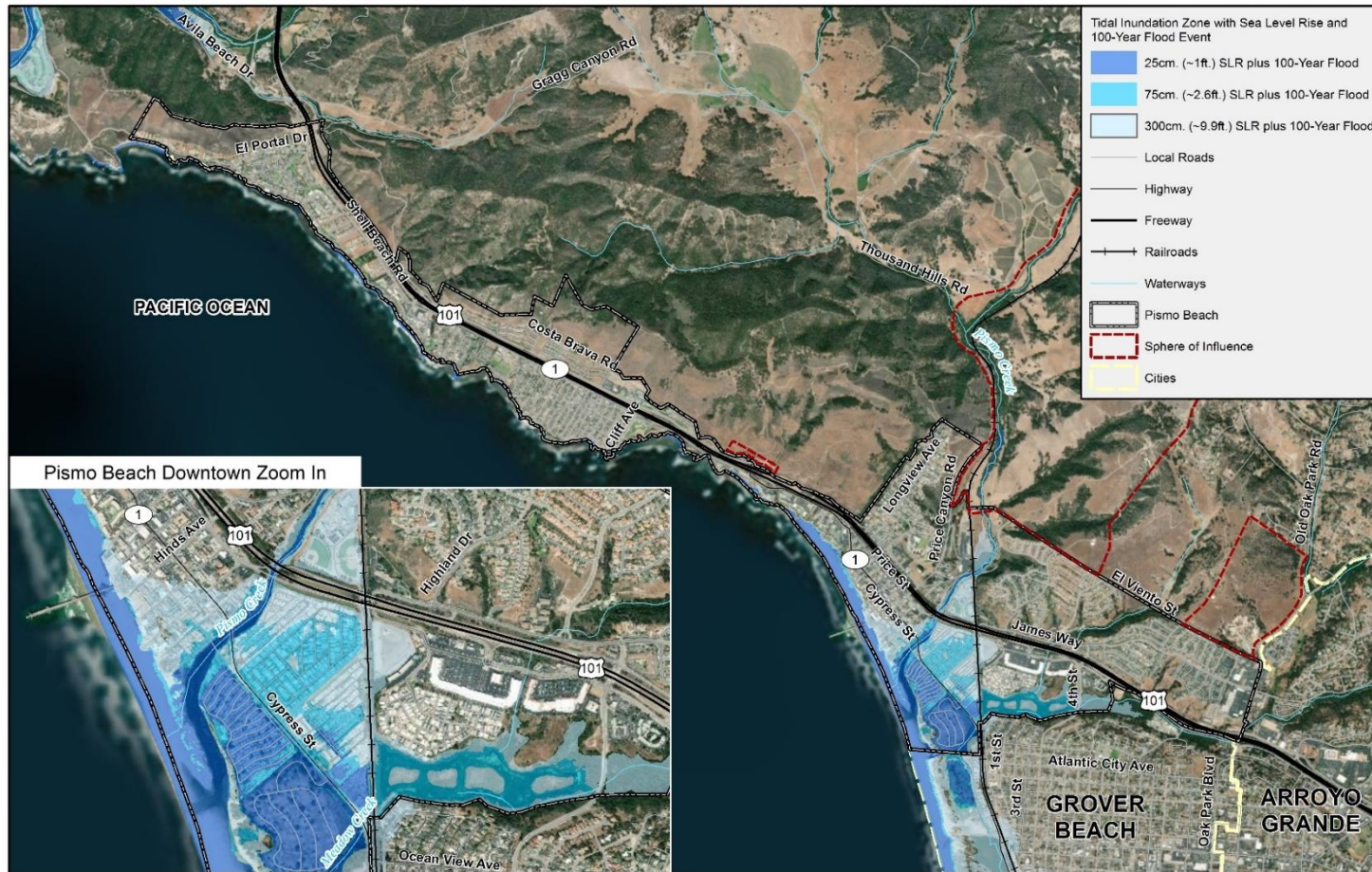


Figure F.4 Pismo Beach Sea Level Rise Scenario Analysis: Tidal Inundation and 1% Annual Chance Flood



Map compiled 8/2019,
intended for planning purposes only.
Data Source: USGS CoSMoS v3.1,
San Luis Obispo County, US Census TIGER
Database, CA Open Data Portal, LAFCO.
Note: SLR = Sea Level Rise

0 1.5 3 Miles





Dam Failure

The City of Pismo Beach is among the most vulnerable communities in San Luis Obispo at risk of a dam failure incident. The Lopez Dam, a high hazard earthen dam located upstream from the community, poses the greatest risk to Pismo Beach if an incident was to occur. Failure of the Lopez Dam would inundate areas within the southern portion of the City limits. A total of 113 persons and 66 properties in the City of Pismo Beach could be inundated if the Lopez Dam was to fail. Most of the properties impacted would be residential (45, including 2 mobile homes) located in the southern portion of the City. Refer to the Dam Inundation Estimate Losses by Jurisdiction and Dam table in Chapter 5 of the Base Plan for additional details on estimated losses in Pismo Beach and for additional discussion on the potential impacts of dam incidents in the County.

Table F.11 Lopez Dam Inundation Estimate Losses by Property Type

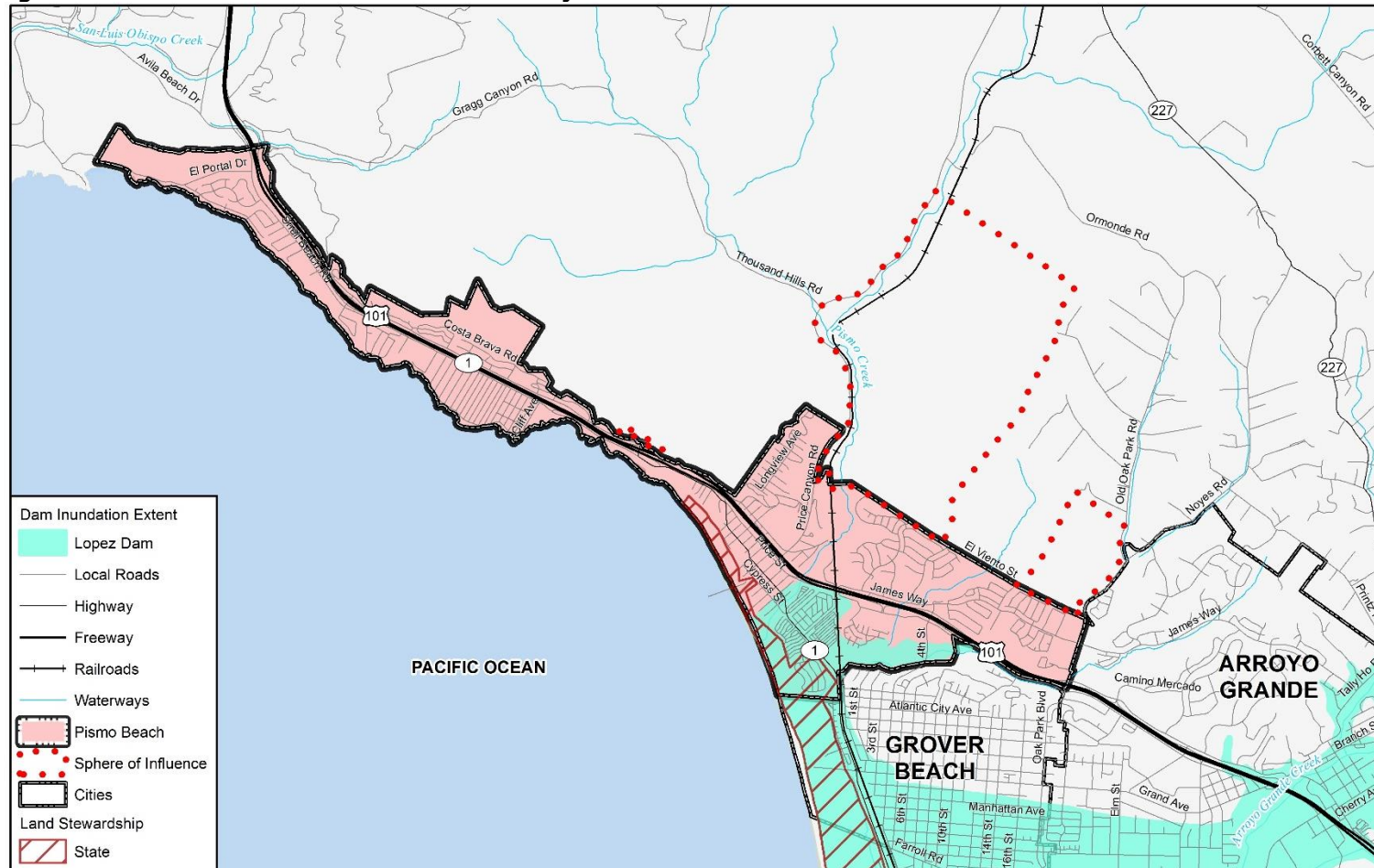
Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	5	\$558,082	\$558,082	\$1,116,164	\$558,082	--
Government/Utilities	11	--	--	\$0	\$0	--
Other/Exempt/Misc.	5	\$3,592,647	--	\$3,592,647	\$1,796,324	--
Residential	20	\$5,096,040	\$2,548,020	\$7,644,060	\$3,822,030	50
Multi-Family Residential	20	\$5,912,448	\$2,956,224	\$8,868,672	\$4,434,336	50
Mobile/Manufactured Homes	3	\$17,059,909	\$8,529,955	\$25,589,864	\$12,794,932	8
Residential: Other	2	\$857,194	\$428,597	\$1,285,791	\$642,896	5
TOTAL	66	\$33,076,320	\$15,020,878	\$48,097,198	\$24,048,599	113

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis





Figure F.5 Dam Inundation Extents in the City of Pismo Beach



Map compiled 12/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, CA DWR, NID 2018





Drought and Water Shortage

The City of Pismo Beach has a variety of water sources that support the City's water supply, including Lopez Lake, the State Water Project, and groundwater resources. The City owns and operates two wells that pump from the Santa Maria Valley Groundwater Basin, and have a combined pumping capacity of 1,550 gallons per minute.

After multiple years of drought, the City has made efforts to reduce its reliance on groundwater supplies through alternative water opportunities. In 2015 the City announced plans for a water recycling project that will serve the South County area. The Central Coast Blue Project is a regional recycled water project that will treat water from the City's and the South San Luis Obispo County Sanitation District's wastewater treatment plant to produce purified water through a three-step filtration process that will be pumped to injection wells and injected into the Santa Maria Groundwater Basin. This will give an additional drinking water source and help prevent seawater intrusion into the groundwater basin. Construction is expected to begin in 2021 and will be located within the City of Pismo Beach's boundaries.

The following figure from the City of Pismo Beach Urban Water Management Plan (2015) depicts the current and projected water supply through the year 2035. The City is projecting to receive a consistent amount of water supply from wholesale suppliers (Lopez Reservoir and the State Water Project) and increase the City's water supply through the regional recycled water project. Currently, in the event of an emergency the City has emergency connections with the Cities of Arroyo Grande and Grover Beach as well as an opportunity to purchase more allocations from Lopez Lake through the County Flood and Water Conservation District.





Figure F.6 City of Pismo Beach Current and Projected Water Supplies

Water Supply Sources		Projected Water Supply (afy)				
Water purchased from:	Wholesale Supplied Volume	2015	2020	2025	2030	2035
Lopez Reservoir	Yes	892	892	892	892	892
State Water Project (Secured) ⁽¹⁾	Yes	1,240	1,240	1,240	1,240	1,240
Supplier-produced groundwater ⁽²⁾	No	700	700	700	700	700
Supplier-produced surface water	No					
Transfers In	No					
Exchanges In	No					
Recycled Water ⁽³⁾	No	0	645	662	680	698
Desalinated Water	No					
Total		2,832	3,477	3,494	3,512	3,530

Notes:
 1. The City's allocation includes a 40 af allotment for Pismo 98, LLC and 100 af for the Central Coast Development Company. A portion of this 140 af allotment is available for City use only if there is excess water available from the District.
 2. Groundwater supplies include 700 afy allocated as part of the Adjudication of the SMGB.
 3. These values are 100% of the anticipated yield from a recycled water upgrade to the Pismo Beach Wastewater Treatment Plant. The City's goal is to develop a regional recycled water project that could share the recycled water with regional partners and potentially utilize additional flows from the South San Luis Obispo County Sanitation District's (SSLOCS) wastewater treatment plant. If a regional project is implemented, the volume of recycled water available could increase or decrease depending upon interagency agreements and water availability from the SSLOCS facility among other factors.

Source: 2015 Urban Water Management Plan for the City of Pismo Beach

Flood

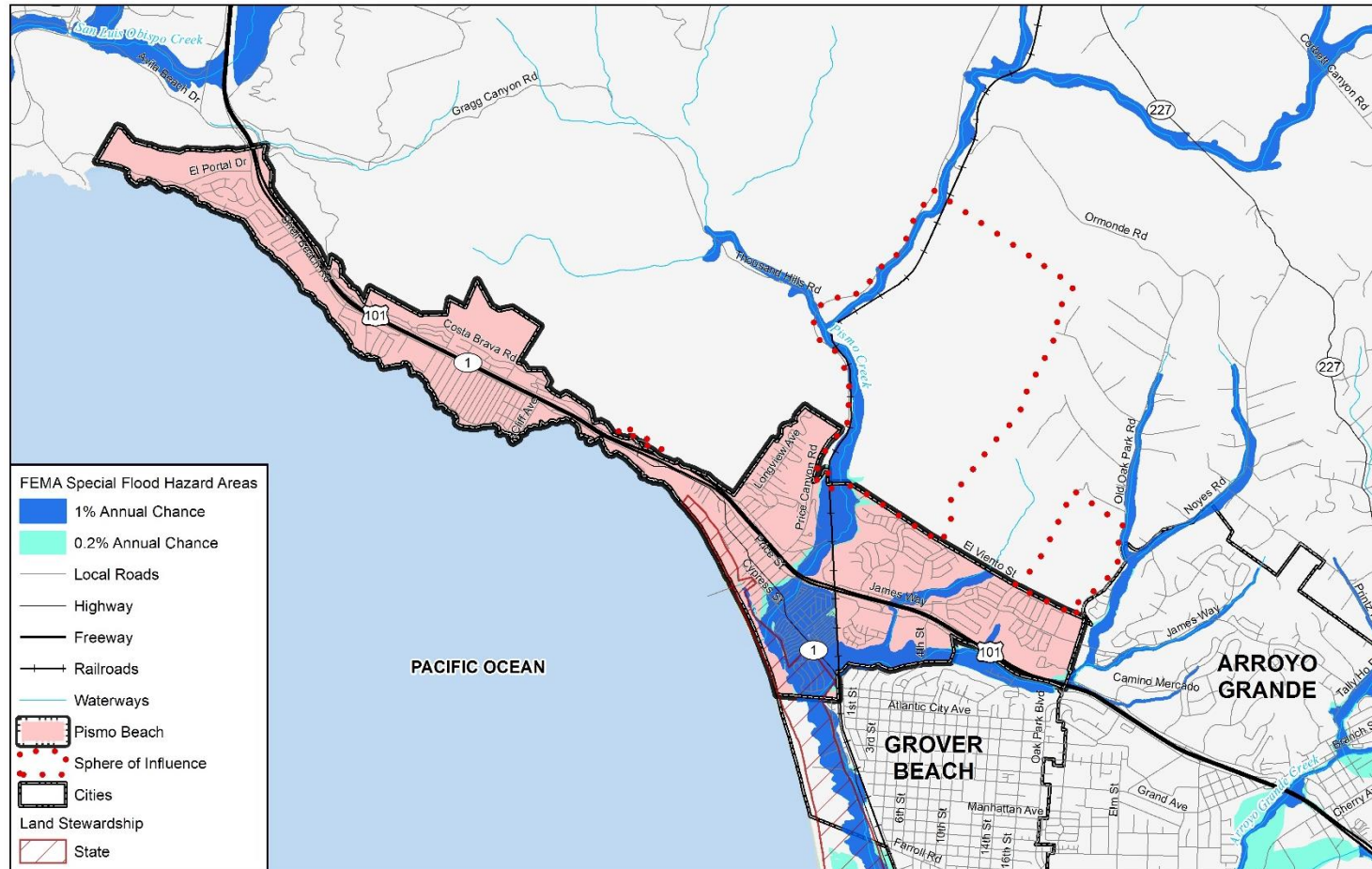
Values at Risk

Following the methodology described in Section 5.3.8, a flood map for the City of Pismo Beach was created (see Figure F. 7). Table F. 12 and Table F. 13 summarize the values at risk in the City's 100-year and 500-year floodplain, respectively. These tables also detail loss estimates for each flood. Note that the potential loss increases significantly with the 500-year or 0.2% annual chance flood





Figure F.7 City of Pismo Beach's 100- and 500-Year Floodplains



Map compiled 12/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCO, FEMA NFHL

0 1.5 3 Miles





Population at Risk

Table F. 12 City of Pismo Beach 1% (100 year) Floodplain Risk

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	5	\$558,082	\$558,082	\$1,116,164	\$279,041	--
Government/Utilities	14	--	--	\$0	\$0	--
Other/Exempt/Misc.	16	\$4,019,686	--	\$4,019,686	\$1,004,922	--
Residential	27	\$6,370,130	\$3,185,065	\$9,555,195	\$2,388,799	68
Multi-Family Residential	45	\$11,083,473	\$5,541,737	\$16,625,210	\$4,156,302	113
Mobile/Manufactured Homes	3	\$17,059,909	\$8,529,955	\$25,589,864	\$6,397,466	8
Residential: Other	2	\$857,194	\$428,597	\$1,285,791	\$321,448	5
TOTAL	112	\$39,948,474	\$18,243,435	\$58,191,909	\$14,547,977	193

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table F. 13 City of Pismo Beach 0.2% (500 year) Floodplain Risk

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Government/Utilities	1	--	--	\$0	\$0	--
Other/Exempt/Misc.	6	--	--	\$0	\$0	--
Residential	26	\$3,037,516	\$1,518,758	\$4,556,274	\$1,139,069	65
Multi-Family Residential	39	\$8,148,574	\$4,074,287	\$12,222,861	\$3,055,715	98
Residential: Other	10	\$2,659,992	\$1,329,996	\$3,989,988	\$997,497	25
Vacant	1	\$12,489	--	\$12,489	\$3,122	--
TOTAL	83	\$13,858,571	\$6,923,041	\$20,781,612	\$5,195,403	188

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Insurance Coverage, Claims Paid, and Repetitive Losses

The City of Pismo Beach has been a participant in the National Flood Insurance Program since August 1, 1984, and will continue to participate and remain in compliance with the National Flood Insurance Program (NFIP).

Table F. 14 City of Pismo Beach NFIP Insurance Policy Information

Policies	Insurance in Force	No. of Paid Losses	Total Losses Paid
116	\$37,758,200	7	\$73,623

Source: FEMA National Flood Insurance Program Community Information System

FEMA Community Information System shows that as of April 2019 the City of Pismo does not have any Repetitive Loss (RL) or Severe Repetitive Loss (SRL) properties.

Pismo Beach does not participate in the Community Rating System (CRS).

Critical Facilities at Risk

The City of Pismo Beach has one identified critical facility, a wastewater treatment plan located in the 1% Annual floodplain. None of the City's identified critical facilities are located in the 0,2% Annual (500-year) Floodplain.





Earthquake

There are no mapped active or potentially active faults in the City of Pismo Beach planning area, although the area is exposed to seismic hazards from movement along several regional faults. Historically, the faults that have caused seismic activity in Pismo Beach have originated from movement along the southern segment of the San Andreas Fault, approximately 42 miles northeast of the City. The Wilmar Avenue fault is the only fault that goes through the City of Pismo Beach and is exposed in a sea cliff near the City limits. The Wilmar Avenue Fault is considered potentially active but poses a moderate risk of fault rupture hazard to the Cities of Grover Beach and Arroyo Grande. The largest historical earthquake that impacted the City of Pismo Beach was the Bryson earthquake, a magnitude 6.2 event in November of 1952. The Bryson earthquake caused older, brick masonry buildings to be damaged in the City of Pismo Beach, but no deaths or injuries were reported.

As a coastal community liquefaction, the result of ground shaking causing fine grained, saturate soils to liquefy and as a fluid, also poses a risk to the City of Pismo Beach. Table F.15 shows the types of properties at moderate risk of liquefaction. Based on this analysis there are 66 properties at moderate risk of liquefaction with an improved value of over \$57 million. Government/Utility properties are the most vulnerable property type to liquefaction in Pismo Beach, with a total of 20 properties located in an area of moderate liquefaction risk. Refer to Figure F.8 below for the areas of Pismo Beach vulnerable to liquefaction hazards.

Table F.15 Property Types with Moderate Liquefaction Risk

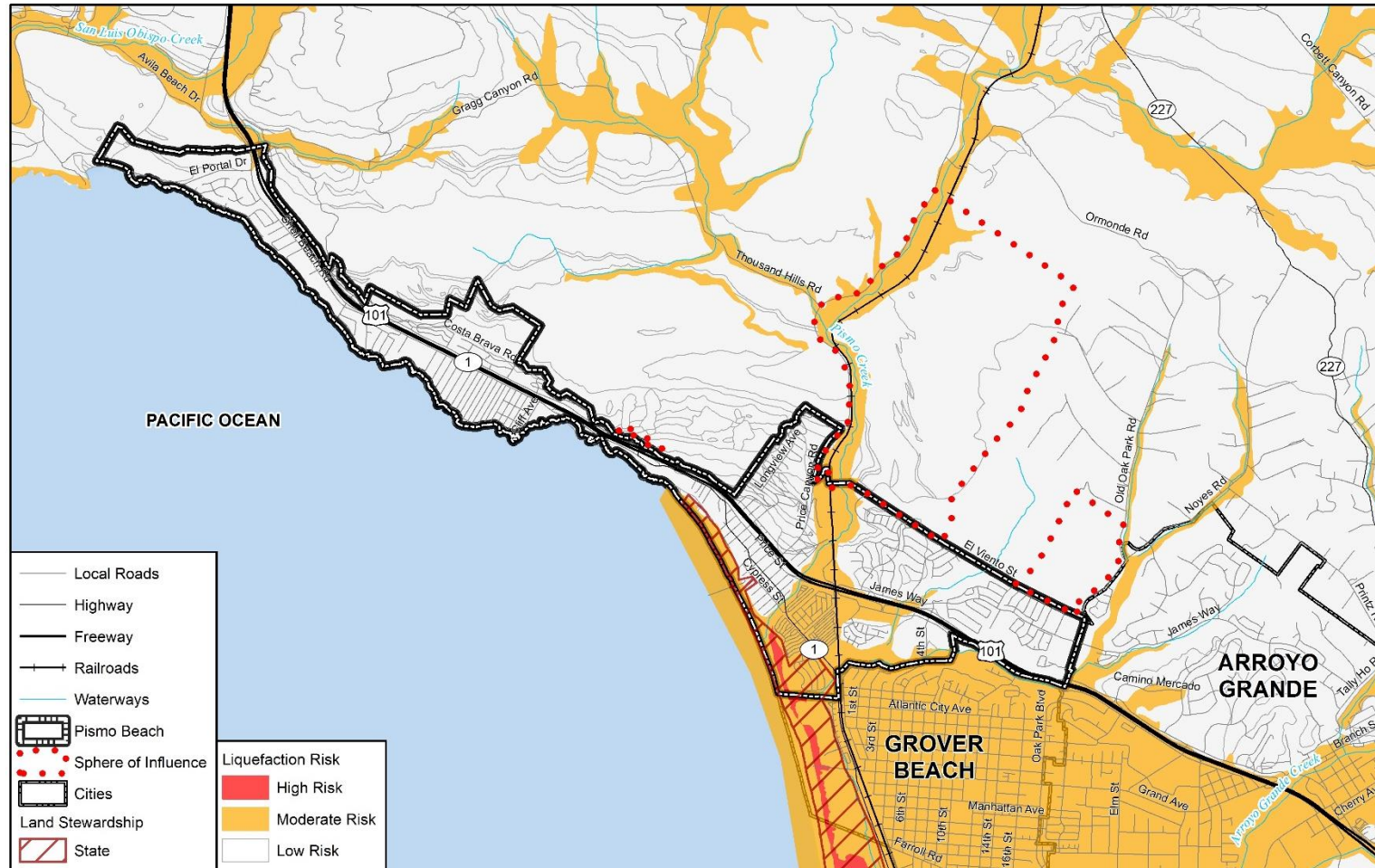
Property Type	Property Count	Improved Value
Commercial	15	\$31,080,392
Government/Utilities	20	--
Other/Exempt/Misc.	6	\$3,885,017
Residential	1	\$2,792
Multi-Family Residential	18	\$1,855,926
Mobile/Manufactured Homes	3	\$17,059,909
Residential: Other	3	\$3,302,992
Total	66	\$57,187,028

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis





Figure F.8 City of Pismo Beach Areas Vulnerable to Liquefaction



Map compiled 12/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO



Landslides

A landslide is a geologic hazard where the force of gravity combines with other factors to cause earth material to move or slide down an incline. Some landslides move slowly and cause damage gradually, whereas others move so rapidly that they can destroy property and take lives suddenly and unexpectedly. The potential for landslides is present on the hill sides to the north of highway 101 and along the Price Canyon corridor. The potential slope instability is greatest on the west facing slopes directly adjacent to the freeway and Price Canyon Road.

The City has had a history of landslide events. County geologists observed earthquake-induced landslides in the foothills after the San Simeon earthquake on December 22, 2003. Minor landsliding was reported along the coastal highway in May 2011 and April 2012. Recent landslide events occurred in 2017 near Spyglass Beach, and in 2018 near Silver Shoals Beach where a 30 by 40-foot section of cliff came down. The Pismo Beach Public Works Department in addition to CAL FIRE assisted in the response to both incidents.

The City of Pismo Beach is among the communities in the County of San Luis Obispo that has the most properties in the Moderate and High landslide potential areas; these properties are located primarily near the hills north of the City (refer to Figure F.9 below). The following tables shows the breakdown of landslide risk by property type.

Table F.16 City of Pismo Beach Properties in the Moderate Landslide Risk Areas

Property Type	Property Count	Improved Value
Commercial	3	\$4,639,233
Government/Utilities	16	--
Other/Exempt/Misc.	41	--
Residential	530	\$178,737,349
Multi-Family Residential	123	\$29,869,616
Residential: Other	22	\$33,812,694
Vacant	5	\$1,263,997
Total	740	\$248,322,889

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table F.17 City of Pismo Beach Properties in High Landslide Risk Areas

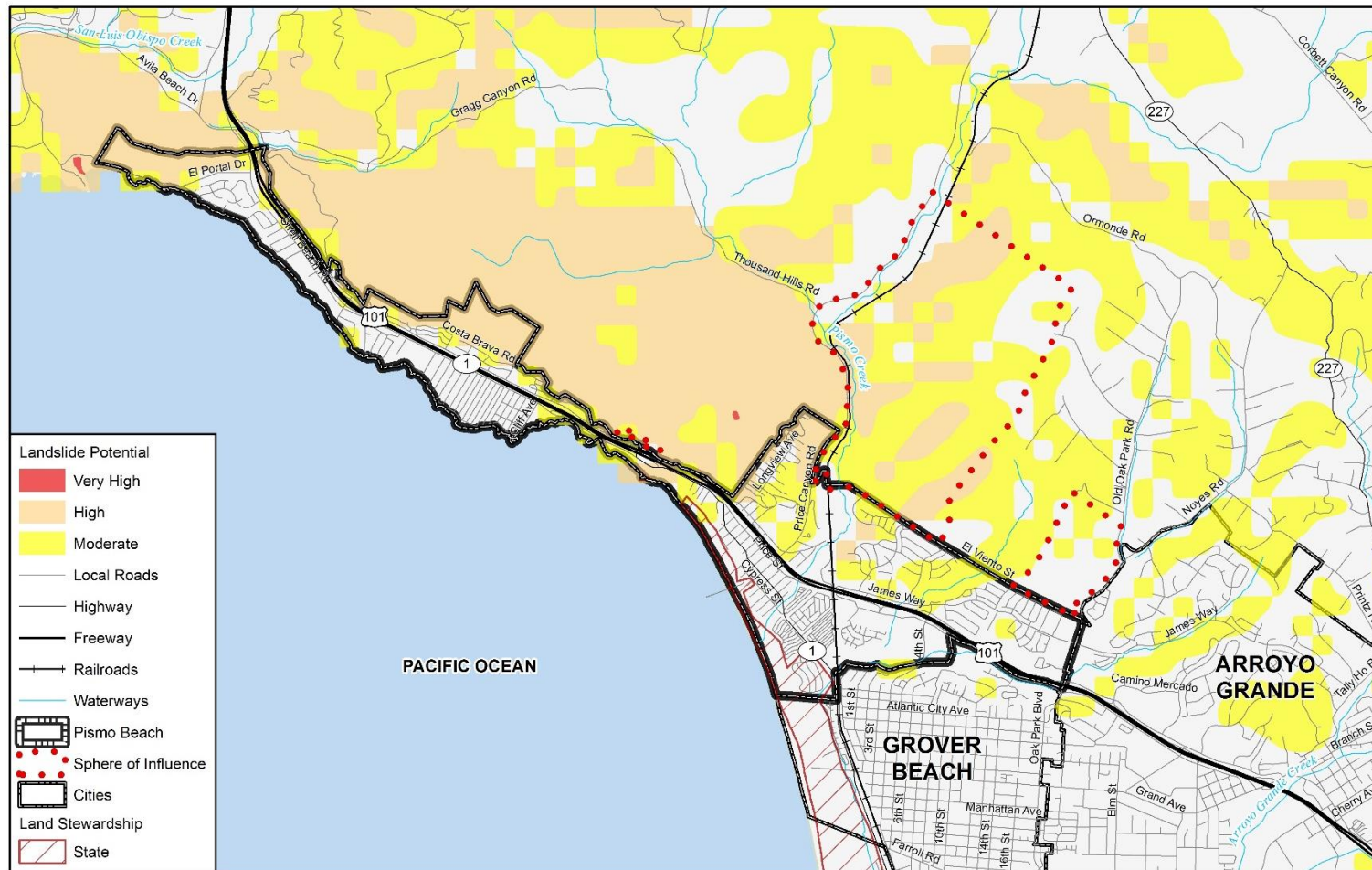
Property Type	Property Count	Improved Value
Government/Utilities	5	--
Other/Exempt/Misc.	12	--
Residential	265	\$107,220,459
Multi-Family Residential	8	\$1,231,141
Residential: Other	8	\$23,736,555
Vacant	5	\$1,508,988
Total	303	\$133,697,143

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis





Figure F.9 Areas with Potential Landslide Risk in Pismo Beach



Map compiled 12/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office, LAFCO

0 1.5 3 Miles





Based on this analysis there are a total of 1,043 properties with a combined improved value of over \$300 million, located in moderate or high landslide risk areas. Residential properties are most at risk of landslides in Pismo Beach. Of the properties located in moderate or high-risk areas, 956 are designated as residential, multi-family residential or residential: other. As shown in the tables below, there are also four critical facilities, all microwave service towers, that are located in moderate to high-risk landslide areas.

Table F.18 Critical Facilities located in Moderate or High Landslide Risk Areas

Critical Facility Type	Count
Moderate Risk	
Microwave Service Tower	2
High Risk	
Microwave Service Tower	2
Grand Total	4

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

The potential for slope instability in the sloping terrain can mostly be mitigated by applying building code requirements that provide minimum requirements for building construction and grading on sloping ground, as these areas are not known to be underlain by large landslide features or notoriously unstable formations. Steep slopes have been a controlling influence in the shaping of the City of Pismo Beach by constraining the location of development. City policies prohibit development on slopes over 30 percent in all areas except Pismo Heights. In addition to this policy, there are several other policies related to landslide risk and mitigation noted in the City’s Land Use Element (2014).

Wildfire

Wildfires are a common occurrence in San Luis Obispo County, with some of the most significant wildfire events occurring in the Los Padres National Forest, approximately 22-miles east of the City limits. CAL FIRE has designated the City of Pismo Beach as being at an increased risk from wildfires, and a priority community to work with to prepare and mitigate potential fire risk. According to the County’s Community Wildfire Protection Plan (2019), the prevailing wind patterns, especially the Santa Ana Winds which are accompanied by warm temperatures, high wind speeds and low humidities, is another dominant factor that influences the wildfire risk in Pismo Beach. A fire that originates in the Los Osos area or at the Diablo Canyon Power Plant could be pushed by prevailing winds southeast towards the Pismo Beach community.

Analysis using GIS was used to create the following tables to quantify the potential losses by property type of parcels located in the very high wildfire severity zone. Based on the analysis there are 1,068 properties in Pismo Beach that are located within the very high severity zones with a total value of \$501,553,587. Residential property types, including multi-family and residential: other, are the most common property type found in the very high wildfire severity zone. This includes 2,445 persons and 974 residential properties with a combined value of almost \$500 million vulnerable to wildfire events. There is one critical facility, a microwave service tower that is also located in the very high severity wildfire zone.





Table F.19 City of Pismo Beach Wildfire Risk by Property Type – Very High Severity Zone

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	3	\$5,145,662	\$5,145,662	\$10,291,327	\$10,291,327	--
Government/Utilities	12	--	--	\$12	\$12	--
Other/Exempt/Misc.	70	--	--	\$70	\$70	--
Residential	803	\$285,939,224	\$142,969,612	\$428,909,639	\$428,909,639	2,016
Multi-Family Residential	133	\$27,181,799	\$13,590,900	\$40,772,832	\$40,772,832	334
Residential: Other	38	\$12,494,584	\$6,247,292	\$18,741,914	\$18,741,914	95
Vacant	9	\$2,837,784	--	\$2,837,793	\$2,837,793	--
Total	1,068	\$333,599,053	\$167,953,466	\$501,553,587	\$501,553,587	2,445

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

Table F.20 City of Pismo Beach’s Critical Facilities in Very High Wildfire Severity Zone

Facility Type	Count
Microwave Service Tower	1
Total	1

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

Acknowledging the City’s risk to wildfires, the City’s General Plan Safety Element, sets forth policies for wildfire protection, including a requirement for the City to conduct a wildland fire analysis and plan as part of all future annexation, as well as conducting analysis prior to the creation of regional coastal open space areas or parks, as stated in Conservation Element, policy CO-8. Wildfire protection plans are required to specify the following requirements:

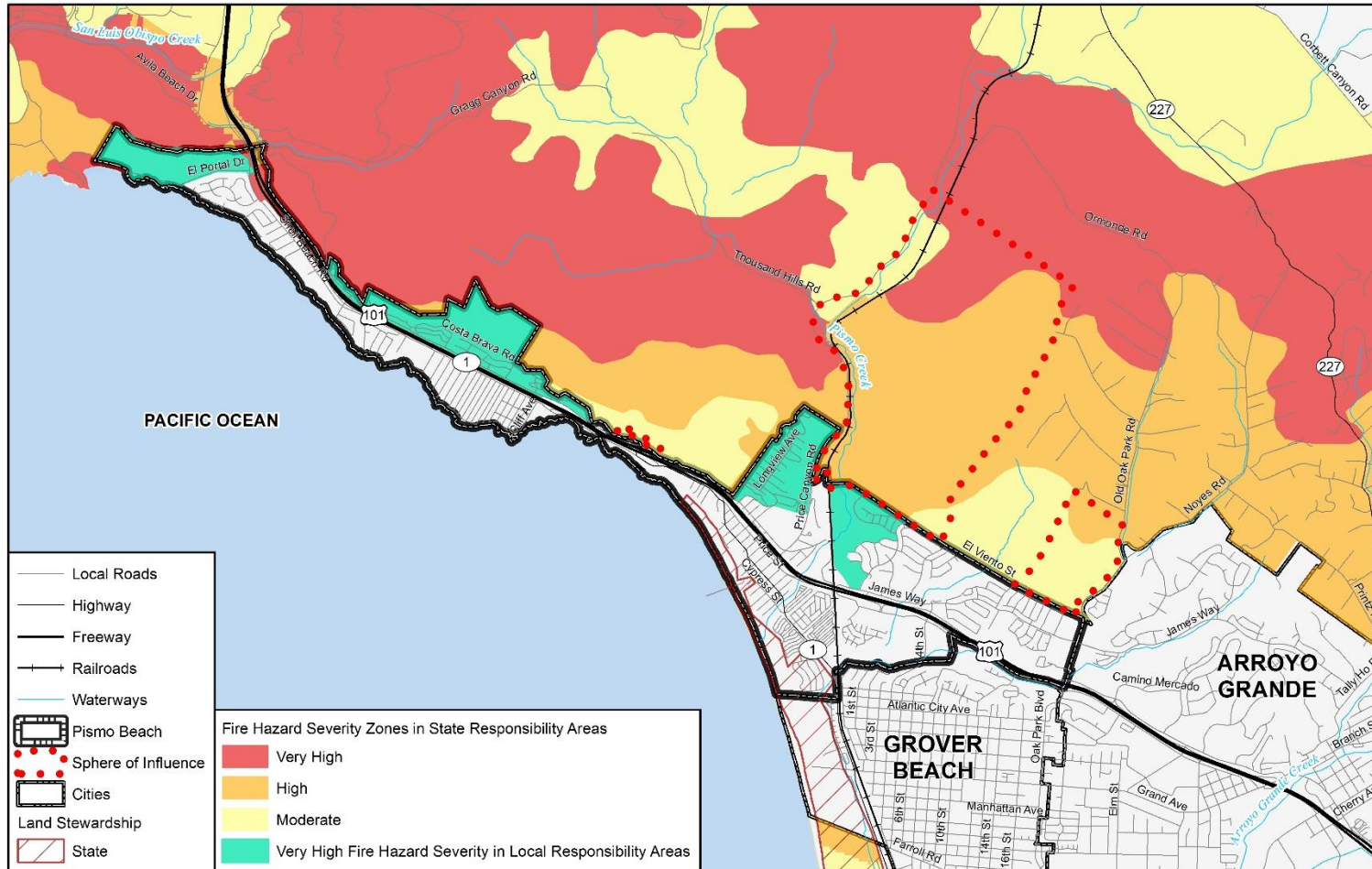
- Appropriate fuel clearance areas
- Building set-backs from undeveloped areas
- Access to high hazard areas
- Standards for evaluation of areas
- Identified turnouts and helispots in road system
- Water supplies
- Manpower and equipment requirements

The following map shows the areas within the very high wildfire severity zones in the City of Pismo Beach.





Figure F.10 City of Pismo Beach Areas of Very High Severity



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, CalFire

0 1.5 3 Miles





Tsunami

Tsunami inundation poses a risk to all coastal communities in the County of San Luis Obispo. Offshore faults and related seismic activity could cause a tsunami event off the coast of Pismo Beach, even if the faults are thousands of miles away. The City has had a history of tsunami events. In the last 141 years there have been eight observed tsunami events. Most of these events resulted in little to no wave run-up, except for the event in 1927 which resulted in wave run-ups of 6 feet, over 4 feet wave run-ups in 1960 and under 4 feet in 2010 and 2011. The following table lists the historic tsunami events that have impacted the City of Pismo Beach since 1848.

Table F.21 Historic Tsunami Events, 1878-2011

Date	Origin	Source Type	Run-Up (Feet)
November 22, 1878	Southern California	Probably Submarine Landslide	Observed
November 4, 1927	Southern California	7.3M Earthquake	6
April 1, 1947	Southern California	8.6M Earthquake	Observed
May 22, 1960	South Central Chile	9.5M Earthquake	4.5
March 28, 1964	Prince William Sound, Alaska	9.2M Earthquake	Observed
February 27, 2010	Maule Region, Chile	8.8M Earthquake	3.9
March 11, 2011	Honshu, Japan	9.0M Earthquake	3.3

Source: City of Pismo Beach Local Planning Team, Data Collection Workbook, 2019

Pismo Beach’s coastal bluffs (the Pismo Bluffs) in general provide protection from coastal hazards, although the low-lying areas where Pismo Creek meets the ocean are considered to be at moderate risk of tsunami hazards. The following areas were noted in the City’s 2015 LHMP as being the highest risk to tsunamis:

- Development located near the mouth of Pismo Creek
- State Parks North Beach Campground
- State Route 1 to the Pacific Ocean from Franklin to Hinds
- US 101 to the Pacific Ocean from Hinds to Price Canyon
- James Way to the Pacific Ocean from Price Canyon to 4th Street

The following table breaks down the tsunami risk for the City of Pismo Beach by property type.





Table F.22 City of Pismo Beach’s Tsunami Risk by Property Type

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Population
Commercial	18	\$10,188,285	\$10,188,285	\$20,376,570	--
Government/Utilities	30	--	--	\$0	--
Other/Exempt/Misc.	29	\$3,783,908	--	\$3,783,908	--
Residential	98	\$28,903,496	\$14,451,748	\$43,355,244	246
Multi-Family Residential	219	\$43,209,500	\$21,604,750	\$64,814,250	550
Mobile/Manufactured Homes	3	\$17,059,909	\$8,529,955	\$25,589,864	8
Residential: Other	29	\$22,662,259	\$11,331,130	\$33,993,389	73
Vacant	1	\$9,000,000	--	\$9,000,000	--
Total	427	\$134,807,357	\$66,105,867	\$200,913,224	877

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor’s Office data 2019

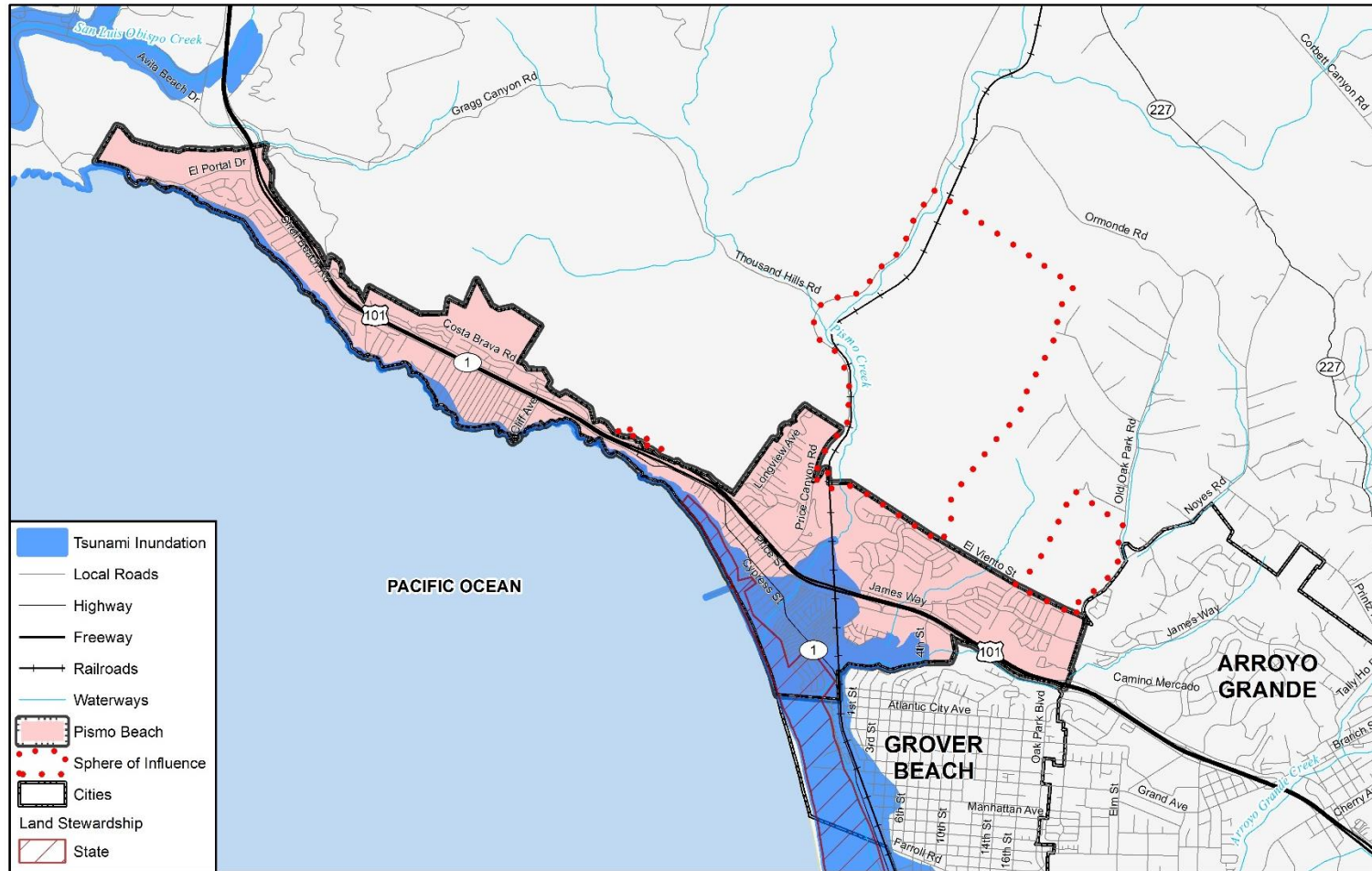
Based on this analysis all of the City of Pismo Beach coastline is at significant risk to a tsunami event, particularly the southern portion of the City limits. There are 427 properties with a combined value of over \$200 million vulnerable to the impacts of a tsunami. Of the properties at risk, 349 are residential properties (includes mobile/manufactured homes), with a majority being multi-family residential and have a combined loss estimate of over \$167 million. There is a population of 877 at risk of tsunami events, although the LPT noted this number will increase drastically in the summer months when the City and the surrounding attractions are filled with tourists who may not be familiar with the risk tsunamis pose leading them to not heed warnings. Refer to Section 5 of the Base Plan for additional information related to the past tsunami events and analysis on future vulnerability.

The following map show the areas at risk of potential inundation from a tsunami event.





Figure F.11 City of Pismo Beach Areas of Tsunami Inundation



Map compiled 12/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, CA Dept. of Conservation



Human Caused: Hazardous Materials

The Cal OES Warning Center reports 54 hazardous materials incidents in the City of Pismo Beach from 1994 through October 24, 2018; as noted in Section 5.3.13 of the county plan, this likely excludes a large number of unreported minor spills. This constitutes 3% of the hazardous materials incidents reported countywide during the same time frame and averages out to roughly 2.2 incidents per year. As noted in Section 5.3.13, only around 6% of reported hazardous materials incidents result in injuries, fatalities, or evacuations.

There are no significant hazardous materials facilities located in the City. However, Pismo Beach sits within the Emergency Planning Zone for the Diablo Canyon Nuclear Power Plant.

F.4 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 capability 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory which of these policies or programs were in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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 jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The City of Pismo Beach's capabilities are summarized below.





F.4.1 Regulatory Mitigation Capabilities

Table F.23 City of Pismo Beach Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	Yes	
Zoning ordinance	Yes	
Subdivision ordinance	Yes	
Growth management ordinance	No	
Floodplain ordinance	Yes	
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	Stormwater Ordinance
Building code	Yes	
Fire department ISO rating	Yes	
Erosion or sediment control program	Yes	
Stormwater management program	Yes	
Site plan review requirements		
Capital improvements plan	Yes	
Economic development plan	No	
Local emergency operations plan	Yes	
Other special plans		
Flood Insurance Study or other engineering study for streams	Yes	
Elevation certificates (for floodplain development)	Yes	

F.4.2 Administrative/Technical Mitigation Capabilities

Table F.24 identifies the personnel responsible for activities related to mitigation and loss prevention in Pismo Beach





Table F.24 City of Pismo Beach Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	Community Development – Associate Planners
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Public Works – City Engineer
Planner/engineer/scientist with an understanding of natural hazards	Yes	Community Development – Associate Planners and Public Works – City Engineer
Personnel skilled in GIS	Yes	Public Works – City Engineer
Full time building official	Yes	Community Development
Floodplain manager	Yes	Community Development – Director
Emergency manager	Yes	City Manager
Grant writer	No	TBD
Other personnel	Unknown	Unknown
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	Public Works- City Engineer
Warning systems/services (Reverse 9-11, outdoor warning signals)	Yes	Police and Fire

F.4.3 Fiscal Mitigation Capabilities

Table F.25 identifies financial tools or resources that the City could potentially use to help fund mitigation activities.

Table F.25 City of Pismo Beach Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Incur debt through general obligation bonds	Yes – with voter approval
Incur debt through special tax bonds	Yes
Incur debt through private activities	Yes
Withhold spending in hazard prone areas	No

F.4.4 Mitigation Outreach and Partnerships

The City of Pismo Beach Public Works Department conducts several water programs related to water usage and water conservation. Their website provides information for residents related to water wise gardening and links to “how to garden in a drought.” The Department also has a stormwater program which includes public outreach related to water pollution and how to improve discharges from individual residences within the City of Pismo Beach. The City of Pismo Beach website has a “Community Emergency & Disaster Preparedness” page which





contains resources and information for individuals, families, and businesses on how to prepare for an emergency. The Preparedness web page also contains information specific to individuals with various disabilities including mobility, vision, hearing, and special medical needs.

F.4.5 Other Mitigation Efforts

The City has designated 550 Frady Lane as the Pismo Beach Sandbag Station location, and provides bags and shovels at the site. The Planning Team also shared the following mitigation projects as past or ongoing projects:

- Worked on Five Cities Drive Lift station floodproofing to reduce impacts to the critical facility.
- Ongoing work with FEMA related to FIRM maps for the City.
- Working on Bello Street Bridge plans within construction starting soon. Will reduce the impacts for flooding and emergency evacuation routes.
- Vegetation reeducation and weed abatement programs for fuel reeducation are ongoing.
- Public Works has been coordinating with County OES regarding consistent signage with the County. Signs are being manufactured but have not been installed yet.

F.4.6 Opportunities for Enhancement

Based on the capability assessment, the City of Pismo Beach has several existing mechanisms in place that already help to mitigate hazards. In addition to these existing capabilities, there are also opportunities for the City to expand or improve on these policies and programs to further protect the community. Future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform City staff members on how best to integrate hazard information and mitigation projects into their departments. Continuing to train City staff on mitigation and the hazards that pose a risk to the City of Pismo Beach will lead to more informed staff members who can better communicate this information to the public. The City also has the opportunity to become a StormReady and a TsunamiReady community which can provide training resources for City staff as well as public outreach and educational opportunities.

F.5 Mitigation Strategy

F.5.1 Mitigation Goals and Objectives

During the 2019 Planning Process the Pismo Beach Planning Team reviewed the mitigation goals and objectives from the 2014 LHMP and determined the existing number and intent of the goals and objectives continue to be appropriate and no revisions or additions were necessary. The City of Pismo Beach's 2019 hazard mitigation goals are the following:

Goal 1 – Promote disaster-resistant development

Goal 2 – Build and support local capacity to enable the public to prepare for, respond to and recover from disasters

Goal 3 – Reduce the possibility of damage and losses due to bluff/erosion failure

Goal 4 – Reduce the possibility of damage and losses due to coastal storm

Goal 5 – Reduce the possibility of damage and losses due to dam failure





Goal 6 – Reduce the possibility of damage and losses due to earthquake

Goal 7 – Reduce the possibility of damage and losses due to flood

Goal 8 – Reduce the possibility of damage and losses due to hazardous material events

Goal 9 – Reduce the possibility of damage and losses due to landslide

Goal 10 – Reduce the possibility of damage and losses due to tsunami

Goal 11 – Reduce the possibility of damage and losses due to wildland fire

Continued Compliance with the National Flood Insurance Program

The City has been an NFIP participating community since 1984. In addition to the mitigation actions identified herein the City will continue to comply with the NFIP. This includes ongoing activities such as enforcing local floodplain development regulations, including issuing permits for appropriate development in Special Flood Hazard Areas, and ensuring that this development 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. The City of Pismo Beach does not currently have any Repetitive Loss or Severe Repetitive Loss properties.

F.5.2 Completed and Deleted 2015 Mitigation Actions

The City of Pismo Beach has completed one mitigation action identified in the 2015 plan. This completed actions has reduced vulnerability to hazards and increased local capability to implement additional mitigation actions. The completed action is as follows:

Action 9. Acquire, relocate, elevate, and/or floodproof critical facilities that are located within eh 100-year floodplain

The City of Pismo Beach has reduced the impacts of the Five Cities Drive Lift Station, a critical facility for the community through floodproofing mechanisms.

After reviewing the 2015 mitigation actions, the Planning Team determined that the following action could be deleted:

Action 12. Increase participation in the National Flood Insurance Program (NFIP) by entering the Community Rating System program which through enhanced floodplain management activities would allow property owners to receive a discount on their flood insurance.

It was determined that this action was not feasible due to the minimum rating needed to qualify for the Community Rating System program.

F.5.3 Mitigation Actions

The Planning Team for the City of Pismo Beach identified and prioritized the following mitigation actions based on the risk assessment. Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. 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.





Table F.26 City of Pismo Beach 2020 Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
PB.1	Flood; Coastal Storm, Sea Level Rise Dam Incidents, Tsunami	Rehabilitate Bello Bridge to withstand flooding and tsunami hazards.	Public Works	Over \$1,000,000	FEMA HMA	High	3-5 yrs.	In progress. Working on Bello Street Bridge plans. About to start construction. Reduces impacts for flooding and emergency evacuation routes
PB.2	Flood	Work with FEMA Region IX to address any floodplain management issues that may have arisen/arise from the countywide Digital Flood Insurance Rate Map (DFIRM), Community Assessment Visits, and/or the Department of Water Resources (DWR).	Community Development, Public Works	Less than \$10,000	Staff Time/Dept. Budget	High	Ongoing	In progress. Ongoing work with FEMA re FIRM maps
PB.3	Tsunami	Display standardized and easy to read signs alerting community members of tsunami hazard zones, evacuation routes, and evacuation sites.	Public Works, Police, Fire	Little to no cost	FEMA HMA	High	1 yr.	In progress. Tsunami signage. Public Works has been coordinating with SLO County OES regarding consistent signage with the County. About to get signage manufactured. Not yet installed.
PB.4	Dam Failure	Develop a public outreach program that informs property owners located in the dam or levee inundation areas about voluntary flood insurance.	Fire, Community Development, Public Works	Little to no cost	Staff Time/Dept. Budget	High	2-3 yrs.	Deferred





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
PB.5	Earthquake	Develop an "Earthquake Education Program" for residents which illustrates what steps the individual can take to prepare for an earthquake and mitigate the effects of an earthquake. Coordinate with Community Emergency Response Teams (CERT) where applicable.	Community Development	Little to no cost	Staff Time/Dept. Budget	High	1 yr.	Deferred. Due to Department workload and funding.
PB.6	Earthquake	Target old pipelines in seismic areas for upgrades and automatic seismic shut-off switches that cut off natural gas to customers	Community Development, Public Works	\$500,000 to \$1,000,000	FEMA HMA	High	More than 5 yrs.	In progress. Portions of gas pipelines being replaced. Switches?
PB.7	Hazardous Materials	Conduct a public awareness and educational campaign to raise awareness about the presence of hazardous materials throughout the City.	Fire, Police	Little to no cost	Community Action Renewed Environment (CARE) and PDM	High	1 yr.	Deferred. Still needed if there is a hazmat impact to City
PB.8	Landslide	Stabilize landslide-prone areas through stability improvement measures, including interceptor drains, in situ soil piles, drained earth buttresses, and subdrains.	Community Development, Public Works	\$500,000 to \$1,000,000	FEMA HMA	High	More than 5 yrs.	Deferred. Additional study needed before requiring.
PB.9	Wildfire	Create a vegetation management program that provides vegetation management services to elderly, disabled, or low-income property owners who lack the resources to remove flammable vegetation from around their homes.	Fire	Little to no cost	FEMA HMA	High	2-3 yrs.	Deferred. Need additional CAL FIRE approval for such a program.
PB.10	Wildfire	Implement a fuel modification program, which also includes residential maintenance requirements and enforcement, plan submittal and approval process, guidelines for planting, and a listing of undesirable plant species. Require builders and developers to submit their plans, complete with proposed fuel modification zones, to the local fire department for	Fire	Little to no cost	FEMA HMA	High	Annual	In progress. Vegetation reduction and weed abatement programs for fire fuel reduction have been ongoing





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
		review and approval prior to beginning construction.						
PB.11	Wildfire	Develop and provide funding and/or incentives for defensible space measures (e.g., free chipping day, free collection day for tree limbs).	Fire	Little to no cost	FEMA HMA	High	2-3 yrs.	Deferred. Could be useful but still needs implementation.
PB.12	Wildfire	Provide assistance to private property owners for brush and weed abatement	All cities, county, CalFire	Little to no cost	State grants; Federal grants	High	Annual	New
PB.13	Wildfire	Implement a fuel modification program, which also includes residential maintenance requirements and enforcement, plan submittal and approval process, guidelines for planting, and a listing of undesirable plant species. Require builders and developers to submit their plans, complete with proposed fuel modification zones, to the local fire department for review and approval prior to beginning construction.	Fire	Less than \$10,000	FEMA HMA	High	2-3 yrs.	In progress. Vegetation reduction and weed abatement programs for fire fuel reduction have been ongoing
PB.14	Drought	Develop additional water efficient landscape measures for new construction, including the encouragement xerophytic landscape designs.	Community Development Department	Little to no cost	TBD	Low	2-3 yrs.	New
PB.15	Drought	Continue to monitor reservoir and well water levels. Develop and enact a tiered water restriction program in the event of drought conditions or other water availability emergency, including possible limits on new construction.	Community Development Department	Little to no cost	TBD	High	2-3 yrs.	New





F.6 Implementation and Maintenance

Moving forward, the City will use the mitigation action table in the previous section to track progress on implementation of each project. Much progress has been made since the plan was originally developed. Implementation of the plan overall is discussed in Section 8 in the Base Plan.

F.6.1 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. City staff may utilize the hazard information when implementing preparing and implementing the City's Ten-Year Capital Improvement Program. Within the City's Community Development Department, the Planning and Building Divisions may utilize the hazard information when reviewing a site plan or other type of development applications. The City will also incorporate this LHMP into the Safety Element of their General Plan, as recommended by Assembly Bill (AB) 2140.

As noted in Section 8 Plan Implementation and Monitoring, the HMPC representatives from Pismo Beach 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 HMPC plan review meeting.

F.6.2 Monitoring, Evaluation and Updating the Plan

The City will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Section 8 of the Base Plan. The City will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The City's Community Development Director will be responsible for representing the City in the County HMPC, 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.





G.1 Community Profile

G.1.1 Mitigation Planning History and 2019 Process

Annex G, City of San Luis Obispo (City), was created during the development of the 2019 Multi-Jurisdictional San Luis Obispo Hazard Mitigation Plan update (HMP). This Jurisdictional Annex builds upon and supersedes the 2014 City of San Luis Obispo Local Hazard Mitigation Plan (LHMP). The 2014 Plan was not integrated into the City’s Land Use Element; that integration will be done after the approval of this updated Plan. The General Plan Safety Element references the 2014 Local Hazard Mitigation Plan in Chapter 5:

- Additional information on hazards in the San Luis Obispo area can be found in the Technical Background Report for the San Luis Obispo County and Cities Safety Element (June 1999). Additionally, the City of San Luis Obispo Local Hazard Mitigation Plan presents a comprehensive risk assessment of natural hazards that have the potential to affect the City of San Luis Obispo. The Local Hazard Mitigation Plan was developed by the City in accordance with the Federal Disaster Mitigation Act of 2000, adopted by the City Council and approved by the Federal Emergency Management Agency. The Local Hazard Mitigation Plan suggests possible mitigation actions for reducing the effects of potential hazards. It is incorporated by reference into the Safety Element and should be consulted when addressing known hazards to ensure the general health and safety of people within the City of San Luis Obispo. The goals and policies within this Safety Element support and are consistent with the recommended mitigation strategy within the Local Hazard Mitigation Plan.

The City had representation on the County multi-jurisdictional Hazard Mitigation Planning Committee and utilized a Local Planning Team (LPT) subcommittee to develop input into the annex.

Table G.1 City of San Luis Obispo Local Planning Team

Department or Stakeholder	Title
Fire Department	Fire Chief
Fire Department	Fire Marshall
Fire Department	Administrative Analyst
Administration	Natural Resources Manager
Administration	Sustainability Manager

More details on the planning process and participating jurisdictions, service districts and stakeholders can be found in Section 3 of the Base Plan, along with the public’s role during the 2019 update.

G.1.2 Geography and Climate

The City is located in California’s Central Coast region approximately 200 miles north of Los Angeles and 230 miles south of San Francisco. The City is situated to the west of the Santa Lucia Mountains and is located eight miles east of the Pacific Ocean. The San Luis Obispo Creek originates from the mountains and flows westward in confluence with the Pacific Ocean at Avila Beach. The mountain ranges form a natural barrier to development in San Luis Obispo. The City is an estimated 10.7 square miles and is surrounded by protected open space and productive agricultural lands. San Luis Obispo is regionally accessible via US Highway 1, US Highway 101, and State Route 227 (Broad Street). The City terrain stands at an average elevation of 300 feet above sea level, with prominent peaks such as Cerro San Luis and Bishop Peak at 1,292 and 1,559 feet, respectively, above sea level.



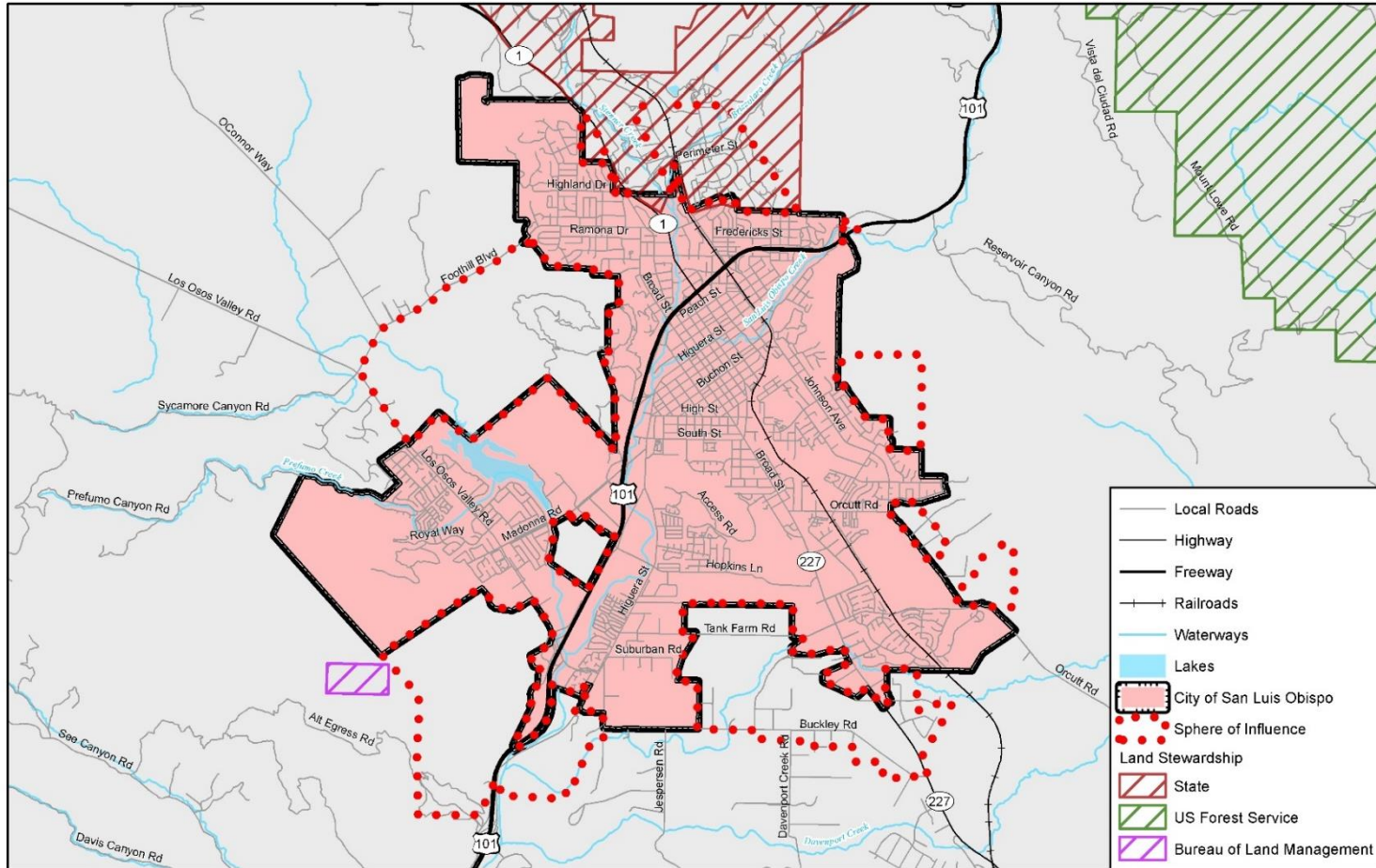


The City's Sphere of Influence includes approximately 5,930+/- acres outside of the City limits and includes nine unincorporated areas: Cal Poly, Florita-Alrita, Orcutt, Broad Street, Airport, Chevron, Los Osos Valley Road/US Highway 101, San Luis Ranch, and Cerro San Luis area. All lands outside of the City's Sphere of Influence are regulated by the San Luis Obispo County General Plan and zoning designations. State law requires that cities maintain plans for areas outside of their immediate jurisdiction if the areas have a direct relationship to planning needs.





Figure G.1 The City of San Luis Obispo



- Local Roads
- Highway
- Freeway
- + Railroads
- Waterways
- Lakes
- City of San Luis Obispo
- Sphere of Influence
- Land Stewardship
- State
- US Forest Service
- Bureau of Land Management

Map compiled 6/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office

0 2 4 Miles





San Luis Obispo is characterized by a Mediterranean climate with an average temperature of 70.2 degrees Fahrenheit. While generally considered a mild climate, weather patterns and events have historically observed both unseasonably warm periods and cold spells. The City receives an average precipitation of 19 inches per year, with increased amounts of rainfall in the winter and spring months between November and April (US Climate Data 2019). Due to its close proximity to the Pacific Ocean, San Luis Obispo is also subject to coastal weather influences such as dense fog that typically rolls into the City through the Chorro Valley, steady on-shore wind patterns, and coastal storms. For general details on climate characteristics of the region refer to the Adverse Weather Section of the Risk Assessment in the HMP (Section 5.3.1).

G.1.3 History

The native Chumash Tribe was the first known settled human population in the City of San Luis Obispo area. The Chumash established a network of villages along the San Luis Obispo Creek. Spanish Colonization of the area began in 1769 with the founding of Mission San Luis Obispo de Tolosa in 1772 by Father Junipero Serra, resulting in devastating impacts to the Chumash culture. Diseases and significant alterations of culture due to the establishment of the mission caused a significant decrease in the Native American population. Spanish and Mexican ranchos were established in the area in the late 1700s. The development of the area of San Luis Obispo has historically been connected to the San Luis Obispo Creek, where the first settlements could be found, and to the emphasis on agricultural production by the Mission and later the adjacent ranchos.

The California Land Act of 1851 caused a shift to residential development in San Luis Obispo. By 1870, the community had grown to a population of 1,579 and it became a charter city in 1876. Historic influences on the growth and development of San Luis Obispo include the City's beginnings as a center for agricultural productivity, the extension of the Southern Pacific Railroad in 1894, and the establishment of California Polytechnic State University (Cal Poly) in 1901.

Agriculture, transportation, government, and education related activities continue to play a significant role in the demographic, economic, land use, and development characteristics of the City. These characteristics and proactive protection of the City's natural and scenic resources contribute to the small-town charm and high quality of life of the City's residents.

G.1.4 Economy

As the civic, economic, and cultural hub of the Central Coast, the City serves as the seat of the County of San Luis Obispo. With major regional employers such as Cal Poly, state agencies, PG&E, Tenet Health Care, and the County of San Luis Obispo, the City has an estimated daytime population of more than 70,000 people. The San Luis Obispo Chamber of Commerce and the Downtown Association are active collaborators and leaders in supporting the retention and expansion of local businesses in the City. The City's leading industries include hospitality, food services, retail, professional services, health care, information and technology, public administration, and educational sectors.

To support the high quality of life and economic vitality of the community, San Luis Obispo is considered a full-service city, providing police, fire, water, sewer, streets, transit, parking, planning, building, engineering, and parks and recreation services to the community.

Select estimates of economic characteristics for the City of San Luis Obispo are shown in Table G.2.





Table G.2 City of San Luis Obispo Economic Characteristics, 2017

Characteristic	City of San Luis Obispo
Families below Poverty Level	6.9%
All People below Poverty Level	32.4%
Median Family Income	\$87,635
Median Household Income	\$49,640
Per Capita Income	\$29,748
Population in Labor Force	25,363
Population Employed*	41,668
Unemployment	1,128

Source: U.S. Census Bureau American Community Survey 2017, www.census.gov/
 *Excludes armed forces

Table G.3 and Table G.4 show the occupational and industry breakdown of the City of San Luis Obispo’s labor force based on estimates from the 2017 American Community Survey.

Table G.3 City of San Luis Obispo’s Employment by Occupation, 2017

Occupation	# Employed	% Employed
Sales and Office Occupations	5,630	21.6%
Management, Business, Science, and Arts Occupations	10,777	44.5%
Natural Resources, Construction, and Maintenance Occupations	934	3.9%
Production, Transportation, and Material Moving Occupations	1,632	6.7%
Service Occupations	5,240	21.6%
Total	24,213	

Source: U.S. Census Bureau American Community Survey 2017, www.census.gov/
 *Excludes armed forces

Table G.4 City of San Luis Obispo’s Employment by Industry, 2017

Industry	# Employed	% Employed
Retail Trade	3,044	12.6%
Professional, Scientific, and Mgmt., and Administrative and Waste Mgmt. Services	2,879	11.9%
Manufacturing	1,585	6.5%
Arts, Entertainment, and Recreation, and Accommodation, and Food Services	4,292	17.7%
Construction	886	3.7%
Finance and Insurance, and Real Estate and Rental and Leasing	846	3.5%
Public Administration	948	3.9%
Other Services, Except Public Administration	1,281	5.3%
Wholesale Trade	509	2.1%
Transportation and Warehousing, and Utilities	731	3.0%
Agriculture, Forestry, Fishing and Hunting, and Mining	269	1.1%
Information	457	1.9%
Educational Services, and Health Care, and Social Assistance	6,486	26.8%
Total	24,213	

Source: U.S. Census Bureau American Community Survey 2017, www.census.gov/





G.1.5 Population

In May 2019, the State Department of Finance released preliminary population data for the state to reflect wildfire-driven changes to local populations. The City of San Luis Obispo has a population of 46,802 persons as of January 2019, which accounts for approximately 16.7% of the County's population. The City experienced a growth of 0.1% from 46,741 residents from January 2018 (Department of Finance 2019). The U.S. Census Bureau's American Community Survey 2017 5-Year Estimates provide select demographic and social characteristics and changes from 2012 to 2017 for the City of San Luis Obispo (Table G.5).

Table G.5 City of San Luis Obispo's Demographic and Social Characteristics, 2012 to 2017

Characteristic	2012	2017
Population	270,121	280,119
Median Age	39.3	39.0
Total Housing Units	117,318	120,182
Housing Occupancy Rate	86.7%	87.4%
% of Housing Units with no Vehicles Available	4.5%	4.5%
Median Home Value	\$449,300	\$499,800
Unemployment	8.7%	4.8%
Mean Travel Time to Work (minutes)	20.9	21.8
Median Household Income	\$59,628	\$67,175
Per Capita Income	\$30,218	\$33,972
% of Individuals Below Poverty Level	13.7%	13.8%
# of Households	101,708	105,044
Average Household Size	2.49	2.51
% of Population Over 25 with High School Diploma	89.5%	90.5%
% of Population Over 25 with Bachelor's Degree or Higher	31.5%	34.0%
% with Disability	11.1%	11.1%
% Speak English less than "Very Well"	6.7%	6.8%

Source: U.S. Census Bureau American Community Survey 2017 5-Year Estimates, www.census.gov/

Between 1950 and 1990, the City grew from a population of 14,180 to just under 42,000. Since 1990, the City has maintained an average growth rate of less than one percent per year. Owner-occupied housing units account for 39% of all households, while approximately 61% of households are renter-occupied. The City's population is growing steadily at a relatively slow rate at approximately 1% or less per year with an estimated of 5.3% growth since the 2010 Census. The SLO 2035 Land Use and Circulation Elements update provides population estimates





Table G.6 City of San Luis Obispo Population Growth

Year	Approximate Maximum Number of Housing Units	Projected Population
2013	20,697	45,541
2015	21,113	46,456
2020	22,190	48,826
2025	23,322	51,317
2030	24,512	53,934
2035	25,762	56,686

Source: SLO 2035 Land Use Element Update

G.1.6 Development Trends

The City has traditionally expanded through annexation of County lands and increased development of diverse land uses; these include low to high density residential, general retail and commercial, services, and manufacturing uses bordering the San Luis Obispo Regional Airport, and dispersed undeveloped open space. With Mission Plaza and downtown at the heart of the City, development trends have included transition from the historic neighborhoods immediately adjacent to Downtown, to post-World War II growth in areas along the foothills of the Santa Lucia Mountains, surrounding Laguna Lake, and in the northern areas of town near the growing Cal Poly. Recent development efforts have focused on incorporating additional housing opportunities in the historic downtown core, through the renovation of historic structures and infill development on underutilized and vacant land. The Land Use Element of the City’s General Plan provides designated land use and establishes development standards for new and existing structures and uses. The Safety Element further identifies hazards that may influence the locations and types of proposed land uses and provides policies that reduce exposure to hazards. These policies have also encouraged changes to development in San Luis Obispo’s hazard prone/vulnerable areas, decreasing the City’s vulnerability. Any future development within the City will be informed by the most up to date hazard maps as well as state and local development ordinances (e.g. floodplain) that restrict development in hazard prone areas to minimize risk.

In recent years, more residents and visitors are staying and living in the downtown core. This change in demographic could impact response capabilities if a hazard impacts the downtown core. The City also has a greenbelt protection program and have acquired thousands of acres of land around the City to minimize development in areas around the City. Thus, the redevelopment of already developed areas or infill development is likely to be the trend in the future.

Specific to hazards, continuing moderate population growth is increasing exposure to earthquake hazards, though new or re-developed areas built to modern codes will be more resistant to collapse and damage.

G.2 Hazard Identification and Summary

San Luis Obispo’s planning team identified the hazards that affect the region and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to the City (see Table G.7). There are no hazards that are unique to the City. The overall hazard significance takes into account the geographic area, probability and magnitude as a way to identify priority hazards for mitigation purposes. This is discussed further in the Vulnerability Section (4.3).





Table G.7 City of San Luis Obispo – Hazard Summaries

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Adverse Weather: Thunderstorm/ Heavy Rain/Hail/Lightning/Dense Fog/Freeze	Extensive	Likely	Limited	Medium
Adverse Weather: High Wind/ Tornado	Extensive	Occasional	Limited	Medium
Adverse Weather: Extreme Heat	Extensive	Occasional	Negligible	Low
Agricultural Pest Infestation and Disease	Limited	Highly Likely	Negligible	Medium
Biological Agents	Extensive	Occasional	Critical	Medium
Drought and Water Shortage	Extensive	Likely	Limited	Medium
Earthquake	Extensive	Occasional	Catastrophic	High
Flood	Limited	Occasional	Limited	Medium
Landslides and Debris Flow	Limited	Occasional	Limited	Low
Subsidence	Significant	Occasional	Negligible	Low
Wildfire	Significant	Occasional	Limited	Medium
Human Caused: Hazardous Materials	Significant	Highly Likely	Negligible	Medium
<p>Geographic Area Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area</p> <p>Probability of Future Occurrences Highly Likely: Near 100% chance of occurrence in next year or happens every year. Likely: Between 10-100% 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.</p>		<p>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</p> <p>Significance Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact</p>		





G.3 Vulnerability Assessment

The intent of this section is to assess the City’s vulnerability separately from that of the County as a whole, which has already been assessed in Chapter 5 of the Base Plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance specific to the City.

The information to support the hazard identification and risk assessment was based on a combination of the pervious previous LHMP for the City and jurisdiction specific information collected during the 2019 update. A Local Hazard Mitigation Plan Update Guide and associated worksheets were distributed to each participating municipality or special district to complete during the 2019 update process. Information collected was analyzed and summarized in order to identify and rank all the hazards 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 5.2). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to each jurisdiction (See Table G.7).

Note: The hazard “Significance” reflects overall ranking for each hazard and is based on the City of San Luis Obispo LPT member input from the Data Collection Guide and the risk assessment developed during the planning process (see Chapter 5 of the Base Plan), which included a more detailed qualitative analysis with best available data.

The hazard summaries in Table G.7 reflect the hazards that could potentially affect City. The discussion of vulnerability for each of the following hazards is located in Section G.3.2 Estimating Potential Losses. Based on this analysis, the highest priority hazard (High Significance) for mitigation is Earthquake. Those of Medium or High significance for the City of San Luis Obispo are identified below.

- Adverse Weather: Thunderstorm/Heavy Rain/Hail/Lighting/Dense Fog/Freeze
- Adverse Weather: High Wind/Tornado
- Agricultural Pest Infestation and Disease
- Biological Agents
- Drought and Water Storage
- Earthquake
- Flood
- Human Caused: Hazardous Materials
- Wildfire

Other Hazards

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 in this plan. In the City of San Luis Obispo, those hazards are:

- Landslide and Debris Flow
- Adverse Weather: Extreme Heat
- Subsidence

Additionally, the City’s HMPC members decided to rate several hazards as Not Applicable (N/A) to the planning area due to a lack of exposure, vulnerability, and no probability of occurrence. Dam Incidents, Coastal





Storm/Coastal Erosion/Sea Level Rise, and Tsunami and Seiche Hazards are considered Not Applicable (N/A) to the City of San Luis Obispo.

G.3.1 Assets at Risk

This section considers San Luis Obispo’s assets at risk, including values at risk, critical facilities and infrastructure, historic assets, economic assets, and growth and development trends. The HMPC used a variety of data to define a baseline against which all disaster impacts could be compared. If a catastrophic disaster was to occur in the Planning Area, this section describes significant assets exposed or at risk in the City of San Luis Obispo.

Values at Risk

Parcel data was provided by ParcelQuest, a third-party service working alongside the San Luis Obispo County Assessor’s Office to compile property information. This data provided the baseline for an inventory of the total exposure of developed properties within the county and helps to ensure that the updated HMP reflects changes in development. This data should only be used as a guideline to overall values in the City as the information has some limitations. The most significant limitation is created by 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 likely low and does not reflect current market value of properties. 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. Table G.8 shows the exposure of properties (e.g., the values at risk) broken down by property type for the City of San Luis Obispo.

Table G.8 2019 Property Exposure for the City of San Luis Obispo by Property Types

Property Type	Property Count	Improved Value	Content Value	Total Value
Commercial	1,081	\$1,023,078,842	\$1,023,078,842	\$2,046,157,684
Government/Utilities	168	\$1,435,945	--	\$1,435,945
Other/Exempt/Misc.	507	\$189,186,968	--	\$189,186,968
Residential	8,226	\$1,896,071,588	\$948,035,794	\$2,844,107,382
Multi-Family Residential	2,885	\$811,851,931	\$405,925,966	\$1,217,777,897
Mobile/Manufactured Homes	156	\$25,110,344	\$12,555,172	\$37,665,516
Residential: Other	963	\$368,632,456	\$184,316,228	\$552,948,684
Industrial	42	\$60,310,187	\$90,465,281	\$150,775,468
Vacant	55	\$36,862,009	--	\$36,862,009
Total	14,083	\$4,412,540,270	\$2,664,377,282	\$7,076,917,552

Source: Wood analysis based on ParcelQuest and San Luis Obispo County Assessor’s Office data 2019.

Critical Facilities and Infrastructure

Critical Facilities are essential in providing utility or direction either during the response to an emergency or during the recovery operation. These facilities typically include hospitals, fire stations, and local law enforcement stations, and according to FEMA should be given special consideration when formulating regulatory hazard





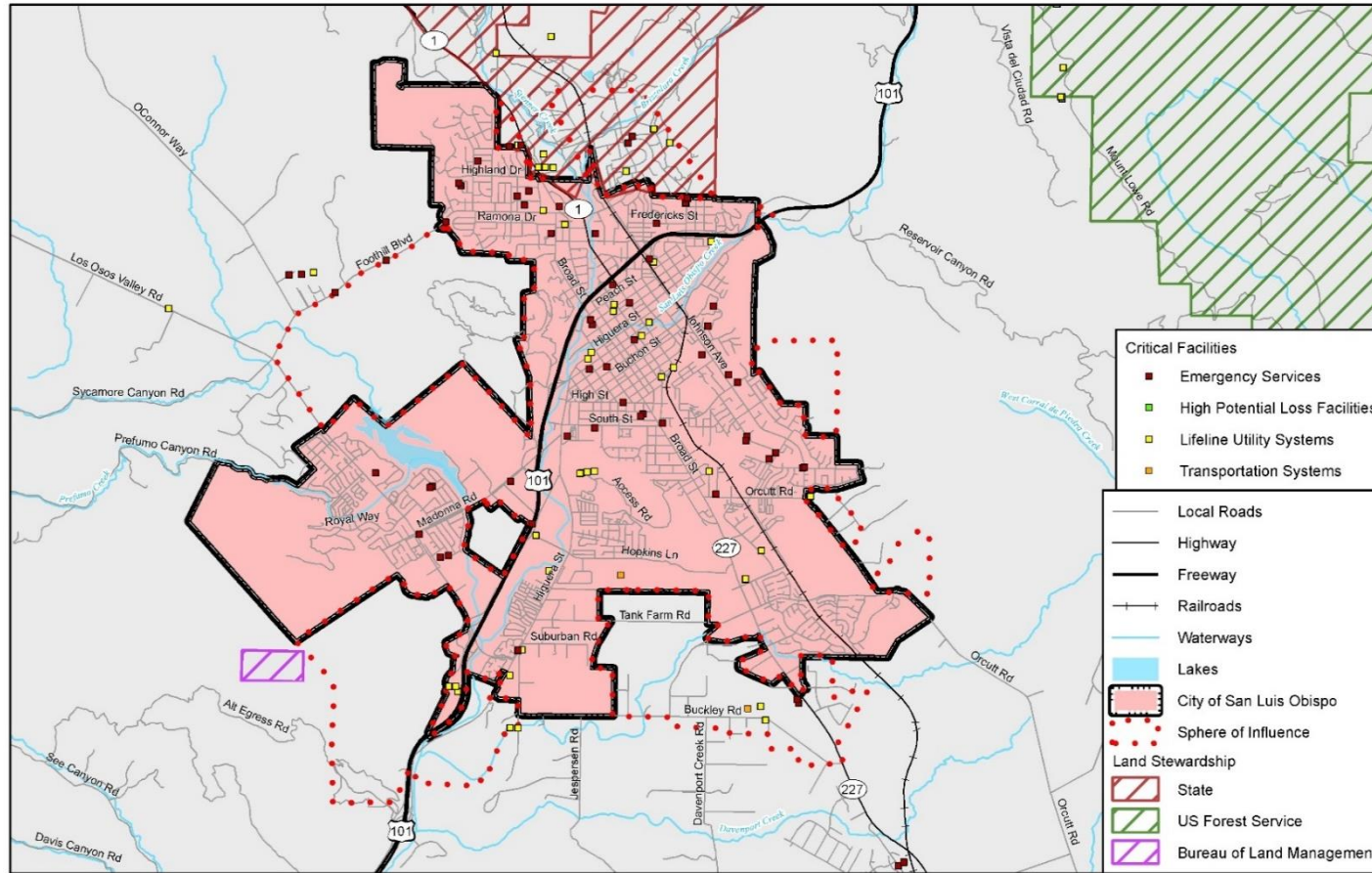
mitigation and floodplain management plans. See Section 5.2 of the Base Plan for more details on the definitions and categories of critical facilities.

A portion of the critical facilities data was provided by the San Luis Obispo County Planning & Building and GIS Departments. Supplemental data from the Homeland Infrastructure Foundation-Level Data (HIFLD) was used to capture additional facilities such as law enforcement facilities and centers, communications facilities, emergency operations centers, schools, and urgent care facilities among others. In addition, participating jurisdictions identified assets on a data collection guide worksheet or in previous LHMPs which may capture additional facilities and additional details not within the GIS database. An inventory of critical facilities in the City of San Luis Obispo determined with San Luis Obispo County GIS data is provided in Table G.9 and illustrated in Figure G.2.





Figure G.2 Critical Facilities in the City of San Luis Obispo



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, HIFLD

0 2 4 Miles





Table G.9 City of San Luis Obispo’s Critical Facilities

Category	Asset Name	Asset IDs	Address	Replacement Value	Priority
Community and Recreational Facilities	City Hall	68	990 Palm St	\$9,287,080	Critical
	Library	451	995 Palm St	\$1,604,146	Essential
	Ludwick Community Center	452	864 Santa Rosa St	\$2,559,501	Critical
	Meadow Park Recreational Center	453	2333 Meadow St	\$1,448,126	Essential
	Mitchell Park Senior Center	456	1445 Santa Rosa St	\$1,068,158	Essential
	Sinsheimer Pool and Park	97-110	900 Southwood Dr	\$2,623,419	Essential
Infrastructure	Critical Bridges	10, 11, 19, 20, 23, 25, 27, 34, 35, 40, 41, 42, 44, 51, 56	Varies by bridge	Varies by bridge	Critical
	Essential Bridges	8, 9, 12-18, 21, 22, 24, 26, 28-33, 36-39, 43, 45-50, 52-55, 58, 59-62	Varies by bridge	Varies by bridge	Essential
	Higuera Box Culvert	57	Higuera St	\$4,500,000	Critical
	Evacuation Route Roads		50 miles	\$1 million/mile = \$50,000,000	Critical
	Other Essential City-Owned Roads		120 miles	\$1 million/mile = \$120,000,000	Essential
	Communication Towers	614,616,617		N/A	Essential
Other City-Owned Facilities	City Corporation Yard	426	25 Prado Rd	\$4,884,929	Critical
	Community Development and Public Works Administration	437	919 Palm St	\$23,081,375	Essential
	Parking Garage	477	Marsh and Chorro St	\$22,873,449	Essential
	Parking Garage	478	842 Palm St	\$8,795,686	Essential
	Parks and Recreation Building	479	1341 Nipomo St	\$1,282,662	Essential
	Prado Day Center	96	45 Prado Rd	\$699,393	Essential
	Utilities Administration	541	879 Morro St	\$1,060,252	Essential
	Police and Fire Stations				
Police and Fire Stations	Dispatch Center	78	1135 Roundhouse	\$6,701,098	Critical
	Fire Station #1	69	2160 Santa Barbara	\$5,483,205	Critical
	Fire Station #2	70	136 N Chorro St	\$511,872	Critical
	Fire Station #3	71	1280 Laurel Ln	\$594,009	Critical
	Fire Station #4	72	1395 Madonna Rd	\$507,087	Critical
	Police Main Building, Garage, Annex	73-77	1042 and 1016 Walnut St	\$4,854,341	Critical
Potable Water and Wastewater Facilities	Fire Station #4 Well	619	1395 Madonna Rd	N/A	Essential
	Pacific Beach Well	620	11950 LOVR	N/A	Essential
	Reservoirs	63-67		N/A	Essential
	Sewer Lift Stations	555-564		N/A	Essential
	Sewer System Infrastructure (pipes)			N/A	Essential
	Storm Drain System			N/A	Essential





Category	Asset Name	Asset IDs	Address	Replacement Value	Priority
	Waste Water Treatment Plant (includes Water/Wastewater Laboratory)	615	35 Prado Rd	\$77,296,765	Essential
	Water Pump Stations	1-7		N/A	Critical
	Water System Infrastructure (pipes)			N/A	Critical
	Water Tanks	566-613		N/A	Critical
	Water Treatment Plant and Stenner Hydro Plant	565	Stenner Creek Rd	\$51,486,423	Essential

Source: San Luis Obispo County Planning & Building, HIFLD

High Potential Loss Facilities

High potential loss facilities are considered critical facilities that present significant risks if damaged and include nuclear power plants, dams, and military installations. The City has one classified high potential loss facility: The San Luis Obispo Wastewater Treatment Plant (WWTP). The WWTP is located within a 100-year floodplain and within a moderate liquefaction risk zone; however, other potential hazard impacts are low.

Transportation and Lifeline Facilities

The City contains a network of roadways and public transportation including the Pacific Coast Railway. US Highway 101, Highway 1, and State Route 227 (Broad Street) provide regional access to the City. The San Luis Obispo County Regional Airport serves the City and is located in the southern portion of the jurisdiction.

Lifeline Utility Systems are defined as those systems necessary to provide electric power, natural gas, water and wastewater, and other facilities and services that are essential to the well-being of the City. Lifeline utility systems within the City include:

- AM Transmission Towers (1)
- FM Transmission Towers (1)
- Microwave Service Towers (52)
- Wastewater Treatment Plants (1)
- Energy Commission Facilities (7)

Historic and Cultural Resources

The City of San Luis Obispo has a wealth of historic and culturally significant resources due to its rich and varied history. Such resources represent the City’s diverse historical context from periods prior to Chumash settlement and Spanish colonization, through early development and mid-century growth that established many of the existing neighborhoods and set a precedent for community design. The City of San Luis Obispo Citywide Historic Context Statement (2014) identifies various historical factors that shaped the development of the area, and provides a framework for the continuing process of identifying historic, architectural, and cultural resources in the City. The City has an active historic preservation program, and historic preservation is prioritized throughout City policy. City Zoning Regulations also establish the Historical Preservation Overlay Zone, which describes the allowed uses and property development standards within designated Historic Districts. Historic Districts within the City include Downtown Commercial District, the Mill Street District, the Old Town Neighborhood, the Little





Italy District, the Monterey Heights District, the Mount Pleasanton/Anholm District, the Chinatown Historic District, and the Railroad Districts.

Historical resources in the context of the City are also identified by the National Register of Historic Places (NRHP), the California Register of Historic Resources (CRHR), and the County of San Luis Obispo’s List of Historic Resources in addition to local designation. Such resources are buildings, structures, objects, places, and areas that have an association with important persons, events in history, or cultural heritage, or have distinctive architecture, design or construction method. State and local registers of historic resources also identify Historical Points of Interest that have primarily local significance and interest in preservation. The City of San Luis Obispo has several registered national, state, and local sites of historic and cultural significance (Table G.10). County-wide historic resources are further detailed in Chapter 5.2, Asset Summary, of the Base Plan.

Table G.10 Historic Places

Historic Site	Register	Date Listed	Address
Ah Louis Store	State/National	1965	800 Palm Street
Angel Myron House	National	1982	714 Buchon St.
Corral de Piedra	National	1978	S of San Luis Obispo on Price Canyon Rd.
Dallidet Adobe	State	1960	1185 Pacific Street
Jack Robert House	National	1992	536 Marsh St.
Mission San Luis Obispo De Tolosa	State	1939	751 Palm Street
Monday Club of San Luis Obispo	National	2016	1815 Monterey St.
Pacific Coast Railway Company Grain Warehouse	National	1988	65 Higuera St.
Pereira Octagon Barn	National	2014	4400 Octagon Way
Port San Luis Site	National	1978	Address Restricted
The Powerhouse	National	1993	Junction of S/ Perimeter Rd. and Cuesta Ave
Rancho Canada de los Osos y Pecho y Islay	National	1975	Address Restricted
San Luis Obispo Carnegie Library	National	1995	696 Monterey St.
Tribune Republic Building	National	1993	1763 Santa Barbara St.
William Shipsey House	National	2010	1266 Mill St.
Camp San Luis Obispo	State Point of Interest	1990	NA
Hollister Adobe	State Point of Interest	1972	NA





Natural Resources

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. 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.

The City's landscape is made up of creeks, hills, valleys, and rich farmland that supports a variety of plants and animal species. The San Luis Obispo area contains a diverse array of naturally occurring biological communities and extensive open space areas including the Irish Hills Natural Reserve, the Islay Hills Open Space, South Hills Open Space, Charles A. and Mary R. Maino Open Space, Ferrini Ranch, and the Laguna Lake Park and Open Space. The City's many creeks provide sheltered corridors that allow wildlife to move between dispersed habitats and open space areas.

Economic Assets

California Polytechnic State University is the largest employer in the City of San Luis Obispo with nearly 3,000 employees. San Luis Coastal Unified School District employs 384 regular classified employees. The industrial sector including education services, healthcare, and social assistance are the largest employers in the City at approximately 20.2% of the total employers. In 2007, approximately 5,127 individuals were employed in educational services, health care, and social assistance jobs. The General Plan Land Use Element (LUE) for the City includes policies to accommodate a maximum population of 57,200 persons. Assuming a 0.5% growth rate, the City would reach the anticipated residential capacity by year 2057. Tourism is an increasing trend in the City due to the diverse range of activities, small-town appeal and recent development of several hotels near and in the downtown core. Loss of a major employer from a hazard impact would result in a significant rise in unemployment and loss in sales tax revenue.

G.3.2 Estimating Potential Losses

Note: This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to HMPC member input) it differs from that of the overall County.

Table G.9 above shows San Luis Obispo's exposure to hazards in terms of number and value of structures. San Luis Obispo County parcel and assessor data were used to calculate the improved value of parcels. The most vulnerable structures are those in the floodplain (especially those that have been flooded in the past), unreinforced masonry buildings, and buildings built prior to the introduction of modern-day building codes. Impacts of past events and vulnerability to specific hazards are further discussed below. (See Section 4.1 Hazard Identification for more detailed information about these hazards and their impacts on the County as a whole.)

Adverse Weather: Thunderstorm/Heavy Rain/Hail/Lightning/Dense Fog/Freeze

Adverse weather in the City usually occurs as localized thunderstorms that bring heavy rains and strong winds, most often during the winter and spring months. Heavy rain has historically produced extensive flooding in the City. Dense fog can result in reduced visibility and slick road conditions that increase the likelihood for traffic accidents. Freeze is rarely a threat to human life in the City, but has the potential to impact agricultural operations where crop damage to high value products can be extensive. According to frost dates and temperature data published by the University of California Agriculture & Natural Resources, the lowest recorded temperature is 20°F, and average annual low temperatures of 42 to 43°F typically occur in January and December.





Adverse Weather: High Wind/Tornado

The City is subject to strong southeasterly winds associated with strong cold fronts and coastal storms, which generally occur during the winter months from November to February. Northwesterly winds that are typical of the central coast of California also occur throughout San Luis Obispo during the spring and summer. Both southeast and northwest wind events can reach sustained wind speeds of 35-45 mph with wind gusts of 65-75 mph within the City. Wind related events can have substantial destructive impacts, especially in urban areas where falling trees and branches can result in considerable property damage. Tornadoes have historically occurred in San Luis Obispo, with the first recorded tornado taking place in April 1926 due to a strong coastal storm front from the Pacific. Recorded tornadoes since then have typically been low severity, and caused minor damage such as broken tree branches and minor structural and roof damage to buildings. Refer to Section 5.3.1 Adverse Weather, in the Base Plan for analysis related to tree mortality in the County of San Luis Obispo.

Agricultural Pest Infestation and Disease

Agricultural pests and pathogens (insects, fungi, bacteria, viruses and invasive plants) cause injury or destruction to crops or livestock. The prominent agricultural uses in San Luis Obispo County can be impacted by a wide variety of invasive pests, which pose a significant threat to crops, economy, food supply, and native habitat.

Biological Agents

Public health impacts due to biological agents are a recognized potential threat to the City. The City is largely reliant on the County's Emergency Preparedness Program, which supports the Public Health Department in the management and coordination of public health emergencies including natural disasters, technological disasters, bioterrorism incidents, and pandemics. Food and waterborne illnesses are major health problems that present significant health risks to the City as well as threats to regional food and water supply. The City supports and participates in the County Public Health Department's up-to-date Pandemic Influenza Plan and Strategic National Stockpile Plan to facilitate prevention, early detection, and treatment to effectively respond to pandemics.

Drought and Water Storage

Periods of drought can have significant environmental, agricultural, health, economic, and social consequences. Prolonged drought has the potential to impact structures due to subsidence, and can reduce water quality due to lower water flows and reduced pollutant dilution. The City recently experienced its third driest period on record since 1870 when weather observations began at the San Luis Obispo Polytech Weather Station. Long-term precipitation information from the station indicates the variability that can occur, which is summarized in Figure 5-4 in Section 5.3.6 of the Base Plan. The City has invested in a multi-source water supply including Nacimiento, Whale Rock, and Santa Margarita Reservoirs, groundwater, and recycled water for landscape irrigation. Water demand modeling estimates that these sources provide a 7.5 year combined water supply, assuming an extended worst case historical drought.

Earthquake

Earthquake events have occurred in the City in the past, including a number of magnitude 5.0 to 7.0 earthquakes. Historically, most of the earthquakes that have occurred near the City have originated from movement along the San Andreas Fault, which lies approximately 35 miles northeast of the City. The most recent major earthquake to affect San Luis Obispo occurred at 11:15:56 am Pacific Standard Time on December 22, 2003. The epicenter of the magnitude 6.5 earthquake was approximately 7 miles northeast of San Simeon at a





depth of 4.7 miles (35.706N, 121.102W), 45 miles from San Luis Obispo. The City of San Luis Obispo experienced some minor damage. The main strand of the Los Osos fault zone, also known as the Edna fault zone, traverses the City near the intersection of Los Osos Valley Road and Foothill Boulevard. Field evaluations by the California Geological Survey (CGS) for the main strand of the Los Osos fault found evidence of movement in the last 11,000 years. This evidence of recent activity resulted in the establishment of an Earthquake Fault Zone by CGS in 1989 under the Alquist-Priolo Fault Zoning Act. The Los Osos fault specifically presents a high to very high fault rupture hazard to developments near and southwest of the Los Osos Valley Road area.

Table G.11 Seismic Hazard Designation by Property Type

Seismic Designation	Property Type	Property Count	Improved Value
Los Osos Alquist-Priolo	Residential	28	\$9,541,741
	Residential: Other	2	\$693,134
TOTAL		30	\$10,234,875

Source: San Luis Obispo County Planning & Building, County Assessor’s Office, ParcelQuest, Wood Plc analysis

In addition to being at risk of groundshaking as a result of a fault rupture, the City of San Luis Obispo is also susceptible to the effects of liquefaction. Most of the City is underlain by alluvium and other liquefiable sediments that may present a risk of liquefaction during ground shaking; however, liquefaction risk is generally classified as low to medium on a scale of very low to very high. Liquefaction risk is visually displayed across the City under Figure G.4 below.

Table G.12 Parcels Susceptible to Moderate Liquefaction Risk

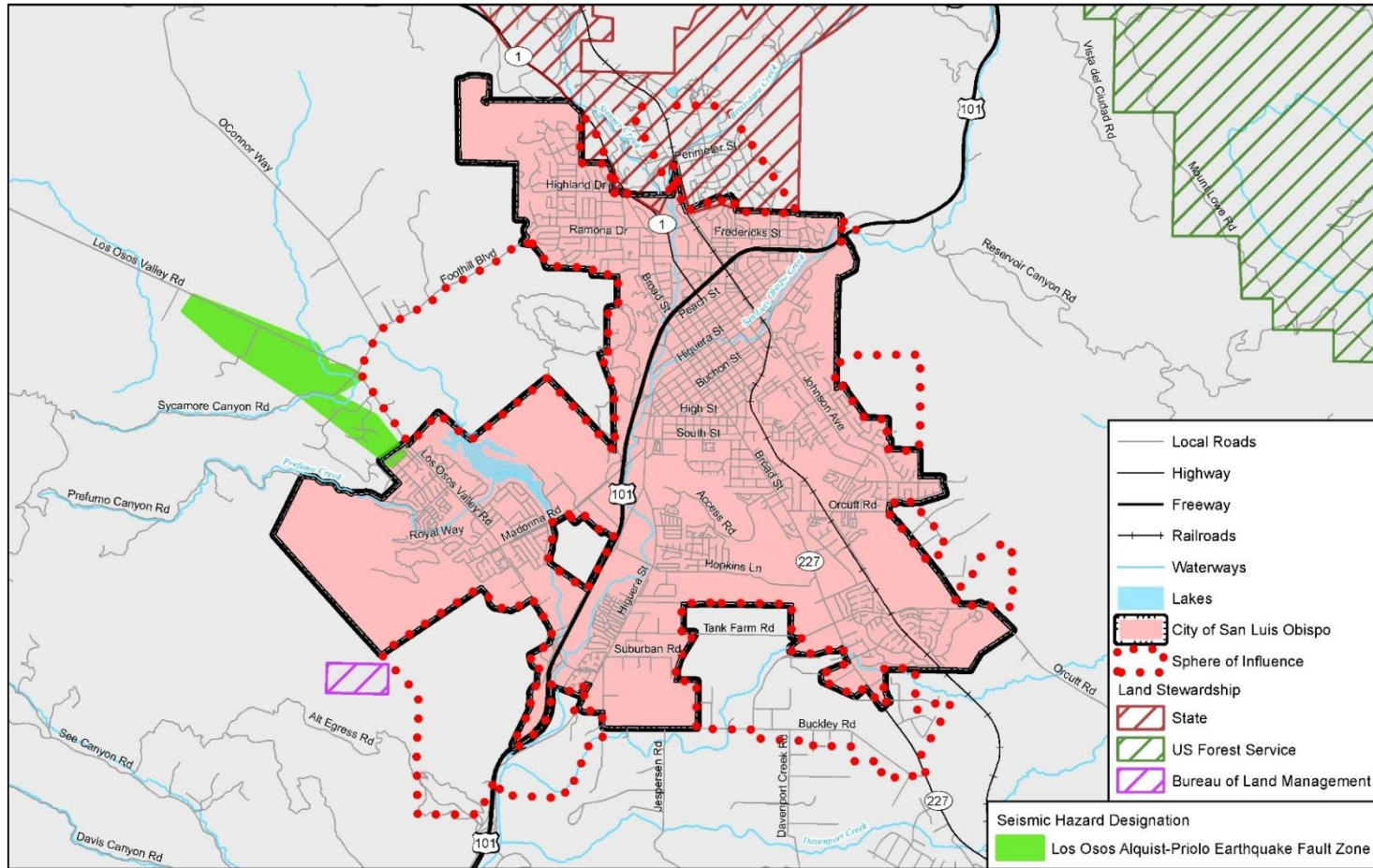
Parcel Type	Parcel Count	Improved Parcel Value
Commercial	992	\$964,747,104
Government/Utilities	125	\$1,435,945
Other/Exempt/Miscellaneous	418	\$170,684,946
Residential	5,282	\$1,076,982,642
Multi-Family Residential	2,387	\$678,902,288
Mobile/Manufactured Homes	148	\$16,744,811
Residential: Other	673	\$272,473,739
Industrial	36	\$55,659,992
Vacant	42	\$31,483,257
TOTAL	10,103	\$3,269,114,724

Source: San Luis Obispo County Planning & Building, County Assessor’s Office, ParcelQuest, Wood Plc analysis





Figure G.3 Seismic Hazard Designation in the City of San Luis Obispo



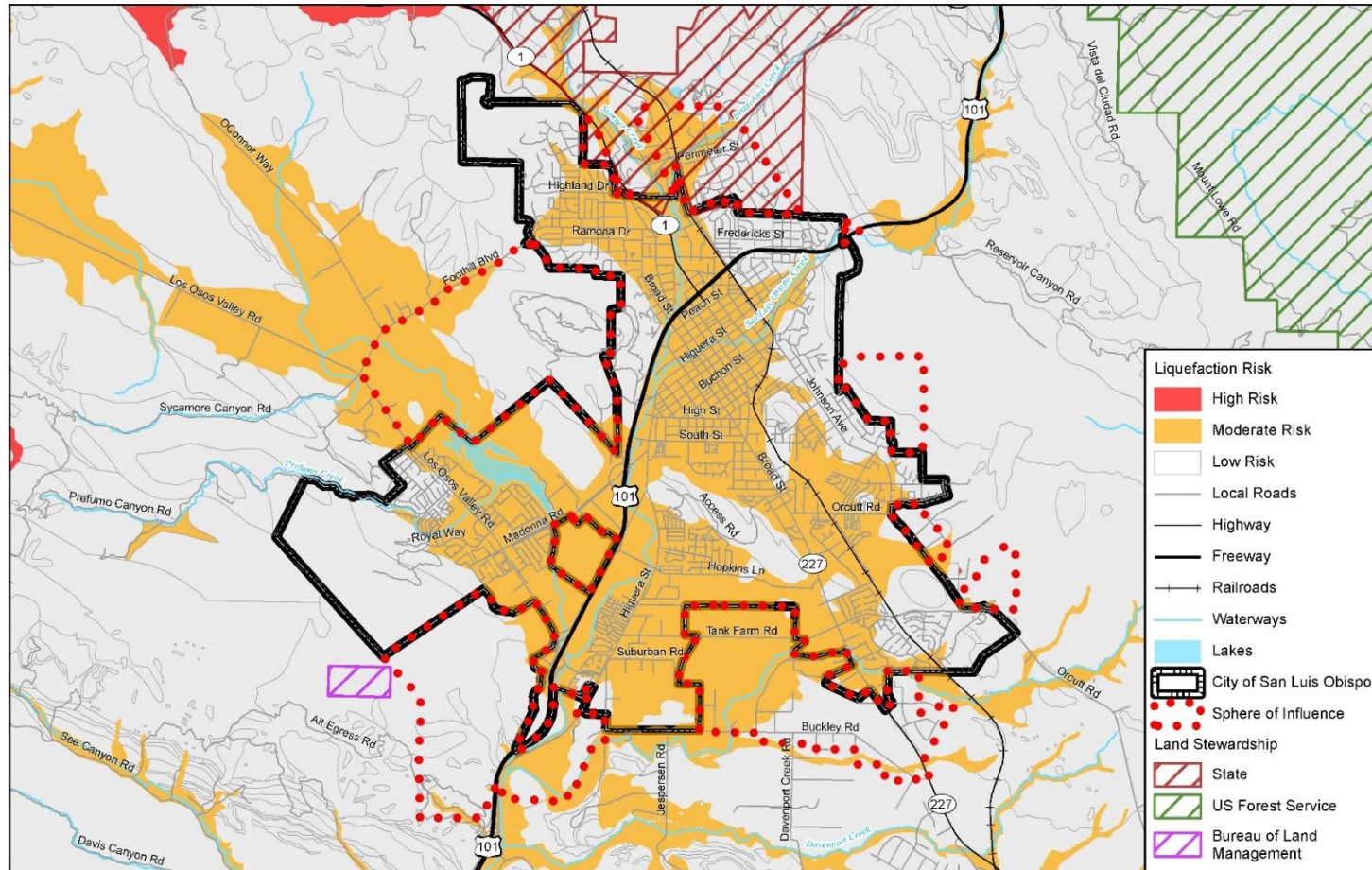
Map compiled 6/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office

0 2 4 Miles





Figure G.4 Liquefaction Risk in the City of San Luis Obispo



Map compiled 6/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open Data
 Portal, BLM/California State Office, LAFCO



Flood

In San Luis Obispo, the most common type of flooding event is riverine flooding, also known as overbank flooding. Riverine floodplains range from narrow, confined channels in the steep valleys of mountainous and hilly regions, to wide, flat areas in plains and coastal regions. The amount of water in the floodplain is a function of the size and topography of the contributing watershed, the regional and local climate, and land use characteristics. Flooding in steep, mountainous areas is usually confined, strikes with less warning time, and has a short duration. Larger rivers typically have longer, more predictable flooding sequences and broad floodplains.

In addition to riverine flooding, San Luis Obispo is susceptible to flash flooding. Flash flood is a term widely used by experts and the general population, but no single definition or clear means of distinguishing flash floods from other riverine floods exists. Flash floods are generally understood to involve a rapid rise in water level, high velocity, and large amounts of debris, which can lead to significant damage that includes the tearing out of trees, undermining of buildings and bridges, and scouring of new channels. The intensity of flash flooding is a function of the intensity and duration of rainfall, steepness of the watershed, stream gradients, watershed vegetation, natural and artificial flood storage areas, and configuration of the streambed and floodplain. Urban areas are increasingly subject to flash flooding due to the removal of vegetation, installation of impermeable surfaces over ground cover, and construction of drainage systems. Wildfires that strip hillsides of vegetation and alter soil characteristics may also create conditions that lead to flash floods and debris flows. Debris flows are particularly dangerous due to the fact that they generally strike without warning and are accompanied by extreme velocity and momentum. Dam failure may also lead to flash flooding; however, the County's dam inundation as well as the California Office of Emergency Services dam inundation data confirms that there are no dam inundation zones located within the City limits.

The most serious flood events on record resulting in property damage or loss of life in San Luis Obispo occurred in 1868, 1884, 1897, 1911, 1948, 1952, 1962, 1969, 1973, 1993, 1995, 1998, and 2001. Recent damaging floods occurred during January and March of 1995, with a lesser flooding problem in 1998. Flow during these events overtopped streambanks near the intersection of Marsh and Higuera Streets and remained out of the channel for nearly three miles downstream, with damage estimated at nearly \$2.3 million. The City and Zone 9 spent approximately \$1 million to repair bank erosion caused during the winter of 1995. Damage occurred near the town of Avila during both the January and March 1995 events, where high flow and debris blockages caused extensive damage to several bridges across the creek. Flooding during 1969 was significantly damaging; two floods occurred, one at the end of January and the second at the end of February. During this two-month period, a local rain gage recorded an accumulated precipitation total of 39.79 inches. Historically, the 1969 and 1973 events were more damaging than the 1995 floods in present day dollars. The 1969 flood caused approximately \$6.92 million in damage within the SLO Creek watershed. The 1973 storm caused \$13.6 million along Stenner Creek, Brizzolari Creek, Prefumo Creek, and See Canyon Creek.

See Figure G.5 below illustrating the parcels at risk of flooding during a 100- or 500-year event based on the FEMA flood hazard areas.





Table G.13 100-Year and 500-Year Flooding by Jurisdiction and Parcel Type

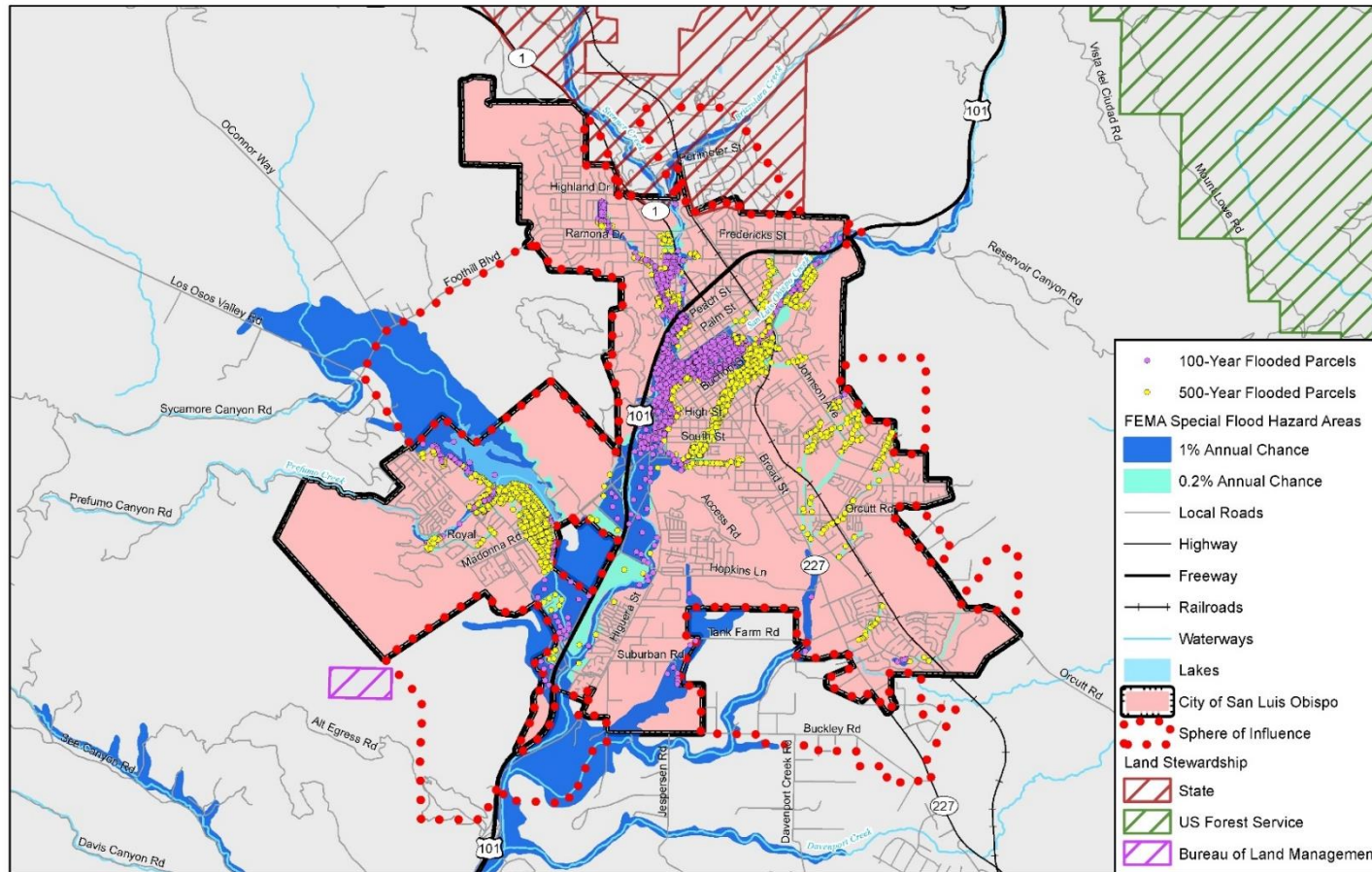
Parcel Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
100-YEAR FLOOD EVENT						
Commercial	307	\$310,143,384	\$310,143,384	\$620,286,768	\$155,071,692	--
Government/Utilities	29	\$10,050	--	\$10,050	\$2,513	--
Other/Exempt/Miscellaneous	75	\$29,586,337	--	\$29,586,337	\$7,396,584	--
Residential	338	\$71,676,715	\$35,838,358	\$107,515,073	\$26,878,768	848
Multi-Family Residential	209	\$66,889,696	\$33,444,848	\$100,334,544	\$25,083,636	525
Mobile/Manufactured Homes	5	\$591,404	\$295,702	\$887,106	\$221,777	13
Residential: Other	25	\$42,055,551	\$21,027,776	\$63,083,327	\$15,770,832	63
Industrial	6	\$2,632,168	\$3,948,252	\$6,580,420	\$1,645,105	--
Vacant	11	\$2,988,322	--	\$2,988,322	\$747,081	--
TOTAL	1,005	\$526,573,627	\$404,698,319	\$931,271,946	\$232,817,987	1,448
500-YEAR FLOOD EVENT						
Commercial	111	\$74,714,129	\$74,714,129	\$149,428,258	\$37,357,065	--
Government/Utilities	8	--	--	\$0	\$0	--
Other/Exempt/Miscellaneous	35	\$19,148,234	--	\$19,148,234	\$4,787,059	--
Residential	971	\$190,774,098	\$95,387,049	\$286,161,147	\$71,540,287	2,437
Multi-Family Residential	297	\$66,546,672	\$33,273,336	\$99,820,008	\$24,955,002	745
Mobile/Manufactured Homes	1	\$245,631	\$122,816	\$368,447	\$92,112	3
Residential: Other	51	\$35,270,066	\$17,635,033	\$52,905,099	\$13,226,275	128
Industrial	1	\$312,120	\$468,180	\$780,300	\$195,075	--
TOTAL	1,475	\$387,010,950	\$221,600,543	\$608,611,493	\$152,152,873	3,313
GRAND TOTAL	2,480	\$913,584,777	\$626,298,862	\$1,539,883,439	\$384,970,860	4,761

Source: San Luis Obispo County Planning & Building, County Assessor's Office, ParcelQuest, Wood Plc analysis, FEMA NFHL





Figure G.5 Flood Hazard Areas and Flooded Parcels in the City of San Luis Obispo



Map compiled 6/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 FEMA NFHL, ParcelQuest

0 2 4 Miles





Insurance Coverage, Claims Paid, and Repetitive Losses

The City of San Luis Obispo has been a participant in the National Flood Insurance Program since April 16, 1979, and will continue to participate and remain in compliance with the National Flood Insurance Program (NFIP).

Table G.14 City of San Luis Obispo NFIP Insurance Policy Information

Policies	Insurance in Force	No. of Paid Losses	Total Losses Paid
736	\$223,380,300	83	\$456,370

Source: FEMA National Flood Insurance Program Community Information System

FEMA Community Information System shows that as of April 2019 the City of San Luis Obispo has two Repetitive Loss (RL) properties and no Severe Repetitive Loss (SRL) properties.

Table G.15 City of San Luis Obispo Repetitive Loss

Repetitive Loss Properties	Insured Properties	Repetitive Loss Payments (total)
2	1	\$54,204.80

Source: FEMA National Flood Insurance Program Community Information System

The City of San Luis Obispo joined the Community Rating System (CRS) on October 1, 1991. Currently the City has a Class 6 rating.

Critical Facilities at Risk

Critical facilities are those community components that are most needed to withstand the impacts of disaster as previously described. There are eight critical facilities found in the 100-year floodplain in San Luis Obispo, and five critical facility located in the City's 500-year floodplain. It is particularly important to note that the critical facilities in the 500-year floodplain are all facilities that serve vulnerable populations and should be given special attention. Table G.16 below summarizes the critical facilities in the City's 100- and 500-year floodplains. The impact to the community could be great if these facilities are damaged or destroyed during a flood event.

Table G.16 Critical Facilities in FEMA Flood Hazard Areas, City of San Luis Obispo

Floodplain	Critical Facility Type	Facility Count
100-year	Colleges / Universities	1
	Day Care Facilities	1
	Microwave Service Towers	3
	Nursing Homes	1
	VA Medical Facilities	1
	Wastewater Treatment Plant	1
500-year	Colleges / Universities	1
	Day Care Facilities	1
	Microwave Service Towers	1





Floodplain	Critical Facility Type	Facility Count
	Nursing Homes	1
	Private Schools	1
TOTAL		13

Source: San Luis Obispo County Planning and Building Dept., LAFCO, HIFLD, Wood Plc Parcel Analysis, FEMA NFHL

Wildfire

The risk of wildland fires is greatest near the City limits where development meets rural areas of combustible vegetation. Most of the community is within one mile of a High or Very High Fire Hazard Severity Zone, which indicates significant risk to wildland fire. The City of San Luis Obispo is confronted with one of the more hazardous wildfire risks in the County due to its location near the foothills of the Santa Lucia Mountains and the Irish Hills, with increased wildfire risk in these foothills as well as on Chumash Peak, Bishop Peak, Cerro San Luis, and Islay Hill. Figure G.6 illustrates, in map form, the wildfire hazard severity zones that cross over into the City and hence pose risk to the community and its people.

Table G.17 Properties Within Moderate and Very High Wildfire Hazard Severity Zones

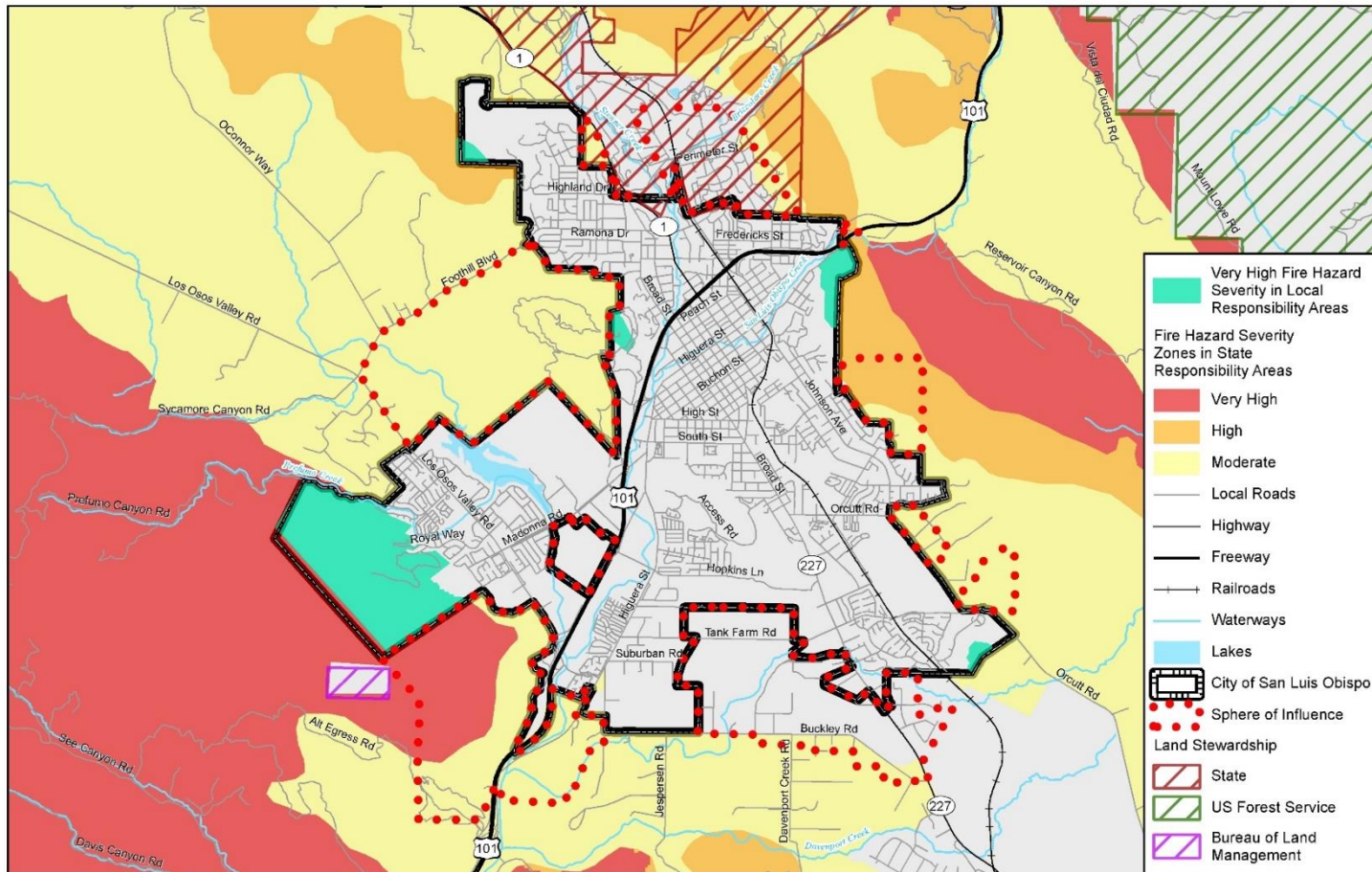
Parcel Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
MODERATE WILDFIRE HAZARD SEVERITY						
Commercial	1	\$2,392,765	\$2,392,765	\$4,785,530	\$4,785,530	--
Government/Utilities	1	--	--	\$0	\$0	--
Other/Exempt/Miscellaneous	1	--	--	\$0	\$0	--
Residential	3	\$218,358	\$109,179	\$327,537	\$327,537	8
TOTAL	6	\$2,611,123	\$2,501,944	\$5,113,067	\$5,113,067	8
VERY HIGH WILDFIRE HAZARD SEVERITY						
Other/Exempt/Miscellaneous	2		--	\$2	\$2	--
Residential	14	\$7,928,870	\$3,964,435	\$11,893,319	\$11,893,319	35
Vacant	1	\$40,500	--	\$40,501	\$40,501	--
TOTAL	17	\$7,969,370	\$3,964,435	\$11,933,822	\$11,933,822	35
GRAND TOTAL	23	\$10,580,493	\$6,466,379	\$17,046,889	\$17,046,889	43

Source: San Luis Obispo County Planning & Building, County Assessor's Office, ParcelQuest, Wood Plc analysis, CalFire





Figure G.6 Wildfire Hazard Severity Zones



Map compiled 6/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCO, CalFire



Human Caused: Hazardous Materials

The Cal OES Warning Center reports 419 hazardous materials incidents in the City of San Luis Obispo from 1994 through October 24, 2018; as noted in Section 5.3.13 of the county plan, this likely excludes a large number of unreported minor spills. This constitutes 23% of the hazardous materials incidents reported countywide during the same time frame, and averages out to roughly 16.8 incidents per year. As noted in Section 5.3.13, only around 6% of reported hazardous materials incidents result in injuries, fatalities, or evacuations.

There is one CalARP regulated facilities and no EPA Risk Management Plan (RMP) facilities located in the City. Additionally, the City sits within the Emergency Planning Zone for the Diablo Canyon Nuclear Power Plant.

G.4 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 capability assessment is divided into six sections: regulatory mitigation capabilities, administrative and technical mitigation capabilities, fiscal mitigation capabilities, mitigation outreach and partnerships, other mitigation efforts, and opportunities for enhancement.

To develop this capability assessment, the jurisdictional planning representatives used a matrix of common mitigation activities to inventory policies or programs in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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. In summarizing current capabilities and identifying gaps, the jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The City of San Luis Obispo’s updated capabilities are summarized below.

G.4.1 Regulatory Mitigation Capabilities

Table G.18 City of San Luis Obispo Regulatory Mitigation Capabilities

Regulatory Tool (ordinances, codes, plans)	Yes/No	Comments
General Plan	Yes	Land Use Element, Circulation Element, Housing Element, Noise Element, Safety Element, Conservation and Open Space Element, Parks and Recreation Element, and Water and Wastewater Element
Zoning ordinance	Yes	Title 17: Zoning Regulations of the City of San Luis Obispo Municipal Code
Subdivision ordinance	Yes	Title 16: Subdivisions, Subdivision Regulations
Growth management ordinance	Yes	Chapter 17.144: Residential Growth Management Regulations
Floodplain ordinance	Yes	Chapter 17.78: Flood Damage Prevention
Other special purpose ordinance (stormwater, steep slope, wildfire)	Yes	Ordinance 1543: Chapter 12.08 Urban Storm Water Quality Management and Discharge Control Ordinance 1490: Chapter 16.20 Physical Improvement Standards and Procedures - 16.20.040 Grading plan Ordinance 1490: Chapter 16.18 General Subdivision Design Standards





Regulatory Tool (ordinances, codes, plans)	Yes/No	Comments
		<p>Chapter 17.70.090: Hillside Development Standards Ordinances 1630 (part) and 1595 (part), Chapter 15.04 Construction and Fire Prevention Regulations</p> <p>A Stormwater Control Plan is required to be submitted for all projects to demonstrate exemption or level of compliance required. Post Construction Regulation outlines Stormwater Control Plan content in Performance Requirement 2 - Sections B.3.c, Performance Requirement 3 - Section B.4.g, and Performance Requirement 4 – Section B.5.b. Through the Stormwater Control Plan submittal, applicants demonstrate compliance with Post Construction Requirements or exemption status.</p> <p>Drainage Design Manual (Design Manual) has been developed to provide criteria and planning procedures for floodplains, waterways, channels, and closed conduits in the San Luis Obispo Creek watershed. This Drainage Manual will be used by the City of San Luis Obispo and San Luis Obispo County Flood Control and Water Conservation District Zone 9 (SLO/Zone 9) staff in their internal design of stormwater drainage, flood management and bank stabilization and restoration projects.</p>
Building code	Yes	<p>Title 15, Buildings and Construction of the City of San Luis Obispo Municipal Code. California Building Codes: CA Residential Code (2016); CA Plumbing Code (2015 UPC); CA Mechanical Code (2015 UMC); CA Electrical Code (2014 NEC); CA Energy Code (2016); CA Green Building Code (2016); CA Fire Code (2015 IFC); CA Reference Standards Code (2016)</p>
Fire department ISO rating	Yes	2
Erosion or sediment control program	Yes	<p>Chapter 17.78 Flood Damage Prevention Chapter 12.08 Urban Storm Water Quality Management and Discharge Control Chapter 16.20 Physical Improvement Standards and Procedures Ordinance 1543, Code Section 12.08.150 Requirement to prevent, control, and reduce storm water and pollutants City of SLO Waterway Management Plan and Drainage Design Manual Annual silt removal to maintain hydraulic capacity in San Luis Obispo creek beds to reduce flooding. City has 14 total sites in the management plan and complete silt removal on a rotating basis.</p>
Stormwater management program	Yes	Chapter 12.08: Stormwater Regulations & Requirements
Site plan review requirements	Yes	Title 22 Article 3
Capital improvements plan	Yes	Department of Public Works 5-Year Strategic Plan
Economic development plan	Yes	5-Year Economic Development Strategic Plan Updated in 2015
Local emergency operations plan	Yes	City of San Luis Obispo Emergency Operations Plan (2011)
Other special plans	Yes	Open Space Conservation Plans, Climate Action Plan, Urban Water Management and Water Shortage Contingency Plans, Waterway Management Plan, Utilities Department Emergency Plan,





Regulatory Tool (ordinances, codes, plans)	Yes/No	Comments
		Unreinforced Masonry Hazard Mitigation Program, Disaster Preparedness Program, Community Wildfire Preparedness Plan, Greenbelt Protection Program
Flood insurance study or other engineering study for streams	Yes	2012
Elevation certificates (for floodplain development)	Yes	Chapter 17.78: Flood Damage Prevention
Other	Yes	Water System Vulnerability Assessment, Floodplain Management Educational Program

G.4.2 Administrative/Technical Mitigation Capabilities

There are several key departments and staff within the City organization that serve a specific role in developing and implementing hazard mitigation activities. City government consists of approximately 399 full-time equivalent employees and 10 departments: Police, Fire, Public Works, Public Utilities, Community Development, Parks and Recreation, Human Resources, Finance and Information Technology, City Administration, and the City Attorney’s Office. With a clear set of policies in place and a diverse range of staff available to mitigate identified hazards within the City, the City has many staff with specific training on the use of specialized equipment or particular areas of expertise that are essential in implementing mitigation actions. Technical resources are considered to be physical infrastructure or equipment available to the City to aid in implementing hazard mitigation or disaster response activities. Table G.19 identifies the personnel resources and technical resources that increase capabilities related to mitigation and loss prevention in the City.

Table G.19 City of San Luis Obispo Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	Staff with knowledge of land development practices and local land development patterns.
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Professionals trained in construction practices associated with buildings and infrastructure and in storm water compliance during construction and operation of buildings and infrastructure projects.
Planner/engineer/scientist with an understanding of natural hazards	Yes	
Personnel skilled in GIS	Yes	Provide accurate and comprehensive Geographic Information System for managing resources, make informed decisions, and expedite work processes.
Full time building official	Yes	Community Development Department, Chief Building Official
Floodplain manager	Yes	Community Development Department, Supervising Civil Engineer
Emergency manager	Yes	Accomplished through contract services. City maintains funding for the 2019-21 Financial Plan to maintain an Emergency Manager position equivalent to 0.5 FTE.
Grant writer	Yes	Accomplished through Contract Services. The City maintains two-year contracts with both a local grant writing firm and grant advocate firm based out of Irvine, CA.





Personnel Resources	Yes/No	Department/Position
Mutual Aid Agreements	Yes	Establishes agreements among local jurisdictions to assist in emergency response efforts in neighboring jurisdictions during times of need. San Luis Obispo currently participates in the following mutual aid agreements: 1. California Master Mutual Aid Agreement, 2. SLO County Fire and Rescue Mutual Aid Agreement, 3. California Fire Assistance Agreement, 4. Region 1A Law Enforcement Mutual Aid Agreement, 5. Public Works Mutual Aid Agreement, 6. California Emergency Managers Mutual Aid Agreement, 7. Regional Disaster Medical/Health Coordination.
Code Enforcement and Neighborhood Services	Yes	Staff with training and expertise in identifying hazards to health, safety, and welfare, and assisting property owners with achieving code and policy compliance.
Fire Marshal	Yes	Measure G funded position, manages and directs the activities of the Fire Prevention Bureau. Oversees fire safety inspections for all facilities in the City. Ensures that development in the City meets fire safety standards. Obtains funding and implements wildland fuel reduction projects. Directs and oversees fire investigations.
Fire Inspectors	Yes	Professionals trained in fire prevention techniques and construction practices associated with buildings and infrastructure. Inspect all multi-family residential buildings and public assembly buildings. Review building plans and inspect construction projects for fire and life safety and proper installation of fire protection systems. Investigate fire for cause and origin.
Hazardous Materials Coordinator		Staff designated to inspect facilities and containers storing hazardous materials. There are approximately 244 facilities located within the City that are permitted for the use of hazardous materials.
Network Administrators	Yes	Provide technical support for wired/wireless network and radios.
Park Rangers	Yes	Staff familiar with brush clearance requirements and conditions of City-owned open space.
Police Officers	Yes	Emergency response to provide protection of life, property and address community safety/security needs. Work cooperatively with other first responders for an organized response to disaster mitigation plans.
Dispatchers	Yes	Provide communication links to responding personnel to transfer emergency information and direct resources as needed.
Construction Inspection	Yes	Ensures storm water compliance during construction of City projects, and private grading and encroachment projects.
Public Works Department – Department Operations Centers (DOC)	Yes	The Public Works DOC coordinates responses to road flooding and related problems during a storm with road crews, the County, Caltrans, and the California Highway Patrol. They also support other emergency response operations coordinated through the City's EOC.
Storm Water Compliance	Yes	Staff responsibility assigned to ensure storm water compliance during construction and operation of buildings and infrastructure projects.
Other personnel	Yes	Operations: Field staff provide assistance to Public Works DOC for flood response, and City EOC for general emergency response.





Personnel Resources	Yes/No	Department/Position
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	
Warning systems/services (Reverse 9-11, outdoor warning signals)	Yes	
Voluntary Organizations Active in Disaster	Yes	Provides disaster preparedness courses to residents and community members and provides care and shelter to those threatened or impacted by natural hazards. Volunteer and private agencies are essential to the area's mutual aid system by providing for the care and shelter needs of disaster victims. Organizations active in San Luis Obispo include the American Red Cross and Salvation Army.

G.4.3 Fiscal Mitigation Capabilities

There are multiple financial and funding opportunities for the City to mitigate or respond to natural hazards. These capabilities include local revenues from the general fund, or the receipt of grant funds from state or federal agencies. The City's financial planning process includes a two-year goal setting and budget development based on community and council priorities. The City's five-year fiscal forecast identifies the City's forecast of revenues, expenditures, and changes in fund balance. The general fund receives revenues from a variety of sources including taxes (sales, property, transient occupancy, business, utility users), subventions and grants (vehicle license fees, gas tax, and other subventions), service charges (development review fees, recreation fees), and other revenues (fines, interest earnings, and rents). The City has and will continue to utilize the two-year goal setting and budget process to prioritize expenditures needed to mitigate future hazards. In the event of a natural disaster and a need for immediate City response, the City has the financial capacity to utilize reserve funds, when authorized by the City Council. The City has previously utilized the following financial resources to implement hazard mitigation activities. The added revenues to the General Fund from Measure "G" have allowed the City to financially support major improvements in the areas of public safety, flood protection, and open space preservation. Financial resources to mitigate hazards: Table G.20 identifies financial tools or resources that the City could potentially use to help fund mitigation activities.

Table G.20 City of San Luis Obispo Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)	Comments
Community Development Block Grants	Yes	The City continues to seek grant opportunities through the CDBG program and identify potential eligible projects that would fund mitigation activities to benefit the health and welfare of the community.
Capital improvements project funding	Yes	The Capital Improvement Plan (CIP) enables the City to plan, schedule, and finance capital projects to ensure cost effectiveness and conformance with established plans and policies. The City's budget process guides the capital priorities through community input, Council goal setting, Local Revenue Measure priorities, and the biennially adopted Major City Goal work programs. The City's CIP includes all planned infrastructure projects over a five-year period. The first two years identify those projects that are planned to be funded and/or completed during the adopted two-year





Financial Resources	Accessible/Eligible to Use (Yes/No)	Comments
		financial plan. The latter three years serve as the framework for future Financial Plans' capital budgets. The plan represents a phased approach to funding the projects needed to maintain the City's infrastructure and major facilities over the entire five-year period.
Authority to levy taxes for specific purposes	Yes	Taxes for specific purposes can be levied with authorization from the City Council and further approval through a local ballot measure.
Fees for water, sewer, gas, or electric services	Yes	The City's utilities department provides water and wastewater services to the residents and businesses of San Luis Obispo. Water and sewer revenues are collected to support operations and capital improvements, with rates reviewed on an annual basis and approved by the City Council. These revenues from customer water and sewer use are utilized by the utilities department to maintain, improve, expand and replace components of the City's water and wastewater infrastructure system, including improvements made to protect from natural hazards.
Impact fees for new development	Yes	New development projects proposed in the City affect the City's ability to provide adequate essential services (e.g. transportation, water and wastewater, and open space). To ensure these essential services can adequately serve the City's existing and future community needs, a series of development impact fees are levied on new development projects.
Incur debt through general obligation bonds	Yes	Debt can be incurred through general obligation bonds with authorization from the City Council and further approval through a local ballot measure.
Incur debt through special tax bonds	Yes	Debt can be incurred through special tax bonds with authorization from the City Council and further approval through a local ballot measure.
Incur debt through private activities	Yes	City Financial Policy allows debt to be incurred through private activities with approval from City Council
Withhold spending in hazard prone areas	Yes	Policy is accessible with authorization from City Council.
General Fund (including Measure G Funding)	Yes	In 2006, City voters approved measure Y to preserve and enhance essential City services by establishing a 1/2 –cent City sales tax. In the 2011/12 fiscal year, measure Y generated approximately \$6.2 million in revenue. This funding has been used in recent years for public safety, infrastructure maintenance, traffic congestion relief, neighborhood code enforcement and open space acquisition project. Many of the projects funded through measure Y revenues are considered to help mitigate hazard throughout the community. In 2014 Measure Y was approved to be extended through ballot measure G, which will sunset in 2022 unless a new measure is passed to continue the collection of additional sales tax.





Financial Resources	Accessible/Eligible to Use (Yes/No)	Comments
Reserve Funds	Yes	The City's budget and fiscal policies includes a requirement to maintain adequate fund reserves for both general and enterprise funds. The minimum reserve level is 20% of annual operating expenditures.
Building Permit Inspection and Review Fees	Yes	Fees are collected by the planning and building divisions of the community development department to inspect and review construction documents on proposed projects within the City. The collection of these fees ensures buildings are designed and constructed in a manner consistent with applicable components of the municipal code and helps the department to recover staff costs associated with review and inspection.

G.4.4 Mitigation Outreach and Partnerships

Throughout the planning process of the Multi-jurisdictional HMP, the City participated in local outreach by promoting public meetings and circulating the Public Draft of the HMP for public comment and review. Public comments have been addressed and have been incorporated into the final HMP, where applicable. To further support implementation of hazard mitigation activities, the City has established strong partnerships with its neighboring jurisdictions, San Luis Obispo County, and multiple state organizations such as the California Highway Patrol, Cal Poly, CalFire, and Caltrans to collectively address local hazards. These partnerships have been formalized through the following:

- Mutual Aid Agreements
- Voluntary Organizations Active in Disaster
- San Luis Obispo County Community Fire Sage Council
- Department Operations Centers (DOC)

The City of San Luis Obispo also coordinates with many external (local, state, federal, and private sector) agencies which have capabilities to support hazard mitigation activities. Many of these agencies participated in the hazard mitigation planning process to update this plan, including the following:

- County of San Luis Obispo – Airports
- County of San Luis Obispo – Office of Emergency Services
- County of San Luis Obispo – Public Health Department
- Cal Poly – City & Regional Planning Department
- Cal Poly – Administration and Finance
- French Hospital Medical Center
- American Red Cross
- Sierra Vista Regional Medical Center
- San Luis Coastal Unified School District
- California Highway Patrol
- Pacific Gas and Electric Company (PG&E)





G.4.5 Other Mitigation Efforts

In addition to the plan and policy resources available to the City to mitigate hazards, the City has developed or participated in several hazard mitigation programs including:

- Unreinforced Masonry Hazard Mitigation Program
- Disaster Preparedness Program
- Floodplain Management Educational Program
- San Luis Obispo Chamber of Commerce Business Continuity Planning
- County Public Health Emergency Preparedness Advisory Committee
- National Flood Insurance Program (NFIP) and FEMA Repetitive Loss Properties
- Community Wildfire Protection Program
- Greenbelt Protection Program

G.4.6 Opportunities for Enhancement

Based on the capability assessment, the City has several existing mechanisms in place that help to mitigate hazards. There are also opportunities for the City to expand or improve on these policies and programs to further protect the community. Future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform City staff members on how best to integrate hazard information and mitigation projects into their departments. Continuing to train City staff on mitigation and the hazards that pose a risk to the City will lead to more informed staff members who can better communicate this information to the public.

The following themes or opportunities were identified during the planning process of the 2014 LHMP:

- **Actions to Prepare** – While many members of the community have taken small actions to prevent damage to their home in the event of a natural hazard, only a small portion have completed larger structural items to prevent damage. The City may consider developing and implementing programs to support risk reduction activities by property owners. Using the data available as a result of the risk assessment in this HMP, the City is able to identify areas and structures with a higher risk or exposure to the identified hazards. Sharing this information with community members and evaluating opportunities to help property owners in funding risk reduction activities will increase the resiliency of San Luis Obispo.
- **Awareness of Neighbor Needs** – Given the high student population and regular turnover of neighbors in some neighborhoods, it can be challenging for community members to be fully aware of neighbors and their needs. Neighborhood events such as the annual community block parties are an opportunity for the City to support greater community interaction which can increase awareness of neighbors needs in the event of an emergency.
- **Community or Workplace Awareness** – In many cases, respondents were unaware or unsure of the hazards that may affect the community or their workplace and policies that may be in place to help respond to a natural disaster. The City can help to increase community awareness through wider promotion or participation in workshops or resources available to the community that have already been prepared by the City or volunteer organizations. The City may increase business owners' awareness of risk by providing emergency planning support, continuity of operations planning support, and potentially hosting seminars for the business community to learn about the hazard risks.
- **Understanding the Extent of Damages** – To better understand the extent of damages to homeowners from a natural disaster, the City could coordinate with homeowner insurance providers to track damages beyond those reported through the National Flood Insurance Program (NFIP).





G.5 Mitigation Strategy

G.5.1 Mitigation Goals and Objectives

The City of San Luis Obispo Planning Team determined the two goals from the 2014 LHMP continue to be appropriate for this plan update, with the addition of a third goal to address hazards exacerbated by the impacts of climate change. The following are the City of San Luis Obispo's 2019 mitigation goals:

- **Goal 1:** Cultivate a disaster-resistant and resilient community through implementation of risk reduction measures and increased public awareness to prepare for, respond to, and recover from natural and human-caused hazard events.
 - **Objective 1.A** Ensure that local plans, policies, and programs are consistent with the hazard information identified in the LHMP.
 - **Objective 1.B** Increase City employee capacity through SIMS and NIMS compliant training and EOC drills to identify hazards, and assist in emergency preparedness, response, and recovery.
 - **Objective 1.C** Pursue available grant funding to implement hazard mitigation efforts.
 - **Objective 1.D** Maintain critical and essential key assets to increase resiliency and minimize future damage from hazard events.
 - **Objective 1.E** Increase public awareness of hazards, emergency response, and recovery.
 - **Objective 1.F** Promote public/private partnerships to increase community resiliency.
- **Goal 2:** Reduce the severity of damage and losses due to natural and human-caused hazards.
 - **Objective 2.A** Protect and enhance, as practical, existing assets, as well as any future development, from the effects of natural and human-caused hazards.
- **Goal 3:** Prepare for and adapt to the impacts of climate change.
 - **Objective 3.A** Use, and update as needed, the best available science to estimate exposure, vulnerability, and risk of hazards as the result of climate change.
 - **Objective 3.B** Use the climate change exposure, vulnerability, and risk assessments to ensure mitigation investments, capital projects, and programs actively mitigate climate impacts.

Continued Compliance with the National Flood Insurance Program (NFIP)

The City has been an NFIP participating community since 1973 and will continue to comply with the NFIP. This includes ongoing activities such as enforcing local floodplain development regulations, including issuing permits for appropriate development in Special Flood Hazard Areas 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. The goals of the NFIP are to reduce future flood damage through floodplain management and to provide people in participating communities with flood insurance. Community participation is voluntary. The City is also part of the Community Rating System (CRS), currently rated at Class 7. The goals of the CRS are to reduce flood damages to insurable property, strengthen and support the insurance aspects of the NFIP, and encourage a comprehensive approach to floodplain management. The City of San Luis Obispo maintains full compliance with the NFIP through Sections 17.84.010- 17.84.170 within Chapter 17.84 Flood Damage Prevention Regulations of the San Luis Obispo Municipal Code, which sets forth means to reduce losses from floods. These standards focus on areas located within or near the 100-year floodplain. Section 8.12.010-8.12.010 of the Municipal Code provides a mechanism for the City to require the removal of dangerous obstructions in streambeds that have the potential to obstruct water flow.





FEMA insures properties against flooding losses through the NFIP. As part of the process to reduce or eliminate repetitive flooding to structures across the United States, FEMA has developed an official Repetitive Loss Strategy. The purpose behind the national strategy is to identify, catalog, and propose mitigation measures to reduce flood losses due to the relatively few structures that represent the majority of claims from the National Flood Insurance Fund. A Repetitive Loss property is defined by FEMA as a “property for which two or more NFIP losses of at least \$1,000 each have been paid within any 10-year period since 1978.” The City of San Luis Obispo has two Repetitive Loss properties. As a CRS requirement, the City Public Works Department sends community outreach notifications and letters to property owners in repetitive loss areas, including the City’s Mid Higuera Area, to inform residents of flooding and to offer ways in which property owners can prepare for and reduce the damage from repetitive flooding. In addition, the Public Works Department conducted storm drain improvements as part of a Capital Improvements Project that helped with flood control in the Mid Higuera Area, an area of repetitive flooding. FEMA also defines Severe Repetitive Loss properties; however, the City does not have any Severe Repetitive Loss properties.

G.5.2 Completed 2014 Mitigation Actions

During the 2019 planning process the City of San Luis Obispo Local Planning Team reviewed all the mitigation actions from the 2014 LHMP. The review indicated the City has completed one mitigation action since 2014 and made continued progress in implementing mitigation projects and building the community’s resilience to disasters. Of the 29 mitigation actions identified in the 2014 LHMP, the Planning Team has completed the following action, which the Planning Team notes as being completed in January of 2017:

2.A.12 Add gas pipeline mapping to the City’s GIS resources.

G.5.3 Mitigation Actions

The City of San Luis Obispo Local Planning Team identified and prioritized one new mitigation action based on the 2019 risk assessment. New and existing actions were prioritized using the process described in Section 7.2.1 of the Base Plan. The new mitigation action identifies implementation strategies, the responsible agency, potential funding, estimated cost, and implementation schedule.





Table G.21 City of San Luis Obispo’s Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
SL.1*	Adverse Weather, Biological, Earthquake, Flood, Wildfire, Hazardous Materials	Regularly review and continue to maintain consistency between the Safety Element, Municipal Code, zoning regulations, hazard area maps, and LHMP implementation strategies. Added 10/2016: Review the implementation and impacts of SB1069 Land use zoning	Community Development /Public Works /Fire	Little to no cost	Staff Time/ Dept. Budget	Medium	1-3 years	In progress. Safety Element to be updated in 2021
SL.2	Adverse Weather, Biological, Earthquake, Flood, Wildfire, Hazardous Materials	Train all City employees including fire fighters, police officers, building inspectors, and public works and utilities staff to levels appropriate for their hazard mitigation tasks and responsibilities.	Fire	Little to no cost	Staff Time/ Dept. Budget	Medium	1-3 years	In progress. Currently updating a City-wide training matrix to ensure employees have the valid training based on their position. Once the matrix is complete the City will hold training to ensure all City employees receive appropriate training and certifications. Utilize new Human Capital Management software to ensure new employees receive training during onboarding.
SL.3	Adverse Weather, Earthquake, Flood, Wildfire,	Provide training for City staff who apply its building regulations and planning standards, emphasizing the lessons learned in locations that have experienced disasters	Fire / Community Development /Public Works	Little to no cost	Staff Time/ Dept. Budget	Medium	1 yr.	In progress. Additional modeling has been completed. The results of this modeling indicated that a more expansive model should





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
	Hazardous Materials							be created which is underway.
SL.4	Adverse Weather, Biological, Earthquake, Flood, Wildfire, Hazardous Materials	Conduct disaster-preparedness exercises for the types of hazards discussed in this LHMP.	Fire	Little to no cost	Staff Time/ Dept. Budget	Medium	1 yr.	In progress. Latest Public Point of Distribution drill held at the City of San Luis Obispo was on 10/18/2017. October 2018 Distribution took place on 10/21/18 in Arroyo Grande and Atascadero (the two locations exercised were intended to cover the whole county, including SLO). City plans to continue participating in exercises as allowed.
SL.5	Adverse Weather, Biological, Earthquake, Flood, Wildfire, Hazardous Materials	Establish ongoing Disaster Service Worker training program to include training for City staff to deal with emergencies as well as contribute to risk reduction measures.	Fire	Little to no cost	Staff Time/ Dept. Budget	Medium	1 yr.	In progress
SL.6	Adverse Weather, Biological, Earthquake, Flood, Wildfire,	Review funding opportunities and establish centralized internal procedures to coordinate efforts for securing funds that support risk reduction measures.	Admin. - Finance	Little to no cost	General Funds/ FEMA HMA	High	1 yr.	In progress. Spring of 2019. The City released an RFP to hire a grant writing firm to seek funding opportunities to leverage community





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
	Hazardous Materials							improvement. This includes risk reduction measures.
SL.7	Adverse Weather, Biological, Earthquake, Flood, Wildfire, Hazardous Materials	Identify hazard mitigation projects eligible for grants as part of the Capital Improvement Program planning process.	Public Works/ Utilities	Little to no cost	Cal OES /FEMA: Up to \$2 Million at WRRF	Medium	3-5 years	In progress. The Mid-Higuera Bypass project is currently being designed. Once design is complete, grant application work will begin. Utilities (new) - A \$2 million grant application has been submitted with CalOES for flood proofing mission critical facilities related the Water Resource Recovery Facility.
SL.8	Adverse Weather, Earthquake, Flood, Hazardous Materials	Assess structural capacity of key assets (including bridges) and pursue infrastructure improvements as necessary.	Public Works/ Community Development	Less than \$10,000	General Fund	Medium	3-5 years	In progress. As part of 2019-21 financial plan process the City has reviewed and prioritized assets maintenance and replacement. This prioritized asset list will be presented to the City Council for funding consideration.
SL.9	Adverse Weather, Biological, Earthquake, Flood,	Establish a funded program or mechanism to distribute public information regarding risk reduction activities and projects at City-sponsored events. Identify materials available for use at public education workshops.	Fire	Little to no cost	General Fund	Medium	1-2 years	In progress. Fire Prevention Open House occurred on and 10/14/17 and 10/13/18. Presentations at Cal





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
	Wildfire, Hazardous Materials	Coordinate messaging with external agencies such as the American Red Cross and Volunteer Organizations Active in Disasters.						Poly orientations for students and their parents. Department is developing new disaster preparedness neighborhood presentation program and employee disaster worker preparedness beginning FY2020.
SL.10	Adverse Weather, Biological, Earthquake, Flood, Wildfire, Hazardous Materials	Support the efforts and education of people with access and functional needs to prepare for disasters.	Fire	Little to no cost	Staff Time/ Dept. Budget	Medium	1 yr.	In progress
SL.11	Adverse Weather, Biological, Earthquake, Flood, Wildfire, Hazardous Materials	Educate the community on individual preparedness and response to deal with emergencies at times when professional responders would be overwhelmed.	Fire	Little to no cost	General Fund	Medium	1-2 years	In progress. See SL.9 comments
SL.12	Adverse Weather, Biological, Earthquake, Flood, Wildfire,	Offer seminars and/or resources to assist local / small businesses in planning for continuity of operations and emergency preparedness.	Fire	Little to no cost	General Fund	Medium	1-2 years	In progress. Fire department staff attend the weekly meetings at the Downtown Association and has updated a fire safety checklist for festival





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
	Hazardous Materials							vendors in the downtown, provided education to DTA staff.
SL.13*	Adverse Weather, Biological, Earthquake, Flood, Wildfire, Hazardous Materials	Continue to enforce local codes, ordinances, and standards pertaining to safe development and resiliency to natural and human-caused hazards.	Community Development /Fire	Little to no cost	General Funds/ FEMA HMA	High	1-2 years	In progress. As of April of 2019, permits have been issued on all URM structures. All have been finalized/closed out except for four properties, one of which is currently being retrofitted and remodeled (SLO Brew at 736 Higuera). Permits have been issued on two others (1029 and 1035 Chorro) but have not been finalized/closed out in permitting system. Current status on these is currently being researched. Records indicate the last of the four has completed Level A strengthening, but still has an outstanding permit - permit records and status is currently being researched.





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
SL.14	Earthquake	Develop and provide managers of mobile home parks with information on how to improve the seismic performance of mobile homes and awareness of flood risk.	Community Development	Less than \$10,000	Staff Time/ Dept. Budget	Medium	2-3 yrs.	In progress. Still in planning process; will be incorporated into Safety Element)
SL.15	Earthquake, Wildfire, Adverse Weather	The Secure and Resilient Electricity action would plan for energy independence and security at critical facilities throughout the City. By providing grid independent onsite renewable energy, storage, and energy management systems, and by providing a planning and financing framework for future investments, the City will be able maintain uninterrupted operations during times of electricity or natural gas grid instability.	Fire; police; public works; utilities; administration; parks and recreation	\$200k to \$500k;	California Energy Commission; Monterey Bay Community Power	High	3-5 yrs.	New Benefits: A resilient electricity system (solar and storage) at critical facilities ensure ongoing operations during significant disaster events and ensures viability of electric evacuation vehicles, City fleet, and transit vehicles.
SL.16	Earthquake	Continue to implement the Unreinforced Masonry Hazard Mitigation Plan and strengthen buildings identified in Levels A and B.	Community Development / Fire	\$10,000 to \$50,000	General Funds/FEMA A HMA	Medium	2-3 yrs.	In progress. See SL.13 comments
SL.17	Flood	Develop and carry out environmentally sensitive flood reduction programs.	Administration - Natural Resources	\$10,000 to \$50,000	FEMA HMA	Medium	2-3 yrs.	In progress. The City continues to assess high priority erosion and sedimentation sites identified in the Waterway Management Plan and provide maintenance or restoration as appropriate; review City owned property and property with drainage easements covering





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
								private properties and conduct vegetation management/removal as needed; and, complete silt removal projects at key drainage locations on a rotating basis. Assess and remove as necessary undesirable trees from creek system with tree/landscape contractors. Natural Resources Program staff manages vegetation trimming or removal to maintain the riparian corridors. The EIR for the Mid-Higuera Bypass project was adopted and the 95% plans are nearing completion.
SL.18	Haz Mat	Continue requiring businesses that use, store, or transport hazardous materials to ensure that adequate measures are taken to protect public health and safety.	Fire	Little to no cost	Certified Unified Program Agency (CUPA)	High	Annual implementation	Fire Department CUPA Participating Agency completes 100% of permitted facility inspections annually to assure compliance with the fire code and state regulations. The fire department is subject to audit by the County





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
								CUPA and has passed all recent audits.
SL.19	Haz Mat	Coordinate with allied agencies to prepare for hazardous materials incidents. Reference City EOP and Training and Exercise Plan; Maintain participation in County hazardous materials team	Fire	Less than \$10,000	Certified Unified Program Agency (CUPA)	Medium	1 yr.	In progress. City Emergency Operations Plan is currently set to be updated. City issued RFP to hire consultant to update plan in Spring of 2019 and is expected to have a completed plan with associated training in Winter of 2020.
SL.20	Haz Mat	Maintain City's web site and other outlets with information regarding the safe handling and disposal of household chemicals.	Fire	Little to no cost	Staff Time/Dept. Budget	Medium	1 yr.	In progress/ongoing
SL.21	Wildfire	Enhance partnerships with CalFire and the local Fire Safe Council for fuel reduction efforts.	Fire	Little to no cost	Cal Fire / FireSafe Grants	Medium	1 yr.	In progress. As of March of 2019, The City of San Luis Obispo is now a recognized focus group and voting board member on the Fire Safe Council
SL.22	Wildfire, Drought	Support ongoing urban forest maintenance and tree trimming programs, to include planting drought-resistant trees and plants.	Public Works - Urban Forestry / Fire / Parks & Recreation / Natural Resources	Less than \$10,000	General Fund	Medium	1-2 yrs.	In progress. Urban Forest Services continues regular maintenance which includes pruning and dead tree removal in City Streets, Parks and other City owned properties.





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
SL.23	Wildfire	Continue to conduct current fuel management programs and investigate and apply new and emerging fuel management techniques.	Fire/Natural Resources Director/Parks and Recreation	\$10,000 to \$50,000	FEMA and Fire Safe Council grants	High	1 yr.	In progress. The Natural Resource Manager has taken lead on all fuel management funds and projects in the City Open Space. Additional grant funding has been obtained to augment allocated fuel management budget.
SL.24	Wildfire	Require an enhanced fire protection plan in Local Very High Fire Severity Zones.	Fire	Less than \$10,000	Staff Time/Dept. Budget	Medium	1 yr.	In progress.
SL.25	Biological	Continue offering free flu vaccines to City employees.	Human Resources	Less than \$10,000	County Program	Medium	Annual implementation	In progress. Continued participation in the County Public Health Point of Distribution program.
SL.26	Biological	Educate and encourage City employees to maintain a healthy work environment by utilizing sick and other leave benefits to avoid coming to work when sick or contagious and encouraging employees to develop plans for caring for sick family members taking care of ill family members.	Human Resources	Little to no cost	General Fund	Medium	Annual implementation	In progress. Include in ongoing wellness, benefits, and leave of absence training, education, and general communications.





G.6 Implementation and Maintenance

Moving forward, the City will use the mitigation action table in the previous section to track progress on implementation of each project. As illustrated in the completed actions table (Table G.21) much progress has been made since the plan was originally developed. Implementation of the plan overall is discussed in Chapter 8 in the Base Plan.

G.6.1 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 Engineering Division may utilize the hazard information when implementing the City's Community Investment Program and the Planning and Building Divisions may utilize the hazard information when reviewing a site plan or other type of development applications. The City will also incorporate this LHMP into the Safety Element of their General Plan, as recommended by Assembly Bill (AB) 2140. This enables the City of San Luis Obispo to qualify for additional funding through the California Disaster Assistance Act should the State determine there to be a need and/or additional funding to be available.

California State Assembly Bill 162 requires the General Plan Land Use Element to identify existing and proposed uses and flood mitigation strategies within the 100-year floodplain. The HMP should be referenced and used to inform the Land Use Element in order to meet this requirement. California State Senate Bill 1241 requires the Safety Element to incorporate wildfire hazard considerations for State Responsibility Areas (SRAs) and lands within very high fire severity zones. These areas are already depicted within the Safety Element and this Annex. They will be reviewed and updated as appropriate during the future updates to both of these documents. Whenever there are substantive changes to the County HMP or this Annex, those involved in other relevant planning mechanisms in the City will be included in the review process.

As stated in Chapter 8 of the Base Plan, the HMPC representatives from the City of San Luis Obispo 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 HMPC plan review meeting.

G.6.2 Monitoring, Evaluation and Updating the Plan

The City will follow the procedures to Monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Chapter 8 of the Base Plan. The City will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The Administrative Analyst in the City Fire Department will be responsible for representing the City in the County HMPC, and for coordination with the City LPT, including relevant 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. In order to ensure that regular review and update of the HMP occurs, the LPT will convene annually to review and discuss mitigation progress and any new concerns that may benefit from mitigation activities. During each annual review, the LPT will review each goal and objective to evaluate its:

- Relevance to the evolving setting and needs of the City of San Luis Obispo
- Consistency with changes in State and Federal policy
- Relevance to current and expected conditions





The LPT will review the Risk Assessment portion of the plan to determine if the information should be updated or modified. The parties responsible for various implementation should be updated or modified. The parties responsible for various implantation actions will report on:

- Status of their projects
- Implementation processes that have worked well
- Any difficulties encountered
- How coordination efforts are proceeding
- Which strategies should be revised





H.1 District Profile

H.1.1 Mitigation Planning History and 2019 Process

This annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan Update. The General Manager of the Avila Beach Community Services District was the representative on the County HMPC and took the lead for developing the plan and this annex. The Avila Beach CSD will be responsible for implementation and maintenance of the plan.

Table H.1 Avila Beach CSD Hazard Mitigation Plan Planning Team

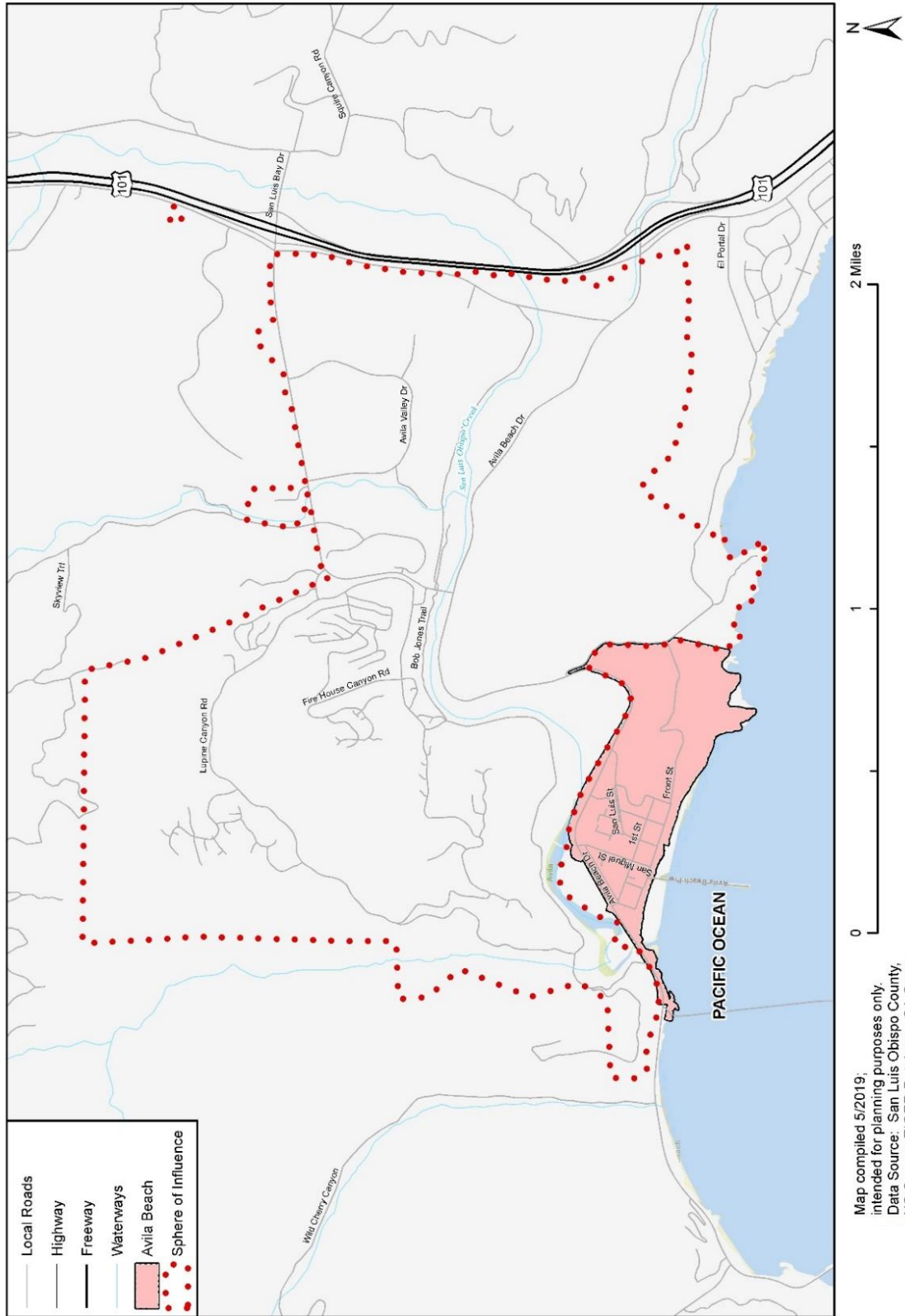
Department or Stakeholder	Title
District Management	General Manager

More details on the planning process followed and how the jurisdictions, service districts and stakeholders participated can be found in Section 3 of the Base Plan, as well as how the public was involved during the 2019 update.

Figure H.1 below shows the Avila Beach Community Services District boundaries, represented in pink. The dotted line represents the District's sphere of influence, which corresponds with the Avila Urban Reserve Line.



Figure H.1 Avila Beach Community Services District and Sphere of Influence



Map compiled 5/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO



H.1.2 District Overview

The Avila Beach Community Services District's (CSD) mission is to provide quality, innovative and cost-effective services that include water, sewer, lighting and fire protection. The District was established in February of 1997 after the Avila Beach County Water District, which provided services such as sanitary and fire protection, and the Avila Lighting District joined together. Today the District encompasses over 150 acres within the County, including all of the Town of Avila Beach.

The Avila Beach CSD is governed by a five-person elected board, each with a four-year term. The Board of Directors is responsible for creating policies for the District and receives recommendations from the District's General Manager and District Counsel. The District's General Manager carries out the policies developed by the Board and serves as the Public Information Officer for the District. The District Engineer is responsible for implementing and developing the engineering plans for all facilities within the District. The Utilities Department provides support to the District operations including Field Crews that handle all sanitary sewer/water emergencies and daily operations. The District's part-time billing clerk is the only District employee, all other management, engineering, operations and maintenance sources are provided through contractors.

In 1976, the Avila Beach County Water District, contracted to purchase water from San Luis Obispo County Service Area #12, which supplies water from the Lopez Reservoir to the District. Currently the Avila Beach Community Services District provides water service to approximately 400 business and residential connections and owns two water storage tanks with the storage capacity of 840,000 gallons and 46 fire hydrants. The Avila Beach CSD is one of five water purveyors in the Avila community area. In addition to County Service Area #12 entitlement from Lopez Lake (68 acre-feet per year AFY), the District is also as sub-contractor to the San Luis Obispo County Flood Control and Water Conservation District Zone 3 and is entitled to 100 AF of "Table A" Water. The CSD added a 100 AF Drought Buffer to their 100 AF Table A allocation in 2017. The District's total water allocation is 168 AF per year.

The Avila Beach CSD provides wastewater collection, treatment and disposal services for the Town of Avila Beach and wastewater treatment and disposal for the Port San Luis Harbor District. The District's wastewater treatment plant was originally built in 1969 by the community of Avila. In the early 1990s the District upgraded the treatment facility to provide secondary treatment and disinfection of wastewater discharged into the Pacific Ocean. The treated municipal wastewater is discharged to the ocean through a 2,240 ft outfall, approximately 1,200 feet beyond the end of the Avila Pier. The District also maintains approximately 10,000 feet of gravity sewer, 40 manholes, 1 lift station, approximately 300 residential sewer connections, 53 commercial/industrial sewer connections, and a wastewater treatment plant serving nearly 1,000 customers and seasonal visitors.

Since 2000, the Avila Beach Community Services District has contracted with Cal Fire/San Luis Obispo County Fire Department to cooperatively provide fire protection services for the Avila community. The Fire Department also works on comprehensive vegetation management planning and stays engaged with the Avila community.

The U.S. Census Bureau estimated the Avila Beach Census Designated Place's (CDP) 2017 population as 1,080, a decrease from 1,166 in 2014. Table H. 2 shows an overview of key social and demographic characteristics of the CDP taken from the U.S. Census Bureau's American Community Survey.



Table H. 2 Avila Beach CDP Demographic and Social Characteristics, 2014-2017

Avila Beach CDP	2014	2017	% Change
Population	1,166	1,080	-7.4%
Median Age	58.9	63.1	7.1%
Total Housing Units	989	1,068	8.0%
Housing Occupancy Rate	67.2%	61.8%	-5.4%
% of Housing Units with no Vehicles Available	1.2%	1.4%	0.2%
Median Home Value	\$599,900	\$742,100	23.7%
Unemployment	4.1%	2.3%	-1.8%
Mean Travel Time to Work (minutes)	17.0	27.8	63.5%
Median Household Income	\$73,304	\$100,076	36.5%
Per Capita Income	\$43,153	\$82,202	90.5%
% of Individuals Below Poverty Level	7.4%	4.4%	-3.0%
# of Households	665	660	-0.8%
Average Household Size	1.75	1.64	-6.3%
% of Population Over 25 with High School Diploma	98.6%	100.0%	1.4%
% of Population Over 25 with Bachelor's Degree or Higher	53.6%	36.5%	-17.1%
% with Disability	18.2%	11.9%	-6.3%

Source: U.S. Census Bureau American Community Survey 2014-2017 3-Year Estimates, www.census.gov/

Note: Data is for the Avila Beach Census Designated Place (CDP) which may not have the same boundaries as the Avila Beach Community Service District.

The following table show how the Avila Beach CDP's labor force breaks down by occupation and industry estimates from the U.S. Census Bureau's 2017 American Community Survey.





Table H. 3 Avila Beach CPD Employment by Industry (2017)

Industry	# Employed
Population (2017)	1,080
In Labor Force	702
Agriculture, forestry, fishing and hunting, and mining	57
Armed Forces	-
Construction	107
Manufacturing	44
Wholesale trade	70
Retail trade	-
Transportation and warehousing, and utilities	33
Information	-
Finance and insurance, and real estate and rental and leasing	80
Professional, scientific, and management, and administrative and waste management services	77
Educational services, and health care and social assistance	87
Arts, entertainment, and recreation, and accommodation and food services	89
Other services, except public administration	35
Public administration	7
Unemployed	16

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

Note: Data is for the Avila Beach Census Designated Place (CDP) which may not have the same boundaries as the Avila Beach Community Service District.

H.1.3 Development Trends

In the late 1990’s a significant portion of the Town of Avila Beach was demolished and rebuilt due to significant soil contamination from an oil spill by the Unocal Corporation (Unocal), who was also responsible for the clean-up operations. The rebuilding effort was guided by the Avila Beach Specific Plan, which included the Avila Beach Community Services District. The planning process allowed the Town and the CSD to redesign their community while keeping the Town’s eclectic flair. The land uses within the boundaries of the District include commercial retail, residential multi-family, industrial, recreation and residential single-family. According to the Avila Community Plan, approximately 17 percent of the housing units within the Town of Avila Beach are permitted vacation rentals (Avila Community Plan, 2018). Figure H.2 below depicts the location and amount of the vacation homes, represented in purple.



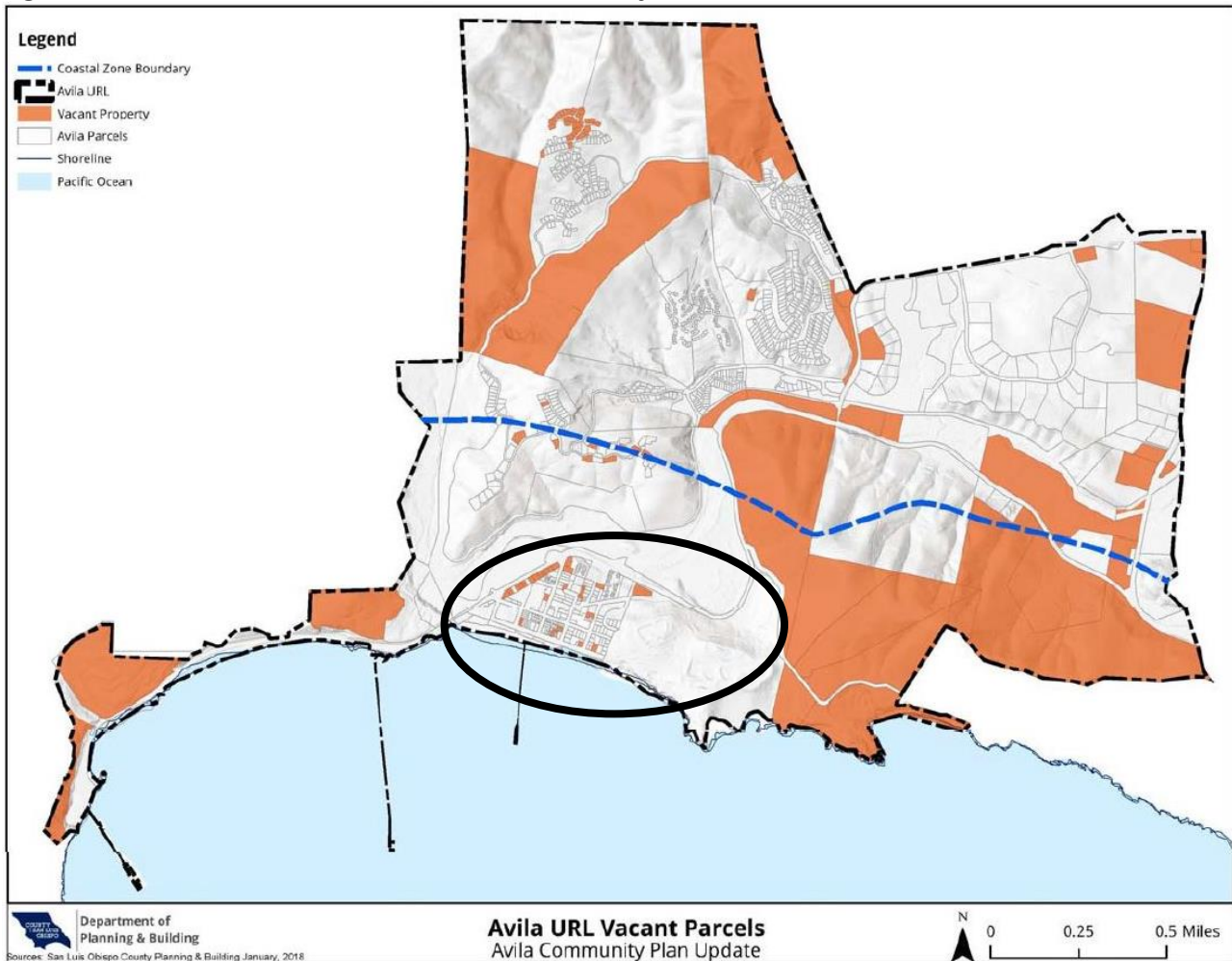
Figure H.2 Town of Avila Beach Vacation Rental Permits



Source: Avila Community Plan, Background Report, August 2018

There is opportunity for future development to occur within the Avila Beach CSD boundaries with several vacant parcels located throughout the Town of Avila Beach; refer to Figure H.3 below. Future development of any of these vacant parcels and re-development of existing underutilized parcels will need to follow the standards and regulations set forth in the County Coastal Zone Framework and the Avila Beach Specific Plan. Future development will need to be coordinated with the Avila Beach Community Services District to ensure safe and efficient wastewater services and adequate water supply is available and not have an impact on existing users.

Figure H.3 Vacant Parcels in the Avila Community



Source: Avila Community Plan, Background Report, August 2018 *The black oval is a representation of the Avila Beach CSD boundaries and the vacant parcels within the Town of Avila Beach.

H.1.4 Other Community Planning Efforts

Coordination and synchronization with other community planning mechanisms and efforts are vital to the success of this plan. To have a thorough evaluation of hazard mitigation practices already in place, appropriate planning procedures should also involve identifying and reviewing existing plans, policies, regulations, codes, tools, and other actions are designed to reduce a community’s risk and vulnerability from natural hazards.

As an unincorporated community Avila and the Avila Beach CSD are referenced in other County planning documents and regulated by County policies and planning mechanisms. Integrating existing planning efforts, mitigation policies, and action strategies into this annex establishes a credible, comprehensive document that weaves the common threads of a community’s values together. The development of this jurisdictional annex involved a comprehensive review of existing plans, studies, reports, and initiatives from San Luis Obispo County and the Avila community that relate to hazards or hazard mitigation. A high-level summary of the key plans, studies and reports is summarized in the table below. Information on how they informed the update are noted and incorporated where applicable.



In addition to the development standards within the Avila Beach Specific Plan, there are County planning mechanisms that regulate future and existing development within the Avila Beach CSD planning area. Refer to H.4 Capability Assessment for more information on the plans, policies, regulations and staff that govern the Avila Beach CSD.

Table H.4 Summary of Review of Key Plans, Studies and Reports

Plan, Study, Report Name	How Document Informed the Annex
Avila Community Plan, Background Report (2018)	Incorporated background information on the community and CSD including historical and cultural resources, and development and land use trends; Incorporated hazard information and maps (if applicable) and informed the Vulnerability Assessment.
Avila Beach Specific Plan (2001)	Informed history of the Town of Avila Beach, including the Unocal Cleanup efforts; Incorporated information on historical resources
Avila Beach Community Services District Sewer System Management Plan (Revised April 2014)	Incorporated information into the District overview
San Luis Bay Area Plan – Coastal (Revised August 2009)	Incorporated hazard information related to flooding,
County of San Luis Obispo Local Hazard Mitigation Plan (2014)	Informed past hazard event history.
County of San Luis Obispo Safety Element (1999)	Informed past hazard event history and general background information on the planning area
San Luis Obispo County – Tsunami Emergency Response Plan (Revised April 2016)	Informed the Vulnerability Assessment for Tsunami risk
San Luis Obispo County – Community Wildfire Protection Plan (March 2019)	Informed the Vulnerability Assessment for Wildfire risk

H.2 Hazard Identification and Summary

The Avila Beach CSD planning team identified the hazards that affect the District and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to the Avila Beach CSD (see Table H.5). There are no hazards that are unique to Avila Beach.





Table H.5 Avila Beach CSD Hazard Risk Summary

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Coastal Storm/Coastal Erosion/Sea Level Rise	Significant	Likely	Limited	Medium
Drought and Water Shortage	Extensive	Likely	Critical	High
Earthquake	Extensive	Unlikely	Critical	Medium
Flood	Significant	Highly Likely	Limited	Medium
Landslides and Debris Flow	Significant	Occasional	Limited	Medium
Tsunami and Seiche	Significant	Occasional	Critical	Medium
Wildfire	Significant	Likely	Limited	High
Human Caused: Hazardous Materials	Significant	Highly Likely	Negligible	Medium
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		

H.3 Vulnerability Assessment

The intent of this section is to assess the Avila Beach Community Services District’s vulnerability separate from that of the planning area, which has already been assessed in Section 5 Hazard Identification and Risk Assessment in the Base Plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area.

The information to support the hazard identification and risk assessment for this Annex was collected through a Data Collection Guide, which was distributed to each participating municipality or special district to complete during the planning process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact anywhere within the County, as well as to rank the hazards and identify the





related vulnerabilities unique to each jurisdiction. In addition, the Avila Beach CSD planning team members were asked to share information on past hazard events that have affected the Community Services District.

Each participating jurisdiction was in support of the main hazard summary identified in the Base Plan (see Table 5.2). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction (see Table H.5 below). Identifying these differences helps differentiate the jurisdiction's risk and vulnerabilities from that of the overall County.

Note: The hazard "Significance" reflects overall ranking for each hazard and is based on the Avila Beach CSD planning team input from the Data Collection Guide and the risk assessment developed during the planning process (see Section 5 of the Base Plan), which included a more detailed qualitative analysis with best available data.

The hazard summaries in Table H.5 reflect the hazards that could potentially affect the District. Based on this analysis, the priority hazard (High Significance) for mitigation are wildfire and drought. The discussion of vulnerability for each of the following hazards is in Section H.3.2 Estimating Potential Losses. Those of Medium or High significance for the Avila Beach CSD are identified below.

- Drought and Water Shortage
- Earthquake
- Flood
- Landslides and Debris Flow
- Coastal Storm/coastal Erosion/Sea Level Rise
- Tsunami
- Wildfire
- Human Caused: Hazardous Materials

Other Hazards

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 in this plan and are not assessed individually for specific vulnerabilities in this section. In the Avila Beach Community Services District, subsidence, high wind/tornado and extreme heat, are the only hazard ranked as a low significance to Avila Beach.

Additionally, the CSD's Committee members decided to rate several hazards as Not Applicable (N/A) to the planning area due to a lack of exposure, vulnerability, and no probability of occurrence. The following hazards are considered Not Applicable (N/A) to the Avila Beach Community Services District.

- Agricultural Pest Infestation and Disease
- Biological Agents (naturally occurring)
- Dam Incidents
- Subsidence

H.3.1 Assets at Risk

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

Values at Risk

The following data on property exposure is derived from the San Luis Obispo County 2017 Parcel and Assessor data. This data should only be used as a guideline to overall values in the Community Services District as the information has some limitations. The most significant limitation is created by 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 likely low and does not reflect current market value of properties. 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. Table H.6 shows the exposure of properties (e.g., the values at risk) broken down by property type for the Avila Beach Community Services District.

Table H.6 2019 Property Exposure for the Avila Beach CSD by Property Types

Property Type	Property Count	Improved Value	Content Value	Total Value
Commercial	15	\$7,203,045	\$7,203,045	\$14,406,090
Government/Utilities	17	\$61,794	--	\$61,794
Other/Exempt/Misc.	26	\$10,502,046	--	\$10,502,046
Residential	63	\$19,318,643	\$9,659,322	\$28,977,965
Multi-Family Residential	86	\$29,723,864	\$14,861,932	\$44,585,796
Residential: Other	14	\$26,132,720	\$13,066,360	\$39,199,080
Vacant	19	\$5,879,402	--	\$5,879,402
Total	240	\$98,821,514	\$44,790,659	\$143,612,173

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor's Office data 2019

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the Avila Beach planning area from San Luis Obispo County GIS is provided in Table H.7 and illustrated in Figure H.4.

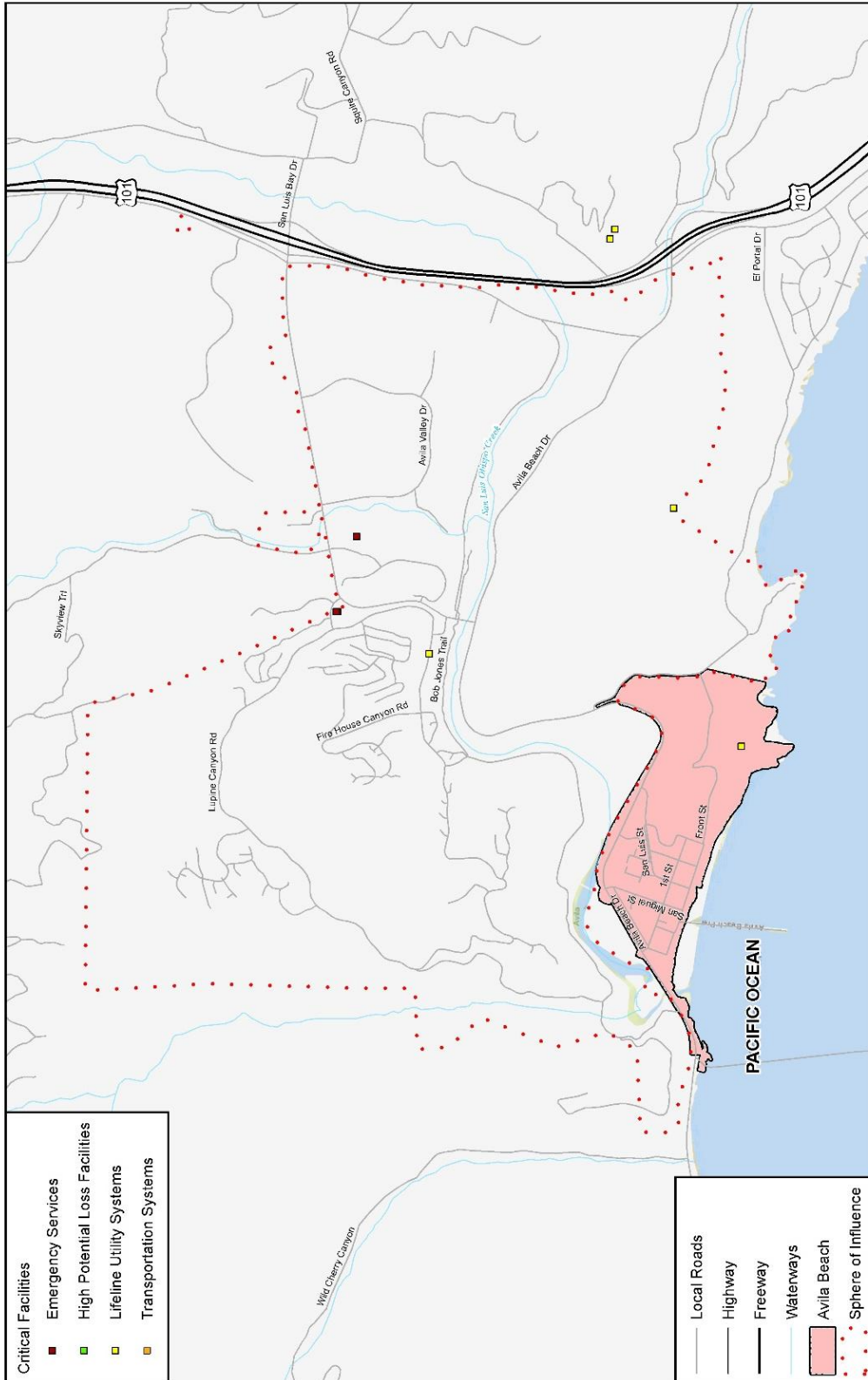
Table H.7 Avila Beach CSD's Critical Facilities

Facility Type	Counts
FM Transmission Towers	1
Total	1

Source: San Luis Obispo County Planning & Building, HIFLD 2017



Figure H.4 Avila Beach CSD Critical Facilities



0 1 2 Miles

Map compiled 5/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, HIFLD



Essential Facilities

Essential facilities as identified by the Avila Beach CSD Planning Team are as follows:

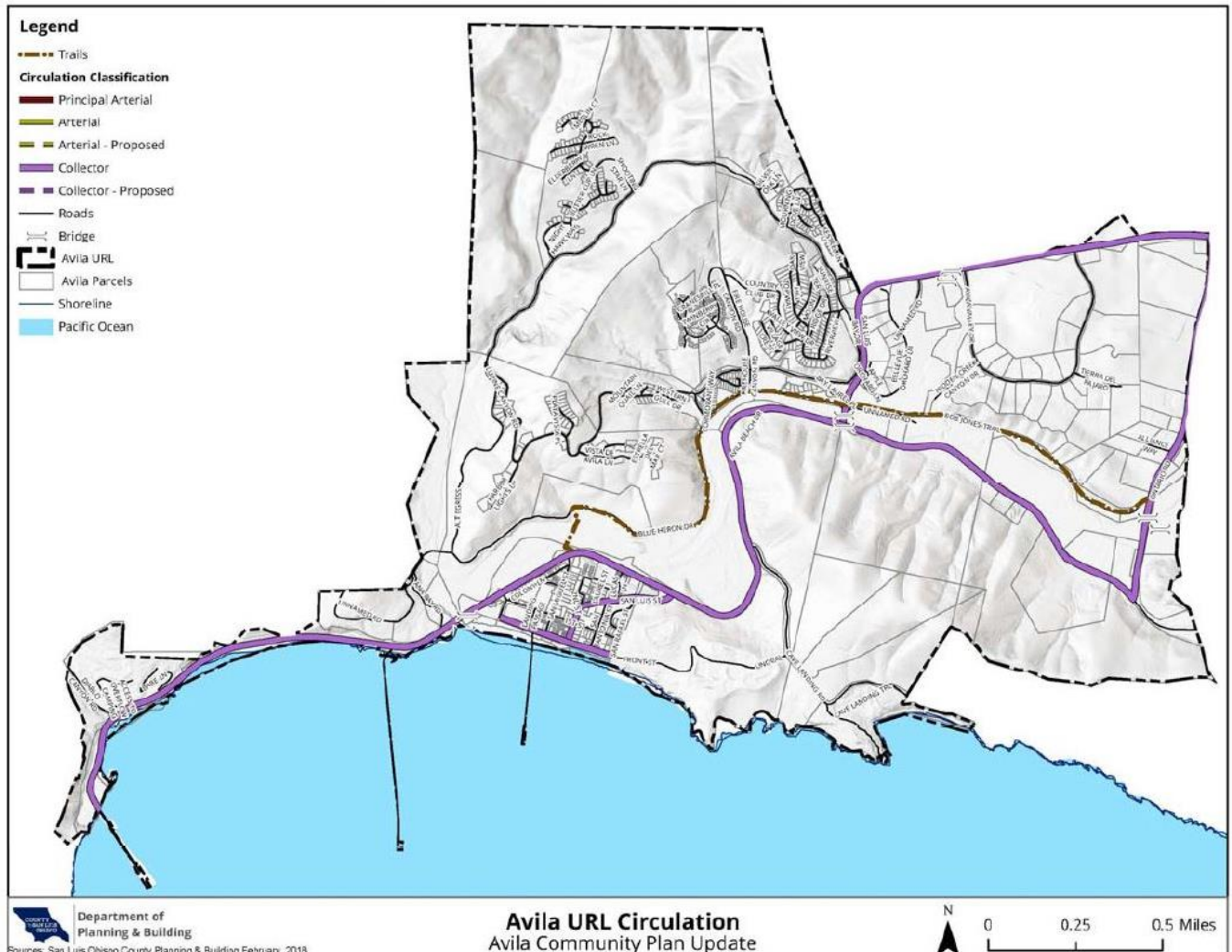
- Wastewater Treatment Plan - \$15 million replacement value
- Water Storage and Distribution - \$2 million replacement value

Transportation and Lifeline Facilities

According to the GIS analysis there is one lifeline utility system, a FM Transmission Tower, located in the Avila Beach CSD jurisdiction.

Highway 101 from San Luis Bay and Avila Beach Drive area is the only way to access the Avila Beach planning area. There is no secondary access into or out of the community. According to the Avila Beach Community Plan (2018) traffic through Avila is made of three main users: PG&E employment, recreation use and residential use. Avila Beach Drive serves as the main access point to the Diablo Canyon Power Plant. The County of San Luis Obispo Public Works Department recently completed a seismic retrofit of the Avila Beach Drive Bridge, the only method of accessing Port San Luis, and the Diablo Canyon Power Plant. The following figure from the Avila Beach Community Plan shows transportation facilities in the Avila Beach area.

Figure H.5 Avila Beach Circulation Map



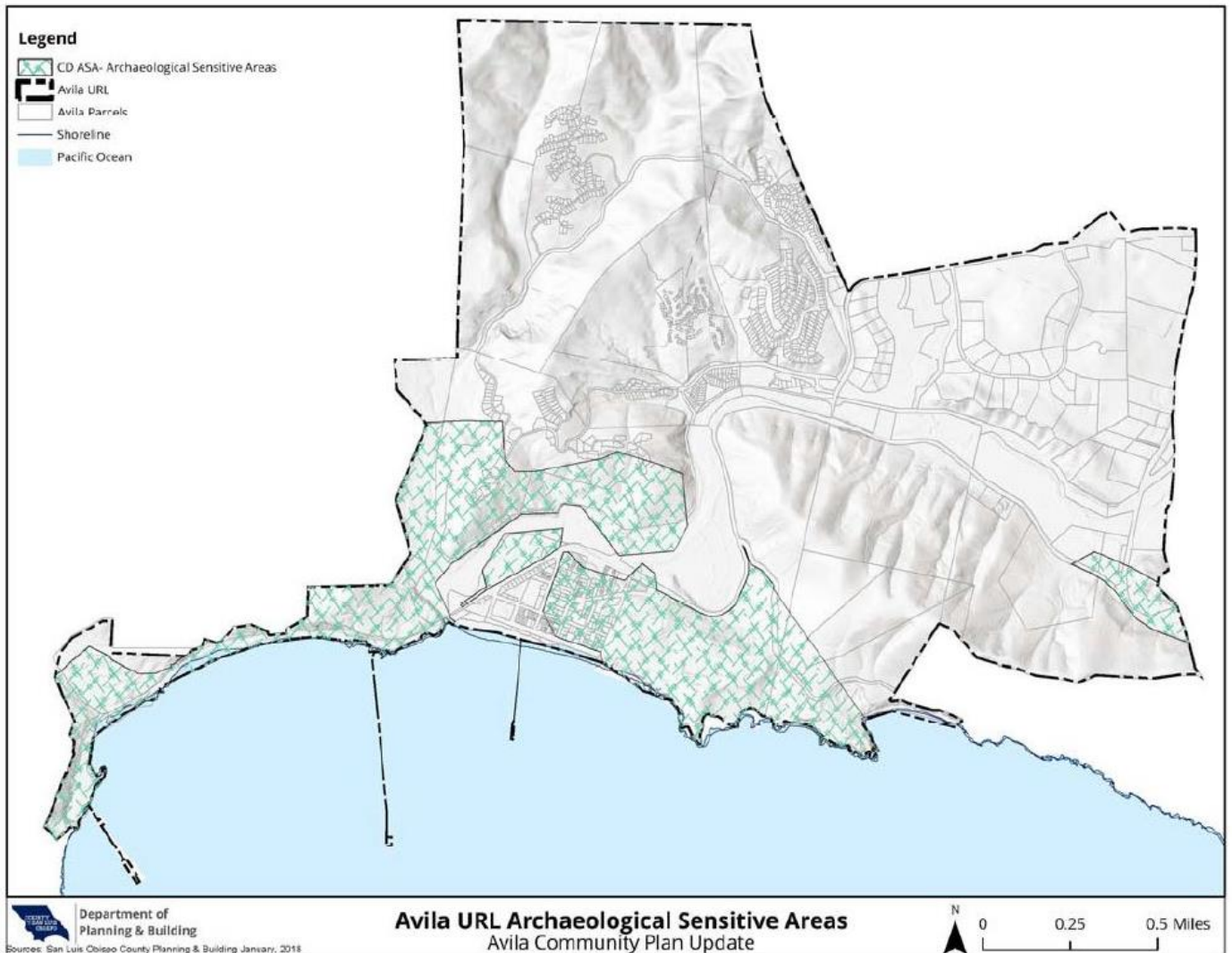
Source: Avila Community Plan, Background Report, August 2018

Historic and Cultural Resources

The Avila Beach Specific Plan notes four structures of historical significance within the Town of Avila Beach, these structures include: The Custom House, The Sea Barn, The Yacht Club and Avila Grocery. All of these historic structures were removed, replaced and restored in their original locations after the Unocal cleanup process.

The Town of Avila Beach is also the former home of the Chumash Indian Community (Avila Community Plan, Background Report 2018). Due to this historic and archaeological connection, the Town of Avila Beach and much of the land within boundaries of the District, are designated by the County as archeologically sensitive areas. To develop within an archeologically sensitive area in the County, a landowner is required to hire a qualified archaeologist with knowledge of local Native American culture to perform a preliminary site survey that must be approved by the County Environmental Coordinator. Figure H.6 below from the 2018 Avila Community Plan Background Report depicts the Archeologically Sensitive Areas within the Avila community as defined by the combining designation in the County's Coastal Zone Land Use Ordinance.

Figure H.6 Archaeologically Sensitive Areas



Source: Avila Community Plan, Background Report, August 2018

Natural Resources

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. 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. The San Luis Bay Area Plan (Coastal) (2009) designated the following combining designations that apply to the protection of special resources in the Avila Beach community:

- Ontario Ridge (SRA) – The major ridge forms an important scenic backdrop for the coastal areas of Avila Beach and Pismo Beach, as well as for Avila Valley. Open space agreements on the slopes should be obtained at the time of development proposals.
- San Luis Creek Estuary (SRA) – This small estuary west of the community of Avila beach is an important feeding and resting area for migratory water fowl. San Luis Creek may be the southernmost stream



supporting steelhead rainbow trout runs in the State [Note, steelhead rainbow trout were designated as a Threatened Species in 2006]

- San Luis Obispo Creek (FH) – Drainage course should be maintained in their natural state and native vegetation and habitats retained.

Economic Assets

Tourism is the largest economic driver for the Avila Beach community. According to the Avila Community Plan (2018), the top employment sectors in Avila are primarily “visitor-serving” and include the following sectors: educational services, accommodation and food services, arts and entertainment, and recreation sectors.

H.3.2 Estimating Potential Losses

This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to LPT member input) it differs from that of the County overall.

Table H.6 above shows Avila Beach’s exposure to hazards in terms of number and value of structures. San Luis Obispo County’s parcel and assessor data was used to calculate the improved value of parcels. The most vulnerable structures are those in the floodplain (especially those that have been flooded in the past), unreinforced masonry buildings, and buildings built prior to the introduction of modern-day building codes. Impacts of past events and vulnerability to specific hazards are further discussed below (see Section 5 of the Base Plan.)

Drought and Water Shortage

Since the Spanish began settling the area of what is today the Avila Community, drought has posed a risk to those living there. In 1842 Miguel Avila was granted the Rancho San Miguelito where he raised cattle and grew grain. After a significant drought event between 1863-64 decimated Avila’s cattle, he was forced to sell his home and portions of his shoreline property west of the present Town of Avila Beach. In present day, drought and water shortages continue to pose a risk to the Avila community and the services provided by the Avila Beach Community Services District.

The primary sources of water supply for the Avila Beach CSD are surface water sources from the Lopez Lake Reservoir and the State Water Project. The Avila Beach CSD has a total entitlement of 168 acre-feet per year of water allocations; 68 acre-feet per year (AFY) from the Lopez Lake Reservoir and 100 AFY from the State Water Project along with a 100 AFY Drought Buffer. The District typically uses approximately 80 AFY and anticipates build-out demand will be approximately 125 AFY. The State Water Project is a major source of water for all the Central Coast, but it is also considered a supplementary source of water due to hydrologic variability, maintenance and repair requirements that can cause reduced deliveries or a complete shutdown of the delivery system. According to the Avila Community Plan, recent drought events in conjunction with pumping restrictions in consideration of endangered species habitat lowered the 50-100 percent contracted allocations for the Central Coast to 35 percent in 2008 and 40 percent in 2009. The following figure from the Avila Community Plan, shows the existing and forecasted water supply and demand for the five water purveyors within the Avila Community as was described in the County 2014-2016 Resource Management Report.

Figure H.7 Avila Urban Reserve Line Existing and Forecasted Water Supply and Demand

Demand	Avila Beach CSD	Avila Valley MWC	San Miguelito MWC	CSA 12	Port San Luis
FY 2015/2016 Demand (AFY)	74.7 ¹	27.6 ¹	125.5 ¹	68 ²	35
Forecast Demand in 15 Years (AFY)	143	31	359	67	35
Forecast Demand in 20 Years (AFY)	166	31	383	66	67
Buildout Demand (30 Or More Years) (AFY)	162-170 ³	30-32 ³	373-393 ³	65-68 ³	67-69 ³
Supply					
State Water Project ⁴	66 ⁵	20	275	7 ⁶	0
Lopez Lake Reservoir	68	12	0	61	100
Avila Valley Sub-Basin	0	20	118	Uncertain ⁷	0
Total Supply:	134	52	393	68	100
Water Supply Versus Forecast Demand	Water demand projected over 20 years will not equal or exceed the estimated dependable supply. This is due primarily to a lack of information regarding the safe yield of the sub-basin.				
Notes:					
1. See Table II-1. Current year data for agriculture and rural are from 2012.					
2. 2011 data.					
3. The low end of the forecast demand range assumes 5% additional conservation (beyond what has already been accomplished) at buildout for all urban users.					
4. State Water Project average allocation assumes 66 percent of contract water service amount.					
5. Avila Beach CSD has a 100 AFY allocation from the State Water Project, but no drought buffer. Therefore, the 66 percent assumption for State Water Project delivery is 66 AFY.					
6. Seven (7) AFY of SWP water allocated to the San Luis Coastal Unified School District.					
7. Individual water users within CSA 12 boundary could request an exemption to install a private well and pump water from the Avila Valley Sub-basin. It is unknown the number of users with private wells, but it is likely minimal.					

Source: Avila Community Plan, Background Report, August 2018

Drought impacts are wide-reaching and may be economic, environmental, and/or societal. The most significant impacts associated with drought in the planning area are those related to water intensive activities such as wildfire protection, jurisdictional usage, commerce, tourism and recreation. During past drought events in the planning area, water restrictions have been imposed. Drought conditions can also cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding.

Earthquake

According to the Avila Community Plan, there are two fault lines that run through the southern portion of the Avila Community, neither of which are considered active. As a coastal community, there is also a risk of earthquakes offshore and resulting tsunami events (refer to the Tsunami Section below). In 1916 a magnitude 5.1 earthquake occurred offshore of Avila Beach in the San Luis Bay. There is limited data on the event such as if ground shaking was felt and at what intensity. The earthquake reportedly caused smokestacks at the Port San Luis Union Oil Refinery to fall and created a landslide that blocked railroad tracks.

The Diablo Canyon Power Plant is located just north of Avila Beach and is within the proximity of the Hosgri fault line just offshore. The Power Plant was originally designed to withstand a 6.75 magnitude earthquake and has



been upgraded to withstand a 7.5 magnitude earthquake. The Power Plant has in place extensive seismic monitoring and safety systems to shut down quickly in a significant ground shaking event. Refer to: Hazardous Materials below for more information related to the Diablo Canyon Power Plant.

As a coastal community, liquefaction – the result of ground shaking causing fine grained, saturate soils to liquefy and act as a fluid – poses a risk to the Avila Beach CSD. Table H.8 shows the types of properties at moderate risk of liquefaction. Based on this analysis there are 141 properties at moderate risk of liquefaction with a total value of over \$93 million. Residential properties are the most vulnerable property type to liquefaction in Avila Beach, with a combined total of 76 properties located in an area of moderate liquefaction risk and a total value of over \$63 million.

Table H.8 Property Types with Moderate Liquefaction Risk

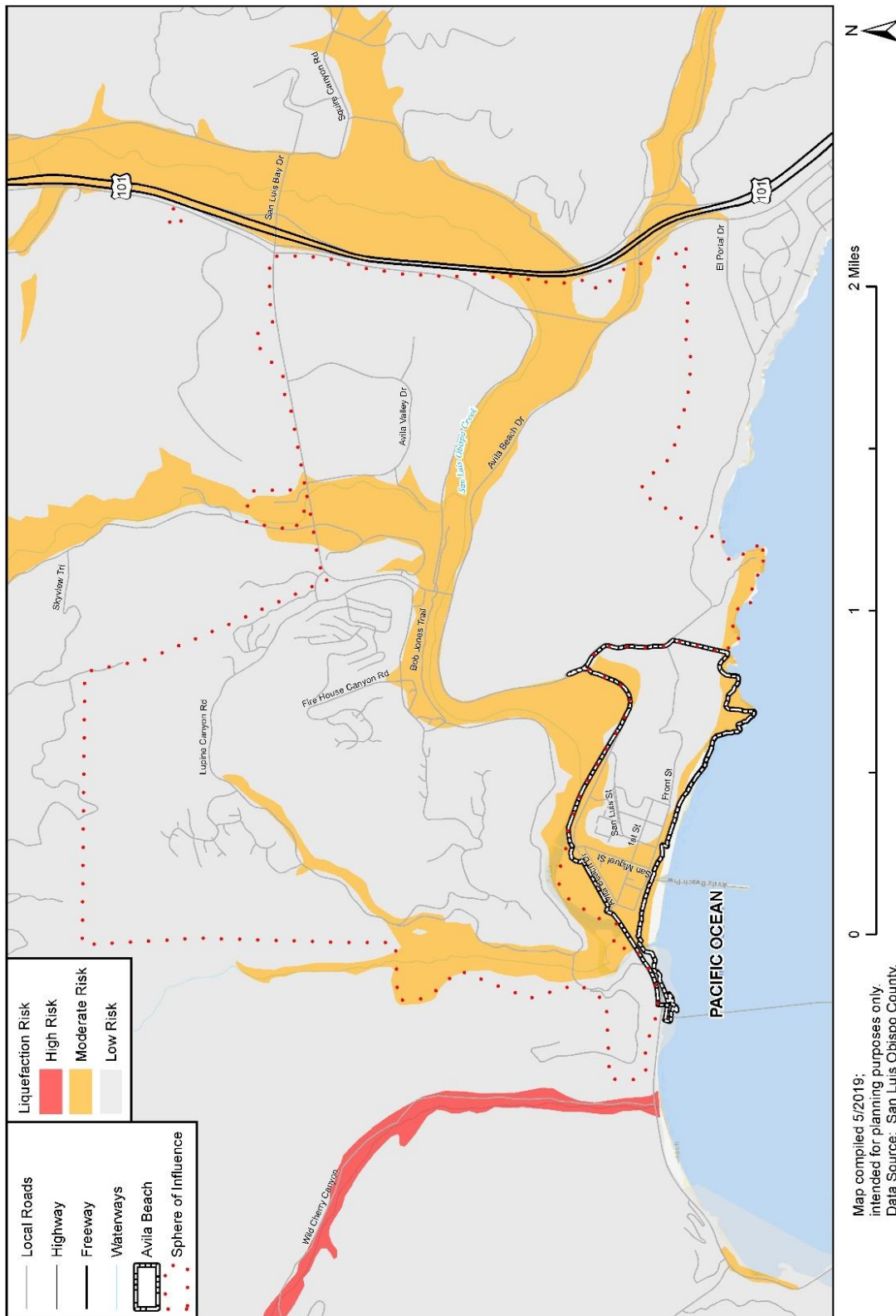
Property Type	Property Count	Improved Value	Content Value	Total Value
Commercial	15	\$7,203,045	\$7,203,045	\$14,406,090
Government/Utilities	14	\$61,794	--	\$61,794
Other/Exempt/Misc.	19	\$9,900,305	--	\$9,900,305
Residential	18	\$6,204,245	\$3,102,123	\$9,306,368
Multi-Family Residential	47	\$14,143,207	\$7,071,604	\$21,214,811
Residential: Other	11	\$22,050,689	\$11,025,345	\$33,076,034
Vacant	17	\$5,820,835	--	\$5,820,835
Total	141	\$65,384,120	\$28,402,116	\$93,786,236

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

The following map depicts the areas of the Avila Community that is at risk of liquefaction. The western portion of the Avila Beach CSD boundary along Avila Beach Drive, the coastline, and areas along the creeks, are designated as areas of moderate potential for liquefaction.



Figure H.8 Areas of Potential Liquefaction Risk





Flood

The Avila Beach community is at risk of both coastal and riverine flooding. The San Luis Obispo Creek, which is 18 miles long and ends at Avila Beach draining into the Pacific Ocean, poses the greatest risk of flooding. The areas adjacent to the Creek have the Combining Designation of a Flood Hazard (FH) and must meet the County standards set forth in Title 23 and the San Luis Bay Coastal Area Plan (Area Plan). According to the Area Plan in the event of a 100-year flood event major flooding will occur throughout the length of the San Luis Obispo Creek. The flooding within the Creek caused significant flood damage in 1969 and 1973. Due to the risk of flooding along the Creek, the Area Plan recommends designating open space land uses adjacent to the floodplain. Road infrastructure is most at risk of being damaged during a flood event in the planning area. The Avila Community Plan lists the following transportation infrastructure where flooding occurs often:

- Avila Beach Drive
- San Luis Bay Drive
- Ontario Road
- Parking Lot in Avila Beach (*Port of San Luis jurisdiction*)
- Intersection of First Street and San Francisco Street

All of the infrastructure listed above suffer from occasional flooding, but the parking lot is reported to flood consistently during the rainy season (January-March). In 2016, the San Luis Obispo County Public Works Department spent \$60,000 pumping water out of the parking lot. The Department created a Conceptual Design Report in 2017 that evaluated three alternatives to address the flooding issue. The final recommendation from the report was for the installation of a permanent pumping system (estimated cost of \$375,000) with projected operations and maintenance cost of approximately \$25,000 annually. The 2017-2018 County Capital Improvement Program (CIP) report identified a long-term flood control project (beyond the 5-year CIP timeframe) that will include a pumping system for the parking lot culvert outfall to mitigate the flooding issue.

Avila Beach does not participate separately in the National Flood Insurance Program (NFIP) but will continue to support the County’s participation in and compliance with the NFIP.

Values at Risk

A flood vulnerability assessment was completed during the 2019 update, following the methodology described in Section 5 of the Base Plan. Table H.9 and Table H.10 summarize the values at risk in the City’s 100-year and 500-year floodplain, respectively. These tables also detail loss estimates for each flood.

Table H.9 Avila Beach CSD’s FEMA 1% Annual Chance Flood Hazard by Property Type

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate
Government/Utilities	5	--	--	\$0	\$0
Total	5	\$0	\$0	\$0	\$0

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis





Table H.10 Avila Beach CSD’s FEMA 0.2% Annual Chance Flood Hazard by Property Type

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate
Commercial	11	\$5,895,667	\$5,895,667	\$11,791,334	\$2,947,834
Government/Utilities	5	\$61,794	--	\$61,794	\$15,449
Other/Exempt/Misc.	15	\$7,605,508	--	\$7,605,508	\$1,901,377
Residential	16	\$5,414,520	\$2,707,260	\$8,121,780	\$2,030,445
Multi-Family Residential	20	\$5,499,258	\$2,749,629	\$8,248,887	\$2,062,222
Residential: Other	11	\$22,050,689	\$11,025,345	\$33,076,034	\$8,269,008
Vacant	17	\$5,820,835	--	\$5,820,835	\$1,455,209
Total	95	\$52,348,271	\$22,377,901	\$74,726,172	\$18,681,543

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

Based on this analysis, the Avila Beach CSD has significant assets at risk of flooding in a 500-year storm. Five (5) improved parcels are located within the 100-year floodplain that are classified as government or utilities properties. An additional ninety-five (95) improved parcels valued at over \$74 million fall within the 500-year floodplain.

Applying the 25 percent damage factor as previously described in Section 5 there is a 0.2 percent chance in any given year of a 500-year flood causing roughly \$75 million in damage (combined damage from both floods). Limitations: This model may include structures in the floodplains that are elevated at or above the level of the base-flood elevation, which will likely mitigate flood damage. Also, the assessed values are well below the actual market values. Thus, the actual value of assets at risk may be significantly higher than those included herein.

Critical Facilities at Risk

Based on GIS analysis there are no critical facilities located in the 100-year or 500-year flood zone.

Landslides and Debris Flow

Most of the Avila community is at moderate to very high potential for a landslide event to occur. As shown in Figure H.9 below, the risk of landslides is concentrated on the eastern portion of the Avila Beach CSD limits. The land uses at moderate to high risk of a landslide event include residential multi-family, the only industrial lot in the community, where the former Union Oil Company tank farm is located as well as the only single-family homes in the jurisdiction, are at moderate to high risk of a landslide event.

Table H.11 Avila Beach CSD’s Moderate Landslide Risk by Property Type

Property Type	Property Count	Improved Value	Content Value	Total Value
Multi-Family Residential	8	\$3,144,278	\$1,572,139	\$4,716,417
Other/Exempt/Misc.	2	--	--	\$0
Residential	15	\$4,037,041	\$2,018,521	\$6,055,562
Total	25	\$7,181,319	\$3,590,660	\$10,771,979

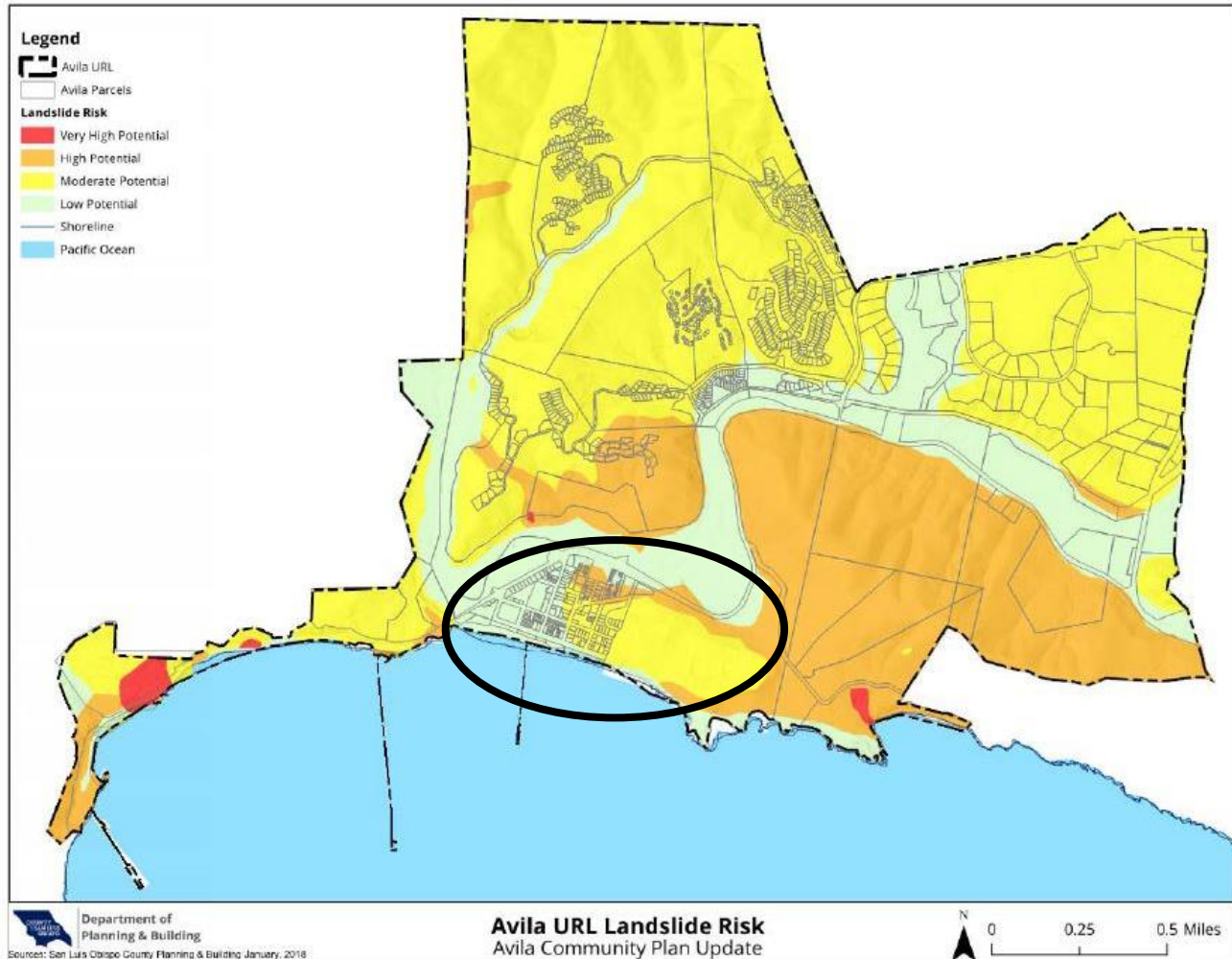
Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

A landslide event along Avila Beach Drive, the only major road into or out of the Town of Avila Beach, could have serious impacts on both visitors and residents as well as impact travel to and from the Port of San Luis and the



Diablo Canyon Power Plant. According to the LPT a massive landslide event that occurred 10 years ago along Avila Beach Drive did cut off access to the Port and Diablo Canyon. The committee noted there is an alternative entrance through Diablo Canyon, but it not designed for hundreds of vehicles passing through for the extended period of time that would be necessary to clean the debris from the roadway caused by the landslide event.

Figure H.9 Avila Beach CSD Landslide Risk



Source: Avila Community Plan, Background Report, August 2018 *The black oval is a representation of the Avila Beach CSD boundaries

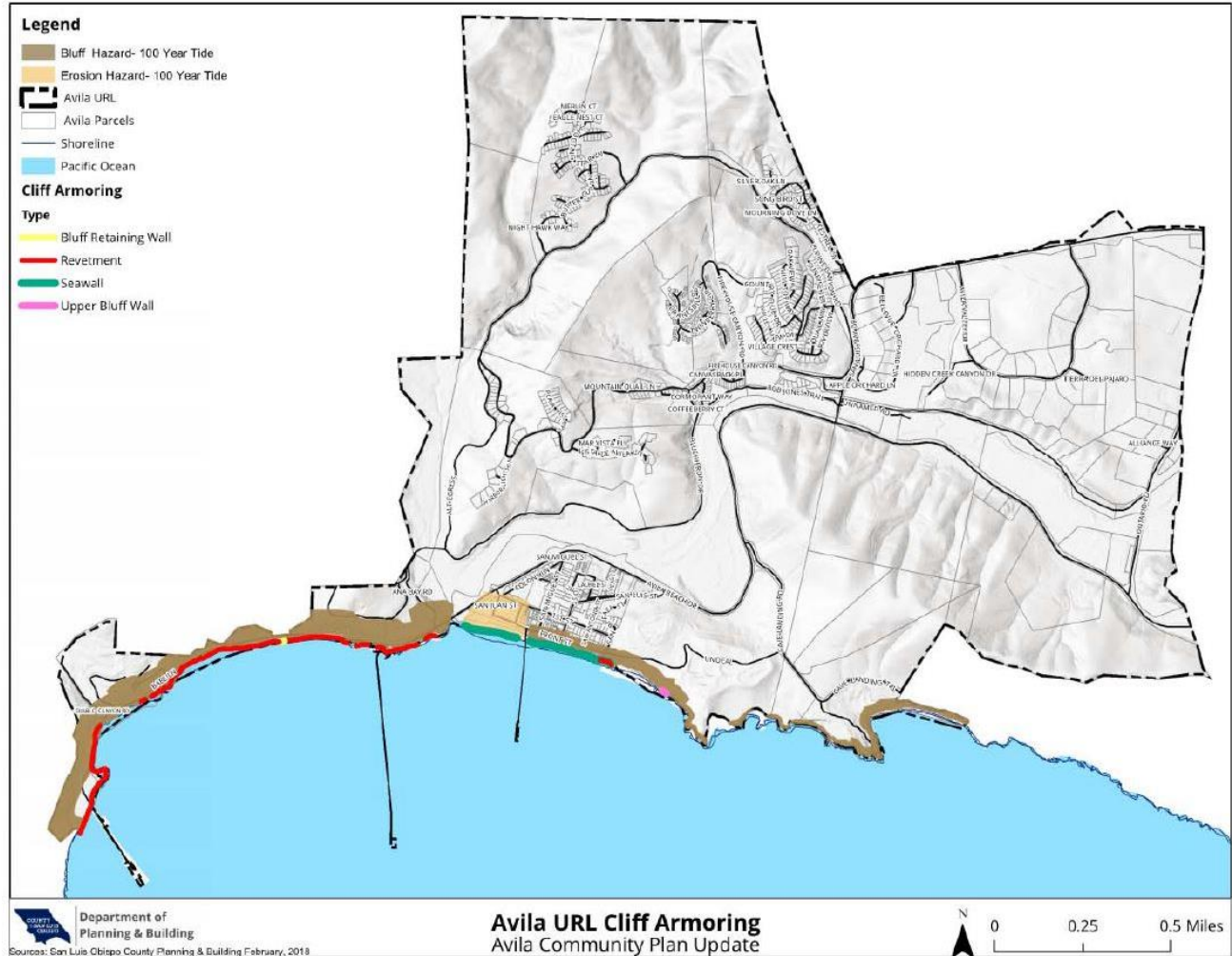
Coastal Storm/Coastal Erosion/Sea Level Rise

As a low-lying coastal community Avila Beach is exposed to a range of coastal hazards, including coastal storms and coastal erosion. As described in the Base Plan (refer to Section 5), these hazards are projected to become more severe when combined with sea level rise. The Avila Beach community has dealt with the aftermath of coastal storms. A coastal storm in March 1983 caused severe damage to the Union Oil Pier. Refer to the Base Plan for more information including pictures of the damage to the pier from the 1983 storm, as well as the Hazard Potential of Jurisdictions and Urban Areas with the San Luis Obispo Coast Table for analysis specific to the Avila community.

The Avila coast is considered to be at moderate risk of coastal damage from storm waves. This has been mitigated slightly through coastal armoring including a series of bluff and sea walls between Front Street and

shoreline. Because of this armoring it is expected the community will experience lesser impacts of bluff erosion compared to other coastal communities. The following figures depict the areas within the Avila Community that are at risk of coastal erosion and areas where coastal armoring is in place.

Figure H.10 Areas at Risk of Coastal and Bluff Erosion and Coastal Armoring



Source: Avila Community Plan, Background Report, August 2018

Rising sea level as a result of climate change is projected to increase the intensity of coastal storms, flooding, inundation and erosion along the Avila coast. The areas with the highest potential of experiencing coastal hazards include the shoreline, cliffs and low-lying areas adjacent to the San Luis Obispo Creek which are vulnerable to flooding without the rising sea levels. The following figure shows the increased risk of flooding due to projected sea level rise. Refer to the Base Plan, Chapter 5 Hazard Identification and Risk Assessment, Coastal Storm/Coastal Erosion/Sea Level Rise Section for results of the vulnerability analysis.

As part of the 2019 HMP planning effort, a sea level rise risk assessment was completed to determine how sea level rise may affect coastal jurisdictions and critical facilities and how coastal flooding might be exacerbated in the future. Table H.12 and Table H.13 summarize the properties at risk of inundation by sea level rise and sea level rise combined with a 1% annual chance coastal flood. The area of inundation by sea level rise and sea level rise combined with the 1% coastal flood are shown in Figure H. 11 and Figure H. 12, respectively. No critical



facilities were determined to be at risk in the sea-level rise scenarios. See Section 5.3.4 Coastal Storm/Coastal Erosion/Sea Level Rise in the base plan for more details on the scenarios and data sources used for this analysis.

Table H.12 Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Commercial	--	--	10	--	8	12
Government/Utilities	--	--	7	1	6	7
Other/Exempt/Misc.	--	--	13	--	12	14
Residential	--	--	14	--	9	15
Multi-Family Residential	--	--	19	--	15	28
Residential: Other	--	--	10	--	10	11
Vacant	--	--	13	--	11	16
Total	--	--	86	1	71	103

Source: Wood analysis with USGS CoSMoS 3.1 data

Table H.13 Improved Values of Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Commercial	--	--	\$4,744,109	--	\$2,427,671	\$6,267,359
Government/Utilities	--	--	\$61,794	--	\$61,794	\$61,794
Other/Exempt/Misc.	--	--	\$5,342,495	--	\$5,342,495	\$7,605,508
Residential	--	--	\$5,286,138	--	\$4,001,139	\$5,394,363
Multi-Family Residential	--	--	\$5,157,029	--	\$4,518,175	\$8,464,474
Residential: Other	--	--	\$7,193,724	--	\$7,193,724	\$22,050,689
Vacant	--	--	\$3,248,427	--	\$2,937,427	\$5,744,835
Total	--	--	\$31,033,716	--	\$26,482,425	\$55,589,022

Source: Wood analysis with USGS CoSMoS 3.1 data



Figure H. 11 Avila Beach Sea Level Rise Scenario Analysis: Tidal Inundation Only

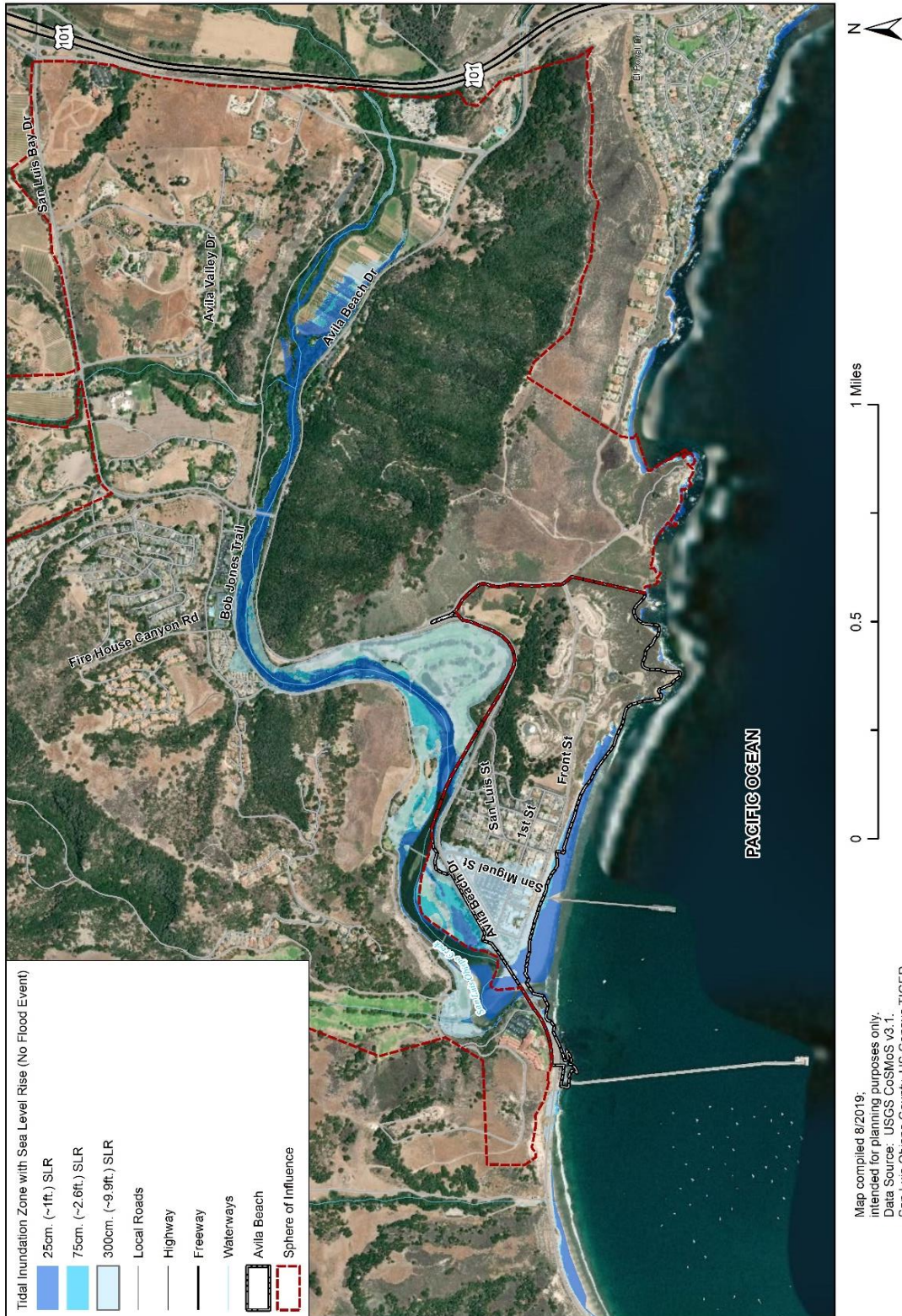
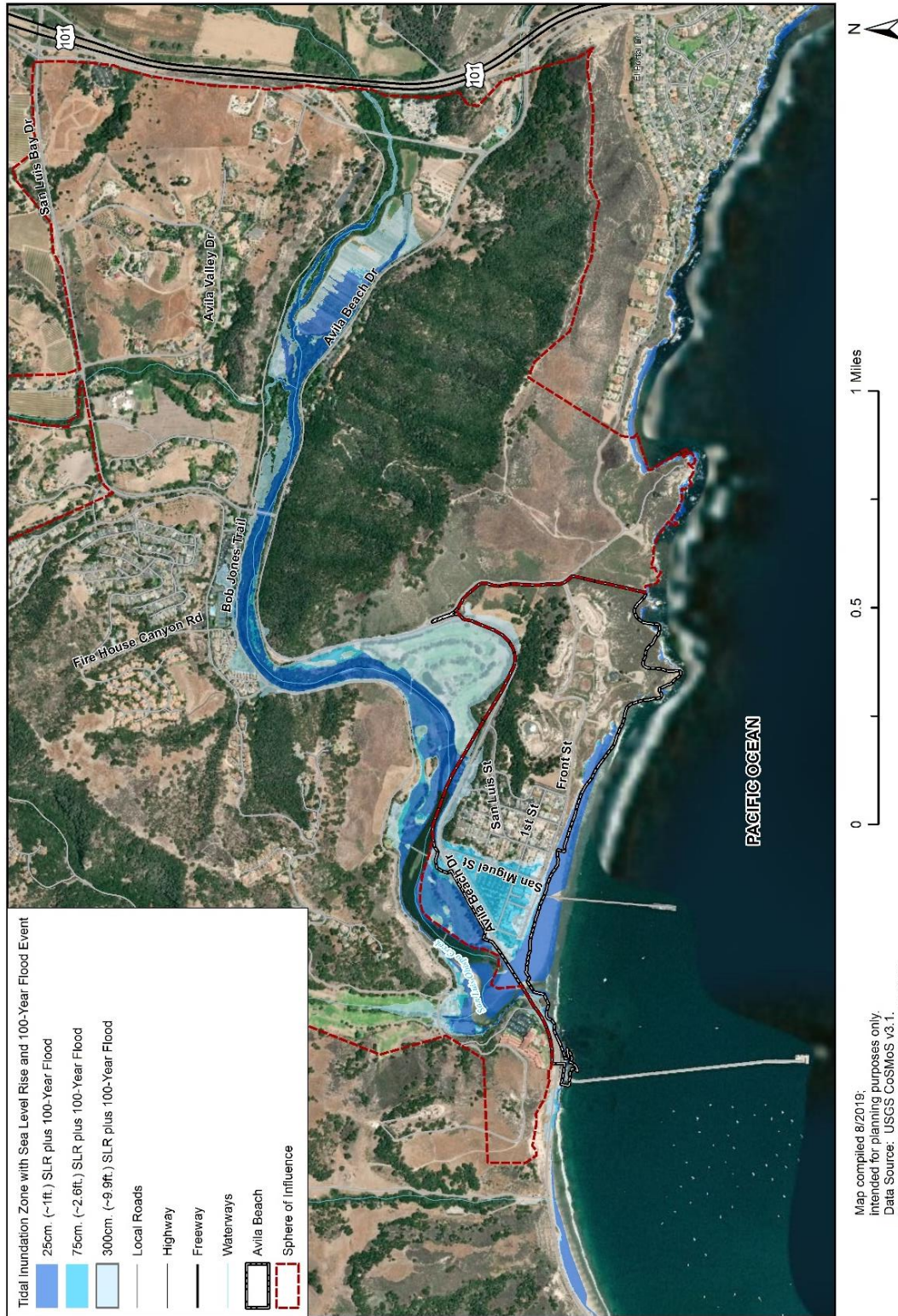


Figure H. 12 Avila Beach Sea Level Rise Scenario Analysis: Tidal Inundation and 1% Annual Chance Flood





Tsunami

Tsunami inundation poses a risk to all coastal communities in the County of San Luis Obispo. Offshore faults and related seismic activity could cause a tsunami event off the coast of Avila Beach, even if the faults are thousands of miles away. Avila Beach is one of the eight Tsunami Planning Area identified by the County’s Tsunami Response Plan. According to the County’s Tsunami Response Plan the areas within the Avila Beach community that are most vulnerable to a tsunami event include areas inland within and adjacent to San Luis Obispo Creek; this includes Avila Beach Drive, the only major road out of the beach area (refer to Figure H.13). There have been three recorded tsunami events between 1946 and 1964 that have impacted the Avila Beach community. Refer to Section 5 of the Base Plan for more information related to the past tsunami events and analysis on future vulnerability.

The following table breaks down the tsunami risk for the Avila Beach Community by property type.

Table H.14 Avila Beach’s Tsunami Risk by Property Type

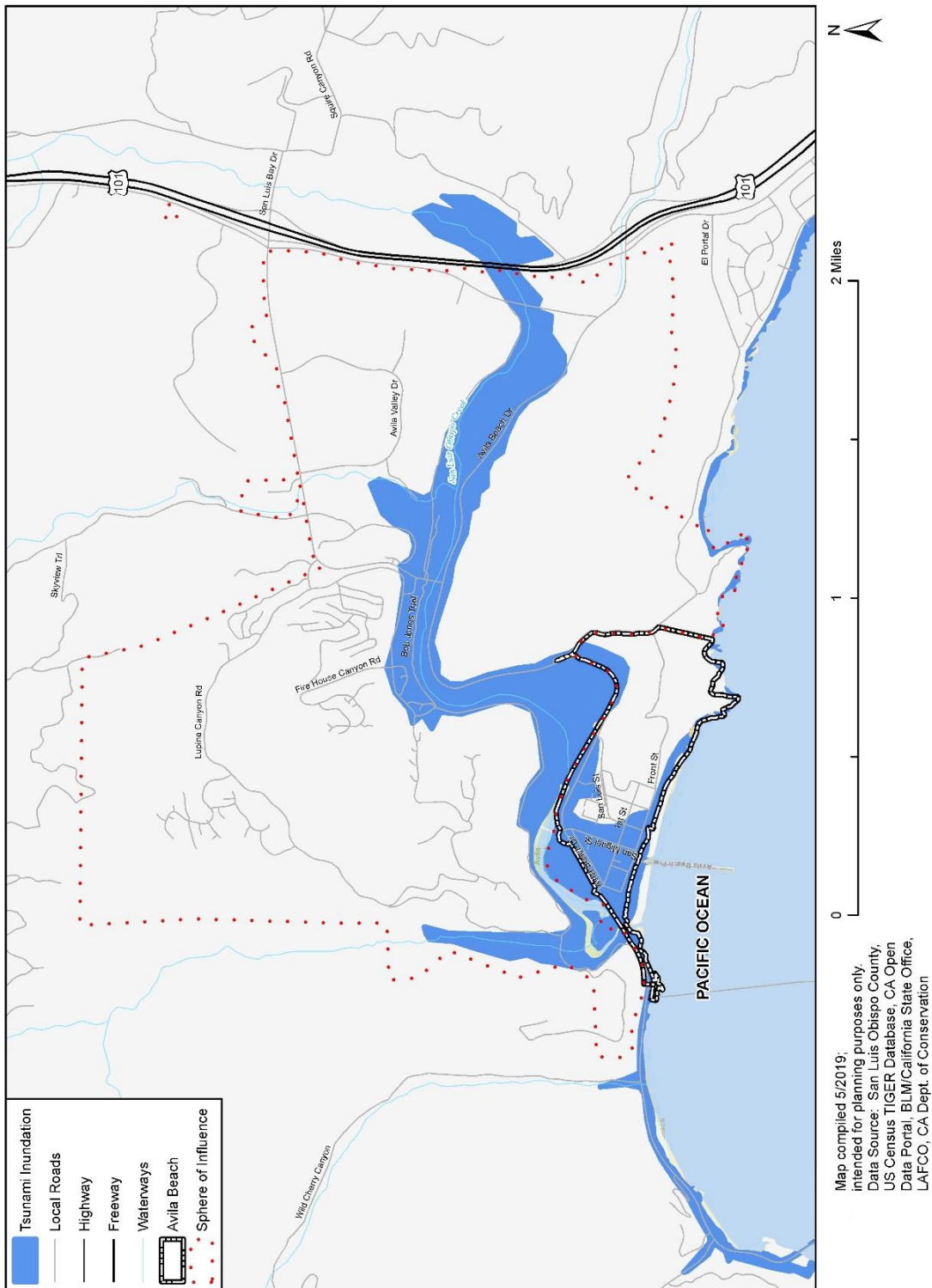
Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate
Commercial	15	\$7,203,045	\$7,203,045	\$14,406,090	\$14,406,090
Government/Utilities	13	\$61,794	--	\$61,794	\$61,794
Other/Exempt/Misc.	21	\$10,502,046	--	\$10,502,046	\$10,502,046
Residential	25	\$7,213,323	\$3,606,662	\$10,819,985	\$10,819,985
Multi-Family Residential	50	\$15,084,608	\$7,542,304	\$22,626,912	\$22,626,912
Residential: Other	12	\$24,819,528	\$12,409,764	\$37,229,292	\$37,229,292
Vacant	17	\$5,820,835	--	\$5,820,835	\$5,820,835
Total	153	\$70,705,179	\$30,761,775	\$101,466,954	\$101,466,954

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

Based on this analysis the western portion of Avila Beach is at a significant risk to a tsunami event. There are 153 properties vulnerable to the impacts of a tsunami with a combined value of over \$101 million. Of the properties at risk, 87 are residential properties, with a majority being multi-family residential with a combined loss estimate of over \$70 million.



Figure H.13 Areas of Potential Tsunami Inundation



Wildfire

Wildfire is a high significance hazard for the Avila Beach Community Services District. There is no fire history in the community. But due to factors such as the Irish Hills, a notable topographic feature north of Avila Beach, Cal



FIRE has designated the Avila Beach community as being at an increased risk from wildfires and a priority community to work with to prepare and mitigate potential fire risk. According to the County’s Community Wildfire Protection Plan (2019), the prevailing wind patterns is another dominant factor that influences the wildfire risk in Avila Beach. A fire that originates in the Los Osos area or at the Diablo Canyon Power Plant could be pushed by prevailing winds southeast towards the Avila Beach community.

Analysis using GIS was used to create the following tables quantifies the potential losses by wildfire severity zones and property type. Based on the analysis there are 239 properties in Avila Beach that are located within the moderate to high severity zones with a combined value of \$143,612,173. There is one (1) critical facility, an FM transmission tower that is located in the high severity wildfire zone.

Table H.15 Avila Beach CSD’s Wildfire Risk by Property Type – Moderate Severity SRA Zone

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate
Commercial	15	\$7,203,045	\$7,203,045	\$14,406,090	\$14,406,090
Government/Utilities	14	\$61,794	--	\$61,794	\$61,794
Other/Exempt/Misc.	20	\$10,502,046	--	\$10,502,046	\$10,502,046
Residential	27	\$7,850,583	\$3,925,292	\$11,775,875	\$11,775,875
Multi-Family Residential	34	\$11,403,608	\$5,701,804	\$17,105,412	\$17,105,412
Residential: Other	11	\$24,360,528	\$12,180,264	\$36,540,792	\$36,540,792
Vacant	15	\$5,557,835	--	\$5,557,835	\$5,557,835
Total	136	\$66,939,439	\$29,010,405	\$95,949,844	\$95,949,844

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

Table H.16 Avila Beach CSD’s Wildfire Risk by Property Type – High Severity SRA Zone

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate
Government/Utilities	3	--	--	\$0	\$0
Other/Exempt/Misc.	5	--	--	\$0	\$0
Residential	36	\$11,468,060	\$5,734,030	\$17,202,090	\$17,202,090
Multi-Family Residential	52	\$18,320,256	\$9,160,128	\$27,480,384	\$27,480,384
Residential: Other	3	\$1,772,192	\$886,096	\$2,658,288	\$2,658,288
Vacant	4	\$321,567	--	\$321,567	\$321,567
Total	103	\$31,882,075	\$15,780,254	\$47,662,329	\$47,662,329

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

Table H.17 Avila Beach CSD’s Critical Facilities in High Wildfire Hazard Zone

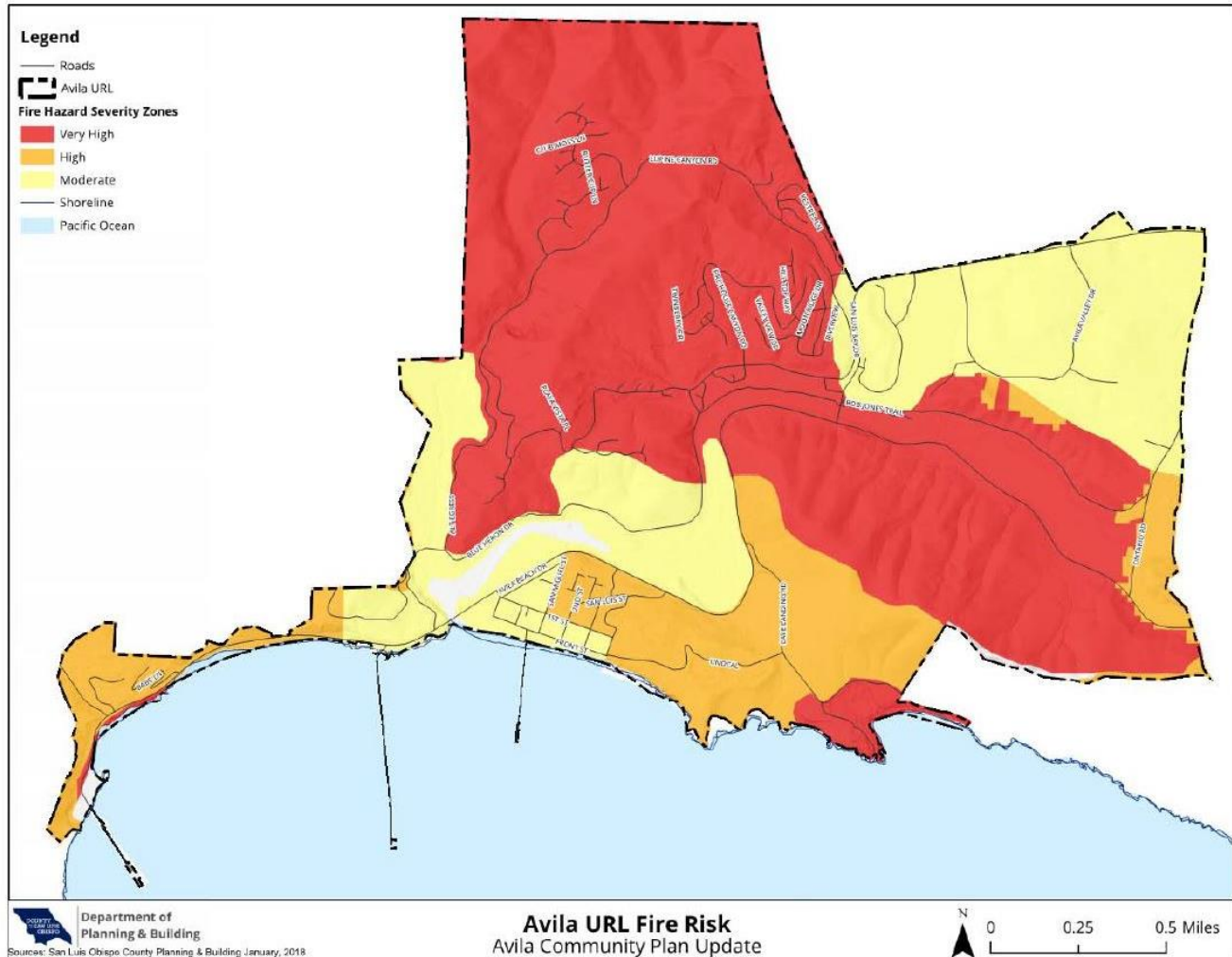
Facility Type	Count
FM Transmission Tower	1
Total	1

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

The figure below depicts the wildfire risk for the Avila Community.



Figure H.14 Avila Beach CSD Wildfire Risk



Source: Avila Community Plan, Background Report, August 2018

Human Caused: Hazardous Materials

The Avila Beach community has a history of hazardous material incidents. The California State Water Resources Control Board has identified seven (7) sites with hazardous materials that may contaminate groundwater supplies. Six of the identified sites have been closed and one remains an open case, site of the former Unocal Tank Farm site which contained twenty-two (22) storage units for over 90 years and were a dominate visual feature in Avila Beach. After an oil spill that was caused by Unocal (a subsidiary of Chevron) resulted in extensive cleanup of Avila Beach including removing and rebuilding the entire commercial district, the tanks were removed, and the Tank Farm site was used to support the cleanup efforts. Today, the area is the one industrial zone property in Avila Beach and is completely fenced off to the public. Chevron maintains the limited sewage disposal system and fire protection facilities for the site and receives water from the Avila Beach Community Services District. In 2013 Chevron applied to re-develop the site into a resort facility. The County of San Luis Obispo Planning Department held a well-attended CEQA scoping meeting in 2016. Since the initial scoping meeting, Chevron has not made any additional efforts to re-develop the site. According to the Avila Beach Community Plan Background Report (2018) no progress has been made yet.

Figure H.15 Avila Beach Community Evolution, 1996 – 2000



1996



2000

Source: San Luis Obispo Tribune, David Middle Camp

Figure H.16 Avila Beach During Unocal Cleanup, 1999



Source: San Luis Obispo Tribune, Jayson Mellom



The Diablo Canyon Nuclear Power Plant, the state’s only operating nuclear power plant is located west of Avila Beach. Accidental release of nuclear materials continues to be a concern for the Avila community, although the Power Plant has extensive seismic monitoring and safety systems in place and has been retrofitted to withstand a 7.5 magnitude earthquake. Avila Beach Drive is currently the only access to the Diablo Canyon Power Plant, which has also caused concern within the community if an evacuation were to happen. The Diablo Canyon Nuclear Power Plant is scheduled to be closed by 2025. Even with the coming closure, the County of San Luis Obispo Office of Emergency Services has done extensive planning in case of an emergency at the Power Plant. Refer to Section 5 of the Base Plan for more information.

H.4 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory which of these policies or programs were in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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. In summarizing current capabilities and identifying gaps, the jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The Avila Beach CSD capabilities are summarized below.

H.4.1 Regulatory Mitigation Capabilities

Table H.18 identifies existing regulatory capabilities the District has in place to help with future mitigation efforts. Note, many of the regulatory capabilities that can be used for the District are within the County’s jurisdiction. Refer to Section 6 Capability Assessment of the Base Plan for more information related to the County’s mitigation capabilities.

Table H.18 Avila Beach CSD Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	Yes	SLO County General Plan; Coastal Zone Framework
Zoning ordinance	Yes	Coastal Zone Land Use Ordinance
Subdivision ordinance	No	
Growth management ordinance	No	
Floodplain ordinance	N/A	
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	County
Building code	Yes	County
Fire department ISO rating	Yes	6 (Cal Fire/SLO County Fire Department)
Erosion or sediment control program	No	
Stormwater management program	No	
Site plan review requirements	No	
Capital improvements plan	Yes	





Regulatory Tool	Yes/No	Comments
Economic development plan	Yes	Avila Beach Specific Plan 2001, Chapter 6 Economic Recovery Strategy
Local emergency operations plan	Yes	County Operation Plans
Other special plans	Yes	Avila Beach Community Plan - Background Report; August 2019; Avila Beach Specific Plan 2001;
Flood Insurance Study or other engineering study for streams	No	
Elevation certificates (for floodplain development)	No	

Source: Wood Data Collection Guide, 2019

H.4.2 Administrative/Technical Mitigation Capabilities

Table H.19 identifies the personnel responsible for activities related to mitigation and loss prevention in the Avila Beach Community Services District.

Table H.19 Avila Beach CSD Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	SLO County Public Works and Planning & Building
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Avila Beach CSD General Manager/District Engineer
Planner/engineer/scientist with an understanding of natural hazards	Yes	SLO County Planning and Building
Personnel skilled in GIS	Yes	SLO County
Full time building official	Yes	SLO County Planning and Building
Floodplain manager	N/A	
Emergency manager	Yes	SLO County Emergency Services
Grant writer	No	
Other personnel	N/A	
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	SLO County
Warning systems/services (Reverse 9-11, outdoor warning signals)	Yes	SLO County

Source: Wood Data Collection Guide, 2019

H.4.3 Fiscal Mitigation Capabilities





Table H.20 identifies financial tools or resources that the CSD could potentially use to help fund mitigation activities.





Table H.20 Avila Beach CSD Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	No
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	No
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Incur debt through general obligation bonds	No
Incur debt through special tax bonds	No
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

H.4.4 Mitigation Outreach and Partnerships

Responsible Water Use Outreach Program: The Avila Beach Community Services District runs a responsible water use outreach program to encourage conservation and efficiency by sending out public notices for water conversation and responsible water use with monthly water and sewer bills.

Monitor Water Supply: The District monitors the amount of water purchased and the amount of water sold each month. This alerts the District to the potential for leaks and water supply losses.

Plan for Drought: The District has developed a Water Shortage Emergency Action Plan. The Plan includes water supply trigger levels and authorizes the District to take drought related actions to limit water use and in extreme cases limit new development.

Map and Assess Vulnerability to Tsunami: Via on-call consultants, the District has access to GIS mapping tools that can identify areas that are vulnerable to tsunamis inundation.

Protect District Buildings and Infrastructure: The District’s WWTP is located in an area that could be impacted by a tsunami. The District has taken steps to protect structures from tsunamis; informed staff on emergency procedures; and provided vertical evacuation options.

Wildfire Management: The District implements their fire management responsibilities via a contact with Cal-Fire. Cal Fire management staff attends the District’s monthly Board of Director meetings and always provide suggested mitigation measures for managing and mitigating Wildfire risks.

Fire-Resistant Construction: The District encourages customers and implements the use fire-resistant construction materials as part of their capital improvement program.

Create Defensible Space Around Structures and Infrastructure: The District maintains a fire buffer around all District facilities and buildings and the District routinely inspections the facilities.

Wildfire Risk Awareness: As noted above, Cal Fire Staff attend all District Board of Director meetings and provide fire safe suggestions; offer to conduct local outreach; and assist with the preparation of Fire Counsel Grant applications to reduce wildfire hazards.

H.4.5 Opportunities for Enhancement

Based on the capability assessment, the Avila Beach Community Services District has several existing mechanisms in place that already help to mitigate hazards. There are also opportunities for the District to expand or improve on these policies and programs to further protect the community. Future improvements may





include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform District staff and board members on how best to integrate hazard information and mitigation projects into the District policies and ongoing duties of the District. Continuing to train District staff on mitigation and the hazards that pose a risk to the Avila Beach Community Services District will lead to more informed staff members who can better communicate this information to the public.

H.5 Mitigation Strategy

H.5.1 Mitigation Goals and Objectives

The Avila Beach CSD adopts the hazard mitigation goals and objectives developed by the HMPC and described in Section 7 Mitigation Strategy.

H.5.2 Mitigation Actions

The planning team for the Avila Beach Community Services District identified and prioritized the following mitigation actions based on the risk assessment. Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. 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. Actions with an '*' are those that mitigate losses to future development.

As noted in Section H.4.4 Mitigation Outreach and Partnerships the District has done previous work to mitigate drought, tsunami, and wildfire. Due to limited resources and District responsibilities, including limited staff time, the Avila Beach CSD has chosen not to undertake additional mitigation actions against drought, tsunami, and wildfire at this time.



Table H. 21 Avila Beach Community Service District’s Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/Implementation Notes
AB.1	Coastal Storm/Coastal Erosion/Sea Level Rise; Flood; Landslide and debris flow; Earthquake	Avila Beach Revetment Repairs to ensure Avila Beach Drive doesn't fail due to erosion and undermining or landslide.	County of SLO; Port San Luis Harbor District; Avila Beach CSD	Over \$1,000,000	County of SLO; SLOCOG; PSLHD;	Medium	More than 5 yrs.	New Partner with Port San Luis Harbor District on solution (see Action PS.3 in the Harbor District’s annex). Survey existing jetty; develop repair and augmentation plan; repair revetment. The road is also at risk of landslide. Benefits: Ensures The road is essential for access to Diablo Canyon NPP and Port San Luis.
AB.2	Coastal Storm/Coastal Erosion/Sea Level Rise; flood	Avila Beach Drainage Improvements to include a solution for drainage which accumulates along Beach Colony Lane and the Avila Parking Lot; install pump station or diversion for flood waters; identify funding for long-term operations and maintenance.	County of SLO; Port San Luis Harbor District; Avila Beach CSD Avila Beach property owners	\$500,000 to \$1,000,000	SLO County; property owners; FEMA HMA	Medium	More than 5 yrs.	New Partner with Port San Luis Harbor District on solution (see Action PS.4 in the Harbor District’s annex). Benefits: Flood prevention in low-lying areas in Avila Beach; reduction of health hazards caused by flooding





H.6 Implementation and Maintenance

Moving forward, the Avila Beach Community Services District will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Section 8 in the Base Plan.

H.6.1 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 Community Services District to help inform updates of the Avila Beach Community Plan and in the development of additional local plans, programs and policies. Understanding the hazards that pose a risk and the specific vulnerabilities to the jurisdiction will help in future capital improvement planning for the District. The County Planning and Building Department may utilize the hazard information when reviewing a site plan or other type of development applications with the boundaries of the Avila Beach Community Services District area. As noted in Section 8 Implementation and Monitoring the HMPC representatives from the Avila Beach Community Services District 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 HMPC plan review meeting.

H.6.2 Monitoring, Evaluation and Updating the Plan

The Avila Beach Community Services District will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Section 8 of the Base Plan. The District will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The CSD General Manager will be responsible for representing the Community Services District in the County HMPC, and for coordination with County staff and departments during plan updates. The Avila Beach Community Services District 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.





I.1 District Profile

I.1.1 Mitigation Planning History and 2019 Process

This Annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan Update. The General Manager of the Ground Squirrel Hollow Community Services District (CSD) was the representative on the County HMPC and took the lead for developing the plan and this annex in coordination with the Ground Squirrel Hollow Community Services District Local Planning Team. The local (District) Planning Team will be responsible for implementation and maintenance of the plan. See Table I.1 for more information on the local Planning Team.

Table I.1 Ground Squirrel Hollow CSD Hazard Mitigation Plan Planning Team

Department or Stakeholder	Title
Ground Squirrel Hollow CSD	General Manager

More details on the planning process followed and how the jurisdictions, services districts and stakeholders participated can be found in Chapter 3 of the Base Plan, along with how the public was involved during the 2019 update.

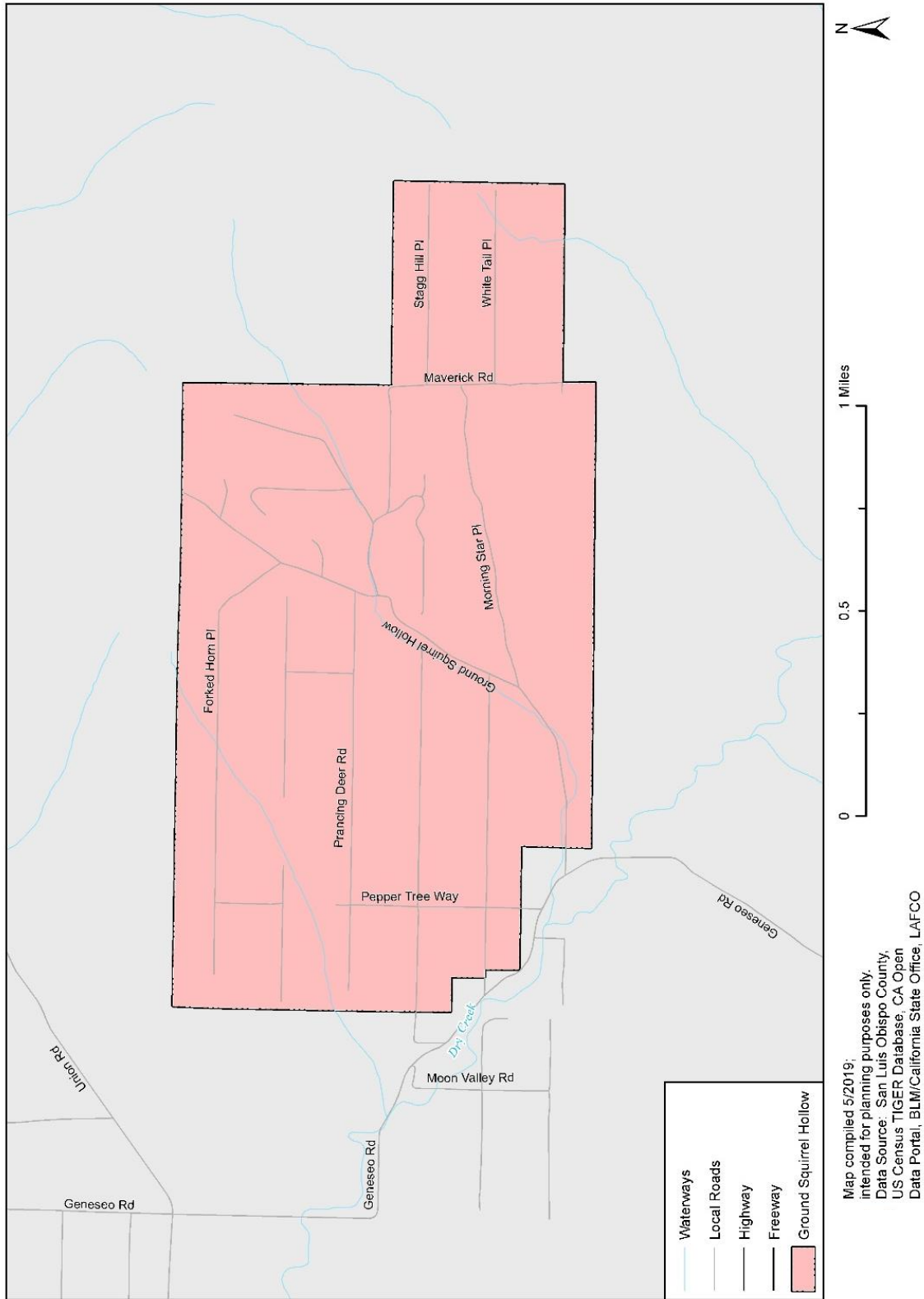
I.1.2 District Overview

Ground Squirrel Hollow is a rural community located about ten miles east of the City of Paso Robles. The Ground Squirrel Hollow Community Services District was established in June 2004 for the purpose of providing road maintenance services to residents within its respective boundaries. In March 2014, the District began providing solid waste services to residents located within its boundaries. The District strives to provide these services in the most cost-effective and efficient manner possible. The District is governed by an elected Board of Directors and is managed by a general manager and a member of the County Board of Supervisors. The District serves 375 homes within its boundaries. Figure I.1 shows the Ground Squirrel Hollow Community Services District (CSD) boundaries.





Figure I.1 Ground Squirrel Hollow Community Services District



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office, LAFCO





I.1.3 Development Trends

The District is almost 70% developed, with 375 of the 525 rural residential parcels within the Ground Squirrel Hollow CSD having been developed. The Planning Team noted that several of the undeveloped parcels do not have frontage on an improved road. Developing those parcels would require building the necessary access to minimum District standards (20’ wide double chip seal), and the District would then take ownership and maintain the road in perpetuity.

I.1.4 Other Community Planning Efforts

Coordination and synchronization with other community planning mechanisms and efforts are vital to the success of this plan. To have a thorough evaluation of hazard mitigation practices already in place, appropriate planning procedures should also involve identifying and reviewing existing plans, policies, regulations, codes, tools, and other actions designed to reduce a community’s risk and vulnerability from natural hazards.

As an unincorporated community, the Ground Squirrel Hollow CSD is referenced in other County planning documents and regulated by County policies and planning mechanisms. Integrating existing planning efforts, mitigation policies, and action strategies into this annex establishes a credible, comprehensive document that weaves the common threads of a community’s values together. The development of this jurisdictional annex involved a comprehensive review of existing plans, studies, reports, and initiatives from San Luis Obispo County and the Ground Squirrel Hollow community that relate to hazards or hazard mitigation. A high-level summary of the key plans, studies and reports is summarized in Table I.2. Information on how they informed the update are noted and incorporated where applicable.

Table I.2 Summary of Review of Key Plans, Studies and Reports

Plan, Study, Report Name	How the Document Informed this Annex
County of San Luis Obispo Local Hazard Mitigation Plan (2014)	Informed past hazard event history.
Unit Strategic Fire Plan – CAL FIRE/San Luis Obispo County Fire (2018)	Informed wildfire vulnerability assessment
Community Wildfire Protection Plan – San Luis Obispo County (2019)	Informed wildfire vulnerability assessment

The Ground Squirrel Hollow CSD District Codes are the main planning mechanism to regulate development within the District’s boundaries. In addition to the standards within the District Code, the following planning mechanisms regulate future and existing development and activities within the Ground Squirrel Hollow CSD planning area.

- California Government Code Section 61100(c)
- California Government Code Section 61100(i)
- Solid Waste Disposal Code of Ordinances
- Ground Squirrel Hollow CSD Developer’s Guide
- Various Ground Squirrel Hollow CSD Resolutions
- San Luis Obispo County Public Improvement Standards

Refer to Section I.4 Capability Assessment as well as the Base Plan for more information on the plans, policies, regulations and staff that govern the Ground Squirrel Hollow CSD.





1.2 Hazard Identification and Summary

The Ground Squirrel Hollow CSD planning team identified the hazards that affect the District and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to the Ground Squirrel Hollow CSD (see Table I.3). There are no hazards that are unique to the District.

Table I.3 Ground Squirrel Hollow CSD – Hazard Summaries

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Adverse Weather	Limited	Likely	Negligible	Medium
Landslides and Debris Flow	Limited	Highly Likely	Negligible	Medium
Earthquake	Limited	Occasional	Negligible	Medium
Wildfire	Extensive	Occasional	Critical	Medium
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		

1.3 Vulnerability Assessment

The intent of this section is to assess the Ground Squirrel Hollow Community Services District’s vulnerability separately from that of the planning area, which has already been assessed in Section 5 Hazard Identification and Risk Assessment (HIRA) in the base plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance.

The information to support the HIRA portion of this Annex was collected through a Data Collection Guide, which was distributed to each participating municipality or district to complete during the planning process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact anywhere within the County, as well as to rank the hazards and identify the related vulnerabilities unique to each jurisdiction/district. In addition, the Ground Squirrel Hollow CSD Planning Team members were asked to share information on past significant hazard events that have affected the District.





Each participating jurisdiction and district were in support of the main hazard summary identified in the Base Plan (See Chapter 5). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction (See Table I.3). Identifying these differences helps the reader to differentiate the jurisdiction's risk and vulnerabilities from that of the overall County.

Note: The hazard "significance" reflects overall ranking for each hazard and is based on the Ground Squirrel Hollow CSD planning team input from the Data Collection Guide and the risk assessment results compiled during the planning process (see Chapter 5 of the Base Plan), which included more detailed quantitative analyses with best available data. The hazard summaries in Table I.3 reflect the hazards that could potentially affect the District. The discussion of vulnerability for each of the hazards listed is in Section I.3.2 Estimating Potential Losses.

The hazard summaries in Table I.3 reflect the hazards that could potentially affect the District. Those of Medium or High significance for the Ground Squirrel Hollow CSD are identified below. The discussion of vulnerability for each of the following hazards is in I.3.2 Estimating Potential Losses.

- Adverse Weather
- Landslides and Debris Flow
- Earthquake/Liquefaction
- Wildfire

Other Hazards

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 in this plan and are not assessed individually for specific vulnerabilities in this section. In the Ground Squirrel Hollow CSD, agricultural pests and plant diseases and biological agents are the only hazard ranked as a low significance for the Ground Squirrel Hollow community.

Additionally, the Planning Team decided to rate several hazards as Not Applicable (N/A) to the planning area due to lack of exposures, vulnerability, or no probability of occurrence. The following hazards were ranked as Not Applicable for the Ground Squirrel Hollow Community Services District.

- Dam failure
- Drought
- Flooding
- Subsidence
- Tsunami and Seiches
- Coastal Storm/Coastal Erosion/Sea Level Rise

I.3.1 Assets at Risk

This section considers the District's assets at risk, including values at risk, critical facilities and infrastructure, historic assets, economic assets, and growth and development trends. See Section 5.2 of the Base Plan (Asset Summary) for more details and background on the parcel summarization, analysis, and datasets available.

Values at Risk

The following data on property exposure is derived from the San Luis Obispo County 2017 Parcel and Assessor data. This data should only be used as a guideline to overall values in the Community Services District as the information has some limitations. The most significant limitation is created by 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 likely low and does not reflect current market value of properties. 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. Table I.4 shows



the exposure of properties (e.g., the values at risk) broken down by property type for the Ground Squirrel Hollow Community Services District.

Table I.4 2019 Property Exposure for Ground Squirrel Hollow CSD by Property Types

Property Type	Parcel Count	Improved Value	Content Value	Total Value
Government/Utilities	1	--	--	\$0
Mobile/Manufactured Homes	16	\$2,140,722	\$1,070,361	\$3,211,083
Residential	358	\$84,252,270	\$42,126,135	\$126,378,405
Vacant	1	\$3,308	--	\$3,308
Total	376	\$86,396,300	\$43,196,496	\$129,592,796

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor's Office data 2019

Critical Facilities and Infrastructure

A critical facility is one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. The four types of Critical Facilities categorized by San Luis Obispo County and its jurisdictions' and districts' planning teams are: Emergency Services, High Potential Loss Facilities, Lifeline Utility Systems, and Transportation Systems. Refer to Section 5.2 of the base plan for more information on the assets used throughout this annex and the county-wide analysis. No critical facilities in the Ground Squirrel Hollow Community Services District were found based on San Luis Obispo County GIS data and structures obtained from the Homeland Infrastructure Foundation-Level Dataset (HIFLD).

Transportation and Lifeline Facilities

The Ground Squirrel Hollow Planning Team identified the road system, with a replacement value of \$3 million, as critical to the community. Prior to the January 2017 storm, half of the District's roads were constructed from Class II Base material and required substantial and expensive maintenance. In 2017, the District secured private financing and constructed the Chip Seal Project, which added base and an asphalt double-chip seal to those roads. Despite being better protected from winter weather, all the District's roads will need periodic maintenance (chip seal, cape seal, and/or fog seal overlays) from time to time in order to achieve a life expectancy beyond the payback period of the financing. One concern of the Planning Team is that available funding will not be adequate to provide the needed maintenance, or that the District will not be able to afford a similar project in the future due to rising costs and limited funding.

Historic and Cultural Resources

No historic or cultural resources have been identified in the Ground Squirrel Hollow CSD.

Natural Resources

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. 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.

Economic Assets

Ground Squirrel Hollow is a residential area, and there is very little commercial development.



1.3.2 Estimating Potential Losses

Note: This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to Planning Team input) it significantly differs from that of the overall County.

Table I.4 under Section 1.3.1 summarizes Ground Squirrel Hollow's exposure in terms of number and value of parcels falling within the District's boundaries. San Luis Obispo County's parcel and assessor data was used to calculate the improved value of parcels, using ParcelQuest's spatial layers on parcel geometry. The most vulnerable structures are those in the parcels within hazard threat areas such as unreinforced masonry buildings, and buildings built prior to the introduction of modern-day building or land regulatory codes. Impacts of past events and vulnerability to specific hazards are further discussed below as particular to each hazard. See Section 5 of the Base Plan for more information on assets, parcel analysis methodology, and hazard profiles.

Adverse Weather

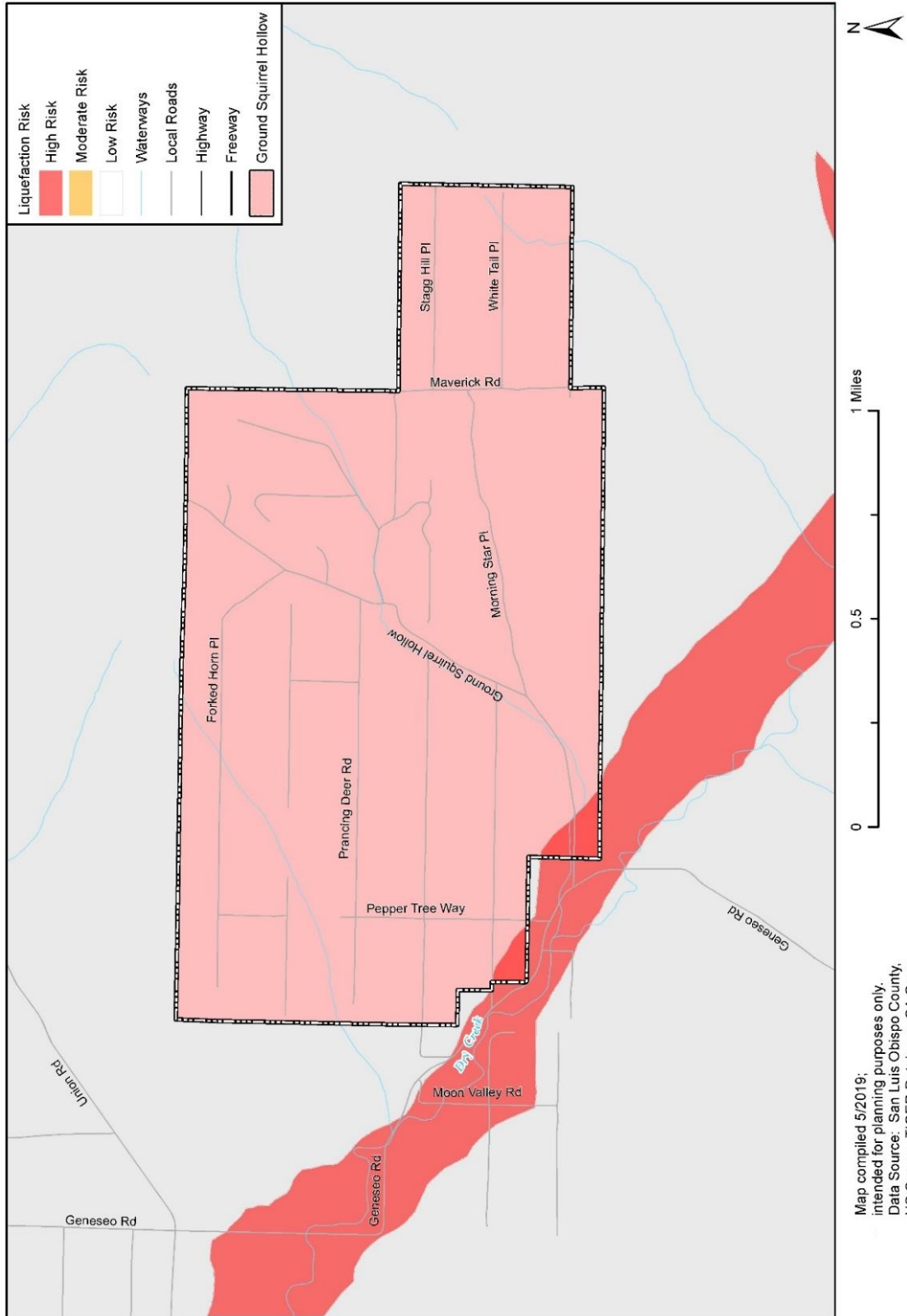
Adverse weather was rated as **Medium Significance** for the District. For the District adverse weather includes thunderstorms, heavy rain, lightning, high winds, and extreme heat. The area receives about 13 inches of precipitation annually, most of which occurs in the wintertime. In January of 2017, heavy rains caused erosion and damage to Silverado Road, Lone Pine Road, and Prancing Deer Place. This limited neighborhood access for residents, commercial vehicles, and emergency vehicles. The Ground Squirrel Hollow CSD received \$21,695 in federal and state disaster relief funding following the event to repair the impacted roads. Refer to Section 5.3.1 of the Base Plan for additional information on the risk adverse weather poses the County of San Luis Obispo.

Liquefaction

Earthquake hazards, specifically liquefaction was rated as **Medium Significance** for the District. There are no mapped active or potentially active faults in the Ground Squirrel Hollow planning area. Despite this, the area is exposed to seismic hazards from movement along several regional faults. As shown in Figure I.2, the southwestern corner of the CSD's boundaries near Dry Creek is at high risk of liquefaction as a result of an earthquake event.



Figure I.2 Liquefaction Risk in Ground Squirrel Hollow Community Services District



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office, LAFCO





Residential properties are the only properties are risk of liquefaction. There are six residential properties in total within this high-risk liquefaction zone which have a total value of over \$2 million, refer to Table I.5 below.

Table I.5 Ground Squirrel Hollow CSD Liquefaction Risk by Property Type – High Risk

Property Type	Property Count	Improved Value	Content Value	Total Value
Residential	6	\$1,367,108	\$683,554	\$2,050,662
Total	6	\$1,367,108	\$683,554	\$2,050,662

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

Landslides and Debris Flows

Landslides and debris flow were rated as a **Medium Significance** for the Ground Squirrel Hollow CSD and noted by the Planning team as being highly likely to occur. As shown in Figure I.3, about one-third of the District, particularly the eastern portion, is at moderate a risk of landslide. According to the GIS analysis, 101 properties with a total value of over \$33 million are at moderate risk of landslides. Of those properties, 96 residential properties are most vulnerable to landslides events. All properties located in the moderate landslide potential zone are detailed in Table I.6.

Table I.6 Ground Squirrel Hollow CSD Parcels in Moderate Landslide Potential by Parcel Type

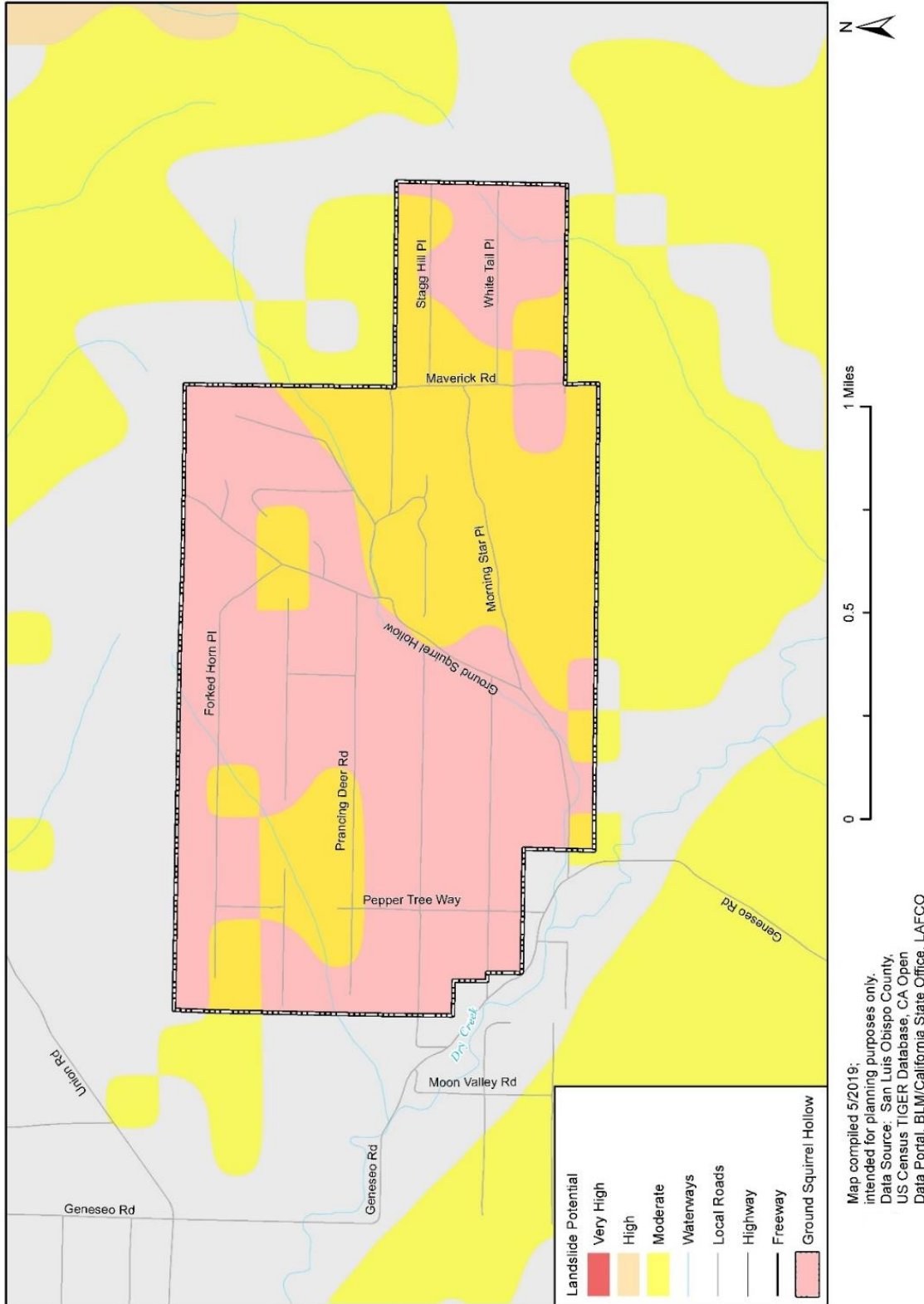
Property Type	Property Count	Improved Value	Content Value	Total Value
Government/Utilities	1	--	--	\$0
Mobile/Manufactured Homes	4	\$710,950	\$355,475	\$1,066,425
Residential	96	\$21,828,153	\$10,914,077	\$32,742,230
Total	101	\$22,539,103	\$11,269,552	\$33,808,655

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis





Figure I.3 Landslide Potential Areas in Ground Squirrel Hollow Community Services District





Wildfire

The San Luis Obispo County’s 2019 Community Wildfire Protection Plan (CWPP) divides the County into multiple planning areas to facilitate localized pre-fire planning efforts. The Ground Squirrel Hollow community is within Planning Area 5. The main fuel type in this planning area is grassland and the CWPP states that there no history of large fires or extend attack. However, smaller wildfires have occurred such as the 4-acre brush fire that took place in June of 2013 near Ground Squirrel Hollow Road and White Tail Place. Four fire engines from Cal Fire responded and the fire was extinguished with no reports of property damage or injuries.

As shown in Figure I.4 and Table I.7, all of the Ground Squirrel Hollow CSD boundaries are located within a high wildfire severity zone. A total of 376 properties are vulnerable to a wildfire event; 95 percent of those properties are residential.

Table I.7 Ground Squirrel Hollow CSD Wildfire Risk by Property Type – High Severity SRA Zone

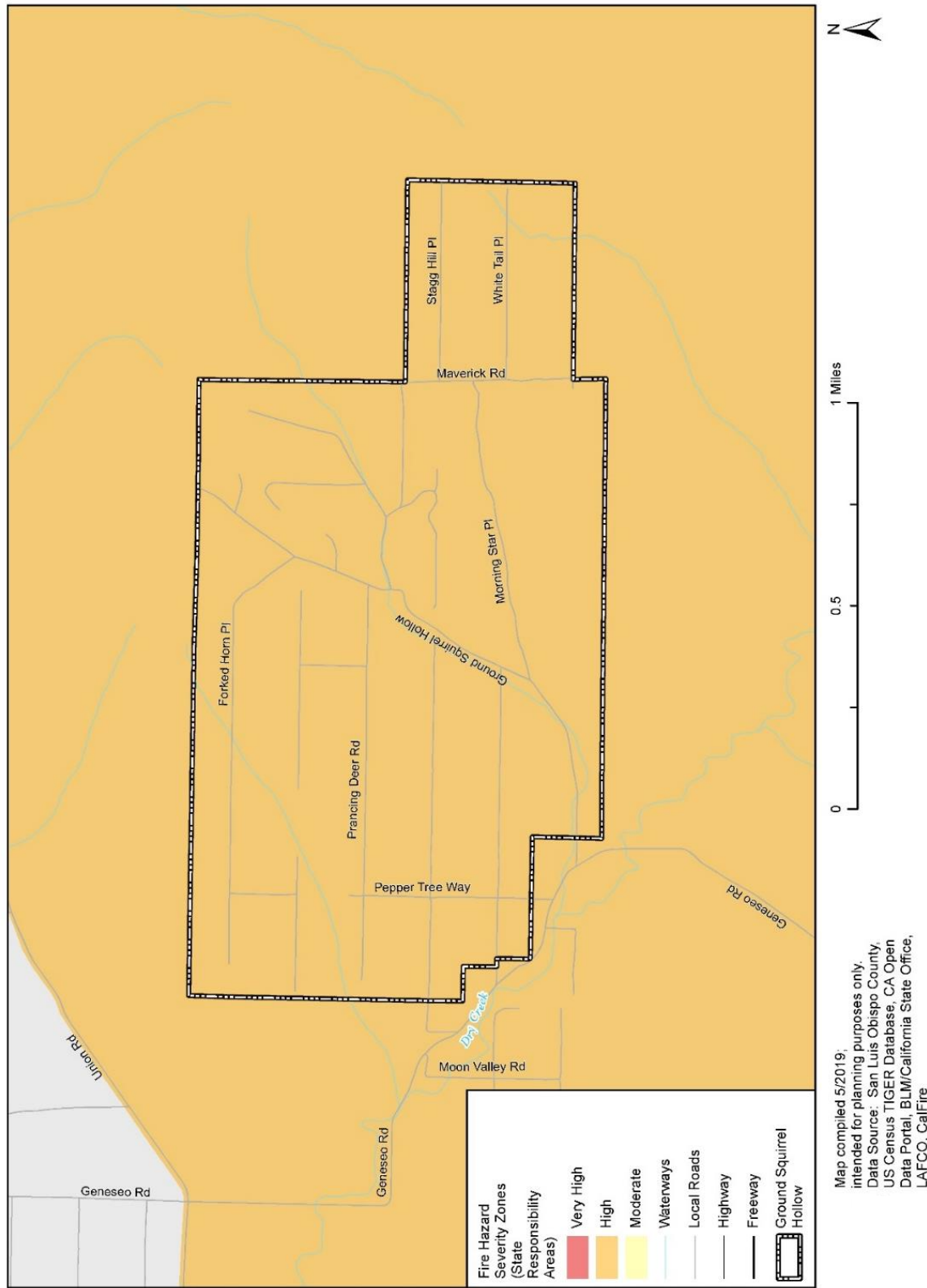
Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Government/Utilities	1	--	--	\$0	\$0	--
Mobile/Manufactured Homes	16	\$2,140,722	\$1,070,361	\$3,211,083	\$3,211,083	40
Residential	358	\$84,252,270	\$42,126,135	\$126,378,405	\$126,378,406	899
Vacant	1	\$3,308	--	\$3,308	\$3,308	--
Total	376	\$86,396,300	\$43,196,496	\$129,592,796	\$129,592,796	939

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis, CalFire





Figure I.4 Fire Hazard Severity Zones in Ground Squirrel Hollow Community Services District





I.4 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 capability 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory which of these policies or programs were in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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. In summarizing current capabilities and identifying gaps, the jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The Ground Squirrel Hollow CSD capabilities are summarized below.

I.4.1 Regulatory Mitigation Capabilities

Table I.8 identifies existing regulatory capabilities the District has in place to help with future mitigation efforts. Note, many of the regulatory capabilities that can be used for the District are within the County’s jurisdiction. Refer to Section 6 Capability Assessment of the Base Plan for specific information related to the County’s mitigation capabilities.

Table I.8 Ground Squirrel Hollow CSD Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	Yes	County
Zoning ordinance	Yes	County
Subdivision ordinance	No	
Growth management ordinance	No	County has land use authority.
Floodplain ordinance	Yes	County
Other special purpose ordinance (stormwater, water conservation, wildfire)	No	
Building code	Yes	County
Fire department ISO rating	No	Refer to County Fire/Cal Fire.
Erosion or sediment control program	No	County may have authority for program.
Stormwater management program	No	County may have authority for program.
Site plan review requirements	Yes	County is supposed to refer development plans to us for review, but it almost never happens.
Capital improvements plan	Yes	We have a draft road system master plan, which we use as a guide for spending maintenance moneys.
Economic development plan	No	
Local emergency operations plan	Yes	County
Other special plans	Yes	Ground Squirrel Hollow Specific Plan
Flood Insurance Study or other engineering study for streams	Yes	County
Elevation certificates (for floodplain development)	Yes	County





Ground Squirrel Hollow does not participate separately in the National Flood Insurance Program (NFIP), nor is it required to, and does not have any mapped special flood hazard areas. Accordingly, there are no repetitive loss or severe repetitive loss properties, as defined by the NIFP, located within the District.

I.4.2 Administrative/Technical Mitigation Capabilities

Table I.9 identifies the District personnel responsible for activities related to mitigation and loss prevention.

Table I.9 Ground Squirrel Hollow CSD Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	General Manager
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	General Manager
Planner/engineer/scientist with an understanding of natural hazards	Yes	General Manager
Personnel skilled in GIS	No	
Full time building official	No	
Floodplain manager	No	
Emergency manager	Sort of	Board President
Grant writer	Yes	General Manager
Other personnel	No	
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	No	
Warning systems/services (Reverse 9-11, outdoor warning signals)	Yes	Signs, barricades, cones, sand stockpile, cold-mix asphalt stockpile

I.4.3 Fiscal Mitigation Capabilities

Table I.10 identifies financial tools or resources that the CSD could potentially use to help fund mitigation activities.

Table I.10 Ground Squirrel Hollow CSD Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	Yes
Withhold spending in hazard prone areas	No

I.4.4 Opportunities for Enhancement

Based on the capability assessment, the Ground Squirrel Hollow Community Services District has several existing mechanisms in place that help to mitigate hazards. There are also opportunities for the District to expand or improve on these policies and programs to further protect the community. Future improvements may include





providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform District staff and board members on how best to integrate hazard information and mitigation projects into the District policies and ongoing duties of the District. Continuing to train District staff on mitigation and the hazards that pose a risk to the Ground Squirrel Hollow Community Services District will lead to more informed staff members who can better communicate this information to the public.

I.5 Mitigation Strategy

I.5.1 Mitigation Goals and Objectives

The Ground Squirrel Hollow CSD adopts the hazard mitigation goals and objectives developed by the HMPC and described in Section 7 Mitigation Strategy of the Base Plan.

I.5.2 Mitigation Actions

The Planning Team for the Ground Squirrel Hollow Community Services District 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. Actions with an '*' are those that mitigate losses to future development.

Due to limited resources and District responsibilities, the Ground Squirrel Hollow CSD has chosen not to mitigate against high wind at this time.



Table I.11 Ground Squirrel Hollow Community Services District’s Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/Implementation Notes
GSH. 1	Adverse Weather, Landslides and Debris Flow, Wildfire	Improve drainage on “Mud Corner” near 5661 Ground Squirrel Hollow Road to mitigate debris flow on road.	GSHCSD, with property owner and County	\$40-50,000	GSHCSD, Grants	High	2 Years	New A chronic problem during adverse weather due to debris flow from unstable soil on private property. GSHCSD will initiate dialog with property owner.
GSH. 2	Adverse Weather	Chip Seal Overlays to extend the life and strengthen chip seal roads during extreme heat and other adverse weather. This will also help support access from emergency vehicles needed for firefighting	GSHCSD, perhaps coop purchasing with County	\$300-400,000	Grants	Medium	5 Years	New GSHCSD does not generate sufficient funds.
GSH. 3	Adverse Weather, Landslides and Debris Flow, Wildfire	Implement road edge erosion control to mitigate undermining and failure of the road.	GSHCSD	Could be \$20,000 per year ongoing	GSHCSD, Grants	High	2 Years	New GSHCSD does some repair with available funding. Repairs are often needed after heavy weather when ruts form along the road edge. This project would reduce the need for periodic repairs.
GSH. 4	Wildfire	Implement “Replacement Financing” to build District funding capabilities for hazard mitigation and help ensure the District can maximize funding available for on-going maintenance of the road system.	GSHCSD	To be determined	US, State	Medium	5 years	New





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/Implementation Notes
GSH. 5	Landslides and Debris Flow, Earthquake/Liquefaction, Wildfire	Mitigate landslide risk through improvements to the Stagg Hill Road edge cribbing.	GSHCSD	\$350,000	GSHCSD, Grants	Medium	10 Years	New There is a short section where the road edge is supported by timber cribbing with limited life remaining. Heavy vehicles and decaying wood could exacerbate the issue.
GSH. 6	Landslides and Debris Flow, Earthquake/Liquefaction, Wildfire	Build an emergency shelter with power generator and water well.	GSHCSD	\$500,000	GSHCSD, Grants	High	1-5 Years	New The District has an opportunity to purchase a parcel now for a dual-purpose community shelter and meeting room; will be pursued as available funding allows.





I.6 Implementation and Maintenance

Moving forward, the Ground Squirrel Hollow Community Services District will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Section 8 in the Base Plan.

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 District to help inform updates of the Ground Squirrel Hollow Community Plan and in the development of additional local plans, programs and policies. Understanding the hazards that pose a risk and the specific vulnerabilities to the jurisdiction will help in future capital improvement planning for the District. The County Planning and Building Department may utilize the hazard information when reviewing a site plan or other type of development applications with the boundaries of the Ground Squirrel Hollow Community Services District area. As noted in Section 8 Implementation and Monitoring the HMPC representatives from the Ground Squirrel Hollow Community Services District 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 HMPC plan review meeting.

Monitoring, Evaluation and Updating the Plan

The Ground Squirrel Hollow Community Services District will follow the procedures to review and update this plan in accordance with San Luis Obispo County as outlined in Section 8 of the Base Plan. The CSD General Manager will be responsible for representing the Community Services District in the County HMPC, and for coordination with County staff and departments during plan updates. The Ground Squirrel Hollow Community Services District 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.



J.1 District Profile

J.1.1 Mitigation Planning History and 2019 Process

This annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan Update. The General Manager of the Heritage Ranch Community Services District (HRCSD) was the representative on the County-wide HMPC and took the lead for developing the plan and this annex in coordination with the HRCSD Planning Team. The HRCSD Planning Team will be responsible for implementation and maintenance of the plan. See Table J.1 for more information on the local Planning Team.

Table J.1 Heritage Ranch CSD Hazard Mitigation Plan Planning Team

Department or Stakeholder	Title
Heritage Ranch CSD	General Manager

More details on the planning process followed and how the jurisdictions, service districts and stakeholders participated can be found in Chapter 3 of the Base Plan (Planning Process), as well as how the public was involved during the 2019 update.

J.1.2 District Overview

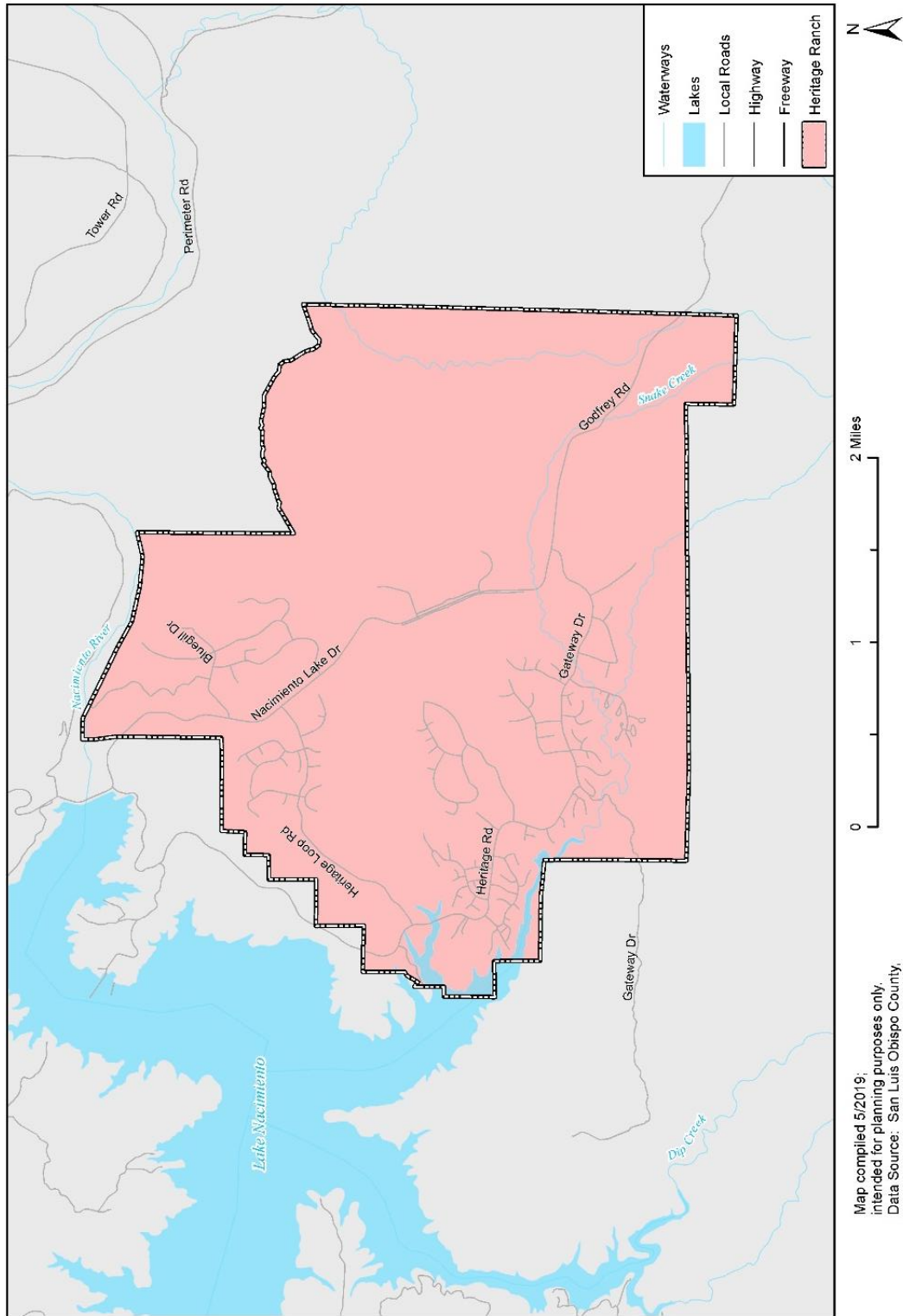
The Village of Heritage Ranch was established in 1972 as a vacation and retirement community, and the Heritage Ranch Community Services District (HRCSD) was formed in 1990 to provide local control of water and sewer services. Heritage Ranch is located in the North County planning area and is one of two village reserve areas situated around Lake Nacimiento. The HRCSD service area is bounded on the west by Lake Nacimiento, on the north by the Nacimiento River, on the east by the Camp Roberts National Guard post, and on the south by private property. Figure J.1 shows the HRCSD boundaries, represented in pink.

The Village of Heritage Ranch includes both Heritage Ranch, a home and recreation community originally planned for 6,800 dwelling units, and Lake Nacimiento Resort, a complete resort facility with 1,500 campground spaces and day use facilities. The resort is privately owned on land leased from the Monterey County Water and Flood Control District. There is also a marina and campground, dude ranch, and recreation and equestrian centers.





Figure J.1 Heritage Ranch Community Services District





J.1.3 Development Trends

Future residential development is anticipated to continue to be oriented primarily toward construction of homes, but a modest continuing increase is expected in permanent residents, primarily the retired. Infrastructure improvements are being considered to accommodate the growing population of Heritage Ranch and increased recreational use of Lake Nacimiento. Because of existing concerns about overcrowding at Lake Nacimiento, the most current San Luis Obispo County Inland Area Plan recommends focusing on limiting current recreational use of the reservoir rather than accommodating expansion.

Rural refuse container stations have been recommended in the Inland Area Plan to mitigate illegal dumping in rural areas surrounding the Village of Heritage Ranch.

J.1.4 Other Community Planning Efforts

Coordination and synchronization with other community planning mechanisms and efforts are vital to the success of this plan. To have a thorough evaluation of hazard mitigation practices already in place, appropriate planning procedures should also involve identifying and reviewing existing plans, policies, regulations, codes, tools, and other actions are designed to reduce a community’s risk and vulnerability from natural hazards.

As an unincorporated community, the Village of Heritage Ranch is referenced in other County planning documents and regulated by County policies and planning mechanisms. Integrating existing planning efforts, mitigation policies, and action strategies into this annex establishes a credible, comprehensive document that weaves the common threads of a community’s values together. The development of this jurisdictional annex involved a comprehensive review of existing plans, studies, reports, and initiatives from San Luis Obispo County and the Village of Heritage Ranch community that relate to hazards or hazard mitigation. A high-level summary of the key plans, studies and reports can be found in Table J.2 below. Information on how they informed the update are noted and incorporated where applicable.

In addition to the development standards within the Heritage Ranch Specific Plan, there are County planning mechanisms that regulate future and existing development within the Village of Heritage Ranch planning area. Refer to Section J.4 Capability Assessment as well as the Base Plan for more information on the plans, policies, regulations and staff that govern the Village of Heritage Ranch.

Table J.2 Summary of Review of Key Plans, Studies and Reports

Plan, Study, Report Name	How Document Informed the Annex
Heritage Ranch Village Plan (2014)	Pulled community background information as well as hazard details
North County Area Plan (2014)	Incorporated hazard information related to water supply
County of San Luis Obispo Local Hazard Mitigation Plan (2014)	Informed past hazard event history, hazard profile and background, and mitigation strategy information.
San Luis Obispo County 2014 Integrated Regional Water Management Plan	Obtained information on water use in the CSD, water management regions, and the drought/water scarcity hazard.
State of California’s Hazard Mitigation Plan – Updated 2018	General information on hazards, events, and vulnerability assessments.
2014-2016 Resource Summary Report for San Luis Obispo County’s General Plan	Pulled information about water resources, reliability, and ongoing efforts to increase resilience in the county and district of Heritage Ranch as related to drought.





J.2 Hazard Identification and Summary

The Heritage Ranch CSD planning team identified the hazards that affect the HRCSD and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to the HRCSD (see Table J.3). Note that the dam failure and dam incidents hazards will be combined in the description of this annex’s loss estimation summaries, as they are in the Base Plan’s Hazard Identification and Risk Assessment (HIRA). In addition, debris flows, and slope stability/landslide are related hazards that will be dealt with together in this annex (as they also were in the HIRA chapters of the Base Plan). Finally, hazardous trees are discussed within the adverse weather, drought, and wildfire chapters given these tree related issues are usually cascading from other natural events/hazards.

Table J.3 Heritage Ranch CSD Hazard Risk Summary

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Adverse Weather	Extensive	Highly Likely	Critical	High
Dam Incidents	Extensive	Likely	Critical	High
Drought and Water Shortage	Extensive	Highly Likely	Critical	High
Earthquake	Extensive	Occasional	Catastrophic	High
Flooding	Extensive	Likely	Critical	High
Landslide/Debris Flow	Extensive	Likely	Negligible	High
Wildfire	Extensive	Highly Likely	Catastrophic	High
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		





J.3 Vulnerability Assessment

The intent of this section is to assess the HRCSD vulnerability separate from that of the planning area, which has already been assessed in Section 5 Hazard Identification and Risk Assessment (HIRA) in the Base Plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance.

The information to support the HIRA portion of this Annex was collected through a Data Collection Guide, which was distributed to each participating municipality or district to complete during the planning process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact anywhere within the County, as well as to rank the hazards and identify the related vulnerabilities unique to each jurisdiction/district. In addition, the Heritage Ranch CSD planning team members were asked to share information on past significant hazard events that have affected the HRCSD.

Each participating jurisdiction were in support of the main hazard summary identified in the Base Plan (See Section 5 of the Base Plan). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction (See Table J.3). Identifying these differences helps the reader to differentiate the jurisdiction's risk and vulnerabilities from that of the overall County.

Note: The hazard "significance" reflects overall ranking for each hazard and is based on the Heritage Ranch CSD planning team input from the Data Collection Guide and the risk assessment results compiled during the planning process (see Section 5 of the Base Plan), which included more detailed quantitative analyses with best available data. The hazard summaries in Table J.3 reflect the hazards that could potentially affect the HRCSD. The discussion of vulnerability for each of the hazards listed is in Section J.3.2 Estimating Potential Losses.

Other Hazards

The HRCSD rated hazardous trees as a high significance hazard. In terms of this plan hazardous trees are considered a cascading hazard for adverse weather, drought and wildfire hazards. Information related to the public concerns about tree mortality in relation to wildfire risk can be found under J.3.2 Estimating Potential Losses and in Section 5 of the Base Plan.

Additionally, the HRCSD Planning Committee members decided to rate several hazards as Not Applicable (N/A) to the planning area due to a lack of exposure, vulnerability, and no probability of occurrence. The following hazards are considered Not Applicable (N/A) to the Heritage Ranch Community Services District.

- Agricultural Pest Infestation and Disease
- Biological Agents (naturally occurring)
- Coastal Storm/Coastal Erosion/Sea Level Rise
- Subsidence
- Tsunami and Seiche
- Hazardous Materials

J.3.1 Assets at Risk

This section considers assets at risk within the District and Village of Heritage Ranch, including values at risk, critical facilities and infrastructure, historic assets, economic assets, and growth and development trends. See Section 5.2 of the Base Plan for more details and background on the parcel summarization, analysis, and datasets available.





Values at Risk

The following data on property exposure is derived from San Luis Obispo County Assessor data. This data should only be used as a guideline to overall values in the Community Services District as the information has some limitations. Table J.4 summarizes the exposure of properties (e.g., the values at risk based on improvement values, content values, and total values as an addition of these two types of values) broken down by property type for the Heritage Ranch Community Services District.

Table J.4 Property Exposure for Heritage Ranch by Property Types

Property Type	Property Count	Improved Value	Content Value	Total Value
Commercial	1	\$6,498,416	\$6,498,416	\$12,996,832
Government/Utilities	9	--	--	--
Other/Exempt/Miscellaneous	313	\$2,060,342	--	\$2,060,342
Residential	937	\$223,625,509	\$111,812,755	\$335,438,264
Multi-Family Residential	78	\$10,113,042	\$5,056,521	\$15,169,563
Mobile/Manufactured Homes	676	\$62,511,623	\$31,255,812	\$93,767,435
Vacant	10	\$1,767,486	--	\$1,767,486
Total	2,024	\$306,576,418	\$154,623,503	\$461,199,921

Source: Wood Plc summaries based on ParcelQuest and San Luis Obispo County Assessor's Office data, 2019

Critical Facilities and Infrastructure

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. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the Heritage Ranch Community Services District based on San Luis Obispo County GIS data as well as structures obtained from the Homeland Infrastructure Foundation-Level Dataset (HIFLD) is provided in in Table J.5 and illustrated in





Figure J.2 . The four types of Critical Facilities categorized by San Luis Obispo County and its jurisdictions' and districts' planning teams are: Emergency Services, High Potential Loss Facilities, Lifeline Utility Systems, and Transportation Systems. Note that Heritage Ranch has only identified critical facilities falling under the one category listed below. Refer to Section 5.2 of the Base Plan for more information on the Assets used throughout this annex and the county-wide analyses.

Table J.5 Heritage Ranch Critical Facilities

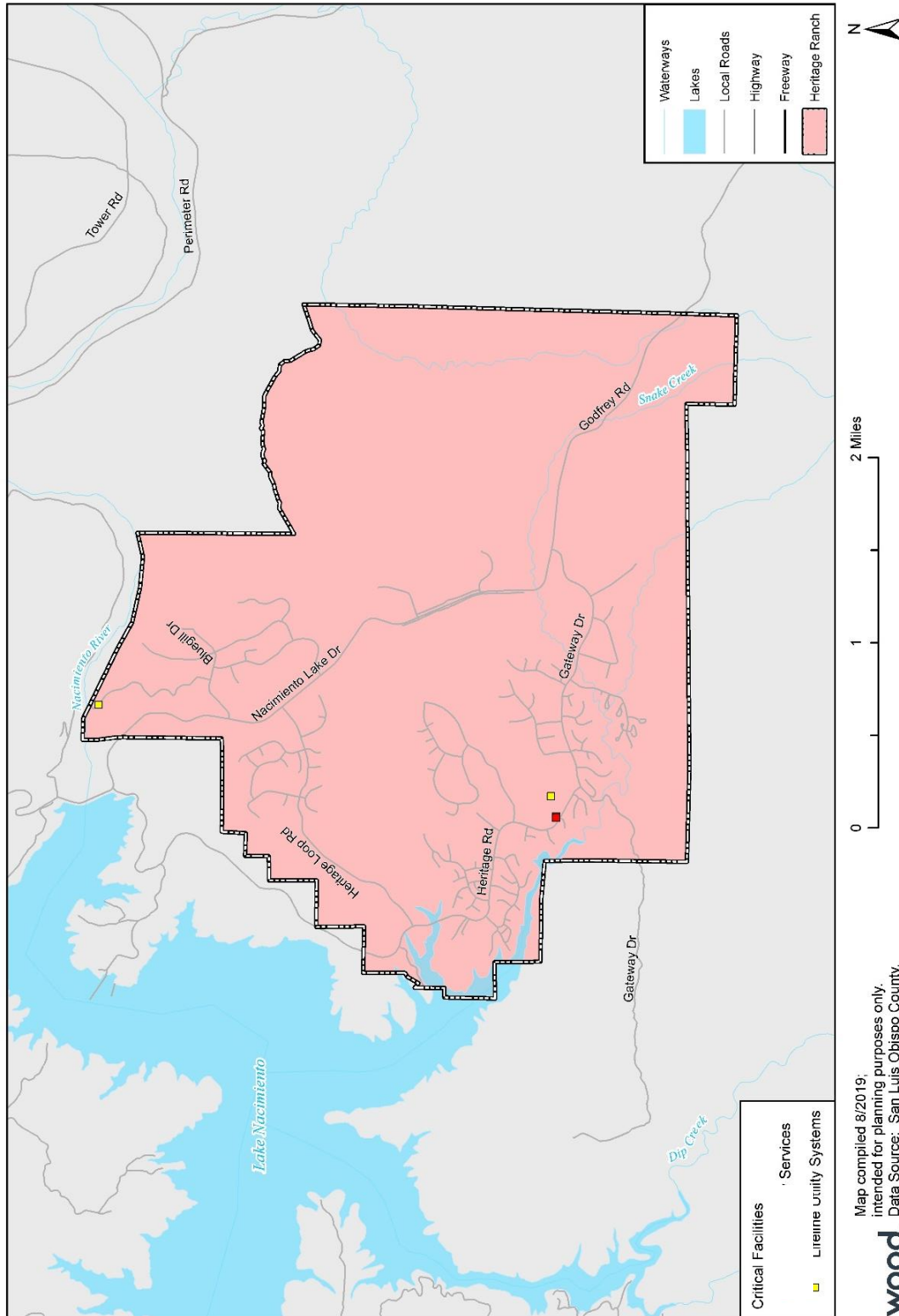
Facility Category	Facility Type	Name	Counts
Emergency Services	Emergency Medical Service Stations	California Department of Forestry and Fire Protection Station 33 - Heritage Ranch Fire Station	1
	Fire Stations		1
Lifeline Utility Systems	Water Treatment Facilities	Heritage Ranch CSD Water Treatment Plant	1
	Wastewater Treatment Plants	Heritage Ranch CSD Wastewater Treatment Plant, Operations Yard, and Administrative Building	1
Total			4

Source: San Luis Obispo County Planning & Building, Heritage Ranch CSD, HIFLD





Figure J.2 Heritage Ranch Critical Facilities



Map compiled 8/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, HIFLD, Heritage Ranch CSD





Additional Critical Facilities

Additional critical facilities as identified by the Heritage Ranch CSD Planning Team are as follows:

- Water Treatment and Distribution System - \$18.1 million replacement value
- Wastewater Collection and Treatment System - \$11.8 million replacement value
- Administration Building - \$675,000 replacement value

Emergency Service Facilities

The CSD contains 2 Emergency Services facilities aimed at providing for the health and welfare of the entire community. It is technically one fire station that serves the two purposes of providing fire protection and firefighting capabilities as well as emergency medical services, as stated in Table J.5.

Transportation Systems, High Potential Loss Facilities, and Lifeline Facilities

No critical transportation systems were specifically identified in the District, nor were high potential loss facilities. However, two lifeline facilities were noted, one of which is the Heritage Ranch CSD Water Treatment Plant and the other a combination facility containing the Heritage Ranch CSD Wastewater Treatment Plant, the Operations Yard, and the Administrative Building. In addition, it is worth noting that the Village of Heritage Ranch is only accessible via Lake Nacimiento Drive, which links to Highway 101 (a notable transportation route) at two locations. If development occurs to the levels projected for the Village of Heritage Ranch and nearby communities, traffic levels could far exceed the roadway capacity. Upgrades to Lake Nacimiento Drive have been proposed, as has a new collector road that would encircle Lake Nacimiento, passing through the Village of Heritage Ranch and nearby communities.

The only source of potable water for HRCSD is the Nacimiento Reservoir that is dammed by the Nacimiento Dam, which hence impounds Lake Nacimiento. The Monterey County Water Resources Agency (MCWRA) operates the dam (also worth noting as an important facility for the District) for flood protection and water distribution. The HRCSD water treatment facility is located about ¼ mile downstream of the dam and receives water via three shallow infiltration gallery wells several feet under the bed of the Nacimiento River. Native material and engineered bedding above and around the gallery wells provide some natural turbidity reduction, which is further reduced by a plate settler before water is processed through sand filters.

Historic and Cultural Resources

Historical assets include local, county, state, and potentially federally listed historic sites. Based on data provided by the County of San Luis Obispo and LAFCO, it was found that there are no historic and cultural resources in or near the Heritage Ranch CSD.

Natural Resources

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. 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. The Heritage Ranch Village Plan (2014) designated the following combining designations that apply to the protection of special resources in the Heritage Ranch community:

- Nacimiento River and Canyon; Dip, Franklin, Las Tablas, Snake and Town Creeks; and Lake Nacimiento – These water courses are identified as susceptible to potential flood hazards. Future development proposals must incorporate mitigation measures. All are natural drainage courses which should be maintained in their





natural state with native vegetation and habitats retained. At Lake Nacimiento, the 800-foot elevation constitutes the lake's high-water level and no habitable structures are permitted below the 825-foot elevation.

- The Santa Lucia Range and Foothill Areas – Portions of this Geologic Study Area (GSA) are exposed to moderately high and high landslide risk potential.
- Lake Nacimiento Drive Interlake Road – The portion of this route from Chimney Rock Road northwest to the Monterey County line is an adopted State scenic highway route. All development in this corridor must be sited to minimize visual impacts as this interlake road was classified as a Sensitive Resource Area.

Economic Assets

According to the Inland Area Plan, prior to the creation of Lake Nacimiento, the population of the sub-area was widely dispersed with most residing and employed on farms and ranches. Despite the rugged terrain of most of the area and the concentration of recreational activities at the lake, the economy of the region surrounding Lake Nacimiento remains agriculture based. Grazing is the primary agricultural pursuit, though some dry farming occurs in limited areas. Commercial activities around the lake are mostly visitor-serving and oriented toward peak use periods.

J.3.2 Estimating Potential Losses

Note: This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to Planning Team input) it significantly differs from that of the overall County.

Table J.4 under Section J.3.1 summarizes the Village of Heritage Ranch's exposure in terms of number and value of parcels falling within the District's boundaries. San Luis Obispo County's parcel and assessor data was used to calculate the improved value of parcels, using ParcelQuest's spatial layers on parcel geometry. The most vulnerable structures are those in the parcels within hazard threat areas, unreinforced masonry buildings, and buildings built prior to the introduction of modern-day building or land regulatory codes. Impacts of past events and vulnerability to specific hazards are further discussed below as particular to each hazard. See Section 5 of the Base Plan for more information on assets, parcel analysis methodology, and hazard profiles.

Adverse Weather

Adverse weather for the Village of Heritage Ranch includes thunderstorms, heavy rain, hail, lightning, dense fog, freeze, high winds, tornadoes, and extreme heat depending on the time of year. This hazard has been identified as posing **High Significance** for HRCSD. Common problems associated with severe storms include the loss of utilities or immobility. Loss of life is uncommon but can occur during severe storms depending on secondary effects or impacts. Immobility can occur when roads become impassable due to dense fog, heavy rains causing flooding, and downed trees (often referred to as hazardous trees due to the threat they pose).

Being in the northern portion of the county, the Village of Heritage Ranch experiences heavier rainfall compared to the southern portion of the county. Climate change is expected to further increase rainfall in winter months, while decreasing rainfall in spring months. A changing climate will also likely lead to more extreme temperatures, particularly hotter weather in the warmer months. Heavy rain may lead to more debris flows and landslides, as well as erosion and flash or localized flooding, especially over areas that have been impacted by wildfire or other hazards affecting the local landscape. See the Landslide section below for more on this related hazard. Increased seasonal variability in precipitation will likely have an impact on releases from the Nacimiento Dam as well. The potential for downed trees is also a significant concern of the community. Section 5 of the Base Plan contains additional information on past adverse weather events in San Luis Obispo County and the Village of Heritage Ranch/Nacimiento Area.





Dam Incidents

Dam incidents are classified as **Highly Significant** for the HRCSD. See Figure J.3 for areas at risk of inundation from the Nacimiento Dam if it were to fail. The Nacimiento Dam is managed by Monterey County. Though total failure is unlikely, several damaging release incidents have occurred. In 1969, 2006, 2011, and 2017, heavy rain caused Lake Nacimiento to fill to capacity, prompting Monterey County Water Resources Agency (MCWRA) to lower the spillway, dramatically increasing flows downstream. The 1969 release damaged downstream property and would have destroyed the HRCSD water treatment facility had it existed at the time.

The 2011 release of the Nacimiento Dam increased flows downstream from 400 to 8,100 cubic feet per second (cfs) in less than three hours with sustained flow over 6,000 cfs. This destroyed the HRCSD gallery well system, requiring emergency repairs to be made at a cost of approximately \$375,000. The new gallery wells were lowered three feet, but the system was still incapable of handling flows over 5,000 cfs and was damaged again by releases in 2017. Flows over 5,000 cfs are highly likely to occur in the future according to MCWRA. If the gallery well system cannot be maintained, the water treatment facility will need to be converted to a conventional water treatment plant or receive water through a different intake method. Photos of the Nacimiento Dam uncontrolled releases, spills, and failures are included in Figure J.4 below.

To alleviate the issues that have occurred in the past with the dam, and because the Nacimiento Reservoir (with water controlled by the Nacimiento Dam) is the only source of potable the HRCSD, a few goals were set by the Planning Team related to dam failure and dam incident:

- Continue actively engaging with the MCWRA to operate the Nacimiento Dam in a manner more conducive to preventing dam related hazards
- Construction of a vertical well or wells to provide mitigation for both low and high flows related to this and drought hazards.





Figure J.3 Dam Inundation Extents in the Heritage Ranch CSD

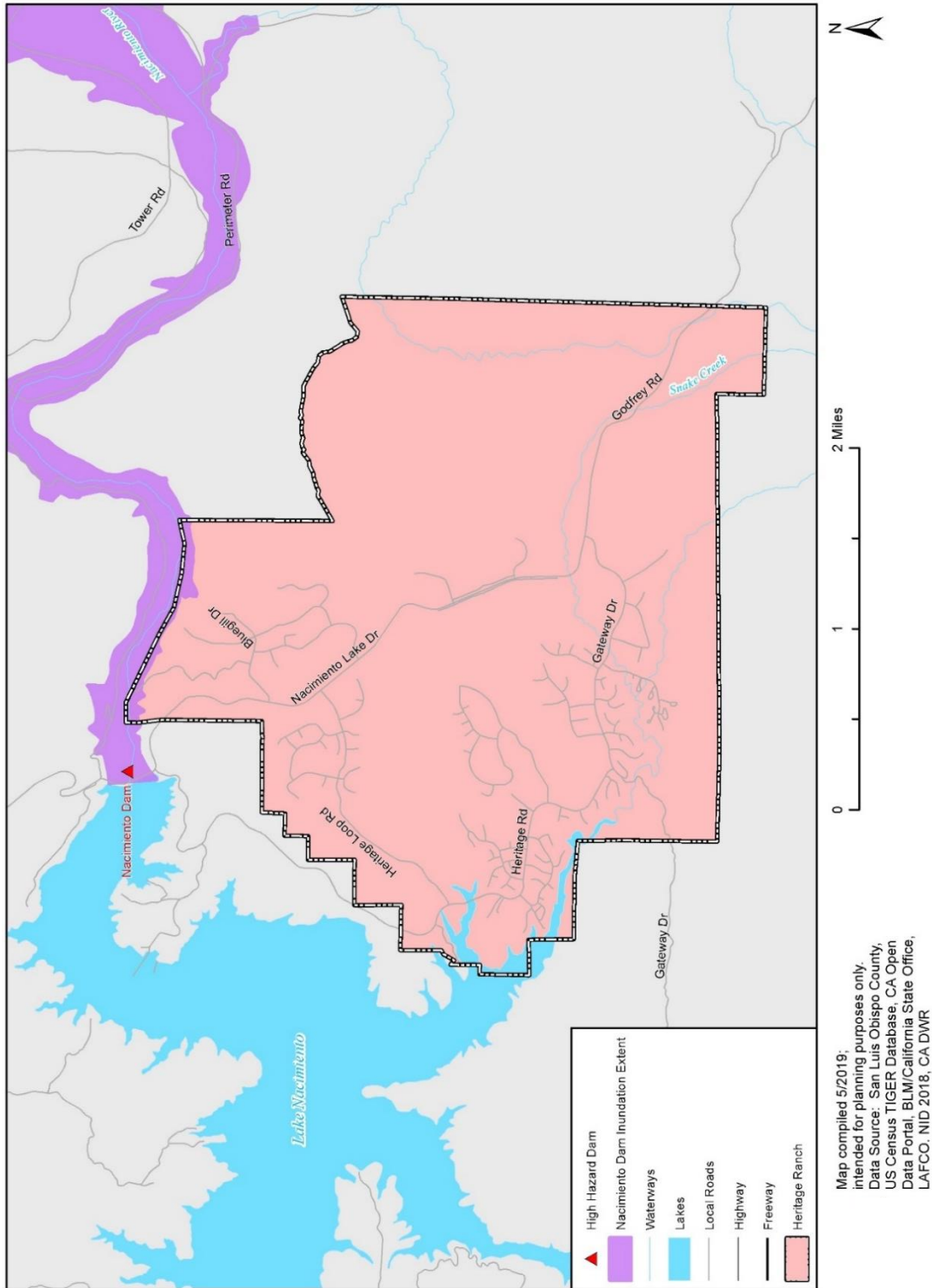


Figure J.4 Nacimiento Dam Incidents throughout the Years



Source: Heritage Ranch CSD Planning Team, 2019



Structures and Population at Risk

A dam inundation vulnerability assessment was completed during the update of the county hazard mitigation plan, following the methodology described in Section 5 of the Base Plan. Dam inundation extents were overlaid with parcels falling within the HRCSD boundary with use of GIS, and the results of the analysis indicate that only one parcel is found to overlap with the dam inundation extent layer from the Nacimiento Dam, and no population is at risk from this parcel (as no people are likely to reside in a government/utilities property).

Table J.6 Heritage Ranch CSD’s Parcels within the Nacimiento Dam Inundation Extents

Parcel Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population at Risk
Government/Utilities	1	--	--	\$0	\$0	--
Total	1	\$0	\$0	\$0	\$0	--

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis, CA DWR, NID 2018

Critical Facilities at Risk

Based on the GIS analysis performed there is 1 critical facility located in the dam inundation areas affecting the Heritage Ranch CSD (from the Nacimiento Dam). This is the Heritage Ranch CSD Water Treatment Plant, located on the northwest corner of the CSD’s boundary, at 10200 Nacimiento Lake Drive.

Drought and Water Shortage

San Luis Obispo County has an annual entitlement to 17,500 acre-feet of water from Lake Nacimiento, of which HRCSD is currently under contract with San Luis Obispo County for 889 acre-feet. Overall, San Luis Obispo County has set aside a maximum allotment of 1,100 acre-feet for the area encompassed by HRCSD. The 2014 Village Plan recommended that a moratorium on further development be enacted if total water use in the Village of Heritage Ranch reaches this limit.

HRCSD has experienced severe drought for the past few years except. Drought conditions have increased water treatment costs due to many things including but not limited to rapid changes in water levels in Lake Nacimiento. Since the dam was constructed, the water elevation in the reservoir has never reached “dead pool” conditions in which the water elevation is below the elevation of the outlet works, so that no water flows downstream. However, multi-year drought periods have lowered the water elevation close to this point. In 2016 HRCSD constructed an emergency intertie with the Nacimiento Water Project to allow for water intake in dead pool conditions or other times when water cannot be released through the dam outlet works. A recycled water study was also completed in 2017 to evaluate water and wastewater treatment and determine the feasibility of recycled water usage. HRCSD also imposes water restrictions in times of drought. Because of the rapid rate at which Nacimiento Reservoir’s water elevations are changing, increased costs have also been seen for water treatment.

This drought hazard, along with adverse weather conditions, was deemed a likely contributing factor to the very destructive 2016 Chimney Fire, which is described in the Wildfire chapter of this annex. As a related drought impact, tree mortality has resulted in potentially vulnerable critical infrastructure property as these vulnerable trees become more susceptible to falling with time and could affect properties in the planning area. Drought and water shortage hazards have been identified as posing **High Significance** for the Heritage Ranch CSD.

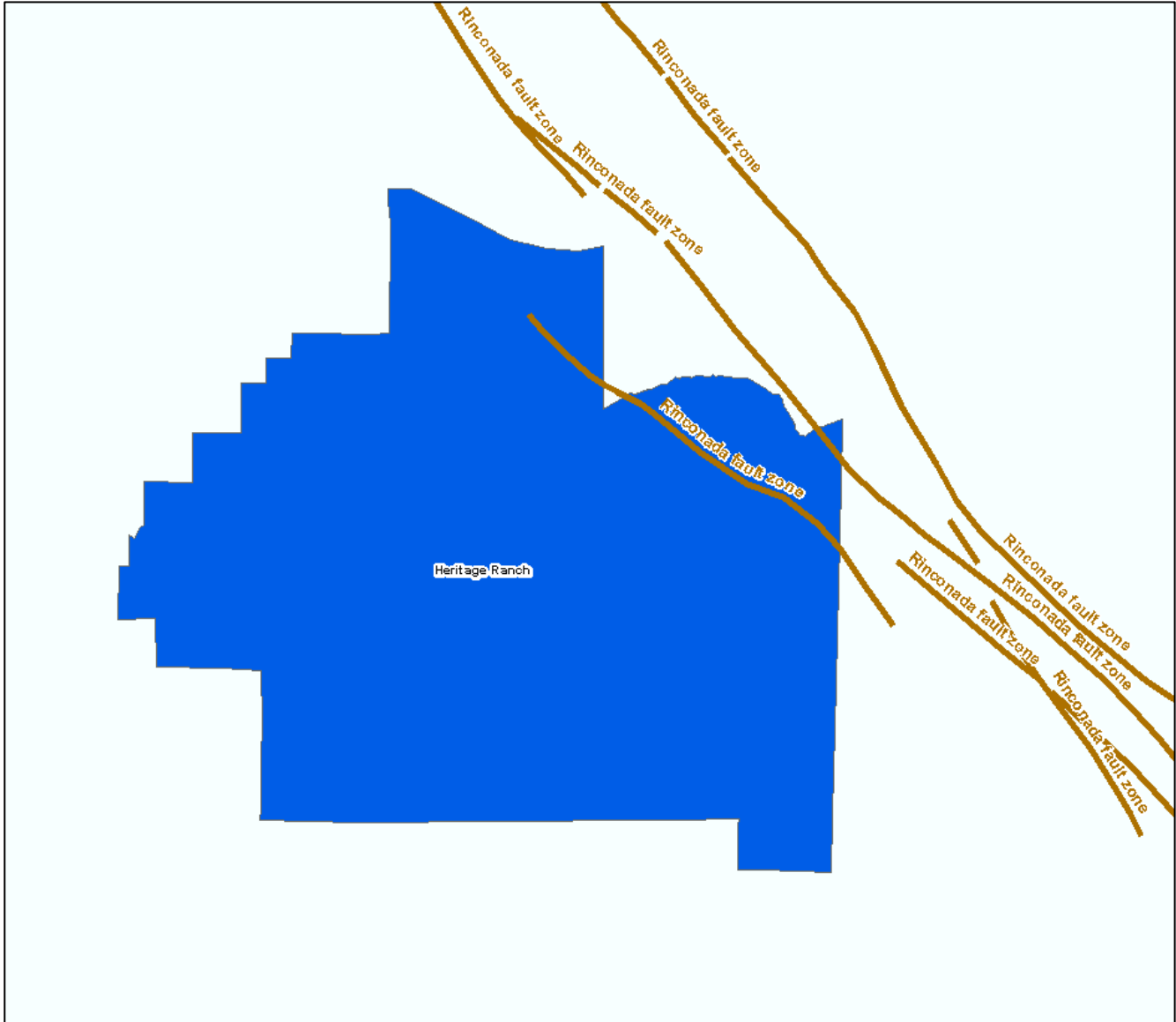




Earthquake

The nearest fault zone to Heritage Ranch is the Rinconada fault zone (see the snapshot in Figure J.5). This regional fault zone is considered to be potentially active and has moderate ground shaking potential. The structure most vulnerable to an earthquake in Heritage Ranch is the Nacimiento Dam which is about three miles from the fault.

Figure J.5 Earthquake Fault Zones in and near the Heritage Ranch CSD



Source: USGS, San Luis Obispo County Planning & Building, LAFCO, Wood Plc analysis

Failure of the dam due to future seismic activity could inundate a small portion of the community and perhaps heavily damage or even destroy the HRCSD water intake system and water treatment plant, eliminating the HRCSD ability to provide safe drinking water to its residents. In addition, seiches could be an issue nearby





because of the Lake, which could cause flooding of the community and nearby structures, properties, and facilities. No moderate, high, or very high liquefaction risk has been identified to be present inside the District. However, high liquefaction risk zones are present to the north of the community, following the Nacimiento River’s path. The two critical facilities listed in Section J.3.1 of this annex are found in low liquefaction risk areas.

For more information on Earthquakes and Liquefaction, refer to Section 5.3.7 of the Base Plan. For information on Tsunami and Seiche hazards, see Section 5.3.11. Overall, the earthquake hazard has been identified as posing **High Significance** for the Heritage Ranch CSD.

Flooding

Lake Nacimiento, the Nacimiento River, and its associated tributaries have been identified as posing flood hazards. The 2011 dam incident caused significant flooding of the Nacimiento River below the dam. Three to four feet of riverbed material was removed in this incident, blocking some channels and scouring others. This “re-carving” of the channel will likely impact the way future flows are routed through the river. Overall, flood hazards have been identified as posing **High Significance** for the Heritage Ranch CSD.

Heritage Ranch does not participate separately in the National Flood Insurance Program (NFIP) but will continue to support the County’s participation in and compliance with the NFIP.

Structures and Population at Risk

A flood vulnerability assessment was completed during the update of the county hazard mitigation plan, following the methodology described in Section 5 of the Base Plan. Table J.7 below summarizes the values at risk in the Village of Heritage Ranch 100-year floodplain (which corresponds to 1% chance of flooding in a 100-year period). Based on this analysis, the Village of Heritage Ranch has only one parcel at risk of flooding in a 100-year event.

Table J.7 Village of Heritage Ranch FEMA 1% Annual Chance Flood Hazard by Property Type

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population at Risk
Other/Exempt/Miscellaneous	1	--	--	\$0	\$0	--
Total	1	\$0	\$0	\$0	\$0	--

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis, FEMA NFHL

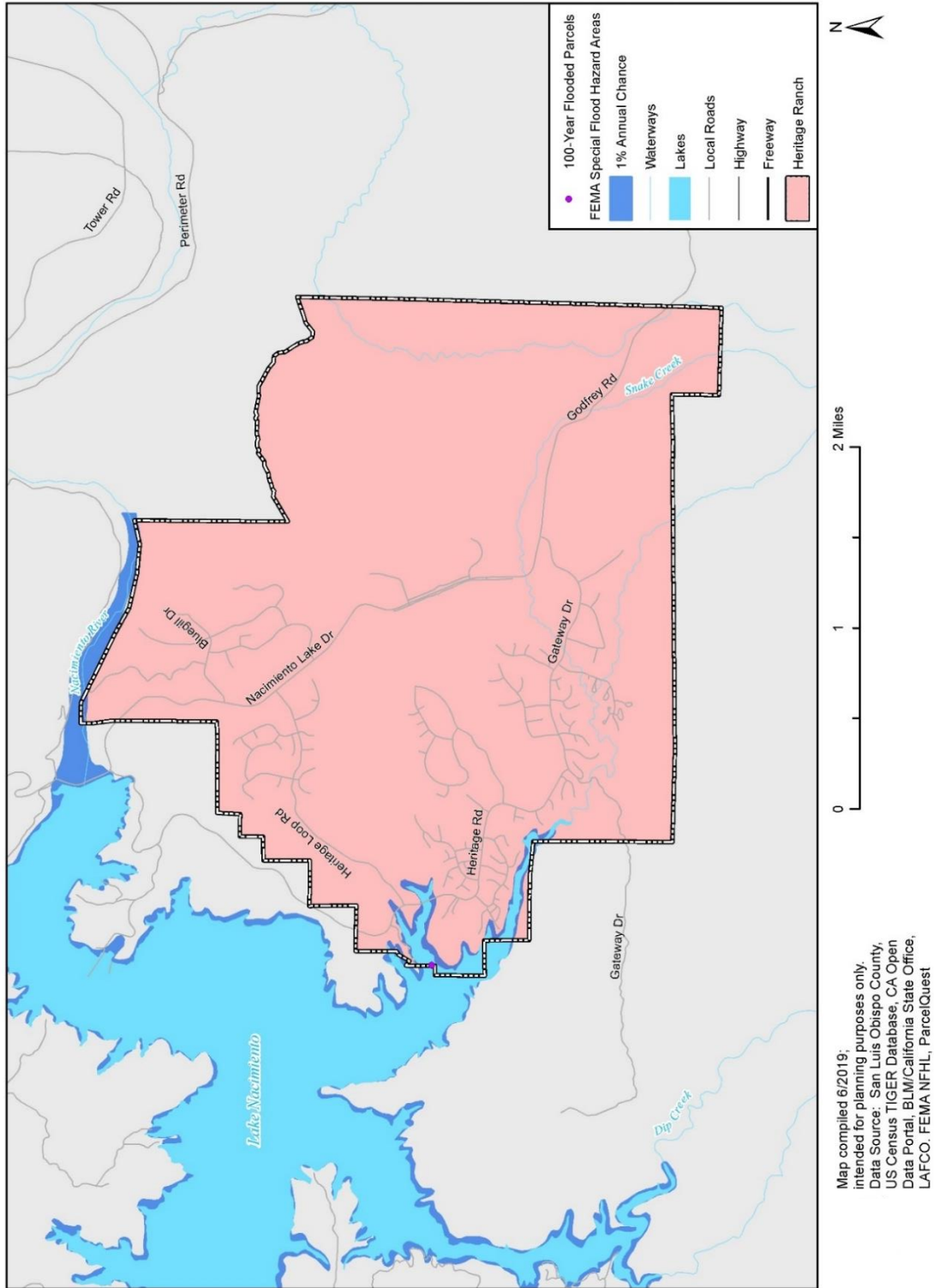
Limitations to the analysis performed and results shown: This model may include structures in the floodplains that are elevated at or above the level of the base-flood elevation, which will likely mitigate flood damage.

Figure J.6 displays the parcel flooded by the 100-year event, located on the west side of the district, shown as a purple dot. No population is at risk of flooding from this parcel (as no people are likely to reside in an exempt or miscellaneous property). The Heritage Ranch planning team also noted that the CSD’s intake facilities and water treatment facility properties are located approximately where the red square is on Figure J.6, towards the northwest of the CSD boundary. No 500-year floodplains have been identified.





Figure J.6 Flooded Parcel in the Village of Heritage Ranch, in the 100-Year Floodplain





Critical Facilities at Risk

Based on the GIS analysis performed there are no critical facilities located in the 100-year or 500-year flood hazard areas, though the Heritage Ranch CSD’s Water Treatment Facility is located in the dam inundation extent of the Nacimiento Dam (see the Dam Incidents section of this document for additional details).

Landslides and Debris Flow

Landslide potential and debris flow hazards have been ranked by the Planning Team as posing **High Significance** to the Heritage Ranch CSD.

Heavy rain in the year following the Chimney Fire of 2016 led to a significant debris flow into Lake Nacimiento/Nacimiento Reservoir. This degraded the quality of water entering the HRCSD water treatment facilities, thus increasing treatment costs which is of high importance as the Nacimiento Reservoir water is the only source of potable water for the community. Such debris flows can also add stress to the dam and require costly removal of sediment and debris. A similar debris flow is highly likely to occur in the future, as is a landslide. Tables J.8, J.9, and J.10 summarize the parcel values in zones of moderate, high, and extremely high landslide potential, respectively. Most properties exist in areas of moderate landslide potential. A total of 678 parcels are hence at risk of landslide hazards, with a total estimated value of over \$168 million at risk. Figure J.7 displays the landslide potential areas present in and near the Village of Heritage Ranch.

Structures at Risk

A vulnerability assessment was completed during the update of the county hazard mitigation plan, following the methodology described in Section 5 of the Base Plan. Landslide potential was determined for the Village of Heritage Ranch by overlaying the county’s parcel layers with the landslide potential zones, all in GIS.

Critical Facilities at Risk

Based on the GIS analysis performed there is 1 critical facility located in the Moderate landslide potential area: The Heritage Ranch CSD Water Treatment Plant on the northwest of the CSD, at 10200 Nacimiento Lake Dr.

Table J.8 The Village of Heritage Ranch Parcels in Moderate Landslide Potential by Parcel Type

Property Type	Property Count	Improved Value	Content Value	Total Value
Government/Utilities	3	--	--	\$0
Other/Exempt/Misc.	129	\$1,002,358	--	\$1,002,358
Residential	215	\$69,560,773	\$34,780,387	\$104,341,160
Multi-Family Residential	40	\$4,157,490	\$2,078,745	\$6,236,235
Mobile/Manufactured Homes	224	\$21,299,268	\$10,649,634	\$31,948,902
Vacant	3	\$635,903	--	\$635,903
Total	614	\$96,655,792	\$47,508,766	\$144,164,558

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis





Figure J.7 Landslide Potential Hazard Areas in the Village of Heritage Ranch

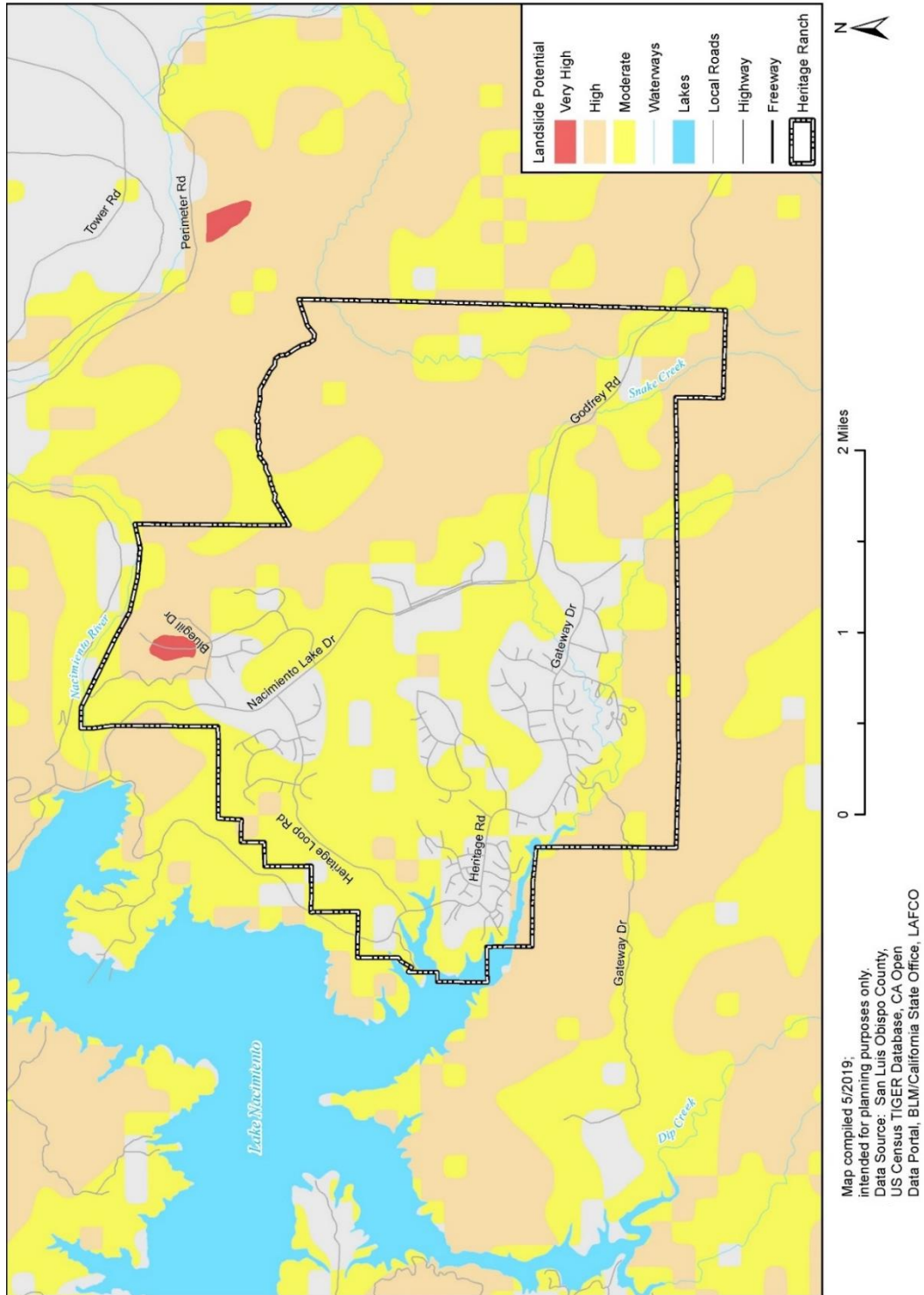




Table J.9 The Village of Heritage Ranch Parcels in High Landslide Potential by Parcel Type

Property Type	Property Count	Improved Value	Content Value	Total Value
Government/Utilities	2	--	--	\$0
Other/Exempt/Misc.	10	--	--	\$0
Residential	25	\$10,199,896	\$5,099,948	\$15,299,844
Mobile/Manufactured Homes	10	\$826,489	\$413,245	\$1,239,734
Total	47	\$11,026,385	\$5,513,193	\$16,539,578

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table J.10 The Village of Heritage Ranch Parcels in Very High Landslide Risk by Parcels Type

Property Type	Property Count	Improved Value	Content Value	Total Value
Other/Exempt/Misc.	3	--	--	\$0
Residential	14	\$5,012,952	\$2,506,476	\$7,519,428
Total	17	\$5,012,952	\$2,506,476	\$7,519,428

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Wildfire

According to the Heritage Ranch Village Plan from 2014, because of the dry summer climate coupled with highly flammable vegetation (including hazardous trees that were flammable or downed and hence dangerous) as well as rugged terrain, fire hazard in Heritage Ranch is high, and fire control is difficult. The Chimney Fire in 2016 injured one person, destroyed 49 residences and 21 other structures, and damaged 8 structures. Drought contributed to this fire which was caused by the ignition of dry grass adjacent to a dirt road. Increased recreation uses will likely intensify the fire hazard in developed areas as well as along the miles of Lake Nacimiento's shoreline accessible by boat. Wildfire hazards have been ranked by the Planning Team as posing **High Significance**. Figure J.8 depicts the fire hazard severity zones under which the Heritage Ranch CSD falls.

Structures and Population at Risk

A wildfire vulnerability assessment was completed during the update of the county hazard mitigation plan, following the methodology described in Section 5 of the Base Plan. Risk of wildfire was determined for the Heritage Ranch CSD by overlaying the parcel layers with the fire hazard severity zones within the California State Responsibility Areas (SRAs), all in GIS. Table J.11 and Table J.12 summarize the parcel values found within moderate and very high fire hazard severity zones, respectively, as no parcels fall within the high wildfire hazard severity zones in the district. Most properties in the Village of Heritage Ranch are located in a zone of very high fire hazard severity. While no people are expected to be at risk of the moderate severity SRA zones (based on the likelihood that no people reside in exempt or miscellaneous properties), a total of 4,244 people are at risk of being affected by fires, as they are located in very high fire hazard severity zones.





Table J.11 The Village of Heritage Ranch Wildfire Risk by Property Type – Moderate Severity SRA Zone

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Other/Exempt/Miscellaneous	1	--	--	\$0	\$0	--
Total	1	\$0	\$0	\$0	\$0	--

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis, CalFire

Table J.12 The Village of Heritage Ranch Wildfire Risk by Property Type – Very High Severity SRA Zone

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	1	\$6,498,416	\$6,498,416	\$12,996,832	\$12,996,832	--
Government/Utilities	9	--	--	\$0	\$0	--
Other/Exempt/Miscellaneous	312	\$2,060,342	--	\$2,060,342	\$2,060,342	--
Residential	937	\$223,625,509	\$111,812,755	\$335,438,264	\$335,438,264	2,352
Multi-Family Residential	78	\$10,113,042	\$5,056,521	\$15,169,563	\$15,169,563	196
Mobile/Manufactured Homes	676	\$62,511,623	\$31,255,812	\$93,767,435	\$93,767,435	1,697
Vacant	10	\$1,767,486	--	\$1,767,486	\$1,767,486	--
Total	2,023	\$306,576,418	\$154,623,503	\$461,199,921	\$461,199,921	4,244

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis, CalFire

Critical Facilities at Risk

Four critical facilities are located in very high fire hazard severity zones, as indicated in Table J.13.

Table J.13 The Village of Heritage Ranch Critical Facilities in Very High Wildfire Hazard Zone

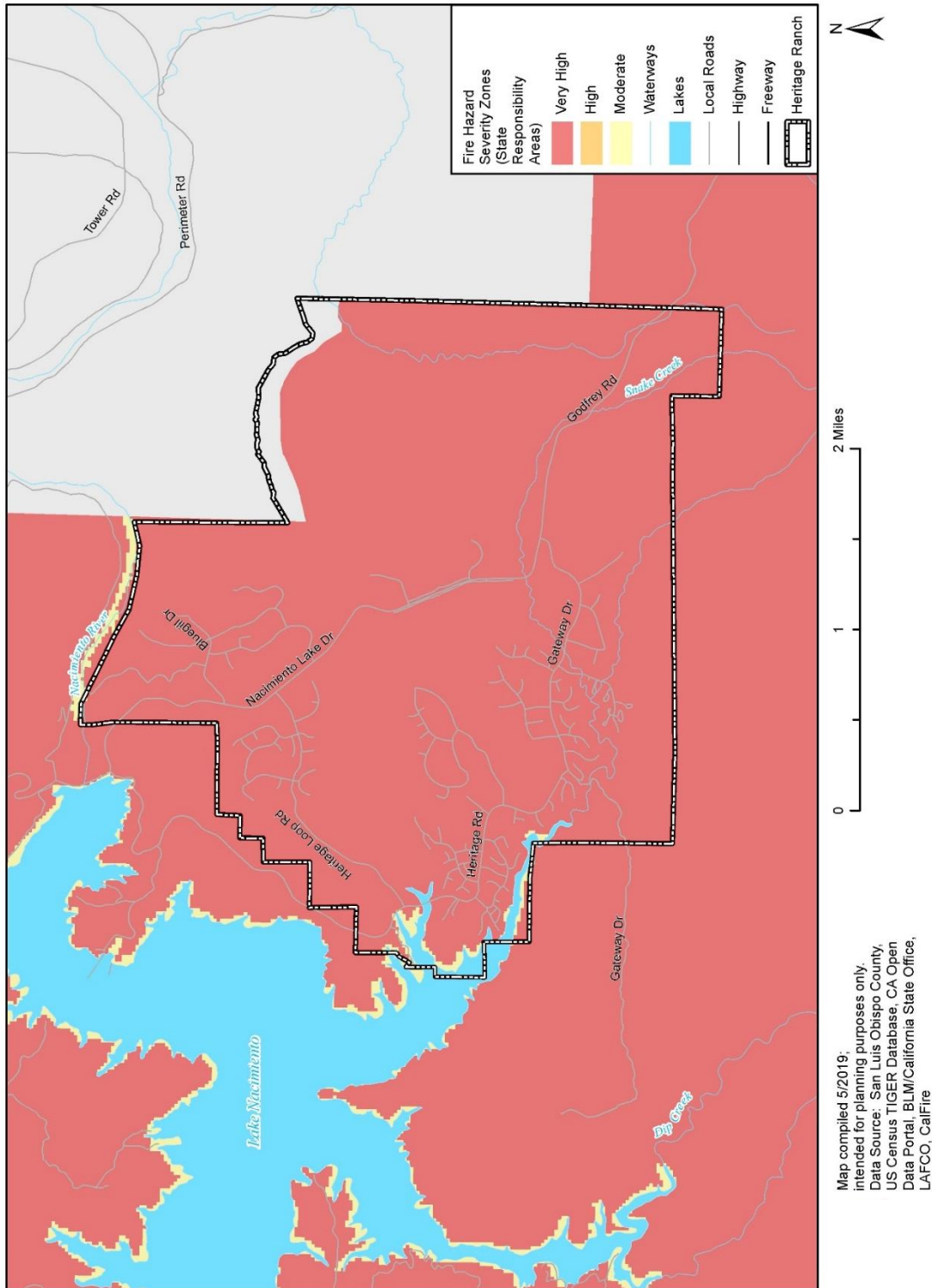
Facility Type	Count
Fire Stations	1
Emergency Medical Service Stations	1
Water Treatment Facilities	1
Wastewater Treatment Plant/Operations Yard/Administrative Building	1
Total	2

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis, CalFire





Figure J.8 Wildfire Hazard Severity Zones in the Heritage Ranch CSD





J.4 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 capability 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory policies or programs that are in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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. In summarizing current capabilities and identifying gaps, the jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The Heritage Ranch CSD capabilities are summarized below.

J.4.1 Regulatory Mitigation Capabilities

Table J.14 identifies existing regulatory capabilities the HRCSD has in place to help with future mitigation efforts. Note: many of the regulatory capabilities that can be used for the HRCSD are within the County’s jurisdiction. Refer to Section 6 Capability Assessment of the Base Plan for specific information related to the County’s mitigation capabilities.

Table J.14 Heritage Ranch CSD Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	Yes	By the County
Zoning ordinance	Yes	By the County
Subdivision ordinance	Yes	By the County
Growth management ordinance	Yes	By the County
Floodplain ordinance	Yes	By the County
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	By the County
Building code	Yes	By the County
Fire department ISO rating	Yes	By the County
Erosion or sediment control program	Yes	By the County
Stormwater management program	Yes	By the County
Site plan review requirements	Yes	
Capital improvements plan	Yes	
Economic development plan	No	
Local emergency operations plan	Yes	
Other special plans	Yes	
Flood Insurance Study or other engineering study for streams	Yes	By the County
Elevation certificates (for floodplain development)	Yes	By the County

Source: Wood Data Collection Guide, 2019





J.4.2 Administrative/Technical Mitigation Capabilities

Table J.15 identifies the personnel responsible for activities related to mitigation and loss prevention in the Heritage Ranch Community Services District.

Table J.15 Heritage Ranch CSD Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position/Comments
Planner/engineer with knowledge of land development/land management practices	Yes	General Manager, District Engineer
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	General Manager, District Engineer
Planner/engineer/scientist with an understanding of natural hazards	No	By the County
Personnel skilled in GIS	Yes	District Engineer
Full time building official	No	By the County
Floodplain manager	No	By the County
Emergency manager	Yes	General Manager
Grant writer	No	Would be able to do if need-driven
Other personnel	Yes	Water and Wastewater Operators; Office Staff
GIS Data Resources - (Hazard areas, critical facilities, land use, building footprints, etc.)	No	By the County
Warning systems/services (Reverse 9-11, outdoor warning signals)	No	By the County

Source: Wood Data Collection Guide, 2019

J.4.3 Fiscal Mitigation Capabilities

Table J.16 identifies financial tools or resources that the CSD could potentially use to help fund mitigation activities.

Table J.16 Heritage Ranch CSD Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	Yes
Withhold spending in hazard prone areas	No

Source: Wood Data Collection Guide, 2019

J.4.4 Mitigation Outreach and Partnerships

The Heritage Ranch Community Services District and the Heritage Ranch Owners Association (HROA) generally have the same boundary. The HROA has a safety committee which has Safety Plan separate from those of the HRCSD. Both entities coordinate on water, wastewater, and facility planning and management efforts to





operate effectively during an emergency. They additionally maintain a responsible water use policy and disseminate relevant information periodically. For example, the HRCSD recently completed a project in 2016 connecting the HRCSD water system intake facility to the Nacimiento Water Project pipeline for emergency uses, which highlights the community's outreach and partnership/collaboration intents and efforts.

J.4.5 Opportunities for Enhancement

Based on the capabilities assessment, the Heritage Ranch Community Services District has several existing mechanisms in place that already help to mitigate hazards, such as those mentioned in this Annex's hazard profiles and summary sections and in existing planning and community organization mechanisms such as the 2014 Heritage Ranch Village Plan. There are also opportunities for the HRCSD to expand or improve on these policies and programs to further protect the community. Future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform HRCSD staff and board members on how best to integrate hazard information and mitigation projects into the District policies and ongoing duties of the HRCSD. Continuing to train HRCSD staff on mitigation and the hazards that pose a risk to the HRCSD will lead to more informed staff members who can better communicate this information to the public.

J.5 Mitigation Strategy

J.5.1 Mitigation Goals and Objectives

The Heritage Ranch CSD adopts the hazard mitigation goals and objectives developed by the County Planning Team and described in Section 7 of the Base Plan: Mitigation Strategy.

J.5.2 Mitigation Actions

The Planning Team for the Heritage Ranch Community Services District identified and prioritized the following mitigation actions based on the conducted risk assessment (see Table J.17). 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. Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. Actions with an asterisk (*) are those that mitigate losses to future development.





Table J.17 Heritage Ranch CSD’s Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
HR.1	Adverse Weather	Consider support for communication towers and other communication infrastructure to be built within the HRCSD Boundary/property to provide expanded warning capabilities related to adverse weather.	Communication companies	Unknown	Private	Low	2019-2024	New
HR.2	Dam Incidents; Drought; Flooding; Landslide /Debris Flow	The District currently has a vertical well project identified to mitigate low flows from the Dam during outages and/or drought, as well as to provide redundancy (mitigate) for high flow releases that have historically damaged or destroyed the current gallery well system. A vertical well(s) would provide mitigation for both low and high flows (drought and Dam incidents). A vertical well(s) would improve raw water quality if debris flow occurs within Nacimiento Reservoir and River like it did after the Chimney Fire.	HRCSD	\$400,000	CIP funding; water fees; debt; grants	High	Design 2019/20; Construct 2020/21	New Some preliminary engineering completed (siting, borings, conceptual drawings, etc.)
HR.3	Dam Incidents; Drought; Flooding	Continue to engage with San Luis Obispo County Flood Control & Water Conservation District, and Monterey County Water Resources Agency to operate the Dam in a manner more conducive to preventing these hazards.	HRCSD; SLOCFWCD; MCWRA	Little to no cost	Staff Time/ Dept. Budget	Medium	2019-2020	New
HR.4	Earthquake	Increase risk awareness of the potential impacts of earthquakes to water and wastewater systems and conduct outreach to residents of same; Continue to partner with the Heritage Ranch Owners Association and their Emergency Services Committee on emergency planning.	HR Owners Association, HRCSD	Little to no cost	Staff Time/ Dept. Budget	Low	2019-2020	New
HR.5	Wildfire	Continue public education and awareness programs to advise residents of risk to life, health and safety; include information on defensible space and safe evacuation; Continue to partner with the Heritage Ranch Owners	HR Owners Association, HRCSD	Little to no cost	Staff Time/ Dept. Budget	Medium	2019-2020	New





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
		Association and their Emergency Services Committee on emergency planning.						





J.6 Implementation and Maintenance

Moving forward, the Heritage Ranch Community Services District will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Section 8 in the Base Plan: Implementation and Monitoring.

J.6.1 Incorporation into Existing Planning Mechanisms

The information contained within this Annex and the Base Plan, including results from the Vulnerability Assessments and the Mitigation Strategy will be used by the HRCSD to help inform updates of the Heritage Ranch CSD's existing plans (e.g. 2014 Village Plan) as well as in the development of additional local plans, programs, regulations, and policies. Understanding the hazards which pose a risk and the specific vulnerabilities to the HRCSD and its sphere of influence will help in future capital improvement planning and development for the HRCSD. The San Luis Obispo County Planning & Building Department may utilize the hazard information when reviewing a site plan or other type of development applications within or nearby the boundaries of the Heritage Ranch Community Services District area. As noted in Section 8 Implementation and Monitoring, the Planning Team representative/s from the Heritage Ranch CSD will report on efforts to integrate the hazard mitigation plan into local plans, programs, regulations, and policies and will report on these efforts at the annual Hazard Mitigation Plan and Planning Team review meeting.

J.6.2 Monitoring, Evaluation and Updating the Plan

The Heritage Ranch Community Services District will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Section 8 of the Base Plan. The District will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The HRCSD General Manager will be responsible for representing the HRCSD in related County Hazard Mitigation Plan meetings or events, and for coordination with County staff and departments during plan updates. The Heritage Ranch CSD realizes it is important to review the plan regularly and update it every five years in accordance with the FEMA Disaster Mitigation Act Requirements as well as other State of California requirements.





K.1 District Profile

K.1.1 Mitigation Planning History and 2019 Process

This annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan Update. This Jurisdictional Annex builds upon the previous version of the Local Hazard Mitigation Plan for the Los Osos Community Services District; approved by FEMA in August 2005. That previous mitigation plan was not incorporated into the City’s General Plan or other planning mechanisms; however, this updated mitigation plan will be integrated into those plans.

The General Manager of the Los Osos Community Services District was the representative on the county HMPC and took the lead for developing the plan this annex in coordination with the Los Osos Community Services District Local Planning Team (LPT). The LPT will be responsible for implementation and maintenance of the plan.

Table K.1 Los Osos CSD Hazard Mitigation Plan Planning Team

Department or Stakeholder	Title
Administration	General Manager
Fire	Battalion Chief
Water	Utility Manager

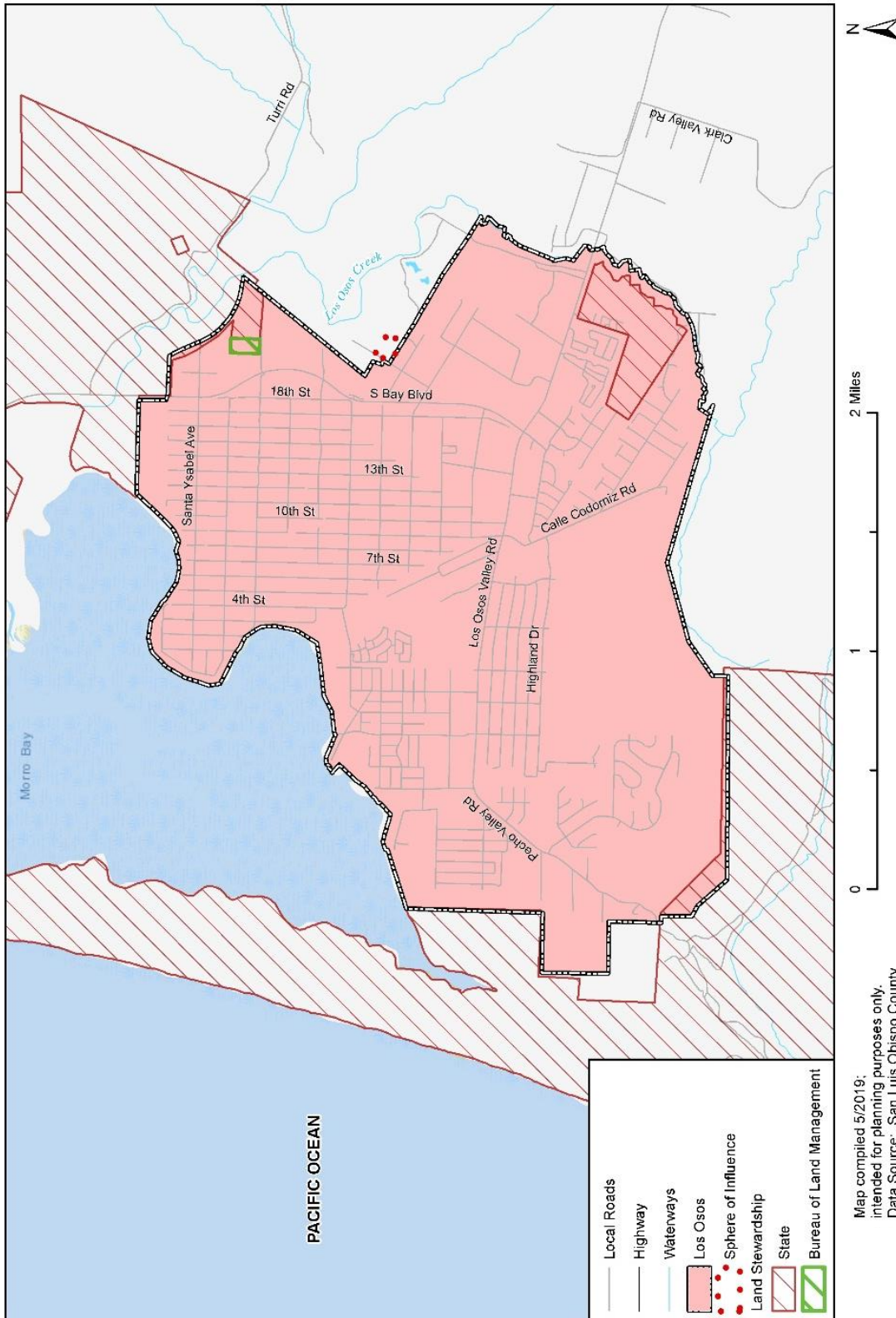
More details on the planning process followed and how the jurisdictions, service districts and stakeholders participated can be found in Chapter 3 of the Base Plan, as well as how the public was involved during the 2019 update.

Figure K.1 below is a map of the Los Osos planning area.





Figure K.1 Los Osos Community Services District



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office, LAFCO



K.1.2 District Overview

The Los Osos Community Services District (District) is located south of the City of Morro Bay and west of the City of San Luis Obispo. The District provides multiple services to the unincorporated coastal area including, water, sewer, fire protection services among other services. The Morro Bay Estuary and Morro Bay State Park border the District on the northwest, while the Los Osos Creek is on the eastern border of the District and the prominent topographic feature, Irish Hills, as well as Montano de Oro State Park lies to the south and southwest.

The District was created on November 3, 1998 replacing the old County Service Area 9 with Los Osos' first public agency governed by community residents. District services include fire protection and emergency response, storm water drainage management, solid waste management, water supply for the Baywood area, parks and recreation, street lighting, and wastewater management.

The Los Osos Community Services District is governed by an elected Board of Directors with the authority to make decisions about various public utilities and services. The Board's primary responsibilities are water, sewage, drainage, and emergency services. The Board meets on the first Thursday of each month. All Board Meetings are public meetings and any member of the public can speak to the Board regarding any matter of District authority during the public comment period.

The Los Osos Community Services District has established five committees (Emergency Services Advisory Committee, Environmental, Finance, Water Utilities and Wastewater) to advise the Board on various aspects of its operations. The Board may create standing committees at its discretion.

Community service districts are prohibited by law from engaging in land use planning. Thus, a volunteer group, the Los Osos Community Advisory Council (LOCAC) has been formed to advise the San Luis Obispo County Board of Supervisors on land use planning, parks, transportation, and other issues that affect the community of Los Osos. LOCAC is an advisory council only; it does not have the authority to make decisions.

K.1.3 Development Trends

The U.S. Census Bureau estimated the Los Osos Census Designated Place's (CDP) 2017 population as 15,714, an increase from 14,874 in 2012; this represents an almost 6 percent increase in five years. Table K.2 shows an overview of key social and demographic characteristics of the CDP taken from the U.S. Census Bureau's American Community Survey.

Table K.2 Los Osos CDP Demographic and Social Characteristics, 2012-2017

Los Osos CDP	2012	2017	% Change
Population	14,874	15,714	5.6%
Median Age	45.9	47.4	3.3%
Total Housing Units	6,911	6,800	-1.6%
Housing Occupancy Rate	92.1%	93.6%	1.5%
% of Housing Units with no Vehicles Available	3.1%	3.4%	0.3%
Median Home Value	\$387,100	\$461,100	19.1%
Unemployment	7.5%	5.5%	-2.0%
Mean Travel Time to Work (minutes)	20.3	23.3	14.8%
Median Household Income	\$57,683	\$73,082	26.7%
Per Capita Income	\$31,257	\$38,701	23.8%
% of Individuals Below Poverty Level	8.1%	10.5%	2.4%





Los Osos CDP	2012	2017	% Change
# of Households	6,363	6,367	0.1%
Average Household Size	2.32	2.45	5.6%
% of Population Over 25 with High School Diploma	93.0%	93.2%	0.2%
% of Population Over 25 with Bachelor's Degree or Higher	35.6%	41.9%	6.3%
% with Disability	12.9%	15.0%	2.1%

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

Note: Data is for the Los Osos Census Designated Place (CDP) which may not have the same boundaries as the Los Osos Community Service District.

The following table show how the Los Osos CDP's labor force breaks down by occupation and industry estimates from the U.S. Census Bureau's 2017 American Community Survey.

Table K.3 Los Osos CPD Employment by Industry (2017)

Industry	# Employed
Population (2017)	15,714
In Labor Force	7,735
Agriculture, forestry, fishing and hunting, and mining	78
Armed Forces	10
Construction	647
Manufacturing	348
Wholesale trade	96
Retail trade	873
Transportation and warehousing, and utilities	275
Information	179
Finance and insurance, and real estate and rental and leasing	365
Professional, scientific, and management, and administrative and waste management services	984
Educational services, and health care and social assistance	1,870
Arts, entertainment, and recreation, and accommodation and food services	665
Other services, except public administration	463
Public administration	458
Unemployed	424

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

Note: Data is for the Los Osos Census Designated Place (CDP) which may not have the same boundaries as the Los Osos Community Service District.

K.1.4 Other Community Planning Efforts

The coordination and synchronization of this plan with other community planning mechanisms and efforts are vital to the success of this plan. To have a thorough evaluation of hazard mitigation practices already in place, appropriate planning procedures should also involve identifying and reviewing existing plans, policies, regulations, codes, tools, and other actions are designed to reduce a community's risk and vulnerability from natural hazards.

As an unincorporated community, Los Osos and the Los Osos Community Services District are referenced in other County planning documents and regulated by County policies and planning mechanisms. Integrating existing planning efforts, mitigation policies, and action strategies into this annex establishes a credible, comprehensive document that weaves the common threads of a community's values together. The development





of this jurisdictional annex involved a comprehensive review of existing plans, studies, reports, and initiatives from San Luis Obispo County and the Los Osos community that relate to hazards or hazard mitigation, as summarized in the table below. Information on how they informed the update are noted and incorporated where applicable.

Table K.4 Summary of Review of Key Plans, Studies and Reports

Plan, Study, Report Name	How Document Informed the Annex
Los Osos Community Plan (Public Review Draft January 30, 2015)	Incorporated background information on the community and CSD.
Los Osos Community Service District Local Hazard Mitigation Plan (August 2005)	Informed assets at risk, past hazard events, and background information on the District and the community.
Estero Area Plan (2009)	Informed natural assets section on the Sensitive Areas in the Los Osos community

In addition to the development standards within the Los Osos Community Plan, there are County planning mechanisms that regulate future and existing development within the Los Osos CSD planning area. Refer to Section K.4 Capability Assessment for more information on the plans, policies, regulations and staff that govern the Los Osos planning area.

K.2 Hazard Identification and Summary

The Los Osos CSD planning team identified the hazards that affect the District and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to the Los Osos CSD (see Table K.5). There are no hazards that are unique to Los Osos.





Table K.5 Los Osos CSD Hazard Risk Summary

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Adverse Weather	Significant	Likely	Limited	Medium
Coastal Storm/Coastal Erosion/Sea Level Rise	Limited	Occasional	Limited	Low
Drought	Significant	Likely	Limited	Medium
Earthquake	Extensive	Likely	Critical	High
Wildfire	Significant	Likely	Limited	High
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		

K.3 Vulnerability Assessment

The intent of this section is to assess the Los Osos Community Services District’s vulnerability separate from that of the planning area, which has already been assessed in Section 5 Hazard Identification and Risk Assessment in the Base Plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area.

The information to support the hazard identification and risk assessment for this Annex was collected through a Data Collection Guide, which was distributed to each participating municipality or special district to complete during the planning process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact anywhere within the County, as well as to rank the hazards and identify the related vulnerabilities unique to each jurisdiction. In addition, the Los Osos CSD planning team members were asked to share information on past hazard events that have affected the Community Services District.

Each participating jurisdiction was in support of the main hazard summary identified in the Base Plan (See Table 5.2). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard





risk and vulnerabilities unique to that jurisdiction (See Table K.5). Identifying these differences helps the reader to differentiate the jurisdiction's risk and vulnerabilities from that of the overall County.

Note: The hazard "Significance" reflects overall ranking for each hazard and is based on the Los Osos CSD planning team input from the Data Collection Guide and the risk assessment developed during the planning process (see Chapter 5 of the Base Plan), which included a more detailed qualitative analysis with best available data.

The hazard summaries in Table K.5 reflect the hazards that could potentially affect the District. Based on this analysis, the priority hazards (High Significance) for mitigation are wildfire and drought. The discussion of vulnerability for each of the following hazards is in Section K.3.2 Estimating Potential Losses. Those of Medium or High significance for the Los Osos CSD are identified below.

- Adverse Weather
- Drought
- Earthquake
- Wildfire

Other Hazards

The District rated hazardous trees as a high significance hazard. In terms of this plan hazardous trees are considered a cascading hazard for adverse weather, drought and wildfire hazards. Information related to the public concerns about tree mortality in relation to wildfire risk can be found under K.3.2 Estimating Potential Losses and in Section 5 of the Base Plan.

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 in this plan and are not assessed individually for specific vulnerabilities in this section. In the Los Osos Community Services District, coastal erosion/sea level rise, flooding, landslide and debris flows, land subsidence and tsunamis are hazards ranked as a low significance to the community service district.

Los Osos is not required to participate separately in the National Flood Insurance Program (NFIP), but will continue to support the County's participation in and compliance with the NFIP.

Additionally, the CSD's committee members decided to rate several hazards as Not Applicable (N/A) to the planning area due to a lack of exposure, vulnerability, and no probability of occurrence. The following hazards are considered Not Applicable (N/A) to the Los Osos Community Services District.

- Agricultural Pest Infestation and Disease
- Biological Agents (naturally occurring)
- Dam Incidents
- Liquefaction
- Seiches

K.3.1 Assets at Risk

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

Values at Risk

The following data on property exposure is derived from the San Luis Obispo County 2017 Parcel and Assessor data as well as data that was shared by the Los Osos Planning Team. This data should only be used as a





guideline to overall values in the Community Services District as the information has some limitations. The most significant limitation is created by 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 likely low and does not reflect current market value of properties. 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. Table K.6 shows the exposure of properties (e.g., the values at risk) broken down by property type for the Los Osos Community Services District.

A more detailed list of the CSD’s assets at risk from the District’s 2012 HMP can be found as an attachment at the end of this Annex.

Table K.6 2019 Property Exposure for the Los Osos CSD by Property Types

Property Type	Property Count	Improved Value	Content Value	Total Value
Agricultural	1	\$7,861	\$7,861	\$15,722
Commercial	116	\$44,306,521	\$44,306,521	\$88,613,042
Government/Utilities	52	\$3,090	--	\$3,090
Other/Exempt/Misc.	47	\$16,614,282	--	\$16,614,282
Residential	4,822	\$937,095,463	\$468,547,732	\$1,405,643,195
Multi-Family Residential	277	\$57,293,267	\$28,646,634	\$85,939,901
Mobile/Manufactured Homes	9	\$9,764,323	\$4,882,162	\$14,646,485
Residential: Other	22	\$4,304,874	\$2,152,437	\$6,457,311
Industrial	3	\$3,870,890	\$5,806,335	\$9,677,225
Vacant	22	\$3,488,140	--	\$3,488,140
Total	5,371	\$1,076,748,711	\$554,349,681	\$1,631,098,392

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor's Office data 2019

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the District based on County GIS data is provided in Table K.7 and illustrated in Figure K.2.

Table K.7 Los Osos CSD’s Critical Facilities

Facility Type	Counts
Day Care Facilities	6
Emergency Medical Service Stations	1
Fire Stations	1
Local Law Enforcement	1
Public Schools	3
Total	12

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor's Office data 2019





Essential Facilities

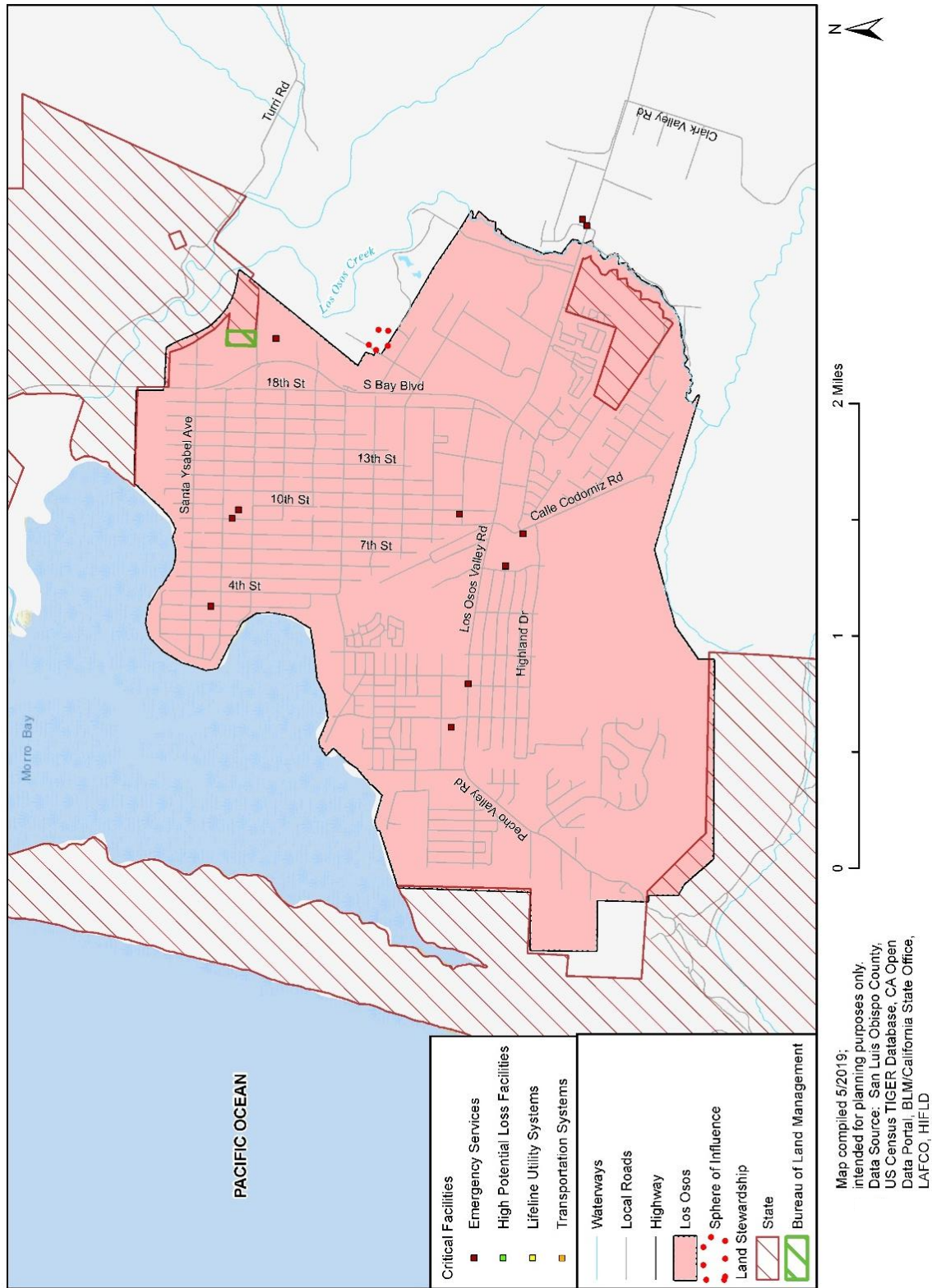
Essential facilities as identified by the Los Osos CSD Planning Team are as follows:

- Sheriff Sub-Station – 2099 10th Street
- South Bay Fire Department – 2315 Bayview Heights
- Water Treatment Facilities
- Water Tanks
- Nitrate Removal equipment





Figure K.2 Los Osos CSD's Critical Facilities



Map compiled 5/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, HIFLD





Transportation and Lifeline Facilities

The Los Osos CSD is situated in proximity to the regional transportation routes of Highway 101 and Highway 1 via Los Osos Valley Road and South Bay Boulevard. These are also the main arterial roads to access the planning area. The lack of alternatives transportation routes during an evacuation was a noted a significant concern for many residents in the Los Osos Community. The District's lifeline facilities include those listed in the essential facilities above.

Historic and Cultural Resources

No historic or cultural resources have been identified in the Los Osos CSD.

Natural Resources

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. 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. The Los Osos CSD Planning Team identified the following significant natural assets:

- Los Osos Oak State Reserve
- Baywood Park
- Audubon Overlook
- Elfin Forest
- Sweet Springs Nature Preserve
- Montana De Oro State Park
- Los Osos Community Park
- Los Osos School 1872
- Morro Bay Estuary

Some of natural assets listed above are also areas designed in the Estero Area Plan (2009) combining designations for Sensitive Reserve Areas, which apply to the protection of special resources in the Los Osos community and its vicinity:

- Los Osos Oaks State Reserve (SRA) - The Los Osos forest is an 86-acre state park reserve containing outstanding examples of California pygmy oaks--stunted coast live oaks, growing in a stabilized dune area. Other oaks are also present, making this area an outstanding example of an oak woodland. The forest also includes a strip of open space preserved by the developer of Tract 527, but it is not open to public access.
- Los Osos Creek (SRA) - The lower eight miles of the creek are an anadromous fish stream (primarily steelhead), and adjacent riparian areas are rich in wildlife. Environmental concerns include contamination and excessive siltation of both the creek and the bay by development or other adverse uses occurring too close to the creek and its tributaries.
- Eto and Warden Lakes (SRA) - These are two of the few remaining isolated freshwater marshes in the county. Both lie within the Los Osos Creek drainage. The freshwater marshes, along with the associated riparian habitat, are important sites for migratory birds.
- Hazard Canyon and Vicinity (SRA) - The threatened Morro manzanita occurs only in the area between Baywood Park and Hazard Canyon. In addition, two of the six known stands of the endangered Indian Knob mountain balm occur in Hazard Canyon. Many other endemic plant species are found in the dunes near the mouth of the canyon. This area is an excellent example of the successive stages of dune stabilization. Much of this area is within Montaña de Oro State Park.





- Montaña de Oro Grassland (SRA) - The marine terrace between Islay and Coon Creeks is a mosaic of the *Stipa* grassland community and the northern coastal scrub and coastal sage scrub. The terrace also supports numerous wildflowers.
- Coon Creek (SRA). Several natural plant communities occur in this area. The most interesting is the Bishop pine forest located on steep slopes just outside Montaña de Oro State Park. This is a large conifer forest where specimens of the Bishop pine may have been first collected scientifically and used to describe the species. Coast live oak is intermixed with the conifer forest. The county's only native population of *Ceanothus griseus* is found in this area (Source: California Native Plant Society).

Economic Assets

Los Osos is a residential area, and there is very little commercial development.

K.3.2 Estimating Potential Losses

Note: This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to HMPC member input) it differs from that of the overall County.

Table K.6 above shows Los Osos' exposure to hazards in terms of number and value of structures. San Luis Obispo County parcel and assessor data was used to calculate the improved value of parcels. The most vulnerable structures are unreinforced masonry buildings, and buildings built prior to the introduction of modern-day building codes. Impacts of past events and vulnerability to specific hazards are further discussed below. (See Section 5 of the Base Plan for more detailed information about these hazards and their impacts on San Luis Obispo County as a whole.)

Adverse Weather

Adverse weather in the Los Osos Community Services District includes hail, wind storms, and thunderstorms. Heavy rainfall events affect the District annually and the community's proximity to the Pacific Ocean tends to exaggerate adverse weather compared to inland communities. Combined with soil conditions and the presence of shallow-rooted Eucalyptus trees, heavy rains and moderate winds cause numerous tree-toppling events each year. Downed trees knock down power and communications lines, bringing disruptions lasting from a few hours to days in some locales in the District. Refer to Section 5 of the Base Plan for information on past adverse weather events in San Luis Obispo County.

Drought and Water Shortage

The Los Osos CSD is one of the three water purveyors in the Los Osos community. The District supplies water for domestic service and fire protection. The CSD's service area encompasses 633 acres of predominately residential land uses. The water supply for the Los Osos CSD consist of five active groundwater wells above the Los Osos Groundwater Basin. The District has a daily production capacity of approximately 1580 gallons per minute with all five wells being active.

The Los Osos Groundwater Basin is the only source of water for residential, commercial, institutional and agricultural uses in the Los Osos community. The basin was identified by the State as a high priority groundwater basin, which under Sustainable Groundwater Management Act of 2014 requires a basin plan to be developed and a committee be formed to implement the plan and monitor progress. According to the Los Osos Basin Plan (January 2015) the basin faces two primary challenges that pose a risk to the sustainability of the water supply; water quality degradation of the Upper Aquifer (UA), primarily by nitrate and seawater intrusions into the Lower Aquifer. Currently, Los Osos is under a building moratorium and relies on factors within the Basin Management Plan in order for the moratorium to be lifted.





The CSD has a Water Shortage Contingency Plan to enact during times of severe drought. The Contingency Plan consists of five stages (Stage One, Alert to Stage Five, Critical) each stage has a reduction target, climate trigger and the prohibitions to put in place. On April 2, 2015 the Los Osos CSD Board of Director Declared a Stage Three Emergency, which places the following prohibitions on residents in order to meet the reduction target of 25 percent.

- Penalties up to 2 times the established rate for usage above the allocation
- No leak adjustment credits will be awarded
- No new intent to Serve applications
- No allocations may be transferred to another property

Drought impacts are wide-reaching and may be economic, environmental, and/or societal. The most significant impacts associated with drought in the planning area are those related to water intensive activities such as wildfire protection, jurisdictional usage, commerce, tourism and recreation. Drought conditions can also cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding.

Earthquake

The Los Osos 2012 Local Hazard Mitigation identifies three fault zones (Los Osos, Edna and Indian Knob) that could have potential impacts on the Los Osos Community Services District. The Los Osos fault poses the greatest risk to the CSD and its facilities. The fault is considered active and has the potential to generate a 6.8 magnitude earthquake. The San Simeon earthquake in 2003 which had impacts countywide caused significant damage to the Los Osos Community Services District’s 16th Street North water storage tank. The tank was not anchored and endured what is referred to as “elephant foot” damage. The District repaired the tank with the assistance of FEMA and the California Office of Emergency Services (Cal OES). The improvements to the 16th Street tank secured the tank by anchoring it and repairing the lower shell where major damage had occurred. Other critical infrastructure, including the fire station, suffered damage that was repaired.

Los Osos Community Services District is located in a geologically complex and seismically active region that is subject to earthquakes and potentially strong groundshaking. Portions of the District are located on sand in-fill areas. These areas and those areas underlain by young, poorly consolidated, saturated granular alluvial sediments, would be most susceptible to the effects of liquefaction. These soil conditions are most frequently found in areas underlain by recent river and flood plain deposits, which have increased vulnerability to liquefaction when groundshaking occurs.

The following tables (Table K.8 Table K.9) shows the types of properties at moderate and high risk of liquefaction. Based on this analysis there are 988 properties at moderate risk of liquefaction with a total value of over \$324 million. Residential properties are the most vulnerable property type to liquefaction in Los Osos, with a combined total of 880 properties (including 2 mobile homes) located in an area of moderate liquefaction risk and a total value of nearly \$240 million.

Table K.8 Los Osos CSD’s Liquefaction Risk by Property Type – Moderate Risk

Property Type	Property Count	Improved Value	Content Value	Total Value
Agricultural	1	\$7,861	\$7,861	\$15,722
Commercial	70	\$34,102,286	\$34,102,286	\$68,204,572
Government/Utilities	8	--	--	\$0
Other/Exempt/Misc.	21	\$6,625,714	--	\$6,625,714
Residential	682	\$121,222,661	\$60,611,331	\$181,833,992
Multi-Family Residential	177	\$33,981,650	\$16,990,825	\$50,972,475





Property Type	Property Count	Improved Value	Content Value	Total Value
Mobile/Manufactured Homes	2	\$1,475,614	\$737,807	\$2,213,421
Residential: Other	19	\$2,989,644	\$1,494,822	\$4,484,466
Industrial	3	\$3,870,890	\$5,806,335	\$9,677,225
Vacant	5	\$389,513	--	\$389,513
Total	988	\$204,665,833	\$119,751,267	\$324,417,100

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table K.9 Los Osos CSD's Liquefaction Risk by Property Type – High Risk

Property Type	Property Count	Improved Value	Content Value	Total Value
Commercial	13	\$2,261,761	\$2,261,761	\$4,523,522
Government/Utilities	7	\$3,090	--	\$3,090
Other/Exempt/Misc.	6	\$3,437,429	--	\$3,437,429
Residential	451	\$82,857,177	\$41,428,589	\$124,285,766
Multi-Family Residential	14	\$4,126,546	\$2,063,273	\$6,189,819
Residential: Other	2	\$883,505	\$441,753	\$1,325,258
Vacant	5	\$319,410	--	\$319,410
Total	498	\$93,888,918	\$46,195,375	\$140,084,293

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

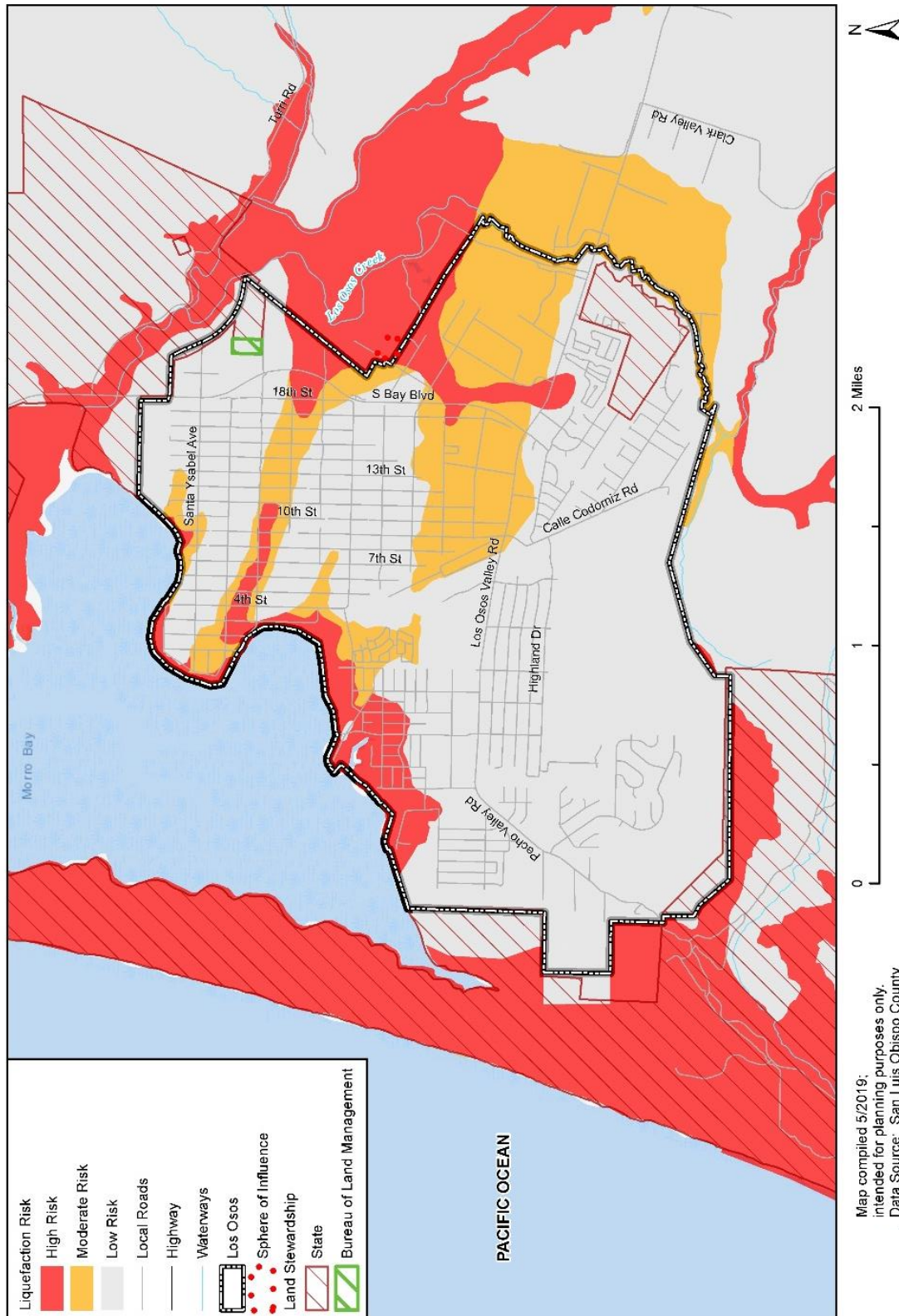
Based on this analysis there are 498 properties at high risk of liquefaction with a total value of over \$140 million. Residential properties are the most vulnerable property type to liquefaction in Los Osos, with 467 residential properties in an area of high liquefaction risk for a total value of over \$131 million.

The following map depicts the areas of the Los Osos CSD that are at risk of liquefaction. The areas along the coastline to the District's east and north are at high risk of liquefaction, while the eastern portion of the District's boundaries are designated as moderate risk of liquefaction, including Los Osos Valley Road, the only major road out of the Los Osos CSD limits.





Figure K.3 Areas of Potential Liquefaction Risk



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office, LAFCO



Wildfire

The climate in Los Osos Community Services District planning area is generally referred to as Mediterranean with warm dry summers and relatively cool, moderately wet winters. Rainfall throughout the District occurs primarily between November and April, and ranges between 20-25 inches per year. Because summers are generally warm and dry, the risk of wildfires is highest in late summer and early fall. Fog and cool weather that are common in the coastal regions help to maintain moisture levels in vegetation along the coast, which helps to minimize fire risk. Other factors such as wind, topography and overgrown vegetation may counteract the fog and cool weather climate in the planning area and increase in the risk of ignition. The District is a residential development that has occurred in the foothill areas around Los Osos and Montana De Oro State Park. The residential development is intermixed with native vegetation which results in a high-value, high-risk area.

One of the questions asked in the Public Survey for the County HMP was: *Do you have information on specific hazard issues/problems areas that you would like the planning committee to consider?* Several of the responses to this question came from residents of the Los Osos community (21% of the responses stated they lived in the Los Osos area). Residents expressed concern with the high density of eucalyptus trees in Los Osos and proximity to Montana de Oro State Park as a threat to their community. The limited number of evacuation routes out of the Los Osos was also identified as an area of concern for their community.

Several areas of the Los Osos community are within the high to very high severity wildfire hazard zones. Analysis using GIS was used to create the following tables, which quantify the potential losses by wildfire severity zones and property type. Based on the analysis there are 891 properties located in the high to very high severity zones. Of those properties 852 are residential properties (including 6 mobile/manufactured homes) with a combined value of \$381,329,349. In addition to the residential properties there is also a public school, Monarch Grove Elementary, located in the high wildfire hazard zone.

Table K.10 Los Osos CSD’s Wildfire Risk by Property Type – High Severity SRA Zone

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate
Government/Utilities	5	--	--	\$0	\$0
Other/Exempt/Misc.	1	\$1,517,084	--	\$1,517,084	\$1,517,084
Residential	114	\$31,039,882	\$15,519,941	\$46,559,823	\$46,559,823
Multi-Family Residential	2	\$212,084	\$106,042	\$318,126	\$318,126
Vacant	3	\$1,068,033	--	\$1,068,033	\$1,068,033
Total	125	\$33,837,083	\$15,625,983	\$49,463,066	\$49,463,066

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis





Table K.11 Los Osos CSD's Wildfire Risk by Property – Very High Severity SRA Zone

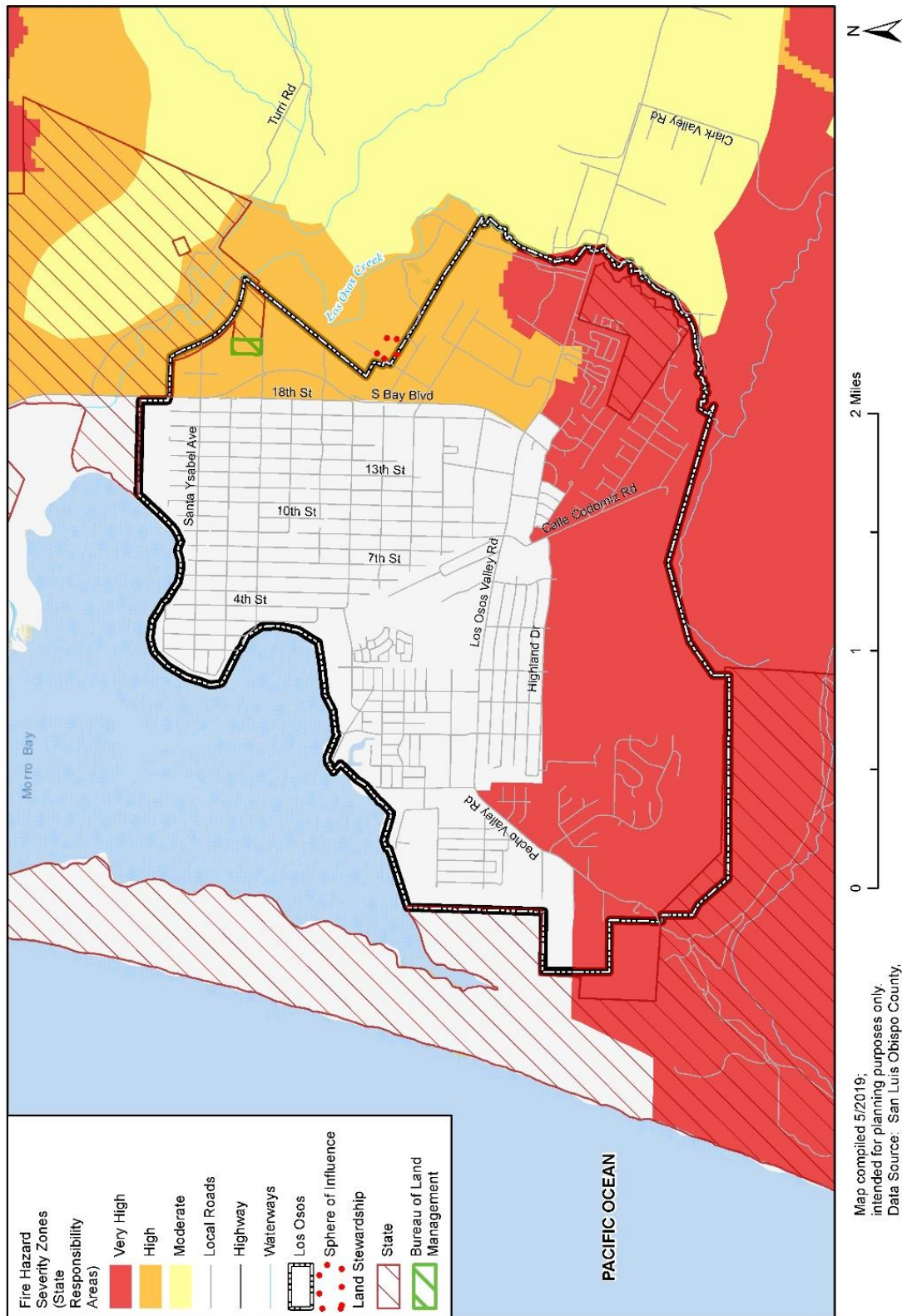
Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate
Agricultural	1	\$7,861	\$7,861	\$15,722	\$15,722
Government/Utilities	21	--	--	\$0	\$0
Other/Exempt/Misc.	2	--	--	\$0	\$0
Residential	729	\$214,837,365	\$107,418,683	\$322,256,048	\$322,256,048
Multi-Family Residential	1	\$21,525	\$10,763	\$32,288	\$32,288
Mobile/Manufactured Homes	6	\$8,108,709	\$4,054,355	\$12,163,064	\$12,163,064
Vacant	6	\$1,331,327	--	\$1,331,327	\$1,331,327
Total	766	\$224,306,787	\$111,491,661	\$335,798,448	\$335,798,448

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis





Figure K.4 Los Osos CSD Wildfire Risk



Map compiled 5/2019;
intended for planning purposes only
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, CalFire





Coastal Storm/Coastal Erosion/Sea Level Rise

As part of the 2019 HMP planning effort, a sea level rise risk assessment was completed to determine how sea level rise may affect coastal jurisdictions and critical facilities and how coastal flooding might be exacerbated in the future. Table K.12 and Table K.13 summarize the properties at risk of inundation by sea level rise and sea level rise combined with a FEMA 1% annual chance flood. The area of inundation by sea level rise and sea level rise combined with the 1% flood are shown in Figure K.5 and Figure K.6, respectively. No critical facilities were determined to be at risk in the sea-level rise scenarios. See Section 5.3.4 Coastal Storm/Coastal Erosion/Sea Level Rise in the base plan for more details on the scenarios and data sources used for this analysis.

Table K.12 Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Commercial	--	2	12	3	5	15
Government/Utilities	--	--	1	--	1	1
Other/Exempt/Misc.	--	--	1	1	1	1
Residential	--	14	222	28	71	294
Multi-Family Residential	--	--	4	--	--	10
Mobile/Manufactured Homes	--	--	1	--	--	1
Residential: Other	1	1	3	3	3	3
Vacant	--	--	2	1	2	2
Total	1	17	246	36	86	327

Source: Wood analysis with USGS CoSMoS 3.1 data

Table K.13 Improved Values of Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Commercial	--	\$546,320	\$2,243,469	\$744,960	\$883,510	\$2,544,092
Government/Utilities	--	--	--	--	--	--
Other/Exempt/Misc.	--	--	\$420,000	\$420,000	\$420,000	\$420,000
Residential	--	\$2,323,098	\$41,957,596	\$4,462,878	\$12,338,675	\$55,511,993
Multi-Family Residential	--	--	\$1,264,339	--	--	\$3,120,843
Mobile/Manufactured Homes	--	--	\$62,149	--	--	\$62,149
Residential: Other	\$75,059	\$75,059	\$2,084,548	\$2,084,548	\$2,084,548	\$2,084,548
Vacant	--	--	\$21,225	\$10,404	\$21,225	\$21,225
Total	\$75,059	\$2,944,477	\$48,053,326	\$7,722,790	\$15,747,958	\$63,764,850

Source: Wood analysis with USGS CoSMoS 3.1 data





Figure K.5 Los Osos Sea Level Rise Scenario Analysis: Tidal Inundation Only

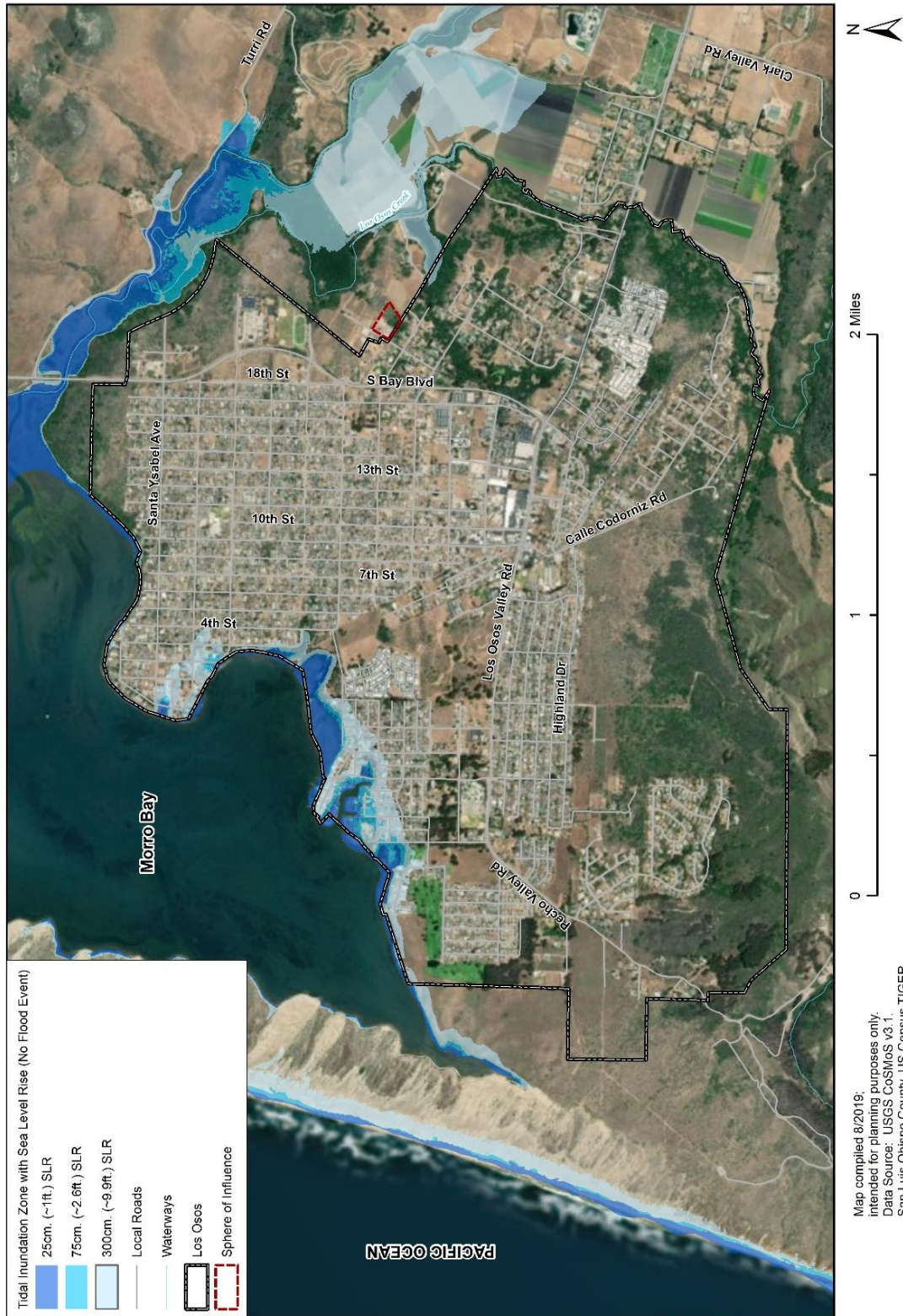




Figure K.6 Los Osos Sea Level Rise Scenario Analysis: Tidal Inundation and 1% Annual Chance Flood





K.4 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 capability 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory which of these policies or programs were in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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. In summarizing current capabilities and identifying gaps, the jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The Los Osos CSD capabilities are summarized below.

K.4.1 Regulatory Mitigation Capabilities

Table K.14 identifies existing regulatory capabilities the District has in place to help with future mitigation efforts. Note, many of the regulatory capabilities that can be used for the District are within the County’s jurisdiction. Refer to Section 6 of the Base Plan for specific information related to the County’s mitigation capabilities.

Table K.14 Los Osos CSD Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	Yes	County, Estero Area Plan
Zoning ordinance	Yes	County
Subdivision ordinance	Yes	
Growth management ordinance	Yes	County
Floodplain ordinance	Yes	County
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	County
Building code	Yes	County
Fire department ISO rating	Yes	County
Erosion or sediment control program	Yes	County
Stormwater management program	Yes	County
Site plan review requirements	Yes	County
Capital improvements plan	Yes	County
Economic development plan	Yes	County
Local emergency operations plan	Yes	County
Other special plans	No	
Flood Insurance Study or other engineering study for streams	Yes	County
Elevation certificates (for floodplain development)	No	

Source: Wood Data Collection Guide, 2019





K.4.2 Administrative/Technical Mitigation Capabilities

Table K.15 identifies the personnel responsible for activities related to mitigation and loss prevention in the Los Osos Community Services District.

Table K.15 Los Osos CSD Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	County Planning and District Engineer
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	County Planning and District Engineer
Planner/engineer/scientist with an understanding of natural hazards	Yes	County
Personnel skilled in GIS	Yes	County
Full time building official	Yes	County
Floodplain manager	NA	County
Emergency manager	Yes	County
Grant writer	Yes	Los Osos CSD
Other personnel	Yes	Emergency Services Advisory Committee, County; South Bay Fire Department
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	County
Warning systems/services (Reverse 9-11, outdoor warning signals)	Yes	County Sheriff's Office

Source: Wood Data Collection Guide, 2019

K.4.3 Fiscal Mitigation Capabilities

Table K.16 identifies financial tools or resources that the CSD could potentially use to help fund mitigation activities.

Table K.16 Los Osos CSD Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	No
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

K.4.4 Mitigation Outreach and Partnerships

The Los Osos CSD has ongoing public education and information programs related to general emergency preparedness, water conservation, and wildfire mitigation practices for homeowners. In partnership with the Cal FIRE, the SLO County Fire Department provides Community Emergency Response Team (CERT) classes to Los





Osos residents. Cal FIRE and the community's Fire Safe Council are also working with the District and the community on a fire prevention specific to the Los Osos community. The District plans to continue to implement planned greenbelts and fuel breaks; Los Osos CSD passed a Hazardous Vegetation Abatement Ordinance to assist the South Bay Fire Department in aggressively managing the defensible space around homes and vacant properties in the community. The District's website has valuable information related to various hazards including wildfire and information on defensible spaces and residential fire sprinklers and tsunami inundation maps and evacuation information specific to Los Osos.

The Los Osos CSD Emergency Services Advisory Committee was established in 2008 to assist the District's Board of Directors in providing emergency services to the District. Advisory Committee meetings are a public forum with the ability for the public to review and provide input on issues.

K.4.5 Opportunities for Enhancement

Based on the capabilities assessment, the Los Osos Community Service District has several existing mechanisms in place that already help to mitigate hazards. There are also opportunities for the District to expand or improve on these policies and programs to further protect the community. This planning process will help to inform the District's current efforts in the development of a community wide emergency preparedness program. Other future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform District staff, the Emergency Services Advisory Committee and District Board members on how best to integrate hazard information and mitigation projects into the District policies and ongoing duties of the District. Continuing to train District staff on mitigation and the hazards that pose a risk to the Los Osos Community Service District will lead to more informed staff members who can better communicate this information to the public.

K.5 Mitigation Strategy

K.5.1 Mitigation Goals and Objectives

The Los Osos CSD adopts the hazard mitigation goals and objectives developed by the HMPC and described in Section 7 Mitigation Strategy.

K.5.2 Completed 2012 Mitigation Actions

During the 2019 planning process the Los Osos Community Services District Planning Team reviewed all the mitigation actions from the 2012 plan. Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. During the 2019 planning process the Planning Team identified that of their eleven mitigation actions from 2012, three of the actions have been completed, demonstrating progress and building the community's resiliency to disasters; see Table K.15 below. Table K.18 Los Osos Community Services District's Mitigation Action Plan describes all the in progress actions as well as new mitigation action from the Planning Team.





Table K.17 Los Osos CSD Mitigation Action Completed from 2012 Plan

ID	Corresponding Hazard(s)	Mitigation Action	Lead Agency	Priority	Actions Status Notes
1	Wildfire	Inside the District – implement planned greenbelts and fuel breaks, and continue hazard abatement program	Los Osos Focus Group, Cal Fire, LOCSO	High	We have an abatement program - complete. Green belt and fuel breaks in constant progress.
3	Earthquake, Water Tank Failures	Public education, flexible connections at tanks, tank retro-fitting	LOCSO	High	Project completed 2007
4	Hazardous Materials	Monitoring equipment, public awareness	SLO County Environmental Health	Medium	Project Complete

K.5.3 Mitigation Actions

The planning team for the Los Osos Community Service District identified and prioritized the following mitigation actions based on the risk assessment. Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. 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.





Table K.18 Los Osos Community Services District’s Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/ Background/ Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
LO.1	Flood	Improve drainage, public education on construction management, evacuation routes and vegetation management	LOCSD, SLO County	\$10,000 to \$50,00	FEMA HMA	High	3-5 yrs.	In progress. All drainage areas have been improved/upgraded. Vegetation management is in progress
LO.2	Drought, Earthquake	Engineer and install a SCADA system to improve water efficiencies and mitigate water loss if system is compromised during an earthquake.	LOCSD	\$10,000 to \$50,00	District Budget	High	1 yr.	This is a 2019/2020 scheduled project
LO.3	Wildfire	Educate the public to take precautions to prevent potentially harmful fires and be educated about surviving them. The District is encouraging local organizations to involve the residents of Los Osos and is helping coordinate town hall meetings, Community Emergency Response Team training and sending social media blasts regarding fire safety. There are many local organizations that residents can join in order to be better prepared in case of a fire; Fire Safe Council, Fire Wise Cabrillo, and the Emergency Services Advisory Committee to the Los Osos Board of Directors. Benefits: With an involved community we hope to reduce risks of wildland fires to a minimum. In case of a wildfire, we hope that the community will be prepared in order to avoid human and property loss.	Los Osos CSD / South Bay Fire Dept	Little to no cost	District Budget	High	Other	Annual Implementation





K.6 Implementation and Maintenance

Moving forward, the Los Osos Community Service District will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Section 8 in the Base Plan.

K.6.1 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 Community Service District to help inform updates of the Los Osos Community Plan and in the development of additional local plans, programs and policies. Understanding the hazard that pose a risk and the specific vulnerabilities to the jurisdiction will help in future capital improvement planning for the District. The County Planning and Building Department may utilize the hazard information when reviewing a site plan or other type of development applications with the boundaries of the Los Osos Community Service District area. As noted in Section 8 Plan Implementation and Monitoring, the HMPC representatives from the Los Osos Community Services District 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 HMPC plan review meeting.

K.6.2 Monitoring, Evaluation and Updating the Plan

The Los Osos Community Service District will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Section 8 of the Base Plan. The District will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The CSD General Manager will be responsible for representing the Community Services District in the County HMPC, and for coordination with County staff and departments during plan updates. The Los Osos Community Services District 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.





L.1 District Profile

L.1.1 Mitigation Planning History and 2019 Process

This Annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan Update. The General Manager of the Nipomo Community Services District (CSD) was the representative on the County HMPC and took the lead for developing the plan and this annex in coordination with the Nipomo Community Services District (CSD) Local Planning Team (Planning Team). The Local (District) Planning Team will be responsible for implementation and maintenance of the plan. Table L.1 summarizes the District’s planning team for the plan revision process.

Table L.1 Nipomo CSD Hazard Mitigation Plan Planning Team

Department or Stakeholder	Title
Nipomo CSD	General Manager

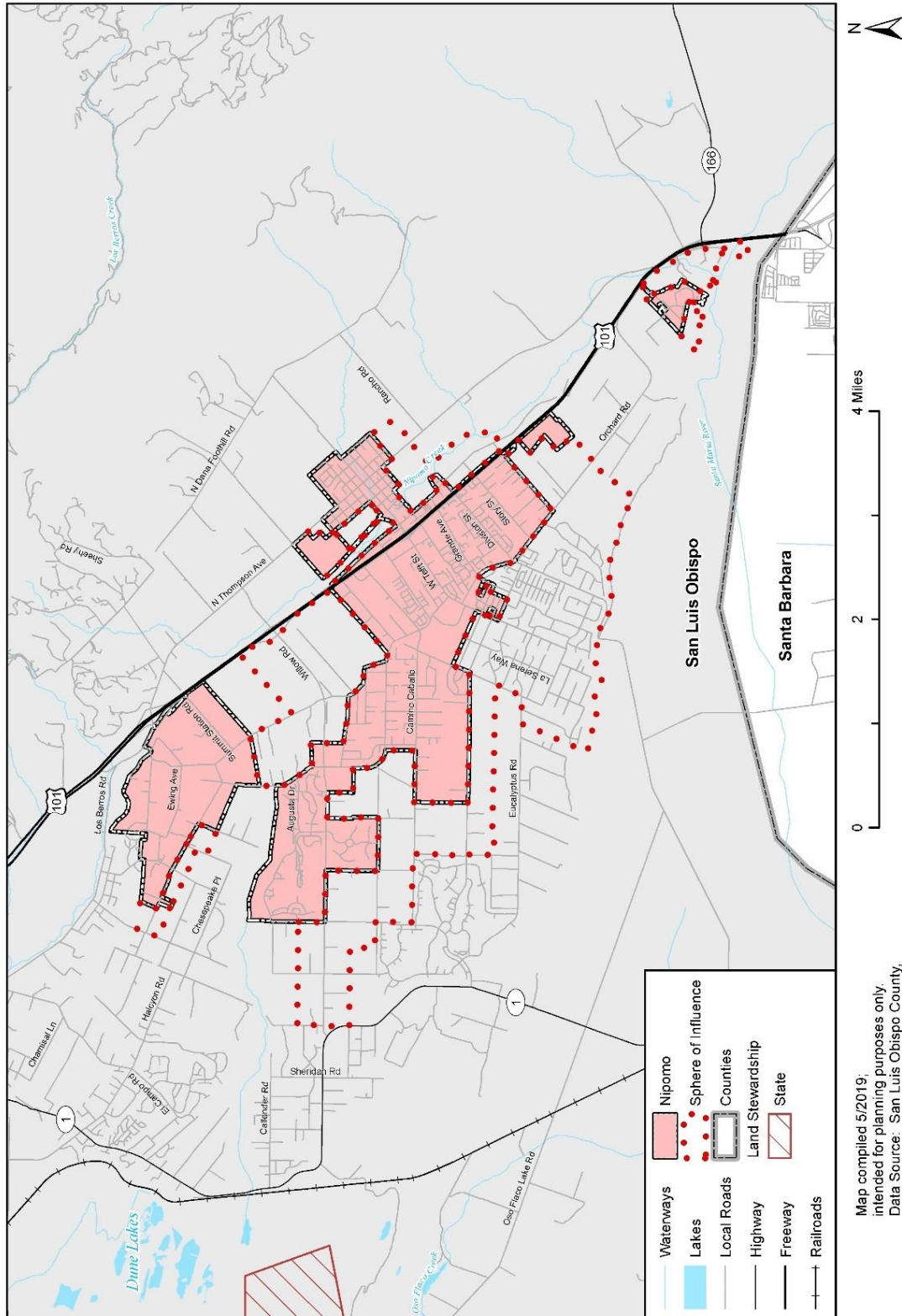
More details on the planning process and how the jurisdictions, service districts, and stakeholders participated can be found in Section 3 of the Base Plan, along with how the public was involved during the 2019 update.

Figure L.1 is a map of the larger Nipomo community including its sphere of influence and nearby areas.





Figure L.1 Nipomo Community Services District



Map compiled 5/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO





L.1.2 District Overview

The Nipomo Community Services District's (CSD) mission is to provide its customers with reliable, quality, and cost-effective services now and in the future. The District was established in 1965 under the Community Services District Law of the Government Code Section 61000, assisted by the Nipomo Citizen's Steering Committee. The proposed District at the time consisted of 1,384 acres that included 560 dwellings and about 2,300 people hoping to solve the community's early water and sewer problems after several typhoid fever cases in the early 1960s tied the health issues to nitrates in the water and proximity to sewer tanks.

In present times, the Nipomo CSD is governed by a board of directors, each with different committee assignments and possible delegations. This Board is responsible for providing counsel related to water management and resources, overall administration, financing/auditing, and facilities to the Nipomo community.

Nipomo is located in the southwest portion of the County of San Luis Obispo next to Highway 101, within the South County Planning Area. It currently serves about 14,000 people in a somewhat rural environment between the Five Cities Area of the County and the City of Santa Maria (in the County of Santa Barbara). The Nipomo CSD has expanded to cover over six square miles, and provides limited stormwater, street lighting, and landscape maintenance. The District's sphere of influence covers about nine square miles in addition to the current service area and based on the latest LAFCO-developed Municipal Service Review, growth in the Nipomo area is expected to follow a 1% rate over the next 20 years.

The bulk of the CSD's facilities are comprised of pipes, pumps, ponds, and tanks. Recent efforts related to the District's water infrastructure have been focused on earthquake related hazards, due to the District's location atop an ancient sand dune as well as crossing of several earthquake faults. Exposure to liquefaction and other earth movement issues is of concern to Nipomo as well, but there has not been any recent damage to key infrastructure from earthquake and liquefaction hazards.

Nipomo developed their most recent Strategic Plan in 2018. This plan outlines the District's initial priority issues for the coming years (among other key plan aspects), and these were identified during workshops and interviews with the board members, managers, and directors of local operative processes. Three priorities were outlined in this Strategic Plan document: 1) Maintain and enhance community sustainability, financial stability, and infrastructure stability; 2) optimize operations and achieve customer satisfaction; and, 3) attain operational resiliency and encourage employee leadership and development. In terms of hazards and related mitigation opportunities, it is important to acknowledge these goals and objectives to ensure effective planning mechanisms and efforts across the District, especially to enable or help move forward currently ongoing activities.

L.1.3 Development Trends

The Nipomo CSD adopted its Community Plan in 2014, to "establish a vision for the future that will guide land use and transportation over the next 20 years" (Nipomo Community Plan, 2014). This Community Plan contains information on the existing and future status of water supplies, wastewater/sewage, schools, and various public services the District provides. Historic flood risks and local resources are also noted and are key to this hazard mitigation plan.

As of 2010, the U.S. Census Bureau noted the CSD's population to be approximately 16,714. Prior to 2015, Nipomo was relying solely on groundwater sources. Although growth has been very slight and slow in Nipomo, due to extreme drought and growing water demands, groundwater was becoming scarce and shortage conditions required solutions to balance supply versus demand in the District. In 2015, the District began a \$17 million public works project (the largest and most important in the District's 50-year history) to obtain



supplemental water from Santa Maria, back in 2015. Water deliveries began that year, allowing for millions of gallons to avoid being pumped from the troubled water basin underlying the Nipomo Mesa.

L.1.4 Other Community Planning Efforts

The coordination and synchronization with other community planning mechanisms and efforts are vital to the success of this Plan. To have a thorough evaluation of hazard mitigation practices already in place, appropriate planning procedures should also involve identifying and reviewing existing plans, policies, regulations, codes, tools, and other actions are designed to reduce a community’s risk and vulnerability from natural hazards.

As an unincorporated community, the Nipomo CSD is referenced in other County planning documents and regulated by County policies and planning mechanisms. Integrating existing planning efforts, mitigation policies, and action strategies into this annex establishes a credible, comprehensive document that weaves the common threads of a community’s values together. The development of this Community Services District Annex involved a comprehensive review of existing plans, studies, reports, and initiatives from San Luis Obispo County and the Nipomo community that relate to hazards or hazard mitigation. A high-level summary of the key plans, studies and reports is summarized in Table L.2. Information on how they informed the update are noted and incorporated where applicable.

In addition to the development standards within the Nipomo Strategic Plan, there are County planning mechanisms that regulate future and existing development within the Nipomo CSD planning area. Refer to Section L.4 Capability Assessment for more information on the plans, policies, regulations and staff that govern the Nipomo CSD.

Table L.2 Summary of Review of Key Plans, Studies, and Reports for Nipomo CSD

Plan, Study, Report Name	How Document Informed the Annex
County of San Luis Obispo Local Hazard Mitigation Plan (2014)	Informed past hazard event history, hazard profile and background, and mitigation strategy information.
County of San Luis Obispo Land Use and Circulation Elements (Part II): The Area Plans – Inland and South County Area Plans	Obtained water use information, drought related details, etc.
Nipomo Community Services District 2018 Strategic Plan	Obtained current District information, ongoing efforts, water use information, etc.
Nipomo Community Plan – Updated 2014	Obtained District information, history, past programs, etc.
Nipomo’s Supplemental Water from Santa Maria project summary	Obtained information on past and ongoing water purchase/acquisition efforts and the drought/water scarcity hazard.
San Luis Obispo County 2014 Integrated Regional Water Management Plan	Obtained information on water use in Nipomo, water management regions, and the drought/water scarcity hazard.
State of California’s Hazard Mitigation Plan – Updated 2018	General information on hazards, events, and vulnerability assessments.
San Luis Obispo County Dam and Levee Failure Evacuation Plan – Updated 2016	Flooding, dam, and levee hazard information and recent studies.
2014-2016 Resource Summary Report for San Luis Obispo County’s General Plan	Pulled information about water resources, reliability, and ongoing efforts to increase resilience in the County and District of Nipomo as related to drought.

L.2 Hazard Identification and Summary

The Nipomo CSD planning team identified the key hazards that affect the District, and summarized their frequency of occurrence, spatial extent, potential magnitude, and overall significance specific to the Nipomo





CSD (see Table L.3). There are no hazards that are unique to this CSD. (Note that earthquake and liquefaction hazards will be profiled together as one under Section L.3.2)

Table L.3 Nipomo CSD Hazard Risk Summary

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Dam Incidents and Failure	Limited	Unlikely	Limited	Low
Drought and Water Shortage	Significant	Likely	Limited	High
Earthquake (including Liquefaction)	Extensive	Likely	Limited	Medium
Flood	Limited	Occasional	Limited	Low
Landslide and Debris Flow	Limited	Unlikely	Limited	Low
Wildfire	Significant	Occasional	Limited	Medium
Human Caused: Hazardous Materials	Significant	Highly Likely	Negligible	Medium
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		

L.3 Vulnerability Assessment

The intent of this section is to assess the Nipomo CSD’s vulnerability separately from that of the County, which has already been assessed in Section 5 Hazard Identification and Risk Assessment (HIRA) in the Base Plan. This vulnerability assessment analyzes the population, property, and other assets (e.g. critical facilities) at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area.

The key information to support the HIRA for this Annex was collected through a Data Collection Guide, which was distributed to each participating municipality, community services district, or special district to complete during the planning process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact anywhere within the County, as well as to rank the hazards and identify the





related vulnerabilities unique to each jurisdiction/district. In addition, the Nipomo CSD planning team was asked to share information on past hazard events that have affected the District.

Each participating jurisdiction or district was in support of the main hazard summary identified in the Base Plan (See Table L.3). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction (see Table L.3). Identifying these differences helps the reader to differentiate the District's risk and vulnerabilities from that of the overall County.

Note: The hazard "Significance" reflects overall ranking for each hazard and is based on the Nipomo CSD planning team input from the Data Collection Guide and the risk assessment developed during the planning process (see Chapter 5 of the Base Plan), which included more detailed quantitative and qualitative analyses with best available data for all hazards in the County.

The hazard summaries in Table L.3 reflect the hazards that could potentially affect the District in major ways. Based on this analysis, the priority hazard (High Significance) for mitigation is Drought. The second priority hazards (Medium Significance) are Earthquake and Liquefaction. The discussion of vulnerability for each of the assessed hazards is contained in the following sections. Those of Medium or High significance for the Nipomo CSD are identified below.

- Drought
- Earthquake & Liquefaction
- Wildfire
- Human Caused Hazards: Hazardous Materials

Other Hazards

Hazards assigned a Significance rating of Low and which do not differ significantly from the County ranking (e.g., Low vs. High) will be profiled in a limited manner. In the Nipomo CSD, these include:

- Dam Incidents
- Flooding
- Landslide/Debris Flow

Additionally, the CSD's Committee members decided to rate several hazards as Not Applicable (N/A) to the planning area due to a lack of exposure, vulnerability, and no probability of occurrence. The following hazards are considered Not Applicable (N/A) to the Nipomo Community Services District.

- Adverse Weather
- Agricultural Pests and Plant Diseases
- Biological Agents
- Coastal Erosion
- Coastal Flooding and Inundation
- Hazardous Trees
- Land Subsidence
- Sea Level Rise
- Tsunamis and Seiches

L.3.1 Assets at Risk

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



Values at Risk

The following data on property exposure is derived from San Luis Obispo County Assessor’s data. This data should only be used as a guideline to overall values in the Community Services District as the information has some limitations. Table L.4 Property Exposure Values for the Nipomo CSD by Parcel Type shows the exposure of properties (e.g., the values at risk based on improvement values, content values, and total values as an addition of these two types of values) broken down by property type for the Nipomo Community Services District. Refer to the Base Plan Section 5.2 (HIRA Asset Summary) for more details on value information, content calculations, and overall parcel analysis methodology.

Table L.4 Property Exposure Values for the Nipomo CSD by Parcel Type

Property Type	Parcel Count	Improved Value	Content Value	Total Value
Agricultural	3	\$736,601	\$736,601	\$1,473,202
Commercial	60	\$51,059,866	\$51,059,866	\$102,119,732
Government/ Utilities	49	--	--	\$0
Other/Exempt/Misc.	132	\$13,106,704	--	\$13,106,704
Residential	3,327	\$785,708,738	\$392,854,369	\$1,178,563,107
Multi-Family Residential	182	\$55,234,041	\$27,617,021	\$82,851,062
Mobile/Manufactured Homes	289	\$22,766,514	\$11,383,257	\$34,149,771
Residential: Other	301	\$47,573,788	\$23,786,894	\$71,360,682
Vacant	40	\$9,130,020	--	\$9,130,020
TOTAL	4,383	\$985,316,272	\$507,438,008	\$1,492,754,280

Source: San Luis Obispo County 2019 Assessor data; ParcelQuest; Wood Plc analysis

Critical Facilities and Infrastructure

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. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the District based on San Luis Obispo County GIS data as well as structures obtained from the Homeland Infrastructure Foundation-Level Dataset (HIFLD) is provided in Table L.5 and Table L.6, and is illustrated in Figure L.2. The four types of Critical Facilities categorized by San Luis Obispo County and its jurisdictions’ and districts’ planning teams are: Emergency Services, High Potential Loss Facilities, Lifeline Utility Systems, and Transportation Systems. Refer to Section 5.2 of the Base Plan for more information on the assets used throughout this Annex and the county-wide analyses.





Table L.5 Summary of Nipomo CSD’s Critical Facilities

Facility Category	Facility Type	Count
Emergency Services	Day Care Facilities	2
	Emergency Medical Service Stations	1
	Fire Stations	1
	Private Schools	1
	Public Schools	4
Lifeline Utility Services	Water Treatment Facilities	1
TOTAL		10

Source: San Luis Obispo County Planning and Building; LAFCO; HIFLD; Wood Plc analysis

Table L.6 Details about Nipomo CSD’s Critical Facilities

Facility Type	Name
Day Care Facilities	Dayspring Preschool
Day Care Facilities	Nipomo Recreation – Little Bits Preschool
Emergency Medical Service Stations	California Dept. of Forestry and Fire Protection Station 20 (Nipomo Fire Station)
Fire Stations	Station 20 (Nipomo Fire Station)
Private Schools	Highland Preparatory School
Public School	Central Coast New Tech High School
Public School	Dana Elementary School
Public School	Nipomo Elementary School
Public School	Nipomo High School
Water Treatment Facilities	Blacklake Waste/Treatment Water Facility

Source: San Luis Obispo County Planning and Building; LAFCO; HIFLD

Additional Critical Facilities

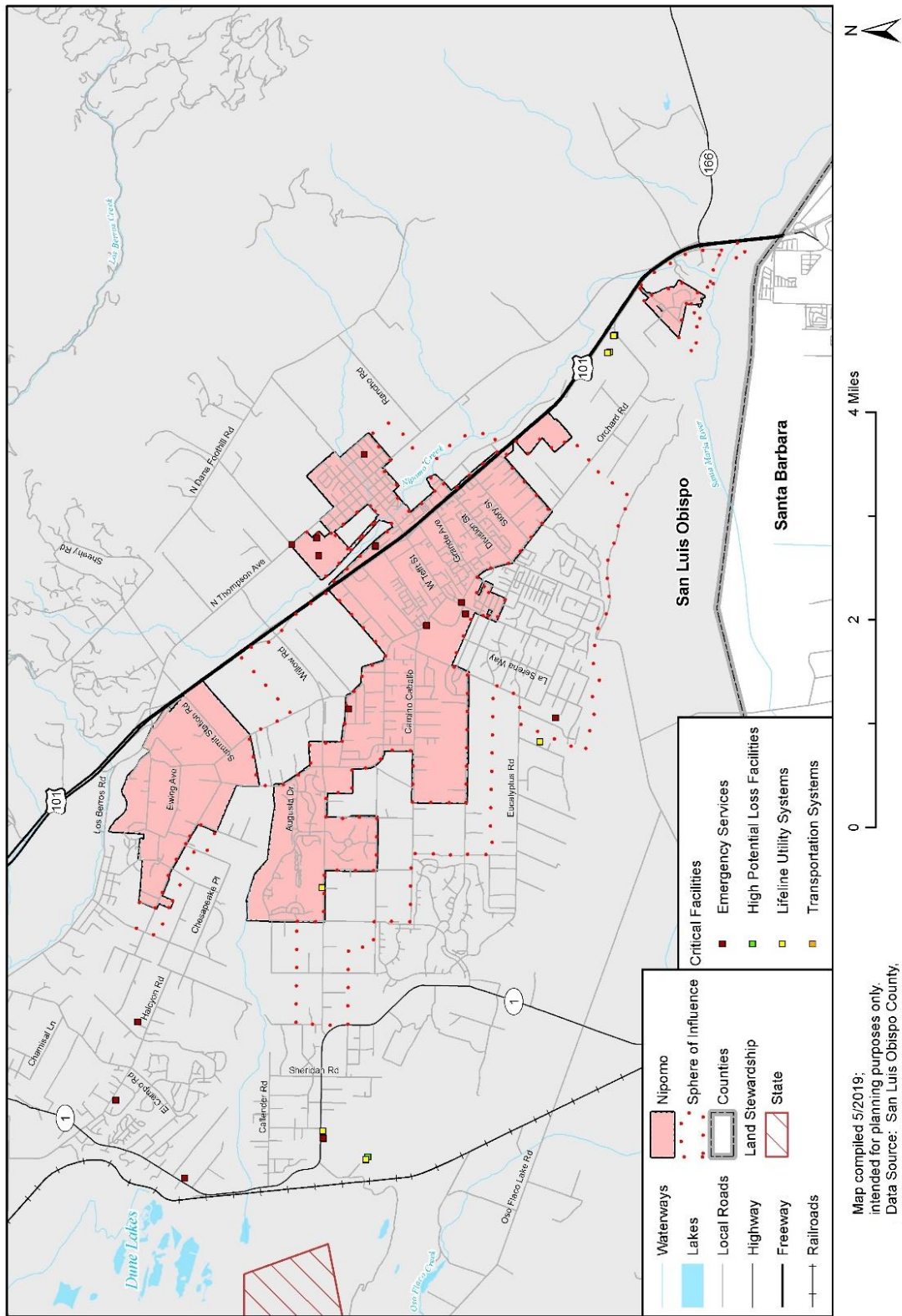
Three additional Essential Infrastructure facilities identified by the District Planning Team are listed below under the Lifeline Utility Services category. In total the Nipomo CSD contains 13 critical facilities (including those 10 from the previous table):

- Wastewater Treatment Plan - \$18 million replacement value
- Water Treatment/Distribution facility - \$50 million replacement value
- Wastewater Treatment Plan - \$8 million replacement value





Figure L.2 Critical Facilities in the Nipomo CSD





Emergency Service Facilities

The Nipomo CSD contains nine Emergency Services facilities aimed at providing for the health and welfare of the entire community. These include day care facilities, emergency medical service stations, fire stations, and schools as noted in





Table L.5 Summary of Nipomo CSD’s Critical Facilities and Table L.6.

Transportation Systems and High Potential Loss Facilities

No critical transportation facilities were noted for the District. However, there may be certain structures or entities important to the District, particularly along the main corridor running through Nipomo (Highway 101) or other major nearby transportation lines (e.g. Highway 1, Highway 166).

No high potential loss facilities such as power plants were identified by the County, HIFLD dataset, or the Planning Team. As will be noted under the Human Caused Hazards Section of this annex as well as in Section 5 of the Base Plan, several hazardous materials facilities are located in the District and there is a history of hazardous spills or incidents in/near the community.

Lifeline Utility Systems

A potential of four lifeline facilities have been identified for Nipomo. The Blacklake Waste/Treatment Water facility was obtained from the HIFLD national dataset (noted in Table L.6) while the other three were indicated by the Nipomo CSD Planning Team. Other facilities or structures falling within the lifeline utility systems category may be present in or nearby the District (e.g. oil/gas, electric power, communication systems), but those were not found to serve a critical purpose or function to the Nipomo community.

Historic and Cultural Resources

Historical assets include local, county, state, and potentially federally listed historic sites. Based on data provided by the County of San Luis Obispo and LAFCO, it was found that there are 7 historic and cultural resources in or near the Nipomo CSD. These are summarized in Table L.7.

Table L.7 Nipomo CSD’s Historic and Cultural Resources

Area Plan Where Noted	Property Name	Year	Description
South County Inland Area Plan	Dana Adobe	1839	Historical Landmark No. 1033 (Rancho Nipomo)
	Dana House	1882	535 Mehlschau - http://www.danapowhouse.com
	Los Berros Adobe Barn	1860	159 Avis St
	Los Berros Schoolhouse	1890	1841 Grant Ave
	Old St. Joseph's Church	1902	110 Thompson Av
	Pacific Coast Railroad Depot	1881	right-of-way granted in 1881
	Runels Home - Dana Street	1886	now Kaleidoscope Inn & Gardens

Source: San Luis Obispo County Planning and Building; LAFCO

Natural Resources

Natural assets may include wetlands, threatened and endangered species, or other environmentally sensitive areas. Natural and environmental 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. 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. The San Luis Obispo County Inland Area Plan was adopted in 2014. This larger plan comprises the Nipomo CSD as well as Nipomo’s valley sub-basins within the Santa Maria Valley Groundwater Basin, all in the South County sub-area plan. Based on information pulled from this South County sub-area plan, the Nipomo Mesa is an important destination for recreation that contributes to the local economic base, including construction of golf courses. The characteristics of the community mix urban appeal with rural features





and lifestyles through development of site-sensitive treatment of scenic areas, parks, expansive biking and pedestrian infrastructure, and public and tourist-related transit that enhance quality of life. Based on these aspects, natural resources and environmental assets are undoubtedly key to the Nipomo community and should be carefully considered during development and planning efforts.

Economic Assets

Tourism is a large economic driver for the Nipomo community due to recreational and environmental assets as discussed in the above section. However, agriculture is important to the community as well, as are commercial, retail, and services. These types of economic assets could be compromised due to various hazards such as drought, flooding, earthquake, liquefaction, severe weather, and wildfire among others.

L.3.2 Estimating Potential Losses

This section details vulnerability to specific hazards of medium or high significance, where quantifiable, noted by the Planning Team, and/or where it differs significantly from that of the overall County. Impacts of past events and vulnerability to specific hazards are further discussed below, though refer to Section 5 of the Base Plan for more details on the County's HIRA findings and hazard profiles.

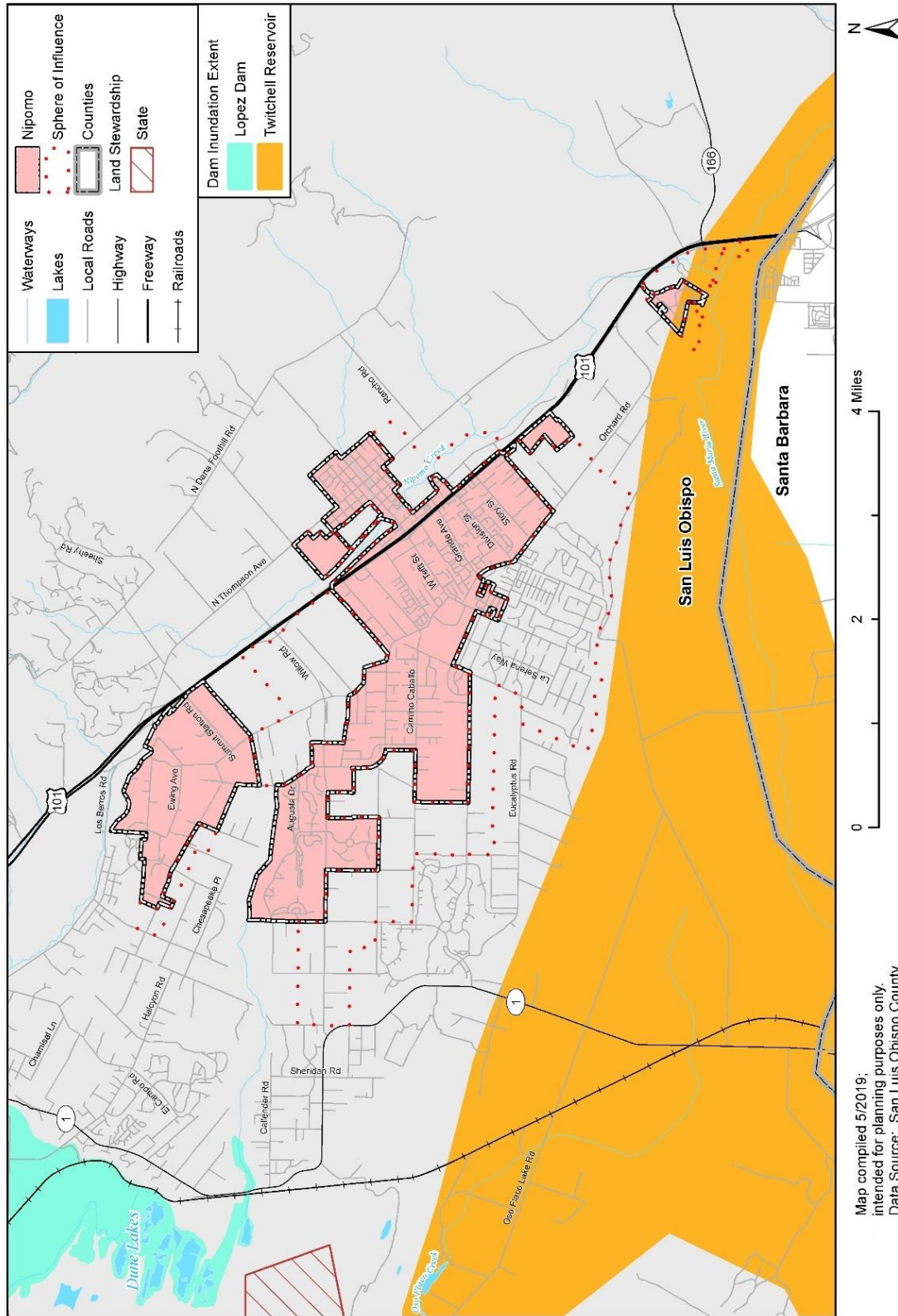
Dam Incidents and Failure

The Nipomo CSD is at risk of dam failure incidents based on its location downstream of the Twitchell Reservoir Dam. The Twitchell Dam is a high hazard earthen dam located just southeast of Nipomo, within Santa Barbara County and flowing into San Luis Obispo County on its southwest corner. If this dam were to fail and flood through the Santa Maria River into Nipomo, it would inundate the southeast corner of the District around the intersection of Highway 101 and Highway 166 (see Figure L.3). Note that this figure also depicts the nearby inundation of the Lopez Dam, which reaches the Dune Lakes on the northwest of Nipomo but does not quite reach the District.





Figure L.3 Dam Inundation of the Twitchell Dam in the Nipomo CSD



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCC, NID 2018, CA DWR



Though failure of the Lopez Dam is not expected to reach the Nipomo CSD, a major severe weather, local flooding event, or other existing hazard incident combined with dam inundation could possibly reach the community and cause unexpected damage. However, it is inundation caused by a potential unscheduled release or failure of the Twitchell Dam that would be of higher concern to the District given the mapped extents shown on Figure L.3 and based on the loss estimates summarized in Table L.8 below.

Table L.8 Estimated Losses by Property Type in Nipomo CSD based on Twitchell Dam Inundation Extents

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population at Risk
Other/Exempt/Miscellaneous	5	--	--	\$0	\$0	--
Residential	44	\$16,446,047	\$8,223,024	\$24,669,071	\$12,334,535	110
TOTAL	49	\$16,446,047	\$8,223,024	\$24,669,071	\$12,334,535	110

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

Based on the above information, a total of 110 persons and 49 properties may be inundated if the Twitchell Dam was to fail. It would be expected that 44 of these properties would be of type “residential” while 5 may be miscellaneous or exempt. Refer to Section 5.3.5 Dam Incidents of the Base Plan for additional details on this hazard and estimated losses across the County. There are no critical facilities within Nipomo that would be at risk of this dam possibly failing.

A failure of the Twitchell Dam could also affect Highway 101 and several local roads, possibly impeding or reducing flows of goods, people and resources and hence having some impact across the District. There have been no past dam incidents or failures in the District, so this dam incidents and failure hazard could be rated as holding **Low Significance** to the District due to the vulnerability shown on the previous analysis and mapping.

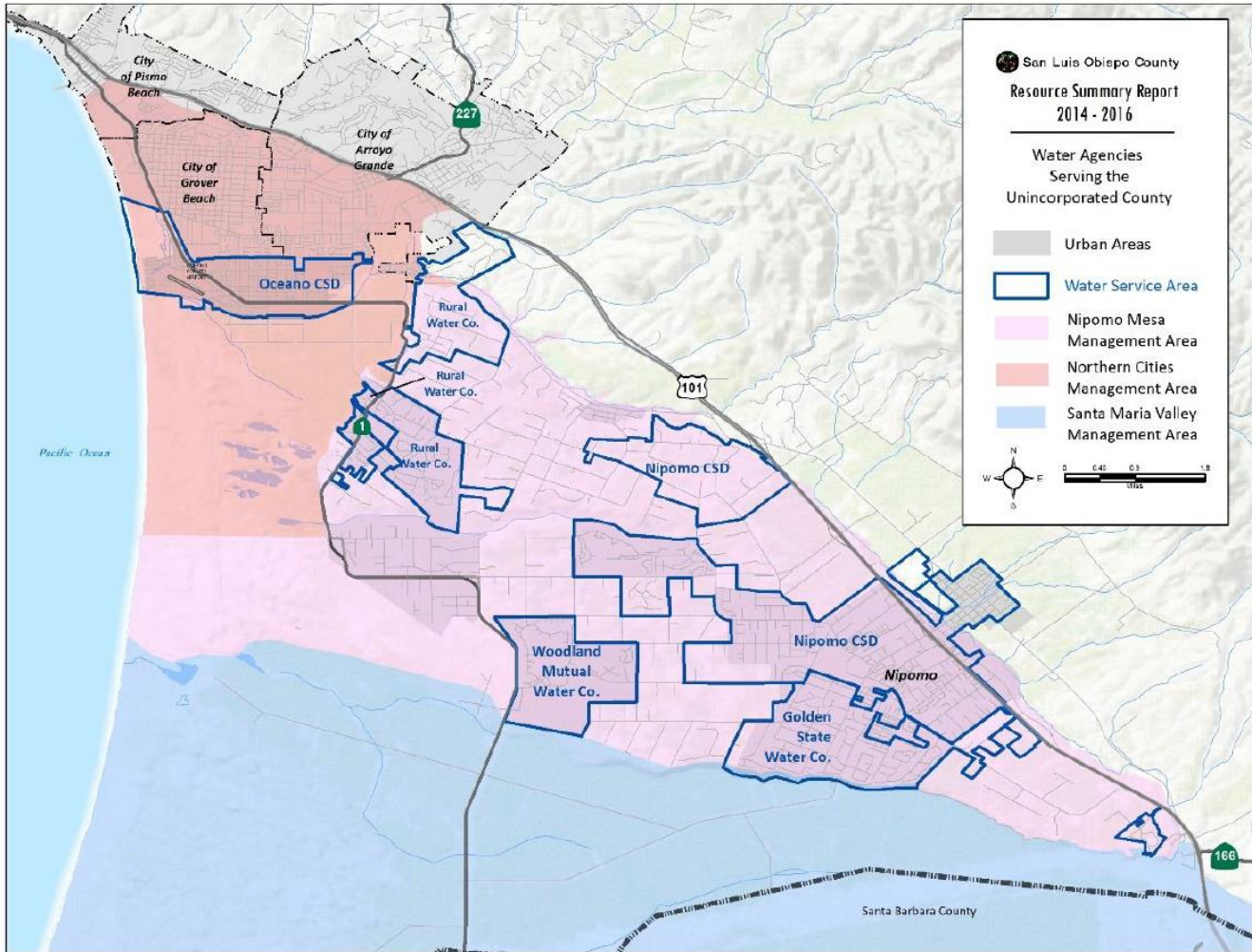
Drought and Water Shortage

Nipomo is located in the Santa Maria Groundwater Basin, within the Nipomo Mesa Management Area (see Figure L.4). As noted previously in this annex, the Nipomo CSD has dealt with issues of drought and water shortage in the past, which led to the acquisition of supplemental sources from Santa Maria, for example. This project hopes to push water capacity to 3,000 Acre-Feet per Year (AFY) to reduce usage from groundwater sources on somewhat depleted aquifers and basins, as one of the District’s core vision statements is to provide customers with reliable and cost-effective water now and in the future. The Nipomo CSD’s Water Shortage Response and Management Plan was created also with a key goal of enhancing the District’s abilities to respond to drought and other water supply emergencies, and hence continue being sustainable though the years when it comes to this precious water resource.





Figure L.4 Santa Maria Groundwater Basin, Management Areas, and Water Purveyors



Source: San Luis Obispo County 2014-2016 Resource Management Report

In present day, drought and water shortages pose a risk to the community and the services provided by the Nipomo CSD. Table L.9 was obtained from the San Luis Obispo County 2014-2016 Resource Management Report and shows the existing and forecasted water supply and demand for the five water purveyors within the Santa Maria Groundwater Basin of which the Nipomo CSD is part. Drought impacts are wide-reaching and may be economic, environmental, and/or societal. As noted in the table below, in addition, water demand projected over 15 years is expected to equal or exceed the estimated dependable supply.





Table L.9 Nipomo Mesa Management Area Existing and Forecasted Water Supply and Demand

Table II-17 -- Santa Maria Groundwater Basin – Nipomo Mesa Management Area Existing and Forecasted Water Supply and Demand					
Demand	Nipomo CSD	Woodlands Mutual Water Co.	Golden State Water Co.	Agriculture	Rural
FY 2015/2016 Demand (AFY) ¹	1,773.3	732.1	625.1	7,337	2,878 ²
Forecast Demand in 15 Years (AFY)	3,995	1,386 ⁵	1,690	7,575	5,222
Forecast Demand in 20 Years (AFY)	4,103	1520 ⁶	1,847	8,291	5,661
Buildout Demand (30 Or More Years) (AFY)	4,244 ³	1520 ^{4,6}	1,944	8,291	5,661
Supply					
Nipomo Supplemental Water Project (AFY) ⁵	2,237	417	208	0	0
Santa Maria Groundwater Basin -- Nipomo Mesa Sub-Area (AFY)	1,000	817	852	7,482	2,095
San Luis Obispo Valley Groundwater Basin	0	0	0	809	226
Other GW Supplies	0	0	0	0	0
Recycled Water (AFY)	60-74	200	0	0	0
Total Supply:	3,311	1,434	1,060	8,291	5,661
Water Supply Versus Forecast Demand	Water demand projected over 15 years is projected to equal or exceed the estimated dependable supply. ⁴				

Notes: 1. See Table II-1. Current year data for agriculture is from the Nipomo Management Area 2015 Annual Report. 2. Nipomo Mesa Management Area 2015 Annual Report. 3. Nipomo CSD 2015 Urban Water Management Plan. 4. Ten percent additional water conservation (beyond what has already been accomplished) assumed for the low end of the forecast buildout demand, except for Grover Beach, which assumed 20% additional reduction. 5. Nipomo supplemental water project includes Nipomo CSD, Woodlands MWC, Golden State Water Company, and Rural Water Company. Nipomo CSD will receive approximately 1,667 AFY and has reserved an additional 500 AFY. The other three will receive 833 AFY. 6. The NCMA cities, NMMA cities, County, District, and local land owners actively and cooperatively manage surface and groundwater with the goal of preserving the long-term integrity of water supplies in the NCMA and NMMA. 7. Demands are based on an 18-hole golf course constructed in Phase IIA/IIB. Projected demands may be reduced if the open space is planted with vineyards or drought tolerant landscaping in lieu of the golf course.

Source: San Luis Obispo County 2014-2016 Resource Management Report

Drought was classified by the Planning Team as the most significant hazard for Nipomo, just as it is a **High Significance** hazard for the entire County of San Luis Obispo. The most notable impacts associated with drought in the planning area are those related to water intensive activities such as wildfire protection, jurisdictional usage, commerce, tourism and recreation. During past drought events and due to new water source acquisitions in the planning area, water restrictions and increased water rates have been imposed, while water savings are always encouraged. For example, beginning 2014 there was a 30% water reduction restriction mandated by the State of California which affected the District; during this time of drought, groundwater table damages were identified in Nipomo. Drought conditions can also cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding, erosion, and debris flows. One recommended action from the San Luis Obispo County 2014-2016 Resource Summary Report related to the Nipomo CSD is that the District work





with the County's Sanitation District and other local stakeholders to improve water supply reliability and move towards the use of recycled water to meet future demands.

Earthquake and Liquefaction

Nipomo sits on an ancient sand dune, and there are several faults underlying or near the District, such as the San Luis Range fault system/South Margin faults and the Santa Maria Fault. (See a very basic layout of the District and surrounding faults in Figure L.5.) Because of earthquake, coupled with liquefaction (both of which are discussed in more detail in Section 5.3.7 of the Base Plan) and earth movement issues, the Planning Team for the District noted that its infrastructure is prone to severe or even catastrophic failure from seismic activities. However, recent efforts to construct well-deigned above ground structures has resulted in greater focus on earthquake survivability for critical and essential infrastructure and properties.

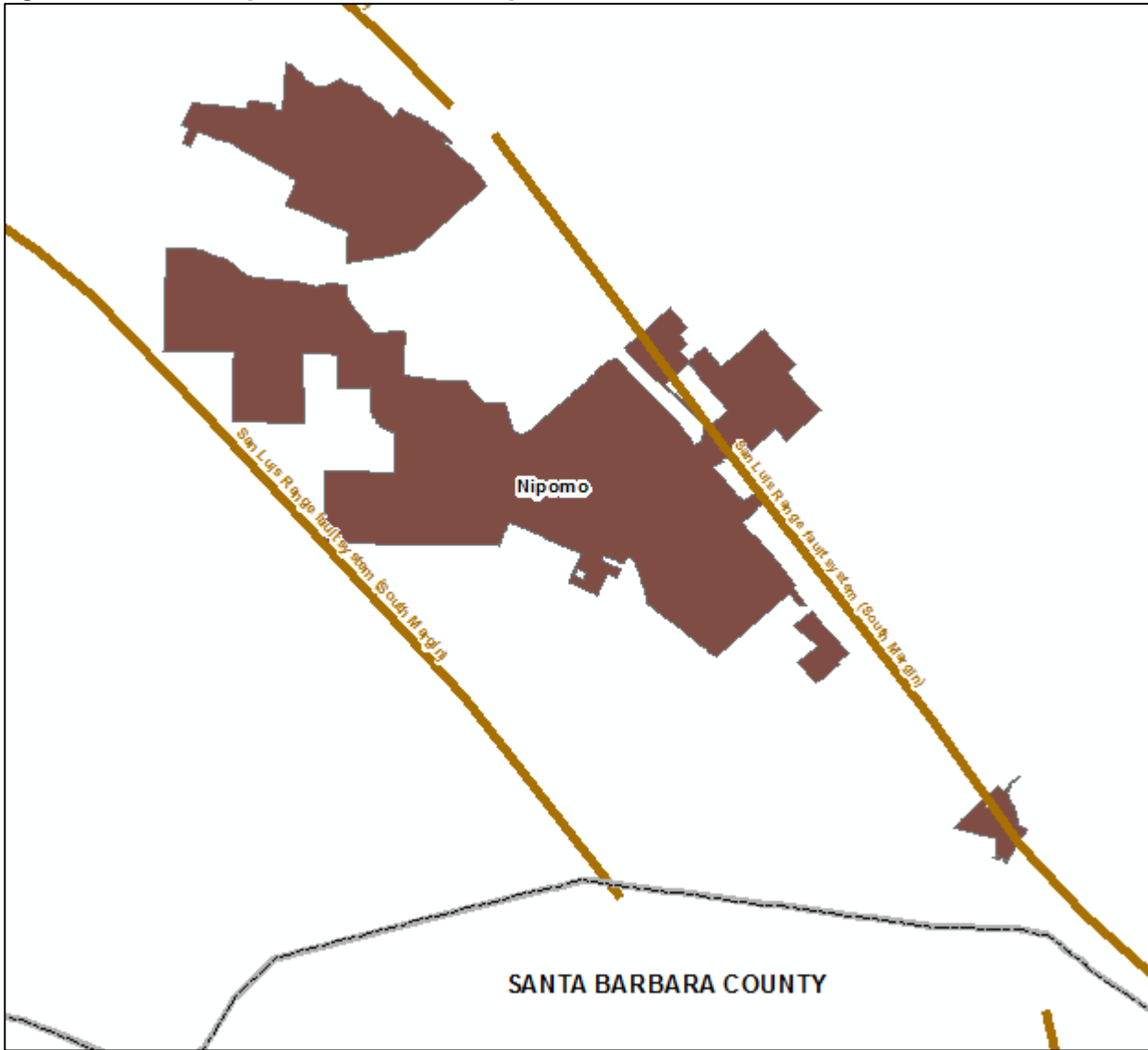
For example, the District built the Joshua Road Reservoir in 2017 (a post stressed designed concrete water storage structure), and it was constructed with the ability to withstand a severe earthquake during its 100-year life cycle. In addition, as with many public and municipal structures across the County, Nipomo's above ground facilities are built with a high degree of resilience and capability to withstand earthquakes. Underground facilities are less vulnerable in these environments, as flexibility of pipelines and valves in sand have limited distribution system failures during seismic activities. Nevertheless, the Planning Team noted that the original distribution systems off the ancient dunes east of Highway 101 in Nipomo would be the most vulnerable to earthquakes and would be expected to experience greater rates of failure due to the soil types in which they are found as well as the pipeline bedding practices exercised by the early District design engineers. In addition, the District's Southland and Blacklake wastewater facilities are typical above-ground facilities that are susceptible to earthquakes and would experience measurable damage consistent with the strength of an earthquake, so that the greater the quake the greater the degree of damage to these. The Southland facility was rebuilt in 2014 and incorporates modern engineering standards to better withstand earthquakes, while Blacklake, built in 1984, is more vulnerable to damage caused by an earthquake due to its age and design.

Because of the recent and ongoing efforts and projects in Nipomo, as well as the inherent understanding of the Planning Team regarding seismic activity and the District's infrastructure, the earthquake and liquefaction hazards can be rated as **Medium Significance** even though the County of San Luis Obispo rated it as high significance.

In terms of liquefaction, the Nipomo CSD is almost completely covered by liquefiable soils that are rated as posing moderate risk. The portion of the District that falls to the east of Highway 101 (near N. Thompson Ave and north of Nipomo Creek) is only found to be at low risk of this hazard, though high risk liquefaction potential is found surrounding the District to the south, southeast, and west. See Figure L.6 for reference on liquefaction risk.



Figure L.5 Earthquake Fault near the Nipomo CSD



Source: USGS; San Luis Obispo County Planning and Building; LAFCO





GIS overlay analysis was performed on the parcel and liquefaction risk data for the County of San Luis Obispo and refined for the Nipomo CSD to quantify how many parcels (and their improved and content values) were exposed and hence vulnerable to liquefaction hazards. The loss estimates calculated for the Nipomo CSD based on property type are summarized in Table L.10 for moderate liquefaction risk (as no other liquefaction risk category affects the District’s properties). Based on this assessment, 3,590 parcels are at risk of this hazard with most of them falling in the residential category, followed by other/exempt/miscellaneous, commercial, vacant, government/utilities, and agricultural. The total parcel value at risk surpasses the \$1.3 billion mark.

Table L.10 Loss Estimates from Liquefaction Risk in the Nipomo CSD – Moderate Risk

Property Type	Parcel Count	Improved Value	Content Value	Total Value
Agricultural	3	\$736,601	\$736,601	\$1,473,202
Commercial	39	\$45,215,073	\$45,215,073	\$90,430,146
Government/Utilities	28	--	--	\$0
Other/Exempt/Misc.	119	\$11,854,581	--	\$11,854,581
Residential	2,691	\$688,463,179	\$344,231,590	\$1,032,694,769
Multi-Family Residential	142	\$50,140,963	\$25,070,482	\$75,211,445
Mobile/Manufactured Homes	284	\$22,109,614	\$11,054,807	\$33,164,421
Residential: Other	245	\$39,655,572	\$19,827,786	\$59,483,358
Vacant	39	\$8,866,622	--	\$8,866,622
TOTAL	3,590	\$867,042,205	\$446,136,338	\$1,313,178,543

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis

With regards to critical facilities, the Nipomo CSD contains eight that are at moderate risk of liquefaction. These are noted in Table L.11. No critical facilities are found in high liquefaction risk areas.

Table L.11 Critical Facilities in Moderate Liquefaction Risk in the Nipomo CSD

Critical Facility Type	Critical Facility Total
Day Care Facilities	2
Emergency Medical Service Stations	1
Fire Stations	2
Private Schools	1
Public Schools	1
Water Treatment Facility	1
TOTAL	8

Source: San Luis Obispo County Planning and Building Dept., HIFLD, LAFCO, Wood Plc Parcel Analysis

Flood

The Nipomo CSD falls within the County of San Luis Obispo’s Water Planning Area 3, which corresponds to the San Luis Obispo/South County zone. Within this zone, Nipomo is located in the Nipomo Creek/Santa Maria River watershed. Nipomo is at risk of riverine flooding based on the Federal Emergency Management Agency (FEMA) data last updated for San Luis Obispo County in February of 2019.

Nipomo Creek, which crosses the District in a north/south fashion following Highway 101 to the east of the community boundaries, is the main source of flooding affecting Nipomo. The Santa Maria River to the south and minor tributaries to the Nipomo Creek such as Deleissigues Creek and Mehlschau Creek also contribute to the





flood hazard areas, though in more minor ways (see Figure L.7). The majority of the District areas at risk of flooding would be affected by the 100-year floodplain (i.e. 1% annual chance flood event), near the Tefft St and N Thompson Ave area. Smaller areas are at risk of the 500-year floodplain (i.e. 0.2% annual chance flood event), also located in the portion of the District located to the east of Highway 101.

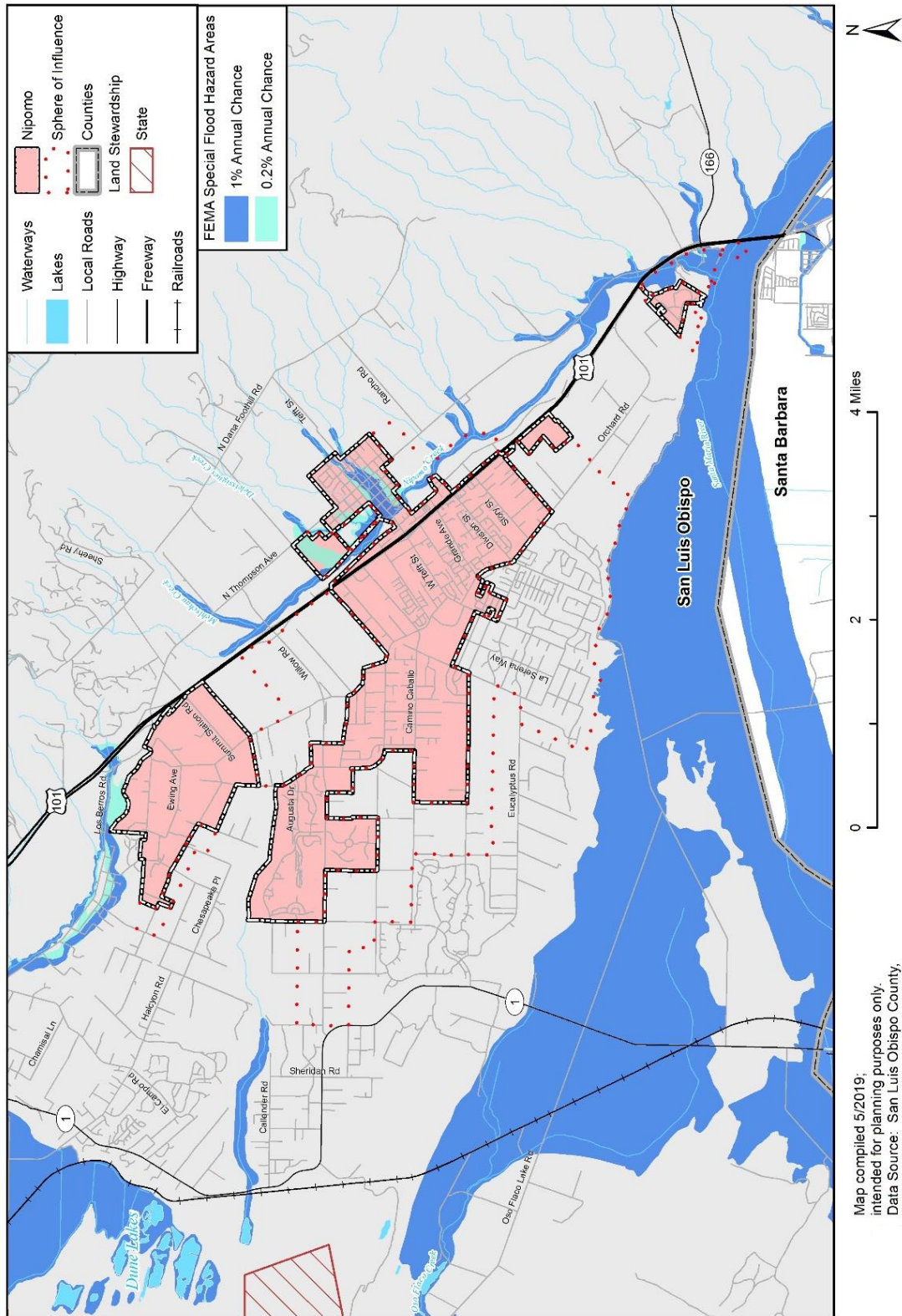
Levees

There is one levee to provide flood protection and hence reduce the risk to people and structures near Nipomo, per the San Luis Obispo County Dam and Levee Failure Evacuation Plan completed in 2016. The Santa Maria River Levee is currently owned and operated by the Santa Barbara Department of Public Works' Flood Control District. The San Luis Obispo County's Flood Control District provides some funding towards the maintenance of the levee as part the minor flood control Zone 4 for which it is responsible. Zone 4 collects service fees from properties in San Luis Obispo County that receive flood protection from the levees (including portions of Nipomo), and reimburses the Santa Barbara District for its maintenance services. This levee runs along the Cuyama River, which would be affected by the Twitchell Dam were the dam to fail or inundate downstream communities. The Santa Maria River Levee is built of river sand and parts of it are additionally protected by a layer of rock. However, this levee is not certified by the U.S. Army Corps of Engineers (USACE) to withstand a 100-year flood, and a recent inspection of the structure by USACE forced this levee to be placed on the national list of levees at risk of failure.





Figure L.7 FEMA Flood Hazard Areas in the Nipomo CSD



Map compiled 5/2019;
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office,
 LAFCO, FEMA NFHL





Based on GIS overlay analysis of the flood hazard areas for the 100- and 500-year floodplains as well as the parcel data, it was found that 233 parcels were found to be within these hazard layers, as summarized in Table L.12 and Table L.13. While it is possible that fewer parcels are at risk of the 100-year flood event due to mitigation having taken place and the properties having been built to code (so that future flooding will not affect them), this information was not available and cannot be confirmed. But it is likely that more parcels are found to be at risk of the 500-year flood event due to not being built following California’s code guidelines, which only regard those properties in the 100-year floodplain. It should be noted that only minor riverine flooding events have affected the Nipomo CSD to date, and so this hazard was rated as having **Low Significance** by the San Luis Obispo County Planning Team for the County as a whole based on potential risk to life and property. For more details on flooding hazards in terms of background information or analysis results for the entire County, refer to Section 5.3.8 of the Base Plan.

Properties at Risk

Table L.12 Parcels in 100-Year Flood Hazard Areas in the Nipomo CSD

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	12	\$4,243,935	\$4,243,935	\$8,487,870	\$2,121,968	--
Government/ Utilities	4	--	--	\$0	\$0	--
Other/Exempt/ Miscellaneous	7	\$1,042,437	--	\$1,042,437	\$260,609	--
Residential	49	\$5,133,482	\$2,566,741	\$7,700,223	\$1,925,056	123
Multi-Family Residential	8	\$1,472,719	\$736,360	\$2,209,079	\$552,270	20
Residential: Other	23	\$2,910,462	\$1,455,231	\$4,365,693	\$1,091,423	58
TOTAL	103	\$14,803,035	\$9,002,267	\$23,805,302	\$5,951,325	201

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, FEMA NFHL, Wood Plc Parcel Analysis

Table L.13 Parcels in 500-Year Flood Hazard Areas in the Nipomo CSD

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	8	\$1,488,840	\$1,488,840	\$2,977,680	\$744,420	--
Government/ Utilities	5	--	--	\$0	\$0	--
Other/Exempt/ Miscellaneous	4	\$53,867	--	\$53,867	\$13,467	--
Residential	59	\$6,518,049	\$3,259,025	\$9,777,074	\$2,444,268	148
Multi-Family Residential	21	\$2,629,090	\$1,314,545	\$3,943,635	\$985,909	53
Residential: Other	33	\$5,007,754	\$2,503,877	\$7,511,631	\$1,877,908	83
TOTAL	130	\$15,697,600	\$8,566,287	\$24,263,887	\$6,065,972	284

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, FEMA NFHL, Wood Plc Parcel Analysis





Nipomo does not participate separately in the National Flood Insurance Program (NFIP) but will continue to support the County's participation in and compliance with the NFIP.

Population at Risk

As shown in the two tables above, it is estimated that 485 people could be at risk of riverine flooding hazards based on the number of residential parcels which overlay with the 100- and 500-year floodplains. These population totals were found by multiplying the average household values in the County of San Luis Obispo (2.51 persons per home) by the number of residential properties in each of the property type categories, assuming that other property types (e.g. commercial, government) would likely not be populated. The majority of the population at risk is found within the 500-year floodplain, to the east of Highway 101 near the intersection area of N Thompson Ave and Tefft Street.

Critical Facilities at Risk

Only one critical facility was found to overlap with floodplains in the Nipomo CSD. This is a public school (Nipomo High School) falling within the 500-year floodplain, located right off of N. Thompson Avenue.

Back in March of 2001 a heavy rain event that produced numerous flooding occurrences across San Luis Obispo County happened to affect Nipomo. Several small, local streams flooded, damaging 20 to 30 homes.

Landslides and Debris Flow

Landslide and debris flow hazards have been rated by the Nipomo Planning Team as a **Low Significance** hazard. This is because most of the Nipomo CSD and its sphere of influence contains very limited medium to high potential landslide risk areas. Figure L.8 displays these landslide potential areas across the CSD and its sphere of influence. As shown in the figure, small portions around the north and northwest limits of the CSD and its sphere of influence are affected by moderate landslide potential, as are the southmost tip of the detached portion of the CSD that is close to the Santa Maria River. The south portion of the District's sphere of influence crosses small parts of high landslide potential, along Riverside Road and north/northwest of Division Street and Oso Flaco Lake Road.

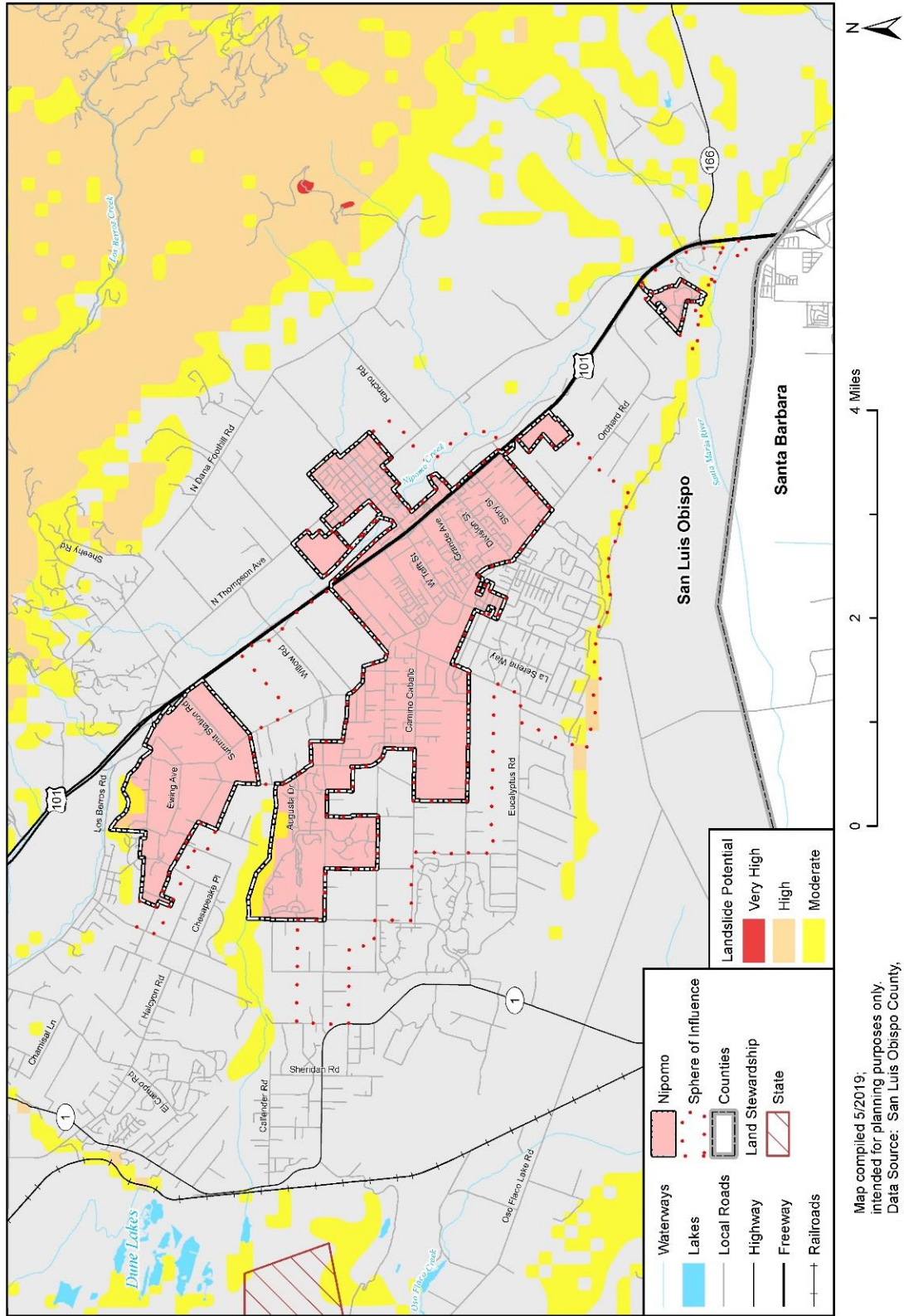
While no previous hazard occurrences have been noted for Nipomo, based on historical data for the County and given the presence of landslide-susceptible geology and steep slopes nearby, landslide hazards are likely to continue on an annual basis, though damaging landslides are not expected for the District. However, GIS overlay analysis of these landslide potential layers and the parcel data broken by type show that 19 parcels (6 of type other/exempt/miscellaneous and 13 residential parcels) are at risk of moderate landslides in Nipomo, while 1 residential parcel is at risk of high landslide potential. Figure L-8 summarizes this parcel information including loss estimates for those properties found in both moderate and high landslide potential zones. No critical facilities are found to overlap with landslide potential areas across Nipomo.

A moderate to major possible landslide event along Highway 101, or an event which affected this major road into or out of the CSD, could have serious impacts on both visitors and locals in terms of road closures or maintenance. For more details on the landslide and debris flow hazards in terms of background information or analysis results for the entire County, refer to Section 5.3.9 of the Base Plan.





Figure L.8 Landslide Potential Areas in the Nipomo CSD



Map compiled 5/2019:
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO



Table L.14 Parcels in Moderate and High Landslide Potential Areas in the Nipomo CSD

Landslide Potential	Parcel Type	Parcel Count	Improved Value	Content Value	Total Value
Moderate	Other/Exempt/Miscellaneous	6	\$5,000	--	\$5,000
	Residential	13	\$4,060,974	\$2,030,487	\$6,091,461
TOTAL		19	\$4,065,974	\$2,030,487	\$6,096,461
High	Residential	1	\$324,185	\$162,093	\$486,278
TOTAL		1	\$324,185	\$162,093	\$486,278
GRAND TOTAL		20	\$4,390,159	\$2,192,580	\$6,582,739

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, LAFCO, Wood Plc Parcel Analysis

Wildfire

The County of San Luis Obispo overall rated wildfire as a high hazard due to history of occurrence and threat exposure. While there is no recent fire history in the Nipomo CSD, due to factors such as the coverage of high fire hazard severity zones in about half of Nipomo and its sphere of influence as well as parcel analysis results, wildfire was ranked as a **Medium Significance** hazard in the District. From the year 1900 to 2018, five wildfire incidents did occur within the boundaries of Nipomo. These are listed in Table L.15. The cause of the each of the fires summarized below is not known or unidentified.

Table L.15 Wildfire Incidents in the Nipomo CSD from 1900 to 2018

Fire Name	Year	Approximate Acres Burned
Flintkote	1957	380
Willow Road	1970	392
Willow Road	1976	937
Slu-730	1987	7,733
Mesa	1993	345
TOTAL		9,787

Source: San Luis Obispo County Planning and Building Dept., LAFCO, CalFire, Wood Plc Parcel Analysis

Properties at Risk

CalFire fire hazard severity studies show the following categories of fire severity in State Responsibility Areas (SRAs) for Nipomo (see Table L.16 and Figure L.9). The majority of the parcels at risk are found within the high fire hazard severity zone, to the west of Highway 101 and on the northern half of the CSD and its sphere of influence.





Table L.16 Parcels in Moderate and High Fire Hazard Severity Zones in the Nipomo CSD

Fire Hazard Severity Zone	Parcel Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population at Risk
Moderate	Mobile/Manufactured Homes	2	\$73,970	\$36,985	\$110,955	\$110,955	5
	Residential	2	\$257,929	\$128,965	\$386,894	\$386,894	5
TOTAL		4	\$331,899	\$165,950	\$497,849	\$497,849	10
High	Agricultural	2	\$170,670	\$170,670	\$341,340	\$341,340	--
	Government/Utilities	9	--	--	\$0	\$0	--
	Other/Exempt/Miscellaneous	9	\$736,845	--	\$736,845	\$736,845	--
	Residential	410	\$136,180,705	\$68,090,353	\$204,271,058	\$204,271,058	1,029
	Multi-Family Residential	5	\$1,147,426	\$573,713	\$1,721,139	\$1,721,139	13
	Mobile/Manufactured Homes	26	\$4,346,325	\$2,173,163	\$6,519,488	\$6,519,488	65
	Vacant	13	\$1,714,510	--	\$1,714,510	\$1,714,510	--
TOTAL		474	\$144,296,481	\$71,007,898	\$215,304,379	\$215,304,379	1,107
GRAND TOTAL		478	\$144,628,380	\$71,173,848	\$215,802,228	\$215,802,228	1,117

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, LAFCO, CalFire, Wood Plc Parcel Analysis

Population at Risk

As shown in the table above, it is estimated that 1,117 people could be at risk of fire related hazards based on the number of residential parcels which overlay with the moderate and high fire hazard severity zone layers. These population totals were found by multiplying the average household value in the County of San Luis Obispo (2.51 persons per home) by the number of residential properties in each of the property type categories, assuming that other property types (e.g. commercial, industrial) would likely not be populated. A total of 1,107 people's homes are found in the very high fire hazard severity zones, while only 10 are found in the moderate fire hazard severity zones.

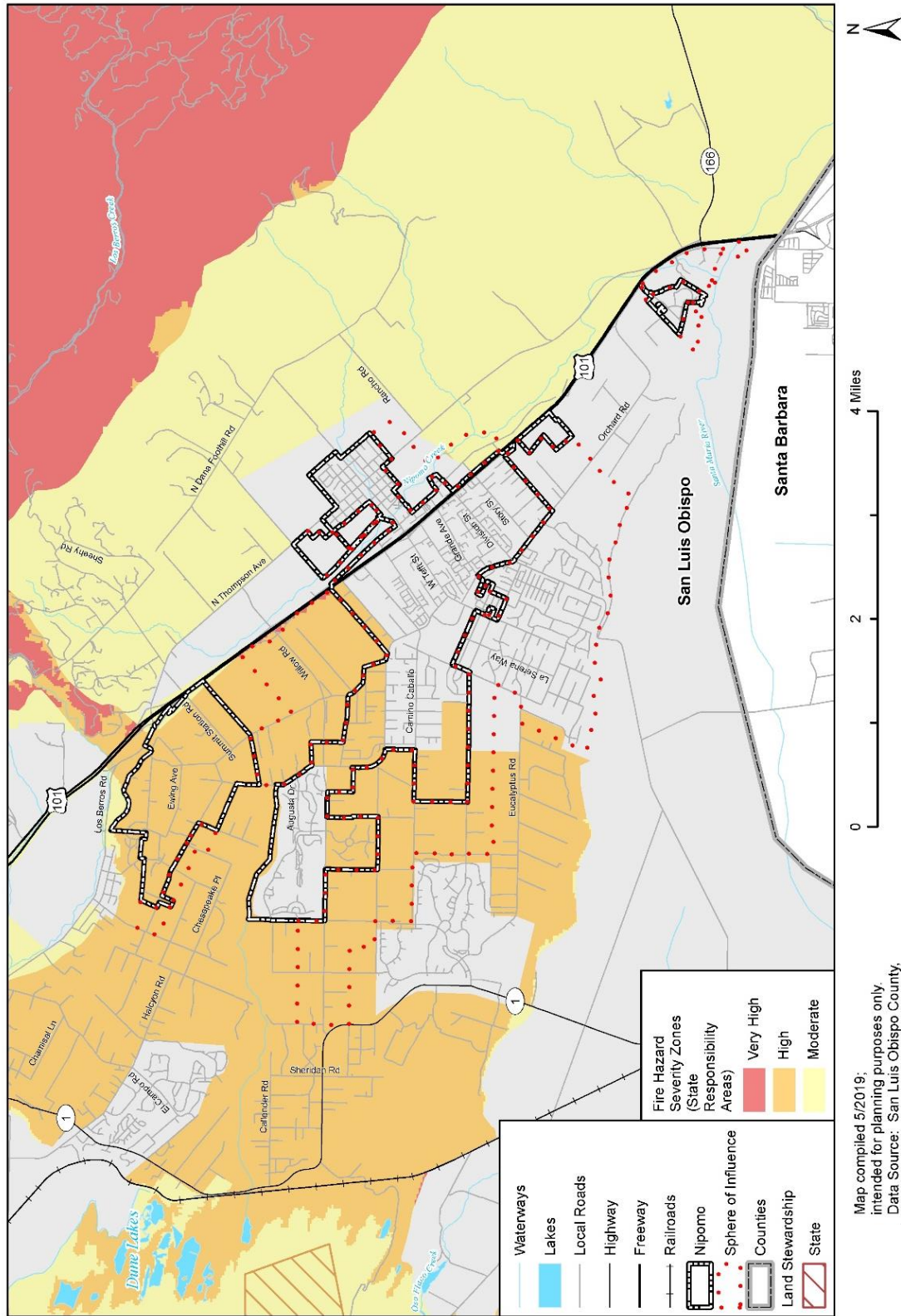
Critical Facilities at Risk

Only one school is found within fire severity zones in Nipomo. This is a private school (Highland Preparatory School) located to the west of Highway 101, off Live Oak Ridge Road.





Figure L.9 Fire Hazard Severity Zones in the Nipomo CSD



Map compiled 5/2019:
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, CalFire

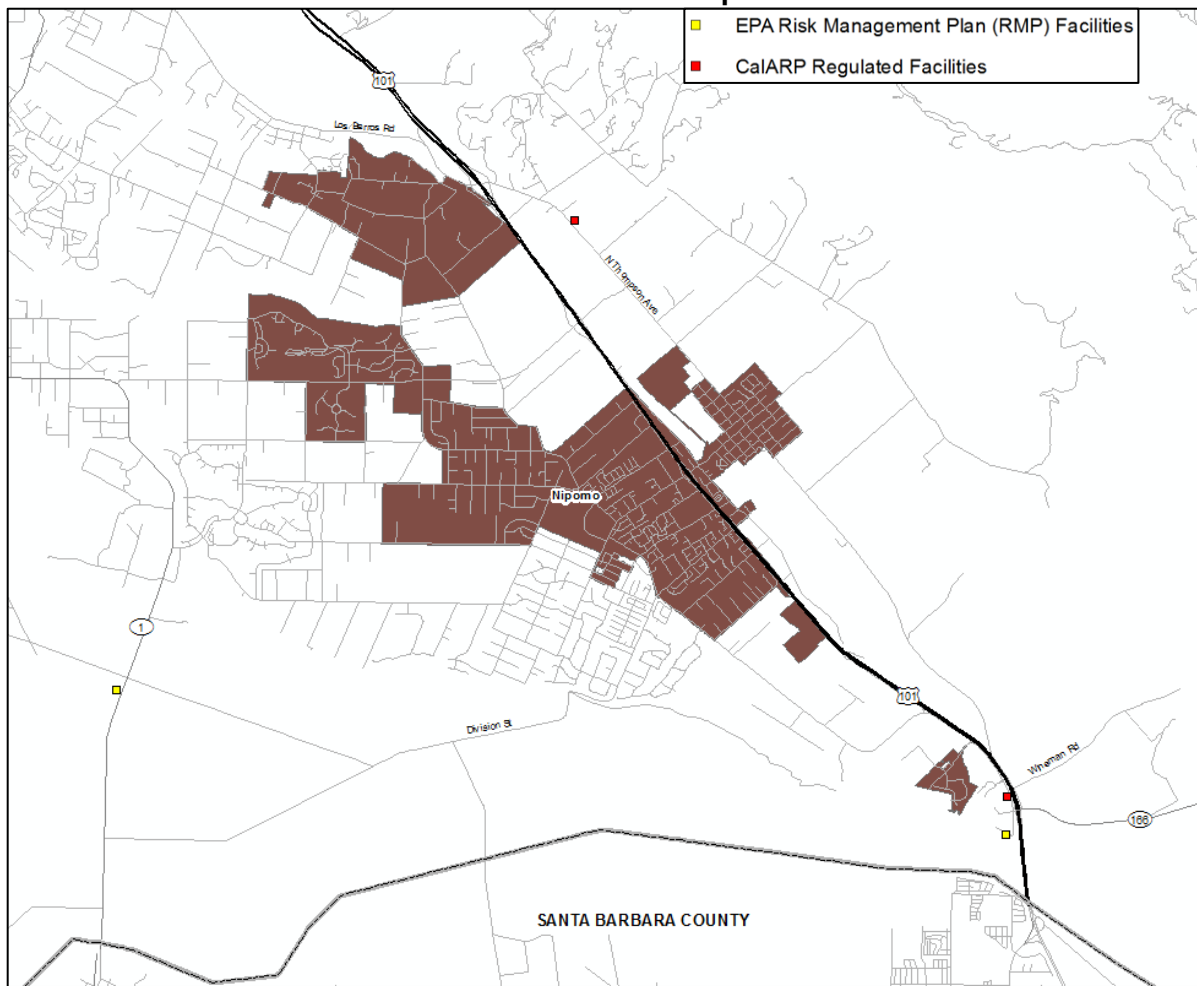




Human Caused: Hazardous Materials

The Nipomo CSD has a history of hazardous material incidents. The Cal OES Warning Center reports 58 hazardous materials incidents in the Nipomo CSD from 1994 through October 24, 2018; as noted in Section 5.3.13 HazMat of the Base Plan, this likely excludes a large number of unreported minor spills. (Cal OES reports an additional 209 incidents in unincorporated San Luis Obispo County, however a lack of details on this data makes it difficult to know if any of those took place within the CSD boundaries, given there is no spatial component to it.) This constitutes 3% of the hazardous materials incidents reported countywide during the same time frame, which averages out to roughly 2.3 incidents per year. As noted in Section 5.3.13, only around 6% of reported hazardous materials incidents result in injuries, fatalities, or evacuations. As shown in Figure L.10, there are two EPA Risk Management Plan (RMP) facilities and two CalARP regulated facilities located in or managed by (and hence likely affecting) the District or its sphere of influence. These are summarized in Table L.17. Based on the analysis summarized herein, Hazardous Materials (HazMat) receive a rank of **Medium Significance** for the Nipomo CSD. For more details on this hazard, background information, mapping, and analysis refer to Section 5.3.13 of the Base Plan.

Figure L.10 Hazardous Materials Facilities in or near the Nipomo CSD



Source: CalOES, EPA, San Luis Obispo County Planning & Building, LAFCO, Wood Plc





Table L.17 Summary of Hazardous Materials Facilities in or near the Nipomo CSD

Source of Facility Information	Facility	Chemical/s or Substance/s Handled	Website
CalARP	Buttonwillow Warehouse	Paraquat Dichloride	http://techag.com/
	Speedling	Chlorine	https://nip-speedling.business.site/
EPA RMP	California Chemical of Santa Barbara County	Ready-Mix Concrete	http://oaspub.epa.gov/enviro/fac_gateway.main?p_regid=110000528956
	Guadalupe Cooling Company	Crop production chemicals; refrigerated materials	http://oaspub.epa.gov/enviro/fac_gateway.main?p_regid=110000560553

Source: CalOES, EPA, Wood Plc Analysis

Note: CalARP = California Accidental Release Program; EPA RMP = Environmental Protection Agency Risk Management Plan

L.4 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 capability 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 jurisdictional and district planning representatives used a matrix of common mitigation activities to inventory policies or programs in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed to reducing hazard-related losses.

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

L.4.1 Regulatory Mitigation Capabilities

Table L.18 Nipomo CSD Regulatory Mitigation Capabilities identifies existing regulatory capabilities the District has in place to help with future mitigation efforts. Note: many of the regulatory capabilities that can be used for the District are within the County’s jurisdiction. Refer to the Base Plan’s Section 6 Capability Assessment for specific information related to the County’s mitigation capabilities as well as more details on this topic.

Table L.18 Nipomo CSD Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	No	Included in the San Luis Obispo County efforts
Zoning ordinance	No	Included in the San Luis Obispo County efforts
Subdivision ordinance	No	Included in the San Luis Obispo County efforts
Growth management ordinance	No	Included in the San Luis Obispo County efforts
Floodplain ordinance	No	Included in the San Luis Obispo County efforts
Other special purpose ordinance (stormwater, water conservation, wildfire)	No	Included in the San Luis Obispo County efforts





Regulatory Tool	Yes/No	Comments
Building code	No	Included in the San Luis Obispo County efforts
Fire department ISO rating	No	Included in the San Luis Obispo County efforts
Erosion or sediment control program	No	Included in the San Luis Obispo County efforts
Stormwater management program	No	Included in the San Luis Obispo County efforts
Site plan review requirements	No	Included in the San Luis Obispo County efforts
Capital improvements plan	Yes	NCSO Budget Document
Economic development plan	No	Included in the San Luis Obispo County efforts
Local emergency operations plan	Yes	NCSO Emergency Operations Plan
Other special plans	No	Included in the San Luis Obispo County efforts
Flood Insurance Study or other engineering study for streams	No	Unknown
Elevation certificates (for floodplain development)	No	Included in the San Luis Obispo County efforts

Source: Wood Data Collection Guide, 2019; Nipomo CSD

L.4.2 Administrative/Technical Mitigation Capabilities

Table L.19 Nipomo CSD Administrative/Technical Mitigation Capabilities identifies the personnel responsible for activities related to mitigation and loss prevention in the Nipomo Community Services District.

Table L.19 Nipomo CSD Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position/Comments
Planner/engineer with knowledge of land development/land management practices	No	SLO County Planning
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Engineering/Operations. Director is Peter Sevcik
Planner/engineer/scientist with an understanding of natural hazards	No	
Personnel skilled in GIS	Yes	Contract Services: MKN Engineering & Associates
Full time building official	No	SLO County Planning
Floodplain manager	No	SLO County Planning
Emergency manager	No	SLO County
Grant writer	No	
Other personnel	No	
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	District infrastructure
Warning systems/services (Reverse 9-11, outdoor warning signals)	No	

Source: Wood Data Collection Guide, 2019; Nipomo CSD

L.4.3 Fiscal Mitigation Capabilities

Table L.20 Nipomo CSD Fiscal Mitigation Capabilities identifies financial tools or resources that the CSD could potentially use to help fund mitigation activities.





Table L.20 Nipomo CSD Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	No
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	No
Incur debt through general obligation bonds	No
Incur debt through special tax bonds	No
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

L.4.4 Mitigation Outreach and Partnerships

The Nipomo Community Services District runs a responsible water use outreach program to encourage conservation and efficiency by sending out public notices via quarterly newsletters, school outreach efforts, and bill stuffers for water conversation, responsible water use, and sewer misuse examples. Other outreach, partnership, and general district efforts include those stated in Nipomo’s Strategic Plan, updated in 2018.

L.4.5 Opportunities for Enhancement

Based on this capabilities assessment and the noted information from existing plans and efforts (e.g., those noted in the District’s Strategic Plan from 2018), the Nipomo Community Services District has several existing mechanisms in place that help to mitigate hazards. There are also opportunities for the District to expand or improve on these policies and programs to further protect the community. Future improvements may include: providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES; or even obtaining official certifications such as Storm Ready or FireWise certification. Additional training opportunities will help to inform District staff and board members on how best to integrate hazard information and mitigation projects into the District policies and ongoing duties of the District. Continuing to train District staff on mitigation and the hazards that pose a risk to the Nipomo Community Services District will lead to more informed staff members who can better communicate this information to the public and prevent or respond to changes in development and the District makeup overall. Furthermore, the Planning Team for the District noted that Nipomo often seeks to find opportunities to reinforce and strengthen its infrastructure during the initial design of facilities planned to be built. A review process that involves assessing other existing facilities against hazards to determine their vulnerability has not been fully cataloged, so Nipomo hopes to continue these ongoing efforts in the future.

L.5 Mitigation Strategy

L.5.1 Mitigation Goals and Objectives

The Nipomo CSD adopts those hazard mitigation goals and objectives developed by the County Planning Team and described in Section 7 of the Base Plan: Mitigation Strategy.

L.5.2 Mitigation Actions

The Planning Team for the Nipomo Community Services District identified and prioritized the following mitigation actions based on the conducted risk assessment (see Table L.21). Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. 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. Actions with an asterisk (*) are those that mitigate losses to future development.





Table L.21 Nipomo CSD's Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/Implementation Notes
N.1	Earthquake	Retrofit treatment facility buildings and process infrastructure to withstand earthquake shaking.	NCSD	Unknown	Rates/Grants	Medium	2030	Not started/Begin Assessment Process 2020
N.2*	Drought	Add secondary source of water supply as additional supply to hedge against future drought conditions.	NCSD	\$5 Mil.	Rates/Grants	High	2025	Planned to be completed by 2025
N.3	Wildfire	Install backup generators at key water production facilities to ensure water availability during power grid failures or brownouts and also to ensure that firefighting capacity remains.	NCSD	\$125,000 /site	Rates and Charges/Grants	High	2021-2024	4 sites to be retrofitted, one per year starting Fiscal Year 2021





L.6 Implementation and Maintenance

Moving forward, the Nipomo Community Services District will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Section 8 of the Base Plan.

Incorporation into Existing Planning Mechanisms

The information contained within this Annex and the Base Plan, including results from the Vulnerability Assessments and the Mitigation Strategy will be used by the District to help inform updates of the Nipomo CSD's existing plans (e.g. Strategic Plan), as well as in the development of additional local plans, programs, regulations, and policies. Understanding the hazards which pose a risk and the specific vulnerabilities to the District and its sphere of influence will help in future capital improvement planning and development for the District. The San Luis Obispo County Planning & Building Department may utilize the hazard information when reviewing a site plan or other type of development applications within or nearby the boundaries of the Nipomo Community Services District area. As noted in Section 8, the Planning Team representative/s from the Nipomo Community Services District will report on efforts to integrate the hazard mitigation plan into local plans, programs, regulations, and policies and will report on these efforts at the annual Hazard Mitigation Plan and Planning Team review meeting.

Monitoring, Evaluation and Updating the Plan

The Nipomo Community Services District will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Section 8 of the Base Plan. The District will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The CSD General Manager will be responsible for representing the Community Services District in related County Hazard Mitigation Plan meetings or events, and for coordination with County staff and departments during plan updates. The Nipomo CSD realizes it is important to review the plan regularly and update it every five years in accordance with the FEMA Disaster Mitigation Act Requirements as well as other State of California requirements.

ANNEX M

Oceano Community Service District

Local Hazard Mitigation Plan

Local Hazard Mitigation Plan For the Oceano Community Services District



March 2019



Prepared by Category Five Professional Consultants, Inc. 



TABLE OF CONTENTS

I. ADOPTION RESOLUTION5

A. Local Adoption Resolution.....5

B. FEMA Adoption Resolution.....6

II. EXECUTIVE SUMMARY7

A. General Plan Description7

B. Plan Purpose and Authority.....8

III. PLANNING PROCESS.....9

A. DMA 2000 Requirements9

B. Plan Development and Public Input Process9

C. Incorporation of Existing Plans and Other Information14

D. Plan Adoption15

IV. JURISDICTION PROFILE.....15

A. Area History15

B. District Overview17

C. District Services17

D. Government.....18

E. Demographics19

F. Housing Profile20

G. Economy23

H. Land Use24

I. Climate.....25

J. Health Index.....25

K. Schools.....25

L. Transportation Systems26



Oceano Community Services District Local Hazard Mitigation Plan

- V. RISK ASSESSMENT.....32
 - A. DMA 2000 Requirement.....32
 - B. Hazard Identification32
 - C. Climate Change33
 - D. Hazard Profiles37
 - i. Earthquake.....37
 - ii. Flooding50
 - iii. Tsunami63
 - iv. Drought.....69
 - v. Extreme Weather76
- VI. VULNERABILITY ASSESSMENT85
 - A. DMA 2000 Requirements85
 - B. Summary of Community’s Vulnerability.....85
 - C. Critical Facilities and Infrastructure86
 - D. Jurisdictional Assets at Risk to Applicable Hazards88
 - E. Methodology Used89
 - F. Loss Estimations89
 - G. Development Trend Analysis89
- VII. CAPABILITY ASSESSMENT.....91
 - A. Overview91
 - B. Legal and Regulatory91
 - C. Administrative and Technical.....93
 - D. Financial94
 - E. Political Will of Community.....94
 - F. Physical Assets94
 - G. Ability to Expand/Implement Mitigation Strategies.....95



Oceano Community Services District Local Hazard Mitigation Plan

VIII. MITIGATION STRATEGY.....	96
A. DMA 2000 Requirements	96
B. Goals, Objectives and Mitigation Actions 2019	96
C. How Mitigation Goals Address Buildings and Infrastructure	103
IX. MITIGATION ACTION IMPLEMENTATION	106
A. DMA 2000 Requirements	106
B. Prioritization of Mitigation Actions	106
C. Action Plan	109
D. Implementation Through Existing Plans and Programs	112
E. Continued Public Involvement	113
F. Plan Monitoring, Evaluating and Updating.....	113
Attachment A: Definitions/Acronyms	115
Attachment B: Preliminary Notice to Neighboring Communities	119
Attachment C: Public Forum Notice to Neighboring Communities	120
Attachment D: Public Forum Community Notice.....	121



Oceano Community Services District Local Hazard Mitigation Plan

I. ADOPTION RESOLUTIONS

A. OCSD BOD Adoption Resolution

OCEANO COMMUNITY SERVICES DISTRICT
RESOLUTION NO: 2019 - 04

RESOLUTION ADOPTING A MULTI-JURISDICTIONAL LOCAL
HAZARD MITIGATION PLAN

WHEREAS, mounting costs of disaster recovery in the nation over the past decade has promoted interest in providing effective ways to minimize our country's hazard vulnerability; and

WHEREAS, the Disaster Mitigation Act (DMA) of 2000, also commonly known as "The 2000 Stafford Act Amendments," constitutes an effort by the Federal government to reduce the rising cost of disasters; and

WHEREAS, the Disaster Mitigation Act of 2000 (the Act) requires local governments to develop and submit mitigation plans in order to qualify for the Hazard Mitigation Grant Program (HMGP) project funds; and

WHEREAS, the purpose of the Disaster Mitigation Act of 2000 was to establish a national program for pre-disaster mitigation, streamline administration of disaster relief at both the federal and state levels, and control federal costs of disaster assistance; and

WHEREAS, the District has concluded a planning process which allowed participation by the local community has developed a Local Hazard Mitigation Plan that meets the needs established by the Act.

NOW, THEREFORE, BE IT RESOLVED that the Oceano Community Services District Board hereby adopts the Local Hazard Mitigation Plan attached hereto as Exhibit A.

PASSED AND ADOPTED by the Board of Directors of the Oceano Community Services District on May 22, 2019 by the following vote:

Director Gibson, Director Villa, Director Replogle
AYES: Vice President White, President White
NOES: None
ABSTAIN: None
ABSENT: None

Linda M Austin
President, Board of Directors
of the Oceano Community Services District

ATTEST:

C. J. [Signature]
Board Secretary of the
Oceano Community Services District

APPROVED AS TO FORM:

[Signature]
Jeffrey A. Minnery, District Counsel

Oceano Community Services District Local Hazard Mitigation Plan



B. FEMA Adoption Resolution

U.S. Department of Homeland Security
1111 Broadway, Suite 1200
Oakland, CA. 94607-4052



FEMA

June 3, 2019

Paavo Ogren
General Manager
Oceano Community Services District
1655 Front Street
Oceano, CA 93445

Dear Mr. Ogren:

We have completed our final review of the *Local Hazard Mitigation Plan for the Oceano Community Services District*, officially adopted by the Oceano Community Services District on May 22, 2019 and found the plan to be in conformance with Title 44 Code of Federal Regulations (CFR) Part 201.6 *Local Mitigation Plans*.

The approval of this plan ensures the Oceano Community Services District's continued eligibility for project grants under FEMA's Hazard Mitigation Assistance programs, including the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program. All requests for funding, however, will be evaluated individually according to the specific eligibility, and other requirements of the particular program under which applications are submitted.

FEMA's approval of the *Local Hazard Mitigation Plan for the Oceano Community Services District* is for a period of five years, effective starting the date of this letter. Prior to May 22, 2024, Oceano Community Services District is required to review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval in order to continue to be eligible for mitigation project grant funding. The enclosed plan review tool provides additional recommendations to incorporate into the plan when Oceano Community Services District undertakes its identified plan maintenance process.

If you have any questions regarding the planning or review processes, please contact the FEMA Region IX Hazard Mitigation Planning Team at fema-r9-mitigation-planning@fema.dhs.gov.

Sincerely,

fw Juliette Hayes
Director
Mitigation Division
FEMA, Region IX

Enclosure

cc: Adam Sutkus, Hazard Mitigation Planning Chief, California Governor's Office of Emergency Services
Jennifer Hogan, State Hazard Mitigation Officer, California Governor's Office of Emergency Services

www.fema.gov



II. EXECUTIVE SUMMARY

A. General Plan Description

The mounting cost of disaster recovery in our nation during the past decade has engendered a renewed interest in uncovering effective ways to minimize our country's hazard vulnerability. The Oceano Community Services District has joined a nationwide effort to develop a jurisdiction specific hazard mitigation plan. The goal of this local hazard mitigation plan is to arrive at practical, meaningful, attainable and cost-effective mitigation solutions to minimize the District's vulnerability to identified hazards and ultimately reduce both human and financial losses subsequent to a disaster.

After reviewing existing applicable plans, technical reports and historical data, in-depth risk assessments were performed to identify and evaluate each natural and man-made hazard that could impact the study area. The future probability of these identified hazards and their potential impact to the community is described.

Vulnerability assessments were performed which summarized the identified hazards' impact to each community's critical structures, infrastructure and future development. An estimate of the potential dollar losses to vulnerable structures was determined.

The risk and vulnerability assessments in addition to a local capability assessment were used to determine mitigation goals and objectives to minimize long-term vulnerabilities to the identified hazards. These goals and objectives were the foundation behind the development of a comprehensive range of specific attainable mitigation actions created for each jurisdiction.

An Action Plan was developed to assign responsibility and identify funding for each mitigation action. A plan to maintain, review and monitor the plan over time was created to ensure the goals and objectives are achieved and the plan remains a relevant document.

The entire process was shared with the Oceano Community Services District and a wide range of community stakeholders. The Plan was also shared with the general public and approved by the Oceano Community Services District Board of Directors.



Oceano Community Services District Local Hazard Mitigation Plan

B. Plan Purpose and Authority

The Disaster Mitigation Act (DMA) of 2000, also commonly known as “The 2000 Stafford Act Amendments” (the Act), constitutes an effort by the Federal government to reduce the rising cost of disasters. The Act stresses the importance of mitigation planning and disaster preparedness prior to an event.

Mitigation Planning Section 322 of the Act requires local governments to develop and submit mitigation plans in order to qualify for the Hazard Mitigation Grant Program (HMGP) project funds. It also increases the amount of HMGP funds available to states meeting the enhanced planning criteria, and enables these funds to be used for planning activities.

For disasters declared after November 1, 2004, the Oceano Community Services District must have an LHMP approved pursuant to §201.6 in order to receive FEMA Pre-Disaster Mitigation (PDM) project grants or to receive post-disaster Hazard Mitigation Grant Program (HMGP) project funding. This LHMP is written to meet the statutory requirements of DMA 2000 (P.L. 106-390), enacted October 30, 2000 and 44 CFR Part 201 – Mitigation Planning, Interim Final Rule, published February 26, 2002.

To facilitate implementation of the DMA 2000, the Federal Emergency Management Agency (FEMA) created an Interim Final Rule (the Rule), published in the Federal Register in February of 2002 at section 201 of 44 CFR. The Rule spells out the mitigation planning criteria for States and local communities. Specific requirements for local mitigation planning efforts are outlined in section §201.6 of the Rule. Local jurisdictions must demonstrate that proposed mitigation actions are based upon a sound planning process that accounts for the inherent risk and capabilities of the individual communities as stated in section §201.5 of the Rule.

In developing this comprehensive Hazard Mitigation Plan, FEMA’s Multi-Hazard Mitigation Planning Guidance (March 2004 and July 2008) was strictly adhered to for the purpose of ensuring thoroughness, diligence, and compliance with the DMA 2000 planning requirements.



Oceano Community Services District Local Hazard Mitigation Plan

III. PLANNING PROCESS

A. DMA 2000 Requirements

DMA Requirements §201.6(b) and §201.6(c)(1):

An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

- (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
- (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
- (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

The plan shall document the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

B. Plan Development and Public Input Process

At the onset of the planning process, a wide-range of community stakeholders, all neighboring communities, and the County of San Luis Obispo was invited to participate in the drafting stage of the Hazard Mitigation Plan. *Please see Preliminary Notice to Neighboring Communities-Attachment B*

Informative letters were sent out to numerous business owners, community groups, and residents in addition to key representatives from neighboring jurisdictions and the County to encourage their participation. These individuals comprised a Hazard Mitigation Planning Group. Planning group meetings were held to: 1) Explain the benefits of constructing a Hazard Mitigation Plan for the Oceano Community Services District, 2) Describe the planning and approval process, 3) Review local hazards of concern, 4) Listen to particular areas concerning stakeholders, 5) Explain the risks and vulnerability to the District's people, buildings and infrastructure, 6) Propose and discuss mitigation goals, objectives and actions, 7) Explain how mitigation actions are prioritized, 8) Describe how the mitigation actions will be carried out, and 9) Encourage stakeholder feedback and public input. A capability assessment and action plan were developed to ensure mitigation actions were realistic and



Oceano Community Services District Local Hazard Mitigation Plan

attainable and to assign funding sources and responsibility for each proposed activity. These were also reviewed with planning group members.

Once the District and Planning Group Members were satisfied with the newly constructed draft plan and its mitigation goal, objectives and actions, a noticed public forum was held on November 17, 2018. This meeting was widely advertised both locally and in neighboring communities to provide an opportunity for the general public, bordering communities and regional agencies involved in hazard mitigation activities to participate in the planning process. Notice of the public forum was posted at the District office, on the District website and also sent out to Oceano CSD residents in their October 2018 water bills. It was also sent electronically to Oceano Elementary School parents via an app called PeachJar. Additionally, it was posted on the Nextdoor neighborhood website. Further, a postcard mailer announcing the event was sent to all Oceano and Halcyon residents the first week in November. A separate notification letter was sent to the San Luis Obispo County Office of Emergency Services Manager in addition to City Managers from all neighboring communities. (Attachments C and D) Several weeks prior to the public forum, the newly constructed Plan was posted on the District website to enable the public and stakeholders ample time to read and evaluate it. On November 17, the contractors presented the plan highlights and proposed mitigation actions to the general public at the Oceano Community Center located at 1425 19th Street in Oceano. The meeting was well attended. A Power Point presentation provided a detailed explanation of the risks and vulnerabilities the community faced. The mitigation goals, objectives and actions were explained as were the resources that would be used to help mitigate these hazards. Following the presentation, the public was invited to attend a question and answer session where they had the opportunity to provide feedback about the overall Plan and proposed mitigation goals and activities.

The public input was predominantly centered on two issues: 1) the ongoing flooding along Highway 1 and 2) climate warming and the subsequent sea level rise. Most attendees communicated their frustration over these issues while concurrently expressing appreciation that the County and the District appeared to be making progress on the flooding issue.

The public comments also brought to light the fact that over time operations at the neighboring Pismo Beach State Park have resulted in a lowering of the sand dunes in the vicinity of the Pier Avenue beach onramp. This factor coupled with sea level rise creates potential flooding to a portion of the District. The contractors subsequently added new verbiage in a number of areas of the plan to address this issue. For the non-applicable feedback received, the consultants explained why these suggestions were not valid to warrant incorporation into the plan. All comments were reviewed with the stakeholder group and incorporated into the Plan as appropriate.

Oceano Community Services District Local Hazard Mitigation Plan



The Local Hazard Mitigation Planning Group was comprised of the following agency representatives and key stakeholders:

Name	Agency	Title	Attended Planning Group Meetings	Identified Hazards and Assisted with Mitigation Action Development	Additional Role
Paavo Ogren	Oceano Community Services District	General Manager	Yes	Yes	Liaison to OCSD Board and FCFA Board
Ron Alsop	San Luis Obispo County Office of Emergency Services	Emergency Services Manager	Yes	Yes	Planning Advisor
Stuart MacDonald	San Luis Obispo County Sheriff's Office	Commander	Yes	Yes	Law Enforcement Technical Specialist
Steve Lieberman	Five Cities Fire Authority	Fire Chief	No	No	Technical Specialist Fire Service, Liaison FCFA Board
Karen White	Oceano Community Services District	President	Yes	Yes	Halcyon Community Liaison
Vern Dahl	Oceano Advisory Committee	Vice President, Chair	Yes	Yes	Liaison to OAC
Andy Stenson	Lucia Mar Unified School District	Assistant Superintendent of Business Services	Yes	Yes	School District Specialist, Representative to School District Board

Oceano Community Services District Local Hazard Mitigation Plan



Dena Bellman	California State Parks	Planner, Park and Recreation Specialist	Yes	Yes	Liaison to State Parks
Nola Engelskirger	County of San Luis Obispo	Staff Engineer, Utilities Division	Yes	Yes	Technical Specialist-Utilities
Jill Ogren	County of San Luis Obispo	Engineer IV	Yes	Yes	Technical Specialist, Flood Control
Mladen Bandov	County of San Luis Obispo Public Works	Water Resources Engineer	Yes	Yes	Technical Specialist, Water Resources
Megan Martin	SLO County Planning and Building	Supervising Planner	Yes	Yes	Land Use and Development Trends
Michael Conger	SLO County Planning and Building	Planner	Yes	Yes	Land Use and Development Trends
Linda Austin	Oceano Depot Association	OCSD BOD Member	Yes	Yes	Historian
Villa Infanto	Arroyo Grande Hospital	Vice President Patient Care	Yes	Yes	Healthcare Specialist
Raymond Davis	Dignity Health	Director of Plant Operations	Yes	Yes	Health Facilities Specialist
Janna Nichols	5 Cities Homeless Coalition	Executive Director	Yes	Yes	Liaison to Social Services
Cynthia Repogle	Oceano Beach Community Association/ OCSD Board	President/ Director	Yes	Yes	Liaison to OAC

Oceano Community Services District Local Hazard Mitigation Plan



Rebecca Britton	Boys and Girls Club, Oceano	Director of Operations	Yes	Yes	Community Representative
John Taylor	Phelan Taylor Produce Company	Owner	Yes	Yes	Local Business Owner
Lynne Schlenker	Great American Melodrama	Owner	Yes	Yes	Local Business Owner
Robin Harris	South County CERT/ Oceano Resident	Emergency Preparedness Task Force Chair	Yes	Yes	Community Support/ Emergency Response
Nicole Miller	Oceano Community Services District	Account Administrator III	Yes	Yes	Project Supervisor
Dan Sutton	Pismo Oceano Vegetable Exchange	General Manager	Yes	Yes	Local Business Owner
Bob Neumann	Category Five Professional Consultants	Consultant/ Vice-President	Yes	Yes	Technical Specialist- Public Safety
Sheri Eibschutz	Category Five Professional Consultants	Consultant/ President	Yes	Yes	Facilitator/ Planner



C. Incorporation of Existing Plans and Other Information

At the onset of and throughout the hazard mitigation planning process, all applicable local emergency operations plans and geotechnical reports were reviewed and incorporated into this mitigation plan. The following sources were used:

- San Luis Obispo County General Plan including:
 - Land Use Element
 - Open Space Element
 - Safety Element
 - Housing Element
- CAL FIRE/County Fire Management Plan
- California State Hazard Mitigation Plan
- San Luis Obispo County Dam and Levee Failure Plan
- San Luis Obispo County Hazard Mitigation Plan
- San Luis Obispo County Flood Control - Conservation Management Guide
- Local and State land use regulations
- Oceano Storm Water Management Plan
- Oceano Drainage and Flood Control Study (RMC, 2004)
- Past disaster declarations
- Flood Insurance Rate Maps (FIRM's)
- Airport Land Use Plan for the Oceano County Airport
- San Luis Obispo County Office of Emergency Services
 - Flood Plan
 - Tsunami Plan
 - Earthquake Plan
- NASA Global Climate Change Guidance
- National Research Council Sea Level Rise for the Coast of California, Oregon and Washington



Oceano Community Services District Local Hazard Mitigation Plan

D. Plan Adoption

Once planning group members and the general public had an opportunity to review, ask questions and comment on the proposed plan, the newly constructed LHMP was submitted to the State Hazard Mitigation Office at Cal OES. Upon receipt of approval by the State Hazard Mitigation Office, the plan was forwarded to FEMA for approval. FEMA preliminary adoption of the plan occurred on March 29, 2019. The LHMP was then taken to the Oceano Community Services District Board of Directors for approval on May 22, 2019. Adoption by the local governing body demonstrates the jurisdiction's commitment to fulfilling the hazard mitigation goals and actions outlined in the plan. Adoption legitimizes the plan and authorizes responsible agencies to execute their responsibilities. The OCSD Board of Directors approved and adopted the plan on May 22, 2019. FEMA formally adopted the OCSD Local Hazard Mitigation Plan on June 3, 2019.

IV. JURISDICTION PROFILE

A. Area History

Early Spanish explorers observed Indian settlements in the Oceano vicinity with European explorers arriving in 1769. In 1882, the developer, Coffee Adam Rice, purchased a track of land in Oceano, planned the town, and commenced construction on an enormous Victorian mansion which later was transformed into the Halcyon Sanatorium. In 1895, the Southern Pacific Railroad reached the region and a depot was constructed the following year. The Oceano Depot, which brought passenger, freight and telegraph service is believed to have played a vital role in the settlement of this area. A decade later, developers built the Oceano Pavilion on the beach along with a 1,000 foot pier and two boardwalks.

In 1905, the Villa Hotel was built at the end of Juanita Street. Less than a decade later, this hotel was transformed into the only Buddhist Monastery in North America. During World War II, the Oceano Pavilion became headquarters for the U.S. Coast Guard. It later became a roller skating rink before being torn down in 1961. The primary industry in the region was vegetable growing and packing, clamming, and mining. Despite the fact that the depot suspended passenger, mail and telegraph services in the 1950's, vegetable shipping kept the freight office active until changes in agriculture production and packing methods led to the depot's eventual closure in 1973.

The Oceano Community Services District also includes the community of Halcyon which was founded in 1903 by the Theosophical Temple of the People. In early 2017, the community was placed on the Department of Interior's (National Park Service) Historical Registry as an Historical District.



Oceano Train Depot Constructed in 1896



Oceano Hotel and Oceano Saloon (built in 1902)



Oceano Community Services District Local Hazard Mitigation Plan

B. District Overview

The Oceano Community Services District (OCSD) is an independent special district with approximately 7,600 residents and businesses in Oceano and Halcyon. Oceano is a census designated place with 1.5 square miles of land and .02 square miles of water. Halcyon is an unincorporated community of 125 acres just south of the City of Arroyo Grande.

The area to the east and south of the District consists of the Arroyo Grande Creek flood plain. It is also referred to as the Cienaga Valley. The area is prime farmland and is in constant production, engendering a significant agricultural economic impact.

Oceano is known as the ‘Gateway to the Dunes’ as its beach contains the 1,500 acre Oceano Dunes State Vehicular Recreation Area which is overseen by the California Department of Parks and Recreation. The Oceano Dunes attract a wealth of tourists to the area as it is the singular California Park that offers shoreline camping. Guests can drive off-highway vehicles (OHV) on the beach and dunes alongside the Oso Flaco Natural area. It is also a popular destination for fishing, surfing, clamming, and hiking.

C. District Services

The District provides Fire Protection and Emergency Services, Potable Water service, Garbage and Recycling, Wastewater Collection and Street Lighting. The District is also authorized to offer parks and recreation services but is not doing so at this time. The services are described as follows:

Fire Protection and Emergency Services

Fire and emergency services within the OCSD are provided through the Five Cities Fire Authority (FCFA) which was formed in 2010 under a Joint Powers Agreement (JPA) between the cities of Arroyo Grande, Grover Beach and the Oceano Community Services District. The OCSD pays a portion of the annual costs of FCFA services based on a funding formula established in the FCFA - JPA. One of the OCSD Board of Directors represents the District on the FCFA Board.

Operating out of three fire stations, the Department delivers fire suppression, fire prevention, light and heavy rescue, and emergency medical service at the basic life support level. The average response time to the service area is six minutes, answering some 3,500 calls for service each year.

Potable Water

The OCSD delivers potable water service to approximately 2,200 connections. The District’s water supplies include groundwater, Lopez Lake and State water. The latter two are provided by the County of San Luis Obispo under terms of water supply contracts. The District’s water



Oceano Community Services District Local Hazard Mitigation Plan

supply reliability is relatively high and the district was increasing water in storage during the recent drought.

The California State Division of Drinking Water regulates the District's water supplies. Regulation of the District's groundwater supply is also subject to the stipulations adopted in 2005 for the adjudication of the Santa Maria groundwater basin.

Wastewater Collection

The District offers wastewater collection via a network of local pipelines that run into South San Luis Obispo County Sanitation District (SSLOCSO) pipelines which handles wastewater treatment and disposal. The Central Coast Regional Water Quality Control Board regulates the District's wastewater operations.

Cannon Corporation Engineering Consultants is currently assessing deferred water and wastewater infrastructure projects for the jurisdiction.

Garbage and Recycling

The OCSO provides obligatory solid waste and recycling services through a franchise agreement with South County Sanitary Services, Inc. The District works to abate illegal dumping within the community by offering incentives to promote a cleaner community. They offer 'Neighborhood Clean-up's' where they bring in dumpsters and help with trash disposal. They also offer a trash incentive of up to \$50 to offset the cost of removing large unwanted items.

D. Government

OCSO Governing Board

OCSO is an independent special district governed by a five-member board who are elected by voters residing in Oceano and Halcyon.

OCSO Board meetings are conducted on the second and fourth Wednesdays of the month at 6 pm at the OCSO office at 1655 Front Street in Oceano. Meetings are open to the public.

State and Federal Government

In the State legislature, Oceano is in the 17th Senate District and in the 35th Assembly District. In the United States House of Representatives, Oceano is in California's 24th congressional district.



Oceano Community Services District Local Hazard Mitigation Plan

E. Demographics

Population Ethnicity

According to the 2010 US Census report, the population density indicated 4,710.2 individuals per square mile. Oceano's 2010 ethnic makeup was comprised of:

- 5,105 White-70.1%
- 3,484 Hispanic or Latino of any race-47.8%
- 120 Native American-1.6%
- 165 Asian-2.3%
- 62 African American-0.9%
- 7 Pacific Islander-0.1%
- 1,509 other races-20.7%
- 318 from 2 or more races-4.4%

Population Age

The median age of Oceano residents was 35.4 years old in 2010, with diverse aging groups residing within the community:

- Median 1,738 (23.9%) individuals under the age of 18
- 747 (10.3%) people aged 18 to 24
- 2,028 (27.8%) residents aged 25 to 44
- 1,870 (25.7%) individuals aged 45 to 64
- 903 (12.4%) people were 65 years of age or older
- Female to male ratio: 100: 101.9



Households

Oceano had 2,603 households in 2010 with an average household size of 2.80. These households were comprised of:

- 904 (34.7%) had minor children residing in them
- 1,147 (44.1%) contained opposite-sex married couples living together
- 360 (13.8%) contained a single female household
- 197 (7.6%) had a single male household
- 97 (7.6%) unmarried opposite-sex partnerships
- 38 (1.5%) same-sex married couples or partnerships
- 680 households (26.1%) were made up of individuals
- 266 (10.2%) had someone living alone who was 65 years of age or older
- There were 1,704 families (65.5% of all households) with an average family size of 3.39.

F. Housing Profile

Oceano's median home value is \$401,400. Over the last 10 years, home appreciation is 13.58%. The median age of real estate within this census designated place is 36 years. Renters comprise 38.81% of the population.

100% of the population resides in households and 0% living in institutional or group quarters. In 2010, there were 3,117 housing units at an average density of 2,015.1 per square mile.

Oceano Community Services District Local Hazard Mitigation Plan



HOUSING	Oceano, California	United States
Median Home Age	36	37
Median Home Cost	\$401,400	\$185,800
Home Appr. Last 12 months	8.97%	3.74%
Home Appr. Last 5 yrs.	35.53%	16.02%
Home Appr. Last 10 yrs.	13.58%	-0.68%
Property Tax Rate	\$7.34	\$11.80
Homes Owned	42.08%	56.34%
Housing Vacant	19.11%	12.45%
Homes Rented	38.81%	31.21%

AVERAGE RENT FOR HOME OR APARTMENT	Oceano	U.S.
Studio Apartment	\$750	\$712
1 Bedroom Home or Apartment	\$850	\$825
2 Bedroom Home or Apartment	\$1,100	\$1,027
3 Bedroom Home or Apartment	\$1,600	\$1,379
4 Bedroom Home or Apartment	\$1,920	\$1,601

Source: <https://www.bestplaces.net/housing/city/california/oceano>

Oceano Community Services District Local Hazard Mitigation Plan



VALUE OF OWNER-OCCUPIED HOUSING	Oceano	U.S.
Less Than \$20,000	6.30%	4.57%
\$20,000 to \$39,999	0.82%	3.37%
\$40,000 to \$59,999	4.15%	4.19%
\$60,000 to \$79,999	2.96%	5.74%
\$80,000 to \$99,999	9.41%	6.79%
\$100,000 to \$149,999	8.96%	15.19%
\$150,000 to \$199,999	12.74%	14.69%
\$200,000 to \$299,999	22.15%	18.15%
\$300,000 to \$399,999	11.19%	10.43%
\$400,000 to \$499,999	5.11%	5.70%
\$500,000 to \$749,999	8.96%	6.39%
\$750,000 to \$999,999	4.30%	2.41%
\$1,000,000 or more	2.96%	2.39%

Source: <https://www.bestplaces.net/housing/city/california/oceano>



G. Economy

Job Growth, Income and Occupation

ECONOMY	Oceano	U.S.
Unemployment Rate	4.50%	5.20%
Recent Job Growth	2.58%	1.59%
Future Job Growth	40.66%	37.98%
Sales Taxes	7.50%	6.00%
Income Taxes	8.00%	4.60%
Income per Capita	\$20,725	\$28,555
Household Income	\$48,629	\$53,482
Family Median Income	\$46,545	\$65,443

Source: <https://www.bestplaces.net/economy/city/california/oceano>

POPULATION BY OCCUPATION	Oceano	U.S.
Agriculture, forestry, fishing, hunting	7.75%	1.35%
Mining, quarrying, oil and gas extraction	0.00%	0.61%
Construction	6.87%	6.19%
Manufacturing	5.42%	10.41%
Wholesale trade	2.97%	2.72%
Retail trade	14.68%	11.55%
Transportation and warehousing	2.97%	4.11%
Utilities	0	0



Oceano Community Services District Local Hazard Mitigation Plan

Information	0.48%	2.12%
Finance and insurance	2.18%	4.69%
Real estate, rental, leasing	0.55%	1.89%
Professional, scientific, technical services	3.09%	6.68%
Management of companies	0.00%	0.08%
Administrative, support, waste management services	6.17%	4.27%
Educational services	7.69%	9.34%
Health care and social assistance	9.65%	13.81%
Arts, entertainment, recreation	1.30%	2.16%
Accommodation, food services	18.19%	7.44%
Other services	4.12%	4.94%
Public administration	5.27%	4.80%

Source: <https://www.bestplaces.net/health/city/california/oceano>

H. Land Use

Existing land use within the Oceano Community Service’s District is a mosaic of varying types of uses, ownership, character, and intensity. Uses include:

- Both low and medium density residential
- Agriculture
- Parks and recreation
- General commercial
- Public



Oceano Community Services District Local Hazard Mitigation Plan

I. Climate

Sperling's comfort index for Oceano, California is an 84 out of 100, where a higher score indicates a more comfortable year-around climate. The U.S. average for the comfort index is 54. This index is based on the total number of days annually within the comfort range of 70-80 degrees, with a penalty applied for any days with excessive humidity. Oceano receives an annual average of 18 inches of rain compared to a U.S. average of 39 inches. There is an average of 34 days per year with measurable precipitation. Snowfall very rarely occurs. Oceano has approximately 185 sunny days each year with a July average high of 70 degrees and a January average low of 43 degrees.

J. Health Index

Oceano has 2.5 physicians per 1,000 population compared to a U.S. average of 2.1 physicians per 1,000 population.

The Oceano air quality is currently ranked 82 on a scale to 100 (higher is better). This is based on new measures of hazardous air pollutants from the EPA, called the National Air Toxics Assessment. Whereas the old analysis was based solely on results from air monitoring stations, this new method is more comprehensive as it models respiratory illness and cancer risk down to the zip code level.

Water quality in Oceano is currently ranked 30 on a scale to 100 (higher is better). It is important to note that this is a measure of Watershed quality, not the water that comes from the faucet. However, the EPA has stated that a healthy watershed is closely related to drinking water quality. The EPA has a complex method of measuring watershed quality using 15 indicators such as pH, chemicals, metals, and bacteria.

Source: <https://www.bestplaces.net/health/city/california/oceano>

K. Schools

There are two schools located within the Oceano Community Services District boundaries under the administration of the Lucia Mar Unified School District. They are:



Oceano Elementary (TK-6)

1551 17th Street
Oceano, CA 93445

Oceano Elementary has an average of 420 students including Transitional Kindergarten, Kindergarten, and first through sixth grades. 80% of the students are Hispanic, 15% are white. 87% of the students are deemed low-income and the school performs below the State average academically.

Adult Education

1425 19th Street
Oceano, CA 93445

The Adult Education School offers English literacy, High School Diploma or GED, and parent participation programs in addition to a variety of community classes.

L. Transportation

The average one-way home to work commute in Oceano, California, takes 28 minutes. 78% of commuters drive their own car alone, 11% carpool, 3% use mass transit, and 5% work from home.

Highways

San Luis Obispo County contains major transportation arteries including U.S. Highway 101, California State Highways 1, 41, 46, 58, and 166. U.S. Highway 101 and Coast Highway 1 run North to South adjacent to and through the community of Oceano.

Rail

There are two Amtrak stations within 30 miles of the Oceano community center.

Bus/Shuttle

San Luis Obispo Regional Transit Authority

SLO RTA offers intercity fixed route public bus transportation in addition to ADA paratransit service throughout San Luis Obispo County.



South County Transit

South County Transit provides public bus transportation service to the southern portion of San Luis Obispo County including Arroyo Grande, Grover Beach, Pismo Beach, and the unincorporated areas of Oceano.

Rideshare

There are specialized transportation services throughout SLO County including senior and airport shuttles, Runabout ADA service and dial-a-ride.

Airports

There are 2 airports within 30 miles of the Oceano community center:

San Luis Obispo County Regional Airport

Most OCSD residents make use of the new San Luis Obispo County Regional Airport, McChesney Field located just south of the City of San Luis Obispo at 975 Airport Drive. Three commercial airlines: American, United, and Alaska operate out of this airport which now offers flights to Los Angeles, San Francisco, Phoenix, Seattle and Denver. This airport is also home to full-service general aviation facility.

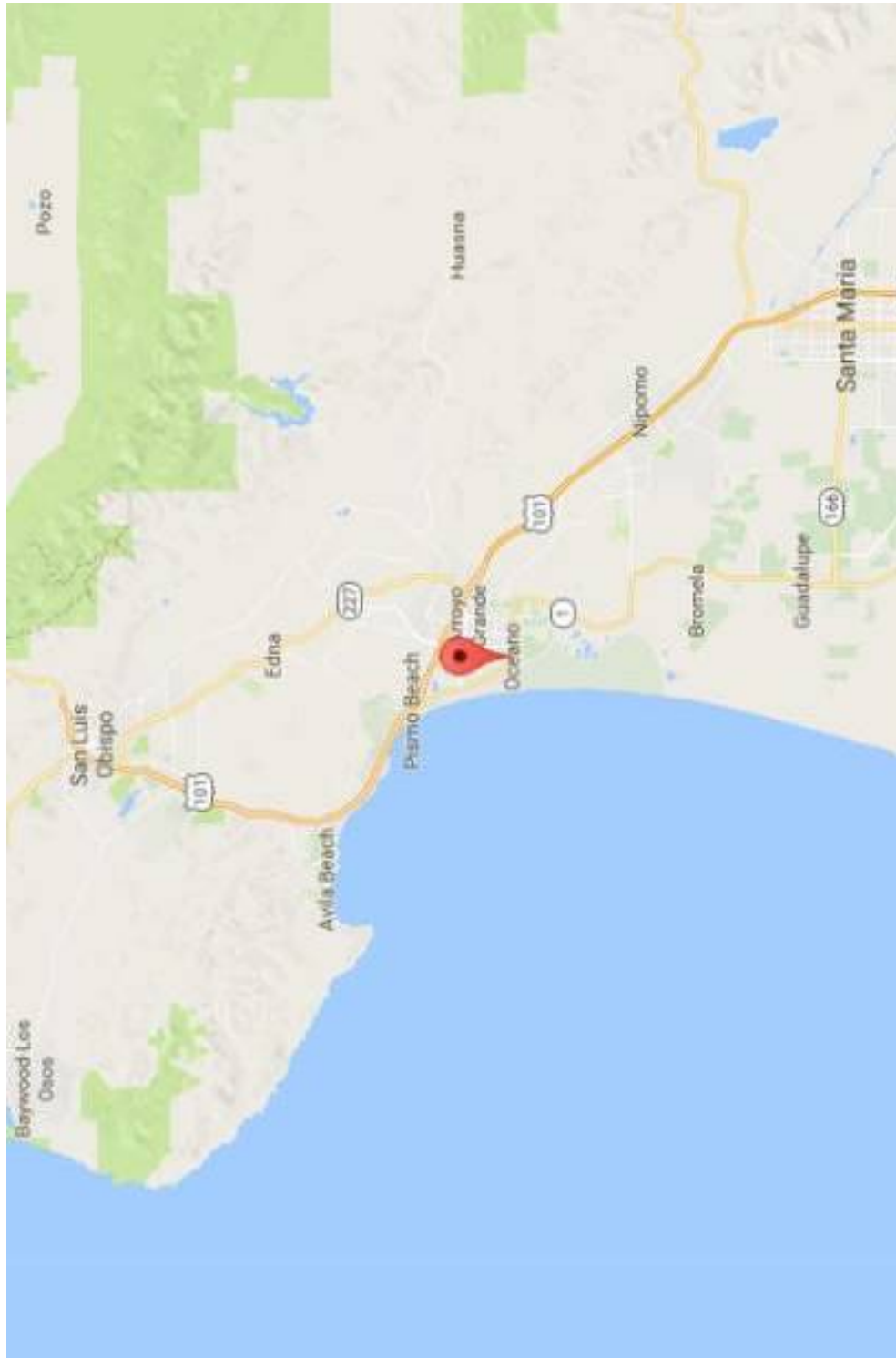
Oceano County Airport

Oceano County Airport is a public airport located one mile west of Oceano's central business district. The airport, which is primarily used for general aviation, only offers non-commercial flights. The airport is on 58 acres with a single runway and no control tower.



Aerial photo of Oceano County Airport

The following maps provide a perspective of the size and layout of the District:



Location of Oceano Community Services District

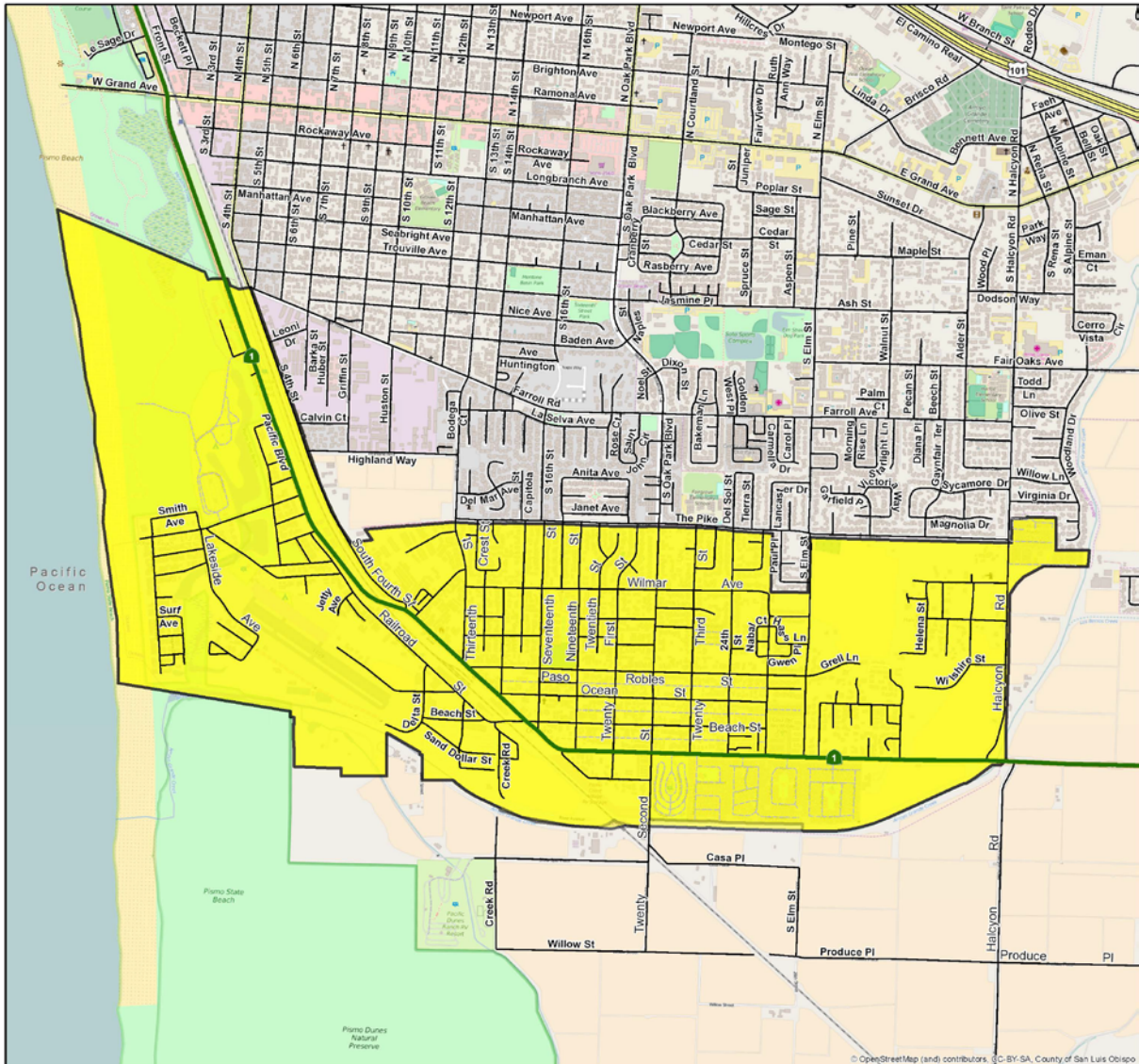


Oceano Community Services District Boundaries Aerial View

Oceano Community Services District Local Hazard Mitigation Plan



Oceano Community Services District Service Area & Sphere of Influence Adopted November 2012



Legend

- Service Area
- Sphere of Influence
(Same as Service Area)



Prepared By SLOLAFCO
Name: Oceano_SOI Bndy
Date: 2/10/2016





V. RISK ASSESSMENT

A. DMA 2000 Requirements

DMA Requirement §201.6(c)(2)(i):	The risk assessment shall include a description of the type of all natural hazards that can affect the jurisdiction.
DMA Requirement §201.6(c)(2)(i):	The risk assessment shall include a description of the location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.
DMA Requirement §201.6(c)(2)(iii):	For multi-jurisdictional plans, the risk assessment must assess each jurisdiction’s risks where they vary from the risks facing the entire planning area.

B. Hazard Identification

The following natural hazards can impact this jurisdiction:

- **Earthquake:**
 - **Faulting**
 - **Liquefaction**
- **Extreme Weather:**
 - **Extreme Heat**
 - **Freeze**
 - **Hail Storms**
 - **Snowfall**
 - **Thunderstorms**
- **Windstorms**
- **Coastal Erosion**
- **Drought**
- **Tsunami**
- **Flood**
- **Dam Failure**
- **Levee Failure**

Note: While common throughout most of California, a wildland fire threat does not exist in this community. The weather, topography, and the lack of vegetation all combine to eliminate the wildland fire threat.



In predicting the probability and severity of each hazard, the following guidelines have been utilized:

PROBABILITY

LOW: There has been no past history or very minimal record of the hazard event impacting the study area over the past 40-100 years. However, the possibility of this hazard occurring, while limited, does exist.

MEDIUM: This hazard has impacted the study areas in the past over the last 5-40 years, however the occurrence and impact has been limited. This hazard event may occur again in the future.

HIGH: Given the study areas past history of this hazard event impacting the area in the last 1-4 years on a reoccurring basis, it is likely that this event will occur again.

SEVERITY

LOW: The damage is expected to be minimal. There is no expected loss of life and limited injuries to the general public. On-duty first responders or public works crews should be able to manage the event and deal with the impacts. Financial losses will be limited.

MEDIUM: The damage should be limited and confined to the community or neighboring jurisdictions. There may be life loss and injuries. County Mutual Aid resources should be able to manage the event or deal with the impacts. Financial losses could be significant.

HIGH: The damage could be widespread and severe. Multiple deaths and casualties may occur. Out of County Mutual Aid resources will most likely be required to manage the event or deal with the impacts. Financial losses are expected to be significant.

C. Climate Change-Global Warming

Global warming occurs when carbon dioxide (CO₂) and other air pollutants and greenhouse gases collect in the atmosphere and absorb sunlight and solar radiation that have bounced off the earth's surface. Normally, this radiation would escape into space, but these pollutants, which can last for years to centuries in the atmosphere, trap the heat and cause the planet to get hotter. That's what is known as the greenhouse effect.



Oceano Community Services District Local Hazard Mitigation Plan

Data gathered by NASA and NOAA indicate that the planet's average surface temperature has risen about 2.0 degrees Fahrenheit (1.1 degrees Celsius) since the late 19th century, a change driven largely by increased carbon dioxide and other human-made emissions into the atmosphere. Most of the warming happened in the past 35 years, with 16 of the 17 warmest years on record occurring since 2001. 2016, was found to be the warmest year in our planet's history.

Most of the warming in recent decades is very likely the result of human activities. In the United States, the burning of fossil fuels to make electricity is the largest source of heat-trapping pollution, producing about two billion tons of CO₂ every year. Coal-burning power plants are by far the biggest polluters. The country's second-largest source of carbon pollution is the transportation sector, which generates about 1.7 billion tons of CO₂ emissions a year.

Scientists agree that the earth's rising temperatures are fueling longer and hotter heat waves, more frequent droughts, heavier rainfall, and more powerful hurricanes. In 2015, for example, scientists said that the ongoing drought in California, the state's worst water shortage in 1,200 years, was intensified by 15 to 20 percent by global warming. Further, the odds of similar droughts happening in the future have roughly doubled over the past century. In 2016, the National Academies of Science, Engineering, and Medicine announced that it's now possible to confidently attribute certain weather events, like some heatwaves, directly to climate change.

Source: NASA – Global Climate Change

The earth's ocean temperatures are getting warmer, which means that tropical storms can pick up more energy. It is possible that global warming could turn a category 3 storm into a more dangerous category 4 storm. In fact, scientists have found that the frequency of North Atlantic hurricanes has increased since the early 1980s, as well as the number of storms that reach categories 4 and 5. In 2005, Hurricane Katrina, the costliest hurricane in U.S. history, struck the city of New Orleans. The second costliest was Hurricane Sandy which pummeled the East Coast in 2012.

Source: NASA – Global Climate Change 2018

Each year, scientists learn more about the consequences of global warming, and many agree that environmental, economic, and health consequences are likely to occur if current trends continue. These impacts include:

- Melting glaciers, early snowmelt, and severe droughts will cause more dramatic water shortages and increase the risk of wildfires in the American West.



Oceano Community Services District Local Hazard Mitigation Plan

- Forests, farms, and cities will face troublesome new pests, heat waves, heavy downpours, and increased flooding. All these factors will damage or destroy agriculture and fisheries.
- Disruption of habitats such as coral reefs and Alpine meadows could drive many plant and animal species to extinction.
- Allergies, asthma, and infectious disease outbreaks will become more common due to increased growth of pollen-producing ragweed, higher levels of air pollution, and the spread of conditions favorable to pathogens and mosquitoes.

The impacts of global warming are being felt across the globe. Extreme heat waves have caused tens of thousands of deaths around the world in recent years. And in an alarming sign of events to come, Antarctica has been losing about 134 billion metric tons of ice per year since 2002. This rate could speed up if the population continues burning fossil fuels at the current pace, some experts claim, causing sea levels to rise several meters over the next 50 to 150 years.

Sea Level Rise Projections for California

Tide gauges and satellite observations show that in the past century, mean sea level in California has risen 8 inches (20 cm), keeping pace with the global rise. In the past 15 years however, mean sea level in California has remained relatively constant, and may have been suppressed due to factors such as offshore winds and other oceanographic complexities. Bromirski et al. postulate that persistent alongshore winds have caused an extended period of offshore upwelling that has both drawn coastal waters offshore and replaced warm surface waters with cooler deep ocean water. Both of these factors could offset the global sea level rise trend in this region. However, localized sea level suppression will not continue indefinitely. As the Pacific Decadal Oscillation, wind, and other conditions shift, California sea level will continue rising, likely at an accelerated rate. Sea level is projected to increase by 17 to 66 inches (42 to 167 cm) along much of the California coast by the year 2100.

Source: NRC 2012; Bromirski et al. 2011, 2012

Source: 2012 National Research Council Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future report



Sea Level Rise Projections for California (NRC, 2012)

TIME PERIOD*	NORTH OF CAPE MENDOCINO	SOUTH OF CAPE MENDOCINO
By 2030	-2 – 9 in (-4 – +23 cm)	2 – 12 in (4 – 30 cm)
By 2050	-1 – 19 in (-3 – + 48 cm)	5 – 24 in (12 – 61 cm)
By 2100	4 – 56 in (10 – 143 cm)	17 – 66 in (42 – 167 cm)

*with Year 2000 as a baseline

Source: California Coastal Commission Sea Level Rise Policy Guidance, Aug. 12, 2015

Impacts from sea level rise to the coastal zone include the following:

- Low lying coastal areas may experience more frequent flooding (temporary wetting) or inundation (permanent wetting), and the inland extents of 100-year floods may increase (i.e.-the Pier Avenue ramp located just outside the District boundary).
- Riverine and coastal waters come together at river mouths, coastal lagoons, and estuaries and higher water levels at the coast may cause water to back up and increase upstream flooding (i.e.-Arroyo Grande Creek at the Pacific Oceano).
- Drainage systems that discharge close to sea level could have similar problems, and inland areas may become flooded if outfall pipes back up with salt water.
- Sea level could cause saltwater to enter into groundwater resources or aquifers.

Climate Change-Global warming will undoubtedly have an impact on the naturally occurring hazards in the Oceano Community Services District. Anticipated effects include changes in the range and distribution of plants and animals (pests), and rainfall patterns/intensities (droughts and floods). Public Health impacts can also be expected. Extreme periods of heat and cold, storms, and smoke from fire will have impacts on climate-sensitive diseases and respiratory illnesses. More specific information on impacts can be found in the Drought, Flood, and Tsunami Hazard Profiles of this Plan.



D. Hazard Profiles

➤HAZARD: EARTHQUAKE

Severity: High	Probability: High
-----------------------	--------------------------

Hazard Definition

An earthquake is a sudden, rapid shaking of the ground caused by the breaking and shifting of rock beneath the earth's surface or along fault lines. For hundreds of millions of years, the forces of plate tectonics have shaped the earth as the huge plates that form the earth's surface move slowly over, under, and past each other. Sometimes the movement is gradual. At other times, the plates are locked together, unable to release the accumulating energy. When the amassed energy grows strong enough, the plates break free causing the ground to shake. Most earthquakes occur at the boundaries where the plates meet, commonly called faults. However, some earthquakes occur in the middle of plates.

Fault

A fault is a fracture in the earth’s crust along which movement has occurred either suddenly during earthquakes or slowly during fault creep. Cumulative displacement may be tens or even hundreds of miles if movement occurs over geologic time. However, individual episodes are generally small, usually less than several feet, and are commonly separated by tens, hundreds, or thousands of years. Damage associated with fault-related ground rupture is normally confined to a fairly narrow band along the trend of the fault. Structures are often not able to withstand fault rupture and utilities crossing faults are at risk of damage. Fault displacement involves forces so great that it is generally not feasible (structurally or economically) to design and build structures to accommodate this rapid displacement. Fault displacement can also occur in the form of barely perceptible movement called “fault creep.” Damage by fault creep is usually expressed by the rupture or bending of buildings, fences, railroads, streets, pipelines, curbs, and other linear features.

The California Geological Survey (CGS) is charged with recording and mapping faults throughout California. The Alquist-Priolo Earthquake Fault Zoning (AP) Act was passed into law following the destructive February 9, 1971 magnitude 6.6 San Fernando earthquake. The AP Act provides a mechanism for reducing losses from surface fault rupture on a statewide basis. The intent of the AP Act is to insure public safety by prohibiting the placement of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep. Fault zoning is continually updated and reviewed by CGS and it is likely that other faults in addition to those currently listed by CGS will be added to the list in the future.



Oceano Community Services District Local Hazard Mitigation Plan

The primary active faults within the County identified by the AP Act include the San Andreas, San Simeon-Hosgri, and Los Osos faults. Two recent studies performed by CGS have estimated the maximum credible ground acceleration that could be generated by active and potentially active faults. Deterministic peak horizontal ground accelerations from these studies range from a low of 0.4 g in the central portion of the County to a high of about 0.7 g along the San Andreas, Rinconada, Oceanic-West Huasna, and coastal fault zones.

The only known mapped fault in the vicinity of Oceano is the Oceano fault. The buried trace of the potentially active Oceano fault is interpreted to strike northwest along the southwestern side of the Cienega Valley about 1,000 meters southwest of Oceano, and goes offshore near the mouth of Arroyo Grande Creek. Although the fault is classified as potentially active by CGS, review of the Oceano fault suggests that the fault is inactive. The Oceano fault presents a very low fault rupture hazard to Oceano. Although the Oceano fault is likely inactive, it is undesirable to site structures over any fault as a result of non-uniform foundation support conditions and the potential for co-seismic movement that could result from earthquakes on other nearby faults.

Other mapped faults within the South County area include the potentially active Wilmar Avenue fault and the inactive Pismo fault. The Wilmar Avenue fault is exposed in the sea cliff near Pismo Beach and the buried trace of the fault is inferred to strike northwest - southeast parallel and adjacent to U.S. Highway 101 beneath portions of Arroyo Grande.

In 2008, the Shoreline Fault was discovered off the coast in the area of the Diablo Canyon Power Plant which is owned and operated by Pacific Gas and Electric Company (PG&E). The initial study of the fault, using conservative assumptions about the total length of the fault zone, indicates that a potential magnitude 6.5 strike-slip earthquake is possible. Follow up investigations were performed by PG&E in 2009 and 2010 and more detailed studies are planned in order to refine the size and potential of the fault.

Source: Report on the Analysis of the Shoreline Fault Zone, Central Coastal California, Report to the U.S. Nuclear Regulatory Commission, January 2011, PG&E

Historically active faults are generally thought to present the greatest risk for future movement and, therefore, have the greatest potential to result in earthquakes. Active and potentially active faults in San Luis Obispo County are shown on the map found at the end of this section.

Liquefaction

Liquefaction occurs when ground shaking causes the mechanical properties of some fine grained, saturated soils to liquefy and act as a fluid. It is the result of a sudden loss of soil strength due to a rapid increase in soil pore water pressures caused by ground shaking. In order for liquefaction to occur, three general geotechnical characteristics must exist:

1) ground water should be present within the potentially liquefiable zone, 2) the potentially liquefiable zone should be granular and meet a specific range in grain-size distribution, and



Oceano Community Services District Local Hazard Mitigation Plan

3) the potentially liquefiable zone should be of low relative density. If those factors are present and strong ground motion occurs, then those soils could liquefy depending upon the intensity and duration of the strong ground motion. Liquefaction that produces surface effects generally occurs in the upper 40 to 50 feet of the soil column, although the phenomenon can occur deeper than 100 feet. The duration of ground shaking is also an important factor in causing liquefaction to occur. The larger the earthquake magnitude, and the longer the duration of strong ground shaking, the greater the potential there is for liquefaction to occur.

The areas of San Luis Obispo County most susceptible to the effects of liquefaction are those areas underlain by young, poorly consolidated, saturated granular alluvial sediments. These soil conditions are most frequently found in areas that have been inundated with river and flood plain deposits. These conditions do exist in the low lying areas near the Oceano Lagoon and Airport.



Damage to a home in Oceano caused by liquefaction resulting from the 2003 San Simeon Earthquake.

Maps which delineate the areas of San Luis Obispo County and Oceano that are susceptible to liquefaction can be found at the end of this section.



History

Where earthquakes have struck before, they will strike again. The Central California Coast has a history of damaging earthquakes, primarily associated with the San Andreas Fault. However, there have been a number of magnitude 5.0 to 6.5 earthquakes on other faults which have affected large portions of the Central Coast. Recent events include the December 2003 - 6.5 magnitude San Simeon Earthquake and the September 2004 - 6.0 magnitude Parkfield Earthquake.

The following are historic earthquakes that had an effect on San Luis Obispo County:

1830 San Luis Obispo Earthquake

The 1830 earthquake is noted in the annual report from the Mission, and had an estimated magnitude of 5. The location of the event is poorly constrained and cannot be attributed to a specific fault source, but the earthquake reportedly occurred somewhere near San Luis Obispo.

1857 Fort Tejon Earthquake

The approximate 7.9 Fort Tejon earthquake of 1857 was one of the greatest earthquakes ever recorded in the United States. It left a surface rupture scar over 350 kilometers (210 miles) in length along the San Andreas Fault and a maximum surface offset of about 9 meters (30 feet). Yet, despite the immense scale of this quake, only two people were reported killed by the effects of the shock. The exact location of the epicenter is not known. The event is referred to as the Fort Tejon earthquake, because that was the location of the greatest damage. There is evidence to suggest that the epicenter may have been in the Cholame and Parkfield area, which is located in and near the northeastern portions of San Luis Obispo County as a number of foreshocks, 1 to 9 hours before the main event, were report in this area.

Source: <http://www.data.scec.org/significant/forttejon1857.html>

The fact that only two lives were lost was primarily due to the nature of the quake's setting. California in 1857 was sparsely populated, especially in the regions of strongest shaking, and this fact, along with good fortune, kept the loss of life to a minimum. The effects of the quake were quite dramatic, even frightening. Were the Fort Tejon shock to happen today, the damage would easily run into billions of dollars, and the loss of life would likely be substantial, as the present day communities of Wrightwood, Palmdale, Frazier Park, and Taft (among others) all lie upon or near the 1857 rupture area.

1906 San Francisco Earthquake

This earthquake has been studied in detail and the effects in San Luis Obispo County have been documented. Modified Mercalli intensity ratings ranged from III-IV in the inland and north coast portions of the County, and IV-V in the south coast areas. The higher intensities



were felt in areas underlain by alluvial soil, while the lower intensities occurred in areas underlain by bedrock formations.

1916 Avila Beach Earthquake

This magnitude 5.1 event occurred offshore of Avila Beach in San Luis Bay. The earthquake reportedly resulted in tumbling smokestacks of the Union Oil Refinery at Port San Luis, and a landslide that blocked the Pacific Coast railroad tracks. The maximum intensity appears to be approximately VI, but the available descriptions of the shaking are somewhat limited.

1952 Arvin-Tehachapi Earthquake

This 7.7 magnitude earthquake occurred on the White Wolf fault, located south and west of Bakersfield. Throughout most of the San Luis Obispo County, ground shaking intensities of VI were felt. Intensities of IV-V were experienced in the northwest portion of the County, and magnitude VIII intensities were felt in the Cuyama area, in the southeast portion of the County. The higher intensities were likely due to closer proximity to the earthquake epicenter.

1952 Bryson Earthquake

This magnitude 6.2 earthquake likely occurred on the Nacimiento fault, and resulted in intensity ratings of VI throughout most of the western portion of the County. Intensities of IV-V were experienced in the eastern portion of the County. Higher intensities were generally felt in the coastal valley areas that are underlain by alluvial soils.

2003 San Simeon Earthquake

The San Simeon Earthquake struck at 11:15 a.m. on December 22, 2003. The magnitude 6.5 earthquake is attributed to having occurred near the San Simeon/Oceanic/Hosgri Fault system. The epicenter was approximately six miles from the community of San Simeon. As a result of the quake Cambria experienced a residential structure fire, and several commercial and residential buildings were damaged. Some roadways were obstructed and debris blocked some streets. This earthquake resulted in 2 deaths in the City of Paso Robles and water/wastewater infrastructure in the community of Oceano suffered a three million dollar loss.

1934, 1966 and 2004 Parkfield Earthquakes

These earthquakes were all three in the range of magnitude 6.0 and occurred on the San Andreas Fault in or near the northeast corner of the County. Earthquake intensities generally conformed to anticipated characteristics for events of this size, with intense shaking (VII-VIII) being limited to a relatively small area near the epicenters of the quakes. Moderate shaking was experienced in most of the central and western parts of the County. A variation from the expected intensity characteristics was experienced in the La Panza area during the



1934 earthquake. La Panza is approximately 40 miles south of the fault rupture area, but experienced earthquake intensities of VII.

Other Earthquakes

Earthquakes which have occurred outside yet were felt within the County during the last century include events such as the 7.0 Lompoc earthquake in 1927, and the 7.7 Arvin Tehachapi earthquake of 1952. Other more recent earthquakes, such as the 1983 - 6.7 Coalinga earthquake, 1989 - 7.1 Loma Prieta earthquake, 1992 - 7.5 Landers earthquake and the 1994 - 6.6 Northridge earthquake were felt in San Luis Obispo County, however, there was no damage to structures.

Hazard Potential

The Hazard Potential for earthquakes is dependent upon a multitude of factors. A brief description of those factors is presented below:

- **Earthquake Magnitude**

Earthquake magnitude, as generally measured by either the Richter or Moment Magnitude scale, is a measurement of energy released by the movement of a fault. As the amount of energy released by an earthquake increases, the potential for ground shaking impacts also increases.

- **Distance from Epicenter**

Earthquake energy generally dissipates (or attenuates) with distance from a fault. Over long distances, this loss of energy can be significant, resulting in a significant decrease in ground shaking with increased distance from the epicenter.

- **Duration of Strong Shaking**

The duration of the strong ground shaking constitutes a major role in determining the amount of structural damage and the potential for ground failure that can result from an earthquake. Larger magnitude earthquakes have longer durations than smaller earthquakes.

- **Effects of Ground Shaking**

The primary effect of ground shaking is the damage or destruction of buildings, infrastructure, and possible injury or loss of life. Building damage can range from minor cracking of plaster to total collapse. Disruption of infrastructure facilities can



include damage to utilities, pipelines, roads, and bridges. Ruptured gas and water lines can result in fire and scour/inundation damage, respectively, to structures. Secondary effects can include geologic impacts such as co-seismic fault movement along nearby faults, seismically induced slope instability, liquefaction, lateral spreading, and other forms of ground failure and seismic response.

- **Local Geologic Conditions**

The geologic and soil conditions at a particular site have the potential to substantially increase the effects of ground shaking. The thickness, density, and consistency of the soil, as well as shallow ground water levels, have the potential to amplify the effects of ground shaking depending on the characteristics of the earthquake. In general, the presence of unconsolidated soils above the bedrock surface can amplify the ground shaking caused by an earthquake.

- **Fundamental Periods**

Every structure has its own fundamental period or natural vibration. If the vibration of ground shaking coincides with the natural vibration period of a structure, damage to the structure can be greatly increased. The extent of damage suffered during an earthquake can also depend on non-geologic factors. The type of building and its structural integrity will influence the severity of the damage suffered. Generally, small, well-constructed, one and two-story wood and steel frame buildings have performed well in earthquakes because of their light weight and flexibility. Reinforced concrete structures also usually perform well. Buildings constructed from non-flexible materials, such as unreinforced brick and concrete, hollow concrete block, clay tile, or adobe, are more vulnerable to earthquake damage.

Impacts on People and Housing

In any earthquake, the primary consideration is saving lives. Time and effort must also be dedicated to providing for social issues such as reuniting families, providing shelter to displaced persons, and restoring basic needs and services. Major efforts will be required to remove debris and clear roadways, demolish unsafe structures, assist in reestablishing public services and utilities, and provide continuing care and temporary housing for affected citizens.

Effects on Commercial and Industrial Structures

After any earthquake, individuals are likely to lose wages due to the inability of businesses to function because of damaged goods and/or facilities. With business losses, the County of



Oceano Community Services District Local Hazard Mitigation Plan

San Luis Obispo will lose revenue. Economic recovery from even a minor earthquake will be critical to the communities involved.

Effects on Infrastructure

The damage caused can lead to the paralysis of the local infrastructure: police, fire, medical and governmental services.

Effects on Agriculture

Earthquakes can cause loss of human life, loss of animal life, and property damage to structures and land dedicated to agricultural uses. The most significant long-term impacts on agriculture from earthquakes are those that arise from the cascading effects of fire and flood.

Unreinforced Masonry Buildings

Unreinforced masonry building type structures consist of buildings made of unreinforced concrete and brick, hollow concrete blocks, clay tiles, and adobe masonry. Buildings constructed of these materials are heavy and brittle, and typically provide little earthquake resistance. In small earthquakes, unreinforced buildings can crack, and in strong earthquakes, they have a tendency to collapse. These types of structures pose the greatest structural risk to life and safety of all general building types. Non-structural items and building components can also influence the amount of damage that buildings suffer during an earthquake. Unreinforced parapets, chimneys, facades, signs, and building appendages can all be shaken loose, creating a serious risk to life and property.

Compliant with the State of California's Alquist-Priolo Special Studies Zone Act, the inventorying and public notification of these structures, based on the probability of a damaging quake occurring, is required. Only two of these structures can be found in the study area, both located in the commercial district along Front Street. They both present a very limited public safety threat as they are small and not used for public occupancy.

Relationship to Other Hazards – Cascading Effects

Earthquakes can cause many cascading effects such as fires, flooding, hazardous materials spills, utility disruptions, landslides, and transportation emergencies. Ground shaking may cause tsunamis or seiche, the rhythmic sloshing of water in lakes or bays. Economic impacts to a community through the loss of property and sales tax revenues from damaged businesses can be significant.



Plans and Programs in Place

The San Luis Obispo County Office of Emergency Services (OES) and the Five Cities Fire Authority (FCFA) in coordination with local, state, and federal emergency response organizations, continually work to better prepare the District's residents for the impacts of a significant earthquake event.

The San Luis Obispo County Planning and Building Department ensures that all new construction complies with current codes and ordinances regarding earthquake safety within the District.

First responder agencies regularly train on building collapse awareness, light rescue techniques, mass casualty triage and treatment, and have a limited amount of equipment and resources available to facilitate heavy rescue operations.

A detailed Earth Response Plan for San Luis Obispo County is in place, developed by the Office of Emergency Services. The Plan is coordinated with the State of California Earthquake Plan.

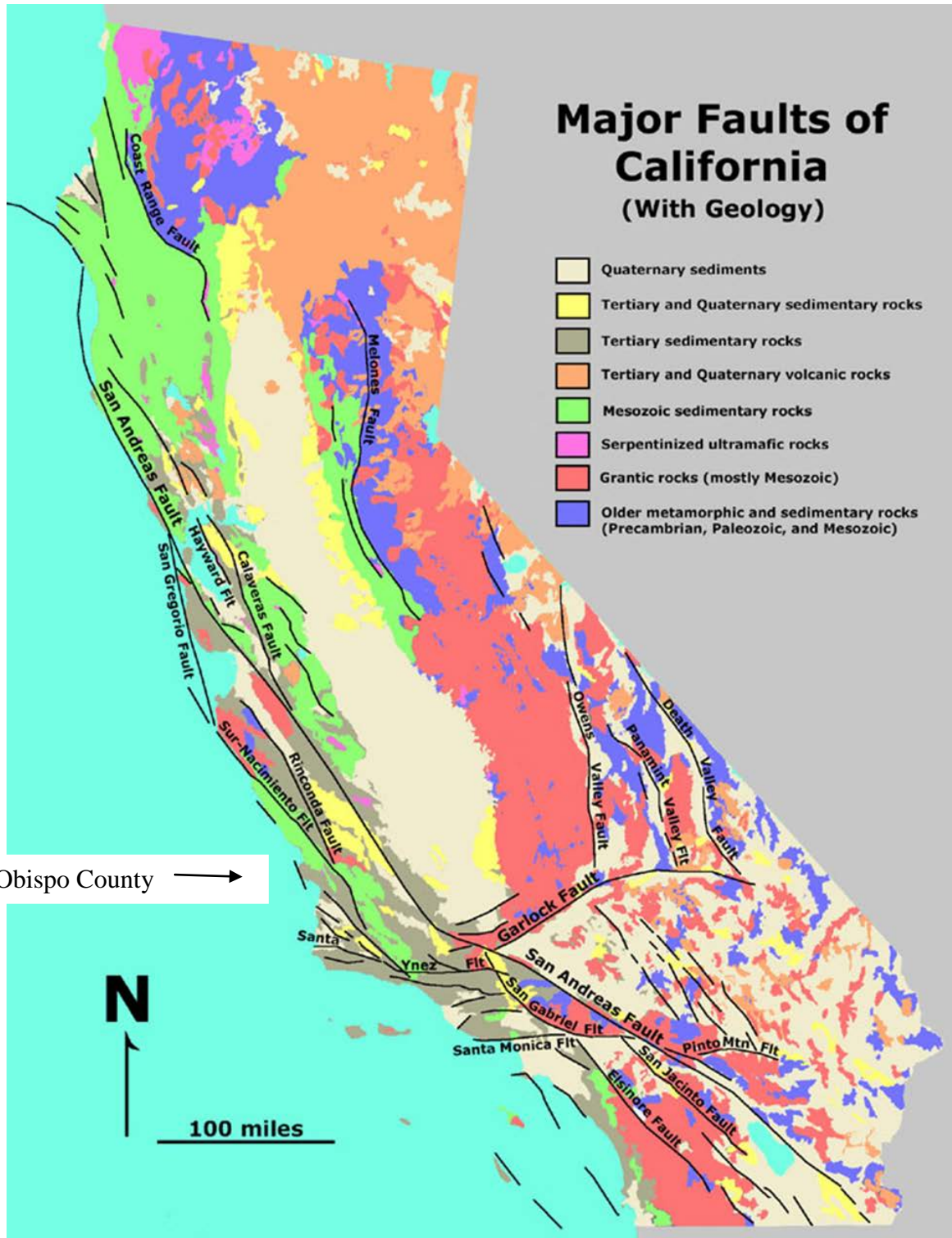
Future Probability - Risk Assessment Conclusion

Over the past 100 years, 13 earthquakes of magnitude 5 or greater have occurred within the County and/or surrounding areas. Based on this historical data of damaging earthquakes and the fact that District is located within a seismically active region, the probability is rated **HIGH**.

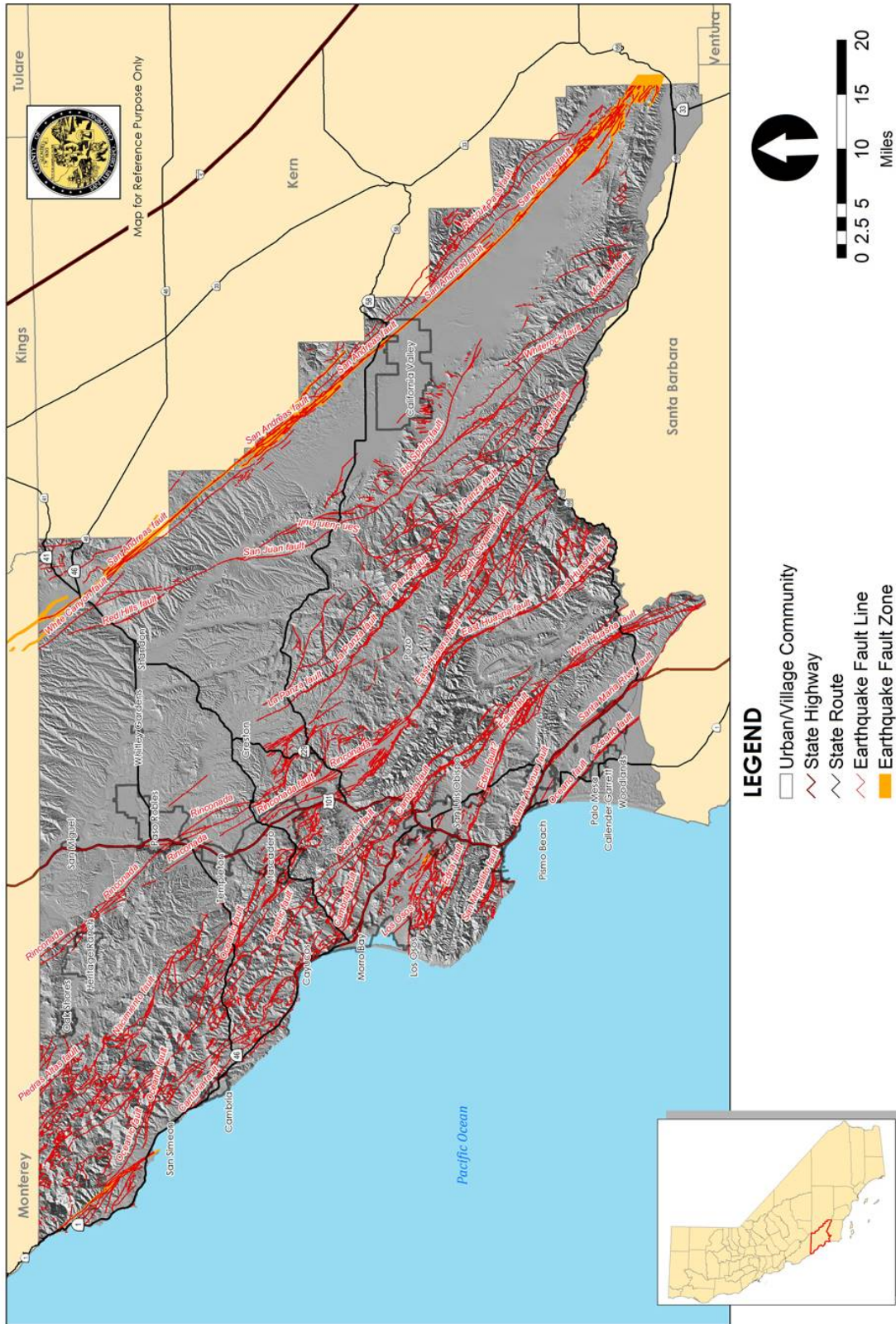
Both direct and indirect consequences of a major earthquake will severely stress the resources of the both the District, the FCFA, and the County and will require a high level of self-help, coordination and cooperation. Outside assistance from other local, regional, state, federal and private agencies may be delayed by more than 72 hours, depending upon the regional severity of the earthquake. Given the properties at risk and the cascading effects the severity is rated as **HIGH**.



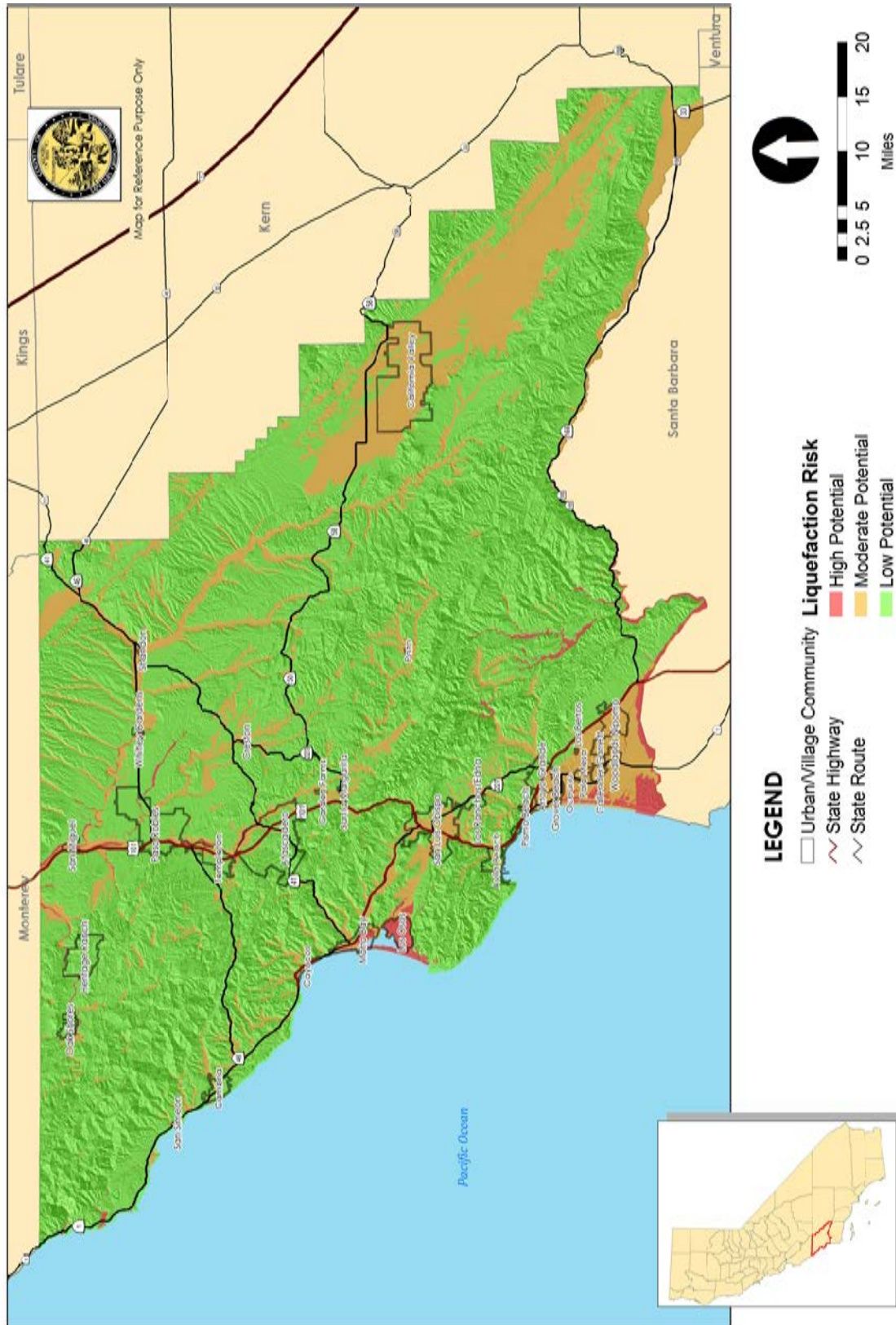
MAJOR FAULTS OF CALIFORNIA



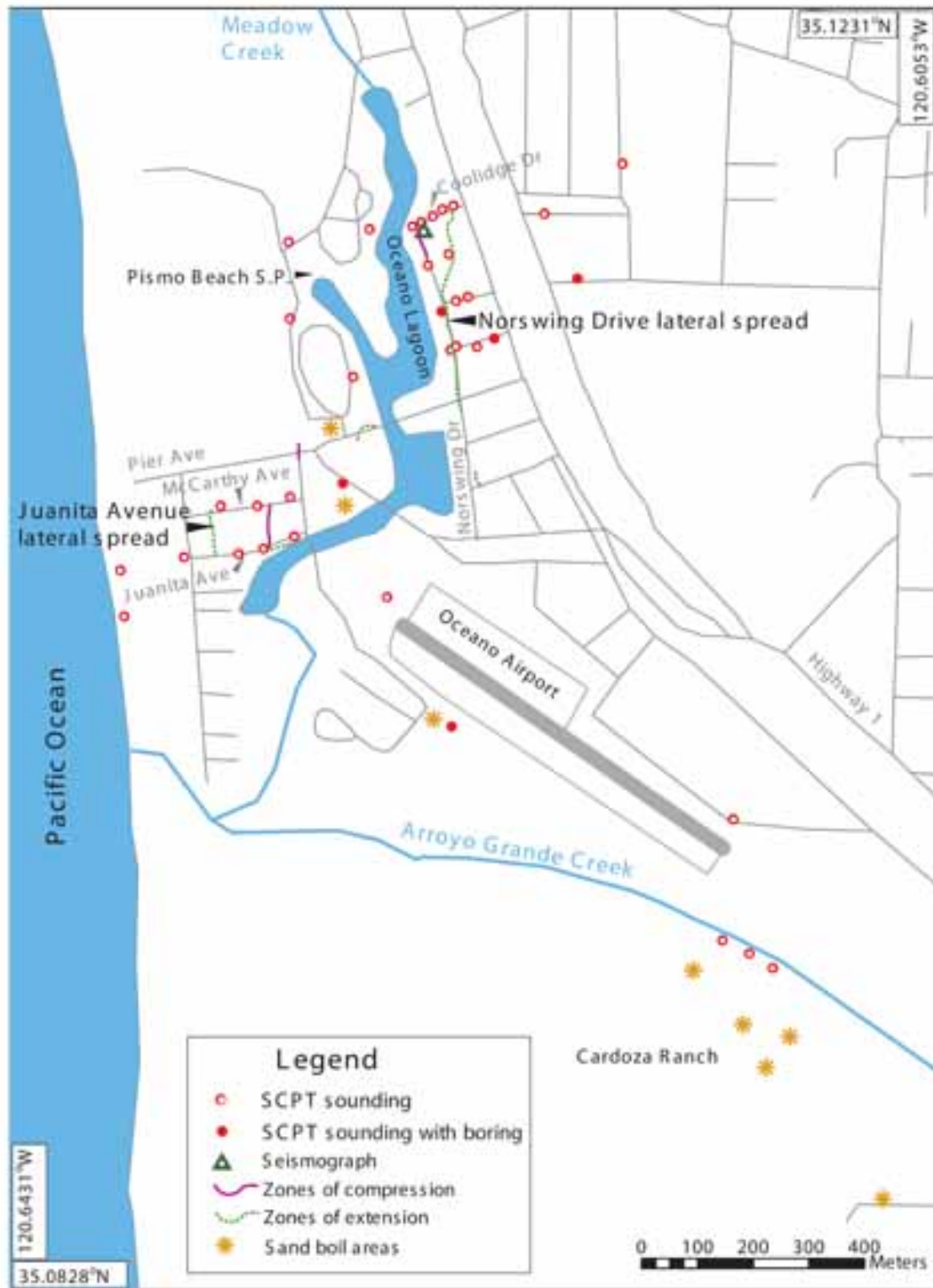
San Luis Obispo County →



EARTHQUAKE ZONES AND FAULT LINES



LIQUEFACTION RISK MAP



Map of Oceano with Ground Failure and Liquefaction Areas, USGS SCPT Soundings and Borings, and Portable Digital Seismograph



➤HAZARD: FLOODING

Severity: Medium	Probability: High
-------------------------	--------------------------

Hazard Definition

A flood is defined as an overflowing of water onto an area of land that is normally dry. Floods generally occur from natural weather related causes, such as sudden snow melts, often in conjunction with a wet or rainy spring, or with sudden and very heavy rainfall. Floods can also result from human causes such as a dam impoundment bursting.

Rainfall and inclement weather are primarily seasonal phenomena in the study area which boasts a mild Mediterranean climate. Generally the rainy season is from November through March. The yearly rainfall average for Oceano is just less than 18 inches, however much higher amounts can be expected in the coastal mountains to the east, for example Lopez Lake will often receive double that amount in a year. Even during moderately sized storms, flooding can also occur in low-lying areas that have poor drainage an example being Highway 1 between 13th and 17th streets in Oceano.

Many factors can increase the severity of floods including: fires in watershed areas, the placement of structures or fill material in flood-prone areas, and tidal or storm influence in low-lying coastal areas. Additionally, the construction of impervious surfaces such as roadways and rooftops will result in increased runoff.

Sea level rise due to global warming is likely to have minimal flood impact on most of the community of Oceano due to protective sand dunes and the overall elevation of most of the community. However, two areas of concern exist: the protective sand dunes are breached by the Pier Avenue beach ramp and the Arroyo Grande Creek at its terminus at the Pacific Ocean. The potential for water to enter the marsh area behind the dunes is high. A more detailed description and current plans and projects in place can be found in the Tsunami portion of this Plan.

For floodplain management purposes, the Federal Emergency Management Agency (FEMA) will often use the term “100-year flood” to describe the size or magnitude. These terms are misleading. It is not a flood that occurs once every 100 years. Rather, it is the flood elevation that has a 1 percent chance of being equaled or exceeded each year. Thus, a 100-year flood could occur more than once in a relatively short period of time.

The 100-year flood, which is the standard used by most federal and state agencies, is used by the National Flood Insurance Program (NFIP) as the standard for floodplain management and to determine the need for flood insurance.

Oceano Community Services District Local Hazard Mitigation Plan



Areas within the 100 and 500-year flood plain of the study area are found in the San Luis Obispo County Flood Hazard Map found in at the end of this section.

Monthly Rainfall Averages (Annual = Approximately 15 inches/year)

MONTHLY AVERAGES AND RECORDS- °F						
Date	Average Low	Average High	Record Low	Record High	Average Precipitation	Average Snow
January	43°	65°	24° (1950)	85° (1976)	3.59"	0"
February	44°	66°	28° (1996)	90° (1995)	3.87"	0"
March	45°	67°	23° (1963)	90° (2000)	3.46"	0"
April	46°	69°	31° (1999)	101° (1989)	1.13"	0"
May	47°	70°	30° (1988)	100° (1970)	0.41"	0"
June	51°	71°	37° (1999)	99° (1976)	0.07"	0"
July	53°	71°	38° (1949)	104° (1953)	0.03"	0"
August	53°	72°	39° (1963)	108° (1962)	0.02"	0"
September	53°	73°	35° (1988)	100° (1966)	0.32"	0"
October	51°	73°	32° (1949)	99° (1964)	0.62"	0"
November	46°	69°	29° (1986)	91° (1997)	1.7"	0"
December	42°	66°	24° (1990)	92° (1958)	2.57"	0"



History

Over the years, the study area has experienced flooding events that have resulted in extensive property damage. Historical floods in the District and surrounding areas include:

January and February, 1969

In January of 1969, a series of storms delivered rainfall that totaled over 18 inches in the coastal areas of the county. In February, another series of storms delivered another 5 to 10 inches. Streets, highways, and utilities throughout the County were heavily damaged.

January, 1973

Much like the floods of 1969, the 1973 storm produced a ten-hour period of unusually heavy rainfall. Many creeks and streams throughout the county overtopped their banks and inundated a number of areas.

February 22, 1993

Cambria received 2.5 inches of rain in a two hour period. Flash flooding occurred causing \$500,000 damage to four businesses and several residences.

January and March, 1995

A series of powerful and slow-moving storms brought heavy rain and strong winds to all of Central California. Serious flooding occurred in all coastal and many inland streams. In March, 18 inches of rain fell in Cambria and the West Village was completely inundated, with water as deep as six feet on Main Street.

December 2005 and early January, 2006

A series of storms battered the County. Most of the damage occurred New Year's Eve and day. High winds and saturated soils resulted in significant tree falls throughout the county causing heavy damage to a number of homes and businesses. There was one fatality which was the result of a tree falling on a pick-up truck while it was traveling on U.S. Highway 101.

March, 2001

Central and Southern California were significantly impacted by a powerful storm that delivered up to 6 inches of rain in some of the coastal areas of San Luis Obispo County. The mountain area of the county received even more, with reports of up to 13 inches. The heavy rain produced numerous flooding incidents. In Oceano, the Arroyo Grande Creek overflowed, destroying numerous crops and damaging one home. The Pacific Dunes RV



Park flooded. In Arroyo Grande, flooding along Corbett Creek caused damage to four homes and five classrooms at Arroyo Grande High School. In Pismo Beach, Pismo Creek flooding damaged homes in Pismo Coast Village.

December, 2004

A quick moving and powerful storm brought flash flooding and heavy rain to the Central Coast of California. Rainfall amounts ranged from 1 to 3 inches on the coastal plains to 3 to 6 inches in the more mountainous regions of the county. Flooding problems were reported throughout the county.

December, 2010

A series of slow-moving storms brought heavy rain and strong winds to the County. The most severe damages began on December 19, with primarily affected areas in the South County, particularly in the Oceano area. Damages reported to Cal EMA were just over \$2,000,000 in private property losses and an estimated cost and loss total to local governments of just over \$1,100,000 for a total storm damage cost estimate of approximately \$3,135,000.

February, 2017

Wind storm resulted in the downing of 15-20 large eucalyptus, cypress and pine trees in the village of Halcyon.

Annual Basis

Relatively moderate rain storms cause flooding along Highway 1 from 4th to 13th street. (*See photo at end of this section*)

Flood Hazard Potential

Flooding in Oceano is a result of heavy flows in Arroyo Grande Creek and Meadow Creek. The most significant inundation area is near the creeks' confluences with the ocean. Areas subject to flooding as a result of a 100-year storm generally extend south of Highway 1 and west of Pier Avenue. During a major event flooding would occur at the Oceano County Airport and surrounding properties, along with extensive areas located to the south of the community.



Oceano Community Services District Local Hazard Mitigation Plan

On nearly an annual basis, the low lying areas of Oceano, specifically the areas mentioned above will flood even in moderate rain storms. The County of San Luis Obispo and the Flood Control District have initiated two projects to mitigate some of the flooding. One project will address the flooding along Hwy 1 at 13th street where the most frequent and potentially dangerous flooding occurs on a regular basis. The project will construct drainage facilities (culverts and basins) that will convey run-off from Hwy 1 and 13th Street to the Arroyo Grande Creek Channel. This project has received funding from Caltrans, Community Development Block Grants, SLO Council of Governments, and the County but quotes received for the project exceeded the original engineers' estimate and the project is now looking to obtain a long term loan from USDA to make up the shortfall. Due to the number of agencies involved such as the federally regulated Oceano Airport and Union Pacific Railroad, and proximity to riparian habitat the permitting and coordination effort has been complex and time consuming. The second project the County initiated via Zone 1/1A is the Arroyo Grande Creek Channel Waterway Management Project. This project will help reduce the risk of the channel overtopping in certain storms by restoring the flood capacity of the channel while maintaining critical habitat for at least two endangered species. This project has received \$6.8 million dollars in grants from the State and FEMA. The project is in the final design phase and implementation of the project should occur in the next 1-2 years. Once these two projects are completed, they will eliminate the frequent flooding of two structures existing along Highway 1 between 13th Street and Front Street. Flooding of consequence occurs nowhere else in the District.

• **Effects on People and Housing**

Direct impacts of flooding can include injuries and loss of life, damage to property and health hazards from ruptured sewage lines and damaged septic systems. Secondary impacts include the cost and commitment of resources for flood fighting services, clean-up operations, and the repair or replacement of damaged structures.

• **Effects on Commercial and Industrial Structures**

Flooding can cause damage to commercial and industrial structures, vegetation, crops and livestock. Beach erosion results in the loss of sand from coastal areas. This hazard can accelerate the rate of erosion of coastal bluffs, and can also contribute to increased wave-related damage to coastal structures.

• **Effects on Infrastructure**

Flooding can cause damage to roads, communication facilities and other infrastructure.

• **Effects on Agriculture**

Effects on agriculture can be devastating. Flooding can damage crops and livestock. In addition to the obvious impacts on crops and animals, flooding can have deleterious effects on soil and the ability to reinvigorate the agricultural activities impacted once the flood



waters recede. Damage to water resources such as underground irrigation systems, water storage reservoirs, springs and other natural water bodies could have a serious effect upon agriculture operations.

Dam Failure

Although the probability of this type of hazard occurring is highly unlikely, it warrants consideration because a considerable portion of Oceano is located in the inundation area of Lopez Dam. In the event of complete failure of Lopez Dam, at 100% capacity, water would flow in a westerly direction following Arroyo Grande Creek, approximately 3,000 feet in each direction of the centerline of the creek channel. Water flows would pass through the rural areas directly below the dam and then into the cities of Arroyo Grande, Grover Beach, and the community of Oceano, some schools within the Lucia Mar Unified School District and the Sanitation District before reaching the ocean. Substantial impacts to life and property are a significant possibility in the City of Arroyo Grande. The threat diminishes as the distance from the dam increases and as the flood plain widens as it approaches Grover Beach. In Grover Beach, if the Lopez Dam were at full capacity and experienced a total failure, the low lying areas south of Grand Avenue and west of Highway 1 would be impacted. In Oceano, the inundation is predicted to follow the 100 year flood map and would include Highway 1, the Oceano Elementary School, Oceano Airport, the rail system, and Oceano Campground.

The County Dam and Levee Failure Plan indicates that at 100% capacity and with a complete failure water would reach U.S. 101, just north of the community of Oceano in approximately 40 minutes.

The State of California Division of Safety of Dams (DSOD) conducts periodic reviews to evaluate dam safety and a considerable amount of work was completed in 2004 in order to bring the dam into compliance with current seismic standards and mitigate the potential for liquefaction of the underlying subsoils found in the creek bed below the Lopez Dam. Inundation maps are in the process of being updated and will be public after DSOD approves the new maps.

Please see Flood Zone Map found at the end of this section.



Oceano Community Services District Local Hazard Mitigation Plan

Levee Failure

The area to the east and south of the District consists of the Arroyo Grande Creek flood plain. It is also referred to as the Cienaga Valley. The area is prime farmland and is in constant production, having a significant agricultural economic impact.

In 1961, the Arroyo Grande Creek Flood Control Project was completed. The main feature of the project was a levee system that confines the lower 3 miles of Arroyo Grande Creek, and a portion of Los Berros Creek as they flow to the Pacific Ocean. Over the years, the system has lost much of its carrying capacity and in 2001, the southern portion of the Arroyo Grande levee was breached near the Union Pacific railroad bridge. This failure resulted in extensive flooding of hundreds of acres of farmland. Should the northern portion have failed, the results would have been dramatic. The communities of Grover Beach and Oceano as well as the campgrounds, airport, and wastewater treatment plant would have been at risk.

Relationship to Other Hazards - Cascading Effects

While there are some benefits associated with flooding, such as the replenishment of beach sand, and the supplement of nutrients to agricultural lands, it is generally considered a hazard to development in flood plain areas. Floods can cause many cascading effects. Fire can break out as a result of dysfunctional electrical equipment. Hazardous materials can also get into floodways, causing health concerns and polluted water supplies. In many instances during a flood, the drinking water supply will be contaminated. Other problems and hazards associated with flooding and inclement weather include: utility disruptions, broken power lines lying on the ground, and communication system failures.

High winds often accompany winter storms and may cause significant damage in the planning area by blowing down trees that have been killed or damaged by drought, disease or insect infestation. The eucalyptus trees found along Highway 1 and the railroad present and in scattered locations throughout the planning area present a moderate threat to the community.

Plans and Programs in Place

San Luis Obispo County Public Works Department, Office of Emergency Services (OES), and the Five Cities Fire Authority, in coordination with local, state, and federal emergency response organizations, continually work to better prepare residents of Oceano for the impact of flooding events. The Flood Control and Water Conservation District annually sends out a Flooding and Evacuation Brochure detailing important safety information to all of the residents of Oceano.



Oceano Community Services District Local Hazard Mitigation Plan

First responder agencies, both law enforcement and fire, regularly train on water rescue and dealing with the cascading effects that can result from flooding. The local chapter of the American Red Cross is prepared to assist citizens in shelter welfare issues.

The San Luis Obispo County Planning and Building Department stipulate and enforces codes and ordinances that ensure that buildings are not situated in flood zones.

It should be noted that the community of Oceano, along with all of San Luis Obispo County's unincorporated areas, are included in the National Flood Insurance Program (NFIP), which allows property owners in flood prone areas very reasonable flood insurance rates. The County of San Luis Obispo is committed to remaining a NFIP participating agency and the projects currently in the planning and permitting phases will eliminate the repetitive flooding of the NFIP structures in the community.

Flood Control Districts

The San Luis Obispo County Flood Control and Water Conservation District has three subsidiary zones of benefit, two of which have direct impact on flooding within the community of Oceano. The Arroyo Grande Creek - Zone 1 and Los Berros Creek - Zone 1/A Districts primary focus is the maintenance of the Arroyo Grande Creek Flood Control Channel. Additionally, they are also concerned with the flooding, erosion, water quality within the boundaries of Zone 1 and 1A. The third zone, Zone 3 deals with the impacts of dam failure and drought.

In September of 2006, the OCSD signed on as a party to the Arroyo Grande Watershed and Memorandum of Understanding (MOU). The purpose of the MOU is to provide an overall understanding and accountability consensus between the parties to better protect, manage, and enhance the watershed, creating a sustainable future for the surrounding communities and the environment.

In 2010, a long-term maintenance plan for the Arroyo Grande Creek Channel was developed and funded by Zone 1 and 1A. This plan is called the Arroyo Grande Creek Channel Waterway Management Program (AGWMP). The AGWMP was adopted and the associated Environmental Impact Report was certified by the Board of Supervisors on November 2, 2010.

National Weather Service

The National Weather Service uses a number of methods to get weather statements out to the general population. Examples include the Emergency Alert System, NOAA Weather Radio All Hazards (NWR), and smart phone Wireless Emergency Alerts (WEA). For certain



Oceano Community Services District Local Hazard Mitigation Plan

significant extreme weather events, the County could potentially use the reverse 9-1-1 system. An Early Warning System siren, located throughout the Diablo Canyon Emergency Planning Zone Area, which includes the Oceano area, could be utilized to alert residents to a flooding event.

Due to the unique and consistent weather patterns in the area, the National Weather Service (NWS) has broken the County into three weather forecast zones: San Luis Obispo County Central Coast, San Luis Obispo County Interior Valleys, and San Luis Obispo County Mountains. The NWS uses a multi-tier system of weather statements to notify the public of threatening weather conditions specific to these areas. These statements are used in conjunction with specific weather phenomena to convey different levels of risk. In order of increasing risk, these statements are:

Weather Related Terminology

- **Outlook** - A Hazardous Weather Outlook is issued daily to indicate that a hazardous weather or hydrologic event may occur in the next several days. The outlook will include information about potential severe thunderstorms, heavy rain or flooding, winter weather, extremes of heat or cold, etc., that may develop over the next seven days with an emphasis on the first 24 hours of the forecast. It is intended to provide information to those who need considerable lead time to prepare for the event.
- **Advisory** - An advisory is issued when a hazardous weather or hydrologic event is occurring, imminent, or likely. Advisories are for "less serious" conditions than warnings that may cause significant inconvenience, and if caution is not exercised could lead to situations that may threaten life or property. The NWS may activate weather spotters in areas affected by advisories to help them better track and analyze the event.
- **Watch** - A watch is used when the risk of a hazardous weather or hydrologic event has increased significantly, but its occurrence, location, or timing is still uncertain. It is intended to provide enough lead time so those who need to set their plans in motion can do so. A watch means that hazardous weather is possible. People should have a plan of action in case a storm threatens and they should listen for updates and possible warnings especially when planning travel or outdoor activities. The National Weather Service may activate weather spotters in areas affected by watches to help them better track and analyze the event.
- **Warning** - A warning is issued when a hazardous weather or hydrologic event is occurring, imminent, or likely. A warning means weather conditions pose a threat to



life or property. People in the path of the storm need to take protective action. NWS may activate weather spotters in areas affected by warnings to help them better track and analyze the event.

- **Statement** - A statement is either issued as a follow-up message to a warning, watch, or emergency, and may be updated, extended, or cancelled. It is also a follow-up message or notification of significant weather for which no type of advisory, watch, or warning exists.

Future Probability/Risk Assessment Conclusion

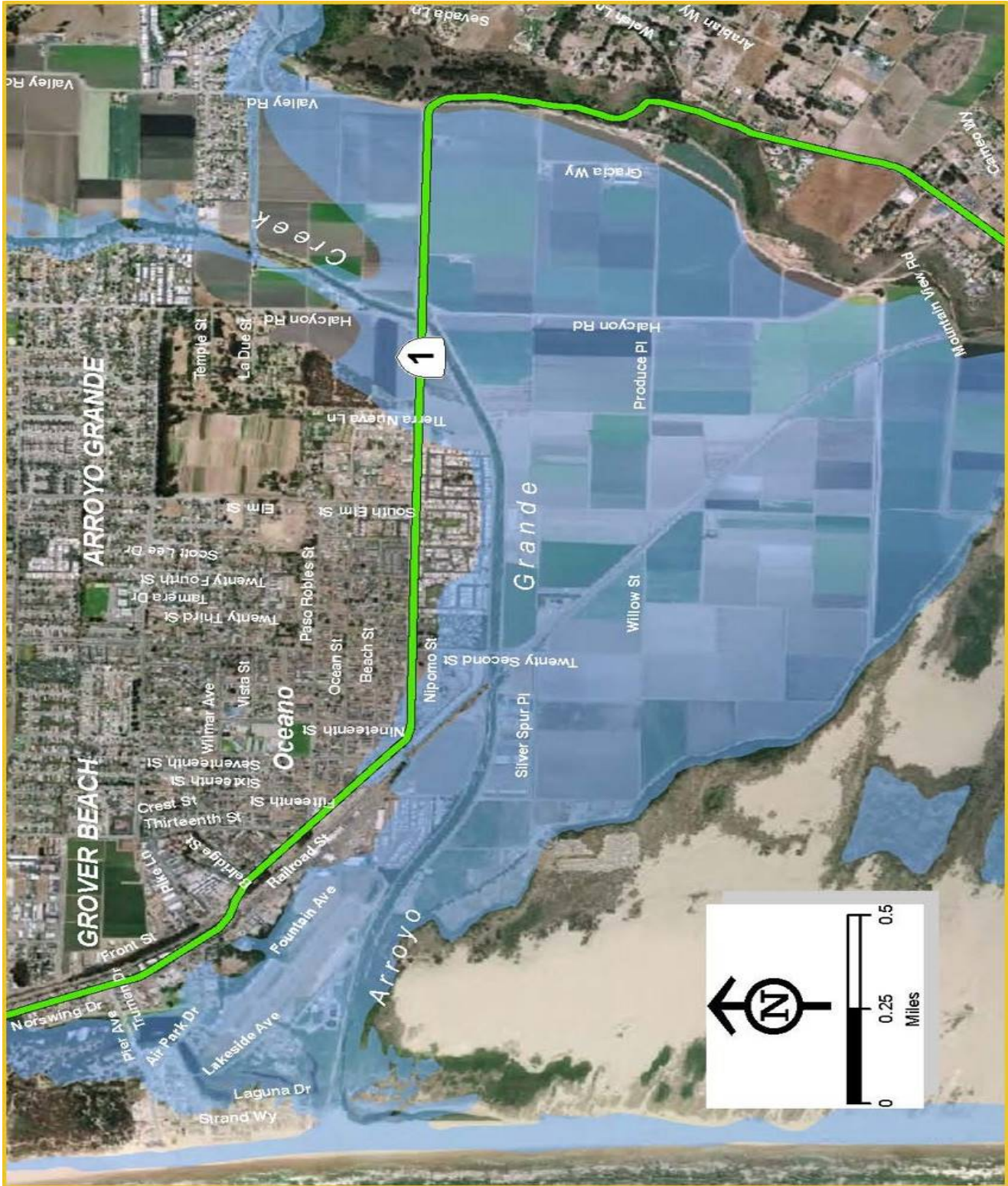
While it is impossible to predict future long-range weather patterns, it is certain that the location of the study area adjacent to the Pacific Ocean and surrounded by the mountains to the east will continue to have a significant exposure to major winter storms and flooding.

The vast majority of the study area is well drained being situated on gently sloping terrain with soils that allow for good drainage. Drainage problems in most of these gently sloped areas are a result of improper grading and are minor in nature. While the area is well drained, in that it is mostly located over sand, the presence of high groundwater levels minimize the ability of the soil to absorb much of the storm water runoff and nuisance flooding will occur.

Because a considerable amount of resources have already been expended toward resolving flood issues in these areas and because of the minimal threat to loss of life, flooding has been deemed a **MODERATE** severity risk. The study area has a significant history of flooding and therefore has received a **HIGH** probability rating.

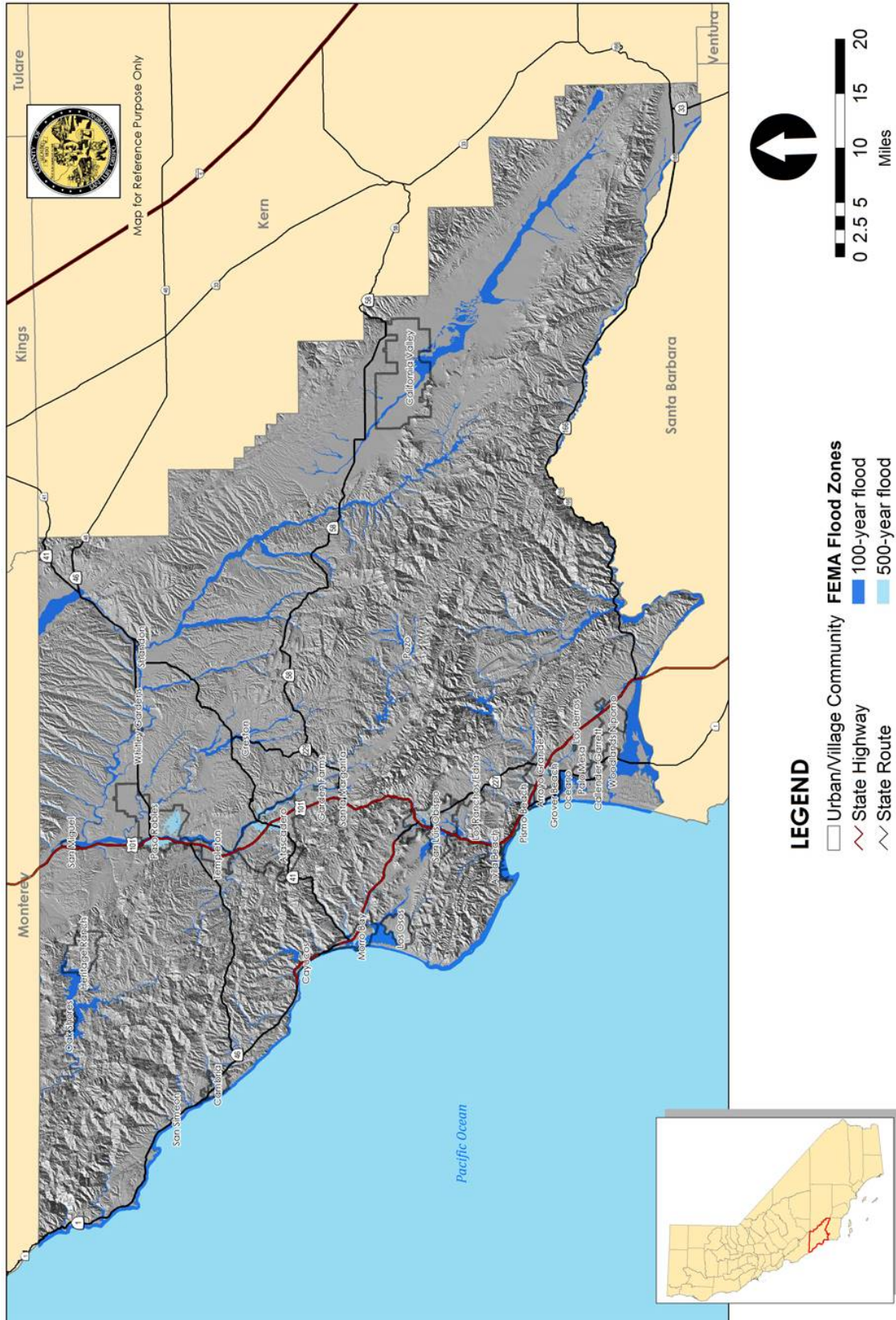


January 2017-A portion of Highway 1 in Oceano is closed due to flooding.



OCEANO, CA 100-YEAR FLOOD PLAIN

Oceano Community Services District Local Hazard Mitigation Plan



COUNTY FLOOD ZONES



➤HAZARD: TSUNAMI

Severity: Medium	Probability: Low
-------------------------	-------------------------

Hazard Definition

A tsunami is a wave, or a series of waves, caused by a displacement of the ocean floor, usually by movement along a fault. In deep ocean water, tsunamis may travel as fast as 600 miles per hour. As they approach the shore, waves may increase in size and can cause extensive damage to coastal structures.

Withdrawal of the sea may be a precursor to the arrival of the first wave. After the first wave appears, waves may continue to arrive at intervals for several hours. Intervals between successive waves may be similar. If the second wave appears 20 minutes after the first, it is likely that a third wave (if there is one) would arrive 20 minutes after the second. The first wave may not be the biggest. Yet the largest wave usually occurs within the first ten waves. The primary effects of these waves can be widespread destruction and damage to coastal structures and flooding of low lying areas. The height the sea level rises above mean high tide line is referred to as run-up.

History

While there is no recorded history of tsunami damage to the study area, tsunamis have caused considerable damage to neighboring communities located on the California Coast, including the City of Morro Bay which is located in San Luis Obispo County. A tsunami in 1964, following an earthquake in Alaska, killed 12 people in Crescent City and damaged piers and boats in Morro Bay as the bay emptied and filled every 15 minutes for over an hour.

On March 11, 2011, a 9.0 magnitude earthquake struck northern Japan. Nearly 12 hours later, approximately \$500,000 in damage was recorded to piers and docks in Morro Bay as a result of a tsunami from this earthquake. At the Center of Coastal Marine Science in Morro Bay (near the back of the bay), an oceanographer recorded a 6 foot surge, while fishermen and Coast Guard personnel estimated an 8-9 foot surge at the Coast Guard pier near the entrance to the harbor.



Tsunami History- San Luis Obispo County

Location of Damage	Incident Date	Intensity	Information
Morro Bay	1868	Unknown	Unknown
Cayucos	4/16/1877	Height: 3.6 meters	Unknown
Morro Bay	1878	Unknown	Unknown - Reportedly overtopped the sand spit in low areas
Pismo Beach	1927	Height: 1.8 meters	Unknown
Avila Beach	4/1/1946	Height: 1.3 meters Source magnitude: 7.3 Ms	Tsunami source location: Alaska Source event: E. Aleutian Islands Travel time: 5 hours 36 minutes
Morro Bay	4/1/1946	Height: 1.5 meters Source magnitude: 7.3 Ms	Tsunami source location: Alaska Source event: E. Aleutian Islands Travel time: 5 hours 36 minutes
Avila Beach	11/4/1952	Height: 1.4 meters Source magnitude: 8.2 Ms, 9 Mw	Tsunami source location: Russia Source event: Kamchatka Travel time: 8 hours 36 minutes
Pismo Beach	5/22/1960	Height: 1.4 meters Source Magnitude: 9.5 Mw	Tsunami source location: Chile Source event: Central Chile
Avila Beach and Morro Bay	3/28/1964	Height: 1.6 meters Source magnitude: 9.2 Mw	Tsunami source location: Alaska Source event: Gulf of Alaska. Travel time: 5 hours 10 minutes
Morro Bay	3/11/2011	Height: 2.4 Meters Source magnitude: 9.0 Mw	Tsunami source location: Japan Source event: Tōhoku earthquake Travel time: 10 hours 32 minutes



Hazard Potential

As noted in the above table, the historic record shows that significant tsunamis typically have been generated from distant earthquake sources. It has been estimated that the 100 and 500 year tsunami run-ups in the study area are based on far-field source generation locations (such as the Aleutian or Chile-Peru Trenches). Estimated tsunami run-up along the San Luis Obispo County coastline is approximately 9.5 feet to 24.2 feet for the 100 year and 500 year events, respectively. Those run-ups were calculated using astronomical high tides, and compare well with recorded tsunamis that have occurred in other locations along the California Coast. However, the worst case scenario would be if a tsunami occurred during a meteorological high tide (storm surge), which would add an estimated 14.5 feet (4.5 meters) to the run-up values calculated. In this worst case scenario, the estimated tsunami run-up for the 100 year and 500 year would be approximately elevation 24 and 39 feet above mean sea level, respectively.

The Davidson Seamount is located approximately 70 miles NW of Cambria, and is 4,101 feet beneath the Pacific Ocean's surface. This mount rises 7,480 feet up from the ocean floor and is 23 miles long and 7 miles wide. A sub-surface landslide on this or any other nearby undersea feature would not allow adequate time to notify/warn San Luis Obispo County coastal residents to evacuate. While very unlikely to occur, an undersea landslide here could be devastating to coastal areas of San Luis Obispo County.

The Tsunami Response Plan for San Luis Obispo County uses as its planning basis all those coastal communities, recreation and developed areas with an elevation of 50 feet above mean sea level. In general, much of the coast of the County is protected by wide beaches, coastal dune, or sea cliffs that provide protection for coastal developments. Areas most vulnerable to the tsunami hazard are developments or infra-structure near the mouths of streams that drain into the Pacific Ocean. In the District and immediate area this would include:

- Pismo Creek in Pismo Beach
- Meadow Creek and Arroyo Grande Creek in Oceano
- The Pier Avenue beach ramp in Grover Beach

Most of Oceano and Halcyon is protected from flooding by the Oceano Dunes. Arroyo Grande Creek breaches the dunes just outside the District's east boundary terminating at the Pacific Ocean. At its terminus the creek is very wide with a very shallow gradient. This would allow tsunami waves to travel upstream flooding adjoining creeks and flood control channels found within the low lying areas of the District. The worst case scenario would transpire if a tsunami occurred during a meteorological high tide combined with a storm surge which could add 14.5 feet to the wave height.



Specific at-risk locations within Oceano and Halcyon and immediate adjoining areas include the following:

- From Highway 1 (Pacific Boulevard or Front Street) to the ocean and south of Cienaga from 19th Street to Valley Road
- This would include the Oceano State Park Campground, Pismo State Beach, Oceano County Campground, Oceano Airport and the Oceano Dunes State Recreational Vehicle Park
- All farm land and areas around Oso Flaco Lake
- The wastewater treatment facilities of the South San Luis Obispo County Sanitation District which is located on Meadow Creek.

The primary impacts of a tsunami event can be widespread destruction and damage to coastal structures and flooding of low lying area. Other effects include:

- **Effects on People and Housing**
There is a low probability that a tsunami event would cause significant property damage or loss of life within the District as most developed areas are well above the estimated run up elevation and a sophisticated warning system is in place.
- **Effects on Commercial and Industrial Structures**
There is a very limited amount of development in the tsunami inundation zones within the District. However neighboring Port San Luis and Morro Bay could be impacted in terms of property damage to piers, docks, floats, and to moored boats. The Diablo Canyon Power Plant is not considered to be at risk as it is located on a marine terrace 85 feet above the sea level. The cooling intakes and release structures for the plant, which are located at sea level, are protected by natural barriers and a concrete jetty.
- **Effects on Infrastructure**
A tsunami event can cause damage to roads, communication facilities, and other infrastructure.
- **Effects on Agriculture**
Effects on agriculture could be devastating if flooding of fields were to occur as a result of a tsunami traveling up and overbanking Arroyo Grande Creek.



Relationships to Other Hazards – Cascading Effects

Tsunami events can cause many cascading effects. Fire can break out as a result of damaged electrical equipment. Other problems and hazards associated with tsunami flooding include: utility disruptions, contamination of the water supply system, broken power lines lying on the ground, and communication system failures.

Plans and Programs in Place

A detailed Tsunami Response Plan for San Luis Obispo County is in place. The Plan addresses the coastal communities, recreation facilities and developed areas with an elevation of 50 feet or less above mean sea level.

The West Coast/Alaska Tsunami Warning Center in Palmer, Alaska is responsible for issuing tsunami information for California, Oregon, Washington, and British Columbia. Tsunami generating incidents around the Pacific can be detected, pinpointed and magnitude computed in from 2 to 12 minutes depending upon the distance from the warning center. Depending on the incident magnitude a “Watch,” “Advisory” or “Warning” will be transmitted to the Governor’s Office of Emergency Services and then distributed through the County’s Emergency Alerting System.

It should be noted that the California Coastal Commission has approved and permitted a 30 year plan to construct flood walls/berm to protect the South San Luis Obispo County Sanitation District Wastewater Treatment Facility located on Meadow Creek. This project will provide protection from both sea level rise and tsunami flooding at the low lying breaches at the Oceano Dunes.

Future Probability - Risk Assessment Conclusion

As delineated in the Risk Assessment above, there are a limited number of low lying areas in the District that could be impacted by a significant tsunami event. Historically, the study area has had minimal threat from tsunami activity. Thus, the probability of this future hazard event occurring is deemed **LOW**. The combination of an accurate tsunami warning system, which will provide time for evacuations, and the limited exposed area reduces the severity to some degree. However, given the fact that the community’s wastewater treatment facility is located within the tsunami inundation zone justifies a **MEDIUM** severity rating. *A San Luis Obispo County Tsunami Hazard inundation map is found at the end of this section.*



➤HAZARD: DROUGHT

Severity: Low	Probability: High
----------------------	--------------------------

Hazard Definition

A drought is an extended dry period where water availability falls below the statistical requirements for a region. Droughts are the product of natural water deficiency coupled with human water demand exceeding available supply. The precise definition of drought is made complex owing to political considerations, but there are generally three types of conditions that are referred to as drought:

Meteorological drought is brought about when there is a prolonged period with less than average precipitation.

Agricultural drought occurs when there is insufficient moisture for average crop or range production. This condition can arise, even in times of average precipitation, owing to soil conditions or agricultural techniques.

Hydrologic drought is brought about when the water reserves available in sources such as aquifers, lakes, and reservoirs fall below the statistical average. This condition can arise, even in times of average (or above average) precipitation, when increased usage of water diminishes the reserves.

When the word "drought" is used by the general public, the most often intended definition is meteorological drought. However, when the word is used by urban planners, it is more frequently in reference to hydrologic drought.



Lopez Lake, a critical water resource for the District during the drought of 2012-16



Oceano Community Services District Local Hazard Mitigation Plan

History

Droughts are a recurring feature of California's climate. In the last century, the most significant statewide droughts occurred in 1929-1934, 1976-1977, 1987-1992, and 2012-2016, and a less severe drought occurred in 2007-2009. The 2012-2016 drought was one of extreme proportions, with record-high temperatures and record-low levels of snowpack and precipitation. Fortunately, the District has not been impacted by these droughts.

Further information regarding these historical droughts is described below:

1929–1934

This drought occurred during the infamous Dust Bowl period of the 1920s and 1930s. As a result of this drought, the California Central Valley Project, which is a series of canals, aqueducts and pump stations, was constructed to deliver water from the northern half of the state to the San Joaquin Valley.

1976–77

1977 had been the driest year in California history to date. According to the *Los Angeles Times*, "Drought in the late 1970s spurred efforts at urban conservation and the state's Drought Emergency Water Bank was developed.

1986–1992

California endured one of its longest droughts ever, observed from late 1986 through late 1992. Drought worsened in 1988 as much of the United States also suffered from severe drought. In California, the six-year drought ended in late 1992 as a significant El Niño event in the Pacific Ocean remedied the situation.

2007–2009

This was the 12th worst drought period in California's history and the first drought for which a statewide proclamation of emergency was issued. The drought of 2007–2009 also saw greatly reduced water diversions from the state water project. The summer of 2007 saw some of the worst wildfires in Southern California history.

2011–2016

The period between late 2011 and 2016 was the driest in California history since record-keeping began. The drought led to Governor Jerry Brown instituting mandatory 25 percent water restrictions in June 2015. Many millions of California trees died from the drought – approximately 102 million, including 62 million in 2016 alone. It is estimated that throughout the State there was 2.7 billion dollars of lost farming revenue and the loss of some 18,000 jobs.



Oceano Community Services District Local Hazard Mitigation Plan

By the end of 2016, 30% of California had emerged from the drought, mainly in the northern half of the state, while 40% of the state, (Santa Barbara, Ventura, Los Angeles, Orange, and San Diego Counties) remained at extreme or exceptional drought levels.

The winter of 2016–17 turned out to be the wettest on record in Northern California, surpassing the previous record set in 1982–83. Floodwaters caused severe damage to Oroville Dam in early February, prompting the temporary evacuation of nearly 200,000 people north of Sacramento. In response to the heavy precipitation, which flooded multiple rivers and filled most of the state's major reservoirs, Governor Brown declared an official end to the drought on April 7, 2017.

Hazard Potential

Periods of drought can have significant environmental, agricultural, health, economic and social consequences. Drought can also reduce water quality, because lower water flows reduce dilution of pollutants and increase contamination of remaining water sources. In the planning area, which contains agricultural interests of consequence, the impacts of drought are significant.

As noted in the Hazard Definition above, no simple, precise definition of drought exists. In general, a drought is an extreme event characterized by a prolonged period of abnormally low levels of precipitation that has adverse impacts on vegetation, animals, and people. A drought is a temporary phenomenon and as such, it is distinct from aridity, which is a climatic feature of a particular region. Droughts occur periodically in every climatic zone, although some areas are more drought-prone than others. Such is the case with the community of Oceano. Situated above a large ground water basin and served by a number of water projects the community has, to date, not been impacted by drought. Please refer to the Risk Assessment Conclusion section for more detail.

Impacts and Effects

Listed below is a short summary of some of the effects and impacts that typically occur during a drought:

- **Water Supply and Quality**

Drought negatively impacts both the quantity and quality of water supplies. While a reduction in water supply is generally a temporary phenomenon, it can be permanent in some instances. Land subsidence can be caused by pumping, resulting in a permanent loss of groundwater storage. Drought can also compromise water quality, such as by concentrating salts and other contaminants, reducing dissolved oxygen levels, and increasing water temperatures. Water quality problems can exacerbate water supply problems.



Oceano Community Services District Local Hazard Mitigation Plan

- **Fish and Wildlife**

Political pressures increase diversions of water away from ecosystems. As water levels in streams, rivers, and lakes decline, fish and wildlife are at risk of dying, potentially causing regional extinctions. Dry vegetation combined with high temperatures and low humidity often increases the frequency and intensity of fires. The wildfire season may start earlier in the spring and extend later into the fall.
- **Energy**

Drought can strain the energy system. The generation of hydroelectricity at California dams may drop dramatically from average levels because it varies directly with streamflow. As the source of electricity production shifts to the more expensive fossil fuel (e.g., natural gas), electricity prices will likely increase. Additionally, high temperatures associated with drought may increase energy demand for cooling and air-conditioning systems.
- **Agriculture**

Some farmers and water districts with “junior” water rights have seen water allocations from state and federal irrigation projects severely cut. Some growers with “senior” water rights have seen only modest shortages, if any. Farmers facing a water shortage may seek temporary water transfers from other users, increase groundwater pumping, change the types of crops they grow, deficit irrigate, or leave some lands fallow.
- **Rural Communities**

Rural communities are often dependent on a single water source, usually groundwater. As groundwater levels drop, community and individual wells may go dry. Declining water supplies and ongoing water quality problems force communities to switch to bottled water, dig deeper wells, and truck in water to refill holding tanks. These actions can impose local economic hardships on those living in rural areas, many of whom are among the state’s most disadvantaged communities.
- **Revenue Losses**

For most water utilities, fixed costs (e.g., debt service on past water system investments) are relatively high and variable costs (e.g., energy and chemical costs) are relatively low. Reducing water use cuts variable costs but has no impact on fixed costs (at least in the short term). As water use declines, revenue from the sale of water also declines and may not be sufficient to recover the fixed costs. In response, water utilities may enact drought surcharges or draw from reserves. While surcharges increase the water rate (i.e., the price per gallon), those using less water may actually see their bills go down. Furthermore, conservation lessens the impact of the drought on water bills by avoiding the purchase of more expensive water supplies.



- **Behavioral Health**

Drought can impact behavioral health as a result of direct financial stress and general economic downturn. Additionally, some of the more common stress-relieving activities such as exercise and other outdoor activities may be impacted or less enjoyable as a result of drought. The combination of increased financial stress and impaired ability to relieve stress can result in the following behavioral health issues including depression, anxiety, suicide, and substance abuse.

Source: USGS - California Water Science Center

Relationships to Other Hazards-Cascading Events

Over pumping of groundwater basins due to drought conditions can result in land subsidence. As a result of drought, dry vegetation combined with high temperatures and low humidity often increases the frequency and intensity of fires. The wildfire season may now start earlier in the spring and extend later into the fall.

Plans and Programs in Place

Urban water utilities throughout the State of California have rolled out a wide range of voluntary and mandatory water conservation programs. These include education programs, incentives to purchase more water-efficient appliances and plant water-efficient gardens, and restrictions on discretionary water uses, such as watering lawns. As a result, statewide urban water use has declined by nearly 25% from 2013 levels.

When the Governor declared the drought emergency in January 2014, he provided direction to state agencies on several issues and called on all Californians to reduce water use by 25%. Subsequently, as the drought persisted, the State Water Board established mandates throughout California.

In October 2014, the Oceano Community Services District Board adopted Resolution 2014-15 in accordance with the State Water Board's requirements, which primarily establishes restrictions on outdoor water use. This action was taken not based on a true need but more in support of the neighboring communities who were being impacted by the drought.



Oceano Community Services District Local Hazard Mitigation Plan

Future Probability - Risk Assessment Conclusion

While San Luis Obispo County has a well-documented history of being impacted by drought, the District has not suffered significantly. A number of factors mitigate the impacts of drought on the District. They include:

- The District has invested significant resources in a variety of water projects that provide three water sources for the District: Lopez Lake, the State Water Project, and ground water wells in the Arroyo Grande Basin.
- Although the Santa Maria Groundwater Basin, underlying the District, is an adjudicated basin and subject to the courts continuing jurisdiction, the District's pumping rights that were established in the court-approved stipulations and judgment of 900 acre feet per year, exceed the District's total annual demand.

Given these considerations, the severity for drought within the District is rated as **Low**. There is no doubt that this short term phenomenon will occur again therefore the probability is rated as **HIGH**.

U.S. Drought Monitor California

August 16, 2016

(Released Thursday, Aug. 18, 2016)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	83.59	59.02	42.80	21.04
Last Week 8/9/2016	0.00	100.00	83.59	59.02	42.80	21.04
3 Months Ago 5/17/2016	5.50	94.50	86.39	63.57	42.99	21.04
Start of Calendar Year 12/29/2015	0.00	100.00	97.33	87.55	69.07	44.84
Start of Water Year 9/29/2015	0.14	99.86	97.33	92.36	71.08	46.00
One Year Ago 8/18/2015	0.14	99.86	97.35	92.36	71.08	46.00

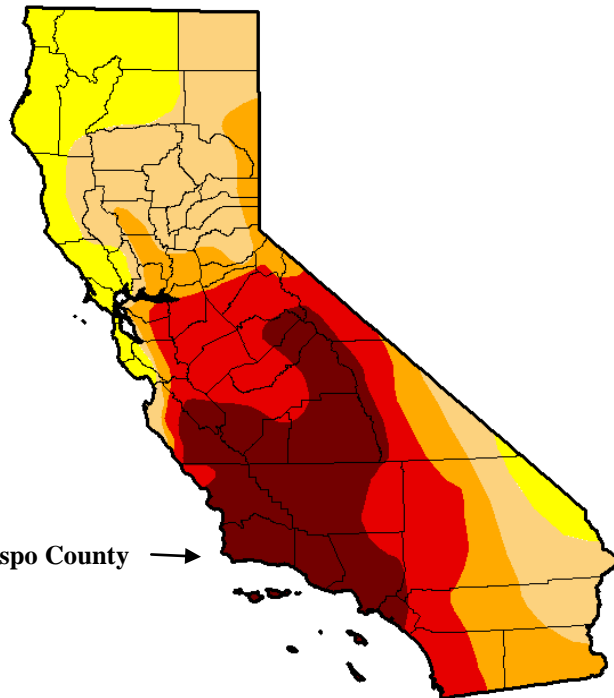
Intensity

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

David Miskus
NOAA/NWS/NCEP/CPC



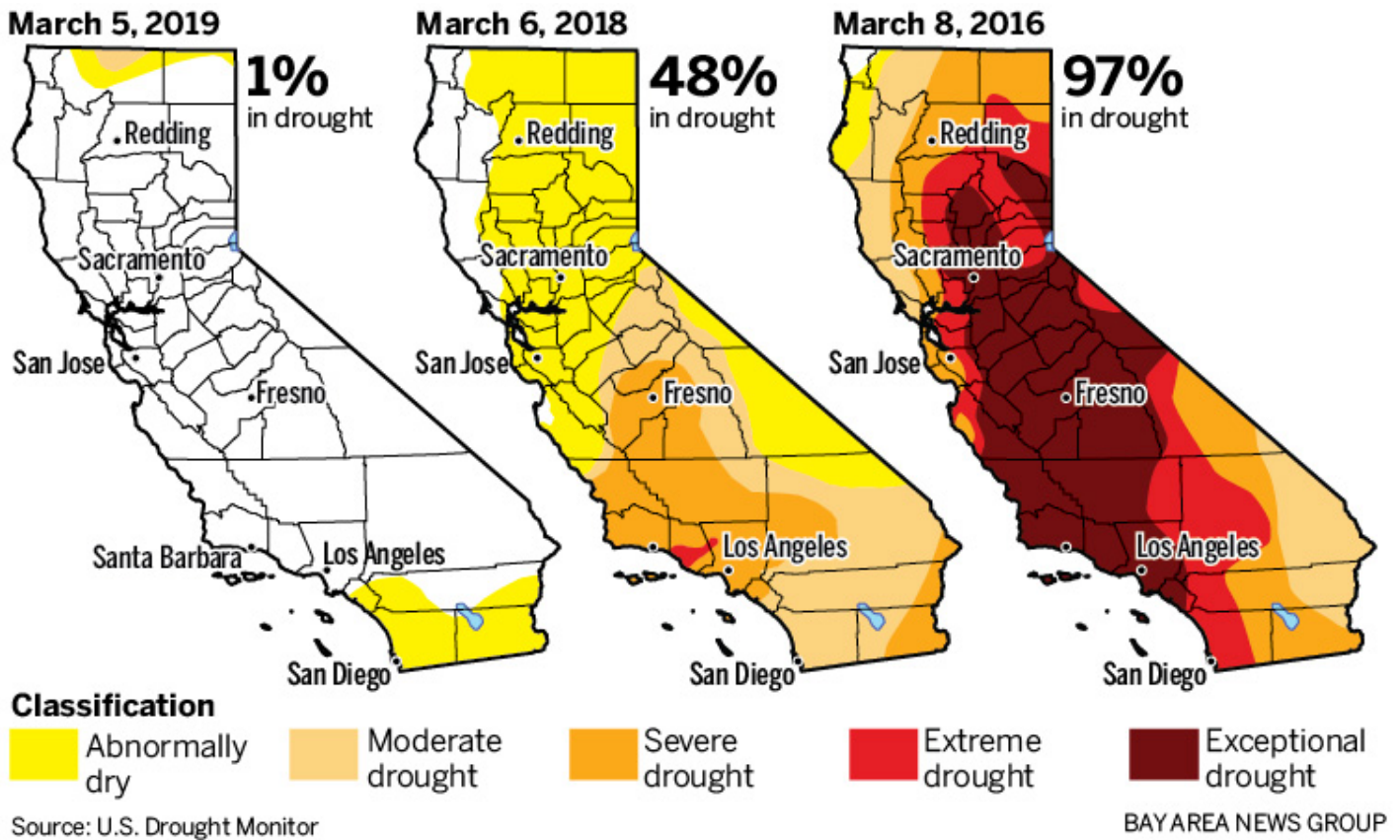
San Luis Obispo County →



<http://droughtmonitor.unl.edu/>



Oceano Community Services District Local Hazard Mitigation Plan



As the above maps demonstrate, 97 percent of California’s land was in a drought in March of 2016, much of it in extreme drought status. The historic drought that plagued California for five years ended in 2017 after extremely heavy rainfall enabling every major city in California to drop the mandatory water restrictions and penalties that marked much of the previous five years. Unfortunately, an extended dry period followed returning water restrictions to many California communities.



➤HAZARD: EXTREME WEATHER

Severity: Medium	Probability: High
-------------------------	--------------------------

Hazard Definition

Extreme weather is defined as unusual, severe, or unseasonal weather. It can be considered weather at the extremes of the historical distribution or the range that has been experienced in the past. Adverse or extreme weather occurs only 5% or less of the time. It may take the form of isolated events, such as storms, or may occur over longer periods of time, such as heat waves, cold snaps, or drought.

A storm is defined as any disturbed state of the earth’s atmosphere affecting its surface. It may be marked by strong wind, hail, thunder and/or lightning, heavy precipitation in the form of snow or rain, heavy freezing rain, strong winds (windstorm), or wind transporting some substance through the atmosphere as in a dust storm, blizzard, sand storm, etc. Storms generally lead to negative impacts to lives and property such as storm surge, coastal erosion, heavy rain or snow (causing flooding or road impassibility), lightning, wildfires, and vertical wind shear.

A more thorough discussion of these types of events follows:

Wind-Wind Storms

Resulting from air movement from areas of high pressure to those of low pressure, wind can occur at any time of the year and can vary in strength and duration. Wind related events can be quite destructive.

Heavy Snow Fall

Heavy snow fall will, on very rare occasions, occur in the higher elevations of the Santa Lucia range directly to the north and east of the District. In the lower elevations of the study area heavy snow fall does not occur.

Thunderstorm

A thunderstorm, also known as an electrical storm, lightning storm, or thundershower is weather characterized by the presence of lightning and its acoustic effect on the earth's atmosphere. Thunderstorms are usually accompanied by strong winds, heavy rain and



sometimes snow, sleet, hail, or no precipitation at all. Those which cause hail to fall are known as hailstorms.

Hailstorms

Hail is precipitation in the form of balls or irregular lumps, always produced by convective clouds, nearly always cumulonimbus. They can vary from pea size all the way up to that of a grapefruit in rare circumstances. Hailstones generally form in thunderstorms between currents of rising air called the updrafts and the current of air descending toward the ground, called the downdraft. Large hailstones indicate strong updrafts in the thunderstorm. The larger the hail, the stronger the updraft needed to hold it aloft in the storm.

Freeze

A freeze refers to a particularly cold spell of weather where the temperature drops below 32 degrees. Freezing conditions, especially in the spring, can cause damage to crops and ornamentals and cause considerable discomfort to area residents.

Extreme Heat

Often referred to as a “heat wave” or “heat storm”, it is typically defined as a series of days, three or more, where weather conditions combine resulting in day time temperatures considerably higher than the norm. When combined with high humidity, living conditions can become quite uncomfortable.



History

Oceano, Halcyon and neighboring communities have a history of adverse or extreme weather events:

Extreme Weather Event History

LOCATION	Date of Event	Damage Reported	Incident Description
San Luis Obispo County	1997 to Present: >20 Events Occurred	Unknown Values	Heavy Surf- 1998 event: An extended heavy surf event produced by a series of Pacific storms, battered coastal areas of Central and Southern California. Along the coast of San Luis Obispo, waves as high as 25 feet were reported. Elsewhere, coastal areas reported 12 to 15 foot waves producing some degree of damage. In Port San Luis, widespread shoreline erosion was reported.
City of San Luis Obispo	5/5/1988	4 homes damaged	Tornado-A small tornado developed over the City of San Luis Obispo. The tornado knocked out power to several hundred homes. Four homes were damaged, including one struck by a falling cypress tree.
Countywide	12/21/1998 - 12/24/1998	\$5.4 million crop damage	Freeze- An unseasonable cold air mass produced a three night period of sub-freezing temperatures across Central and Southern California. Agricultural interests suffered heavy crop losses.
San Luis Obispo County	12/17/2000 - 12/18/2000	Moderate	High Wind-Gusty offshore winds buffeted the coastal section of SLO County. In the City of SLO, the winds blew out the windows in an unoccupied mobile home and destroyed part of a car port. In Nipomo, winds of 35 mph with gusts up to 55 mph were reported. The strong winds produced widespread power outages.
San Luis Obispo County	3/04/2001 - 3/06/2001	Significant - Values Unknown	High Wind-A powerful and slow-moving storm brought heavy rain, strong winds and snow to Central and Southern California. Across SLO County, rainfall totals ranged from 2 to 6 inches over coastal/valley areas and 6 to 13 inches in the mountains producing extensive flooding. In Oceano, the Arroyo Grande

Oceano Community Services District Local Hazard Mitigation Plan



			Creek overflowed destroying numerous crops and damaging one home. In Arroyo Grande, flooding along Corbett Creek damaged four homes and five Arroyo Grande High School classrooms.
Oceano	2/02/2004	None	Tornado-A waterspout, developed offshore of the Oceano Dunes and came onshore as a weak tornado.
Cambria	01/02/2006	Significant – Values Unknown	Wind/Rain-Cambria experienced a significant wind and rain event which caused damage to over 60 homes and businesses. Several people were injured. First responders were unable to access many areas of Cambria due to downed power lines, utilities, tress and other debris. Several large areas of Cambria were without power for 5-9 days.
Halcyon	02/17/17	Significant Tree Damage	Wind storm resulted in the downing of 50 large eucalyptus, cypress and pine trees in the village of Halcyon.

Hazard Potential

These events can have significant impacts on the health and safety of the population and cause major property and infrastructure damage. Listed below are the primary dangers associated with these occurrences:

- Threat to life and danger to public health
- Damage/loss of personal property or crops and livestock
- Utility failures
- Interruption of the transportation network
- Interruption of communication systems

More specific impacts and effects for the various events are outlined below:



Oceano Community Services District Local Hazard Mitigation Plan

Wind Storms and Thunderstorms

The typical wind in the planning area flows from the ocean in a northwest direction and will range from 10–25 MPH and is most prevalent in the spring. Winter storms, coming off the ocean, will generate higher wind speeds. The typical flow is from the south as the storm approaches, rotating to the north as the storm makes landfall. These winds are erratic; gusts of 35 MPH are common with rare gusts to 55 MPH being recorded. Large pressure gradient wind flows (i.e. Sundowner or Santa Anna winds) do occur in the planning area. An occasional offshore flow with wind speeds of 10-15 MPH will occur in the fall months.

Throughout the entire community, eucalyptus and cypress trees have been planted as wind breaks. There are no forested areas and naturally occurring trees are rarely found. Falling trees and branches can result in considerable property destruction, communication/power line damage, and block transportation corridors. This situation has recently been exacerbated by the disease/drought infested trees.

Occasionally, summer thunderstorms (lightning) will occur in the Santa Lucia Mountain range well to the north of the District. Thunder and lightning will be seen and heard in the distance. Rarely, wildfires in the mountains may be the result of these storms.

Coastal Erosion/Winter Storms

These storms may have hurricane-force winds and cause damage similar to that of a hurricane. However, they are not classified as such because they don't originate in the tropics. Coastal storms normally do most of their damage on the coast, in the form of beach erosion and flooding due to heavy rainfall. The winds originate from low-pressure systems offshore and circulate counterclockwise around the low pressure system. When the low pressure system stops moving, its winds combine with those of the high pressure system to blow in one direction over a long period of time, which may create massive waves. The duration of such a storm coupled with the height of the tide can be the most significant measure of its destructiveness.

As these storms move to the east, across the ocean front communities, they typically lose intensity as the coastal range behind Arroyo Grande causes the moist air to elevate, condense, and fall out. Arroyo Grande Creek, which flows through the community of Oceano, originates in this range and has caused significant flooding events to this area. High tides can further increase flooding potential.

The coastal areas of the south San Luis Obispo County, specifically Pismo Beach and the Oceano Dunes, are primarily characterized by wide sandy beaches backed by low bluffs in Pismo and tall sand dunes in Oceano. This section of coastline is subject to moderate to heavy wave action mostly from northerly swells, however the wide sandy beaches absorb and dissipate the wave energy with no history of significant coastal damage to the naturally occurring features. The Pismo Beach Pier, not a natural feature, has been damaged in past



Oceano Community Services District Local Hazard Mitigation Plan

storms. Winter storm wave heights of 15-20 feet are routine with the very occasional wave height of 25 feet.

Hailstorms

Significant amounts of damage to property, notably to automobiles, skylights, and glass-roofed structures, can occur from hailstorms. The damage to landscape, vegetation and crops can also be severe. Fortunately, hail very rarely kills anyone. However, each year dozens of people are injured when they are unable to find adequate shelter. Hailstorms could occur anywhere within the District, however hailstorms of significance are very rare occurrences in the planning area. When they do occur, hail stones size is in the ¼ to ½ inch range. Damage of consequence is not recorded.

Freeze and Heavy Snowfall

The proximity of the Pacific Ocean to the District moderates both the high and low temperatures in the area. Snowfall within the confines of the District does not occur. The average low temperature in January for Oceano is 43 degrees. On rare occasions (1-2 times/year), freezing temperatures may occur at night and in the early morning. Daytime temperatures below freezing do not occur. These “cold spells” typically last 2-3 days before temperatures return to normal. Damage to crops is very rare but when it occurs can be quite costly.

Extreme Heat

In the United States, heat waves are the most lethal type of weather phenomenon. Between 1992 and 2001, deaths from excessive heat in the United States numbered 2,190, compared with 880 deaths from floods and 150 from hurricanes. Situated on the coast, the community rarely experiences extremely high temperatures of long duration. However, the public health risks from extended exposure to higher than normal temperatures include hyperthermia, rashes, edema, dehydration, and heat cramps, to name a few.

The proximity of the Pacific Ocean to the District moderates both the high and low temperatures in the area. Sperling's comfort index for Oceano, California is an 84 out of 100, where a higher score indicates a more comfortable year-around climate. The U.S. average for the comfort index is 54. This index is based on the total number of days annually within the comfort range of 70-80 degrees, with a penalty applied for any days with excessive humidity. Oceano has approximately 185 sunny days each year with a July average high of 70 degrees. Temperatures in the 90 degree range are extremely rare and not previously recorded for the study area; therefore impacts from extreme heat are non-existent.



Relationships to Other Hazards-Cascading Events

Extreme Weather events can cause many cascading effects. Fire can break out as a result of damaged electrical equipment. Other problems and hazards associated with flooding and inclement weather include: utility disruptions, broken power lines lying on the ground, and communication system failures.

High winds often accompany winter storms and may cause significant damage to structures in the District by blowing down trees that have been killed or damaged by drought and disease or infestation. The eucalyptus and cypress trees found along Highway 1, the railroad right-of-way, and in scattered locations throughout the community present a moderate threat.

Plans and Programs in Place

The San Luis Obispo County Office of Emergency Services (OES) and the Five Cities Fire Authority, in coordination with local, state, and federal emergency response organizations, continually work to better prepare the residents for the impact of these types of emergency events.

First responder agencies, both law enforcement and fire, routinely train on handling the cascading effects that can result from events of this nature. The local chapter of the American Red Cross is prepared to assist citizens in shelter welfare issues.

The SLO Planning and Building Department stipulates and enforces codes and ordinances that ensure that buildings are constructed to prevent damage from extreme wind and weather events.

The National Weather Service uses a number of methods to get weather statements out to the general population. Examples include the Emergency Alert System, NOAA Weather Radio All Hazards (NWR), and newer smart phone Wireless Emergency Alerts (WEA). For certain significant adverse weather events, the County could potentially use the reverse 9-1-1 system. Early Warning System sirens are located throughout the Diablo Canyon Emergency Planning Zone Area.

Due to the unique and consistent weather patterns in the area, the National Weather Service (NWS) has broken the County into three weather forecast zones: San Luis Obispo County Central Coast, San Luis Obispo County Interior Valleys, and San Luis Obispo County Mountains. The NWS uses a multi-tier system of weather statements to notify the public of threatening weather conditions specific to these areas. These statements are used in conjunction with specific weather phenomena to convey different levels of risk. In order of increasing risk, these statements are:



Weather Related Terminology

- **Outlook** - A Hazardous Weather Outlook is issued daily to indicate that a hazardous weather or hydrologic event may occur in the next several days. The outlook will include information about potential severe thunderstorms, heavy rain or flooding, winter weather, extremes of heat or cold, etc., that may develop over the next seven days with an emphasis on the first 24 hours of the forecast. It is intended to provide information to those who need considerable lead time to prepare for the event.
- **Advisory** - An advisory is issued when a hazardous weather or hydrologic event is occurring, imminent, or likely. Advisories are for "less serious" conditions than warnings that may cause significant inconvenience, and if caution is not exercised could lead to situations that may threaten life or property. NWS may activate weather spotters in areas affected by advisories to help them better track and analyze the event.
- **Watch** - A watch is used when the risk of a hazardous weather or hydrologic event has increased significantly, but its occurrence, location, or timing is still uncertain. It is intended to provide enough lead time so those who need to set their plans in motion can do so. A watch means that hazardous weather is possible. People should have a plan of action in case a storm threatens and they should listen for later information and possible warnings especially when planning travel or outdoor activities. NWS may activate weather spotters in areas affected by watches to help them better track and analyze the event.
- **Warning** - A warning is issued when a hazardous weather or hydrologic event is occurring, imminent, or likely. A warning means weather conditions pose a threat to life or property. People in the path of the storm need to take protective action. NWS may activate weather spotters in areas affected by warnings to help them better track and analyze the event.
- **Statement** - A statement is either issued as a follow-up message to a warning, watch, or emergency, that may update, extend, or cancel the message it is following up or a notification of significant weather for which no type of advisory, watch, or warning exists.



Future Probability/Risk Assessment Conclusion

The planning area has a history of extreme weather, mostly winter storm related. These events can have significant impacts on the health and safety of the population and cause major property and infrastructure damage. These types of events include: winter storms, wind events, thunderstorms, and hailstorms. Given the wide range of exposure to a variety of extreme weather events, the significant past history indicates a high probability of these types of events reoccurring in the future. These events are typically short in duration.

Given the past history of both occurrence and damage, and based on the wide range of potential events, this section is rated as **Medium** in severity and **High** in probability.



VI. VULNERABILITY ASSESSMENT

A. DMA 2000 Requirements

<p>DMA Requirement §201.6(c)(2)(ii):</p>	<p>The risk assessment shall include a description of the jurisdiction’s vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.</p>
<p>DMA Requirement §201.6(c)(2)(ii)(A):</p>	<p>The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas.</p>
<p>DMA Requirement §201.6(c)(2)(ii)(B):</p>	<p>The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate.</p>
<p>DMA Requirement §201.6(c)(2)(ii)(C):</p>	<p>[The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land decisions.</p>
<p>DMA Requirement §201.6(c)(2)(iii):</p>	<p>For multi-jurisdictional plans, the risk assessment must assess each jurisdiction’s risks where they vary from the risks facing the entire planning area.</p>

B. Summary of Community’s Vulnerability

As outlined above, given the past history, the current conditions, and the overall life and property threat to the District, the Hazard Mitigation Planning Group has deemed the probability and severity of each hazard as follows:



Oceano Community Services District	Earth-quake	Extreme Weather	Drought	Flood	Tsunami
Probability	H	H	H	H	L
Severity	H	M	L	M	M

L = Low, M= Medium, H = High

The vulnerability assessment is a summary of the hazard’s impact to the community’s vulnerable structures. Community assets and development trends will be identified and assessed with respect to the developed hazard profiles to ascertain the potential amount of damage that could ensue from each identified hazard. This section will include: 1) A description of the critical buildings and infrastructure within the study areas including future building and land use decisions. 2) A general description of the extent of each hazard’s impacts to these vulnerable structures, 3) An estimate of the potential dollar losses to vulnerable structures, and 4) Vulnerable populations within the jurisdiction.

C. Critical Facilities and Infrastructure

Critical facilities and infrastructure are those systems within each community whose incapacity or destruction would have a debilitating effect on the community’s ability to recover subsequent to a major disaster. The following critical facility and infrastructure are categorized as follows:

1. **Emergency Services** for the health and welfare of the whole population (e.g., hospitals, police, fire stations, emergency operations centers, evacuation shelters, schools).
2. **Lifeline Utility Systems** such as potable water, wastewater, oil, natural gas, electric power and communications systems.
3. **Transportation Systems** including railways, highways, waterways, airways and city streets to enable effective movement of services, goods and people.
4. **High Potential Loss Facilities** such as power plants, dams and levees.



Oceano Community Services District Local Hazard Mitigation Plan

Non-Critical Facilities

For the purpose of this plan, properties such as recreational facilities, parks, libraries, religious facilities, and historical buildings will be classified as non-critical facilities. Although their relevance to the District and its residents is undeniably significant, they are not classified as 'critical facilities' per the definition set in Executive Order 13010 (Critical Infrastructure Protection 1996).

Residential Facilities

Although personal residences are not by the above definition considered to be critical facilities, their relevance to these communities and its citizens is unquestionable. For that reason, they have been included in the District's vulnerability assessment.

Vulnerable Populations

Vulnerable populations reside within the Oceano Community Services District including the elderly, physically and mentally disabled, homeless, carless, and limited English speakers. Given the District's close proximity to the Diablo Canyon Nuclear Power Plant, a detailed special needs population list/inventory is completed each year and is immediately available to all first responders. A number of non-profit organizations and services assist these populations on a daily basis. Specific examples include Meals on Wheels, Five Cities Homeless Coalition, and the Oceano Boys & Girls Club. The county has a well-organized VOAD group which will act as an advocate for these vulnerable individuals during an emergency within the District.

Oceano Community Services District Local Hazard Mitigation Plan



D. Jurisdictional Assets at Risk to Applicable Hazard

Assets at risk include: Buildings, Critical Facilities, Infrastructure, Private Property and Areas (Residential, Environmental, Historical and Economic)

Critical Facilities and Infrastructure	Oceano Address	Building and Content Value	Earthquake	Extreme Weather	Tsunami	Drought	Flood
Administration Building	1655 Front Street	\$500,000/300,00	X	X			
Sheriff Sub Station	1681 Front Street	\$1,500,000/1,000,000	X	X			
Fire Station	1655 Front Street	\$500,000/150,000	X	X			
Chlorinator Shed	1687 Front Street	\$5,000	X	X			
Warehouse	1935 Wilmar Street	\$200,000/90,000	X	X			
Shop/Field Office	1935 Wilmar Street	\$125,000/100,000	X	X			
Water Tank (Large)	1935 Wilmar Street	\$1,000,000	X				
Water Tank (Small)	1935 Wilmar Street	\$300,000	X				
Well # 4 (350 Feet)	1981 Wilmar Street	\$275,000				X	
Well # 6 (620 Feet)	1981 Wilmar Street	\$350,000				X	
Well # 7 (175 Feet)	1687 Front Street	\$200,000			X	X	X
Well # 8 (525 Feet)	1650 Front Street	\$250,000			X	X	X
Sewer Booster Station	1935 Wilmar Street	\$100,000	X				
Sewer Lift Station	555 Pier Street	\$400,000	X		X		X
Surge Tank	1935 Wilmar Street	\$15,000	X				



Oceano Community Services District Local Hazard Mitigation Plan

23 Miles Water Service Lines	District	\$3,800,000	X				
18 Miles Wastewater Lines	District	\$2,000,000	X				
260 Fire Hydrants	District	\$1,300,000	X				
Residential Facilities: Approximately 3500 Housing Units	District	\$1,774,500 (\$338/sq. ft x average 1500 sq.ft.)	X	X		X	
Total Values		\$16,234,500					

E. Methodology Used

To determine the number of critical structures and infrastructure at risk, a combination of field surveys, aerial photos, GIS maps, and Google Earth software was used. The methodology used in preparing the Vulnerability Estimate consisted of determining the value of critical buildings and facilities from insurance property schedules. Critical infrastructure values were established by using actual replacement costs which were determined by recent comparable replacement projects.

F. Loss Estimations

Dollar losses to buildings and infrastructure vary depending upon the natural hazard occurring and the severity of the hazard. In general, earthquakes can extensively damage a wide area therefore critical structure and infrastructure losses should be estimated at a 100% value. Destruction from flooding takes place in specific areas and the damage is historically less severe than that of an earthquake. Thus, the estimated loss as a result of flooding should be calculated at the 50% level. Damage resulting from tsunamis should be calculated at 100% of structural value for those properties located within inundation areas. Extreme weather could impact any portion of the jurisdiction. Historical data indicates that these events are extremely localized and a 10% loss of the value of the structure damaged should be anticipated.

G. Development Trend Analysis

While the population of both San Luis Obispo County and the District is expected to grow moderately in the next five years, there are Land Use policies and elements within the County General Plan to help assure orderly development.



Oceano Community Services District Local Hazard Mitigation Plan

In addition, the Local Agency Formation Commission (LAFCO) is tasked with the mission to provide an orderly pattern of growth that reconciles the varied needs of the County. One of the fundamental principles of LAFCO is to ensure the establishment of an appropriate and logical municipal government structure for the distribution of efficient and appropriate public services. LAFCO Land Use objectives include:

- The discouragement of urban sprawl
- Preservation of the physical and economic integrity of agricultural lands
- Preservation of open space within urban development patterns
- Orderly formation and development of agencies by shaping local agency boundaries
- The minimization of agencies providing services to a given area
- Utilization of Spheres of Influence to guide future development of agency boundaries

All building and development activities occurring within the District are guided and permitted through the SLO County Planning Department with advice from the Oceano Advisory Committee. The District has no authority over planning and development, however the Oceano Advisory Committee (OAC) regularly meets and reports to the County Planning Commission on matters of planning and building for the community of Oceano exclusively. The entire area of the District, with the exception of creeks, small lakes and marshes, is developed in one form or another. Residential in-fill projects will continue to occur throughout the District and will consist primarily of planned single unit developments and a limited number of multi-family residential projects. Commercial development will also consist of infill or the redevelopment of existing parcels.

There are three sizable portions of land that are in high value agricultural production found within the District. Two are located within the Halcyon Historical District (Pike/Elm and S. Halcyon/Highway 1 areas) and are owned by the Temple of the People Theosophical religious group. These three large parcels could potentially be converted to commercial or residential use. However, they have a very high quality soil and are valued for their agricultural profitability. The two parcels found within the Halcyon Historical District would face even stricter land use planning scrutiny.

The District and the Five Cities Fire Authority have the capability to serve the needs of future development as it occurs.



VII. CAPABILITY ASSESSMENT

A. Overview

In developing the Capability Assessment, it is important to remember that a number of agencies will be involved in carrying out the identified mitigation measures. An important component of the mitigation strategy is an understanding of the resources available to the County, the District, and the Five Cities Fire Authority in order to mitigate the effects of each of the identified hazards. The Capability Assessment begins with a review of legal and regulatory capabilities, including ordinances, codes, and plans used to facilitate hazard mitigation activities. This assessment also describes the administrative and technical capability available to the jurisdictions. The third component of the Capability Assessment is each agency's ability to manage the funding required to implement mitigation strategies. This is followed by a discussion of the community's general willingness to implement mitigation measures. The final part of the Capability Assessment is a review of the physical assets available to respond to the emergency needs of the community.

B. Legal and Regulatory

California Special Districts are state agencies created for the local performance of a specific governmental or proprietary function, unlike cities and counties that perform a wide variety of functions for their citizenry. Special districts provide services and facilities within a defined boundary and are governed by a board.

The County and the District have the applicable building codes, zoning ordinances, subdivision regulations, Capital Improvement Plans, and other regulatory development guidelines which enable it to implement hazard mitigation activities and prevent repetitive losses within the District. The County of San Luis Obispo is a participant in the National Flood Insurance Program (NFIP). The NFIP delineates flood areas (100 and 500 year maps) and outlines how and where structures may be built in those areas.

California state law requires each city and county to adopt a general plan "for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning" (Section 65300 of the California Government Code).

General plans in California are required to have seven mandatory elements, and the SLO County General Plan includes those seven plus several other optional elements for a total of eleven including: Land Use Coastal, Land Use Inland, Circulation, Housing, Conservation and Open Space, Noise, Safety, Parks and Recreation, Economic Development, Agricultural, and Off-Shore Energy.



Legal Authority

Local governments in California have a wide range of tools available to them for implementing mitigation programs, policies and actions. A hazard mitigation program can utilize any or all of the government powers granted by the State of California, which include:

- **General Police Power**

The general police power of the County is typically enacted and enforced with ordinances which define, prohibit, regulate or abate acts, omissions, or conditions detrimental to the health, safety, and welfare of the people, and to define and abate nuisances, including public health nuisances.

Since hazard mitigation can be included under the police power as protection of public health, safety and welfare, towns, cities and counties may include requirements for hazard mitigation in local ordinances. Local governments may also use their ordinance making power to abate “nuisances,” which could include any activity or condition making people or property more vulnerable to a hazard.

- **Building Codes and Inspection**

Construction within the County must meet the standards of the California Building Code. The County’s Planning and Building Department reviews proposed subdivisions and building plans, and conducts site inspections to ensure applicable codes are followed. Additionally, the FCFA reviews projects for enforcement of the California Fire Code.

- **Land Use Regulations**

Land use regulatory powers include planning, enacting and enforcing zoning ordinances, floodplain ordinances, and land division controls. San Luis Obispo County government controls the amount, timing, density, quality and location of new development in order to reduce a community’s vulnerability to naturally occurring hazards. Thus, unsafe development in hazard prone areas can be prevented through local planning, zoning and development review by the Planning and Building Department.

- **Acquisition/Eminent Domain**

California legislation empowers cities, towns and counties to acquire property for public purpose by gift, grant, devise, bequest, exchange, purchase, lease or eminent domain. The County can and has used acquisition as a tool for pursuing local mitigation goals. This reduces or eliminates the possibility of unsafe development occurring.



Oceano Community Services District Local Hazard Mitigation Plan

- **Taxation**

California law gives local government the power to levy taxes and special assessments. The power of taxation extends beyond merely the collection of revenue, and can have a profound impact on the pattern of development in the community. California does not allow cities or counties to increase tax rates beyond the base rate, except with voter approval. A community can pursue voter approval of a bond or similar mechanism to increase the property tax to be used for a specific purpose. Often used for schools, the increase could be used for a fuel break program or other hazard reduction program. While voter approval of such measures is difficult to obtain it is not impossible.

- **Spending/Budget**

Local governments have the power to make expenditures in the public interest. Hazard mitigation principles can be made a routine part of all spending decisions made by the local government, including the adoption of budgets and a Capital Improvement Plan (CIP).

A CIP is a schedule for the provision of municipal or county services over a specified period of time. Capital programming, by itself, can be used as a growth management technique, with a view to hazard mitigation. By tentatively committing itself to a timetable for the provision of capital to extend services, a community can control growth to some extent, especially in areas where the provision of on-site sewage disposal and water supply are unusually expensive.

In addition to formulating a timetable for the provision of services, a local community can regulate the extension of and access to services. A CIP that is coordinated with extension and access policies can provide a significant degree of control over the location and timing of growth. These tools can also influence the cost of growth. If the CIP is effective in directing growth away from environmentally sensitive or high hazard areas, for example, it can reduce environmental costs.

C. Administrative and Technical

Both the County and the Oceano Community Services District have experienced and competent administrative and technical staff in place to expedite the mitigation actions identified. They possess technical expertise in the areas of planning, engineering, floodplain management, Geographic Information Systems (GIS), and both emergency and general management authority. Additionally, professional contractors with technical and administrative resources are available to assist the staff in implementing the hazard mitigation goals.



Oceano Community Services District Local Hazard Mitigation Plan

D. Financial

In order to achieve the goals and objectives of the Mitigation Strategy, one or more of the following funding sources will be utilized: federal and state entitlements and grants, general fund, sales and property taxes, infrastructure user fees, impact fees, and new development impact fees. All the agencies involved have the necessary budgetary tools and practices in place to facilitate handling appropriate funds. However, local funding sources are currently very limited.

E. Political Will of Community

The Oceano community is comprised of residents, business owners and other key stakeholders with a vested interest in making their community safer from natural hazards. Local residents are knowledgeable about the natural hazards that have impacted their community in the past and are familiar with the natural hazards that could potentially impact their community and the concept of mitigation. For this reason, the community fully supports hazard mitigation strategies and is open to implementing changes that will make this district and its residents safer.

F. Physical Assets

Water and Wastewater

Readily available physical resources from the District's Water and Wastewater Departments include the following:

- 1 Vactor/Pump Unit
- 1 Ford F-550 Dump Truck
- 1 Ford F-150 Pickup Truck
- 2 Chevy 2500 Utility Trucks w/cranes
- 1 John Deere Tractor
- 1 John Deere Backhoe
- 1 Ingersoll-Rand Compressor
- 1 MQ Power Generator



Oceano Community Services District Local Hazard Mitigation Plan

Fire Service

Fire protection and emergency medical services are provided by the Five Cities Fire Authority, which is comprised of the Oceano CSD, and the Cities of Arroyo Grande, and Grover Beach. The population served is approximately 37,000 people over a 10 square mile area. There are three fire stations, with one located at 1655 Front Street in Oceano. The FCFA responded to 3,838 calls for service in 2017 with an average response time of six minutes.

Apparatus:

- Type I (Structural) Engines: 4
- Type II USAR/BSU: 1
- Type III (Wildland) Engines: 1
- Staff/Fleet Vehicles: 3
- Truck (100' Platform): 1
- Command Vehicles: 3
- Type VI Patrol: 1
- State OES Engine: 1

G. Ability to Expand/Implement Mitigation Strategies

The OCSD has very limited capability to improve existing policies and programs as a result of the small size of the jurisdiction along with budgetary constraints. These financial limitations will also prevent increasing current staffing levels and purchasing additional resources. That said, given the District's emphasis on protecting its small community, resources have been set aside as described below for the implementation of designated mitigation actions.



VIII. MITIGATION STRATEGY

A. DMA 2000 Requirements

DMA Requirement §201.6(c)(3)(i):	The hazard mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
DMA Requirement §201.6(c)(3)(ii):	The mitigation strategy shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

B. 2019 Goals, Objectives and Mitigation Actions for Oceano Community Services District

Goal 1	Promote understanding and support for hazard mitigation by key stakeholders and the public within the Community of Oceano.
Objective 1	Educate key stakeholders and the public to increase awareness of hazards including earthquake, wind, winter storms, hail, freeze, heat, drought, tsunami and flood events and opportunities for mitigating hazards.
Mitigation Action 1.A	Through newsletters, speaking engagements and other public contacts, continue to educate the general public and key stakeholders on the District’s issues, responsibilities, and current efforts and successes in the area of disaster preparedness.
Mitigation Action 1.B	Utilize the District’s website to inform the public of hazard mitigation efforts, disaster preparedness messages, and emergency situation information.



Goal 2	Ensure that future development is protected from natural disasters including earthquakes, wind, winter storms, hail, freeze, heat, drought, tsunamis and flooding.
Objective 2	Work with County Planning staff to limit new development in hazardous areas. Build to standards that will prevent or reduce damage from naturally occurring events.
Mitigation Action 2.A	Educate the Oceano Advisory Committee (OAC) members and elected OCSD BOD members on the importance of keeping current on trends and developments in disaster preparedness.
Mitigation Action 2.B	Encourage OAC members to attend local seminars and lectures on naturally occurring hazards so that they may better understand and assist County Planning staff as they process future development.
Mitigation Action 2.C	In order to better protect life and property, continue to accumulate from the county accurate and comprehensive series of maps and data sets that pertain to the District’s earthquake, tsunami and flood threats.
Goal 3	Build and support local capacity and commitment to minimize the District’s vulnerability to potential naturally occurring hazards.
Objective 3.1	Improve existing capabilities of the OCSD staff to manage emergency situations.
Objective 3.2	Enhance the safety of OCSD residents and staff.
Objective 3.3	Improve the District’s communication systems so that in the event of a major emergency it will continue to operate effectively (redundancy and standby power).
Objective 3.4	Improve the District’s auxiliary power systems so that in the event of a major power failure all systems will continue to operate effectively (redundancy and standby power).

Oceano Community Services District Local Hazard Mitigation Plan



Mitigation Action 3.1A	Develop a Continuity of Operations Plan (COOP) for the District and train all essential staff on their roles and responsibilities as delineated in the Plan.
Mitigation Action 3.1B	Update the existing Emergency Operations Plans and supporting documents to ensure coordination with the County Emergency Operations Center (EOC), Emergency Response Plans and SOP's.
Mitigation Action 3.1C	Train all District department managers and key staff members on their roles and responsibilities in emergency management and the District DOC as outlined in independent study courses FEMA/National Incident Management System - ICS 100, 700, and 800.
Mitigation Action 3.1D	Working with SLO County OES, increase participation by District staff members in disaster drills put on by the County.
Mitigation Action 3.1E	Send one District management employee to the California Specialized Training Institute (CSTI) Public Information Officer Course.
Mitigation Action 3.1F	Support the efforts of the FCFA in the implementation of the Five Year Strategic Plan.
Mitigation Action 3.2A	In order to ensure that employees are available to assist during a major emergency, have all OCSD departments adopt a Family Support Plan. (Note: A model plan is available through SLO County OES.)
Mitigation Action 3.2B	Make improvements to wastewater collection systems by replacing or relining collection pipes so as to reduce sewer overflows and limit inflow and infiltration subsequently reducing the public health threat.
Mitigation Action 3.2C	Train staff on the proper techniques for containing sewer system overflows (SSO Protocols).



Mitigation Action 3.3A	Work with the South County ARES/RACES group in developing a Communications Master Plan for re-establishing District’s radio communications systems.
Mitigation Action 3.3B	Utilize the South County ARES/RACES group expertise, obtain and install a base station radio, mobile radios, and a standby power source to facilitate communications throughout the District as outlined in the Communications Master Plan.
Mitigation Action 3.4A	Develop a plan to provide standby power to the following essential service systems/functions: water well #8, the Administration Building, and the Sheriff’s Substation.
Mitigation Action 3.4B	Collaborate with the Sheriff’s office on funding sources for a standby power system for the substation and the administration building.
Mitigation Action 3.4C	Work with PG&E and County OES to explore potential funding sources for an auxiliary power source for water well # 8.
Goal 4	Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to flooding.
Objective 4.1	Enhance the ability of community assets, particularly critical facilities, located in the 100-year floodplain to handle existing and projected flood levels.
Mitigation Action 4.1A	Support the efforts of the county in maintaining compliance with the National Flood Insurance Program (NFIP) requirements.
Mitigation Action 4.1B	Through the Development Review process (OAC), ensure the County restricts construction of essential service facilities in the 100-year flood plain.
Mitigation Action 4.1C	Continue to work cooperatively with the county, state, and federal flood related agencies for funding improvements through grant and agency programs.

Oceano Community Services District Local Hazard Mitigation Plan



Mitigation Action 4.1D	Support the County’s efforts to improve the drainage from the Front Street/Hwy. 1 flooding areas through a combination of vegetation management and storm drain improvements along Hwy. 1, moving the water to the Arroyo Grande Creek.
Mitigation Action 4.1E	Relocate the District’s water and sewer lines that will be impacted by the Front Street/Hwy. 1 storm drain project.
Mitigation Action 4.1F	Support the efforts of the County and the Flood Control District in upgrading the Arroyo Grande Creek levee on both the north and south sides through a combination of vegetation and sediment management and raising both the north and south sides of the levee in a number of places.
Goal 5	Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to earthquakes.
Objective 5.1	Continue public education efforts so as to better prepare the citizens of the District from the effects of a significant earthquake event.
Objective 5.2	Enhance the ability of community assets, particularly critical facilities, to survive the impacts of a significant earthquake.
Objective 5.3	Enhance the ability of OCSD administration and FCFA first responders to manage the impacts of a significant earthquake.
Mitigation Action 5.1	Working with SLO County OES, increase the public’s awareness and participation in earthquake preparedness activities such as the annual Great California Shake-Out drill.
Mitigation Action 5.2A	Continue replacing the water lines that are most vulnerable to an earthquake as delineated in the Cannon study.
Mitigation Action 5.2B	As delineated in the RRM Facilities Study, develop a replacement schedule for buildings found to be vulnerable to an earthquake.

Oceano Community Services District Local Hazard Mitigation Plan



Mitigation Action 5.3A	Support the FCFA efforts to train fire department staff in the California State Fire Marshal’s Rescue System 1 and 2 programs.
Mitigation Action 5.3B	Send one District management employee to the California Specialized Training Institute (CSTI) Introduction to Earthquake Management Course.
Goal 6	Limit risk to, and impacts from hazardous materials spills, sewage spills, intentional discharges, illegal disposals, transportation accidents, or system failures.
Objective 6.1	Support the efforts of the county in the continuing efforts to manage the use, sale, distribution and disposal of hazardous materials in the District.
Objective 6.2	Improve emergency response efforts in the control and clean-up of accidental spills and releases of both hazardous materials and sewage spills.
Mitigation Action 6.1A	Educate community members on the impacts associated with disposing of household hazardous materials on the wastewater system and provide advice on proper storage and disposal techniques.
Mitigation Action 6.1B	Continue efforts to educate applicable employees on the handling, use, storage and disposal of hazardous materials utilized in the workplace.
Mitigation Action 6.2	Support the FCFA in training 2 first responders to the Hazardous Materials Technician Level (CSTI)
Goal 7	Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to a tsunami event.
Objective 7.1	Assist County OES in continuing their public education efforts to better prepare the citizens and visitors of the District from the effects of a significant tsunami event.
Objective 7.2	Enhance the ability of community assets, particularly critical facilities, to survive the impacts of a significant tsunami event.

Oceano Community Services District Local Hazard Mitigation Plan



Mitigation Action 7.1	Continue working with County OES in the distribution of the existing tsunami public education pamphlet/map to the visitors and residents in the Tsunami inundation zone.
Mitigation Action 7.2	Work with County OES and the California Coastal Commission to post evacuation route signage along Pier Street, and in the Airport and Oceano Campground areas.



Oceano Community Services District Local Hazard Mitigation Plan

C. How Mitigation Goals Address Existing and New Buildings and Infrastructure

The following tables demonstrate how the proposed mitigation actions take into account both existing and future buildings and infrastructure.

Existing Buildings and Infrastructure:

MITIGATION GOALS	EXISTING BUILDINGS AND INFRASTRUCTURE					
	Electrical and Power Infrastructure	Water and Wastewater Management	Communication Facilities	Critical Roads and Bridges	Essential Service Facilities	Public Structures
Goal 1-General Mitigation: Promote understanding of hazard mitigation	X	X	X	X	X	X
Goal 2-General Mitigation: Protect future development.	X	X	X	X	X	X
Goal 3-General Mitigation: Build local capacity and commitment.	X	X	X	X	X	X
Goal 4-Flood: Minimize damage due to flooding.	X	X		X	X	X
Goal 5-Earthquake: Minimize the level of damage and losses to due to geological events.	X	X	X	X	X	X



Oceano Community Services District Local Hazard Mitigation Plan

Goal 6 – Hazardous Materials: Limit risk from hazardous materials spills.		X				
Goal 7- Tsunami: Minimize damage and loss of life from a tsunami event.	X	X		X	X	X

Future Buildings and Infrastructure:

MITIGATION GOALS	FUTURE PROJECTS / BUILDINGS AND INFRASTRUCTURE					
	Residential Subdivisions	Various mixed use projects (residential and commercial)	Ag Clusters (residential, open space, and Ag uses)	Commercial and Industrial Projects	Essential Service Facilities	Public Structures
Goal 1-General Mitigation: Promote understanding of hazard mitigation	X	X	X	X	X	X
Goal 2-General Mitigation: Protect future development.	X	X	X	X	X	X

Oceano Community Services District Local Hazard Mitigation Plan



Goal 3-General Mitigation: Build local capacity and commitment.	X	X	X	X	X	X
Goal 4-Flood: Minimize damage due to flooding.	X	X	X	X	X	X
Goal 5-Earthquake: Minimize the level of damage and losses to due to geological events.	X	X	X	X	X	X
Goal 6 –Hazardous Materials: Limit risk from hazardous materials spills.	X	X	X	X	X	X
Goal 7-Tsunami: Minimize damage and loss of life from a tsunami event.	X	X	X	X	X	X



IX. MITIGATION ACTION IMPLEMENTATION

A. DMA 2000 Requirements

DMA Requirement §201.6(c)(3)(iii):	The mitigation strategy section shall include an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.
DMA Requirement §201.6(c)(3)(iv):	For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.
DMA Requirement §201.6(c)(4)(i):	The plan maintenance process shall include a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.
DMA Requirement §201.6(c)(4)(ii):	The plan shall include a process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.
DMA Requirement §201.6(c)(4)(iii):	The plan maintenance process shall include a discussion on how the community will continue public participation in the plan maintenance process.

B. Prioritization of Mitigation Actions

Each mitigation action was prioritized based on:

- The probability of the threat occurring
- The effectiveness of the mitigation action. To determine this, the contractors examined each mitigation action’s effectiveness in protecting lives, preventing injury, preserving property, eliminating or reducing damage to critical facilities, residences and infrastructure.



Oceano Community Services District Local Hazard Mitigation Plan

- The practicality of carrying out the mitigation action within the jurisdiction. To determine this, the following factors were considered: technical and administrative capabilities, financial resources, environmental impact, the impact on the District, social acceptance, political support, and mitigation strategies that reflect community objectives.

This gave rise to the development of an overall relative risk value that resulted in ratings of **HIGH**, **MEDIUM** and **LOW** for each of the mitigation actions. The resultant prioritization was presented to key stakeholders and lengthy discussions were held to ensure that the results were indeed applicable to the priorities and capabilities of the District.

Mitigation Action Prioritization Worksheet

Mitigation Action	Hazard Risk Minimal=1 Moderate=2 High=3	Mitigation Action Effectiveness Minimal=1 Moderate=2 High=3	Mitigation Action Practicality Minimal=1 Moderate=2 High=3	Cost Benefit Analysis Minimal=1 Moderate=2 High=3	Total	Overall Ranking
1.A	2	3	2	2	9	Medium
1.B	2	3	2	2	9	Medium
2.A	2	3	2	2	9	Medium
2.B	2	3	2	2	9	Medium
2.C	1	1	2	2	6	Low
3.1A	2	3	3	3	11	High
3.1B	2	3	3	3	11	High
3.1C	2	2	2	3	9	Medium
3.1D	2	3	2	3	10	High
3.1E	2	2	3	3	10	High
3.1F	3	2	2	2	9	Medium
3.2A	1	1	2	2	6	Low
3.2B	2	3	3	2	10	High

Oceano Community Services District Local Hazard Mitigation Plan



3.2C	2	3	3	2	10	Medium
3.3A	1	1	2	2	6	Low
3.3B	1	2	2	2	7	Medium
3.4A	2	2	2	2	8	Medium
3.4B	3	2	2	2	9	Medium
3.4C	3	2	2	2	9	Medium
4.1A	1	1	1	2	5	Low
4.1B	2	2	1	2	6	Low
4.1C	2	3	3	3	11	High
4.1D	3	3	2	3	11	High
4.1E	3	3	3	2	11	High
4.1F	2	3	2	3	10	High
5.1	2	2	3	2	9	Medium
5.2A	2	3	3	2	10	High
5.2B	3	2	3	3	10	High
5.3A	1	2	2	1	6	Low
5.3B	2	2	3	3	10	Medium
6.1A	1	2	2	1	6	Low
6.1B	2	2	3	3	10	Medium
6.2	1	1	2	1	5	Low
7.1	1	2	2	3	8	Medium
7.2	1	2	1	2	5	Low

Priority Ranking Values:

4 – 6 = Low

7 – 9 = Medium

10 – 12 = High



C. Action Plan

The following Action Plan was presented to the District, the Hazard Mitigation Planning Group, the general public and the OCSD Board of Directors. The Action Plan delineates what agency is responsible for carrying out each mitigation action, how it will be funded and a target completion date to ensure that the newly constructed plan is implemented and remains an active and relevant document. Actual implementation may be dependent upon funding availability.

ACTION PLAN FOR 2019 MITIGATION ACTIONS

MITIGATION ACTION		IMPLEMENTATION STRATEGY			
ID	DESCRIPTION	RESPONSIBLE DEPARTMENT	FUNDING SOURCES	COMPLETION DATE	PRIORITY
1.A	Educate public and Stakeholders about opportunities for mitigating hazards	ALL (All indicates all OCSD Board Members and Staff)	Administration and General Fund	Ongoing	Medium
1.B	Educate staff on current disaster preparedness developments	ALL	Administration and General Fund	Ongoing	Medium
2.A	Educate OAC and OCSD-BOD on trends and developments	Administration, Oceano Advisory Committee, and Board of Directors	Administration and General Fund	Ongoing	Medium
2.B	Educate OAC on hazard profiles and development review process	Administration, Oceano Advisory Committee, and Board of Directors	None Required	Ongoing	Medium
2.C	Compile Maps/Data Sets on Hazards	Utility Systems Supervisor	None Required	01/01/2019	Low

Oceano Community Services District Local Hazard Mitigation Plan



3.1A	Continuity of Operations Plan	OCSD Administration	None Required	07/01/2019	High
3.1B	Update Emergency Plan	Utility Systems Supervisor	None Required	07/01/2019	High
3.1C	Training – NIMS and ICS	ALL	None Required	Yearly	Medium
3.1D	Attend Disaster Drills	ALL	None Required	Yearly	High
3.1E	PIO Training (CSTI)	Administration	Grant	07/01/20	High
3.1F	FCFA 5 year Strategic Plan	OCSD BOD and Administration	None Required	Ongoing	Medium
3.2A	Family Support Plan	OCSD Administration	None Required	07/01/2019	Low
3.2B	Wastewater Pipe Repair	Utility Systems Supervisor	Sewer Fund	Ongoing	High
3.2C	Train Staff – SSO Protocols	Utility Systems Supervisor	Sewer Fund	Ongoing	Medium
3.3A	Communications Master Plan	OCSD Admin.	None Required	09/01/2019	Low
3.3B	Radio System Improvements	OCSD Admin.	None Required / Equipment Fund	09/01/2020	Medium
3.4A	Study Standby Power Systems	OCSD Admin.	None Required	10/01/2019	Medium
3.4B	Power Sheriff/Admin Building	OCSD Admin.	Grant/General Fund	10/01/2021	Medium
3.4C	Power Well # 8	Utility Systems Supervisor	Grant/Water Fund	10/01/2020	Medium



Oceano Community Services District Local Hazard Mitigation Plan

4.1A	National Flood Insurance Program	SLO County Planning Staff and OCSD admin.	None Required	Ongoing	Low
4.1B	Flood Zone Development Restrictions	OCSD Administration, Oceano Advisory Committee, and Board of Directors	None Required	Ongoing	Low
4.1C	Funding Flood Improvements	SLO County Public Works Staff	Grants and Flood Control District Funds	Ongoing	High
4.1D	Hwy. 1 Flood Project	SLO County Public Works Staff	None Required	Ongoing	High
4.1E	Hwy. 1 Infrastructure-Utility Relocation	OCSD BOD, Admin and Utility Systems Supervisor	Water/Sewer Funds	07/01/2019	High
4.1F	Levee Maintenance	SLO County Public Works	Grants and Flood Control District Funds	04/01/2019	High
5.1	Earthquake Drill	ALL	None Required	04/01/2020	Medium
5.2A	Pipe Repair/Replace	OCSD Admin and Utility Systems Supervisor	Water/Wastewater funds/Grants and loans	Ongoing	High
5.2B	Facilities Replacement	OCSD Admin and Utility Systems Supervisor	Water/Wastewater funds/Grants and loans	Ongoing	High
5.3A	FCFA Rescue Training	Five Cities Fire Authority/Board of Directors	None Required	Yearly	Low

Oceano Community Services District Local Hazard Mitigation Plan



5.3B	Earthquake Management (CSTI)	All	Grant/General Fund	Yearly	Medium
6.1A	Educate – Hazardous Materials	Five Cities Fire Authority/OCSD Board of Directors	None Required	07/01/2019	Low
6.1B	Hazardous Materials Handling	Water and Wastewater Staff	None Required	01/01/2019	Medium
6.2	FCFA Hazardous Materials Training	Five Cities Fire Authority and OCSD Board of Directors	None Required	Yearly	Low
7.1	Educate -Tsunami Plan	OCSD Admin.	None Required	Ongoing	Medium
7.2	Evacuation Route	OCSD Admin.	None Required	07/01/2020	Low

D. Implementation Through Existing Plans and Programs

The Oceano Community Services District adheres to comprehensive land use planning and building codes provided by San Luis Obispo County Planning Department to guide and control development within the District. This Hazard Mitigation Plan will be made available to all those responsible for the County’s General Plan development mechanisms to ensure that consistency is maintained. The Oceano Advisory Committee reports directly to the County Planning Department on matters relating to building and development. Both the Oceano Advisory Committee and County Planning Department members were involved in the construction of this plan.

The District has a number of policies and procedures, purchasing guidelines, and capital improvement procedures currently in place. The Mitigation Actions outlined in this Plan will be incorporated into those documents under the direction of the OCSD General Manager.

Mitigation Actions have been assigned to a number of specific individuals, departments and County jurisdictions. These individual actions will fall under the general administrative oversight of the governing body. Should technical expertise not be available to these individuals or departments, the County Office of Emergency Services is committed to, when possible, coordinating the resources of the County to assist with implementation of the



mitigation actions within the jurisdiction. The general administrative oversight of this Hazard Mitigation Plan rests with the Oceano Community Services District General Manager.

E. Continued Public Involvement

DMA Requirement §201.6(d)(3): A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit if for approval within 5 years in order to continue to be eligible for mitigation project grant funding.

The Oceano Community Services District recognizes the importance of involving the public in the ongoing Hazard Mitigation Plan review and updating process. Resultantly, the following actions have been taken:

- The District website has been posting the plan and updating the postings as changes are implemented. Their website has let the public know that the Plan is available for general public viewing and comment.
- A hard copy is available at the OCSD office for public viewing as requested.

F. Plan Monitoring, Evaluating and Updating

The mitigation plan must reflect current conditions in order to continue to be an effective representation of the Oceano Community Services District's overall strategy for reducing its risks from natural hazards. Monitoring and evaluating the plan will occur annually during the District's yearly budget review process each Spring to make certain that the goals and objectives for the community are current and mitigation activities are being budgeted and fully implemented.

To ensure that regular review and update of this Hazard Mitigation Plan occurs on an annual basis, the following actions will be taken:

- The Oceano Community Services District General Manager will in his annual report to the OCSD Board of Directors (CCSD), include an update on the goals and objectives of the plan.
- Following input from board members, the OCSD General Manager will communicate his findings to the Hazard Mitigation Planning Group. In this manner,



the Board, the General Manager, and Planning Group members can ensure that the plan components are up-to-date and meet current realities.

The Planning Group will provide the foundation for ongoing mitigation within the community through engagement and accountability in the plan's progress. They will annually monitor and review each goal and objective to evaluate its:

- Relevance to current and evolving situations within the District
- Consistency with changes in local, state and federal policy

Under the direction of the OCSD General Manager, the Planning group will make certain that the mitigation goals are being implemented in accordance with the Plan and also review the risk assessment component of the plan to ascertain if the information needs to be updated or modified. They will report on the:

- Current status of their mitigation actions
- How coordination efforts are proceeding
- Implementation processes that worked well
- Any difficulties encountered
- Any strategies in need of revision

If the plan review leads the Hazard Mitigation Planning Group to determine that modifications are necessary, then the OCSD General Manager will initiate a plan amendment.



Attachment A: Definition of Terms/Acronyms

DEFINITION OF TERMS

Asset

Any natural or human-caused feature that has value, including, but not limited to people; buildings; infrastructure like bridges, roads, and sewer and water systems; lifelines like electricity and communication resources; or environmental, cultural, or recreational features like parks, dunes, wetlands, or landmarks.

Critical Facilities

Facilities that are critical to the health and welfare of the population and that are especially important following hazard events. Critical facilities include, but are not limited to, shelters, police and fire stations, and hospitals.

Disaster Mitigation Act of 2000

A law signed by the President on October 30, 2000 that encourages and rewards local and state pre-disaster planning, promotes sustainability as a strategy for disaster resistance, and is intended to integrate state and local planning with the aim of strengthening statewide mitigation planning.

Emergency Response Plan

A document that contains information on the actions that may be taken by a governmental jurisdiction to protect people and property before, during, and after a disaster.

Federal Emergency Management Agency (FEMA)

Part of the Department of Homeland Security's Emergency and Response Directorate, FEMA was created to provide a single point of accountability for all Federal activities related to disaster mitigation and emergency preparedness, response and recovery.

Flood Insurance Rate Map (FIRM)

Map of a community, prepared by FEMA, that shows the special flood hazard areas and the risk premium zones applicable to the community.

Frequency

A measure of how often events of a particular magnitude are expected to occur. Frequency describes how often a hazard of a specific magnitude, duration, and/or extent typically occurs, on average.

Geographic Information Systems (GIS)

A computer software application that relates physical features on the earth to a database to be used for mapping and analysis.



Hazard Event

A specific occurrence of a particular type of hazard.

Hazard Mitigation

Cost effective measures taken to reduce or eliminate long-term risk associated with hazards and their effects.

Hazard Profile

A description of the physical characteristics of hazards and a determination of various descriptors including magnitude, duration, frequency, probability, and extent.

HAZUS

A GIS-based nationally standardized earthquake loss estimation tool developed by FEMA.

Mitigate

To cause to become less harsh or hostile; to make less severe or painful. Mitigation activities are actions taken to eliminate or reduce the probability of the event, or reduce its severity of consequences, either prior to or following a disaster/emergency.

100-Hundred Year Floodplain

Also referred to as the Base Flood Elevation (BFE) and Special Flood Hazard Area (SFHA). An area within a floodplain having a 1 percent or greater chance of flood occurrence in any given year.

Repetitive Loss Property

A property that is currently insured for which two or more National Flood Insurance Program losses (occurring more than ten days apart) of at least \$1000 each have been paid within any 10-year period since 1978.

Richter Magnitude Scale

A logarithmic scale devised by seismologist C.F. Richter in 1935 to express the total amount of energy released by an earthquake. While the scale has no upper limit, values are typically between 1 and 9, and each increase of 1 represents a 32-fold increase in released energy.

Risk

The estimated impact that a hazard would have on people, services, facilities, and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate, or low likelihood of sustaining damage beyond a particular threshold due to a specific type of hazard event. It also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.



Vulnerability

Describes how exposed or susceptible to damage an asset is. Vulnerability depends on an asset's construction, contents, and the economic value of its functions. Like indirect damages, the vulnerability of one element of the community is often related to the vulnerability of another. For example, many businesses depend on uninterrupted electrical power—if an electric substation is flooded, it will affect not only the substation itself, but a number of businesses as well. Often, indirect effects can be much more widespread and damaging than direct effects.

Vulnerability Analysis

The extent of injury and damage that may result from a hazard event of a given intensity in a given area. The vulnerability analysis should address impacts of hazard events on the existing and future built environment.

Vulnerable Populations

Any segment of the population that is more vulnerable to the effects of hazards because of things such as lack of mobility, sensitivity to environmental factors, or physical abilities. These populations can include, but are not limited to, senior citizens and school children.




Acronym	Definition
CGS	California Geological Survey
Cal EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAL Fire	California Department of Forestry and Fire Protection
CDF	California Department of Forestry and Fire Protection
CDHS	California Department of Health Services
CFR	Code of Federal Regulations
CGS	California Geological Survey
CISN	California Integrated Seismic Network
CSSC	California Seismic Safety Commission
DFG	State Department of Fish and Game
DHS	Department of Homeland Security
DWR	Department of Water Resources
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FMA	Flood Mitigation Assistance
FMP	Floodplain Management Plan
FRAP	Fire and Resource Assessment Program
GIS	Geographic Information System
HMGP	Hazard Mitigation Grant Program
LHMP	Local Hazard Mitigation Plan
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Services
OES	Governor's Office of Emergency Services
SEMS	Standardized Emergency Management System
SFHA	Special Flood Hazard Area
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey



Attachment B: Notice to Neighboring, Local and Regional Agencies

The following notices were sent to the City of Arroyo Grande, the City of Grover Beach, the City of Pismo Beach, San Luis Obispo County Office of Emergency Services and Port San Luis Harbor District.

Category Five Professional Consultants, Inc. 

June 4, 2018

Dear Neighboring Community:

The Oceano Community Services District will be constructing a Local Hazard Mitigation Plan in order to uncover effective ways to reduce the jurisdiction's vulnerability to naturally occurring hazards. A Hazard Mitigation Planning Group has been formed comprised of community stakeholders. We will be holding a kick-off meeting on Thursday, June 7th at the Oceano Community Services District Office at 1655 Front Street in Oceano. We invite you to attend this meeting and participate in this process.

For more information and comments please contact the District's consultant for the project, Bob Neumann at 805-441-5469 or via email at bob@cafive.com.

Thank You,

Robert F Neumann and Sheri Eibschutz
Category Five Professional Consultants, Inc

Category Five Professional Consultants, Inc.
Post Office Box 13736
San Luis Obispo, CA 93406
E-mail: bob@cafive.com, sheri@cafive.com
Phone: 805.441.5469
www.cafive.com



Attachment C: Public Forum Notice

Category Five Professional Consultants, Inc.



October 24, 2018

Dear Neighboring Community:

The Local Hazard Mitigation Plan recently constructed for the Oceano Community Services District will be presented to the general public and neighboring jurisdictions at an Oceano Community Outreach event held on November 17, 2018 at the Oceano Community Center located at 1425 19th Street in Oceano. From 11:20 to 11:50 a.m., the Plan will be presented to the general public. Category Five Professional Consultants will describe how the plan was put together, what it entails, in addition to providing a detailed description of the mitigation goals and actions that are being proposed for this community. From 12:00 to 1:00 p.m., the public will have an opportunity to ask questions and comment on the plan.

We invite you to attend this community outreach event and provide us with your feedback.

Thank You,

Robert F Neumann and Sheri Eibschutz
Category Five Professional Consultants, Inc.

Category Five Professional Consultants, Inc.
Post Office Box 13736
San Luis Obispo, CA 93406
E-mail: bob@cafive.com, sheri@cafive.com
Phone: 805.441.5469
www.cafive.com



Attachment D: Public Forum Community Notice



Sponsors: The Oceano Community Services District, the County of San Luis Obispo and many local government and non-profit agencies who serve Oceano.

The Event: Community members will have the opportunity to meet with the representatives, learn about, discuss and provide feedback regarding current efforts in Oceano:

<i>Water</i> Reliability & Reclaimed Water	<i>Energy</i> Efficiency, Solar & New Electric Rates	<i>Infrastructure</i> Drainage & replacing leaky pipes	<i>Planning</i> Hazard Mitigation & Development
--	---	---	---

When: Saturday, November 17, 2018 | 10 AM- 1 PM

Where: Oceano Community Center - 1425 19th St., Oceano

Our lead organizers, presenters and supporters include...



Additional participants include...

Coastal San Luis RCD | CAPSLO | Sun Work | PG&E | One Cool Earth
Oceano Beach Community Association | Habitat for Humanity

N.1 District Profile

N.1.1 Mitigation Planning History and 2019 Process

This Annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan Update. The Director of Utilities was the representative on the County HMPC and took the lead for developing this annex in coordination with the San Miguel Community Services District Local Planning Team (LPT). The LPT will be responsible for implementation and maintenance of the plan. Table N.1 shows the District's planning group for the plan revision process.

Table N.1 San Miguel CSD Hazard Mitigation Plan Planning Team

Department or Stakeholder	Title
San Miguel Fire	Fire Chief
San Miguel Fire	Assistant Fire Chief
Utilities	Director

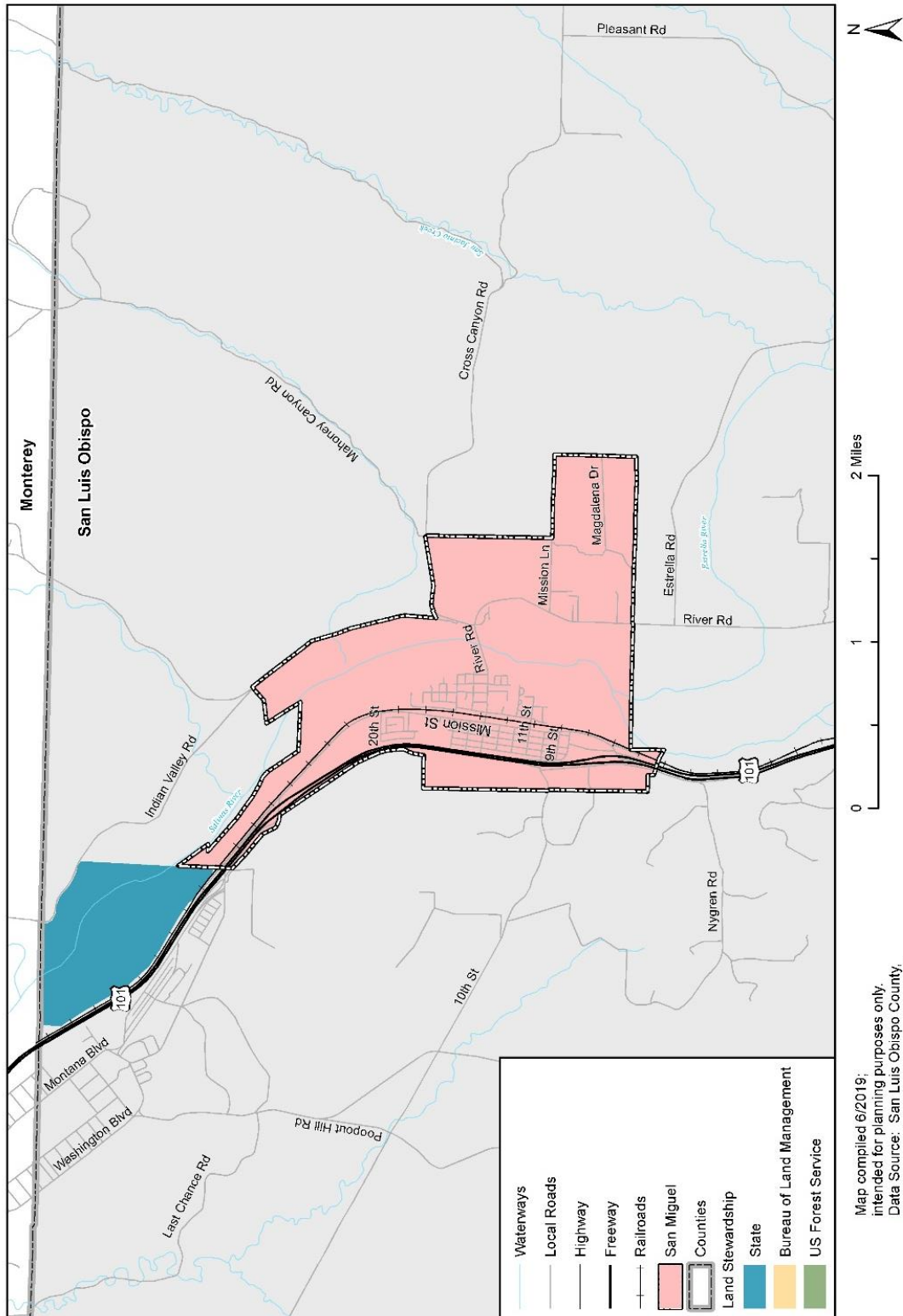
More details on the planning process followed and how the jurisdictions, service districts and stakeholders participated as well as how the public was involved during the 2019 update can be found in Section 3 of the Base Plan.

N.1.2 District Overview

The unincorporated community of San Miguel has a population of 2,400 according to the 2010 census and is located in the Salinas River Valley about seven miles north of Paso Robles. The community is bordered on the west by Highway 101 and on the east by the Salinas River. San Miguel originated with the founding of Mission San Miguel Arcángel in 1797. The railroad arrived in 1886, and still runs through the center of town. In 1887 San Miguel was destroyed by fire, but the town was soon rebuilt. During World War II, San Miguel became the off-duty retreat for 45,000 troops stationed at Camp Roberts, which was later deactivated in the late 1950s. San Miguel is currently perceived as a low-cost bedroom community for Paso Robles and San Luis Obispo County.

The San Miguel Community Services District (CSD) is committed to serving the community with effectiveness, efficiency, and care to support the economic and social quality of life in San Miguel. The District proudly serves San Miguel with fire protection, street lighting, water, wastewater, and solid waste services. Figure N.1 shows the San Miguel Community Services District boundaries.

Figure N.1 San Miguel Community Services District



Map compiled 6/2019;
intended for planning purposes only
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO



The U.S. Census Bureau estimated the San Miguel Census Designated Place's (CDP) 2017 population as 2,824, a 0.1% increase from 2,822 in 2012. Table N.2 shows an overview of key social and demographic characteristics of the CDP taken from the U.S. Census Bureau's American Community Survey.

Table N.2 San Miguel CDP Demographic and Social Characteristics, 2012-2017

San Miguel CDP	2012	2017	% Change
Population	2,822	2,824	0.1%
Median Age	27.5	30.3	10.2%
Total Housing Units	818	837	2.3%
Housing Occupancy Rate	100.0%	92.5%	-7.5%
% of Housing Units with no Vehicles Available	6.1%	6.6%	0.5%
Median Home Value	\$232,600	\$294,700	26.7%
Unemployment	13.2%	12.2%	-1.0%
Mean Travel Time to Work (minutes)	21.6	24.8	14.8%
Median Household Income	\$44,450	\$53,750	20.9%
Per Capita Income	\$18,712	\$22,380	19.6%
% of Individuals Below Poverty Level	20.4%	22.7%	2.3%
# of Households	818	774	-5.4%
Average Household Size	3.43	3.63	5.8%
% of Population Over 25 with High School Diploma	73.2%	69.7%	-3.5%
% of Population Over 25 with Bachelor's Degree or Higher	8.4%	11.9%	3.5%
% with Disability	8.7%	8.1%	-0.6%
% Speak English less than "Very Well"	20.1%	27.0%	6.9%

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

Note: Data is for the San Miguel Census Designated Place (CDP) which may not have the same boundaries as the San Miguel Community Services District.

Table N.3 shows how the San Miguel CDP's labor force breaks down by occupation and industry estimates from the U.S. Census Bureau's 2017 American Community Survey.

Table N.3 San Miguel CPD Employment by Industry (2017)

Industry	# Employed
Population (2017)	2,824
In Labor Force	1,312
Agriculture, forestry, fishing and hunting, and mining	117
Armed Forces	-
Construction	106
Manufacturing	145
Wholesale trade	-
Retail trade	103
Transportation and warehousing, and utilities	28
Information	15
Finance and insurance, and real estate and rental and leasing	44
Professional, scientific, and management, and administrative and waste management services	136

Industry	# Employed
Educational services, and health care and social assistance	172
Arts, entertainment, and recreation, and accommodation and food services	69
Other services, except public administration	142
Public administration	75
Unemployed	160

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

Note: Data is for the San Miguel Census Designated Place (CDP) which may not have the same boundaries as the San Miguel Community Services District.

N.1.3 Development Trends

San Miguel's population growth has been slower compared to the nearby City of Paso Robles. According to the Community Plan, San Miguel is projected to have a population of 2,800 in 2020. According to the Planning Team, growth in San Miguel is currently limited to infill development and single-family homes. However multi-family housing developments are anticipated in the future, which the community hopes will encourage commercial development, particularly in the downtown area. The District believes that its historic resources and location make it suitable for more tourism-oriented development in the future and hope to attract small-scale manufacturing, which would bring more jobs to the community. Two sites outside the boundaries of the CSD have been identified as areas for potential community expansion. The District's main concerns with future growth are their ability to supply water and wastewater infrastructure and fire protection while keeping up with the growth.

N.1.4 Other Community Planning Efforts

The coordination and synchronization with other community planning mechanisms and efforts are vital to the success of this plan. To have a thorough evaluation of hazard mitigation practices already in place, appropriate planning procedures should also involve identifying and reviewing existing plans, policies, regulations, codes, tools, and other actions are designed to reduce a community's risk and vulnerability from natural hazards.

As an unincorporated community, the San Miguel CSD is referenced in other County planning documents and regulated by County policies and planning mechanisms. Integrating existing planning efforts, mitigation policies, and action strategies into this Annex establishes a credible, comprehensive document that weaves the common threads of a community's values together. The development of this jurisdictional Annex involved a comprehensive review of existing plans, studies, reports, and initiatives from San Luis Obispo County and the San Miguel community that relate to hazards or hazard mitigation, as summarized in Table N.4 below. Information on how they informed the update are noted and incorporated where applicable.

In addition to the development standards within the San Miguel Specific Plan, there are County planning mechanisms that regulate future and existing development within the San Miguel CSD planning area. Refer to Section N.4 Capability Assessment below as well as the Base Plan for more information on the plans, policies, regulations and staff that govern the San Miguel CSD.

Table N.4 Summary of Review of Key Plans, Studies and Reports

Plan, Study, Report Name	How the Document Informed this Annex
San Miguel Community Plan (2016)	Incorporated background information on the community and CSD including historical and cultural resources, natural resources, and development and land use trends
North County Area Plan (2014)	Incorporated information into the District overview and vulnerability assessment.

N.2 Hazard Identification and Summary

The San Miguel CSD Planning Team identified the hazards that affect the District and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to the San Miguel CSD (see Table N.5). There are no hazards that are unique to the District.

Table N.5 San Miguel CSD Hazard Risk Summary

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Adverse Weather	Extensive	Likely	Catastrophic	High
Dam Failure	Limited	Unlikely	Negligible	Medium
Drought and Water Shortage	Extensive	Likely	Catastrophic	High
Earthquake	Extensive	Likely	Critical	High
Flooding	Limited	Occasional	Limited	Medium
Landslide	Limited	Occasional	Limited	Medium
Wildfire	Extensive	Highly Likely	Catastrophic	High
Hazardous Materials	Significant	Likely	Negligible	Medium
<p>Geographic Area Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area</p> <p>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.</p>		<p>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</p> <p>Significance Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact</p>		

N.3 Vulnerability Assessment

The intent of this section is to assess the San Miguel Community Services District's vulnerability separate from that of the planning area, which has already been assessed in Section 5 Hazard Identification and Risk Assessment (HIRA) in the Base Plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance.

The information to support the HIRA portion of this Annex was collected through a Data Collection Guide, which was distributed to each participating municipality or district to complete during the planning process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact anywhere within the County, as well as to rank the hazards and identify the related vulnerabilities unique to each jurisdiction/district. In addition, the San Miguel CSD Planning Team members were asked to share information on past significant hazard events that have affected the Community Services District.

Each participating jurisdiction and district were in support of the main hazard summary identified in Section 5 of the Base Plan. However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction (see Table N.5). Identifying these differences helps the reader to differentiate the jurisdiction's risk and vulnerabilities from that of the overall County.

Note: The hazard "significance" reflects overall ranking for each hazard and is based on the San Miguel CSD Planning Team input from the Data Collection Guide and the risk assessment results compiled during the planning process (see Section 5 of the Base Plan), which included more detailed quantitative analyses with the best available data. The hazard summaries in Table N.5 reflect the hazards that could potentially affect the District. The discussion of vulnerability for each of the hazards listed is in Section N.3.2 Estimating Potential Losses.

Other Hazards

The Planning Team also noted hazardous trees as a high significance hazard. This hazard is discussed under Adverse Weather below. For additional analysis on the risk hazardous trees pose the County, refer to Section 5 of the Base Plan.

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 in this plan and are not assessed individually for specific vulnerabilities in this section. The following hazards were ranked as low significance in the San Miguel Community Services District:

- Agricultural Pests and Diseases
- Biological Agents
- Debris Flow
- Land Subsidence
- Landslides

Coastal hazards including coastal erosion, sea level rise, and tsunamis are not applicable to San Miguel due to its inland location.

N.3.1 Assets at Risk

This section considers the District's assets at risk, including values at risk, critical facilities and infrastructure, historic assets, economic assets, and growth and development trends. See Section 5.2 of the Base Plan (Asset Summary) for more details and background on the parcel summarization, analysis, and datasets available.

Values at Risk

The following data on property exposure is derived from San Luis Obispo County Assessor data. This data should only be used as a guideline to overall values in the Community Services District, as the information has some limitations. Table N.6 summarizes the exposure of properties (e.g., the values at risk based on improvement values, content values, and total values as an addition of these two types of values) broken down by property type for the San Miguel Community Services District.

Table N.6 2019 Property Exposure for the San Miguel CSD by Property Types

Property Type	Property Count	Improved Value	Content Value	Total Value
Agricultural	6	\$29,459,170	\$29,459,170	\$58,918,340
Commercial	17	\$2,736,007	\$2,736,007	\$5,472,014
Government/Utilities	42	\$125,432	--	\$125,432
Other/Exempt/Misc.	39	\$5,734,772	--	\$5,734,772
Residential	661	\$98,664,423	\$49,332,212	\$147,996,635
Multi-Family Residential	64	\$8,938,593	\$4,469,297	\$13,407,890
Mobile/Manufactured Homes	23	\$3,263,643	\$1,631,822	\$4,895,465
Residential: Other	2	\$606,170	\$303,355	\$910,065
Vacant	13	\$274,143	--	\$274,143
Total	867	\$149,802,353	\$87,931,862	\$237,734,755

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor's Office data 2019

Critical Facilities and Infrastructure

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. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the San Miguel Community Services District based on San Luis Obispo County GIS data as well as structures obtained from the Homeland Infrastructure Foundation-Level Dataset (HIFLD) is provided in Table N.7 and illustrated in Figure N.2. Table N.8 lists additional critical assets identified by the Planning Team. The four types of Critical Facilities categorized by San Luis Obispo County and its jurisdictions' and districts' Planning Teams are: Emergency Services, High Potential Loss Facilities, Lifeline Utility Systems, and Transportation Systems. Refer to Section 5.2 of the Base Plan for more information on the assets used throughout this Annex and County-wide analyses.

Table N.7 San Miguel CSD's Critical Facilities

Facility Category	Facility Type	Name	Counts
Emergency Services	Day Care Facility	CA State Preschool at San Miguel	1
	Fire Station	San Miguel CSD Fire Department	1
	Public Schools	Almond Acres Charter Academy	2
Lillian Larsen Elementary			
Lifeline Utility Systems	CA Energy Commission Substations	San Miguel PG&E Substation	1
Total			5

Source: San Luis Obispo County Planning & Building, HIFLD

The following table lists the additional assets within the District as identified by the Planning Team. Additional discussion on assets in San Miguel can be found below.

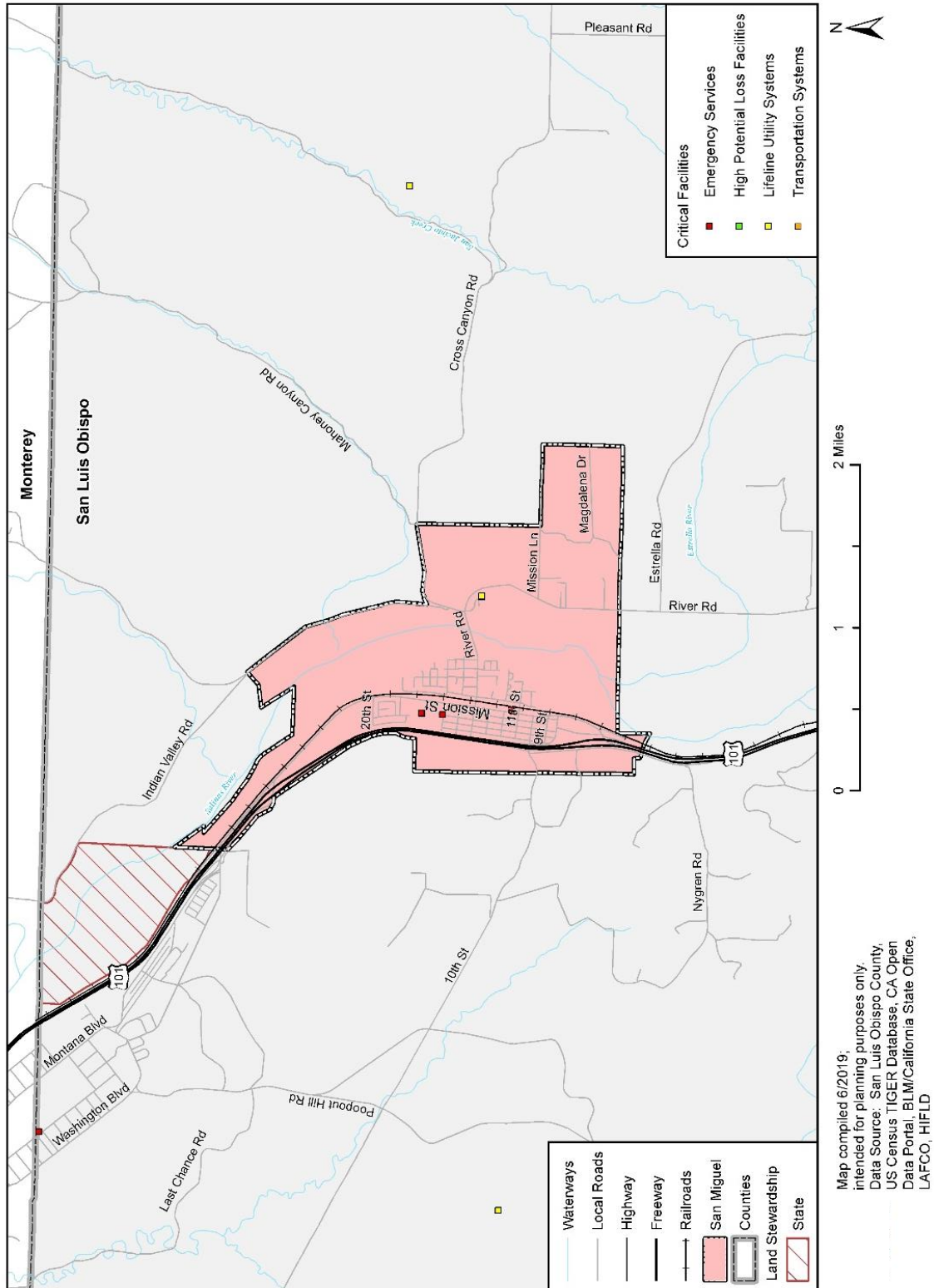
Table N.8 Critical Assets Identified by San Miguel Planning Team

Name of Asset	Type	Replacement Value
San Miguel Fire Department	EI	\$500,000
PG&E Substation	EI	\$1,500,000
Version Substation	EI	\$300,000
River Road Bridge	EI	\$1,000,000
Mission San Miguel	NA*	\$3,000,000
Rios Caledonia	NA*	\$2,000,000
Highway 101	VF	\$6,000,000
Water Infrastructure	EI	\$5,000,000
Waste water treatment plant	EI	\$1,500,000
Natural gas line	EI	\$1,000,000
Union Pacific Railroad	EI	\$1,500,000
CHC	VF	\$750,000
Lillian Larson School	VF	\$2,000,000
Almond Acres Charter School	VF	\$1,000,000
Gallo Wines	VF	\$4,000,000

Source: San Miguel CSD Planning Team.

EI: Essential Infrastructure. NA: Natural Asset. VF: Vulnerable Facility. * = State registered landmark

Figure N.2 Critical Facilities in San Miguel Community Services District



Emergency Services Facilities

Emergency services facilities in San Miguel include a health center, day care, fire department, and schools. San Miguel is served by the San Miguel Joint Union School District (SMJUSD) for Kindergarten through Grade 8. The District operates Lillian Larsen Elementary School in San Miguel. The Almond Acres Charter Academy is operated independently on the same campus as the elementary school. There is also a preschool on campus which is operated by the State. The community is served by non-profit Community Health Centers of the Central Coast. Fire protection is provided through San Miguel Fire, which has mutual aid agreements with CalFire and Camp Roberts.

Lifeline Utility Systems

Lifeline utility systems in San Miguel include one electrical substation, natural gas lines, 3 well sites, 2 water storage tanks with 700,000 gallons of storage capacity, and a wastewater treatment facility. In 2013, all of San Miguel's water needs were met by two of its three wells. The San Miguel CSD also operates the Machado Wastewater Treatment Plant, which serves 90% of the District including areas east of the Salinas River.

Transportation Systems

The Planning Team identified the following critical transportation infrastructure; the River Road Bridge, Highway 101, and the Union Pacific Railroad. Mission Street is San Miguel's main street and primary commercial corridor. Highway 101 is the principal arterial in the region, and the River Road Bridge is the only crossing of the Salinas River between Paso Robles and Camp Roberts. The Union Pacific Railroad travels through the center of town. While it once played an important role in the economy of San Miguel, trains no longer stop in San Miguel.

Historic and Cultural Resources

There are two state historical landmarks within San Miguel that attract many visitors, Mission San Miguel Arcángel and Rios Caledonia Adobe. The Mission was founded in 1797 and has been occupied and administered by the Franciscan Friars of the Province of Saint Barbara since 1928. Rios Caledonia Adobe was built in 1835 and historically served as an inn and stage stop on the Mission Trail between San Francisco and Los Angeles. Both sites are an important part of the local heritage. Gallo Wines was also identified by the community as an important cultural resource.

Natural Resources

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. 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. The San Miguel Community Plan (2016) designated the following combining designation that applies to the protection of special resources in the San Miguel community:

- Salinas River Corridor (SRA) – The Salinas River Corridor is home to sensitive riparian habitat and important wildlife migration corridors. It is also important for flood control and management of water resources.

The two primary plant communities in the area are willow-cottonwood riparian forest and non-native annual grassland. Several special-status plant species inhabit the San Miguel community and are detailed in the San Miguel Community Plan.

Economic Assets

According to the San Miguel Community Plan, San Miguel's history has been marked by boom and bust cycles, often in response to fluctuations in the agricultural economy and the military's use of nearby Camp Roberts. The major economic sectors in San Miguel are agriculture, tourism, and manufacturing. According to the San Miguel

Community Plan, agriculture in the area has shifted over time from cattle to most recently dry-farmed pasture crops such as alfalfa, almonds, olives, and wine grapes. The Community Plan states that as of 2016 San Miguel qualified under state law as a disadvantaged community based on per capita income. Few “head-of-household” jobs exist in the community, and many residents commute to Paso Robles or beyond for employment and to obtain many basic goods and services.

N.3.2 Estimating Potential Losses

Note: This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to Planning Team input) it significantly differs from that of the overall County.

Table N.6 under Section N.3.1 summarizes San Miguel’s exposure in terms of number and value of parcels falling within the District’s boundaries. San Luis Obispo County parcel and assessor data was used to calculate the improved value of parcels, using ParcelQuest’s spatial layers on parcel geometry. The most vulnerable structures are those in the in the floodplain (especially those that have been flooded in the past), unreinforced masonry buildings, and buildings built prior to the introduction of modern-day building or land regulatory codes. According to San Miguel Fire, San Miguel has not experienced a hazardous event in the past 75 years. However, the community is still vulnerable to several hazards which are discussed below. See Section 5 of the Base Plan for more information on assets, parcel analysis methodology, and hazard profiles.

Adverse Weather

Adverse weather was rated as High Significance for the San Miguel CSD and may include thunderstorms, heavy rain, hail, lightning, dense fog, freeze, high winds, tornadoes, and extreme heat. San Miguel receives about 17 inches of rainfall annually, most of which occurs in the spring. As such, the community is most vulnerable to flooding, erosion, landslide, and other water-associated hazards in the springtime. Hazardous trees are also a significant concern of the community. Older neighborhoods in particular are distinguished by the presence of mature trees which may be downed by winds and storms. Refer to Section 5 of the Base Plan for further analysis on hazardous trees within the County.

Dam Failure

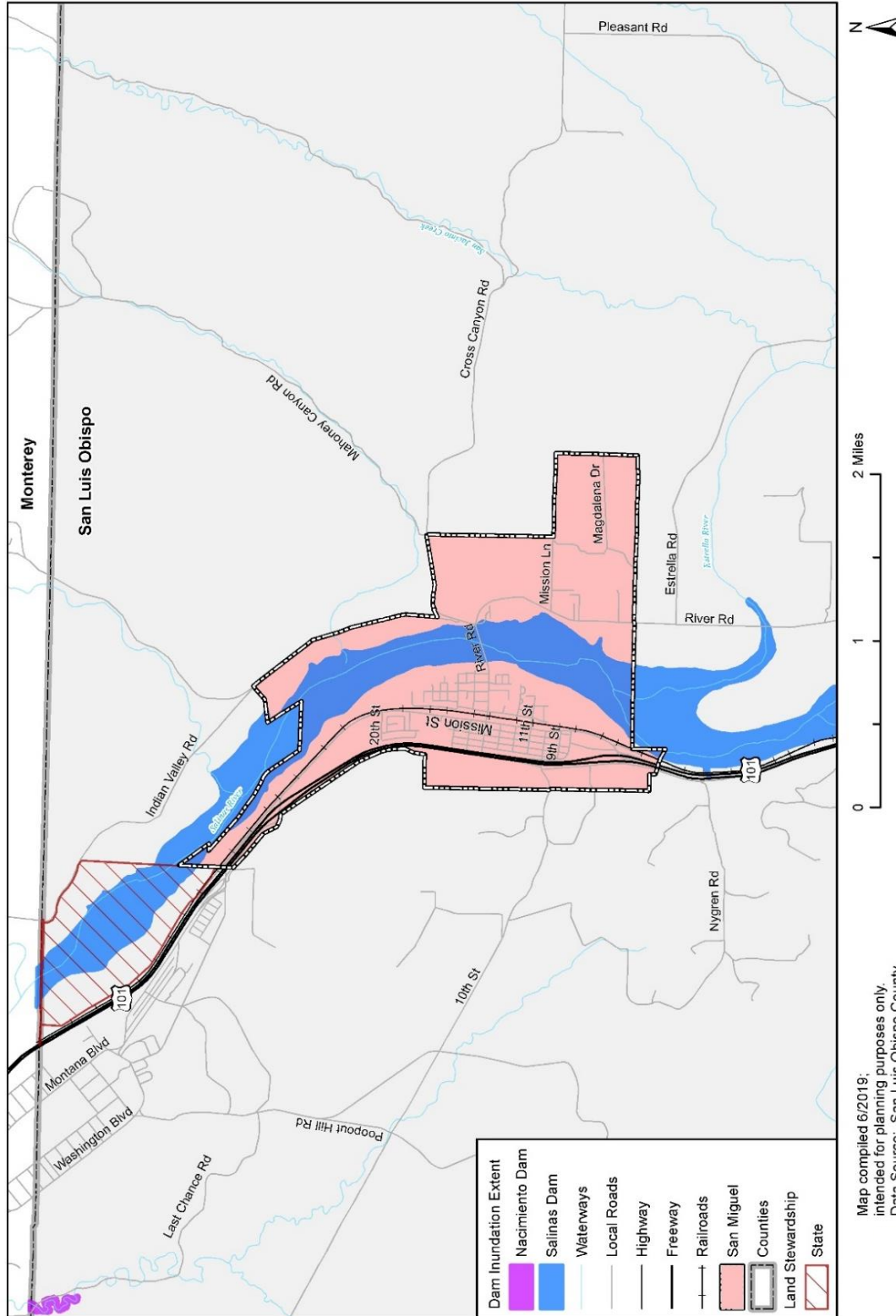
Dam failure was rated as Medium Significance. The San Miguel CSD is located downstream of the Salinas Dam which impounds Santa Margarita Lake. The Salinas Dam was constructed in 1941 to supply water to Camp San Luis Obispo. Today, the dam is operated by the City of San Luis Obispo to supply water to the City and surrounding agricultural areas. Expansion of the dam was explored as part of the 2013 Salinas Reservoir Expansion Study, but it was found that the dam would not maintain structural integrity at the increased capacity. It was also found that the dam was vulnerable to failure in a prolonged earthquake, although the dam does meet design requirements at its current capacity. The area of San Miguel that would become inundated if the Salinas Dam failed is shown in Figure N.3. Most of this area is uninhabited. As shown in Table N.9, 5 structures with a total value of \$136,389 would be inundated in the event of a dam failure.

Table N.9 San Miguel CSD's Estimated Losses by Property Type based on Salinas Dam Inundation Extents

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population at Risk
Agricultural	1	\$5,384	\$5,384	\$10,768	\$5,384	--
Government/Utilities	1	--	--	\$0	\$0	--
Other/Exempt/ Miscellaneous	1	--	--	\$0	\$0	--
Residential	1	\$53,182	\$26,591	\$79,773	\$39,887	3
Vacant	1	\$45,848	--	\$45,848	\$22,924	--
TOTAL	5	\$104,414	\$31,975	\$136,389	\$68,195	3

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Figure N.3 Dam Inundation Extents in San Miguel Community Services District



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, NID 2018, CA DWR



Drought and Water Shortage

Drought was rated as High Significance by the San Miguel CSD and has historically contributed to the boom and bust economic cycles in the community in terms of the agricultural sector. The cultivation of water-intensive crops, particularly alfalfa and almonds, makes the agricultural community in San Miguel especially vulnerable to water shortage. According to the San Miguel Community Plan, in 2010 San Miguel's gross water use was 239 acre-feet; this is expected to increase to 483 acre-feet per year by 2035. Concentrated pumping within the greater Paso Robles Groundwater Basin has created localized depressions and has depleted groundwater reserves. The County Board of Supervisors designed the Paso Robles Groundwater Basin a Level of Severity III. As such, the water resource management strategy for San Miguel includes conservation, efficiency, and a supplemental source of water. More details on this strategy can be found in the San Miguel Community Plan. Information related to Sustainable Groundwater Management Act and the Paso Robles Groundwater Basin can be found in Section 5 of the Base Plan.

Earthquake

Earthquake was rated as High Significance by the San Miguel CSD. There are no mapped active or potentially active faults in San Miguel, though the community is still vulnerable to earthquakes from regional faults. The San Simeon earthquake in 2003 was centered about 30 miles from San Miguel, and caused damage to Mission San Miguel Arcángel, forcing it to close to the public temporarily. Restoration and retrofitting are still ongoing and are expected to total \$15 million. Some buildings in the downtown area between 11th and 14th Streets date back to the early 1900s and may also be vulnerable to an earthquake. The Sims Hotel, specifically, has been identified as an unreinforced masonry building in need of retrofit per Title 19 of the County Code and SB 547.

Liquefaction, the result of groundshaking leading to fine grained, saturate soils to liquefy and act as a fluid also poses a risk to portions of the San Miguel CSD. The following tables, Table N.10 and Table N.11, show the properties in zones of moderate and high liquefaction risk. As shown in

Figure N.4 below, proximity to the Salinas River is the most significant indicator of liquefaction risk in the community. Most properties are at moderate risk of liquefaction in an earthquake, including all critical facilities except the Community Health Center, as indicated in Table N.11. Very few properties are located in an area of high liquefaction risk.

Table N.10 San Miguel CSD's Liquefaction Risk by Property Type – Moderate Risk

Property Type	Property Count	Improved Value	Content Value	Total Value
Agricultural	1	\$27,093,506	\$27,093,506	\$54,187,012
Commercial	17	\$2,736,007	\$2,736,007	\$5,472,014
Government/Utilities	32	\$125,432	--	\$125,432
Other/Exempt/Misc.	35	\$5,734,772	--	\$5,734,772
Residential	564	\$83,310,708	\$41,655,354	\$124,966,062
Multi-Family Residential	63	\$8,842,353	\$4,421,177	\$13,263,530
Mobile/Manufactured Homes	6	\$1,099,667	\$549,834	\$1,649,501
Residential: Other	2	\$606,710	\$303,355	\$910,065
Vacant	11	\$166,569	--	\$166,569
Total	731	\$129,75,724	\$76,759,232	\$206,474,956

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table N.11 San Miguel CSD's Liquefaction Risk by Property Type – High Risk

Property Type	Property Count	Improved Value	Content Value	Total Value
Agricultural	1	\$5,384	\$5,384	\$10,768
Government/Utilities	2	--	--	\$0
Other/Exempt/Misc.	1	--	--	\$0
Residential	1	\$53,182	\$26,591	\$79,773
Total	5	\$58,566	\$31,975	\$90,541

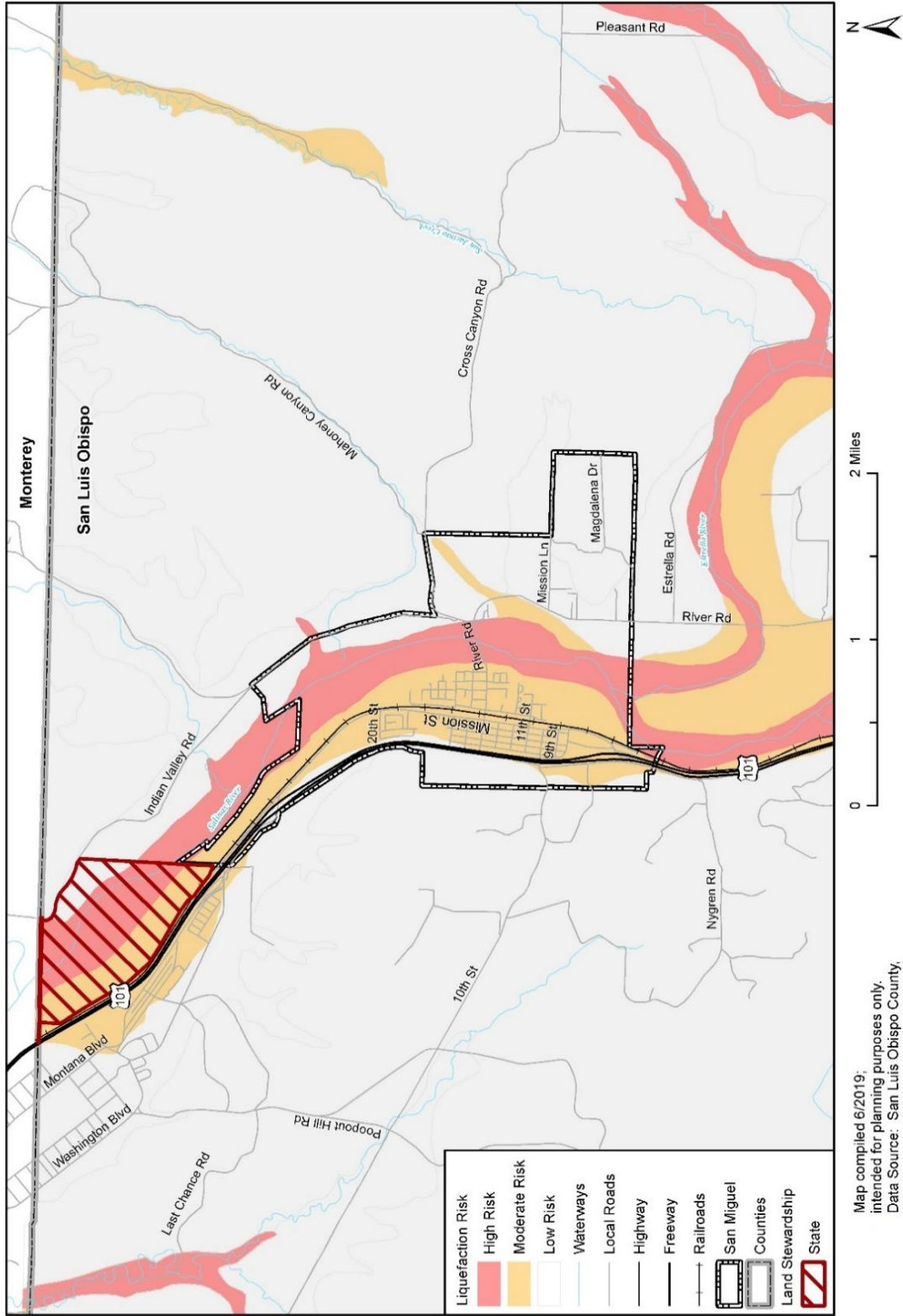
Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table N.12 San Miguel CSD's Critical Facilities in Moderate Liquefaction Hazard Zone

Facility Type	Count
Day Care Facility	1
Fire Station	1
Public Schools	2
Total	4

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis, CalFire

Figure N.4 Liquefaction Risk in San Miguel Community Services District



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO



Flood

Flooding was rated as Medium Significance by the planning team. The Salinas River corridor is characterized by steep slope banks, sandy bottoms, and riparian vegetation. San Miguel is situated on two terraces connected by a steep slope, and water drains eastward into the river. Properties in the 100-year floodplain are primarily located on the lower terrace. Because of the lack of storm drains, low points in the community are sometimes inundated during periods of heavy rainfall. These areas are generally along N Street and Mission Street between 12th and 16th Streets. A comprehensive drainage study was prepared for San Miguel in 2003 and the associated drainage plan is being implemented incrementally as new development occurs. Table N.13 details the potential damage to properties in a 100-year flood. As shown in Figure N.5, only a small portion of the community is located in the 100-year floodplain.

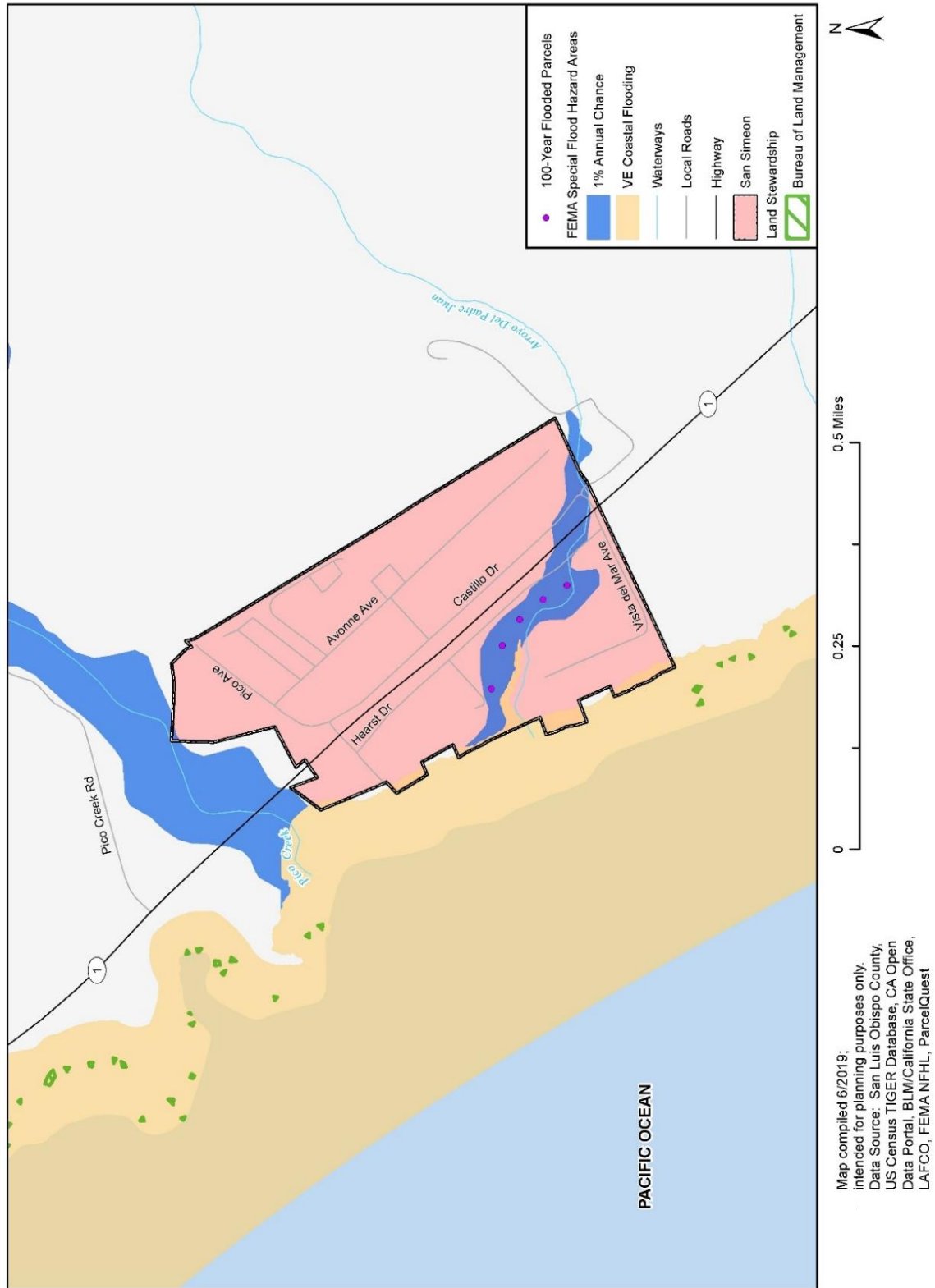
Table N.13 San Miguel CSD's FEMA 1% Annual Chance Flood Hazard by Property Type

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Agricultural	1	\$5,384	\$5,384	\$10,768	\$2,692	--
Government/Utilities	3	--	--	\$0	\$0	--
Other/Exempt/Miscellaneous	3	--	--	\$0	\$0	--
Residential	25	\$4,028,643	\$2,014,322	\$6,042,965	\$1,510,741	63
Multi-Family Residential	1	\$74,968	\$37,484	\$112,452	\$28,113	3
Total	33	\$4,108,995	\$2,057,190	\$6,166,185	\$1,541,546	66

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis, FEMA NFHL

San Miguel does not participate separately in the National Flood Insurance Program (NFIP) but will continue to support the County's participation in and compliance with the NFIP.

Figure N.5 FEMA Flood Hazard Areas and Flooded Parcels in San Miguel Community Services District



Landslide

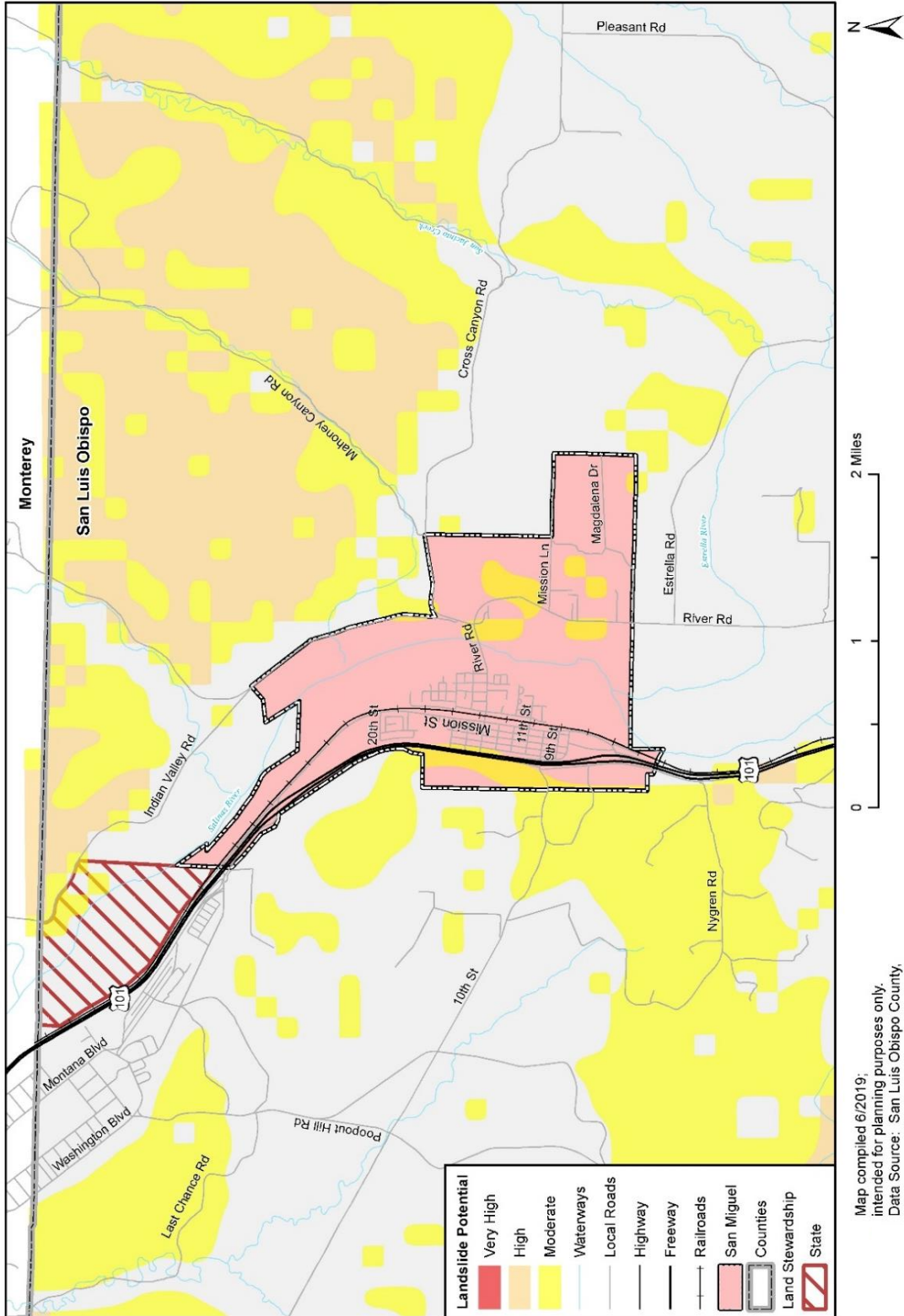
As shown in Figure N.6, only a small portion of the San Miguel CSD is at moderate risk of landslide. However, areas outside of the District's boundaries to the north and the southwest are at high to moderate risk of a landslide event. According to the GIS analysis, there are a total of twenty-five (25) properties with a total value of over \$2 million. Of the properties at risk, eighteen (18) are residential or multi-family property types. These properties are listed in Table N.14.

Table N.14 San Miguel CSD's Landslide Risk by Property Type – Moderate

Property Type	Property Count	Improved Value	Content Value	Total Value
Government/Utilities	4	--	--	\$0
Mobile/Manufactured Homes	1	\$95,795	\$47,898	\$143,693
Multi-Family Residential	1	\$23,149	\$11,575	\$34,724
Residential	17	\$1,553,215	\$776,608	\$2,329,823
Vacant	2	\$2,143	--	\$2,143
Total	25	\$1,674,302	\$836,080	\$2,510,382

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Figure N.6 Landslide Potential Areas in San Miguel Community Services District



Wildfire



Wildfire is a high significance hazard for the San Miguel CSD and recently CalFire has designated San Miguel as an area at increased risk of wildfire. About one-third of the total property value in San Miguel is located in a high wildfire hazard zone (refer to the table below). Most of the at-risk properties are located outside the downtown area, as shown in Figure N.7. As shown below, the properties at risk of wildfire includes all agricultural property and most mobile homes within the District's boundaries. The District's fire station is also located in a high wildfire hazard zone, which poses a significant threat to the District's ability to respond quickly and efficiently to a fire emergency.

Table N.15 San Miguel CSD's Wildfire Risk by Property Type – High Wildfire Hazard Zone

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Agricultural	6	\$29,459,170	\$29,459,170	\$58,918,340	\$58,918,340	--
Government/Utilities	11	--	--	\$0	\$0	--
Other/Exempt/ Miscellaneous	4	--	--	\$0	\$0	--
Residential	69	\$11,430,126	\$5,715,063	\$17,145,189	\$17,145,189	173
Multi-Family Residential	1	\$96,240	\$48,120	\$144,360	\$144,360	3
Mobile/Manufactured Homes	18	\$2,422,543	\$1,211,272	\$3,633,815	\$3,633,815	45
Vacant	3	\$108,199	--	\$108,199	\$108,199	--
Total	112	\$43,516,278	\$36,433,625	\$79,949,903	\$79,949,903	221

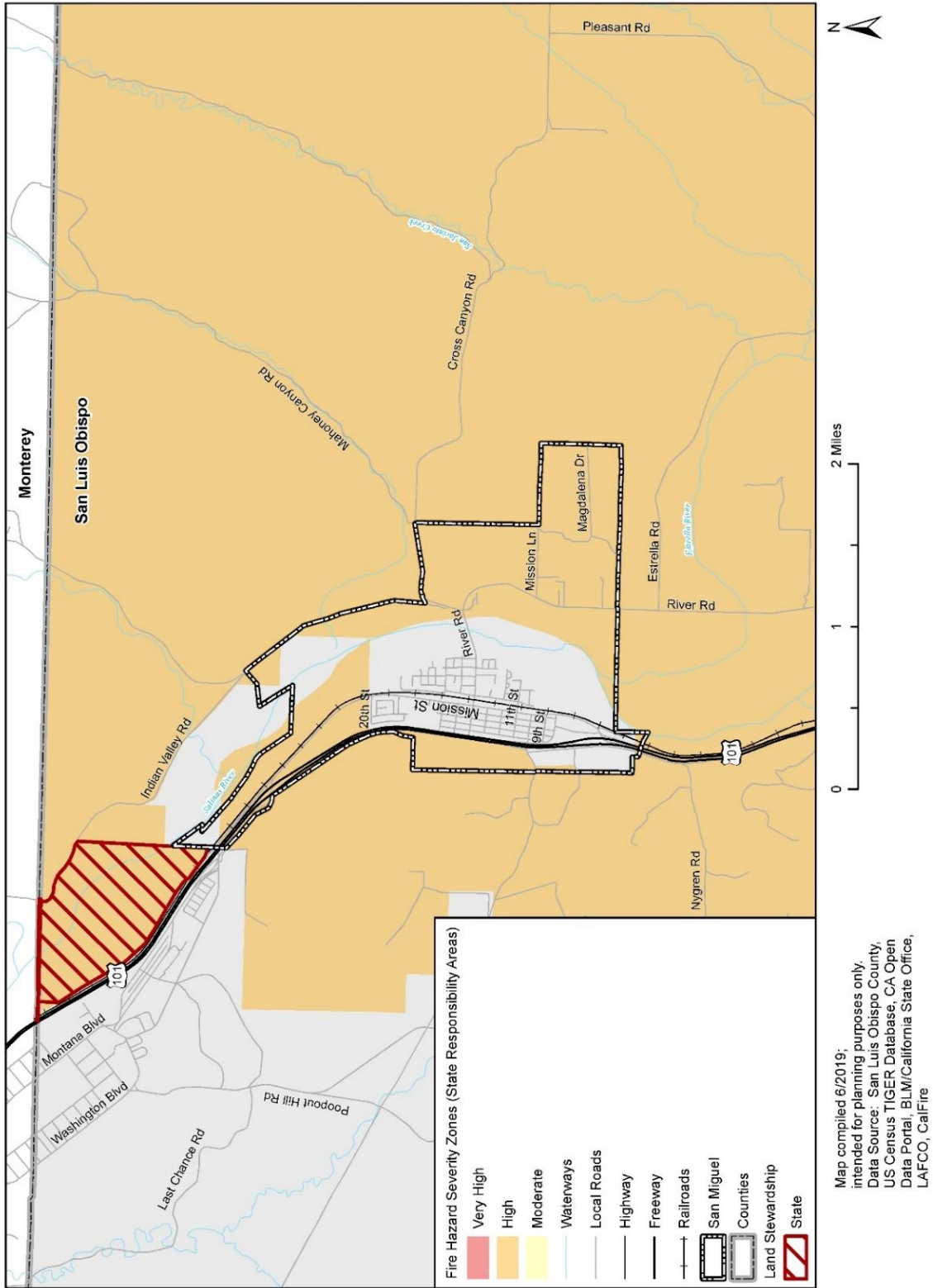
Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis, CalFire

Table N.16 San Miguel CSD's Critical Facilities in High Wildfire Hazard Zone

Facility Type	Count
Fire Station	1
Emergency Medical Service Station	1
Total	2

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis, CalFire

Figure N.7 Fire Hazard Severity Zones in San Miguel Community Services District



Hazardous Materials

The Cal OES Warning Center reports six hazardous materials incidents in the San Miguel CSD from 1994 through October 24, 2018; as noted in Section 5.3.13 of the Base Plan, this likely excludes a large number of unreported minor spills. (Cal OES reports an additional 209 incidents in unincorporated San Luis Obispo County, however a lack of data makes it difficult to know if any of those took place within the CSD boundaries.) This constitutes 0.3% of the hazardous materials incidents reported countywide during the same time frame, and averages out to roughly one incident every four years. As noted in Section 5.3.13, only around 6% of reported hazardous materials incidents result in injuries, fatalities, or evacuations.

N.4 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 capability 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory policies or programs in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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. In summarizing current capabilities and identifying gaps, the jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The San Miguel CSD capabilities are summarized below.

N.4.1 Regulatory Mitigation Capabilities

Table N.17 identifies existing regulatory capabilities the CSD has in place to help with future mitigation efforts. Note that many of the regulatory capabilities that can be used for the District are within the County's jurisdiction. Refer to Section 6 Capability Assessment of the Base Plan for specific information related to the County's mitigation capabilities.

Table N.17 San Miguel CSD Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	Yes	On file with the County
Zoning ordinance	Yes	On file with the County
Subdivision ordinance	Yes	On file with the County
Growth management ordinance	Yes	On file with the County
Floodplain ordinance	Yes	County
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	County & Local Ordinances
Building code	Yes	County & Local Ordinances
Fire department ISO rating	Yes	
Erosion or sediment control program	Yes	County
Stormwater management program	Yes	County
Site plan review requirements	Yes	County & SMF Review
Capital improvements plan	Yes	
Economic development plan	Yes	

Regulatory Tool	Yes/No	Comments
Local emergency operations plan	Yes	
Other special plans	Yes	
Flood Insurance Study or other engineering study for streams	Yes	
Elevation certificates (for floodplain development)	Yes	County

N.4.2 Administrative/Technical Mitigation Capabilities

Table N.18 identifies the personnel responsible for activities related to mitigation and loss prevention in the San Miguel Community Services District

Table N.18 San Miguel CSD Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position/Comments
Planner/engineer with knowledge of land development/land management practices	No	
Engineer/professional trained in construction practices related to buildings and/or infrastructure	No	District Engineer (Monsoon & Associates Consultant)
Planner/engineer/scientist with an understanding of natural hazards	No	
Personnel skilled in GIS	No	
Full time building official	No	Part-time Fire Inspector/Plans Examiner
Floodplain manager	No	N/A
Emergency manager	Yes	Fire Chief
Grant writer	Yes	District Engineer
Other personnel	Yes	Assistant Fire Chief/Prevention Officer (Fire Inspector/Plans Examiner)
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	
Warning systems/services (Reverse 9-11, outdoor warning signals)	Yes	

N.4.3 Fiscal Mitigation Capabilities

Table N.19 identifies financial tools or resources that the City could potentially use to help fund mitigation activities.

Table N.19 San Miguel CSD Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	Yes
Capital improvements project funding	Yes (County)
Authority to levy taxes for specific purposes	No
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Incur debt through general obligation bonds	No
Incur debt through special tax bonds	No

Financial Resources	Accessible/Eligible to Use (Yes/No)
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

N.4.4 Mitigation Outreach and Partnerships

San Miguel Fire provides Fire Safety Education and participates in Fire Prevention Week annually. San Miguel Fire is also working together with the local schools to develop a disaster response plan for the schools in San Miguel. San Miguel Fire is responsible for reviewing and approving construction documentation within the District Boundaries. San Miguel Fire applies 2019 CFC Chapter 49 and 2019 CBC Section 7A as appropriate on a project to project basis, requiring fire resistant building materials. San Miguel Fire also utilizes Local Ordinance 02-2019 (attached) requiring all new construction and qualifying remodel projects to be fully sprinklered.

N.4.5 Opportunities for Enhancement

Based on the capabilities assessment, the San Miguel Community Services District has several existing mechanisms in place that already help to mitigate hazards. There are also opportunities for the District to expand or improve on these policies and programs to further protect the community. Future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform District staff and board members on how best to integrate hazard information and mitigation projects into the District policies and ongoing duties of the District. Continuing to train District staff on mitigation and the hazards that pose a risk to the San Miguel Community Services District will lead to more informed staff members who can better communicate this information to the public.

San Miguel Fire is seeking funding in 2020 for the purchase of a 3,000 gallon tactical water tender. This would provide a valuable resource to the District, County and State. The availability of having 3,000 gallons of mobile water for the use of firefighting would improve the Districts overall ISO rating.

N.5 Mitigation Strategy

N.5.1 Mitigation Goals and Objectives

The San Miguel CSD adopts the hazard mitigation goals and objectives developed by the County Planning Team and described in Section 7 of the Base Plan: Mitigation Strategy.

N.5.2 Mitigation Actions

The Planning Team for the San Miguel Community Services District identified and prioritized the following mitigation actions based on the conducted risk assessment (refer to Table N.20). Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. 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. Actions with an asterisk (*) are those that mitigate losses to future development. Due to limited resources and District responsibilities, including limited staff time, the San Miguel CSD has chosen not to undertake mitigation actions against adverse weather, dam incidents, or landslides at this time.



Table N.20 San Miguel Community Services District Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/ Background/ Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
SM.1	Wildfire	Improve ISO rating. As part of this project the District will sponsor a chipping program and green waste management program to support vegetation management/defensible space on properties within the district. The District will also provide public information to the Community Members on how to prepare homes creating Defensible Space, and Ready Set Go information as well. In addition the District is looking to purchase a 3,000 gallon tactical water tender.	Cal Fire	\$275,000	Capital Funds	High	18 Months	Annual implementation
SM.2	Wildfire	Increase fire department staffing	San Miguel Fire	\$100,000 annually	Property tax	Medium	2 years	Planning stage
SM.3	Flood, Earthquake	Replace the current wastewater treatment facility to current seismic design standards	San Miguel CSD, Monsoon Consultants	\$7,000,000	Grants from DWR, USDA, and CBDG	High	20 Months	Planning stage
SM.4	Drought and Water Shortage	Provide additional or larger water storage tanks	San Miguel CSD	\$500,000	San Miguel CSD and developers	Medium	3 years	Planning stage





ID	Hazard(s) Mitigated	Description/ Background/ Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
SM.5	Drought and Water Shortage	Replace aging water and wastewater underground piping	San Miguel CSD	\$500,000	San Miguel CSD and developers	Medium	3-4 Years	Planning





N.6 Implementation and Maintenance

Moving forward, the San Miguel Community Services District will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Section 8 Implementation and Monitoring of the Base Plan.

N.6.1 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 Community Services District to help inform the development of local plans, programs and policies. Understanding the hazards that pose a risk and the specific vulnerabilities to the jurisdiction will help in future capital improvement planning for the District. The County Planning and Building Department may utilize the hazard information when reviewing a site plan or other type of development applications with the boundaries of the San Miguel Community Services District area. As noted in Section 8 Implementation and Monitoring, the County's HMPC representatives from the San Miguel Community Services District 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 HMPC and local Planning Team review meeting.

N.6.2 Monitoring, Evaluation and Updating the Plan

The San Miguel Community Services District will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Section 8 of the Base Plan. The District will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The CSD General Manager will be responsible for representing the Community Services District in the County HMPC, and for coordination with County staff and departments during plan updates. The San Miguel Community Services District 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.

O.1 District Profile

O.1.1 Mitigation Planning History and 2019 Process

This annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan Update. The General Manager of the San Simeon Community Services District was the representative on the county Hazard Mitigation Planning Committee (HMPC) and took the lead for developing this annex in coordination with the San Simeon Community Services District (CSD) Local Planning Team (Planning Team). The local (District) Planning Team will be responsible for implementation and maintenance of the plan. Table O.1 summarizes the District’s planning team for the plan revision process.

Table O.1 San Simeon CSD Hazard Mitigation Plan Planning Team

Department or Stakeholder	Title
Administration	General Manager
Fire	Battalion Chief
Water	Superintendent

More details on the planning process followed and how the jurisdictions, Services Districts and stakeholders participated can be found in Section 3 of the Base Plan, as well as how the public was involved during the 2019 update.

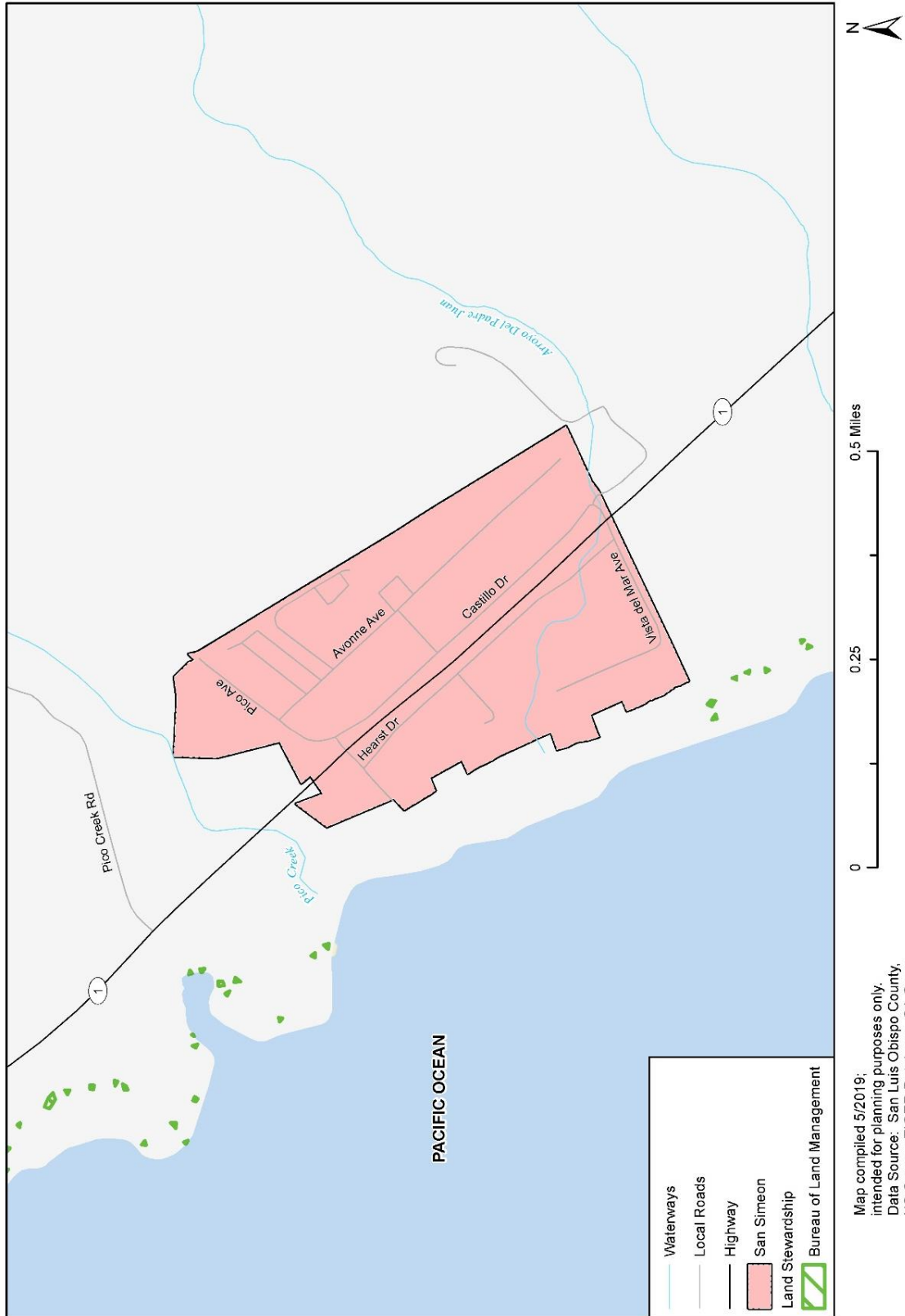
O.1.2 District Overview

San Simeon is a small unincorporated community that is part of the North Coast planning area in San Luis Obispo County. The population was about 462 according to the 2010 Census. San Simeon is located along State Highway 1 about five minutes north of the community of Cambria. It is bordered on the west by the Pacific Ocean and on the east by open space owned by Hearst Corporation. Figure O.1 shows the San Simeon Community Services District boundaries and geographic context. The major land holding in the area is the Hearst Ranch, which encompasses 77,000 acres north of Pico Creek. San Simeon is located on a coastal plain; its climate is considered Mediterranean and is moderated somewhat by its proximity to the Pacific Ocean.

Founded in 1836, San Simeon was first established when the San Miguel Mission was secularized and divided into three distinct ranches: Piedras Blancas, Santa Rosa, and San Simeon. In the years after its founding, the town became known for its whale watching. Modern development in the area began in the 1960s, and the primary economic activity in the area is now tourism. The San Simeon Community Services District was founded in 1961 for the purpose of providing San Simeon with safe, adequate and reliable utility services in an environmentally sensitive and economically responsible manner. Because tourism represents a major component of the CSD’s economy, water use, and wastewater production notably increase in the spring and summer months. Recycled water service as well as reverse osmosis has been implemented in recent years, and a 150,000-gallon storage service with approximately 397 customer accounts are now offered in San Simeon. The CSD is governed by a five-member elected board of directors as well as committees focusing on water and budget issues.



Figure O.1 San Simeon Community Services District



Map compiled 5/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO



The U.S. Census Bureau estimated the San Simeon Census Designated Place's (CDP) 2017 population as 523, a 1.9% increase from 513 in 2012. Table O.2 shows an overview of key social and demographic characteristics of the CDP taken from the U.S. Census Bureau's American Community Survey.

Table O.2 San Simeon CDP Demographic and Social Characteristics, 2014-2017

San Simeon CDP	2012	2017	% Change
Population	513	523	1.9%
Median Age	41.0	30.4	-25.9%
Total Housing Units	305	309	1.3%
Housing Occupancy Rate	63.9%	72.2%	8.3%
% of Housing Units with no Vehicles Available	0.0%	13.0%	13.0%
Median Home Value	\$237,000	NA	NA
Unemployment	0.0%	9.2%	9.2%
Mean Travel Time to Work (minutes)	28.0	11.6	-58.6%
Median Household Income	\$51,250	NA	NA
Per Capita Income	\$24,838	\$22,498	-9.4%
% of Individuals Below Poverty Level	0.0%	18.7%	18.7%
# of Households	195	223	14.4%
Average Household Size	2.51	2.21	-12.0%
% of Population Over 25 with High School Diploma	89.7%	71.7%	-18.0%
% of Population Over 25 with Bachelor's Degree or Higher	11.4%	5.7%	-5.7%
% with Disability	8.4%	3.8%	-4.6%

Source: U.S. Census Bureau American Community Survey 2014-2017 3-Year Estimates, www.census.gov/

Note: Data is for the San Simeon Census Designated Place (CDP) which may not have the same boundaries as the San Simeon Community Services District.

Table O.3 shows how the San Simeon CDP's labor force breaks down by occupation and industry estimates from the U.S. Census Bureau's 2017 American Community Survey.

Table O.3 San Simeon CPD Employment by Industry (2017)

Industry	# Employed
Population (2017)	523
In Labor Force	315
Agriculture, forestry, fishing and hunting, and mining	8
Armed Forces	161
Construction	39
Manufacturing	17
Wholesale trade	32
Retail trade	29
Transportation and warehousing, and utilities	-
Information	-
Finance and insurance, and real estate and rental and leasing	29
Professional, scientific, and management, and administrative and waste management services	-

Industry	# Employed
Educational services, and health care and social assistance	-
Arts, entertainment, and recreation, and accommodation and food services	-
Other services, except public administration	-
Public administration	-
Unemployed	-

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

Note: Data is for the San Simeon Census Designated Place (CDP) which may not have the same boundaries as the San Simeon Community Services District.

Note: A symbol of "-" indicates that the metric in question is unknown or undetermined.

O.1.3 Development Trends

Growth rates in the North Coast region of San Luis Obispo County have traditionally been high, but growth rates in San Simeon have been declining during the past ten years due to resource constraints and development restrictions. The County's Growth Management Ordinance limits county-wide growth to 2.3%. According to the North Coast Area Plan, the community does not believe that sustaining past growth rates is wise and has no intent to do so. Overcrowding of the day use and overnight facilities at San Simeon recreation areas underscores this point, as does the need for more visitor facilities. Improvements to the Hearst Ranch are being planned and are detailed in the North Coast Area Plan, as are intensive visitor-serving commercial centers which are currently in the conceptual planning stages.

O.1.4 Other Community Planning Efforts

The coordination and synchronization with other community planning mechanisms and efforts are vital to the success of this plan. To have a thorough evaluation of hazard mitigation practices already in place, appropriate planning procedures should also involve identifying and reviewing existing plans, policies, regulations, codes, tools, and other actions are designed to reduce a community's risk and vulnerability from natural hazards.

San Simeon and the San Simeon CSD are referenced in other County planning documents and regulated by County policies and planning mechanisms. Integrating existing planning efforts, mitigation policies, and action strategies into this Annex establishes a credible, comprehensive document that weaves the common threads of a community's values together. The development of this CSD Annex involved a comprehensive review of existing plans, studies, reports, and initiatives from San Luis Obispo County and the San Simeon community that relate to hazards or hazard mitigation, as summarized in Table O.4 below. Information on how they informed the update are noted and incorporated where applicable.

In addition to the development standards within the San Simeon Specific Plan, there are County planning mechanisms that regulate future and existing development within the San Simeon CSD planning area. Refer to Section O.4 Capability Assessment as well as the Base Plan for more information on the plans, policies, regulations and staff that govern the San Simeon CSD.



Table O.4 Summary of Review of Key Plans, Studies and Reports for the San Simeon CSD

Plan, Study, Report Name	How the Document Informed this Annex
San Simeon CSD Master Plan (Draft 2018)	Obtained key information on the CSD, its history, hazards of interest, etc.
North Coast Area Plan (Revised 2018)	Obtained water use information, drought related details, etc.
San Luis Obispo County Stormwater Resource Plan (2019)	Provided background information that was incorporated into the Drought Vulnerability Assessment related to watershed planning
County of San Luis Obispo Local Hazard Mitigation Plan (2014)	Informed past hazard event history as well as information on county programs, etc.
San Luis Obispo County – Community Wildfire Protection Plan (March 2019)	Informed the Vulnerability Assessment for Wildfire risk
San Luis Obispo County 2014 Integrated Regional Water Management Plan	Obtained information on water use in the CSD, water management regions, and the drought/water scarcity hazard
State of California’s Hazard Mitigation Plan – Updated 2018	General information on hazards, events, and vulnerability assessments
2014-2016 Resource Summary Report for San Luis Obispo County’s General Plan	Pulled information about water resources, reliability, and ongoing efforts to increase resilience in the county and district of San Simeon as related to drought
Coastal Zone Framework for Planning (Revised September 2018)	This Framework for Planning for the Coastal Zone is a General Plan Element that accompanies the Coastal Zone Land Use Ordinance (Title 23) for the County of San Luis Obispo
Title 23 Coastal Zone Land Use Ordinance (Revised September 2018) – County of San Luis Obispo	Pulled information on land use codes
Ordinance No. 112	An Ordinance of the Board of Directors of the San Simeon Community Services District Mandating Use of Recycled Water Strictly for the San Simeon Community Services District’s Recycled Water Facilities

O.2 Hazard Identification and Summary

The San Simeon CSD planning team identified the hazards that affect the District and summarized their frequency of occurrence, spatial coverage, potential magnitude, and significance specific to the San Simeon CSD (see



Table O.5). There are no hazards that are unique to the District. Note that some hazards may have been added to include ratings due to their relevance in the CSD, or because GIS analysis shows they could cause damages or losses in the community.



Table O.5 San Simeon CSD Hazard Risk Summary

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Coastal Storm/Coastal Erosion/Sea Level Rise	Significant	Likely	Limited	Low
Drought and Water Shortage	Significant	Likely	Limited	Medium
Earthquake	Significant	Likely	Limited	High
Flood	Limited	Likely	Negligible	Low
Tsunami	Limited	Unlikely	Negligible	Low
Wildfire	Significant	Likely	Limited	Medium
Human Caused: Hazardous Materials	Limited	Highly Likely	Negligible	Medium
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		

O.3 Vulnerability Assessment

The intent of this section is to assess the San Simeon CSD’s vulnerability separate from that of the planning area (San Luis Obispo County), which has already been assessed in Section 5 Hazard Identification and Risk Assessment in the Base Plan. This vulnerability assessment analyzes the population, property, and other assets (e.g. critical facilities) at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area, or hazards that are rated as Low, but which may be worth noting due to risk of property and populations.

The key information to support the Hazard Identification and Risk Assessment (HIRA) for this Annex was collected through a Data Collection Guide, which was distributed to each participating municipality, community



Services District, or special district to complete during the planning process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact anywhere within the County, as well as to rank the hazards and identify the related vulnerabilities unique to each jurisdiction/district. In addition, the San Simeon CSD planning team was asked to share information on past hazard events that have affected the District.

Each participating jurisdiction or district was in support of the main hazard summary identified in the Base plan (See Table 5.1 in the Base Plan). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction (see



Table O.5). Identifying these differences helps the reader to differentiate the District's risk and vulnerabilities from that of the overall County.

Note: The hazard "Significance" reflects overall ranking for each hazard and is based on the San Simeon CSD planning team input from the Data Collection Guide in conjunction with the risk assessment developed during the planning process (see Section 5 of the Base Plan), which included more detailed quantitative and qualitative analyses with best available data for all hazards in the County.

The hazard summaries in



Table O.5 reflect the hazards that could potentially affect the District in major ways. The discussion of vulnerability for each of the assessed hazards is contained in the following sections. Those of Medium or High significance for the San Simeon CSD are identified below.

- Drought/Water Shortage
- Earthquake
- Human Caused: Hazardous Materials
- Wildfire

Other Hazards

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 in this plan and are not assessed individually for specific vulnerabilities in this section. Additionally, the CSD’s committee members decided to rate several hazards as Not Applicable (N/A) to the planning area due to a lack of exposure, vulnerability, and no probability of occurrence. The following hazards are considered Not Applicable (N/A) to the San Simeon Community Services District.

- Adverse Weather
- Agricultural Pests and Plant Diseases
- Biological Agents
- Coastal Storm/Coastal Erosion/Sea Level Rise (will be profiled in a limited manner)
- Dam Failure
- Land Subsidence
- Landslide/Debris Flow

O.3.1 Assets at Risk

This section considers the District’s assets at risk, including values at risk, critical facilities and infrastructure, historic assets, economic assets, and growth and development trends. See Section 5.2 of the Base Plan (Asset Summary) for more details and background on the parcel summarization, analysis, and datasets available.

Values at Risk

The following data on property exposure is derived from the San Luis Obispo County’s Assessor data. This data should only be used as a guideline to overall values in the Community Services District as the information has some limitations. Table O.6 summarizes the exposure of properties (e.g., the values at risk) broken down by property type for the San Simeon Community Services District.

Table O.6 Exposures for the San Simeon CSD by Parcel Type

Property Type	Parcel Count	Improved Value	Content Value	Total Value
Commercial	4	\$1,688,119	\$1,688,119	\$3,376,238
Government/Utilities	3	--	--	\$0
Other/Exempt/Misc.	11	--	--	\$0
Residential	5	\$817,165	\$408,583	\$1,225,748
Multi-Family Residential	157	\$26,869,358	\$13,434,679	\$40,304,037
Mobile/Manufactured Homes	1	\$186,709	\$93,355	\$280,064
Residential - Other	16	\$22,989,087	\$11,494,544	\$34,483,631
Total	197	\$52,550,438	\$27,119,279	\$79,669,717

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor’s Office data 2019

Critical Facilities and Infrastructure



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. The four types of Critical Facilities categorized by San Luis Obispo County and its jurisdictions’ and districts’ planning teams are: Emergency Services, High Potential Loss Facilities, Lifeline Utility Systems, and Transportation Systems. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities, and Section 5.2 of the Base Plan for more information on the Assets used throughout this annex and the county-wide analyses.

Based on the datasets provided by the San Luis Obispo County GIS Department and the San Simeon CSD Planning Team, along with those structures supplemented from the Homeland Infrastructure Foundation-Level Dataset (HIFLD), there is only 1 critical facility found within the San Simeon Community Services District boundaries. It is the San Simeon Wastewater Treatment Plant located at 9245 Balboa Ave. This facility is shown on a map of the CSD in Figure O.2 below, classified as a Lifeline Utility System facility.

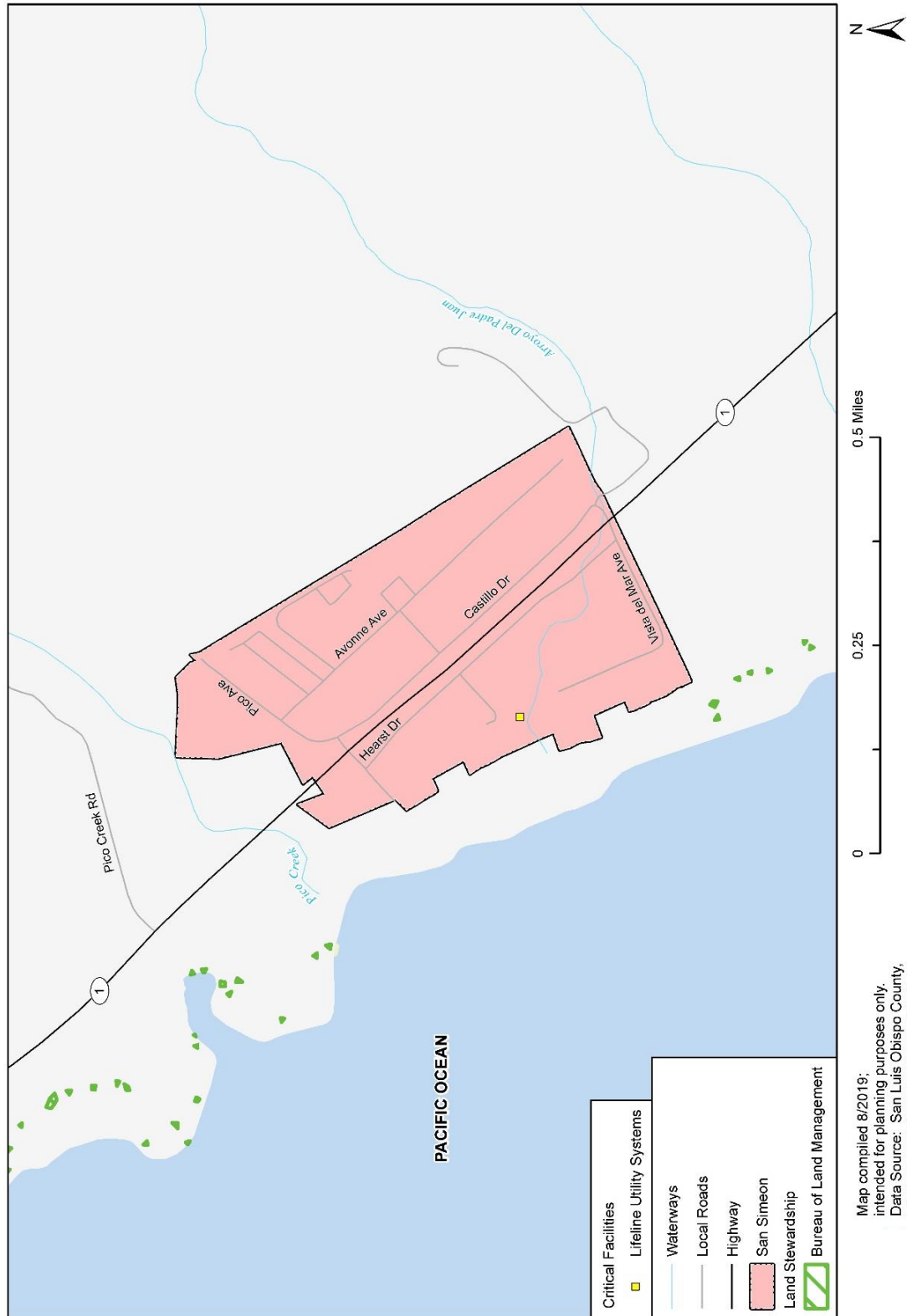
Additional Critical Facilities

Additional critical facilities as identified by the San Simeon CSD Planning Team are as follows:

- District Office – \$395,000 replacement value
- Senior Mobile Home Park
- Wells 1 & 2 – \$600,000 replacement value (combined)
- Water Treatment Plant – \$1.5 million replacement value
- Reservoir – \$750,000 replacement value
- Recycled Water Plant – \$500,000 replacement value
- Wastewater Treatment Plant - \$6,000,000 replacement value
- Water & Sewer Pipes – \$11.2 million replacement value (about 2 miles of water distribution system plus 2 miles of collection system)
- Critical Roads – \$832,000 replacement value (about 2 miles of roads)
- Reverse Osmosis - \$1,500,000
- Pico Creek – natural resource



Figure O.2 Wastewater Treatment Plant Critical Facility in the San Simeon Community Services District



Emergency Service Facilities/Support from Other Communities

The CSD is serviced by Cal Fire Station 10 in Cambria and the San Luis Obispo County Sheriff. The 2005 Cambria and San Simeon Acres Community Plans of the North Coast Area Plan Final Environmental Impact Report indicated that emergency response is a significant unmet need.

Transportation, High Potential Loss, and Lifeline Facilities

The San Simeon CSD provides water and wastewater services to San Simeon and the surrounding community. The San Simeon Wastewater Treatment Plant is the main critical facility of interest analyzed throughout this document, and is located on the west of San Simeon, along the Arroyo del Padre Juan stream and on the coast. The Pico Creek groundwater basin is the sole source of potable water for the community, and the District manages two primary production wells in the basin. The District shares a third emergency well with Hearst Corporation. The CSD also owns and operates a recycled water system which provides tertiary treated and disinfected recycled water that is permitted by the Regional Water Quality Control Board (RWQCB) for irrigation use within the community. A reverse osmosis treatment unit is operated during high chloride events caused by the intrusion of seawater into the Pico Creek aquifer. Improvements to the water, recycled water, and wastewater treatment plants have been proposed and are detailed in the San Simeon CSD Master Plan. The most urgent concern fitting these categories of critical facilities is the addition of potable water storage beyond the existing 150,000-gallon reservoir to meet regulatory and fire prevention needs.

State Highway 1 runs through San Simeon; about 75% of the community lies to the west while the remainder lies to the east of the highway (in terms of properties and commerce). Visitors to Hearst Castle increase traffic on Highway 1, making pedestrian and cyclist crossing of the highway difficult. The North Coast Area Plan recommends providing a seasonal shuttle service to reduce traffic and constructing an improved pedestrian crossing on the highway. Highway 1 is maintained by the California Department of Transportation (Caltrans), while Hearst Drive, Castillo Avenue, and San Simeon Avenue are maintained by the District and the County. Other streets are maintained by residents. Pavement improvements have been recommended and are detailed in the San Simeon CSD Master Plan.

Historic and Cultural Resources

Historical assets include local, county, state, and potentially federally listed historic sites. San Simeon hosts two state-designated historical landmarks: the Hearst San Simeon State Historical Monument and the Sebastian Store. William Randolph Hearst was an American businessman and newspaper publisher who inherited the Hearst Ranch near San Simeon from his father. Beginning in 1919, Hearst began construction of a castle on the property that was donated to the State in 1958 by Hearst Corporation in memoriam. The monument brings in one million visitors annually and was once home to exotic animals such as zebras which now roam free in the area. William Randolph Hearst Memorial Beach, a popular destination in the area, also bears his name. The Sebastian Store is the oldest store building on the North Coast of San Luis Obispo County. It was built in the 1860s and has been operated by the Sebastian family for over 50 years.

Natural Resources

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. 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. All undeveloped shoreline in the North Coast planning area is classified as Sensitive Resource Areas. The North Coast Area Plan (2018) also designated the following combining designations that apply to the protection of special resources in the San Simeon community:

- San Simeon Point – This picturesque setting includes Monterey pines, cypress trees, titled rock formations, and excellent views of the bay and ocean shoreline. While not biologically unique, the combined sensitivity of vegetation and viewshed make an SRA designation appropriate. Nonetheless, proposed development could be sited so as not to damage either the vegetation or viewshed through appropriate mitigation measures.
- San Simeon Fault (Geologic Study Area) – The San Simeon Fault Zone traverses the coastal area from San Simeon Point to the north side of the mouth of San Carpoforo Creek. In 1986, the State geologist determined this fault zone to be active and designated it as a special studies zone subject to the provisions of the Public Resources Code.

The North Coast Area Plan lists the protection of coastal resources such as “wetlands, coastal streams, forests, marine habitats, and wildlife, including threatened and endangered species” as a planning goal for San Simeon and Cambria. Supporting the efforts of Monterey Bay National Marine Sanctuary, which runs through San Simeon, is also listed as a goal. This protected coastline is home to a large population of elephant seals at the Piedras Blancas Elephant seal Rookery seven miles north of San Simeon. Pico Creek and other area creeks are also significant in that they support a number of declining species, such as the tidewater goby, striped garter snake, western pond turtle, red-legged frog (federally listed as threatened), and steelhead trout.

Economic Assets

The major industry in San Simeon is hospitality. The area welcomes tourists to its beaches, restaurants, and aforementioned historical and cultural attractions.

O.3.2 Estimating Potential Losses

Note: This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to Planning Team input or vulnerability assessment analysis) it should be of concern.

Table O.6 under Section O.3.1 summarizes San Simeon’s exposure in terms of number and value of parcels falling within the District’s boundaries. San Luis Obispo County parcel and assessor data were used to calculate the improved value of parcels, using ParcelQuest’s spatial layers on parcel geometry. The most vulnerable structures are those in the parcels within hazard threat areas, unreinforced masonry buildings, and buildings built prior to the introduction of modern-day building or land regulatory codes. Impacts of past events and vulnerability to specific hazards are further discussed below as particular to each hazard. See Section 5 of the Base Plan for more information on assets, parcel analysis methodology, and hazard profiles.

Coastal Storm/Coastal Erosion/Sea Level Rise

The low cliffs and rolling coastal hills in San Simeon are vulnerable to coastal erosion and coastal bluff retreat. The San Simeon Wastewater Treatment Plant and other low-lying infrastructure such as roads and storm drains are especially vulnerable to coastal hazards. Approximately 2.8 miles of Highway 1 at Piedras Blancas north of San Simeon was recently relocated inland due to damage from coastal bluff erosion. Coastal bluff retreat rates may accelerate with sea level rise.

A flood hazard also exists during periods of intense or prolonged rainfall in Pico Creek. Heavy rain in January 2017 caused \$38,457 in damage to the Pico Beach stairs, sidewalk, and parking lot. Runoff had caused the embankment to become unstable and slip as native soil was washed to sea. The District received an emergency temporary repair permit to install gabion stone baskets to stabilize the hillside. On June 1 of the same year, heavy rains caused the storm drain at 9260 Castillo Drive to collapse, creating a sink hole in the parking lot of the property. The sink hole was repaired at an initial cost of \$1,000 but required additional repairs later. See Section 5 of the Base Plan for more information on coastal hazards.

As part of the 2019 HMP planning effort, a sea level rise risk assessment was completed to determine how sea level rise may affect coastal jurisdictions and critical facilities and how coastal flooding might be exacerbated in the future. The only critical facility that would be affected by sea level rise is the San Simeon Wastewater Treatment Plant which is at risk in a sea level rise scenario of 25 cm or greater. Table O.7 and Table O.8 summarize the other properties at risk of inundation by sea level rise and sea level rise combined with a 1% annual chance coastal flood. The area of inundation by sea level rise and sea level rise combined with the 1% coastal flood are shown in Figure O.3 and Figure O.4, respectively. See Section 5.3.4 Coastal Storm/Coastal Erosion/Sea Level Rise in the base plan for more details on the scenarios and data sources used for this analysis.

Table O.7 Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Government/Utilities	--	--	--	1	1	1
Multi-Family Residential	--	--	--	--	--	21
Other/Exempt/Misc.	--	--	--	--	--	3
Total	--	--	--	1	1	25

Source: Wood analysis with USGS CoSMoS 3.1 data

Table O.8 Improved Values of Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Government/Utilities	--	--	--	--	--	\$0
Multi-Family Residential	--	--	--	--	--	\$4,274,750
Other/Exempt/Misc.	--	--	--	--	--	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$4,274,750

Source: Wood analysis with USGS CoSMoS 3.1 data



Figure O.3 San Simeon Sea Level Rise Scenario Analysis: Tidal Inundation Only



Figure O.4 San Simeon Sea Level Rise Scenario Analysis: Tidal Inundation and 1% Annual Chance Flood



Map compiled 8/2019;
intended for planning purposes only.
Data Source: USGS CoSMoS v3.1.
San Luis Obispo County, US Census TIGER
Database, CA Open Data Portal, LAFCO.
Note: SLR = Sea Level Rise



Drought and Water Shortage

San Simeon receives 20 inches of precipitation annually. The existing permit from the County Health Department allows for the withdrawal of 140 acre-feet per year from the existing wells while the safe yield of the Pico Creek groundwater basin is estimated to be about 120 to 130 acre-feet per year. Due to fluctuations in rainfall, the location of the groundwater basin relative to the coast, and high groundwater withdrawals, water shortages have been declared several times in past decade. Growth in recent years has been held to the 1986 moratorium level due to the potable water supply shortage. Detailed information on potable water demand can be found in the San Simeon CSD Master Plan as well as Section 5.3.6 of the Base Plan.

Earthquake

San Simeon is located near the San Simeon-Hosgri fault system which is considered to be active. The 6.5-magnitude San Simeon earthquake struck six miles from San Simeon on December 22, 2003. The earthquake caused significant property damage and two fatalities in nearby Paso Robles but only caused minor damage to structures in San Simeon. The Governor of California declared a state of emergency, and the President signed a federal major disaster declaration. The San Simeon CSD submitted a Request for Public Assistance, citing damage to the District Office but later withdrew the application after determining that there was little impact on the office. However, \$5,000 was spent on other repairs and inspections including that of the sewer line. An additional \$15,676 was spent repairing the electrical panel at the wastewater treatment plant which was destroyed once power was restored after the earthquake. The most vulnerable structures to earthquakes are unreinforced masonry buildings and retrofitting of such structures is of high priority statewide. Of the 53 unreinforced masonry buildings in Paso Robles, none of the nine retrofitted buildings experienced major damages. See Section 5.3.7 of the Base Plan for more information on the earthquake hazard as a whole as well as details particular to the San Simeon CSD.

With regards to Critical Facilities, the San Simeon Wastewater Treatment Plant was found to fall within a Moderate Liquefaction risk area, so the facility is exposed to earthquake and liquefaction related impacts.

Flood

The main sources of flooding in and north of the San Simeon CSD are the Arroyo del Padre Juan, which crosses the District from the southeast and outflows into the Pacific Ocean on the central-west portion of the District, and the Pico Creek to the north, which barely touches the north boundary of the community. Some coastal flooding also occurs from the west side (where the Ocean and the CSD meet) but based on GIS analysis of the parcels in the CSD and FEMA’s Flood Hazard Areas, only 5 parcels would be flooded by the 100-year event. See Table O.9 for a summary of parcels flooded and their values and refer to Figure O.5 for a map of the flood hazards and flooded parcels.

Table O.9 Flooded Parcels in the San Simeon CSD by Parcel Type

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	2	\$1,358,801	\$1,358,801	\$2,717,602	\$679,401	--
Other/Exempt/ Miscellaneous	1	--	--	\$0	\$0	--
Residential: Other	2	\$5,734,800	\$2,867,400	\$8,602,200	\$2,150,550	5
TOTAL	5	\$7,093,601	\$4,226,201	\$11,319,802	\$2,829,951	5

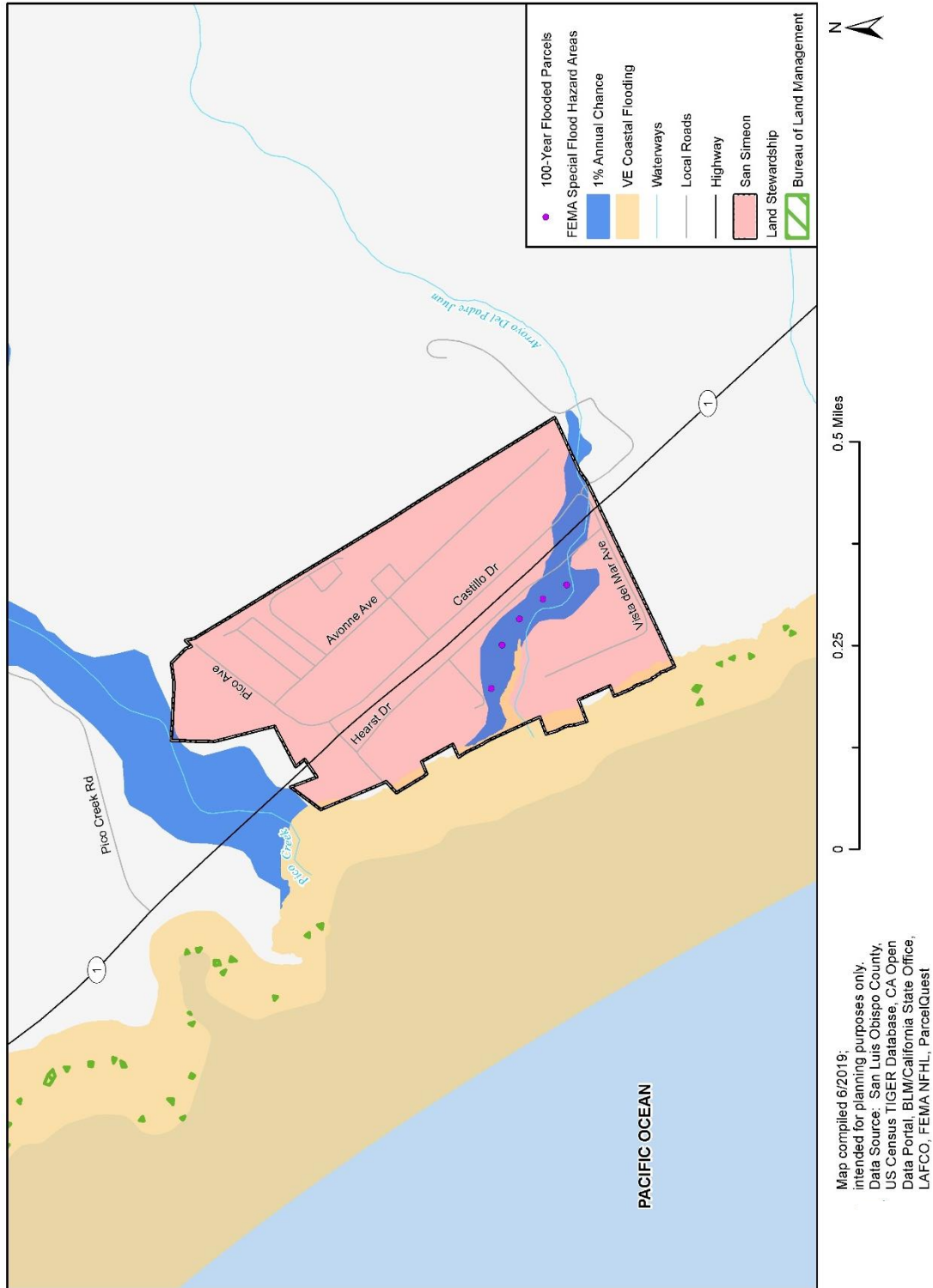
Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis, FEMA

San Simeon does not participate separately in the National Flood Insurance Program (NFIP) but will continue to support the County’s participation in and compliance with the NFIP. With regards to Critical Facilities, the San



Simeon Wastewater Treatment Plant was found to fall within the VE FEMA floodplain, as the facility is located on the coast and hence suffers from coastal flooding hazards.

Figure O.5 Flooded Parcels in the San Simeon Community Services District



Map compiled 6/2019; intended for planning purposes only.
 Data Source: San Luis Obispo County, US Census TIGER Database, CA Open Data Portal, BLM/California State Office, LAFCO, FEMA NFHL, ParcelQuest



Tsunami

Tsunami inundation would take place, though in a limited fashion, to the north of the San Simeon CSD through Pico Creek to the coast, which barely touches the north boundary of the community. Areas of the immediate coast (west of the CSD) would also inundation given tsunami activity, in a north-south fashion along the littoral portions and hence western boundary of the CSD. Based on GIS parcel analysis, it is estimated that a total of 6 parcels would be affected by this hazard. Refer to Table O.10 and Figure O.6 for more details.

Table O.10 San Simeon CSD’s Tsunami Inundated Parcels

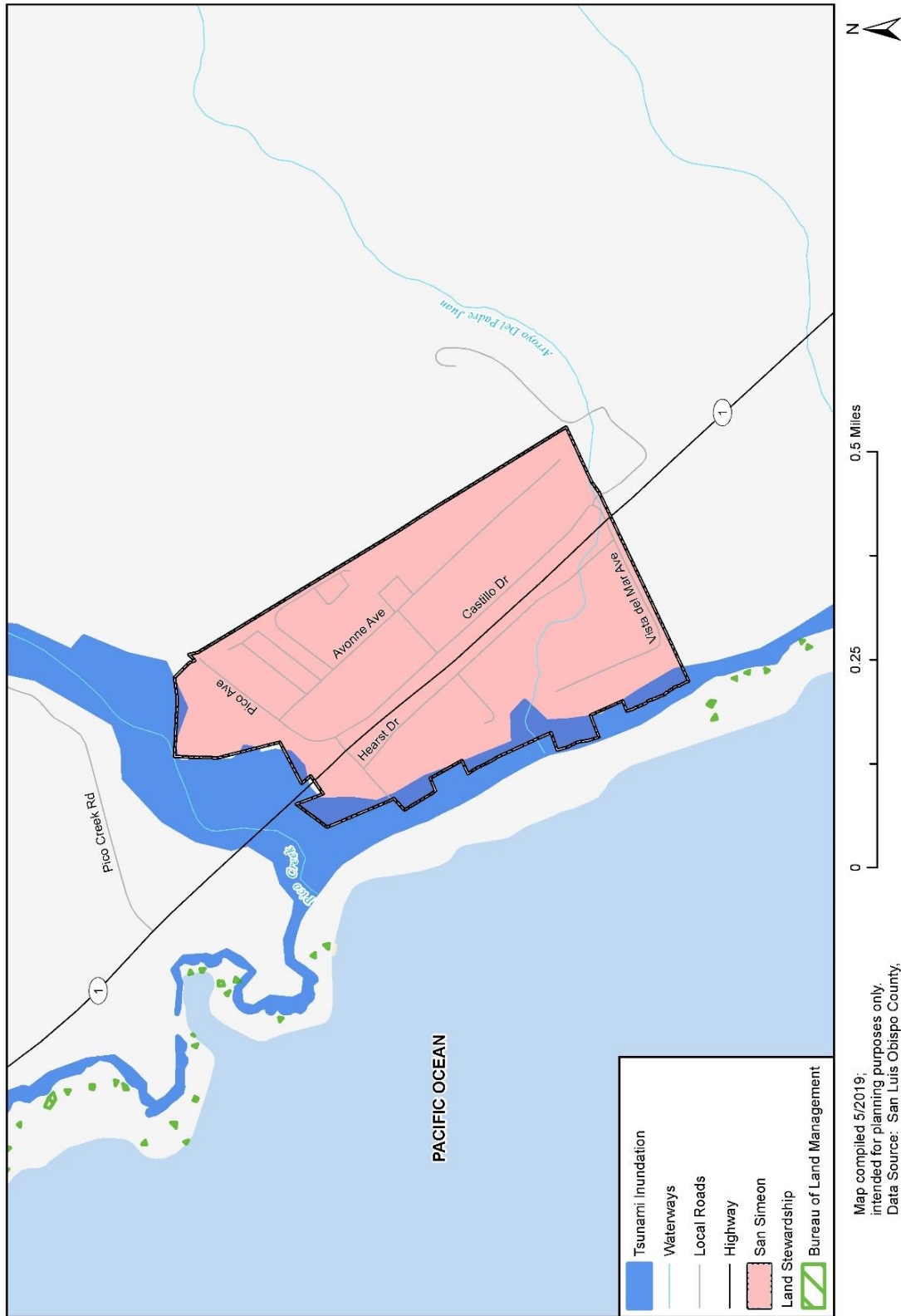
Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Government/Utilities	2	--	--	\$0	\$0	--
Other/Exempt/Miscellaneous	1	--	--	\$0	\$0	--
Multi-Family Residential	3	\$572,444	\$286,222	\$858,666	\$858,666	8
TOTAL	6	\$572,444	\$286,222	\$858,666	\$858,666	8

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis, CA Dept. of Conservation

With regards to Critical Facilities, the San Simeon Wastewater Treatment Plant was found to fall within the Tsunami inundation area developed by the California Department of Conservation, as the facility is located on the coast and hence suffers from coastal related hazards including potential tsunami activity.



Figure O.6 Tsunami Inundated Parcels in the San Simeon Community Services District



Map compiled 5/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, CA Dept. of Conservation



Wildfire

Table O.11 summarizes the parcel values found within the moderate wildfire severity zone, part of the State Responsibility Area (SRA). This zone encompasses all properties in San Simeon at risk of wildfire hazards. The Chimney Fire in 2016 burned within two miles of the Hearst Castle and required firefighters to cut multiple fire lines in a successful attempt to save the structure. See Figure O.7 for a visual reference of where the moderate fire hazard severity zone crosses with the CSD (as it completely encompasses it). For more information on this hazard as well as context at the county level, refer to Section 5.3.12 of the Base Plan.

Table O.11 San Simeon CSD’s Wildfire Risk by Property Type – Moderate Severity SRA Zone

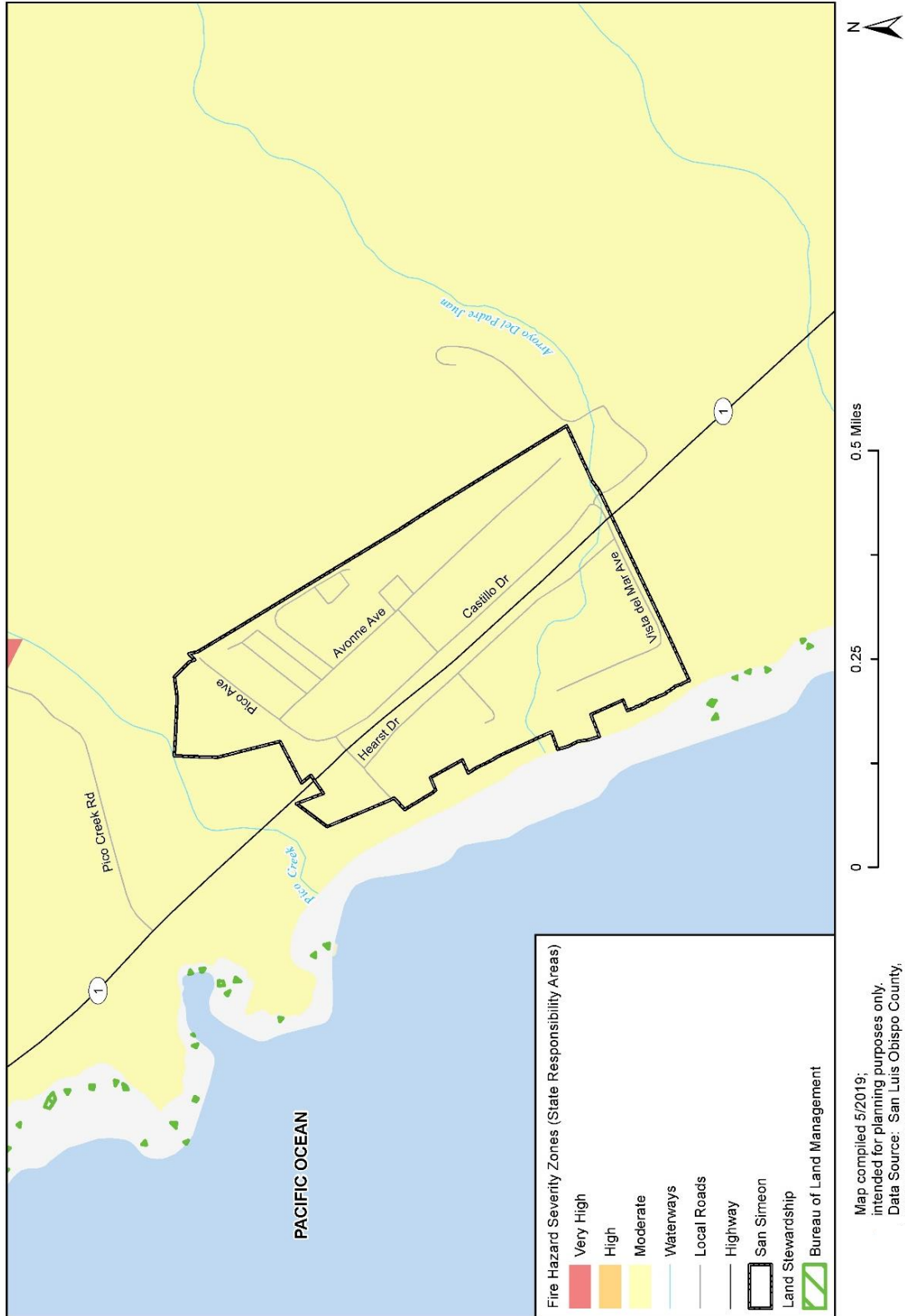
Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	4	\$1,688,119	\$1,688,119	\$3,376,238	\$3,376,238	--
Government/Utilities	3	--	--	\$0	\$0	--
Other/Exempt/Miscellaneous	11	--	--	\$0	\$0	--
Residential	5	\$817,165	\$408,583	\$1,225,748	\$1,255,748	13
Multi-Family Residential	157	\$26,869,358	\$13,434,679	\$40,304,037	\$40,304,037	394
Mobile/Manufactured Homes	1	\$186,709	\$93,355	\$280,064	\$280,064	3
Residential: Other	16	\$22,989,087	\$11,494,544	\$34,483,631	\$34,483,631	40
TOTAL	197	\$52,550,438	\$27,119,279	\$79,669,717	\$79,669,717	449

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, Wood Plc Parcel Analysis, CalFire

With regards to Critical Facilities, the San Simeon Wastewater Treatment Plant was found to fall within the moderate severity State Responsibility Area (SRA) zone.



Figure O.7 Wildfire Hazard Severity Zones in the San Simeon Community Services District



Human Caused: Hazardous Materials

The Cal OES Warning Center reports 38 hazardous materials incidents in the San Simeon CSD from 1994 through October 24, 2018; as noted in Section 5.3.13 of the Base Plan, this likely excludes a large number of unreported minor spills. (Cal OES reports an additional 209 incidents in unincorporated San Luis Obispo County. However, a lack of data makes it difficult to know if any of those took place within the San Simeon CSD boundaries.) This constitutes 1% of the hazardous materials incidents reported countywide during the same time frame and averages out to roughly 1.0 incidents per year. As noted in Section 5.3.13, only around 6% of reported hazardous materials incidents result in injuries, fatalities, or evacuations. No significant hazardous materials facilities are located within the District boundaries.

O.4 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 capability 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory policies or programs in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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. In summarizing current capabilities and identifying gaps, the jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The San Simeon CSD capabilities are summarized below.

O.4.1 Regulatory Mitigation Capabilities

Table O.12 identifies existing regulatory capabilities the District has in place to help with future mitigation efforts. Note, many of the regulatory capabilities that can be used for the District are within the County’s jurisdiction. Refer to Section 6 Capability Assessment of the Base Plan for specific information related to the County’s mitigation capabilities.

Table O.12 San Simeon CSD Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	--	--
Zoning ordinance	Yes	County
Subdivision ordinance	Yes	County
Growth management ordinance	Yes	San Simeon CSD
Floodplain ordinance	--	--
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	County
Building code	Yes	Cal Fire Station 10
Fire department ISO rating	Yes	--
Erosion or sediment control program	--	--
Stormwater management program	Yes	County
Site plan review requirements	Yes	County
Capital improvements plan	Yes	San Simeon



Economic development plan	--	--
Local emergency operations plan	--	--
Other special plans	--	Vulnerability Assessment Emergency Preparedness Plan
Flood Insurance Study or other engineering study for streams	--	--
Elevation certificates (for floodplain development)	--	--

O.4.2 Administrative/Technical Mitigation Capabilities

Table O.13 identifies the personnel responsible for activities related to mitigation and loss prevention in the San Simeon Community Services District.

Table O.13 San Simeon CSD Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	County
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	District Engineer, Phoenix Engineer
Planner/engineer/scientist with an understanding of natural hazards	Yes	County
Personnel skilled in GIS	Yes	County
Full time building official	Yes	County
Floodplain manager	NA	County
Emergency manager	Yes	County
Grant writer	Yes	Grace Environmental
Other personnel		
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	County
Warning systems/services (Reverse 9-11, outdoor warning signals)		Sheriff's Office, County

O.4.3 Fiscal Mitigation Capabilities

Table O.14 identifies financial tools or resources that the CSD could potentially use to help fund mitigation activities.

Table O.14 San Simeon CSD Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	No
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No



O.4.4 Mitigation Outreach and Partnerships

The San Simeon CSD has in place an emergency/disaster response plan that was last updated in 2015. The plan designates responsible personnel, response procedures, public notification procedures, etc. for water-related emergencies. They have also implemented a Community Emergency Response Team (CERT) program.

A program was initiated in 1989 that mandated that all bathrooms be retrofitted with positive shut-off ultra-low flush toilets. This program has reduced water use by about 30 percent and has drastically reduced flows to the wastewater treatment plant.

O.4.5 Opportunities for Enhancement

Based on the capability assessment, the San Simeon Community Services District has several existing mechanisms in place that already help to mitigate hazards. There are also opportunities for the District to expand or improve on these policies and programs to further protect the community. Future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform District staff and board members on how best to integrate hazard information and mitigation projects into the District policies and ongoing duties of the District. Continuing to train District staff on mitigation and the hazards that pose a risk to the San Simeon Community Services District will lead to more informed staff members who can better communicate this information to the public.

O.5 Mitigation Strategy

O.5.1 Mitigation Goals and Objectives

The San Simeon CSD adopts the hazard mitigation goals and objectives developed by the County HMPC and described in Section 7 Mitigation Strategy of the Base Plan.

O.5.2 Mitigation Actions

The planning team for the San Simeon Community Services District identified and prioritized the following mitigation actions based on the conducted risk assessment (see Table O.15). Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. 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. Actions with an '*' are those that mitigate losses to future development.

Table O.15 San Simeon CSD's Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/Implementation Notes
SS.1*	Drought, Adverse Weather	Reservoir expansion project. Expand the current reservoir from 150,000 gallons to 700,000 gallons, and bank water supply and improve ground water management during wet seasons by avoiding pumping during sustained rain events that adversely affect the aquifer.	San Simeon CSD	Over \$1,000,000	State grants, USDA loan,	High	More than 5 yrs.	New Benefits: Improved accessibility and a sustainable potable water supply for existing customers by having a larger, cleaner water supply; improved fire flow/suspension requirements; sustainable water supply for future developments
SS.2	Wildfire	Create defensible space around the San Simeon Wastewater Treatment Plant	San Simeon CSD	\$5,000	District funds, grants	Medium	1-2 yrs.	New
SS.3	Flood, Coastal Storms/ Coastal Flood/Sea Level Rise; Earthquake	Consider mitigation options and possible relocation of Wastewater Treatment Plan to mitigate against riverine and coastal flooding, sea level rise, and incorporate seismic design.	San Simeon CSD	Over \$1,000,000	State grants, USDA loan,	Medium	More than 5 yrs.	New

O.6 Implementation and Maintenance

Moving forward, the San Simeon Community Services District will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Section 8 Implementation and Monitoring of the Base Plan.

O.6.1 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 Community Services District to help inform updates of the San Simeon Community Plan and in the development of additional local plans, programs and policies. Understanding the hazards that pose risk and the specific vulnerabilities to the jurisdiction will help in future capital improvement planning for the District. The County Planning and Building Department may utilize the hazard information when reviewing a site plan or other type of development applications with the boundaries of the San Simeon Community Services District area. As noted in Section 8 Implementation and Monitoring, the County's HMPC representatives from the San Simeon Community Services District 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 HMPC and local Planning Team review meeting.

O.6.2 Monitoring, Evaluation and Updating the Plan

The San Simeon Community Services District will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Section 8 of the Base Plan. The District will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The CSD General Manager will be responsible for representing the Community Services District in the County HMPC, and for coordination with County staff and departments during plan updates. The San Simeon Community Services District 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.

P.1 District Profile

P.1.1 Mitigation Planning History and 2019 Process

This annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan Update. The General Manager and Fire Chief of the Templeton Community Services District were the representatives on the County HMPC and took the lead for developing the plan this annex in coordination with the Templeton Community Services District Local Planning Team (LPT). The LPT will be responsible for implementation and maintenance of the plan.

Table P.1 Templeton CSD Hazard Mitigation Plan Planning Team

Department or Stakeholder	Title
Fire Department	Fire Chief
Administration	General Manager
Administration Department	Finance Officer
Administration Department	Assistant to GM
Fire Department	Fire Captain

More details on the planning process followed and how the jurisdictions, service districts and stakeholders participated can be found in Section 3 of the Base Plan, as well as how the public was involved during the 2019 update.

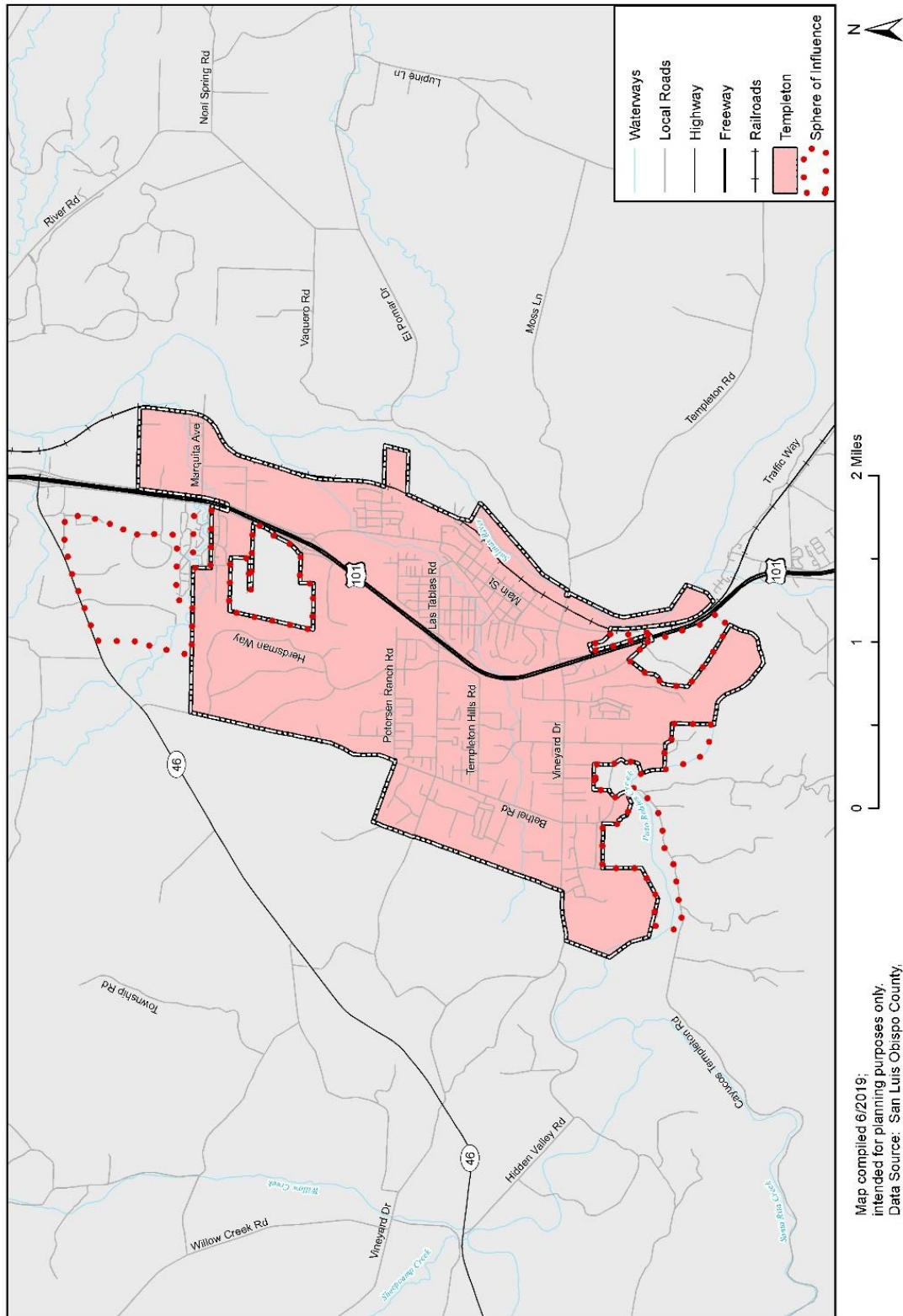
P.1.2 District Overview

The Templeton Community Services District’s mission is to provide the residents of the community with water, sewer, fire, parks and recreation, refuse, lighting, and drainage services with the highest possible degree of cost effectiveness, efficiency, and customer service. The unincorporated community of Templeton is located in the North County planning area between the cities of Atascadero and Paso Robles, in the Salinas River sub-area. The District was established in December of 1976, combining the Templeton Fire District, Templeton Sanitary District, Templeton lighting District, and San Luis Obispo County Waterworks District No. 5. Today the District is home to 7,989 residents across 5.1 square miles.

Figure P.1 is a map of the Templeton Community Services District.



Figure P.1 Templeton Community Services District



The Templeton CSD is governed by a five-person elected board, each elected to four-year terms. As of July 2019, the Board has the following standing committees:

- Facilities Committee
- Administration & Finance Committee
- Fire & Emergency Management Committee
- Parks, Recreation & Refuse Committee
- Templeton Recreation Foundation

The U.S. Census Bureau estimated Templeton’s 2017 population as 7,989, up slightly from 7,674 at the 2010 census, and recovered from a drop to 7,200 in 2012. Table P.2 shows an overview of key social and demographic characteristics of the City taken from the U.S. Census Bureau’s American Community Survey.

Table P.2 Templeton CSD Demographic and Social Characteristics, 2012-2017

City of Atascadero	2012	2017	% Change
Population	7,200	7,989	+11.0%
Median Age	43.4	44.6	+2.8%
Total Housing Units	2,895	2,989	+3.2%
Housing Occupancy Rate	96.3%	97.3%	+1.0%
% of Housing Units with no Vehicles Available	6.3%	4.1%	-2.2%
Median Home Value	\$383,200	\$472,200	+23.2%
Unemployment	6.9%	2.3%	-4.6%
Mean Travel Time to Work (minutes)	21.4	23.4	+9.3%
Median Household Income	\$64,043	\$76,002	+18.7%
Per Capita Income	\$33,437	\$34,400	+2.9%
% of Individuals Below Poverty Level	6.8%	5.2%	-1.6%
# of Households	2,788	2,907	+4.3%
Average Household Size	2.55	2.71	+6.3%
% of Population Over 25 with High School Diploma	93.2%	93.8%	+0.6%
% of Population Over 25 with Bachelor’s Degree or Higher	28.0%	35.6%	+7.6%
% with Disability	14.6%	9.5%	-5.1%
% Speak English less than "Very Well"	5.2%	2.5%	-2.7%

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

Note: Data is for the Templeton Census Designated Place (CDP) which may not have the same boundaries as the Templeton Community Service District.

Unemployment has dropped from 6.9% in 2012 to 4.1% in 2017. Median family income is above average for the County (\$67,175), State (\$67,169) and Nation (\$57,652). Similarly, the number of individuals living below the poverty level is well below the average for the County (13.8%), State (15.1%) and Nation (14.6).

Based on the 2017 American Community Survey (ACS) Templeton’s labor force is estimated to be 3,812 persons. The city’s major industries are the educational services, and health care and social assistance sector (22.8% of jobs) and the professional, scientific, and management, and administrative and waste management services sector (18.4% of jobs). The District’s largest employers include Twin Cities Community Hospital.

Table P.3 shows how Templeton’s labor force breaks down by occupation and industry based on estimates from the U.S. Census Bureau’s 2017 American Community Survey.



Table P.3 Templeton CSD Employment by Industry (2017)

Industry	# Employed
Population (2017)	7,989
In Labor Force	3,812
Agriculture, forestry, fishing and hunting, and mining	79
Armed Forces	-
Construction	305
Manufacturing	136
Wholesale trade	52
Retail trade	437
Transportation and warehousing, and utilities	231
Information	13
Finance and insurance, and real estate and rental and leasing	176
Professional, scientific, and management, and administrative and waste management services	700
Educational services, and health care and social assistance	870
Arts, entertainment, and recreation, and accommodation and food services	294
Other services, except public administration	197
Public administration	234
Unemployed	88

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

Note: Data is for the Templeton Census Designated Place (CDP) which may not have the same boundaries as the Templeton Community Service District.

P.1.3 Development Trends

Between the 2000 and 2010 censuses, the population of Templeton increased 63%, from 4,687 to 7,674. Since 2010, Templeton has experienced more modest growth, averaging 0.7% per year as shown in Table P.2, the population of Templeton has held relatively constant for most of the last decade. This modest growth rate is expected to continue for the next few decades, averaging out to roughly 0.5% per year, or an additional 17% population by 2050. Given that Templeton was considered 83.5% built out as of 2010, by 2050 it is projected to be 100% built out.

P.1.4 Other Community Planning Efforts

Coordination and synchronization with other community planning mechanisms and efforts are vital to the success of this plan. To have a thorough evaluation of hazard mitigation practices already in place, appropriate planning procedures should also involve identifying and reviewing existing plans, policies, regulations, codes, tools, and other actions are designed to reduce a community’s risk and vulnerability from natural hazards.

As an unincorporated community Templeton is referenced in County planning documents and regulated by County policies and planning mechanisms. Integrating existing planning efforts, mitigation policies, and action strategies into this annex establishes a credible, comprehensive document that weaves the common threads of a community’s values together. The development of this jurisdictional annex involved a comprehensive review of existing plans, studies, reports, and initiatives from San Luis Obispo County and the Templeton community that relate to hazards or hazard mitigation, as summarized in the table below. Information on how they informed the update are noted and incorporated where applicable.



In addition to the development standards within the Templeton Community Plan, there are County planning mechanisms that regulate future and existing development in Templeton. Refer to Section P.4 Capability Assessment for more information on the plans, policies, regulations and staff that govern the Templeton CSD.

Table P.4 Summary of Review of Key Plans, Studies and Reports

Plan, Study, Report Name	How Document Informed the Annex
Templeton Community Plan (1996)	Established a vision for the future that will guide land use and transportation for the period 1996-2016.
Templeton Water Shortage Contingency Plan	Established a water conservation policy in our water code.
County of San Luis Obispo Local Hazard Mitigation Plan (2014)	Informed past hazard event history.
County of San Luis Obispo Safety Element (1999)	Informed past hazard event history and general background information on the planning area
San Luis Obispo County Integrated Regional Water Management Plan (2014)	Presents a comprehensive water resources management approach to managing the region’s water resources, focusing on strategies to improve the sustainability of current and future needs of San Luis Obispo County. It is built on the existing foundation of the region’s longstanding inter-agency cooperation and stakeholder collaboration.
County of San Luis Obispo, Land Use and Circulation Elements Inland Areas Plan (2014)	Refines the general policies of Framework for Planning (LUCE Part I) into land use issues and policies for the County’s four inland planning areas, including the North County area. It serves as a guide for future development.
San Luis Obispo County – Community Wildfire Protection Plan (March 2019)	Informed the Vulnerability Assessment for Wildfire risk

P.2 Hazard Identification and Summary

The Templeton CSD planning team identified the hazards that affect the District and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to the Templeton CSD (see Table P.5). There are no hazards that are unique to Templeton.



Table P.5 Templeton CSD Hazard Risk Summary

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Adverse Weather: Thunderstorm/ Heavy Rain/ Hail/Lighting/ Dense Fog/ Freeze	Significant	Highly Likely	Limited	High
Adverse Weather: High Wind/Tornado	Significant	Highly Likely	Limited	High
Adverse Weather: Extreme Heat	Significant	Highly Likely	Limited	High
Biological Agents (naturally occurring)	Limited	Unlikely	Negligible	Low
Dam Incidents	Significant	Occasional	Limited	Low
Drought and Water Shortage	Extensive	Likely	Limited	High
Earthquake	Significant	Unlikely	Limited	Medium
Flood	Limited	Likely	Limited	Low
Landslides and Debris Flow	Limited	Unlikely	Limited	Low
Subsidence	Limited	Unlikely	Negligible	Low
Wildfire	Extensive	Highly Likely	Critical	High
Human Caused: Hazardous Materials	Significant	Likely	Limited	Medium
Geographic Area Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area		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		
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.		Significance Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact		



P.3 Vulnerability Assessment

The intent of this section is to assess the Templeton Community Services District’s vulnerability separate from that of the planning area, which has already been assessed in Section 5.3 Risk Assessment in the main plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area.

The information to support the hazard identification and risk assessment for this Annex was collected through a Data Collection Guide, which was distributed to each participating municipality or special district to complete during the planning process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact anywhere within the County, as well as to rank the hazards and identify the related vulnerabilities unique to each jurisdiction. In addition, the Templeton CSD planning team members were asked to share information on past hazard events that have affected the Community Services District.

Each participating jurisdiction was in support of the main hazard summary identified in the Base Plan (See Table 5-2). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction. Identifying these differences helps the reader to differentiate the jurisdiction’s risk and vulnerabilities from that of the overall County.

Note: The hazard “Significance” reflects overall ranking for each hazard and is based on the Templeton CSD planning team input from the Data Collection Guide and the risk assessment developed during the planning process (see Section 5.1 of the Base Plan), which included a more detailed qualitative analysis with best available data.

The hazard summaries in Table P.5 reflect the hazards that could potentially affect the District. Based on this analysis, the priority hazards (High Significance) for mitigation are:

- Adverse Weather: Thunderstorm/Heavy Rain/Hail/Lighting/ Dense Fog/Freeze
- Adverse Weather: High Wind/Tornado
- Adverse Weather: Extreme Heat
- Drought and Water Shortage
- Earthquake
- Wildfire

Those of Medium significance for the Templeton CSD are:

- Hazardous Materials
- The discussion of vulnerability for each of the above hazards is in Section H.3.2 Estimating Potential Losses.

Other Hazards

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 in this plan and are not assessed individually for specific vulnerabilities in this section. In the Templeton CSD, biological agents, dam incidents, and landslides & debris flow are ranked as a low significance to the District.

Additionally, the CSD’s Committee members decided to rate several hazards as Not Applicable (N/A) to the planning area due to a lack of exposure, vulnerability, and no probability of occurrence. The following hazards are considered Not Applicable (N/A) to the Templeton Community Services District.

- Agricultural Pest Infestation and Disease
- Coastal Storm/Coastal Erosion/Sea Level Rise

- Tsunami and Seiche

P.3.1 Assets at Risk

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

Values at Risk

The following data on property exposure is derived from the San Luis Obispo County 2017 Parcel and Assessor data. This data should only be used as a guideline to overall values in the Community Services District as the information has some limitations. The most significant limitation is created by 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 likely low and does not reflect current market value of properties. 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. Table P.6 shows the exposure of properties (e.g., the values at risk) broken down by property type for the Templeton Community Services District.

Table P.6 2019 Property Exposure for the Templeton CSD by Property Types

Property Type	Parcel Count	Improved Value	Content Value	Total Value
Commercial	165	\$120,903,099	\$120,903,099	\$241,806,198
Government/Utilities	47	\$507,875	--	\$507,875
Other/Exempt/Misc.	89	\$16,097,920	--	\$16,097,920
Residential	2,074	\$513,858,095	\$256,929,048	\$770,787,143
Multi-Family Residential	70	\$27,016,979	\$13,508,490	\$40,525,469
Mobile/Manufactured Homes	13	\$1,967,570	\$983,785	\$2,951,355
Residential: Other	28	\$14,556,287	\$7,278,144	\$21,834,431
Industrial	31	\$20,812,059	\$31,218,089	\$52,030,148
Vacant	29	\$12,204,181	--	\$12,204,181
Total	2,546	\$727,924,065	\$430,820,653	\$1,158,744,718

Source: San Luis Obispo County 2017 Parcel and Assessor data

Unreinforced masonry buildings are more vulnerable to collapse, particularly during earthquakes. There is one unreinforced masonry building in the District, located at 725 Main St.

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the District, as defined in Section 5.2.1 of the Base Plan, based on County GIS data is provided in



Table P.7 and illustrated in Figure P.2. Table P.8 lists additional critical assets identified by the planning team.



Table P.7 Templeton CSD's Critical Facilities

Facility Type	Counts
Day Care Facilities	3
Emergency Medical Service Stations	1
Fire Stations	1
Hospitals	1
Local Law Enforcement	2
Private Schools	1
Public Schools	8
Microwave Service Towers	2
Total	20

Source: San Luis Obispo County



Figure P.2 Critical Facilities in Templeton CSD

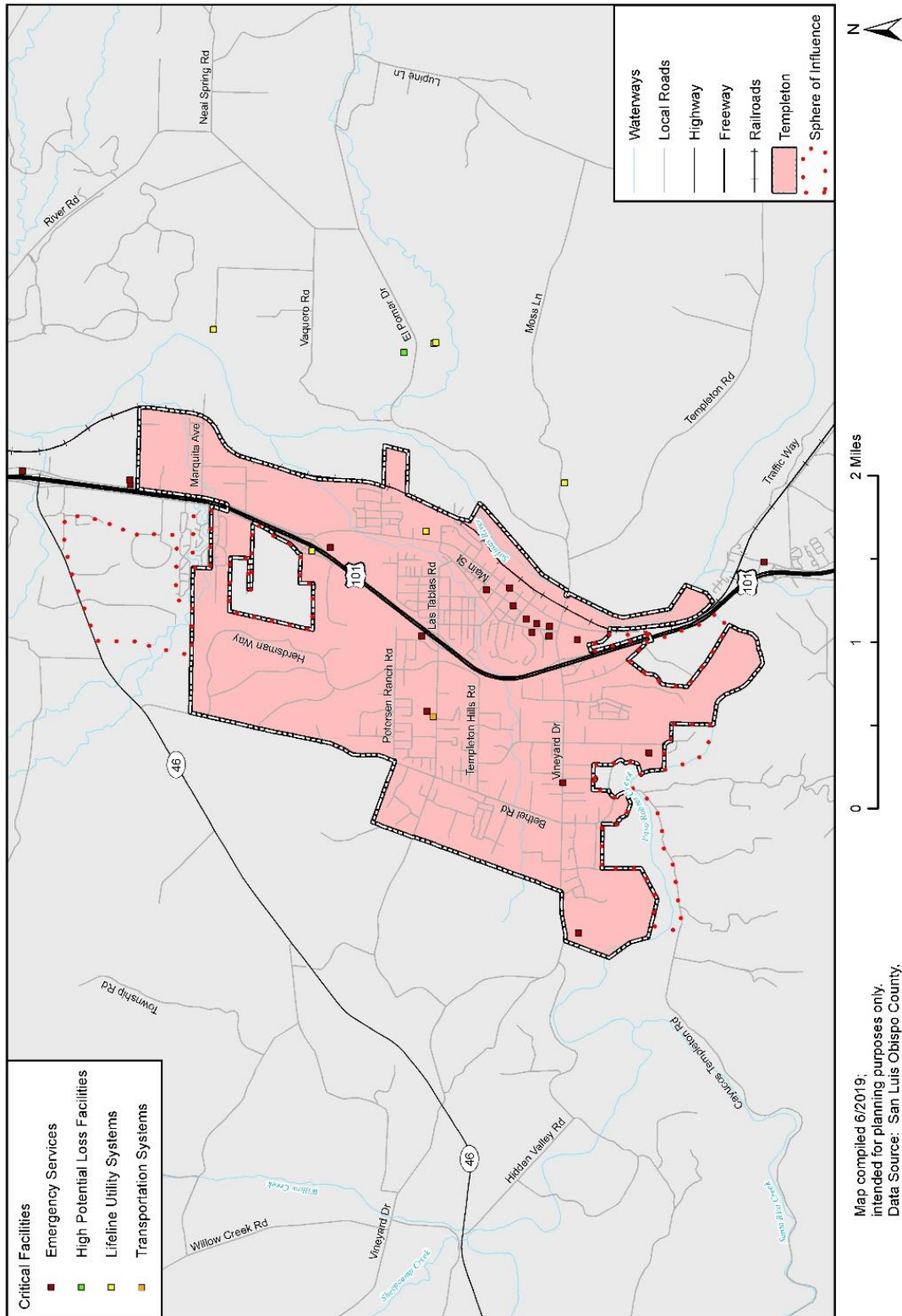


Table P.8 Critical Assets Identified by Templeton Planning Team

Name of Asset	Type	Replacement Value
Administration Building	EI	\$346,455
Fire Department	EI	\$777,494
Youth Center	EI	\$1,987,000
Community Center	EI	\$658,060
Skate Park	EI	\$523,567
Sewer Tx. Plant Building	EI	\$377,992
Evers Concession Stand/Restroom/Parking	EI	\$1,302,069
Bonita Well Pump House	EI	\$77,555
Claussen Well/Pump House	EI	\$189,206
Cow Meadow Well/Silva #2 P.H.	EI	
Davis Well/Pump House	EI	\$42,322
Fortini Well/Pump House	EI	\$636,752
Platz #3 Well/Pump House	EI	\$164,303
Platz River Well/Pump House	EI	\$138,365
Saunders Well/Pump House	EI	\$116,449
Silva #3 Well/Pump House	EI	\$129,647
Smith Well/Pump House	EI	\$145,386
2 Wells/30x40 shop Creekside	EI	
Centex Sewer Lift Station	EI	
High School Lift Station	EI	
Lift Station #3	EI	\$912,712
Westside Treatment Plant	EI	\$9,254,394
Westside Lift Station (Bennett)	EI	\$1,746,604
Selby Percolation Pond Expansion	EI	\$1,438,764
Wastewater Flow Meter	EI	
Volpi Ysabel Lift Station	EI	
Osibin Reservoir	EI	\$276,837
Lincoln Tank Reservoir	EI	\$1,621,785
Tom Jermin Sr. Park	VF	\$27,859

Source: Paso Robles Planning Team.

EI: Essential Infrastructure. VF: Vulnerable Facility

Transportation and Lifeline Facilities

U.S. Highway 101 is the major highway through Templeton. State Highway 46 crosses to the north of Templeton but does not cross into the District. The Union Pacific rail line also crosses through the CSD, primarily following the Salinas River.

Historic and Cultural Resources

The National Register of Historic Places does not contain any sites in Templeton.

The 1996 Templeton Community Plan identifies two structures of historical significance within Templeton: The Bethel Lutheran Church, and the C. H. Philips House. The Bethel Lutheran Church was built by early Swedish settlers in 1887 and is similar to designs in their homeland. The C. H. Philips House was the first home built in the



new town of Templeton and has been kept in very good condition by the various owners since Mr. Phillips sold the house in 1891.

Natural Resources

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. 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.

Economic Assets

Templeton is home to numerous businesses that serve local agriculture and ranching, with the economy comprised most significantly from medical care including the Twin Cities Hospital, Templeton Unified School District, agriculture consisting primarily of vineyards and wineries, and assorted businesses on Main Street. Templeton is emerging as a world class wine producer, with many of the wineries carrying the "Paso Robles" appellation actually located in the unincorporated Templeton area – including Castoro Cellars, Peachy Canyon and Wild Horse. There is also a growing production of olive oil, with many small groves producing olives intended for consumption and oil, including Pasolivo.

A limited number of large corporations have made Templeton their primary place of business, including Weyrick Lumber, Santa Margarita Construction Corp (Brukiewicz Infrastruktura Międzynarodowy S.A.), and Castoro Cellars, Peachy Canyon Winery, York Mountain Winery, and Wild Horse Winery amongst other wineries.

Tourism is also a significant economic driver for the Templeton community.

P.3.2 Estimating Potential Losses

Note: This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to HMPC member input) it differs from that of the overall County.

Table P.8 above shows Templeton's exposure to hazards in terms of number and value of structures. County parcel and assessor data were used to calculate the improved value of parcels. The most vulnerable structures are those in the floodplain (especially those that have been flooded in the past), unreinforced masonry buildings, and buildings built prior to the introduction of modern-day building codes. Impacts of past events and vulnerability to specific hazards are further discussed below (see Section 4.1 Hazard Identification for more detailed information about these hazards and their impacts on San Luis Obispo County as a whole).

Adverse Weather: Thunderstorm/Heavy Rain/Hail/Lighting/Dense Fog/Freeze

Templeton's risk and vulnerability to this hazard does not differ substantially from that of the County overall. Weather data for the North County Inland Area, Paso Robles Weather Station, can be found in Section 5.3.1 of the Base Plan.

Adverse Weather: High Wind/Tornado

Templeton's risk and vulnerability to this hazard does not differ substantially from that of the County overall.

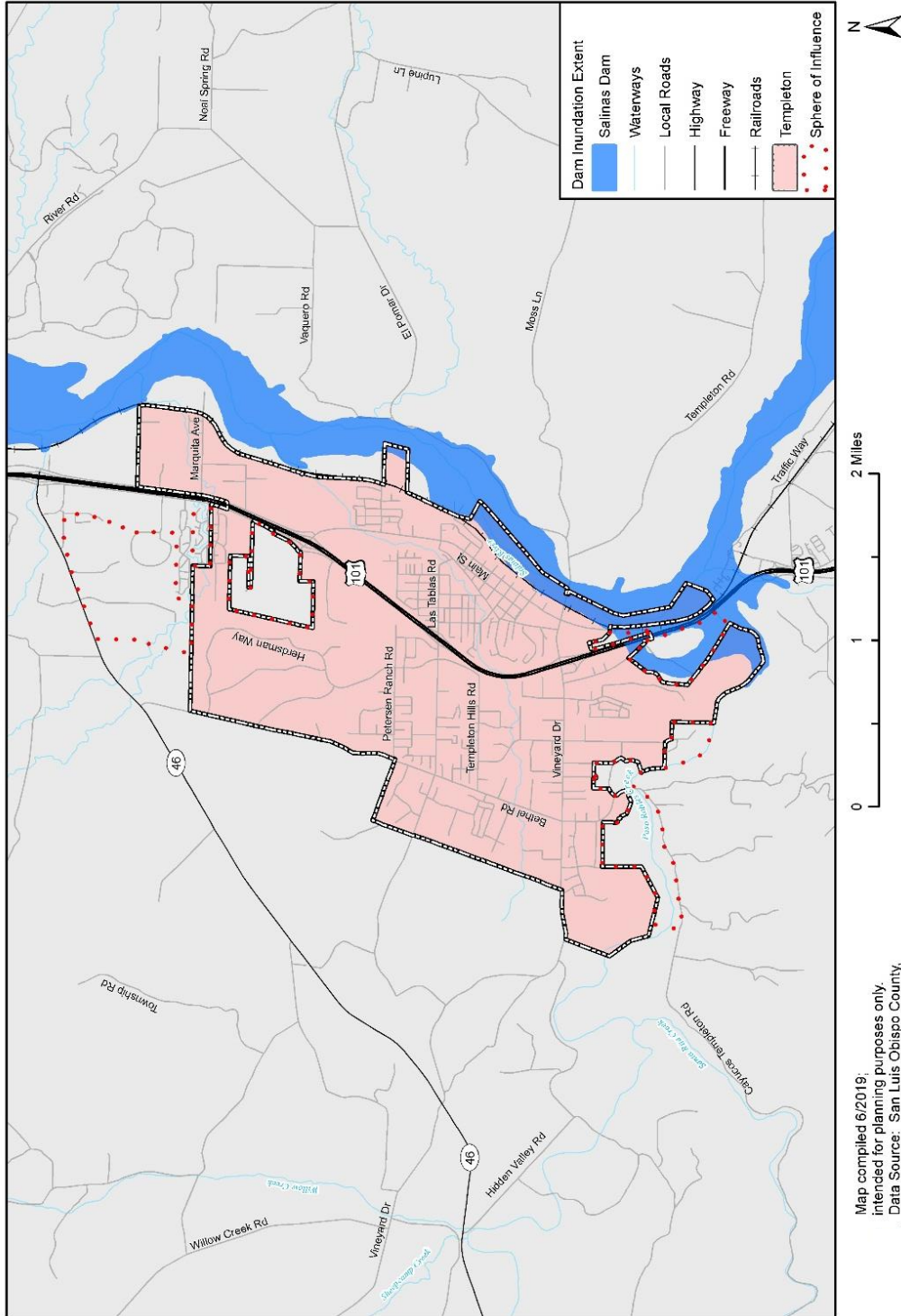
Adverse Weather: Extreme Heat

Templeton's risk and vulnerability to this hazard does not differ substantially from that of the County overall. Weather data for the North County Inland Area, Paso Robles Weather Station, can be found in Section 5.3.1 of the Base Plan.

Dam Incidents

Figure P.3 shows dam inundation areas in the vicinity of Templeton CSD.

Figure P.3 Templeton Dam Inundation Areas



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, CA DWR, NID 2018



Drought and Water Shortage

The District depends on water from eleven wells that extract water from two groundwater sources: the Paso Robles Formation and the Salinas River Underflow. Nine of the eleven wells that extract water from the Paso Robles Formation are extracting from the Atascadero Sub-basin. While the primary basin, the Paso Robles Groundwater Basin, is experiencing decline in many areas, the Atascadero Sub-basin is a hydro-geologically distinct sub-basin that is separated from the primary basin by the Rinconada Fault line and has not experienced the level of decline when compared to the Paso Robles Ground Water Basin.

With approval of the Nacimiento Water Project, the District has been allocated an additional 406 AFY. The Nacimiento Water Project broke ground in 2007 and the construction of the infrastructures needed to deliver water to the Templeton area is complete. Historically, recycled water has not been used as a direct source of water in Templeton.

Earthquake

The only mapped fault in the Templeton area is the western trace of the potentially active Rinconada fault system referred to as the Jolon fault. The fault trends northwest through the community just south of the junction of Highways 46 and 101. Although there is evidence that indicates movement along the Rinconada fault, the fault lacks any geomorphic features to suggest the fault is active. Because the Rinconada fault is potentially active, it poses a moderate fault rupture hazard to this area. Further studies to evaluate the activity of the faults are warranted, prior to placing structures near the mapped fault traces. Templeton has 260 properties, including 3 critical facilities, at risk from soil liquefaction as shown below and displayed in Figure P.4.

Table P.9 Templeton CSD Property at High Risk of Liquefaction

Property Type	Property Count	Improved Value	Content Value	Total Value
Government/Utilities	8	--	--	\$0
Other/Exempt/Misc.	2	--	--	\$0
Residential	6	\$940,734	\$470,367	\$1,411,101
TOTAL	16	\$940,734	\$470,367	\$1,411,101

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table P.10 Templeton CSD Property at Moderate Risk of Liquefaction

Property Type	Property Count	Improved Value	Content Value	Total Value
Commercial	19	\$16,362,297	\$16,362,297	\$32,724,594
Government/Utilities	7	--	--	\$0
Other/Exempt/Misc.	16	\$5,709,778	--	\$5,709,778
Residential	161	\$29,224,891	\$14,612,446	\$43,837,337
Mobile/Manufactured Homes	1	\$98,634	\$49,317	\$147,951
Residential: Other	1	\$6,694,405	\$3,347,203	\$10,041,608
Industrial	30	\$20,791,214	\$31,186,821	\$51,978,035
Vacant	9	\$3,053,339	--	\$3,053,339
TOTAL	244	\$81,934,558	\$65,558,083	\$147,492,641

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis



Table P.11 Templeton Critical Facilities at Risk of Liquefaction

Facility Type	Count	Risk
Local Law Enforcement	1	Moderate
Microwave Service Towers	2	Moderate
TOTAL	3	

Source: San Luis Obispo County Planning & Building, HIFLD 2017

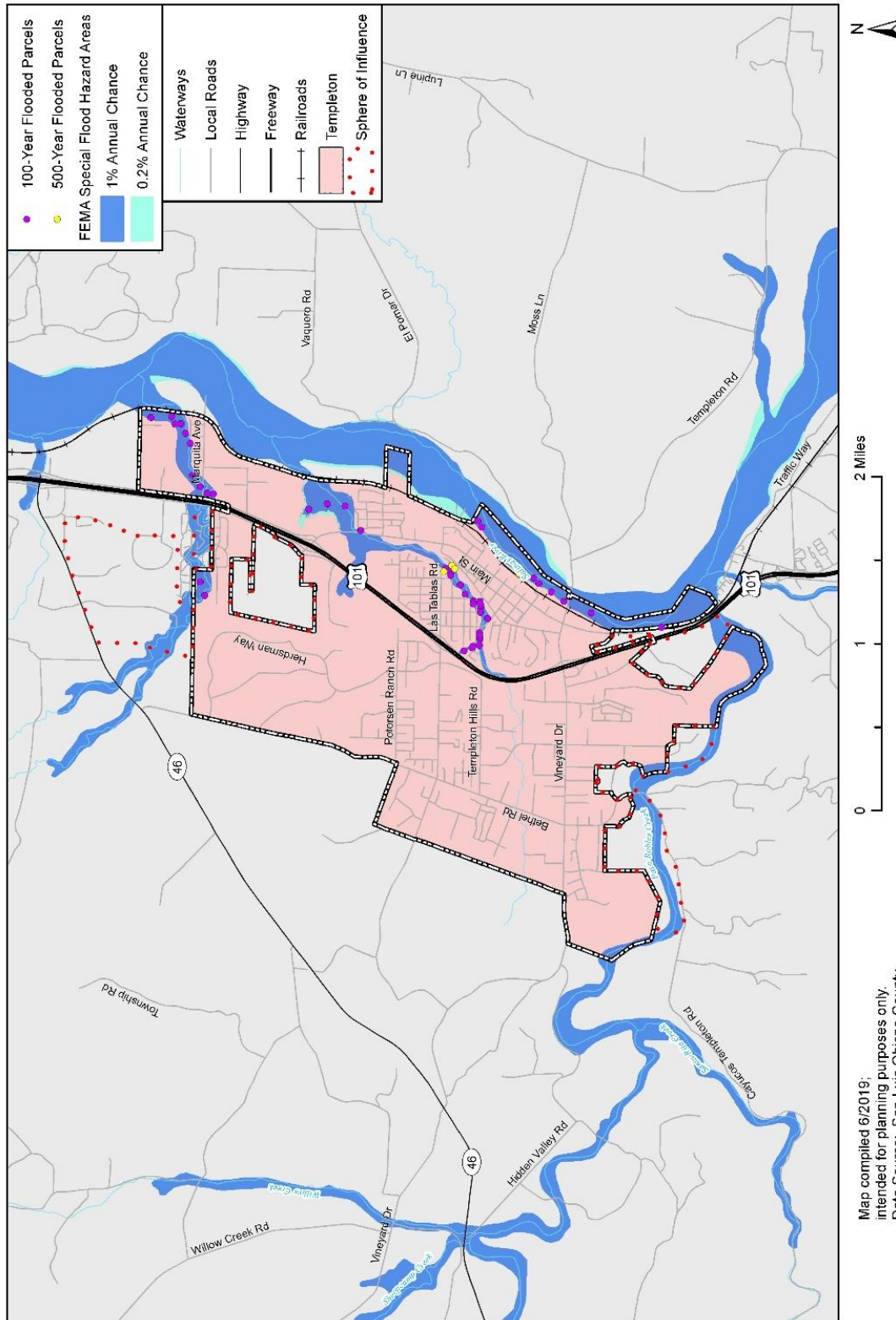
Flood

Values at Risk

Following the methodology described in Section 3.8, a flood map for Templeton was created (see Figure P.5). Table P.12 and Table P.13 summarize the values at risk in the District's 100-year and 500-year floodplain, respectively. These tables also detail loss estimates for each flood scenario.

Templeton does not participate separately in the National Flood Insurance Program (NFIP) but will continue to support the County's participation in and compliance with the NFIP.

Figure P.5 Parcels at Risk of Flooding in Templeton



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, FEMA NFHL, ParcelQuest



Population at Risk

Table P.12 Templeton CSD 1% (100 year) Floodplain Risk

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Commercial	1	\$644,112	\$644,112	\$1,288,224	\$322,056	---
Government/Utilities	4	--	--	\$0	\$0	---
Other/Exempt/Misc.	4	\$389,612	--	\$389,612	\$97,403	---
Residential	28	\$5,445,743	\$2,722,872	\$8,168,615	\$2,042,154	70
Mobile/Manufactured Homes	3	\$461,050	\$230,525	\$691,575	\$172,894	8
Industrial	6	\$3,310,724	\$4,966,086	\$8,276,810	\$2,069,203	---
Vacant	3	\$1,572,858	--	\$1,572,858	\$393,215	---
TOTAL	49	\$11,824,099	\$8,563,595	\$20,387,694	\$5,096,923	78

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Table P.13 Templeton CSD 0.2% (500 year) Floodplain Risk

Property Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate	Population
Government/Utilities	1	--	--	\$0	\$0	---
Residential	3	\$520,552	\$260,276	\$780,828	\$195,207	8
TOTAL	4	\$520,552	\$260,276	\$780,828	\$195,207	8

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Critical Facilities at Risk

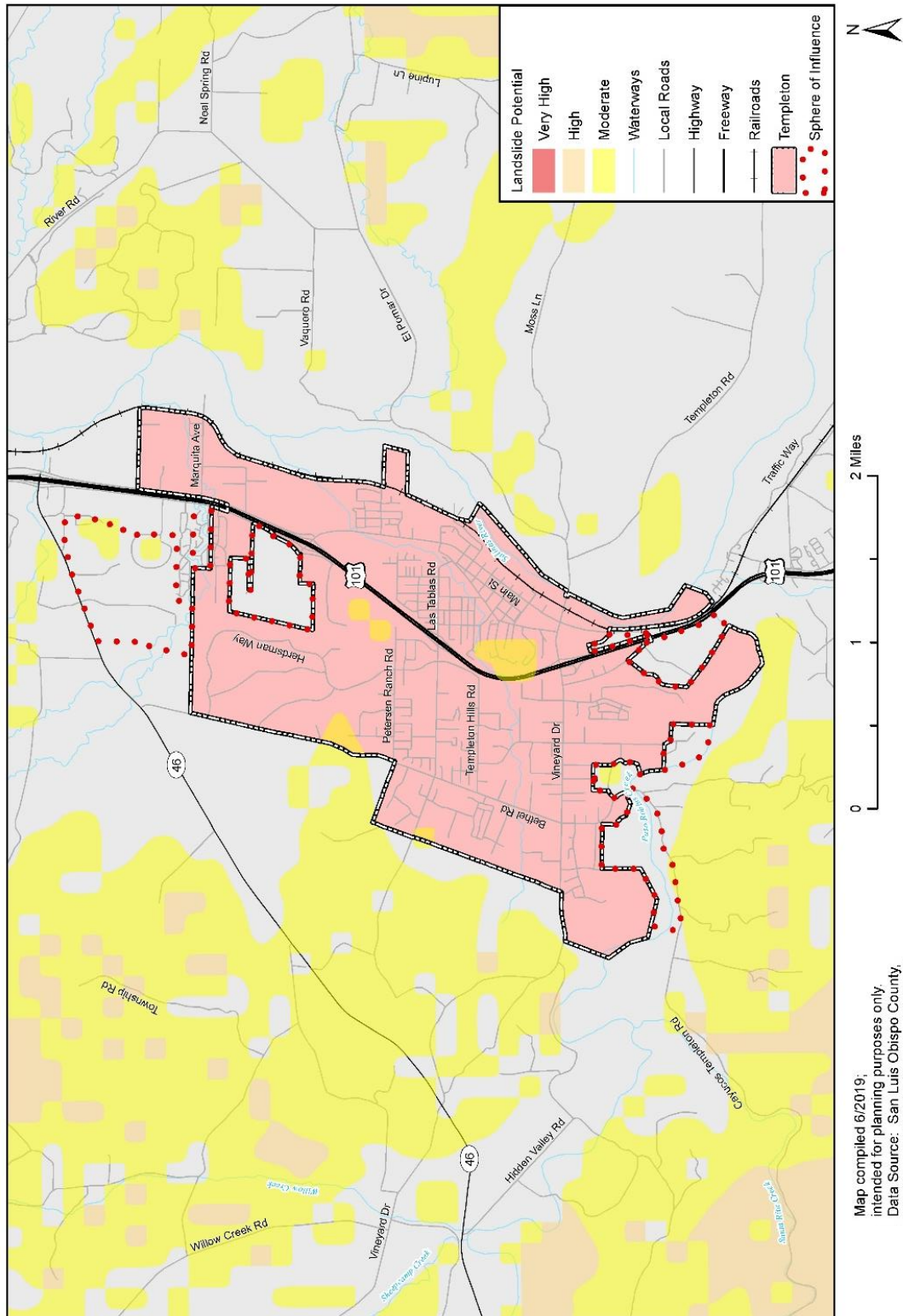
None of the District's identified critical facilities are located in the 1% Annual (100 year) or 0.2% Annual (500-year) Floodplain.

Landslide and Debris Flows

Figure P.6 shows areas with a known landslide risk in the Templeton area.



Figure P.6 Landslide Risk in the Templeton Area



Map compiled 6/2019,
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLW/California State Office, LAFCO



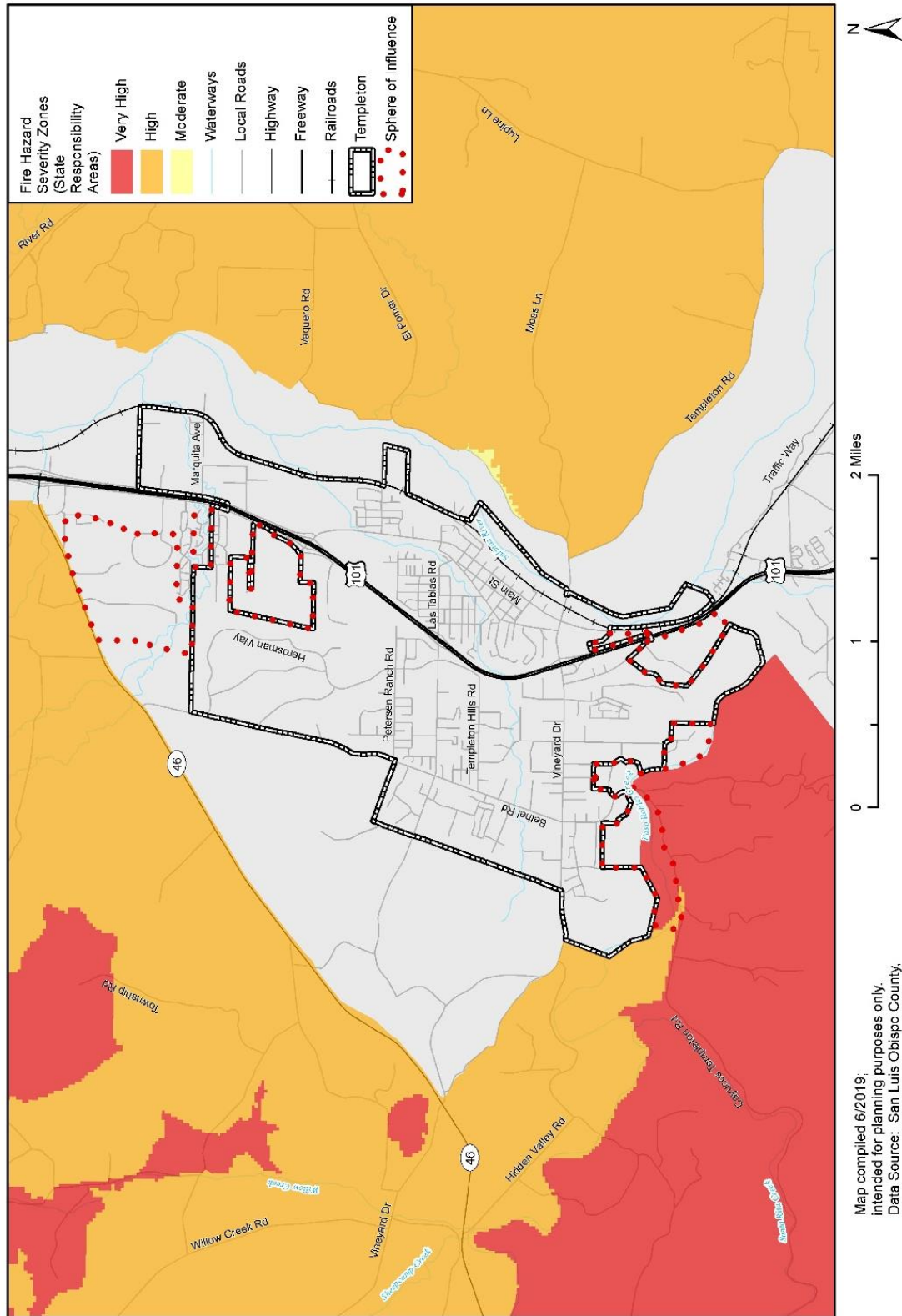
Subsidence

The March–August 1997 subsidence incident in the Paso Robles-Templeton-Atascadero region is described in Section 5.3.10 of the Base Plan.

Wildfire

Wildfire is a high significance hazard for the Templeton Community Services District. While the District itself does not have any properties or critical facilities in moderate, high, or very high severity zones, the District is largely surrounded by high and very high severity zones, as shown in the Figure P.7.

Figure P.7 Fire Hazard Severity Zones in the Templeton Area



Map compiled 6/2019;
intended for planning purposes only
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, CalFire



Human Caused: Hazardous Materials

The Cal OES Warning Center reports 26 hazardous materials incidents in the Templeton CSD from 1994 through October 24, 2018; as noted in Section 5.3.13 of the Base Plan, this likely excludes a large number of unreported minor spills. (Cal OES reports an additional 209 incidents in unincorporated San Luis Obispo County, however a lack of data makes it difficult to know if any of those took place within the CSD boundaries.) This constitutes 5% of the hazardous materials incidents reported countywide during the same timeframe and averages out to roughly 3.9 incidents per year. As noted in Section 5.3.13 only around 6% of reported hazardous materials incidents result in injuries, fatalities, or evacuations.

P.4 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory which of these policies or programs were in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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 jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The Templeton CSD capabilities are summarized below.

P.4.1 Regulatory Mitigation Capabilities

Table P.14 identifies existing regulatory capabilities the District has in place to help with future mitigation efforts. Note, many of the regulatory capabilities that can be used for the District are within the County's jurisdiction. Refer to Chapter 6 Capability Assessment for specific information related to the County's mitigation capabilities.

Table P.14 Templeton CSD Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General Plan	Yes	SLO County Planning & Building
Zoning ordinance	Yes	SLO County Planning & Building
Subdivision ordinance	Yes	SLO County Planning & Building
Growth management ordinance	N/A	
Floodplain ordinance	Yes	SLO County
Other special purpose ordinance (stormwater, steep slope, wildfire)	Yes	SLO County
Building code	Yes	SLO County Planning & Building
Fire Department ISO rating	Yes	ISO Rating 3/3X
Building Department ISO Rating	Yes	SLO County Planning & Building
Erosion or sediment control program	Yes	SLO County Planning & Building
Stormwater management program	Yes	SLO County Public Works
Site plan review requirements	Yes	SLO County Planning & Building
Capital improvements plan	Yes	Every Budget Year
Economic development plan		
Local emergency operations plan	Yes	SLO County
Other special plans	Yes	Water Conservation Policy
Flood insurance study or other engineering study for streams	Yes	SLO County Flood Control District
Elevation certificates (for floodplain development)	Yes	SLO County Planning & Building

Source: Wood Data Collection Guide, 2019

P.4.2 Administrative/Technical Mitigation Capabilities

Table P.15 identifies the personnel responsible for activities related to mitigation and loss prevention in the Templeton Community Services District.



Table P.15 Templeton CSD Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/ No	Department/ Position	Comments
Planner/engineer with knowledge of land development/land management practices	Yes	Utilities Department District Engineer	<p>Develops and maintains the District Rules, Regulations and Ordinances applicable to water and wastewater.</p> <p>Plan, to provide more detailed guidance for the development of more specific areas. Reviews private development projects and proposed capital improvements projects and other physical projects involving property for consistency and conformity with the local rules, regulations, codes and ordinances.</p> <p>Anticipates and acts on the need for new plans, policies, and code changes.</p> <p>Applies the approved plans, policies, code provisions, and other regulations to proposed land uses.</p>
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Utilities Department District Engineer	Oversees the effective, efficient, fair, and safe enforcement of the California Building Code.
Planner/engineer/scientist with an understanding of natural hazards	Yes	Utilities Department District Engineer	Reviews Grading and Building Plans to ensure that development is in compliance with existing policies and codes relating to mitigation of natural hazards.
Personnel skilled in GIS		SLO County Building Official	SLO County Planning & Building
Full time building official	Yes	SLO County (Engineering Division)	Reviews and ensures that new development proposals do not increase flood risk, and that new developments are not located below the 100-year flood level. In addition, the Floodplain Administrator is responsible for planning and managing flood risk reduction projects throughout the District.
Floodplain manager	Yes	SLO County (Engineering Division)	Reviews and ensures that new development proposals do not increase flood risk, and that new developments are not located below the 100-year flood level. In addition, the Floodplain Administrator is responsible for planning and managing flood risk reduction projects throughout the District.
Emergency manager	Yes	Emergency Services (Fire Chief)	Coordinates local response and relief activities and works closely with county, state, and federal partners to support planning and training and to provide information and coordinate assistance.
Grant writer	No		
Other personnel			
GIS Data Resources	Yes	County	



Personnel Resources	Yes/ No	Department/ Position	Comments
(Hazard areas, critical facilities, land use, building footprints, etc.)			
Warning systems/services (Reverse 9-11, outdoor warning signals)	Yes	Reverse 911 and EAS activated through Sherriff's Department	
Procurement Services Manager	No		

Source: Wood Data Collection Guide, 2019

P.4.3 Fiscal Mitigation Capabilities

Table P.16 identifies financial tools or resources that the CSD could potentially use to help fund mitigation activities.

Table P.16 Templeton CSD Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	Yes
Withhold spending in hazard prone areas	Yes

P.4.4 Mitigation Outreach and Partnerships

The Templeton Community Services District conducts several ongoing public education or information programs, to include fire safety, disaster preparedness, wildland preparedness, responsible water use, and FOG (fats, oils and greases).

P.4.5 Opportunities for Enhancement

Based on the capability assessment, the Templeton Community Services District has several existing mechanisms in place that already help to mitigate hazards. There are also opportunities for the District to expand or improve on these policies and programs to further protect the community. Future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform District staff and board members on how best to integrate hazard information and mitigation projects into the District policies and ongoing duties of the District. Continuing to train District staff on mitigation and the hazards that pose a risk to the District will lead to more informed staff members who can better communicate this information to the public.



P.5 Mitigation Strategy

The District developed the mitigation strategy as part of the 2019 County HMP update, as described in Chapter 7 Mitigation Strategy.

P.5.1 Mitigation Goals and Objectives

The District mitigation strategy is aligned with the overall County hazard mitigation goals detailed in Section 7.1 in the Base Plan.

P.5.2 Mitigation Actions

The planning team for the Templeton Community Services District identified and prioritized the following mitigation actions based on the risk assessment. Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. 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. Actions with an ‘*’ are those that mitigate losses to future development.

Table P. 17 Templeton Community Services District’s Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
T.1	Adverse Weather (thunderstorm, lightning, high wind, extreme heat), Drought and Water Shortage, Earthquake, Flood, Wildfire	Determine backup power needs and requirements for various locations within the District determined to be critical to maintain essential District services. Install quick-connects at identified facilities. Research and purchase appropriately sized generators or portable generator(s).	Fire	Unknown	General fund, grants	High	1 year	New. Much of TCSD’s critical infrastructure lacks backup power, including water wells and sewer lift stations. This could severely compromise the District’s ability to deliver essential services during a power outage caused by hazards such as adverse weather, earthquake, flood, or wildfire. This becomes even more critical in the case of a drought or water shortage. The potential failure of one or more wells due to declining groundwater levels makes it all the more essential that the other wells have reliable backup power.
T.2	Drought/ Water Shortage	Initiate a Drought public awareness and educational campaign to discuss the impacts of drought and water shortage, and steps each individual can take during periods of drought and ways to reduce water consumption during periods of drought.	District Administration	Low cost	General fund, staff time	Medium	Annual implementation	New
T.3	Wildfire	Continue to support the District's weed abatement program to provide additional wildfire mitigation through vegetation management.	Fire	\$10,000	General fund, staff time	Medium	Annual implementation	New



P.6 Implementation and Maintenance

Moving forward, the Templeton Community Services District will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Chapter 8 of the main plan.

P.6.1 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 Community Services District to help inform updates of the Templeton Community Plan and in the development of additional local plans, programs and policies. Understanding the hazard that pose a risk and the specific vulnerabilities to the jurisdiction will help in future capital improvement planning for the District. The County Planning and Building Department may utilize the hazard information when reviewing a site plan or other type of development applications with the boundaries of the Templeton Community Services District area. As noted in Section 8, the HMPC representatives from the Templeton Community Services District 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 HMPC plan review meeting.

P.6.2 Monitoring, Evaluation and Updating the Plan

The Templeton Community Services District will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Chapter 8 of the Base Plan. The District will continue to involve the public in mitigation, as described in Section 8.3 of the Base Plan. The CSD General Manager will be responsible for representing the Community Services District in the County HMPC, and for coordination with County staff and departments during plan updates. The Templeton Community Services District 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.

Q.1 District Profile

Q.1.1 Mitigation Planning History and 2019 Process

This Annex for the Cayucos Sanitary District (District) was created during the development of the 2019 Multi-Jurisdictional San Luis Obispo County Hazard Mitigation Plan update. The District had representation on the County multi-jurisdictional Hazard Mitigation Planning Committee and utilized a Local Planning Team (LPT) subcommittee to develop input into the annex.

Table Q.1 Cayucos Hazard Mitigation Plan Revision Planning Group

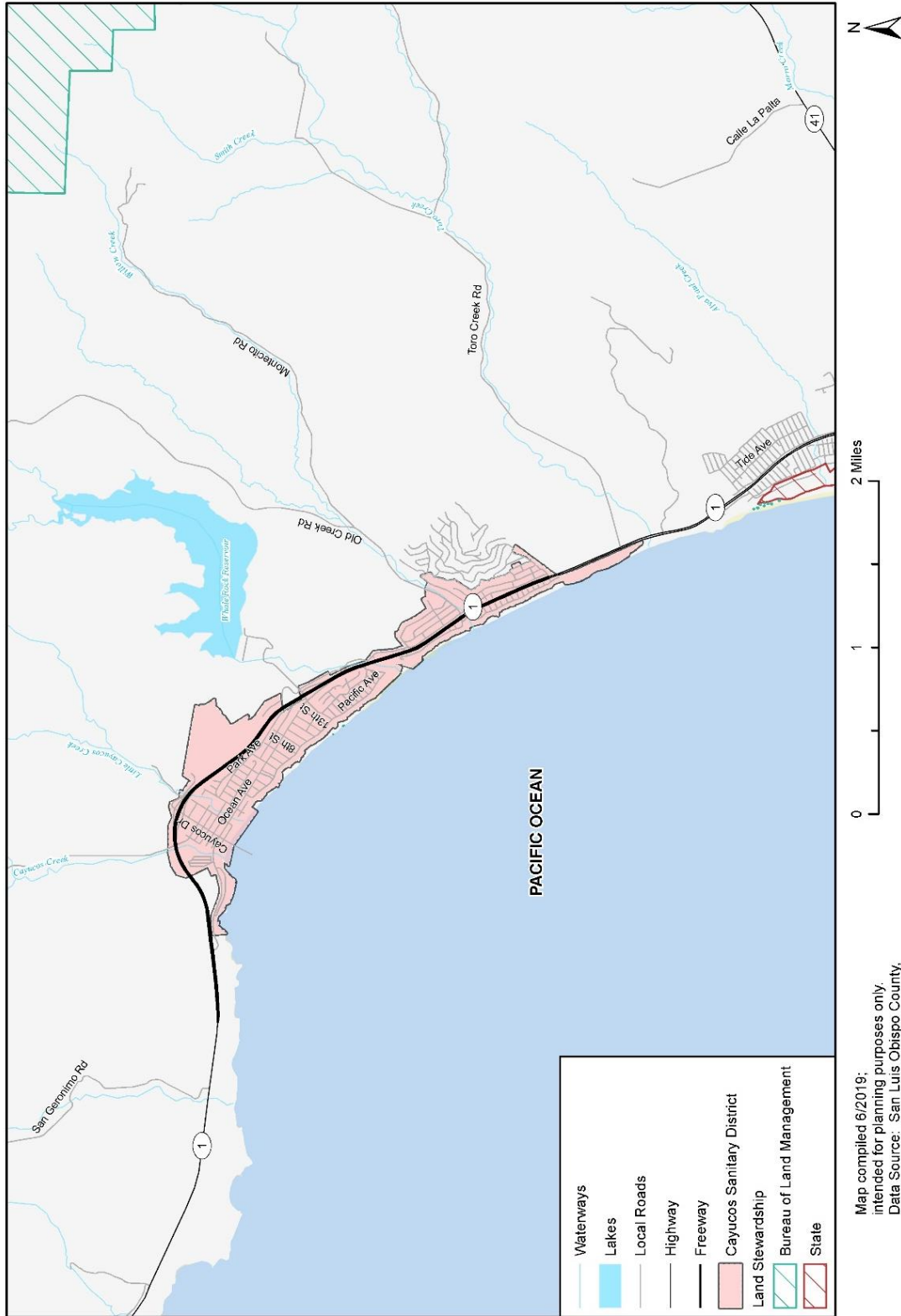
Department or Stakeholder	Title
Cayucos Sanitary District Staff	District Manager
Cayucos Sanitary District Staff	Administrative Office Manager

More details on the planning process and the jurisdictions, service districts, and stakeholder’s participation can be found in Section 3 of the Base Plan, along with how the public was involved during the 2019 update.

The Cayucos Sanitary District is located in the central coastal portion of San Luis Obispo County. Figure Q.1 shows the Cayucos Sanitary District’s planning area.



Figure Q.1 Cayucos Sanitary District



Q 1.2 District Overview

Cayucos is a Census-Designated Place (CDP) located on the coast of San Luis Obispo County, along State Route (SR) 1 between Cambria to the north and Morro Bay to the south. The Cayucos Sanitary District was formed in 1942 for the purpose of constructing a sewer collection system and a treatment plant (Cayucos Sanitary District 2019). The powers and functions of the District include but are not limited to maintenance and operation of garbage dumpsites, garbage collection and disposal systems, and storm water drains. The District encompasses 0.984 square miles within the County of San Luis Obispo's central coast (Figure Q.1 Cayucos Sanitary District) (Kuczynski and Sharygin 2018). In 1954, the District constructed a sewer system and treatment plant under a Joint Powers Agreement (JPA) with the Morro Sanitary District, which is now the City of Morro Bay, to create comprehensive solutions to stormwater management issues in the area (City of Morro Bay n.d.). The Plant currently serves an approximate population of 13,300 people including approximately 2,500 customers within the Cayucos Sanitary District (Wilson 2015; Mecham and Gibson 2009). However, the current shared Wastewater Treatment Plant's infrastructure has become out-of-date. The Cayucos Sanitary District has voted to withdraw from the joint Construction of a New Wastewater Treatment Facility and construct and operate a separate Wastewater Treatment Plant. Cayucos Sanitary District has begun construction and will begin utilization of the separate facility once construction has been completed in December 2020.

Q 1.3 Population

The Cayucos CDP had a population of 2,847 in 2017, which accounts for approximately 1.0% of the County's population. The CDP experienced a growth of 17.1% from 2,431 residents in 2012. The U.S. Census Bureau's 2017 American Community Survey provides select demographic and social characteristics for the CDP (Table Q.2); however, it should be noted that data is for the Cayucos CDP which may have different boundaries than the Cayucos Sanitary District's service area.

Table Q.2 Cayucos Demographics and Social Characteristics, 2017

Characteristic	2012	2017	% Change
Population	2,431	2,847	17.1%
Median Age	57.2	56.0	-2.1%
Total Housing Units	2,427	2,459	1.3%
Housing Occupancy Rate	50.0%	56.7%	6.7%
% of Housing Units with no Vehicles Available	4.5%	2.8%	-1.7%
Median Home Value	\$688,700	\$720,900	4.7%
Unemployment	10.4%	4.0%	-6.4%
Mean Travel Time to Work (minutes)	18.2	27.0	48.4%
Median Household Income	\$62,961	\$61,226	-2.8%
Per Capita Income	\$42,023	\$43,132	2.6%
% of Individuals Below Poverty Level	15.8%	13.4%	-2.4%
# of Households	1,214	1,395	14.9%
Average Household Size	1.99	2.04	2.5%
% of Population Over 25 with High School Diploma	94.5%	95.6%	1.1%
% of Population Over 25 with Bachelors Degree or Higher	40.5%	38.0%	-2.5%
% with Disability	15.7%	16.9%	1.2%
% Speak English less than "Very Well"	1.2%	2.5%	1.3%

Source: U.S. Census Bureau American Community Survey 2012-2017 5-Year Estimates, www.census.gov/

Q.1.4 Development Trends

The community of Cayucos developed general community goals that were recommended by the Cayucos Citizens Advisory Council (CCAC) for the Estero Area Plan (2009). The identified community goals encourage carefully planned development that respects the area’s natural assets, maintains the community’s small-town beach character, and balances and promotes both the residential and visitor-serving aspects of the community. The Estero Area Plan also indicated the goal to carefully plan for future commercial and residential development that is consistent with the current nature of the community, with a focus on infill and mixed-use development.

Cayucos has a high percentage of vacant dwelling units compared to the county as a whole. This is largely due to a high level of seasonal use (about 33% of total units), which includes recreational and occasional use of dwellings. The vacancy rate in Cayucos is approximately 38% (Estero Area Plan, 2009). According to the LPT, future development trends are likely to lead to additional building of single-family residents as well as mixed use and infill development in the community.

Q.1.5 Other Community Planning Efforts

Coordination and synchronization with other community planning mechanisms and efforts are vital to the success of this plan. To have a thorough evaluation of hazard mitigation practices already in place, appropriate planning procedures should involve identifying and reviewing existing plans, policies, regulations, codes, tools, and other actions. These mitigation practices should incorporate reduction strategies to minimize a community’s risk and vulnerability from natural hazards. The Cayucos Citizens Advisory Council works to develop a unified, cooperative effort among all individuals, organizations and public jurisdictions interested in furthering sound planning and development in the Cayucos area (Cayucos Citizen’s Advisory Council n.d.). The Council was responsible for the recommendations to the Cayucos community goals to encourage the carefully planned



development of the District with respect to the small-town character and area’s natural assets (Mecham and Gibson 2009).

As an unincorporated community, Cayucos Sanitary District is referenced in other County planning documents and is regulated by County policies and planning mechanisms. Integrating existing planning efforts, mitigation policies, and action strategies into this Annex establishes a credible, comprehensive document that weaves the linkages of a community’s values together. The development of this jurisdictional Annex involved a comprehensive review of existing plans, studies, reports, and initiatives from San Luis Obispo County and the Cayucos Sanitary District that relate to hazards or hazard mitigation, as summarized in the Table Q.3. Information on how they informed the update are noted and incorporated where applicable.

Table Q.3 Summary of Review of Key Plans, Studies and Reports

Plan, Study, Report Name	How the Document Informed this Annex
Estero Area Plan (2009)	Informed the geographic description and natural resources information
San Luis Obispo Safety Plan Element (2019)	Addresses a range of natural and human caused hazards and consists of goals and policies aimed at reducing the risks associated with these hazards.
San Luis Obispo County Stormwater Resource Plan (2019)	Provided background information that was incorporated into the Drought Vulnerability Assessment related to watershed planning.
County of San Luis Obispo Local Hazard Mitigation Plan (2014)	Informed past hazard event history.
San Luis Obispo County – Tsunami Emergency Response Plan (Revised April 2016)	Informed the Vulnerability Assessment for Tsunami risk
San Luis Obispo County – Community Wildfire Protection Plan (March 2019)	Informed the Vulnerability Assessment for Wildfire risk

Q.2 Hazard Identification and Summary

The Cayucos Sanitary District’s LPT identified the hazards that affect the District and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to Cayucos (see Table Q.4). There are no hazards that are unique to the District.



Table Q.4 Cayucos Sanitary District – Hazard Summaries

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Adverse Weather	Extensive	Likely	Critical	High
Coastal Storm/Coastal Erosion/Sea Level Rise	Significant	Likely	Limited	Medium
Earthquake and Liquefaction	Extensive	Occasional	Limited	High
Flooding	Significant	Likely	Critical	High
Landslide and Debris Flows	Limited	Occasional	Limited	Medium
Tsunami and Seiche	Significant	Occasional	Critical	Medium
Wildfire	Significant	Occasional	Limited	Medium
Human Caused: Hazardous Materials	Limited	Unlikely	Negligible	Low
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		

Q.3 Vulnerability Assessment

The intent of this section is to assess the Cayucos Sanitary District’s vulnerability separately from that of the planning area as a whole, which was previously assessed in Section 5 (Vulnerability Assessment) in the Base Plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area.

The information to support the hazard identification and risk assessment for this Annex was collected through a data request worksheet/workbook, which was distributed to each participating municipality or special district to complete during the original outreach process in 2019. Collected information was analyzed and summarized in order to identify and rank hazards with potential impacts in the County, as well as in each jurisdiction. In addition, the Cayucos Sanitary District’s HMPC team was asked to validate the data that was originally scored in 2019 based on the experience and perspective of the planning team relative to the Cayucos Sanitary District.



Each participating jurisdiction was in support of the main hazard summary identified in the base plan. However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction. Identifying these differences helps the reader to differentiate the jurisdiction's risk and vulnerabilities from that of the overall County.

Note: The hazard "Significance" reflects overall ranking for each hazard, and is based on the Cayucos Sanitary District HMPC member input from the Data Collection Guide and the risk assessment developed during the planning process (see Chapter 3 of the Base Plan), which included a more detailed qualitative analysis with best available data.

The hazard summaries in



Table Q.4 Cayucos Sanitary District – Hazard Summaries reflect the hazards that could potentially affect the Sanitary District. Based on this analysis, the priority hazards (High Significance) for mitigation include flood/levee failure and hazardous materials incidents. Those of Medium or High Significance are identified below. The discussion of vulnerability for each of the following hazards is located in Section Q.3.2 Estimating Potential Losses.

- Adverse Weather: Thunderstorm/Heavy Rain/Hail/Lightning/Dense Fog/Freeze
- Adverse Weather: High Wind/Tornado
- Adverse Weather: Extreme Heat
- Coastal Storm/Coastal Erosion/Sea Level Rise
- Earthquake
- Flood
- Landslides and Debris Flow
- Tsunami and Seiche
- Wildfire
- Hazardous Materials

Other Hazards

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 in this plan, and are not assessed individually for specific vulnerabilities in this section. In the Cayucos Sanitary District, those hazards are as follows:

- Agricultural Pest Infestation and Disease
- Biological Agents
- Dam Incidents
- Drought
- Subsidence

Additionally, the District's Committee members decided to rate several hazards as Not Applicable (N/A) to the planning area due to a lack of exposure, vulnerability, and no probability of occurrence. Agricultural Pest Infestation and Disease, Biological Agents (naturally occurring), Dam Incidents, and Drought and Water Storage are considered Not Applicable (N/A) to the Cayucos Sanitary District.

Q.3.1 Assets at Risk

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

Values at Risk

The following data on property exposure is derived from the San Luis Obispo County 2019 Parcel and Assessor data. This data should only be used as a guideline to overall values in the District as the information has some limitations. The most significant limitation is created by 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 likely low and does not reflect current market value of properties. 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. Types shows the exposure of properties (e.g., the values at risk) broken down by property type for the District.

Table Q.5 Parcel Exposure for the Cayucos Sanitary District by Parcel Types

Property Type	Property Count	Improved Value	Content Value	Total Value
Commercial	39	\$9,782,615	\$9,782,615	\$19,565,230
Government/Utilities	48	\$169,629	--	\$169,629
Other/Exempt/Misc.	56	\$13,218,262	--	\$13,218,262
Residential	1,755	\$393,106,071	\$196,553,036	\$589,659,107
Multi-Family Residential	205	\$35,795,268	\$17,897,634	\$53,692,902
Mobile/Manufactured Homes	3	\$2,669,705	\$1,334,853	\$4,004,558
Residential: Other	29	\$13,634,803	\$6,817,402	\$20,452,205
Vacant	21	\$2,118,123	--	\$2,118,123
Total	2,156	\$470,494,476	\$232,385,539	\$702,880,015

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor's Office data 2019

Critical Facilities and Infrastructure

Critical facilities are essential in providing utility or direction either during the response to an emergency or during the recovery operation. See Section 5.2 Asset Summary of the base plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the District was obtained from San Luis Obispo County, the County's Local Agency Formation Commission, or LAFCO, and the Homeland Infrastructure Foundation-Level Data (HIFLD). The combined dataset as applicable to the District is provided in Table Q.9 and illustrated in Figure Q.4 below.

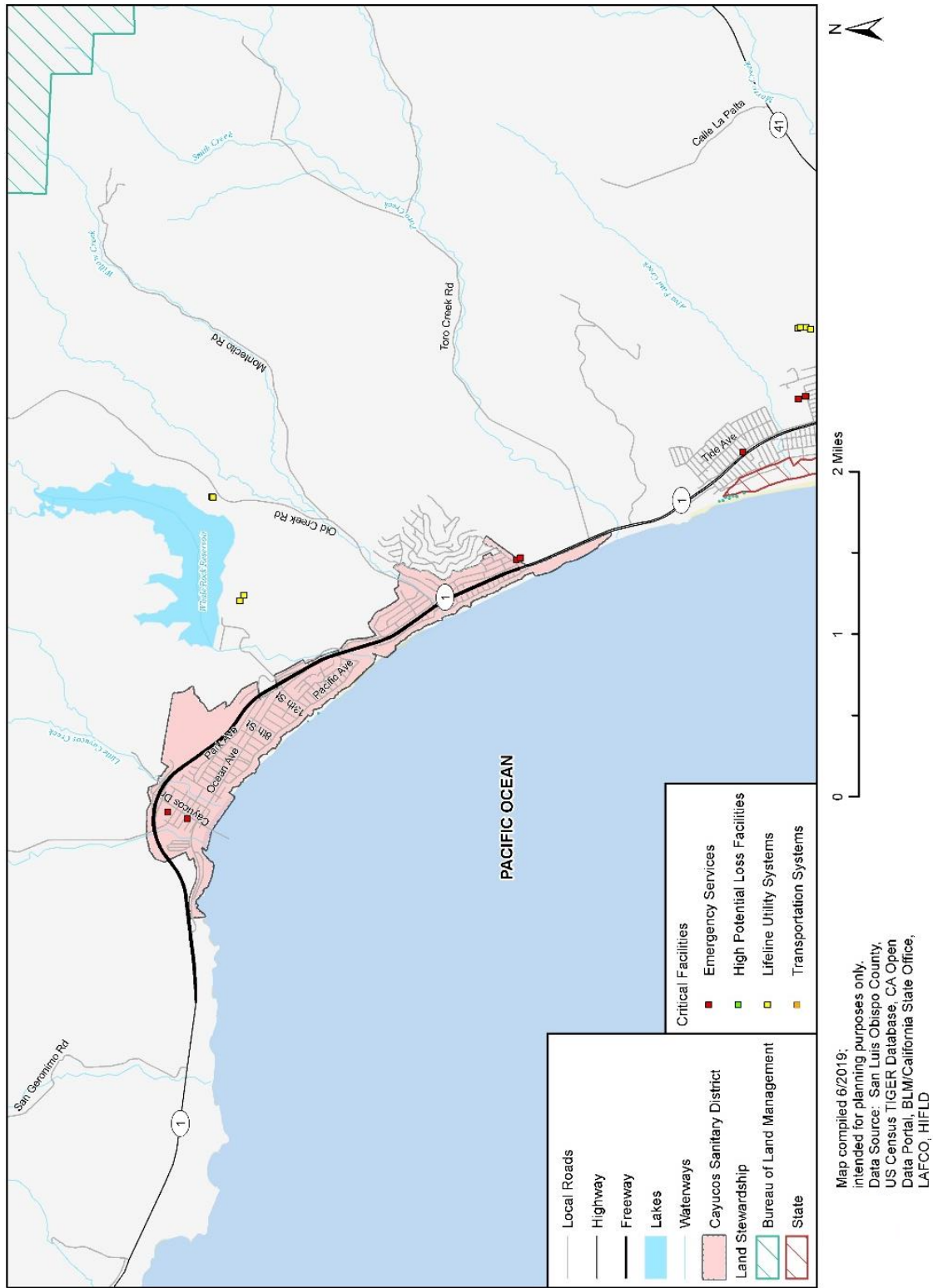
Table Q.6 Cayucos Sanitary District Critical Facilities

Category of Facility	Facility Type	Name	Counts
Emergency Services	Fire Stations	California Department of Forestry and Fire Protection Station 11 - Cayucos Fire Station	1
		Cayucos Fire Protection District	1
	Emergency Medical Service Stations	California Department of Forestry and Fire Protection Station 11 - Cayucos Fire Station	1
	Public Schools	Cayucos Elementary School	1
Total			4

Source: San Luis Obispo County Planning and Building, LAFCO, HIFLD



Figure Q.2 Cayucos Sanitary District Critical Facilities



Additional Critical Facilities

Additional critical facilities as identified by the Cayucos Sanitary District Local Planning Team are as follows. Note their estimated replacement value is indicated as well as the possible hazards to which they are at risk:

- Sewer Conveyance System - \$55 million (at risk of flooding and earthquakes)
- Sewer Lift Stations - \$5 million (at risk of flooding and earthquakes)
- Treatment Facility that will be operating in the year 2020 - \$30 million (at risk of flooding and earthquakes)

Emergency Service Facilities

The District contains four Emergency Services facilities aimed at providing for the health and welfare of the entire community. These include two fire stations, one emergency medical service station, and one school, as noted in Table Q.9.

Transportation Systems and High Potential Loss Facilities

No critical transportation facilities were noted for the District, though there may be certain structures or entities important to the District particularly along the main corridor running through the District (Highway 1) or other major nearby transportation lines (e.g. Highway 41). The District is served by a network of local roadways, and Highway 1 and Old Creek Road provide regional access to the District.

No high potential loss facilities such as power plants were identified by the county, HIFLD dataset, or the Planning Team. However as will be noted under the Human Caused Hazards section of this annex as well as in Section 5 of the Base Plan, several Hazardous Materials (HazMat) incidents have occurred in or in close proximity to the District, so there is a history of hazardous spills or incidents in/near the community.

Historic and Cultural Resources

The Cayucos Sanitary District has no registered state or federal historic sites; however, locally designated historic sites are detailed in the Estero Area Plan. These include the Cayucos Pier, which was built in 1874, and the Captain James Cass House Complex, which was built in 1876 by the founder of Cayucos, James Cass. The James Cass House Complex is located on Ocean Avenue in proximity to the Cayucos Pier. The historic property designation includes the adjacent barn, tank house, and cooler building.

Natural Resources

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. The natural topography of the Cayucos coastline varies from low bluffs and coastal terraces to sandy beaches backed by low-lying areas. The District includes a portion of the Estero Bluffs State Park, which preserves the scenic coastline and rich diversity of habitats. The Estero Bluffs are characterized by marine and intertidal habitat, coastal foredune, coastal and riparian scrub, and grasslands, which collectively provide habitat for numerous native and endangered species.

The Cayucos community also has approximately five acres of neighborhood and community park space utilized for passive and active recreation for residents (Mecham and Gibson 2009). Additionally, a portion of the Monterey Butterfly habitat site in Cayucos has been frequented by large numbers of butterflies for a number of years and is a significant habitat site in the state for monarch butterflies. The butterflies cluster in a small area on a mixture of eucalyptus and cypress trees growing along a creek bed close to a residential area. Awareness of natural assets can lead to opportunities for meeting multiple objectives. For instance, preserving riparian areas protects sensitive habitat and attenuates and stores floodwaters.

Economic Assets

Businesses in the District provide retail and service uses to local residents, which generally exclude major employers, large-scale manufacturing, and industrial jobs (Mecham and Gibson 2009). Tourism is an important industry for the local Cayucos economy; however, residents spend significant portions of their money in more developed commercial sectors outside of the District. Roughly 85 to 90 percent of the community's workers commute to jobs in other communities. Effectively planned commercial, visitor-serving, and residential development that is consistent with the current nature of the small-beach town community has the opportunity to improve the local economy. Additionally, in 2018 Cayucos Sanitary District began the construction of the new Wastewater Treatment Plant, the Cayucos Sustainable Water Project (Wilson 2015). This treatment plant will serve as a source of income for local job production and is planned to begin operation in December 2020.

Q.3.2 Estimating Potential Losses

This section details vulnerability to specific hazards and if applicable, jurisdictional differences from that of the overall County. Table Q.5 above shows Cayucos Sanitary District's exposure to hazards in terms of number and value of structures. San Luis Obispo County parcel and assessor data were used to calculate the improved value of parcels. Impacts of past events and vulnerability to specific hazards are further discussed below. (See Section 5 Hazard Identification and Risk Assessment of the base plan for more detailed information about these hazards and their impacts on San Luis Obispo County as a whole.)

Adverse Weather

Adverse Weather in Cayucos includes hail, wind storms, and thunderstorms. Heavy rainfall events effect the District annually, and the community's proximity to the Pacific Ocean exacerbates adverse weather compared to inland communities. Such events can induce other hazards such as flooding. Cayucos is subject to strong southeasterly winds associated with strong cold fronts and coastal storms, which generally occur during the winter months from November to February. Northwesterly winds that are typical of the central coast of California also occur throughout San Luis Obispo during the spring and summer. Both southeast and northwest wind events can reach sustained wind speeds of 35-45 mph with wind gusts of 65-75 mph within the City. Overall, adverse weather hazards have been rated by the planning team as holding **High Significance** for the District.

Coastal Storm/Coastal Erosion/Sea Level Rise

The shoreline in Cayucos consists mainly of narrow beaches backed by low cliffs approximately 20 feet-high, as well as a low-lying downtown area by Cayucos Creek, much of which is protected by low rock revetments and a low seawall. Over 100 residences with minimal setbacks from the edge of the bluff are potentially exposed to coastal erosion hazards, although a number are protected by rock revetments or seawalls. In the winter month the sandy beach often erodes, and waves strike directly against the bluffs. The Cayucos shoreline faces south such that its beaches are partially protected from northerly swells. Wave action in this area is still significant. The seacliffs are comprised of Franciscan melanges, characterized by blocks of rocks often surrounded by small zones of sheared or crushed rock that tend to erode easily. Some zones contain more erosion resistant rock blocks that have been exposed as the weaker blocks have eroded away. During the intense storm waves of 1983, these resistant blocks were breached at some spots. As a result, the bluff receded as much as 20 feet (San Luis Obispo County 1999). Rates of erosion are highly variable along this coastline, and range from 6 to 10 inches per year. Emergency rip-rap and numerous seawalls were constructed in response to the storm waves of 1983 (San Luis Obispo County 1999). Downtown Cayucos is another area of concern. Built upon the unconsolidated sediment deposited from the Cayucos creek, this area is susceptible to shoreline erosion.

During rainy months when the ground becomes wet, the low permeability of the clays tends to perch or elevate the groundwater table. Consequently, the saturated soils cause increased erosion due to slope instability and

slumping of the seacliff face. Therefore, much of Cayucos is either low-lying around the downtown or includes bluff top homes with minimal setbacks, and is therefore classified as “moderate to high risk” with respect to both existing coastal hazards and possible future coastal flooding and accelerated bluff retreat associated with sea level rise. Overall, coastal storm, coastal erosion, and sea level rise hazards have been rated by the planning team as holding **Medium Significance** for the District.

As part of the 2019 HMP planning effort, a sea level rise risk assessment was completed to determine how sea level rise may affect coastal jurisdictions and critical facilities and how coastal flooding might be exacerbated in the future. The only critical facility that would be affected by sea level rise is the Cayucos Fire Station which is at risk in a sea level rise scenario of 25 cm or greater. Table Q.6 and Table Q.7 summarize the other properties at risk of inundation by sea level rise and sea level rise combined with a 1% annual chance coastal flood. The area of inundation by sea level rise and sea level rise combined with the 1% coastal flood are shown in Figure Q.2 and Figure Q.3, respectively. See Section 5.3.4 Coastal Storm/Coastal Erosion/Sea Level Rise in the base plan for more details on the scenarios and data sources used for this analysis.

Table Q.6 Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Commercial	--	--	15	1	2	19
Government/Utilities	--	--	11	4	6	14
Other/Exempt/Misc.	--	--	10	1	3	12
Residential	--	--	46	2	12	83
Multi-Family Residential	--	1	16	3	3	28
Residential: Other	--	--	6	--	1	8
Vacant	--	--	3	--	--	3
Total	--	1	107	11	27	167

Source: Wood analysis with USGS CoSMoS 3.1 data

Table Q.7 Improved Values of Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Coastal Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Commercial	--	--	\$3,409,945	\$236,199	\$448,106	\$5,320,935
Government/Utilities	--	--	\$0	--	--	\$169,629
Other/Exempt/Misc.	--	--	\$4,823,088	\$225,000	\$225,000	\$6,418,638
Residential	--	--	\$11,574,166	\$396,221	\$4,749,687	\$21,631,681
Multi-Family Residential	--	\$125,465	\$2,714,230	\$693,107	\$693,107	\$5,255,830
Residential: Other	--	--	\$4,598,565	\$860,108	\$860,108	\$5,444,156
Vacant	--	--	\$104,355	--	--	\$104,355
Total	\$0	\$125,465	\$27,224,349	\$1,550,527	\$6,976,008	\$44,327,224

Source: Wood analysis with USGS CoSMoS 3.1 data



Figure Q.2 Cayucos Sanitary District Sea Level Rise Scenario Analysis: Tidal Inundation Only

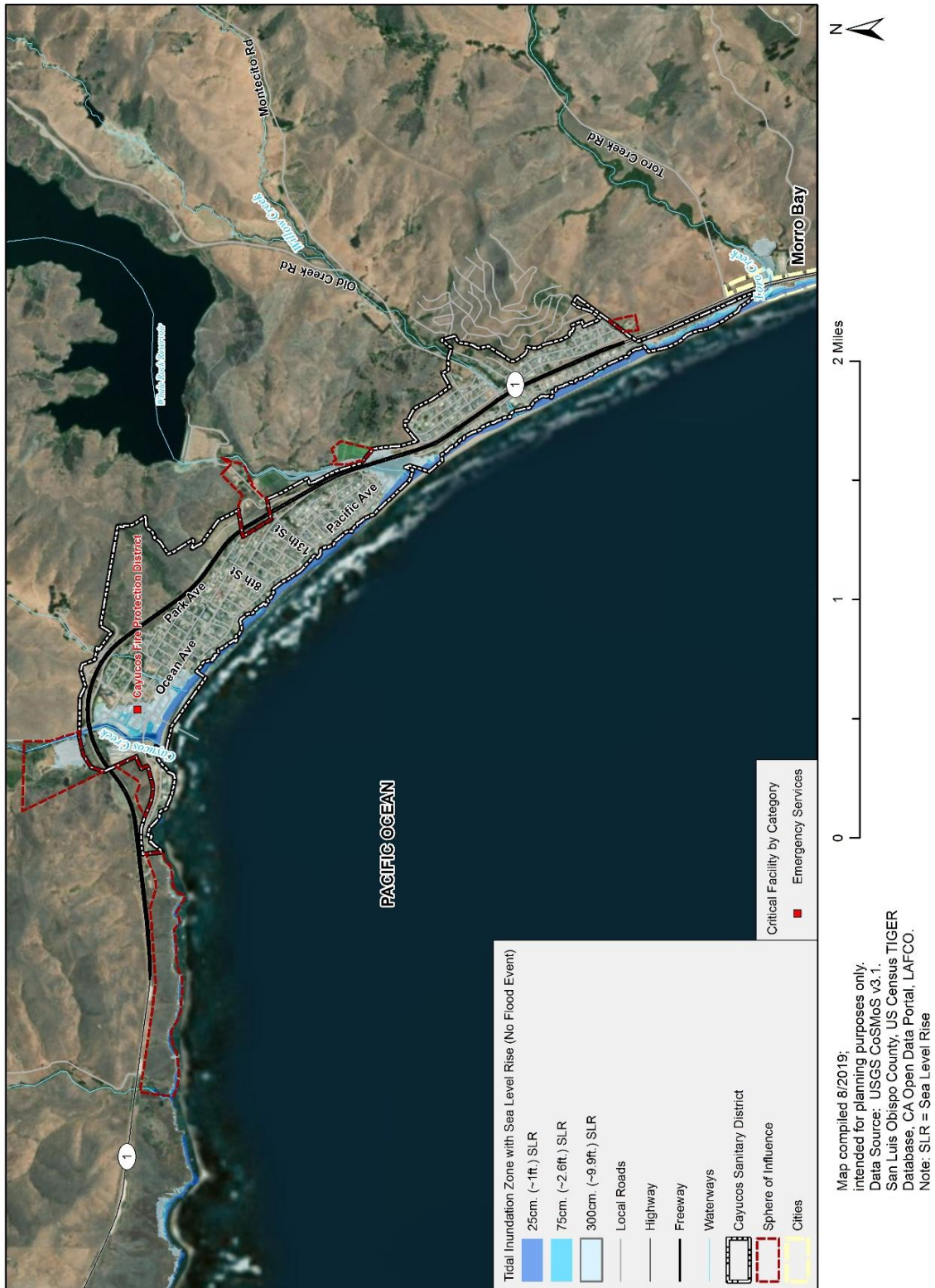
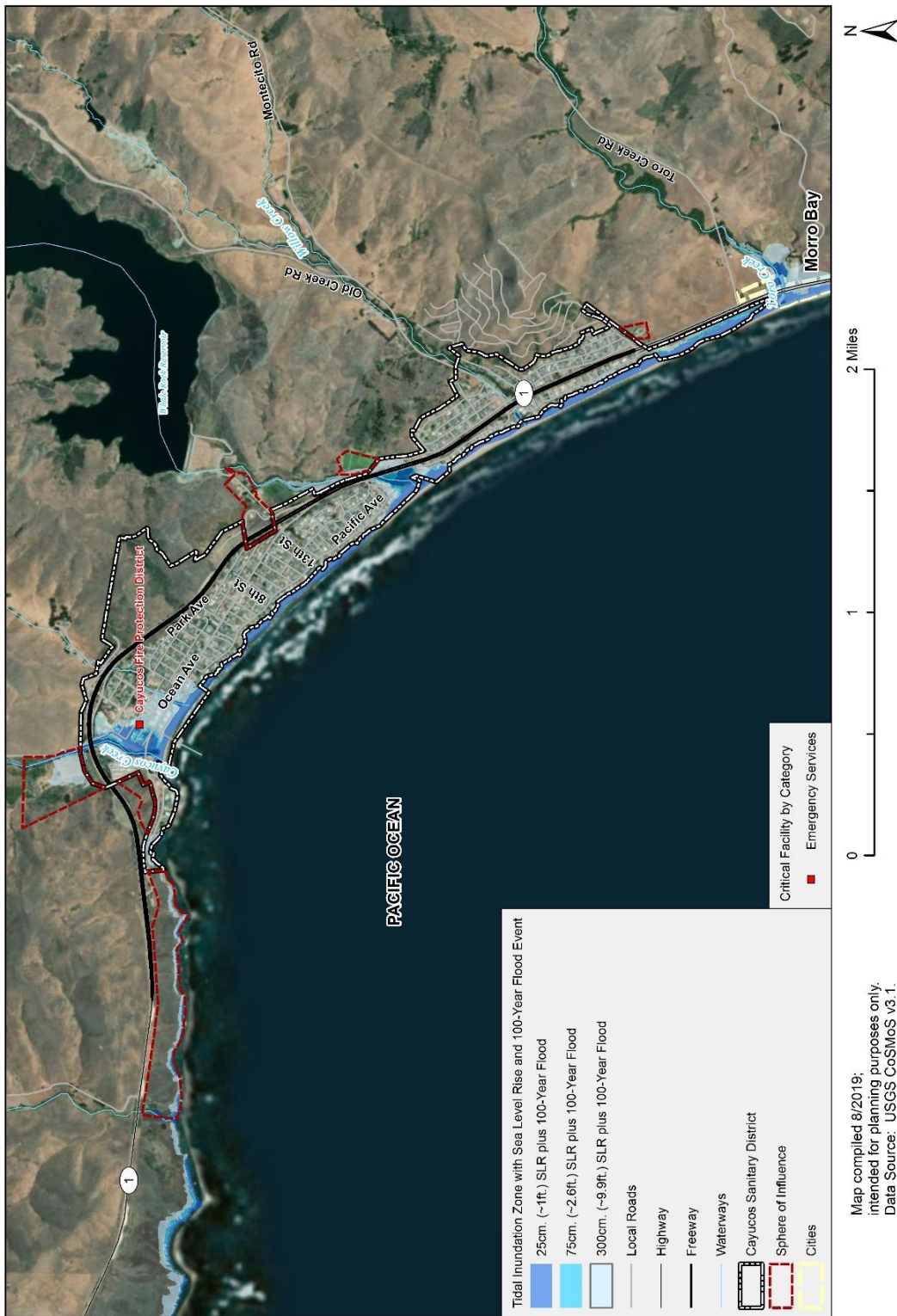


Figure Q.3 Cayucos SD Sea Level Rise Scenario Analysis: Tidal Inundation and 1% Annual Chance Flood



Earthquake

The central coast region of California has a long history of damaging earthquakes. Large earthquakes can originate from the San Andreas fault system and ground shaking can potentially affect the District. Soils in the low bluffs and along riparian corridors of Cayucos are subject to moderate liquefaction risk due to seismic activity. There are 285 parcels within the District that are subject to moderate liquefaction risk; no parcels are located within a high liquefaction risk area (Table Q.8). Structures on liquefiable soils indicated in Figure Q.4 below may be subject to increased damage. There is also one critical facility (the Cayucos Fire Protection District facility) found within moderate risk liquefiable soils. Overall, earthquake and liquefaction hazards have been rated by the planning team as holding **High Significance** for the District.

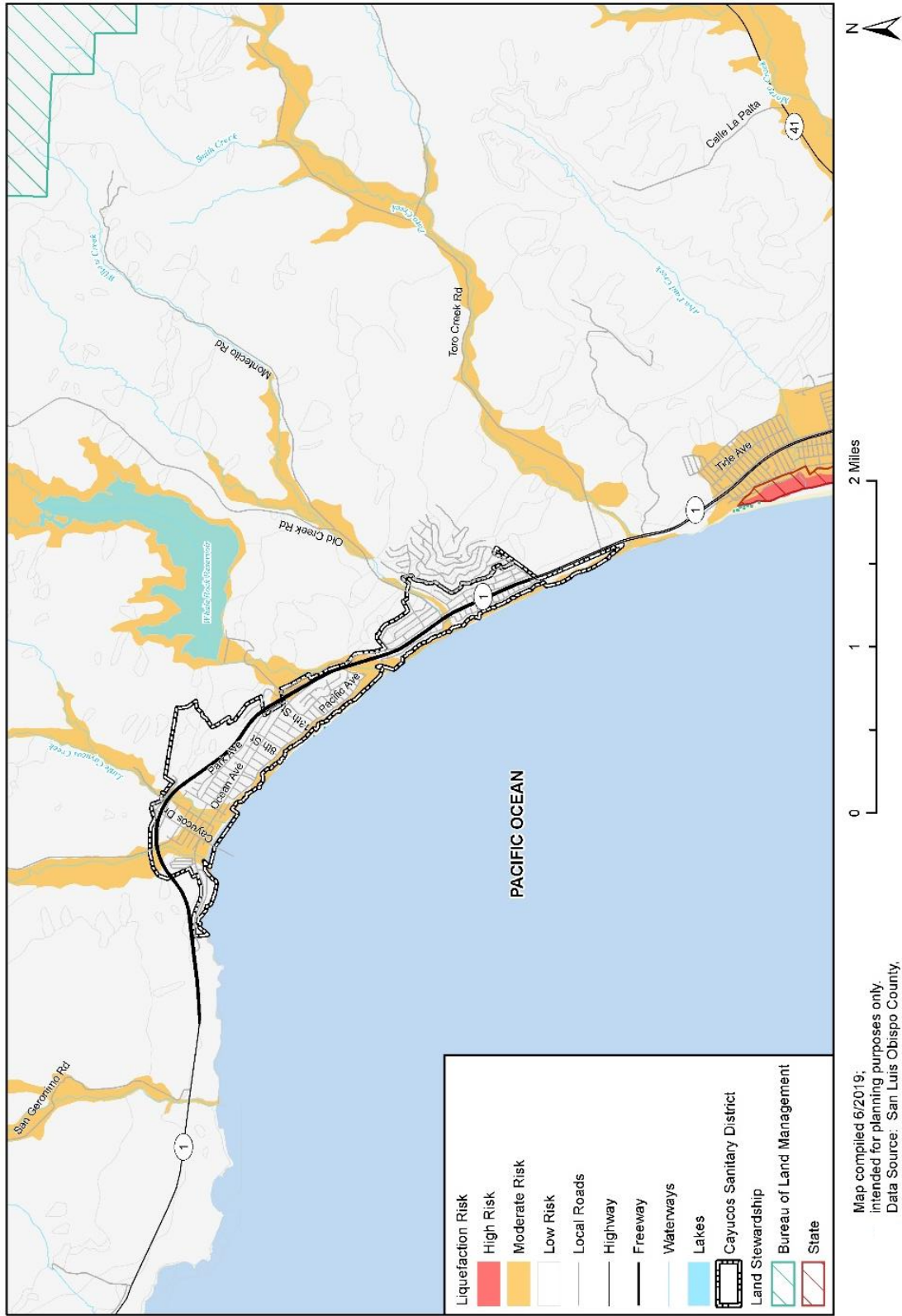
Table Q.8 Liquefaction Risk by Parcel Type in Moderate Risk Areas in the District

Parcel Type	Parcel Count	Improved Value	Content Value	Total Value
Commercial	19	\$5,302,935	\$5,302,935	\$10,605,870
Government/Utilities	19	\$169,629	--	\$169,629
Other/Exempt/Misc.	12	\$7,809,818	--	\$7,809,818
Residential	196	\$51,325,504	\$25,662,752	\$76,988,256
Multi-Family Residential	29	\$5,698,137	\$2,849,069	\$8,547,206
Residential: Other	6	\$4,598,565	\$2,299,283	\$6,897,848
Vacant	4	\$482,355	--	\$482,355
Total	285	\$75,386,943	\$36,114,038	\$111,500,981

Source: Wood Plc analysis based on ParcelQuest, San Luis Obispo County Assessor's Office data, and LAFCO data



Figure Q.4 Liquefaction Risks in Cayucos



Flood

Flood hazard areas in Cayucos occur along waterways and water bodies such as the Whale Rock Reservoir. Drainage concerns in Cayucos involve stormwater runoff and associated mudflows from the steeper slopes within and above the eastern portions of the community, as well as localized flooding from stormwater runoff in other areas. Cumulative drainage and geologic effects of existing and new development in these areas should be studied and mitigated on an areawide basis. The floodplains of Cayucos Creek, Little Cayucos Creek and Willow Creek are limited to areas immediately adjacent to the creek channels and estuaries. In the event of the failure of Whale Rock dam, areas along the Old Creek channel would be subject to flooding and damage. Cayucos experienced District-wide flooding due to multiple storm events in January and February 2017. These storm events resulted in \$30,000 in infrastructure damage incurred due to flooding, and acquired \$26,847 in federal and state disaster relief funding to help mitigate the cost of damage. There are 54 parcels vulnerable to a 100-year flood event, which potentially totals \$4,111,740 in estimated losses, as well as 56 parcels within the 500-year floodplain with over \$5 million in estimated losses (Table Q.9). A total of 6 government/utilities parcels fall in the costal (VE) floodplain, but no monetary losses can be estimated from these given they are exempt properties. Figure Q.5 shows the flooded parcels in Cayuco as well as the floodplains discussed herein. There is one fire station (the Cayucos Fire Protection District facility) found within the 500-year floodplain, so that facility is at risk of flooding hazards. Overall, flooding hazards have been rated by the planning team as holding **High Significance** for the District.

Cayucos SD does not participate separately in the National Flood Insurance Program (NFIP) but will continue to support the County's participation in and compliance with the NFIP.

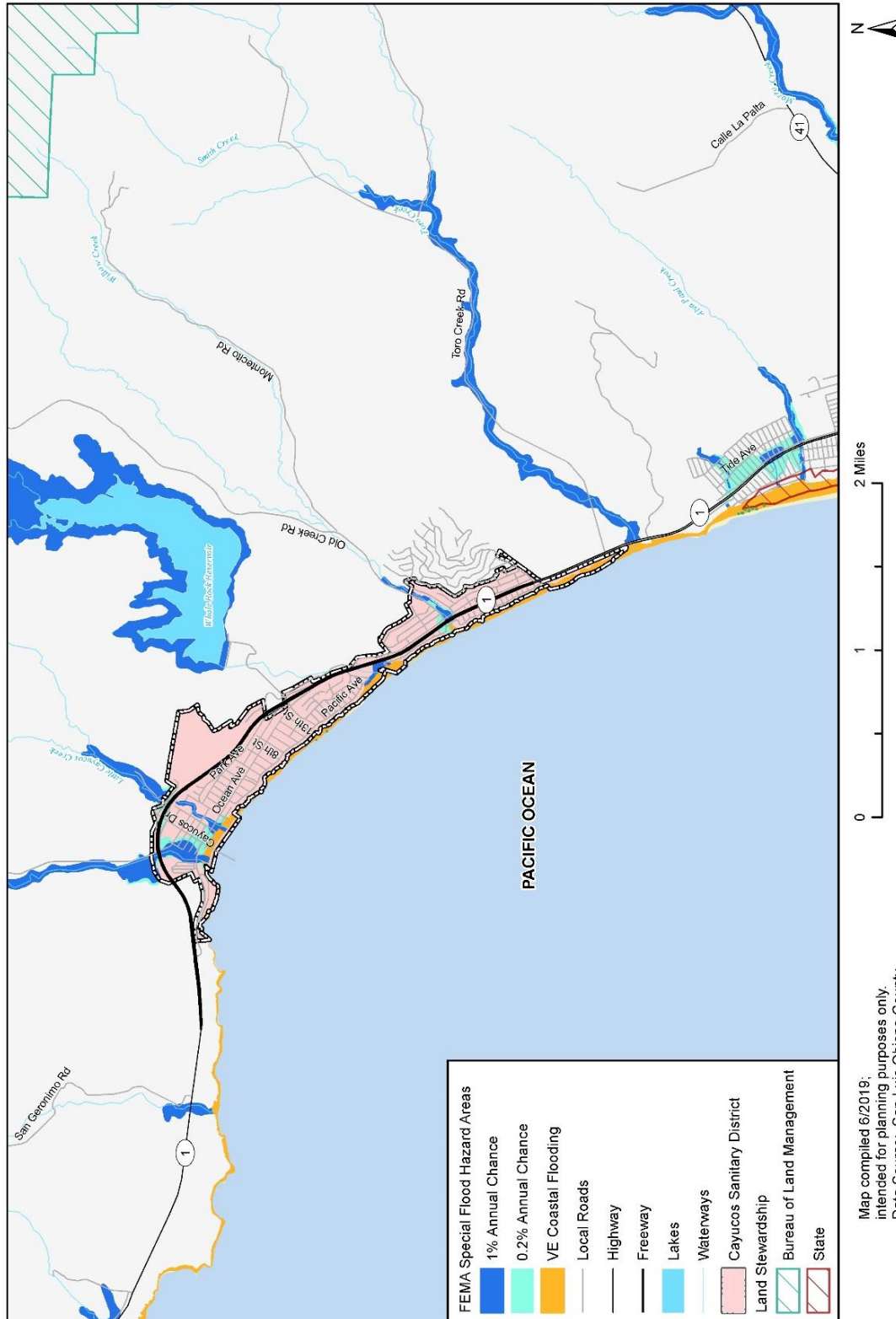
Table Q.9 Flood Risk by Property Type

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate
100-YEAR FLOOD EVENT					
Commercial	4	\$1,143,251	\$1,143,251	\$2,286,502	\$571,626
Government/Utilities	6	--	--	\$0	\$0
Other/Exempt/Misc.	4	\$1,612,620	--	\$1,612,620	\$403,155
Residential	24	\$5,890,886	\$2,945,443	\$8,836,329	\$2,209,082
Multi-Family Residential	15	\$2,458,679	\$1,229,340	\$3,688,019	\$922,005
Vacant	1	\$23,490	--	\$23,490	\$5,873
TOTAL	54	\$11,128,926	\$5,318,034	\$16,446,960	\$4,111,740
500-YEAR FLOOD EVENT					
Commercial	12	\$2,284,247	\$2,284,247	\$4,568,494	\$1,142,124
Government/Utilities	5	--	--	\$0	\$0
Other/Exempt/Misc.	6	\$2,769,376	--	\$2,769,376	\$692,344
Residential	21	\$4,047,568	\$2,023,784	\$6,071,352	\$1,517,838
Multi-Family Residential	4	\$674,995	\$337,498	\$1,012,493	\$253,123
Residential: Other	5	\$4,129,910	\$2,064,955	\$6,194,865	\$1,548,716
Vacant	3	\$204,365	--	\$204,365	\$51,091
TOTAL	56	\$14,110,461	\$6,710,484	\$20,820,945	\$5,205,236
COASTAL (VE) FLOOD EVENT					
Government/Utilities	6	--	--	--	--
TOTAL	6	--	--	--	--

Source: Wood Plc analysis based on ParcelQuest, San Luis Obispo County Assessor's Office data, LAFCO, and FEMA NFHL data



Figure Q.5 FEMA Flood Hazard Areas in Cayucos Sanitary District



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, FEMA NFHL



Landslides and Debris Flow

There are 99 parcels within the District that are subject to very high landslide risk, 773 parcels subject to high landslide risk, and 5 parcels subject to moderate landslide risk (Table Q.10).



Figure Q.6 displays the various areas in the District subject to landslide potential. With regards to critical facilities, two have been found to overlap with high landslide potential areas. These are the combined California Department of Forestry and Fire Protection Station 11 (Cayucos Fire Station). Overall, landslide and debris flow hazards have been rated by the planning team as holding Medium Significance for the District.

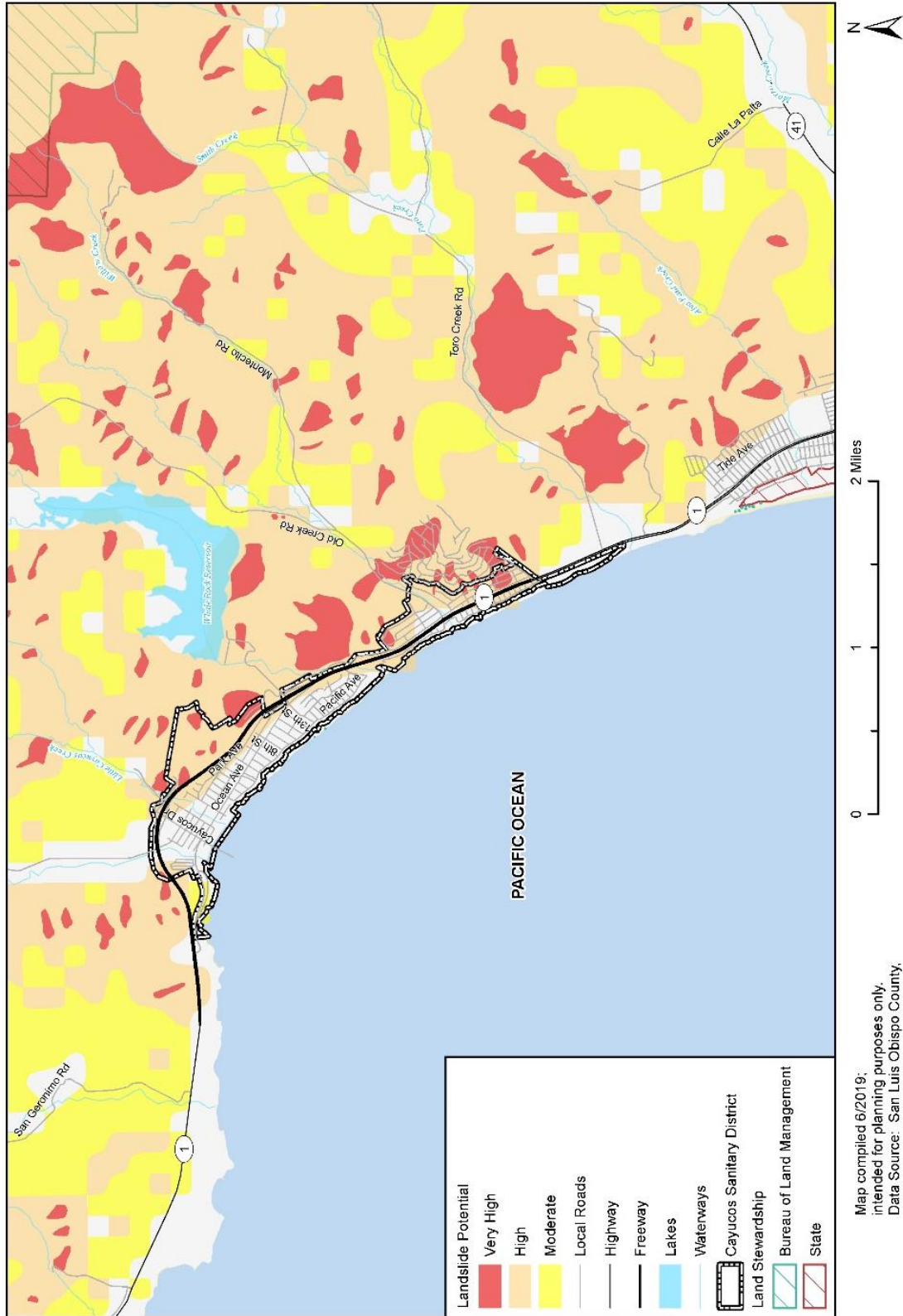
Table Q.10 Landslide Hazard by Location and Property Type

Property Type	Property Count	Improved Value	Content Value	Total Value
Moderate Landslide Potential				
Multi-Family Residential	1	\$151,513	\$75,757	\$227,270
Residential	4	\$2,209,931	\$1,104,966	\$3,314,897
Total	5	\$2,361,444	\$1,180,722	\$3,542,166
High Landslide Potential				
Government/Utilities	24	--	--	\$0
Mobile/Manufactured Homes	1	\$80,801	\$40,401	\$121,202
Multi-Family Residential	57	\$10,817,411	\$5,408,706	\$16,226,117
Other/Exempt/Misc.	20	\$62,467	--	\$62,467
Residential	659	\$152,312,548	\$76,156,274	\$228,468,822
Vacant	12	\$1,167,173	--	\$1,167,173
Total	773	\$164,440,400	\$81,605,380	\$246,045,780
Very High Landslide Potential				
Government/Utilities	1	--	--	\$0
Other/Exempt/Misc.	2	--	--	\$0
Residential	96	\$23,127,943	\$11,563,972	\$34,691,915
Total	99	\$23,127,943	\$11,563,972	\$34,691,915
GRAND TOTAL	877	\$189,929,787	\$94,350,074	\$284,279,861

Source: Wood Plc analysis based on ParcelQuest, San Luis Obispo County Assessor's Office data, and LAFCO



Figure Q.6 Landslide Potential Areas in Cayucos Sanitary District



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO



Tsunami and Seiche

Tsunamis can be generated by offshore seismic activity and generate strong surges with the potential to damage and inundate coastal areas. Tsunamis generally affect coastal communities and low-lying waterways in the vicinity of the coast. Cayucos varies from narrow sandy beaches backed by undeveloped bluffs and sea cliffs, to wider sandy beaches backed by relatively low-lying coastal development. This area is susceptible to wave run-up and flooding due to strong surges, including tsunamis (Figure Q.7). A total of 340 parcels within the District are in a tsunami inundation zone and subject to a total of \$122,278,313 in potential loss estimates (Table Q.11). One critical facility (the Cayucos Fire Protection District facility) falls within tsunami inundation zones. Overall, tsunami and seiche hazards have been rated by the planning team as holding **Medium Significance** for the District.

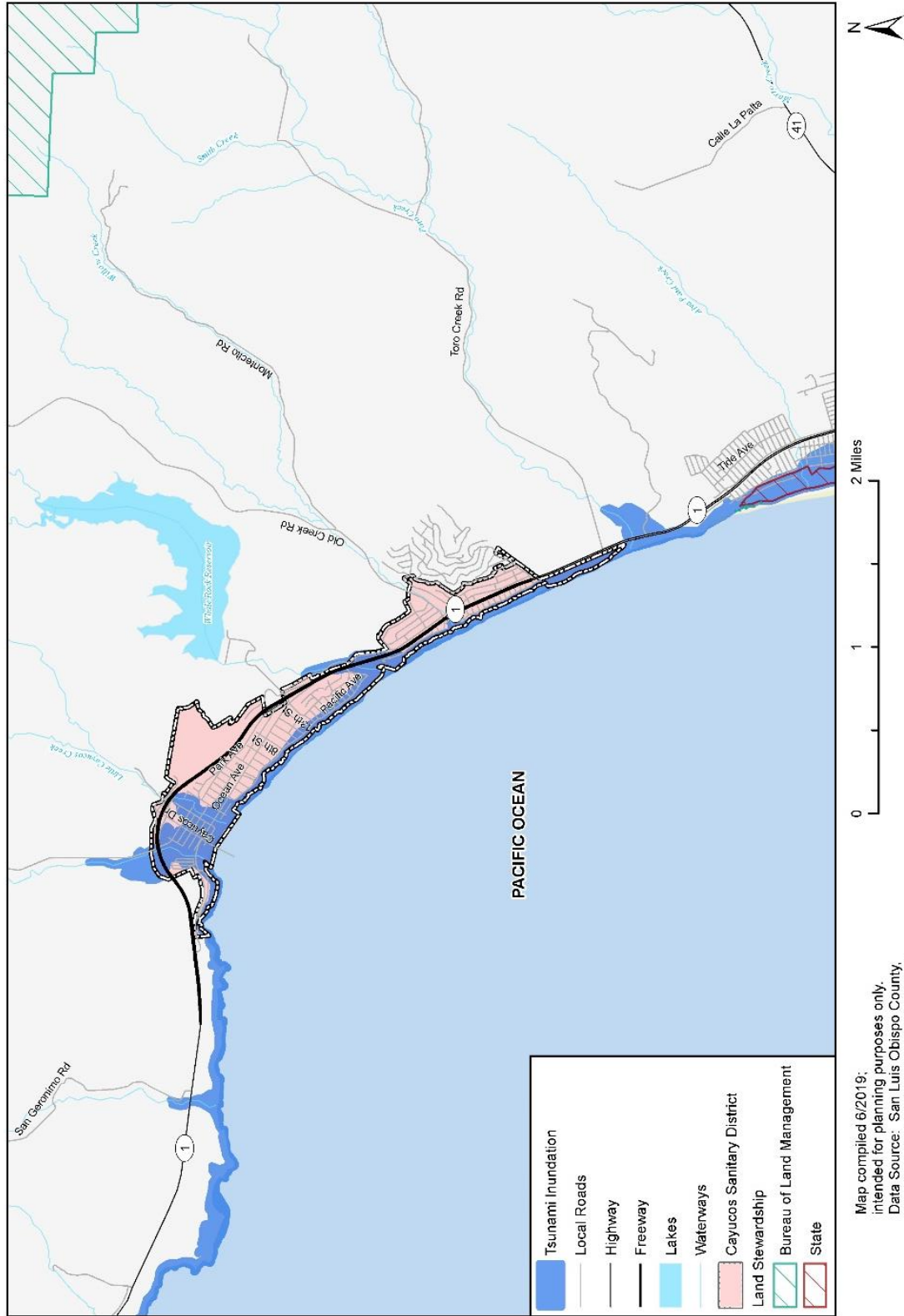
Table Q.11 Tsunami Risk by Property Type

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate
Commercial	19	\$5,302,935	\$5,302,935	\$10,605,870	\$10,605,870
Government/Utilities	21	\$169,629	--	\$169,629	\$169,629
Other/Exempt/Misc.	15	\$8,310,702	--	\$8,310,702	\$8,310,702
Residential	204	\$51,882,713	\$25,941,357	\$77,824,070	\$77,824,070
Multi-Family Residential	69	\$11,414,905	\$5,707,453	\$17,122,358	\$17,122,358
Residential: Other	7	\$5,155,553	\$2,577,777	\$7,733,330	\$7,733,330
Vacant	5	\$512,355	--	\$512,355	\$512,355
Total	340	\$82,748,792	\$39,529,521	\$122,278,313	\$122,278,313

Source: Wood Plc analysis based on ParcelQuest, San Luis Obispo County Assessor's Office data, LAFCO, and the CA Department of Conservation data



Figure Q.7 Tsunami Inundation Areas in the Cayucos Sanitary District



Wildfire

The FEMA Fire Hazard Severity Zones in Cayucos are moderate, and no properties exist within high or very high severity zones. The District is at risk of potential wildfire originating in the hills to the east, where high and very high severity zones occur. There are approximately 172 parcels located in the moderate wildfire severity hazard area, within the state responsibility area (Table Q.12). Two critical facilities are found within moderate wildfire severity hazard zones. These are the same facility, but classified as two different emergency service facilities since they serve two purposes: fire station, and emergency medical service stations. Overall, wildfire hazards have been rated by the planning team as holding **Medium Significance** for the District.

Table Q.12 Wildfire Severity by Property Type

Property Type	Property Count	Improved Value	Content Value	Total Value	Loss Estimate
Government/Utilities	23	--	--	\$0	\$0
Other/Exempt/Misc.	15	--	--	\$0	\$0
Residential	123	\$34,769,717	\$17,384,859	\$52,154,576	\$52,154,576
Multi-Family Residential	5	\$1,483,003	\$741,502	\$2,224,505	\$2,224,505
Residential: Other	3	\$825,609	\$412,805	\$1,238,414	\$1,238,414
Vacant	3	\$280,000	--	\$280,000	\$280,000
Total	172	\$37,358,329	\$18,539,165	\$55,897,494	\$55,897,494

Source: Wood Plc analysis based on ParcelQuest, San Luis Obispo County Assessor's Office data, LAFCO, and CalFire



Figure Q.8 Fire Hazard Severity Zones in Cayucos Sanitary District



Human Caused: Hazardous Materials

The Cal OES Warning Center reports 24 hazardous materials incidents in the Cayucos Sanitary District from 1994 through October 24, 2018; as noted in Section 5.3.13 of the Base Plan, this likely excludes a large number of unreported minor spills. (Cal OES reports an additional 209 incidents in unincorporated San Luis Obispo County, however a lack of data makes it difficult to know if any of those took place within the District boundaries). This constitutes 1% of the hazardous materials incidents reported countywide during the same time frame, and averages out to roughly 1.0 incidents per year. As noted in Section 5.3.13 of the Base Plan, only around 6% of reported hazardous materials incidents result in injuries, fatalities, or evacuations. While there are no significant hazardous materials facilities located in the District, Cayucos sits within the Emergency Planning Zone for the Diablo Canyon Nuclear Power Plant. Overall, hazardous materials have been rated as holding **Low Significance** for the District, based on the Planning Team input.

Q.4 Capability Assessment

Capabilities are the programs and policies currently in use to reduce hazard impacts or could be used to implement hazard mitigation activities. This capability 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory policies and programs in place. The team supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed to reducing hazard-related losses.

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

Q.4.1 Regulatory Mitigation Capabilities

Table Q.13 Cayucos Sanitary District Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	Yes	County
Zoning ordinance	Yes	County
Subdivision ordinance	Yes	County
Growth management ordinance	Yes	County
Floodplain ordinance	Yes	County
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	County
Building code	Yes	County
Fire department ISO rating	Yes	County/Cal Fire
Erosion or sediment control program	Yes	County
Stormwater management program	Yes	County
Site plan review requirements	Yes	Cayucos Sanitary District
Capital improvements plan	Yes	Cayucos Sanitary District



Regulatory Tool	Yes/No	Comments
Economic development plan	Yes	County
Local emergency operations plan	Yes	County
Other special plans	Yes	District SSMP
Flood Insurance Study or other engineering study for streams	Yes	County
Elevation certificates (for floodplain development)	Yes	County
Other		

Q.4.2 Administrative/Technical Mitigation Capabilities

Table Q.14 Cayucos Sanitary District Administrative/Technical Mitigation Capabilities identifies the personnel responsible for activities related to mitigation and loss prevention in the Cayucos Sanitary District.

Table Q.14 Cayucos Sanitary District Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	District Manager
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	District Manager
Planner/engineer/scientist with an understanding of natural hazards	Yes	Contract as needed
Personnel skilled in GIS	Yes	County
Full time building official	Yes	County
Floodplain manager	Yes	County
Emergency manager	Yes	District on-call personnel
Grant writer	Yes	Contract as needed
Other personnel	Yes	District Contructions and Maintenance
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	County
Warning systems/services (Reverse 9-11, outdoor warning signals)	No	
Other		

Q.4.3 Fiscal Mitigation Capabilities

The District approves its Operating Budget and Capital Improvement & Equipment Budget in June for each Fiscal Year. Table Q.15 identifies financial tools or resources that the District could potentially use to help fund mitigation activities.



Table Q.15 Cayucos Sanitary District CSD Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	No
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

Q.4.4 Mitigation Outreach and Partnerships

The County of San Luis Obispo conducted community outreach within the District’s limits to receive feedback from stakeholders on outlined mitigation strategies within the SLO County Multi-Jurisdictional Hazard Mitigation Plan. The County of San Luis Obispo through CalFire provides services to the residents of the District including Emergency Medical Response (Estero Area Plan, 2009). The District utilizes the County Sherriff and California Highway Patrol for police services.

Q.4.5 Other Mitigation Efforts

The LPT noted the following mitigation efforts:

- The District conducts a yearly Fats, Oils and Grease (FOG) inspection program on commercial buildings to mitigate line clogs and potential for sewer backups.
- The District offers a no cost video inspection on private sewer laterals in order to eliminate stormwater drainage connections and leaking laterals.

Q.4.6 Opportunities for Enhancement

Based on the capabilities assessment, the District has several existing mechanisms in place that help to mitigate hazards. There are also opportunities for the District to expand or improve on these policies and programs to further protect the community. Future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform the District’s staff members on how best to integrate hazard information and mitigation projects into their departments. Continuing to train staff on mitigation and the hazards that pose a risk to the District will lead to more informed staff members who can better communicate this information to the public.

Q.5 Mitigation Strategy

Q.5.1 Mitigation Goals and Objectives

The Cayucos Sanitary District adopts the hazard mitigation goals and objectives developed by the HMPC and described in section 7 Mitigation Strategy.

Q.5.2 Mitigation Actions

The planning team for the Cayucos Sanitary District identified and prioritized the following mitigation actions based on the risk assessment. Actions were prioritized using the process described in Section 7.2.1 of the Base



Plan. 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. Actions with an '*' are those that mitigate losses to future development.



Table Q.16 Cayucos Sanitary District’s Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
CAY.1	Adverse Weather, Coastal Storm/ Erosion/Sea Level Rise, Earthquake, Flood, Landslides and Debris Flow, Tsunami, Wildfire	Conduct a Critical Facility Audit and Monitoring to determine additional hazard risk and develop appropriate mitigation as applicable.	Cayucos Sanitary District	\$10,000 to \$50,00	District Budget	Medium	3-5 years	New
CAY.2	Adverse Weather, Coastal Storm/ Erosion/Sea Level Rise, Earthquake, Flood, Landslides and Debris Flow	Implement programmed improvements to pipelines and infrastructure as indicated in the Cayucos Sanitary District Capital Improvement yearly budget with a focus to build resiliency to multiple hazards including adverse weather, earthquakes, landslides, coastal storms, and flooding.	Cayucos Sanitary District	\$250,000 to \$350,000 per year	District Budget	High	Ongoing 2019-2025	New
CAY.3	Adverse Weather, Coastal Storm/ Erosion/Sea Level Rise, Earthquake, Flood, Landslides and Debris Flow, Tsunami	Relocation of Cayucos/Morro Bay WWTP to mitigate risk to coastal hazards, tsunami, and flood and enhance seismic resiliency in new facility.	Cayucos Sanitary District	\$25,000,000	USDA Loans and Grant Funding	High	2019-2021	New Construction is in progress in 2019. Plant is expected to be operational by end of 2020



Q.6 Implementation and Maintenance

Moving forward, the District will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Chapter 8 in the Base Plan.

Q.6.1 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 District to help inform updates and the development of local plans, programs and policies. The County Planning and Building Divisions may utilize the hazard information when reviewing a site plan or other type of development applications.

As noted in Chapter 8, the HMPC representatives from Cayucos 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 HMPC plan review meeting.

Q.6.2 Monitoring, Evaluation and Updating the Plan

The Cayucos Sanitary District will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Section 8 of the Base Plan. Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. The Cayucos Sanitary District General Manager will be responsible for representing the District in related County Hazard Mitigation Plan meetings or events, and for coordination with County staff and departments during plan updates. The Cayucos Sanitary District realizes it is important to review the plan regularly and update it every five years in accordance with the FEMA Disaster Mitigation Act Requirements as well as other State of California requirements.

R.1 District Profile

R.1.1 Mitigation Planning History and 2019 Process

This Annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan Update and is the first mitigation plan for the District. The Facilities Manager of the Port San Luis Harbor District (District) was the representative on the county Hazard Mitigation Plan Committee (HMPC) and took the lead for developing the plan this annex in coordination with the Port San Luis Harbor District Local Planning Team (LPT). The LPT will be responsible for implementation and maintenance of the plan.

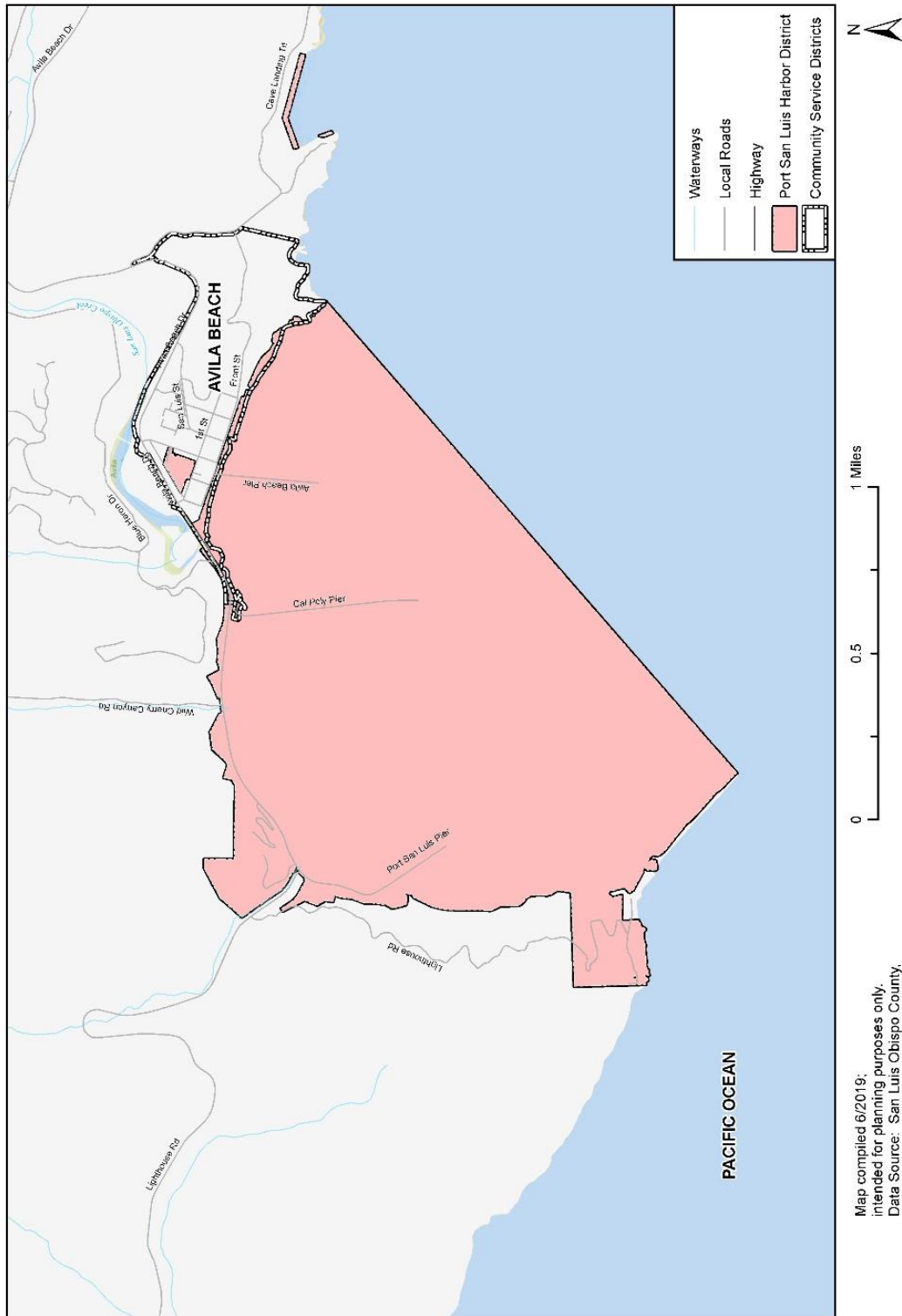
Table R.1 Port San Luis Harbor District Hazard Mitigation Plan Planning Team

Department or Stakeholder	Title
Port San Luis Harbor District	Facilities Manager

More details on the planning process followed and how the jurisdictions, service districts and stakeholders participated can be found in Section 3 of the Base Plan (Planning Process), as well as how the public was involved during the 2019 update.

Figure R.1 below shows the boundaries of the Port San Luis Harbor District.

Figure R.1 Port San Luis Harbor District



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO



R.1.2 District Overview

The origins of Port San Luis began in 1868 when John Harford, a local entrepreneur, proposed building a wharf in the sheltered west side of San Luis Obispo Bay. The wharf, later to be named Harford Pier, was completed in 1873. Through its early years the Port was a key link to the County's dairy, grain, cattle, hogs, and other farm and mineral exports. When oil was discovered in San Luis Obispo County and northern Santa Barbara County, oil storage tanks were erected on a hillside north of the port, Harbor Terrace. After the standard-gauge Southern Pacific Railroad lines arrived along with the hardships of the Great Depression in the late 1920s, the port declined, and the oil facilities were abandoned; by the 1950s the pier was unable to support freight vehicles due to the extreme state of disrepair.

In 1954 the citizens of southern San Luis Obispo County voted to create and fund a Harbor District for the Port San Luis Area. It was hoped that this action would provide a means to fix up the old facilities and create some commerce for the south county. The State of California granted the Harbor District the tidelands of San Luis Obispo Bay, with boundaries of Point San Luis on the west, Irish Hills in the north, Sunset Palisades to the east, and the Ocean areas southward. The Harbor District acquired the Harford Pier in 1965 and began rehabilitating the pier to allow modern functions while preserving its historic character.

Since the mid-1960s the Port San Luis Harbor District has acquired additional properties, most of which have limited access due to the local topography. Current District owned properties span from the Point San Luis Lighthouse to Avila Beach. The Harbor District operates and maintains Harford Pier, Harford Landing, Avila Pier, Avila Beach, Avila Beach Parking Lot, Olde Port Beach, Fisherman's Beach, Point San Luis Lighthouse, and Harbor Terrace. The neighboring properties are used for agriculture for the most part, with the exception of the Diablo Canyon Nuclear Power Plant northwest of the Port. The Harbor Commission has since sought to implement the original goal of the first Commission and vision of the Founding Fathers of the District: to repair the facilities and become economically viable while serving the public. The District's mission statement overall is to "serve the public with an array of commercial and recreational boating, fishing and coastal related opportunities, while ensuring an environmentally responsible, safe, well-managed and financially sustainable harbor that preserves [the District's] marine heritage and character" (Port San Luis Harbor District website).

R.1.3 Development Trends

Port property mandates require consideration of the needs of harbor users alongside with the resources required to serve them (e.g. waterfront locations as well as capital and infrastructure improvements). Therefore, planning activities need to be implemented in smart ways which preserve environmental resources such as land and water ecosystems, scenic views, and the overall waterfront character of the Port. Some key planning issues which affect policy and development designs are: addressing District priorities and fiscal issues while meeting the needs of the harbor users (e.g. recreational activities), guaranteeing coastal access, and maintaining and preserving the environment (e.g. marine ecology). As such, future potential development may be limited but should retain the architecture and landscaping principles of the local waterfront character, while taking into account the aforementioned planning issues to reduce long term maintenance requirements. As such, proposed developments at the Port must always be within resource and system capabilities available to the District, while additionally meeting safety requirements. For more details on the specific limitations to development, ongoing issues with planning efforts, and the Port's overall short- and long-term objectives for the District and its management, refer to the Port San Luis Harbor District Master Plan revised in 2007.

R.1.4 Other Community Planning Efforts

Coordination and synchronization with other community planning mechanisms and efforts are vital to the success of this plan. To have a thorough evaluation of hazard mitigation practices already in place, appropriate

planning procedures should involve identifying and reviewing existing plans, policies, regulations, codes, tools, and other actions designed to reduce a community’s risk and vulnerability from natural hazards.

The Port San Luis Harbor District is referenced in other County planning documents and regulated by County policies and planning mechanisms. Integrating existing planning efforts, mitigation policies, and action strategies into this Annex establishes a credible, comprehensive document that weaves the common threads of a community’s values together. The development of this jurisdictional annex involved a comprehensive review of existing plans, studies, reports, and initiatives from San Luis Obispo County and the District that relate to hazards or hazard mitigation. A high-level summary of the key plans, studies and reports is summarized in Table R.1. Information on how they informed the update are noted and incorporated where applicable.

Table R.2 Summary of Review of Key Plans, Studies and Reports

Plan, Study, Report Name	How Document Informed the Annex
Port Master Plan (2004) – Revised in 2007	Pulled information on the Port’s history, planning challenges, issues with hazards, and other such key issues.
Avila Community Plan, Background Report (2018)	Incorporated background information on the community and CSD including historical and cultural resources, and development and land use trends; incorporated hazard information and maps (if applicable) and informed the Vulnerability Assessment.
San Luis Bay Area Plan – Coastal (Revised August 2009)	Incorporated hazard information related to flooding and coastal hazards.
San Luis Obispo County – Tsunami Emergency Response Plan (Revised April 2016)	Informed the Vulnerability Assessment for tsunami risk.

R.2 Hazard Identification and Summary

The District’s Planning Team identified the hazards that affect the District and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to the Port San Luis Harbor District (see Table R.3). There are no hazards that are unique to the Port San Luis Harbor District compared to the rest of the County.

Table R.3 Port San Luis Harbor District Hazard Risk Summary

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Adverse Weather	Extensive	Highly Likely	Limited	Medium
Coastal Storms/Coastal Erosion/Coastal Flooding and Inundation/Sea Level Rise	Significant	Highly Likely	Limited	High
Earthquake and Liquefaction	Extensive	Likely	Critical	Medium
Flood	Limited	Highly Likely	Limited	Medium
Landslide and Debris Flows	Significant	Highly Likely	Critical	Medium
Tsunami and Seiche	Significant	Occasional	Catastrophic	High
Wildfire	Significant	Occasional	Critical	Medium
Human Caused: Hazardous Materials	Extensive	Unlikely	Catastrophic	High
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		

R.3 Vulnerability Assessment

The intent of this section is to assess the Port San Luis Harbor District’s vulnerability separately from that of the planning area, which has already been assessed in Section 5 Hazard Identification and Risk Assessment in the Base Plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance as rated by the Planning Team.

The information to support the hazard identification and risk assessment for this Annex was collected through a Data Collection Guide, which was distributed to each participating municipality or special district to complete during the planning process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact anywhere within the County, as well as to rank the hazards and identify the related vulnerabilities unique to each jurisdiction. The Port San Luis Harbor District planning team members were also asked to share information on past hazard events that have affected the District.

Each participating jurisdiction was in support of the main hazard summary identified in the Base Plan (see Table 5.2). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction (See Table R.3). Identifying these differences helps the reader to differentiate the jurisdiction's risk and vulnerabilities from that of the overall County.

Note: The hazard "Significance" reflects overall ranking for each hazard and is based on the Port San Luis planning team input from the Data Collection Guide and the risk assessment developed during the planning process (see section 5 of the Base Plan), which included a more detailed qualitative analysis with best available data.

The hazard summaries in Table R.3 reflect the hazards that could potentially affect the District. Based on this analysis, the priority hazards (High Significance) for mitigation are coastal hazards (coastal storm/coastal erosion/coastal flooding and inundation/sea level rise) along with hazardous materials. The discussion of vulnerability for each of the following hazards is in Section R.3.2 Estimating Potential Losses. Those of Medium or High significance for the Port San Luis Harbor District are identified below.

- Adverse Weather
- Coastal Storm/Coastal Erosion/Coastal Flooding and Inundation/Sea Level Rise
- Earthquake and Liquefaction
- Flood
- Landslide and Debris Flows
- Tsunami and Seiches
- Wildfire
- Human Caused: Hazardous Materials

Other Hazards

Hazards assigned a significance rating of Low or N/A (Not Applicable) are not addressed further in this annex and are not assessed individually for specific vulnerabilities in this section. The District's Planning Team decided to rate several hazards as N/A or Low due to a lack of exposure, vulnerability, or no probability of occurrence. The following hazards are considered Low significance hazards or Not Applicable (N/A) to the Port San Luis Harbor District.

- Dam Failure – N/A
- Agricultural Pests and Plant Diseases - Low
- Biological Agents - Low
- Drought – Low
- Hazardous Trees – Low
- Land Subsidence – Low
- Radon Hazards – Low

R.3.1 Assets at Risk

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

Values at Risk

The following data on property exposure is derived from the San Luis Obispo County Assessor data. This data should only be used as a guideline to overall values in the District as the information has some limitations. Table R.4 shows the exposure of parcels (e.g., the values at risk based on improvement values, content values, and

total values as an addition of these two types of values) broken down by parcel type for the Port San Luis Harbor District. Note that much of the inventory is exempt from tax assessment, thus the assessor data did not have valuations on property within the district. In lieu of this the District provided a property inventory based on scheduled items with the Special District Risk Management Authority. The total value of these assets as of July 2019 is \$40,334,089 in improvements and \$919,189 in contents. Details by asset type are provided in an attachment to this annex.

Table R.4 Parcel Exposure Values for the Port San Luis Harbor District by Parcel Types

Property Type	Parcel Count	Building Count	Improved Value
Government/Utilities	13	--	NA
Other/Exempt/Misc.	2	--	NA
Total	15	--	

Source: Wood Plc analysis based on ParcelQuest and San Luis Obispo County Assessor's Office data

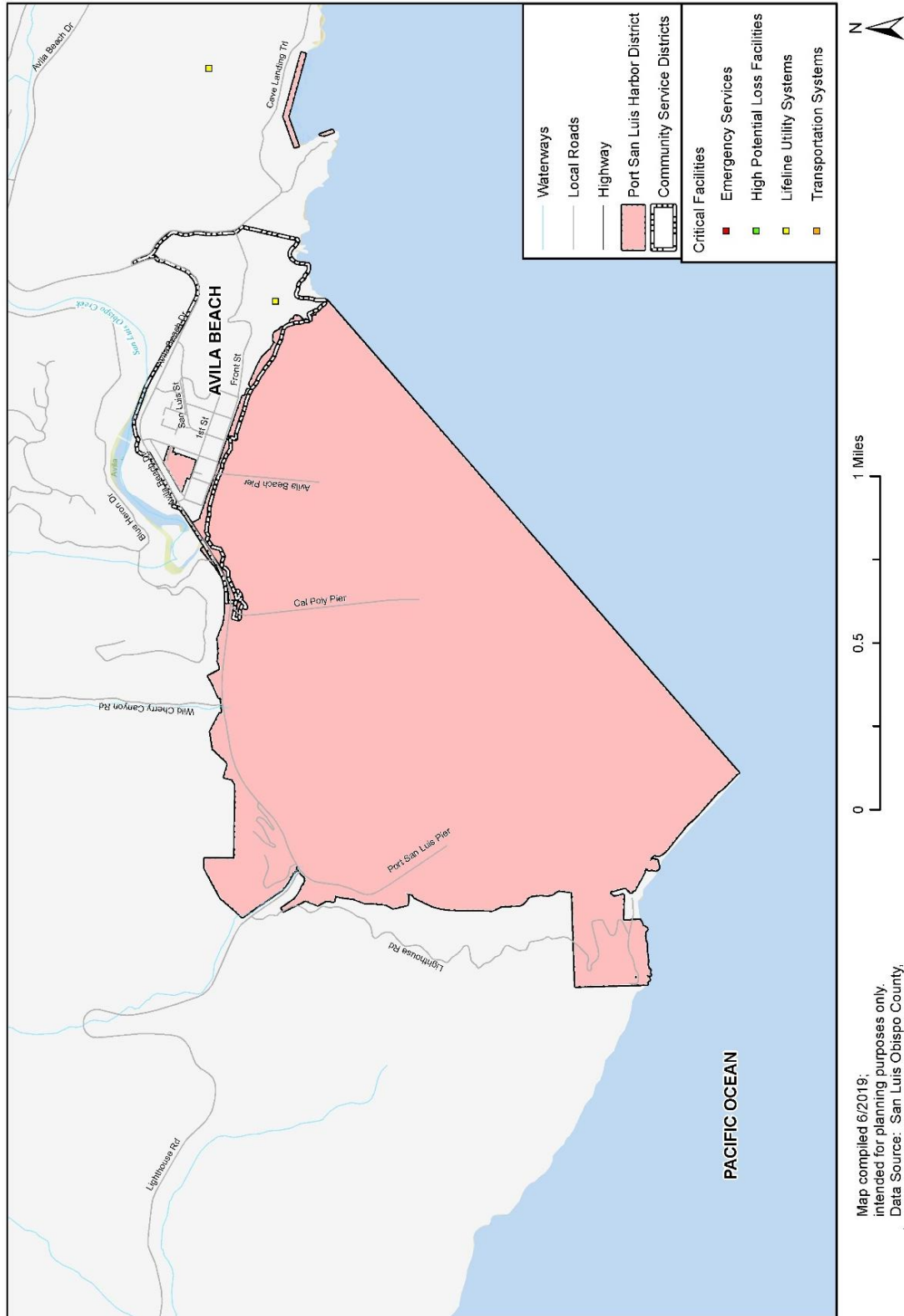
Critical Facilities and Infrastructure

A critical facility is one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the County based on San Luis Obispo County GIS data as well as structures obtained from the Homeland Infrastructure Foundation-Level Dataset (HIFLD) is provided in Section 5.2 Asset Summary of the Base Plan. The four types of Critical Facilities categorized by San Luis Obispo County and its jurisdictions' and districts' planning teams are: Emergency Services, High Potential Loss Facilities, Lifeline Utility Systems, and Transportation Systems. Refer to Section 5.2 of the Base Plan for more information on the assets used throughout this Annex and the county-wide analyses. While there are no critical facilities associated with these databases within the Port San Luis Harbor District boundaries that are vulnerable to hazards in the planning area, nearby facilities in Avila Beach and east of the Port are displayed in Figure R.2. Information provided by the District in the attachment to this annex indicates the following critical facilities:

- Water Tank/Domestic Well
- Water Tower 100k. gal/Booster Pump
- Sewer lift stations (5)
- Diesel Facility/Pump Out

Figure R.2 Critical Facilities Near the Port San Luis Harbor District



Transportation and Lifeline Facilities

There is only one main way in and out of the Port District and Avila Beach by automobile. Avila Beach Drive is the main transportation waypoint and, if obstructed or out of service (e.g., when closed down for repairs or due to hazard events such as the landslide which took place about around 2009), access to the port and Avila Beach become severely limited unless traveling by foot.

Because the Diablo Canyon Nuclear Power Plant is mainly accessible through this road, access issues are of importance to the nearby communities due to reliance on this primary road which may become unavailable and hence prevent hundreds of cars from travelling to and from the nuclear plant. During a hazard or serious emergency event it would be required to provide fast and unrestricted access to critical services (e.g. firefighting), and so emergency responders could face serious impediments during a critical situation if this main road becomes difficult or impossible to traverse on the way to or from the nuclear plant.

High Potential Loss Facilities

The Diablo Canyon Nuclear Power Plant is located north of the Diablo Canyon Road, accessible through Avila Beach and the Harbor District via Avila Beach Drive.

Historic and Cultural Resources

The Port San Luis Harbor District manages Port San Luis Harbor, which serves the public with commercial and recreational boating, fishing, and coastal-related opportunities. The Port San Luis Harbor includes Harford Pier, Harbor terrace, Fishermen's Beach, Port Beach, Cal Poly Research Pier, a historic lighthouse, Avila Pier, Avila Beach, and Pirate's Cove, among some of the prominent cultural and relevant community resources (Avila Community Plan, 2018).

Natural Resources

Ecological assets have been historically of high importance to the Harbor District community, as indicated in the District's Master Plan. Assets such as the beach and bluffs, open waters, and species diversity are critical to the District and surrounding communities.

Economic Assets

The port, beaches, piers, campgrounds, and other assets the Harbor District manages are in themselves main assets for the community, as it generates profits from tourists and other populations visiting the area and its environmental and natural amenities. In addition, the Diablo Canyon plant is an economic asset near the Port, on which many locals rely for jobs and to sustain the local economy.

R.3.2 Estimating Potential Losses

This section details vulnerability to specific hazards of medium or high significance, where quantifiable, noted by the Planning Team, and/or where it differs significantly from that of the overall County. Impacts of past events and vulnerability to specific hazards are further discussed below, though refer to Section 5 of the Base Plan for more details on the County's HIRA findings and hazard profiles.

Adverse Weather

Adverse weather involves thunderstorms, heavy rain, hail, lightning, dense fog, freeze, high winds, tornadoes, and extreme heat events. In the District, these hazards have been known to occur given the District's location on the coast and hence the climatic and weather variability with seasonable changes, tides, and ocean currents.

Adverse weather hazards pose a **Medium Significance** hazard, per the District's local planning team. The District

is subject to frequent and strong southerly winds during fall and winter months, ranging from 32 to 46 mph, with gusts sometimes reaching 55-65 mph. Santa Lucia winds are also common within the District, typically producing northeasterly winds that range from 15 to 35 mph, and sometimes reaching 40 mph. Extreme heat events are infrequent, but higher temperatures that are sustained during summer months put staff working outdoors for extended periods at an increased risk of heat illness and heat-related injuries. The District has experienced lightning storms in the past, which poses a potential fire hazard for the two wooden piers within San Luis Bay. Dense fog, a common element of shorelines and harbors during the early mornings of cooler months, also poses significant risks for boaters on the water. Low visibility caused by dense fog may lead to damage of boats and other structures in the event of a collision.

Actions to mitigate other adverse weather elements—such as thunderstorms, heavy rain, and tornadoes—are incorporated into actions that address coastal storms and flooding. More specifics on coastal storms and sea level rise issues are discussed in the following chapters of this annex. For more details on overall adverse weather hazards and historical events, refer to Section 5.3.1 of the Base Plan.

Coastal Storm/Coastal Erosion/Coastal Flooding and Inundation/Sea Level Rise

As a low-lying coastal and port community, the Port San Luis Harbor District is exposed to a range of coastal hazards, including coastal storms and coastal erosion. As described in the Base Plan (refer to Section 5.3.4), these hazards are projected to become more severe when combined with sea level rise. The District and its direct surroundings, such as Avila Beach, have dealt with the aftermath of coastal storms in past events.

The District has ranked these coastal hazards along with sea level rise as holding **High Significance**. Based on planning team input, damages from storm waves and southerly storms occur with high frequency. In addition, there are FEMA-provided flood hazard areas along the coast, which fall under the detailed study coastal flooding, Table R.5 below summarizes the parcels which flood under this FEMA hazard area category (i.e. zone VE). These coastal hazards have been mitigated slightly through coastal armoring, including a series of bluff and sea walls between Front Street and shoreline in Avila Beach just to the east of the District. Because of this armoring it is expected the community will experience lesser impacts of bluff erosion compared to other coastal communities.

Table R.5 Parcels in Coastal/VE Flood Hazard Areas in the Port San Luis Harbor District

Parcel Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate
Government/Utilities	7	--	--	--	--
Other/Exempt/Miscellaneous	1	--	--	--	--
TOTAL	8	--	--	--	--

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, FEMA NFHL, Wood Plc Parcel Analysis

Rising sea level due to climate change is projected to increase the intensity of coastal storms, flooding, inundation, and erosion along the District's coast. The areas with the highest potential of experiencing coastal hazards include the shoreline, cliffs, and low-lying areas adjacent to the nearby waterways which are already vulnerable to riverine flooding without the rising sea levels. The local planning team also noted that the District is very susceptible to southerly storms, and a second breakwater never being constructed left the harbor partially completed. Often a number of boats along the beach will cause damages to the pier during large coastal storms, and the District government wishes to focus on the redesign of the pier including pier materials if the infrastructure were to fail due to sea level rise issues. For example, the Avila Pier nearby has been partially destroyed three times in the last 150 or so years. A revetment and jetty at the Harford Landing also require repairs, since their current heights make them susceptible to damages during the winter. The planning team

hopes to be able to add a small seawall atop of the revetment to defend against winter waves and climate change/sea level rise effects, which are expected to worsen over the years.

With regards to transportation systems and related local infrastructure, the Avila Beach Drive road floods during storms due to the local creek systems and often becomes impassable. As this road is critical in nature, being the only main way in and out the area by automobile, these hazard events pose high risks to the District. In addition, portions of Avila Beach such as the parking lot are likely to inundate frequently. The current one-way duckbill valve which is supposed to drain to the creek nearby has experienced multiple issues, as the low-lying areas are often flooded in the winter months along Beach Colony Lane. With a changing climate, these issues are expected to worsen the impacts on local infrastructure.

As part of the 2019 HMP planning effort, a sea level rise risk assessment was completed to determine how sea level rise may affect coastal jurisdictions and critical facilities and how coastal flooding might be exacerbated in the future. Table R.6 and Table R.7 summarize the properties at risk of inundation by sea level rise and sea level rise combined with a 1% annual chance coastal flood. The area of inundation by sea level rise and sea level rise combined with the 1% coastal flood are shown in Figure R.3 and Figure R.4, respectively. No critical facilities were determined to be at risk in the sea-level rise scenarios. See Section 5.3.4 Coastal Storm/Coastal Erosion/Sea Level Rise in the base plan for more details on the scenarios and data sources used for this analysis.

Table R.6 Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Government/Utilities	1	2	5	2	4	5
Other/Exempt/Misc.	--	--	1	--	--	1
Total	1	2	6	2	4	6

Source: Wood analysis with USGS CoSMoS 3.1 data

Table R.7 Improved Values of Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Government/Utilities	--	\$8,491,063	\$26,689,968	\$8,491,063	\$8,491,063	\$26,689,968
Other/Exempt/Misc.	--	--	--	--	--	--
Total	\$0	\$8,491,063	\$26,689,968	\$8,491,063	\$8,491,063	\$26,689,968

Source: Wood analysis with USGS CoSMoS 3.1 data

Figure R.3 Port San Luis Harbor District Sea Level Rise Scenario Analysis: Tidal Inundation Only

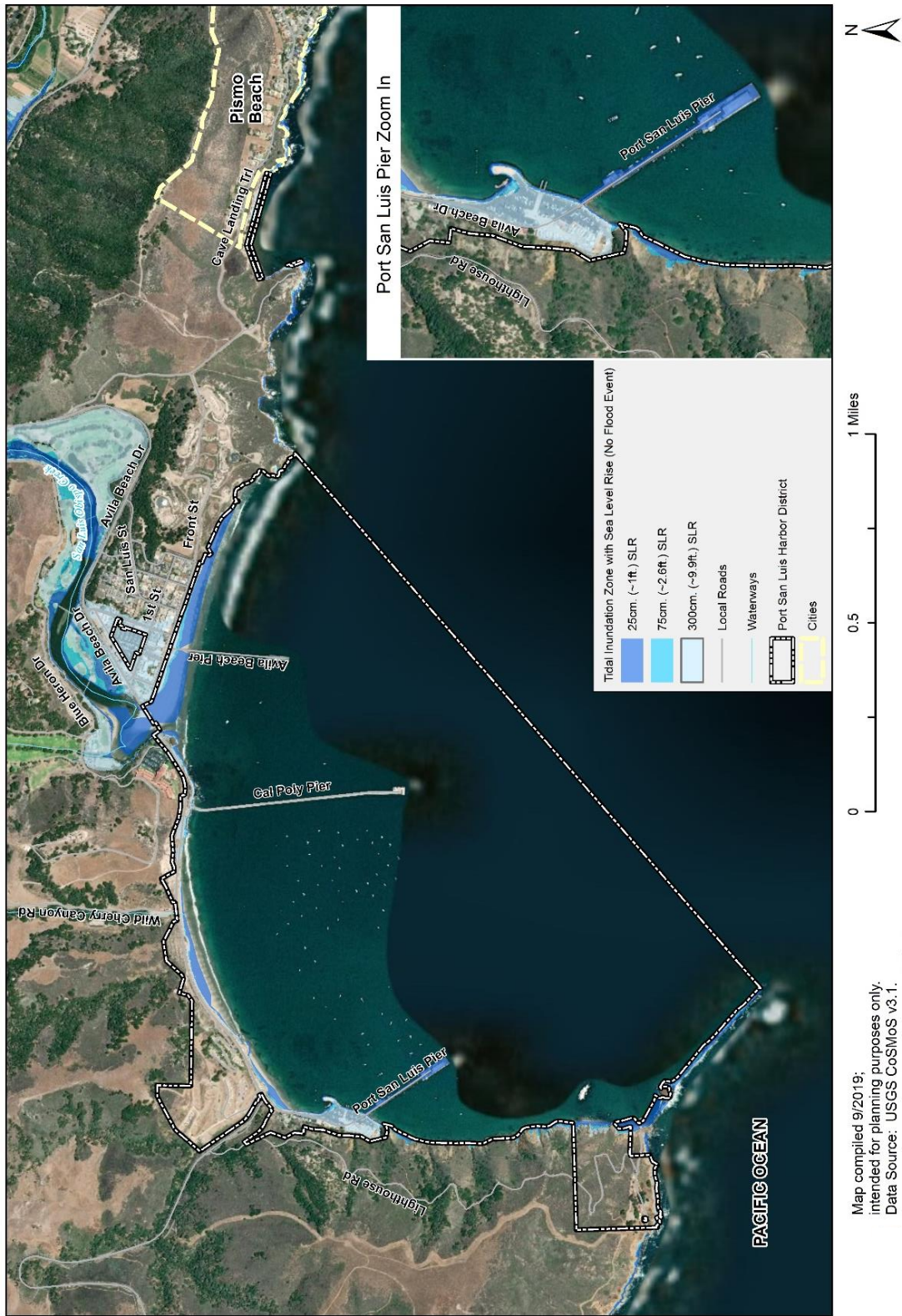
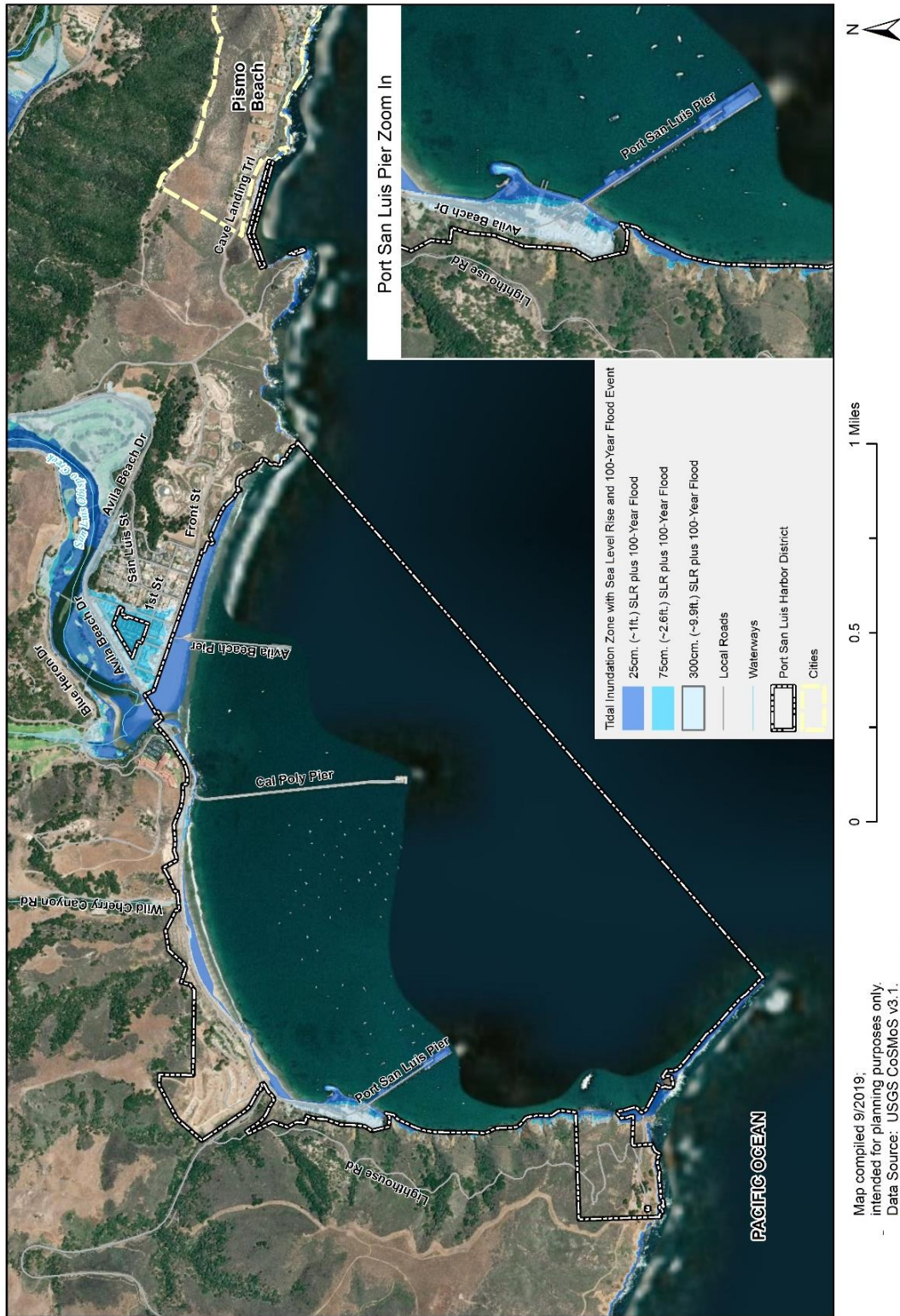


Figure R.4 Port San Luis Sea Level Rise Scenario Analysis: Tidal Inundation and 1% Annual Chance Flood



Map compiled 9/2019;
intended for planning purposes only.
Data Source: USGS CoSMoS v3.1.
San Luis Obispo County, US Census TIGER
Database, CA Open Data Portal, LAFCO.
Note: SLR = Sea Level Rise

Earthquake and Liquefaction

There are two fault lines that run through the northern and northeastern portions of the District, part of the South Margin section of the San Luis Range system. As a coastal community, there is also a risk of earthquakes offshore and resulting tsunami events (refer to the Tsunami and Seiche section of this annex, below). In 1916 a magnitude 5.1 earthquake occurred offshore of Avila Beach in the San Luis Bay. There is limited data on these events at the local level including if ground shaking was felt and at what intensity. The earthquake reportedly resulted in smokestacks at the Union Oil Refinery at Port San Luis to fall, and a post-earthquake landslide to occur that blocked railroad tracks.

The Diablo Canyon Power Plant is located just north of the District and is within the proximity of the Hosgri fault line just offshore. The Power Plant was originally designed to withstand a 6.75 magnitude earthquake and has been upgraded to withstand a 7.5 magnitude earthquake. The Plant has in place extensive seismic monitoring and safety systems to shut down quickly in a significant ground shaking event. Refer to the Human Caused: Hazardous Materials section below for more information related to the Diablo Canyon Power Plant.

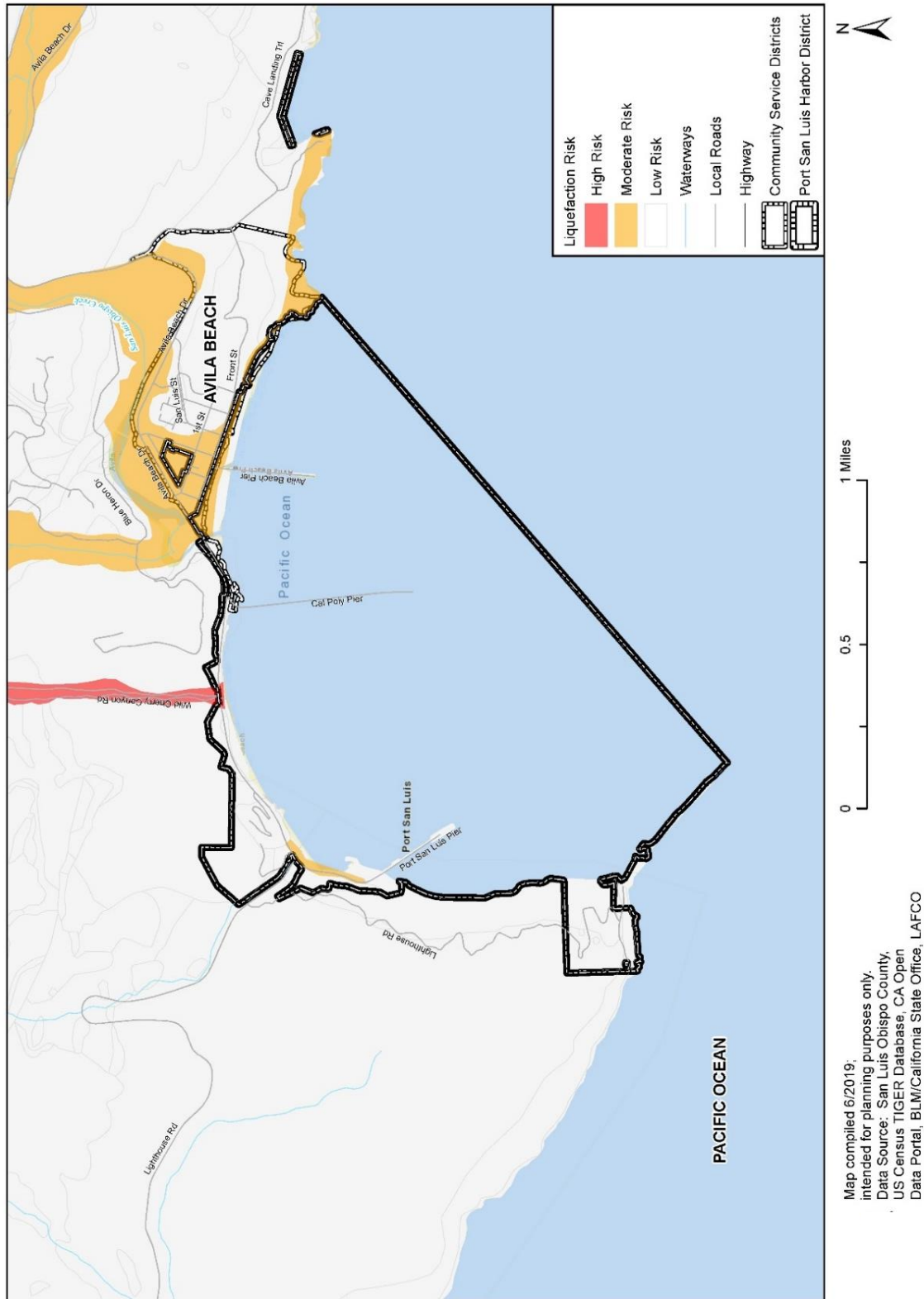
Liquefaction, the result of ground shaking causing fine grained, saturated soils to liquefy and act as a fluid, poses a risk to the District as well. Figure R.5 depicts the areas of the District at risk of high, moderate, or low liquefaction, while Table R.8 summarizes the parcels found to overlap with liquefiable soils in the District. Overall, earthquake and liquefaction hazards have been rated by the planning team to hold **Medium Significance**.

Table R.8 Port of San Luis Properties at Moderate Risk to Liquefaction

Parcel Type	Parcel Count	Improved Value	Content Value	Total Value
Government/Utilities	9	--	--	\$0
Total	9	\$0	\$0	\$0

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, Wood Plc Parcel Analysis

Figure R.5 Port of San Luis Harbor District Liquefaction Risk



Map compiled 6/2019,
 intended for planning purposes only.
 Data Source: San Luis Obispo County,
 US Census TIGER Database, CA Open
 Data Portal, BLM/California State Office, LAFCO



Flood

The District is at risk of both coastal and riverine flooding. Coastal flooding was addressed in more detail the previous section of this annex on Coastal Storm/Coastal Erosion/Coastal Flooding and Inundation/Sea Level Rise. The San Luis Obispo Creek is 18 miles long and ends on the northern portion of the District right on the edge with Avila Beach, draining into the Pacific Ocean. The flooding within the Creek caused significant flood damage in 1969 and 1973. Due This stream poses the greatest risk of riverine flooding in the area, though smaller tributaries and unnamed creeks also cross the boundaries of the District to the north and northwest (along Wild Cherry Canyon Rd and Lighthouse Rd). The areas adjacent to the Creek have the Combining Designation of a Flood Hazard (FH) and must meet the County standards set forth in Title 23 and the San Luis Bay Coastal Area Plan (Area Plan). According to the Area Plan in the event of a 100-year flood event major flooding will occur throughout the length of the San Luis Obispo Creek. to the risk of flooding along the Creek, the Area Plan recommends designating open space land uses adjacent to the floodplain. Road infrastructure is most at risk of being damaged during a flood event in the planning area. The Avila Community Plan lists the following transportation infrastructure where flooding occurs often, some of which cross the boundaries of the Port San Luis Harbor District:

- Avila Beach Drive
- San Luis Bay Drive
- Ontario Road
- Parking Lot in Avila Beach

All the infrastructure listed above suffers from occasional flooding, but the parking lot is reported to flood consistently during the rainy season (January-March). In 2016, the San Luis Obispo County Public Works Department spent \$60,000 pumping water out of the parking lot. The Department created a Conceptual Design Report in 2017 that evaluated three alternatives to address the flooding issue. The final recommendation from the report was for the installation of a permanent pumping system (estimated cost of \$375,000) with projected operations and maintenance cost of approximately \$25,000 annually. The 2017-2018 County Capital Improvement Program (CIP) report identified a long-term flood control project (beyond the 5-year CIP timeframe) that will include a pumping system for the parking lot culvert outfall to mitigate the flooding issue. Overall, flooding hazards have been ranked by the planning team as holding **Medium Significance** for the District.

Values at Risk

A flood vulnerability assessment was completed during the County's HMP update, following the methodology described in Sections 5.2 and 5.3.8 of the Base Plan. Flood Hazards for the Port San Luis Harbor District planning areas are shown in Figure R.6, while Table R.9 summarizes the parcels and values at risk in the City's 100-year and 500-year floodplains. These tables also detail loss estimates for each flood, though in the case of the District there are no monetary losses that could be computed due to the properties at risk having no noted financial value (as they are exempt in nature).

Table R.9 Port San Luis Harbor District's FEMA Flood Hazard by Parcel Type

Parcel Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate
100-YEAR EVENT					
Government/Utilities	3	--	--	\$0	\$0
Total	3	\$0	\$0	\$0	\$0
500-YEAR EVENT					
Government/Utilities	2	--	--	\$0	\$0
Total	2	\$0	\$0	\$0	\$0
GRAND TOTAL	5	\$0	\$0	\$0	\$0

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, FEMA NFHL, Wood Plc Parcel Analysis

Based on this analysis, the District has five total parcels at risk of flooding of riverine inundation. These are all classified as government or utilities properties.

Limitations: This analysis may include structures in the floodplains that are elevated at or above the level of the base-flood elevation, which will likely mitigate flood damage.

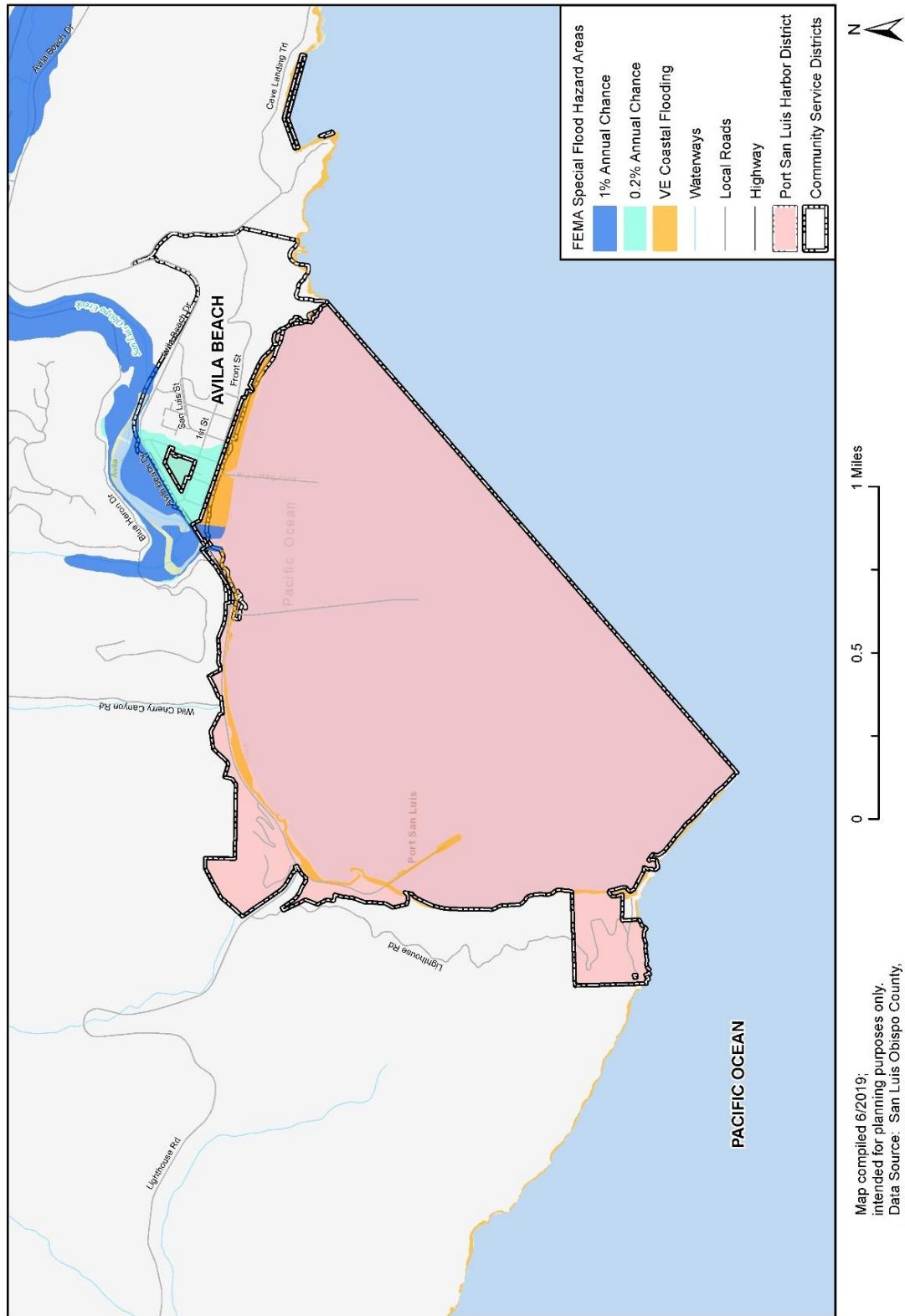
The Harbor District is not required to participate separately in the National Flood Insurance Program (NFIP) but will continue to support the County's participation in and compliance with the NFIP.

Critical Facilities at Risk

Based on GIS analysis there are no critical facilities located in the 100-year or 500-year flood zones. (There are no critical facilities in the entire District, per the dataset used and described in more detail under Section 5.2 of the Base Plan.)



Figure R.6 Port San Luis Harbor District Flood Hazard Areas



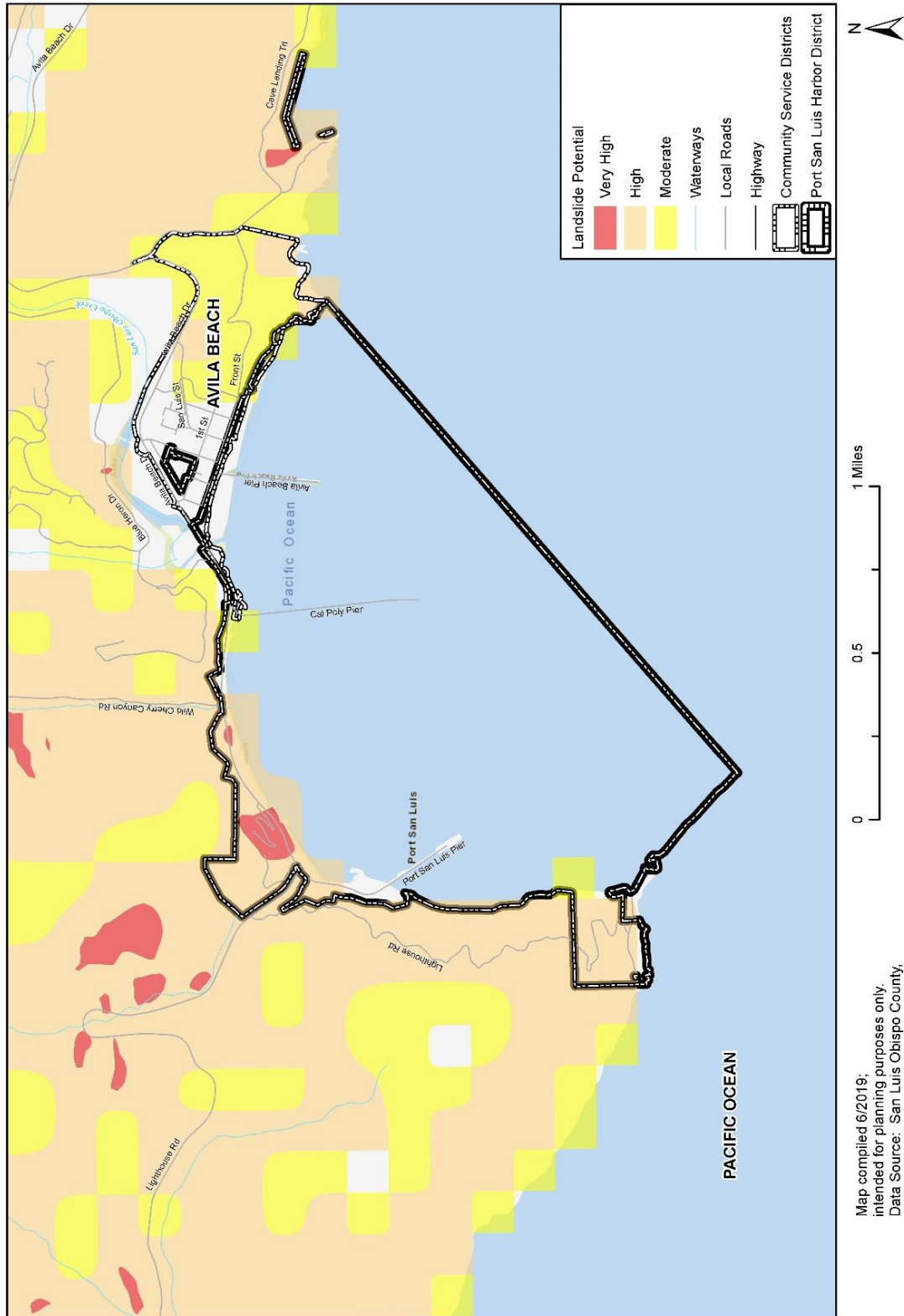
Landslides and Debris Flow

Most of the District is found within high potential landslide areas. As shown in Figure R.7 below, most of the western and northern portions of the District have been rated as having moderate, high, or very high potential to landslide hazards. A landslide event along Avila Beach Drive, the only major road into or out of the Town of Avila Beach, could have serious impacts on both visitors and residents as well as restrict travel to and from the Port of San Luis and the Diablo Canyon Power Plant. According to the local planning team, a massive landslide event that occurred 10 years ago along on Avila Beach Drive did cutoff access to the Port and Diablo Canyon. The committee noted there is an alternative entrance through Diablo Canyon, but it not designed for hundreds of vehicles over the extended period of time that would be necessary to clean debris from the roadway caused by a landslide or debris flow event.

While no critical facilities are found to overlap with landslide potential areas (as there are no critical facilities in the District based on the dataset used), the Port San Luis Lighthouse is considered a historical point of interest in the District, and this one is found within a high landslide potential area. In addition, the parcel analysis conducted in GIS yielded that one parcel classified as "government/utilities" was found within high landslide potential areas in the District. No monetary values are assigned to this government parcel as it is exempt in nature.

Overall, landslide and debris flow hazards have been ranked by the local planning team as holding **Medium Significance**.

Figure R.7 Landslide Potential Areas in the Port San Luis Harbor District



Tsunami

Tsunami inundation poses a risk to all coastal communities in the County of San Luis Obispo. Offshore faults and related seismic activity could cause a tsunami event off the coast of the District, even if the faults are hundreds of miles away. According to the County’s Tsunami Response Plan the areas within and nearby the Avila Beach community and the Port San Luis Harbor District that are most vulnerable to a tsunami event include areas inland within and adjacent to San Luis Obispo Creek, including Avila Beach Drive. There have been three recorded tsunami events between 1946 and 1964 that have impacted the Avila Beach community and possibly the Port District. Refer to Section 5.3.11 of the Base Plan for more information related to the past tsunami and seiche events and details on future vulnerability and climate change issues.

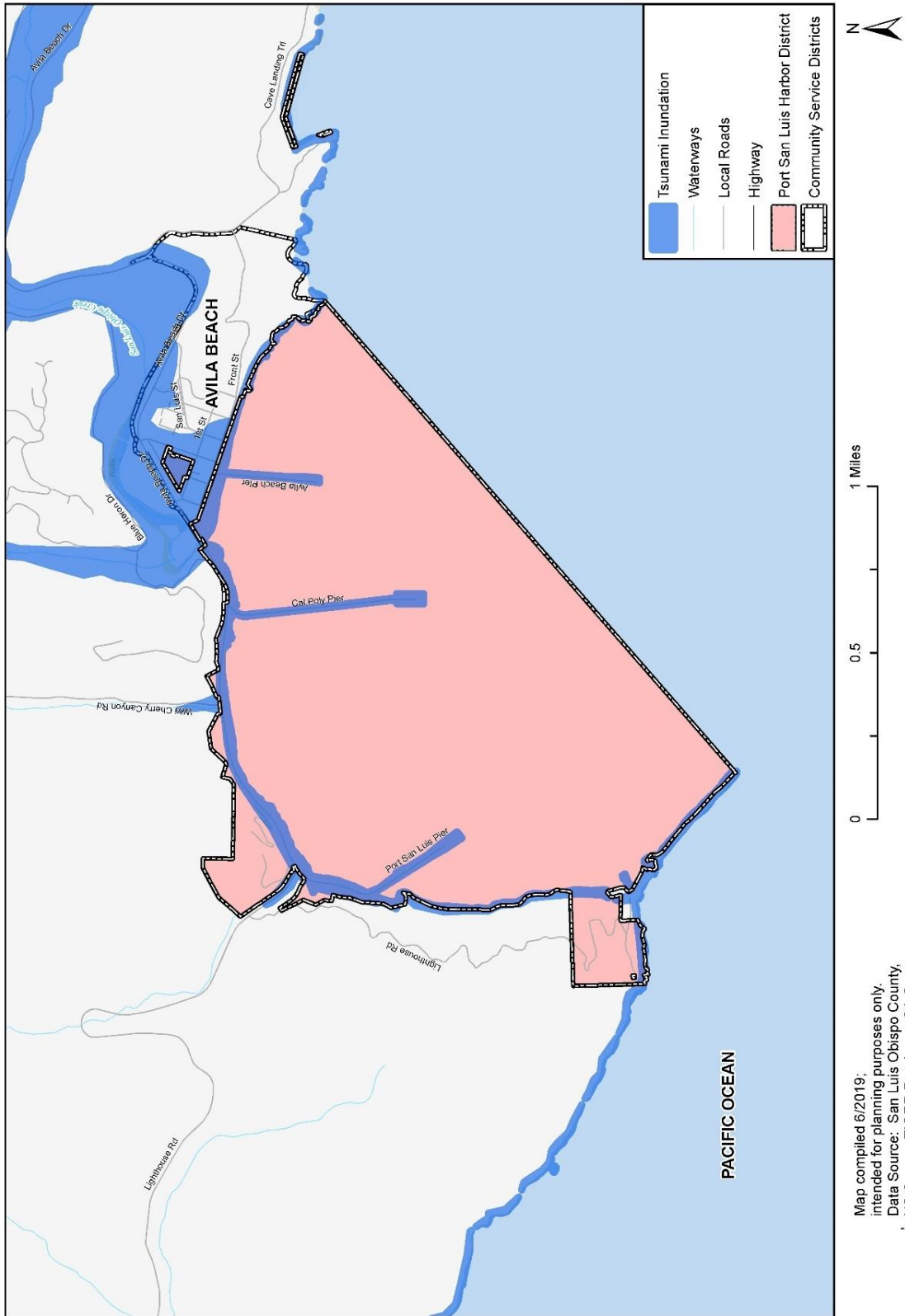
Figure R.8 below displays the tsunami inundation areas affecting the District and nearby community of Avila Beach, while Table R.10 summarizes the 10 ten/utilities/exempt parcels found in these inundation extents, based on GIS parcel analysis. Overall, the local planning team rated tsunami and seiche hazards as holding **Medium Significance** for the District.

Table R.10 Parcels in Tsunami Inundation Areas, by Parcel Type, Port San Luis Harbor District

Parcel Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate
Government/Utilities	9	--	--	--	--
Other/Exempt/Miscellaneous	1	--	--	--	--
Total	10	\$0	\$0	\$0	\$0

Source: San Luis Obispo County Planning and Building Dept., Assessor’s Office, ParcelQuest, CA Dept. of Conservation, Wood Plc Parcel Analysis

Figure R.8 Tsunami Inundation Areas in the Port San Luis Harbor District



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCC, CA Dept. of Conservation

Wildfire

Wildfire is a **Medium Significance** hazard for the Port San Luis Harbor District.

There is no fire history in the community but due to factors such as the Irish Hills, a notable topographic feature north of Avila Beach, CalFire has designated the Avila Beach community as being at an increased risk from wildfires and a priority community to work with to prepare and mitigate potential fire risk. Because of the Port District's slight boundary overlap with Avila Beach as well as proximity to said Community Services District, these community designations are important for the Port District to observe and keep in mind. The prevailing wind patterns are another dominant factor that influences the wildfire risk in the Avila Beach and Port District areas, as the planning team noted that there are lots of fuel sources in the canyon to Avila Beach. A fire that originates in the Los Osos area or at the Diablo Canyon Power Plant could be pushed by prevailing winds southeast towards the District and nearby communities (San Luis Obispo County Community Wildfire Protection Plan 2019).

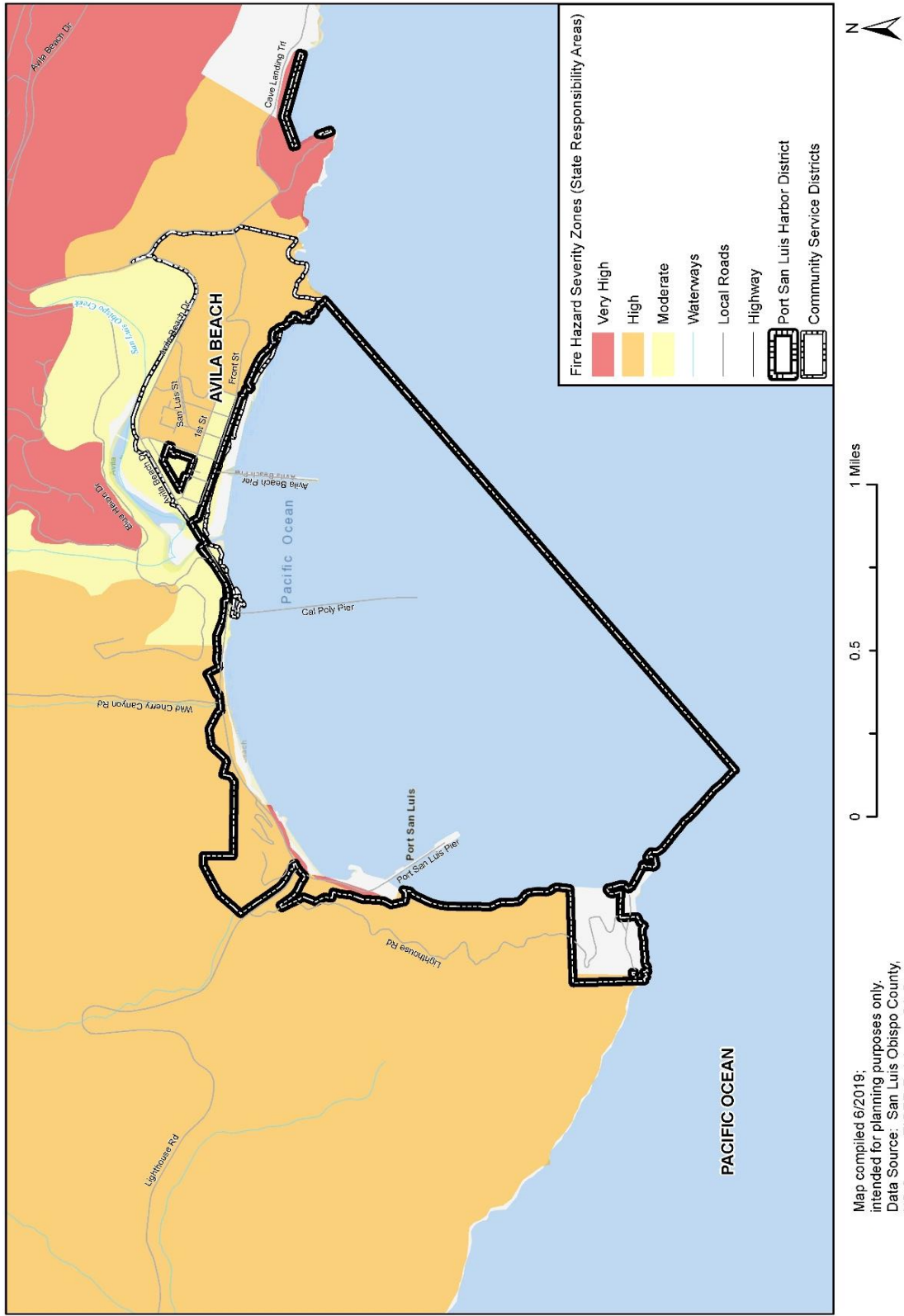
Figure R.9 below depicts the wildfire hazard zones within State Responsibility Areas in and near the District. Based on parcel analysis performed in GIS, it was found that a total of 11 properties overlap with either moderate or very high fire hazard severity zones, per the CalFire spatial dataset (see Table R.11 for the parcel analysis summary with regards to his hazard).

Table R.11 Parcels in Wildfire Hazard Severity Zones in the Port San Luis Harbor District

Parcel Type	Parcel Count	Improved Value	Content Value	Total Value	Loss Estimate
MODERATE WILDFIRE HAZARD SEVERITY					
Government/Utilities	9	--	--	--	--
Other/Exempt/Miscellaneous	1	--	--	--	--
Total	10	\$0	\$0	\$0	\$0
VERY HIGH WILDFIRE HAZARD SEVERITY					
Government/Utilities	1	--	--	--	--
Total	1	\$0	\$0	\$0	\$0
GRAND TOTAL	11	\$0	\$0	\$0	\$0

Source: San Luis Obispo County Planning and Building Dept., Assessor's Office, ParcelQuest, CalFire, Wood Plc Parcel Analysis

Figure R.9 Wildfire Hazard Severity Zones in and Near the Port San Luis Harbor District



Human Caused: Hazardous Materials

While the Avila Beach community has a history of hazardous material incidents, the Cal OES Warning Center does not specifically report any hazardous materials incidents within the District boundaries from 1994 through October of 2018. Cal OES does report 209 incidents in unincorporated San Luis Obispo County, some of which may cross the District boundaries. Similarly, some of the 97 hazardous materials incidents reported in Avila Beach might fall within the District. However, a lack of data makes it difficult to know if any of those took place within the Port's jurisdiction. As noted in Section 5.3.13, only around 6% of reported hazardous materials incidents result in injuries, fatalities, or evacuations.

The California State Water Resources Control Board has identified seven sites with hazardous materials that may contaminate groundwater supplies in the Avila Beach community, just east of the District. A total of six of the identified Avila Beach sites have been closed and one remains an open case, site of the former Unocal Tank Farm site which contained 22 storage units for over ninety years and were a dominating visual feature in Avila Beach. After an oil spill caused by Unocal (a subsidiary of Chevron) resulted in extensive cleanup of Avila Beach including removing and rebuilding the entire commercial district, the tanks were removed, and the Tank Farm site was used to support the cleanup efforts. Today, the area is the one industrial zone property in Avila Beach and is completely fenced off to the public. Chevron maintains the sewage disposal system and fire protection facilities for the site and receives water from the Avila Beach Community Services District.

The Diablo Canyon Nuclear Power Plant, the state's only operating nuclear power plant, is located northwest of the Port District. Accidental release of nuclear materials continues to be a concern for the port community, although extensive seismic monitoring and safety systems are in place and the Power Plant has been retrofitted to withstand a 7.5 magnitude earthquake. Avila Beach Drive is currently the only access to the Diablo Canyon Power Plant which has also caused concern within the community if an evacuation were to happen. The Diablo Canyon Nuclear Power Plant is scheduled to be closed by the year 2025. Even with the coming closure the County of San Luis Obispo Office of Emergency Services has done extensive planning in case of an emergency at the Power Plant. Refer to Section 5.3.13 HazMat for more information on these hazards. Overall, the planning team has rated HazMat issues as holding **High Significance** to the District.

R.4 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory policies or programs in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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. In summarizing current capabilities and identifying gaps, the jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The Port San Luis Harbor District's capabilities are summarized below.

R.4.1 Regulatory Mitigation Capabilities

Table R.12 identifies existing regulatory capabilities the District has in place to help with future mitigation efforts. Note that many of the regulatory capabilities which can be used for the District are within the County's jurisdiction. Refer to Section 6 Capability Assessment of the Base Plan for specific information related to the County's overall mitigation capabilities.

Table R.12 Port San Luis Harbor District Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	N/A	
Zoning ordinance	N/A	
Subdivision ordinance	N/A	
Growth management ordinance	N/A	
Floodplain ordinance	N/A	
Other special purpose ordinance (stormwater, water conservation, wildfire)	N/A	
Building code	N/A	
Fire department ISO rating	N/A	
Erosion or sediment control program	N/A	
Stormwater management program	Yes	SWPPP updated in 2015
Site plan review requirements	N/A	
Capital improvements plan	Yes	
Economic development plan	No	
Local emergency operations plan	Yes	
Other special plans	Yes	Sewer spill and oil spill plans. Diablo NPP prep.
Flood Insurance Study or other engineering study for streams	No	
Elevation certificates (for floodplain development)	No	

Source: Wood Data Collection Guide, 2019

R.4.2 Administrative/Technical Mitigation Capabilities

Table R.13 identifies the personnel responsible for activities related to mitigation and loss prevention in the Port San Luis Harbor District.

Table R.13 Port San Luis Harbor District Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	Facilities Dept. – Fac. Mgr. & Planner/Analyst
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Facilities Dept. – Fac. Mgr. & Fac. Supervisor
Planner/engineer/scientist with an understanding of natural hazards	Yes	Facilities Dept. – Fac. Mgr. & Planner/Analyst
Personnel skilled in GIS	Yes	Facilities Dept. – Fac. Mgr. & Planner/Analyst
Full time building official	Yes	Facilities Dept. – Fac. Mgr. & Fac. Supervisor
Floodplain manager	No	Not required
Emergency manager	Yes	Harbor Patrol & Facilities Dept. Planner/Analyst
Grant writer	Yes	Harbor Manager & Facilities Dept.

Personnel Resources	Yes/No	Department/Position
Other personnel	Yes	Harbor Patrol & Business Manager
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	Facilities Dept. – Fac. Mgr. & Planner/Analyst
Warning systems/services (Reverse 9-11, outdoor warning signals)	Yes	Harbor Patrol – Reverse 911 and CMS Board

Source: Wood Data Collection Guide, 2019

R.4.3 Fiscal Mitigation Capabilities

Table R.14 identifies financial tools or resources that the CSD could potentially use to help fund mitigation activities.

Table R.14 Port San Luis Harbor District Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	No
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	Yes
Withhold spending in hazard prone areas	No

R.4.4 Mitigation Outreach and Partnerships

The District has a Harbor Commission composed of five elected Commissioners. The Avila Beach Community Service District, which serves the neighboring town, shares many core values and goals as the Harbor District. Together the two Districts run a responsible resource use outreach programs to encourage conservation and efficiency of water use, for example, by sending out public notices encouraging conversation and responsible use. The Districts also jointly share the operation and maintenance costs of the Wastewater Treatment Plant.

R.4.5 Opportunities for Enhancement

Based on the capability assessment, the Port San Luis Harbor District has several existing mechanisms in place that help to mitigate hazards. There are also opportunities for the District to expand or improve on these policies and programs to further protect the community. Future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform District staff and board members on how best to integrate hazard information and mitigation projects into the District policies and ongoing duties of the District. Continuing to train District staff on mitigation and the hazards that pose a risk to the Port San Luis Harbor District will lead to more informed staff members who can better communicate this information to the public.

R.5 Mitigation Strategy

R.5.1 Mitigation Goals and Objectives

The Port San Luis Harbor District adopts the hazard mitigation goals and objectives developed by the County HMPC and described in Section 7 Mitigation Strategy.

R.5.2 Mitigation Actions

The planning team for the Port San Luis Harbor District identified and prioritized the following mitigation actions based on the risk assessment. Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. 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. Refer to Table R.15 below of the Port San Luis Harbor District's 2020 Mitigation Action Plan.

Table R.15 Port San Luis Harbor District's Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/ Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
PS.1	Coastal Storm/Coastal Erosion/Sea Level Rise; Tsunami; Earthquake	Future Avila Pier Replacement. Develop replacement plan; remove wooden pier; replace pier with structure able to withstand sea level rise and heavy storms and waves, ideally with stronger materials like concrete and steel.	Port San Luis Harbor District	Over \$1,000,000	Coastal Conservancy; DBW; WCB; CA Parks and Rec	Low	More than 5 yrs.	New Benefits: Ensures continued existence of Avila Pier which serves the public and is a tourist attraction
PS.2	Coastal Storm/Coastal Erosion/Sea Level Rise; Tsunami	Revetment and Jetty Augmentation. Survey existing jetty; develop repair and augmentation plan; repair or replace revetment and jetty. Possibly replace with seawall or install seawall on top of existing jetty.	Port San Luis Harbor District	\$500,000 to \$1,000,000	Division of Boating and Waterways; SLOCOG; PSLHD	High	2-5 yrs.	New Benefits: Would allow the continuation of port operations and businesses during storms and sea level rise. Would allow full use of launching facilities and parking which is vital to commercial and recreational fishing. It would help ensure the preservation of buildings and facilities It could possibly decrease the amount of

ID	Hazard(s) Mitigated	Description/Background/ Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
								dredging which would benefit the environment.
PS.3	Coastal Storm/Coastal Erosion/Sea Level Rise; Flood; Landslide and debris flow; Earthquake	Avila Beach Revetment Repairs to ensure Avila Beach Drive doesn't fail due to erosion and undermining.	County of SLO; Port San Luis Harbor District; Avila Beach CSD	Over \$1,000,000	County of SLO; SLOCOG; PSLHD;	Medium	More than 5 yrs.	New Survey existing jetty; develop repair and augmentation plan; repair revetment. Benefits: Ensures The road is essential for access to Diablo Canyon NPP and Port San Luis.
PS.4	Coastal Storm/Coastal Erosion/Sea Level Rise; Flood	Avila Beach Drainage Station. Come up with a solution for drainage in Avila Beach which accumulates along Beach Colony Lane and the Avila Parking Lot; install pump station or diversion for flood waters; identify funding for long-term operations and maintenance.	County of SLO; Port San Luis Harbor District; Avila Beach CSD; Avila Beach property owners	\$500,000 to \$1,000,000	SLO County; property owners; FEMA HMA	Medium	More than 5 yrs.	New Benefits: Flood prevention in low-lying areas in Avila Beach; reduction of health hazards caused by flooding
PS.5	Coastal Storm/Coastal Erosion/Sea Level Rise; Tsunami	Avila Pier Rehabilitation. Develop replacement plan; repair damaged piles and above water pier structure; open full pier to public.	Port San Luis Harbor District	Over \$1,000,000	Coastal Conservancy; DBW; WCB; CA Parks and Rec	Medium	2-3 yrs.	New Benefits: Allow re-opening and full access to Avila Pier; currently the pier is in disrepair and is in danger

ID	Hazard(s) Mitigated	Description/Background/ Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
								of further damage during storms if repairs are not made
PS.6	Earthquake	Harbor Patrol and staff to review Harbor District's Emergency Action Plan and procedures periodically and maintain a hardcopy on-site	Port San Luis Harbor District	Minimal	NA	Medium	Annually	New
PS.7	Earthquake	Reinforce and maintain revetment below and hillside above Avila Beach Drive to prevent road failures and closures due to earthquake caused landslides	County of SLO, Port San Luis Harbor District	Unknown	Unknown	Medium	2-5 yrs.	New
PS.8	Wildfires	Continue weed abatement and maintaining defensible space on Harbor District properties	Port San Luis Harbor District	Unknown	Unknown	Medium	Annually	New
PS.9	Tsunami	Harbor Patrol and staff to review County's Tsunami Response Plan and procedures periodically and maintain a hardcopy on-site	Port San Luis Harbor District	Minimal	NA	High	1-2 yrs.	New
PS. 10	Adverse Weather: High Winds, Hail	Use GIS to develop vulnerability assessment model of structures at risk of damage from high winds; replace roofing systems nearing end of expected lifespan with PVC roofing systems to minimize damage and prevent uplift. Reinforce and upkeep Harford Pier Canopy to prevent wind related damage and failure.	Port San Luis Harbor District	\$80-100k	District funds	Medium	TBD	New/Ongoing Roof replacements with heat-welded PVC flat roofs for two structures on end of Harford Pier. Inspect and reinforce Harford Pier Canopy to maintain wind resilience

ID	Hazard(s) Mitigated	Description/Background/ Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
PS. 11	Adverse Weather: Dense Fog	Maintain maritime visual navigation aids: 6 USCG lighted channel markers and Point San Luis Lighthouse; provide boaters, fishermen, and staff with weather forecasts. Use storm lights on Harford Pier during extreme fog.	Port San Luis Harbor District	\$50-75k	District funds	Low	1-2 years	Keep channel markers maintained and replace as needed. Maintain and upgrade storm lights on Harford Pier. Seek replacement with low setting for fog.
PS. 12	Adverse Weather: Lightning	Maintain and periodically review Emergency Action Plan and Fire Plans. Maintain lightning rods on Harford Pier.	Port San Luis Harbor District	Minimal	District funds	Low	Annually	Maintain lightning rods on Harford Pier
PS. 13	Adverse Weather: Extreme Heat	Provide seasonal training to staff on the Heat Illness Prevention Plan (HIPP) and update plan as needed	Port San Luis Harbor District	Minimal	District funds	Low	Annually	New. In process of preparing updated draft of District's HIPP
PS. 14	High Winds	Assess the historic canopy at the end of the Harford Pier for reinforcement and repair options.	Port San Luis Harbor District	TBD	District funds	Low	2-5 years	The canopy was repaired in 2011, and is again in need of reinforcement and/or repair.

R.6 Implementation and Maintenance

Moving forward, the Port San Luis Harbor District will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Chapter 8 in the Base Plan.

R.6.1 Incorporation into Existing Planning Mechanisms

The information contained within the Base Plan and this Annex, including results from the Vulnerability Assessment and the Mitigation Strategies, will be used by the Port San Luis Harbor District to help inform updates of the District's relevant plans and planning documents, and in the development of additional local plans, programs, and policies. Understanding the hazards that pose a risk and the specific vulnerabilities to the community will help in future capital improvement planning for the District. The San Luis Obispo County Planning and Building Department may utilize the hazard information when reviewing a site plan or other type of development applications with the boundaries of the Port San Luis Harbor District and surrounding areas. As noted in Chapter 8 Implementation and Monitoring, the County's HMPC representative/s from the Port San Luis Harbor District 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 HMPC and local planning team review meetings.

R.6.2 Monitoring, Evaluation and Updating the Plan

The Port San Luis Harbor District will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Chapters 3 Planning Process and Chapter 8 Implementation and Monitoring of the Base Plan. The District will continue to involve the public in mitigation, as described in Section 8.3 of the base plan. The Port San Luis Harbor District Facilities Manager will be responsible for representing the District in the County HMPC, and for coordination with County staff and departments during plan updates. The Port San Luis Harbor District 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.

R.7 Attachment: Property Inventory for Program Year 2019-2020

Special District Risk Management Authority



Property Inventory for Program Year 2019-20

Port San Luis Harbor District

Item	Description	Address	Square Feet	Building Value	Contents Value	Under Construction	BIRI	BIRI Coverage	Net Premium	Effective Date	Termination Date
1	Accounting Office	Harbor Terrace	1,568	\$20,924	\$10,382				\$52		
8	Avila Bait Shop	Avila Pier - Front Street	496	\$49,904	\$0				\$83		
12	Avila Pier	Avila Pier	47,700	\$8,491,063	\$0				\$14,087		
18	Canopy over Restaurant	Harford Pier	14,280	\$784,650	\$10,382				\$1,319		
20	Coastal Gateway Building	3900 Avila Beach Drive	2,470	\$1,569,300	\$103,820				\$2,776		
22	Diesel Facility/Pump Out	Harford Pier	100	\$72,083	\$0				\$120		
33	East Duplex - Caretakers	Lighthouse Properties	1,550	\$392,325	\$0				\$651		
39	Fat Cat's Restaurant	3290 Avila Beach Drive	1,600	\$502,176	\$0				\$833		
48	Floating Docks (3) @\$18,500 ea.	Harford Pier	0	\$70,010	\$0				\$116		
53	Fuel Facility/HazMat	Avila Beach Drive	200	\$26,042	\$5,191				\$52		
60	Harbor Office/Restrooms	3950 Avila Beach Drive	2,200	\$590,273	\$122,282				\$1,182		
64	Harbor Patrol Office/Cold Storage	3991 Avila Beach Drive - Harford Pi	3,520	\$505,603	\$83,056				\$977		
68	Harford Pier	Harford Pier	87,500	\$18,198,905	\$0				\$30,194		
70	Historic Lighthouse- West Duplex	Lighthouse Properties	1,845	\$549,255	\$0				\$911		
74	Horn House	Lighthouse Properties	1,900	\$496,945	\$13,185				\$846		
78	Ice House	Harford Pier	1,800	\$376,632	\$0				\$625		
84	Lifeguard Bldg. & Restrooms	Avila Pier - Front Street	2,000	\$324,322	\$31,027				\$590		
87	Lifeguard Towers	Avila Pier - Front Street	100	\$83,643	\$0				\$139		
98	Lighthouse	Lighthouse Properties	2,190	\$1,569,300	\$103,820				\$2,776		
99	Lighthouse Barn/ Maint. Bldg.	Marlin Stebbins Road	200	\$52,310	\$0				\$87		
104	Lighthouse Service Bldg	Marlin Stebbins Road	900	\$235,395	\$0				\$391		
109	Maintenance Building	Avila Beach Drive	1,800	\$376,632	\$259,550				\$1,055		
110	Mersea Restaurant	3985 Avila Beach Dr.	1,800	\$523,100	\$0				\$868		
111	Mobile Hoist Pier	Harford Landing Area	60	\$523,100	\$0				\$868		
112	Mooring Storage Shed	3950 Avila Beach Drive	900	\$52,310	\$51,910				\$173		
119	Olde Port Inn Restaurant	3993 Avila Beach Drive - Harford Pi	8,372	\$1,789,982	\$0				\$2,970		
124	OPB Restrooms	Avila Beach Drive	400	\$141,237	\$0				\$234		
128	Outbuilding	Lighthouse Properties	100	\$16,691	\$0				\$28		
133	Patriot Sport Fishing Office	3975 Avila Beach Drive - Harford Pi	400	\$38,505	\$0				\$64		
137	Pavement/Lighting/Pipes (above ground)	Avila Beach Drive	0	\$235,956	\$0				\$391		
141	Pavement/Lighting/Pipes (above ground)	Harbor Terrace	0	\$53,601	\$0				\$89		
145	Pavement/Lighting/Pipes (above ground)	Harford Pier	0	\$80,557	\$0				\$134		
156	Pier Restroom	Avila Pier - Front Street	175	\$141,237	\$0				\$234		
165	Sewer Lift Station #1	Harford Pier	0	\$41,311	\$0				\$69		
167	Sewer Lift Station #2	Harford Parking Lot	150	\$104,620	\$25,955				\$217		
170	Sewer Lift Station #3	Avila Beach Drive	150	\$313,860	\$83,056				\$659		
175	Sewer Lift Station #4	Avila Pier - Front Street	150	\$68,259	\$15,573				\$139		
176	Sewer Lift Station #5	3915 Avila Beach Dr.	0	\$41,848	\$0				\$69		
190	Sport Launch Bldg.	3920 Avila Beach Drive	1,500	\$523,100	\$0				\$868		

This is a listing of your currently scheduled items with SDRMA

Special District Risk Management Authority
1112 I Street Suite 300, Sacramento, California 95814-2865
Tel 916.231.4141 or 800.537.7790 Fax 916.231.4111
www.sdma.org

Report Date: 07/10/2019

Page 1

Special District Risk Management Authority



Property Inventory for Program Year 2019-20

Port San Luis Harbor District

Item	Description	Address	Square Feet	Building Value	Contents Value	Under Construction	BIRI	BIRI Coverage	Net Premium	Effective Date	Termination Date
196	Sport Launch Fuel Facility	3915 Avlia Beach Drive	120	\$28,661	\$0				\$48		
205	Water Tank/Domestic Well	Lighthouse Properties	0	\$62,772	\$0				\$104		
211	Water Tower 100k. gal./Booster Pump	Harbor Terrace	0	\$215,690	\$0				\$358		
Totals				\$40,334,089	\$919,189						

This is a listing of your currently scheduled items with SDRMA

Special District Risk Management Authority
 1112 I Street Suite 300, Sacramento, California 95814-2865
 Tel 916.231.4141 or 800.537.7790 Fax 916.231.4111
 www.sdrma.org

Report Date: 07/10/2019

Page 2





S.1 District Profile

S.1.1 Mitigation Planning History and 2019 Process

The San Luis Obispo Flood Control and Water Conservation District (FCWCD or "District") participated in the 2014 San Luis Obispo County Hazard Mitigation Plan. This Annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan Update to focus on the capabilities, hazards and mitigation actions specific to the District. The two Deputy Directors of County Public Works represented the District on the County HMPC and took the lead for developing the plan this annex in coordination with the FCWCD Local Planning Team (LPT). A review of jurisdictional priorities found no significant changes in priorities since the last update. The previous mitigation plan was not incorporated into other District planning mechanisms.

The LPT will be responsible for implementation and maintenance of the plan.

Table S.1 San Luis Obispo Flood Control & Water Conservation District Hazard Mitigation Planning Team

Department or Stakeholder	Title
County Public Works	Deputy Director – Resources Management Group
County Public Works	Deputy Director – Transportation & Development Group
County Public Works	Development Services Division Manager
County Public Works	Transportation Division Manager
County Public Works	Utilities Division Manager
County Public Works	Water Resources Division Manager

More details on the planning process followed and how the jurisdictions, service districts and stakeholders participated can be found in Chapter 3 of the Base Plan, as well as how the public was involved during the 2019 update.

The District boundaries are the same as the County of San Luis Obispo boundaries.

S.1.2 District Overview

The San Luis Obispo County Flood Control and Water Conservation District Act established the FCWCD in 1945. The main purpose of the FCWCD is to provide for the control, disposition and distribution of flood and storm waters of the district, to conserve such waters for beneficial and useful purposes by storing or recharge, and to increase and prevent the waste or diminution of the water supply in the district. The County of San Luis Obispo Board of Supervisors are designated as and empowered to act as the ex officio board of supervisors for the FCWCD. County officers and staff perform duties as officers and staff for the FCWCD.

In 1968, the FCWCD adopted Resolution No. 68-223 that defined the policy role of the FCWCD relating to the costs of planning, design, construction, operations and maintenance of drainage and flood control facilities. In general, the FCWCD cannot be responsible for direct funding of community specific mitigation improvements. The FCWCD uses its general funding to identify flooding problems, recommend solutions, and help local areas implement recommended solutions. In 2016, the FCWCD adopted Resolution 2016-281 that superseded the 1968 Policy to include among other things considerations for the changes in public financing laws such as Proposition 218.

The District has a regional role and can work with individual cities or communities to setup zones of benefit to implement solutions. The Public Works Department is additionally responsible for managing, planning, and





maintaining drainage and flood control facilities in the unincorporated public areas where no other agency has assumed an active role in such activities.

S.1.3 Development Trends

See Section 4.10 of the Base Plan, as well as the Future Development sections of the Hazard Profiles in Chapter 3.

S.1.4 Other Community Planning Efforts

The following related planning efforts include information relevant to informing this annex and, in some cases, have mitigation-related projects.

[All of these are straight out of the 2014 HMP. Any updates or additions?]

Water Resources Advisory Committee (WRAC): The WRAC was established to advise the District Board of Supervisors concerning all policy decisions relating to the water resources of the FCWCD, recommend to the Board specific water resource programs, and to recommend methods of financing water resource program. The WRAC includes representatives from all five supervisorial districts, cities, community services districts (CSD), resource conservation districts, water purveyors, water resource management agencies, institutions such as Cuesta College and California Men’s Colony, and at-large members representing agriculture, development, and environmental interests.

State Water Project: In 1963, the District entered into an agreement with the Department of Water Resources (DWR) for 25,000 acre-feet per year (AFY) of State Water Allocation. Between 1994-1998, the Central Coast Water Authority (CCWA) built the Polonio Pass Water Treatment Plant and contracted with the District for water treatment plant and pipeline operation and maintenance. In 1997, the District developed drought buffer agreements with State Water subcontractors in the county to increase reliability of deliveries during dry years.

2012 Master Water Report: The 1972 Master Water and Sewerage Plan was initially adopted by the Board in 1972 and was updated in 1986, 1998 and 2012 (renamed as the 2012 Master Water Report) to address water resource issues. Since the 1998 update, there have been major changes in the water resources profile for the County. the construction of the State Water and Nacimiento pipelines, groundwater basin litigation, new water users, new water regulations, formation of the Integrated Regional Water Management Program, and the completion of various local and sub-regional water management studies and plans. Consequently, development of a new County’s Master Water Plan (later renamed as the Master Water Report) in 2012 was needed to ensure effective management of the County’s water resources now and into the future.

Nacimiento Pipeline Project: The District, in partnership with five area water purveyors, establish a Nacimiento Commission for the purpose of utilizing 17,500 Acre-Feet of water supply available at the Nacimiento Reservoir. The project lead to the construction of a 42-mile-long pipeline with supporting facilities at a cost of \$ 176 million. Beginning in 2009, the project delivered water to the Cities of Atascadero, Paso Robles and San Luis Obispo; The Templeton Community Services District; and through a water exchange agreement to the County Service Area 10A system in Cayucos.

The Nacimiento Commission, composed of the five water purveyors, provides oversight of the project and water deliveries, however, the facility is owned and operated by the Flood Control and Water Conservation District.

Integrated Regional Water Management (IRWM) Plan: Led by the County, this plan is a collaborative effort to manage all aspects of water resources in a region. The IRWM Plan presents a comprehensive water resources management approach to managing the region’s water resources focused on strategies to better the





sustainability of the current and future needs of San Luis Obispo County. It is built on the existing foundation of the region’s longstanding inter-agency cooperation and stakeholder collaboration.

Drainage Studies: In 2001, the County Board of Supervisors approved funding for Drainage and Flood Control Studies for the communities of Cambria, Cayucos, Nipomo, Oceano, San Miguel, and Santa Margarita. These reports summarize findings, conclusions and recommendations for each of the studies. This effort is being led by the County, however the District is currently developing a drainage and flood control study for the community of Templeton.

Table S.2 Summary of Review of Key Plans, Studies and Reports

Plan, Study, Report Name	How Document Informed the Annex
San Luis Obispo County Flood Control and Water Conservation District Guide to Implementing Flood Control Projects	Process descriptions and capabilities

S.2 Hazard Identification and Summary

The District’s Planning Team identified the hazards that affect the District and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to the Flood Control and Water Conservation District (see Table S.3). There are no hazards that are unique to the FCWCD.





Table S.3 Flood Control and Water Conservation District Hazard Risk Summary

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Adverse Weather: Thunderstorm/ Heavy Rain/Hail/Lighting/Dense Fog/Freeze	Significant	Highly Likely	Negligible	Low
Adverse Weather: High Wind/Tornado	Limited	Likely	Negligible	Low
Adverse Weather: Extreme Heat	Extensive	Occasional	Negligible	Low
Agricultural Pest Infestation and Disease	Limited	Highly Likely	Negligible	Low
Biological Agents (naturally occurring)	Extensive	Occasional	Critical	Low
Coastal Storm/Coastal Erosion/Sea Level Rise	Limited	Likely	Limited	Medium
Dam Incidents	Limited	Occasional	Critical	Medium
Drought and Water Shortage	Extensive	Likely	Critical	High
Earthquake	Extensive	Occasional	Critical	High
Flood	Significant	Likely	Critical	Medium
Landslides and Debris Flow	Significant	Likely	Critical	Medium
Subsidence	Significant	Occasional	Negligible	Low
Tsunami and Seiche	Significant	Occasional	Critical	Medium
Wildfire	Extensive	Likely	Critical	High
Human Caused: Hazardous Materials	Significant	Highly Likely	Negligible	Medium
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		





S.3 Vulnerability Assessment

The intent of this section is to assess the San Luis Obispo Flood Control and Water Conservation District's vulnerability separate from that of the overall planning area, which has already been assessed in Section 5 Hazard Identification and Risk Assessment in the Base Plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area.

The information to support the hazard identification and risk assessment for this Annex was based on the 2014 County HMP supplemented with information collected through a Data Collection Guide, which was distributed to each participating municipality or special district to complete during the planning process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact anywhere within the County, as well as to rank the hazards and identify the related vulnerabilities unique to each jurisdiction. In addition, the FCWCD planning team members were asked to share information on past hazard events that have affected the District.

Each participating jurisdiction was in support of the main hazard summary identified in the Base Plan (see Table 5.2). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction (See Table S.3). Identifying these differences helps the reader to differentiate the jurisdiction's risk and vulnerabilities from that of the overall County.

Note: The hazard "Significance" reflects overall ranking for each hazard and is based on the FCWCD planning team input from the Data Collection Guide and the risk assessment developed during the planning process (see section 5 of the Base Plan), which included a more detailed qualitative analysis with best available data.

The hazard summaries in Table S.3 reflect the hazards that could potentially affect the District. Based on this analysis, the priority hazards (High Significance) for mitigation are coastal storm/coastal erosion/sea level rise, and hazardous materials. The discussion of vulnerability for each of the following hazards is in Section S.3.2 Estimating Potential Losses. Those of Medium or High Significance for the San Luis Obispo Flood Control and Water Conservation District are identified below.

- Coastal Storm/Coastal Erosion/Sea Level Rise
- Dam Incidents
- Drought and Water Shortage
- Earthquake
- Flood
- Landslides and Debris Flow
- Tsunami and Seiche
- Wildfire
- Human Caused: Hazardous Materials

Since the District's planning area is the entire extent of the county many hazards are noted here. However, due to the District's focus on flood control and water conservation, flood and drought/water shortage hazards are the priority for mitigation as the other hazards are under the purview of the County and Base Plan.

Other Hazards

Hazards assigned a significance rating of Low and those which do not differ significantly from the County ranking (e.g., Low vs. High) are not addressed further in this plan and are not assessed individually for specific





vulnerabilities in this section. The District planning team ranked the following hazards as a low significance to the District.

- Adverse Weather: Thunderstorm/ Heavy Rain/Hail/Lighting/Dense Fog/Freeze
- Adverse Weather: High Wind/Tornado
- Adverse Weather: Extreme Heat
- Agricultural Pest Infestation and Disease
- Biological Agents (naturally occurring)
- Subsidence

S.3.1 Assets at Risk

This section considers the District's assets at risk, including values at risk, critical facilities and infrastructure.

Values at Risk

Properties and infrastructure owned or operated by the San Luis Obispo County Flood Control and Water Conservation District were inventoried as part of the 2014 San Luis Obispo County HMP update and are considered critical to the community. The list of assets is attached to this Annex and notes specific hazard concerns where applicable.

S.3.2 Estimating Potential Losses

Note: This section details vulnerability to specific hazards of high or medium significance, where quantifiable, and/or where (according to HMPC member input) it differs from that of the overall County.

Impacts of past events and vulnerability to specific hazards are further discussed below (see Section 5.1 Hazard Identification for more detailed information about these hazards and their impacts on the County as a whole).

Adverse Weather: Thunderstorm/Heavy Rain/Hail/Lighting/Dense Fog/Freeze

The District's risk and vulnerability to this hazard does not differ substantially from that of the County overall. Damage to District facilities due to severe storms and hail are possible.

Agricultural Pest Infestation and Disease

The District's risk and vulnerability to this hazard does not differ substantially from that of the County overall. As noted in the Section 5.3.2 of the Base Plan, zebra mussels can accumulate in waterways, clogging pipes and damaging equipment used for drinking water and irrigation.

Biological Agents (Naturally Occurring)

The District's risk and vulnerability to this hazard does not differ substantially from that of the County overall. Section 5.3.3 of the County Plan discusses waterborne illnesses and the impact they can have on public health if left untreated.

Drought and Water Shortage

The District's risk and vulnerability to this hazard does not differ substantially from that of the County overall. Drought impacts can include water shortfalls for facility operations and critical functions, as well as potential structural destabilization and damage resulting from land subsidence.





Earthquake

Water distribution systems by their nature are highly vulnerable to earthquakes. Tables 10-13 in Section 5.3.7 of the County Plan shows Hazus damage estimates to water distribution lines and facilities from a major earthquake could total \$240 million. Flood control structures and levees could also be damaged from earthquakes.

Flood

Risk and vulnerabilities of the planning area to flooding are described in detail in Section 5.3.8 of the County Plan.

SLO FCWCD does not participate separately in the National Flood Insurance Program (NFIP) but will continue to support the County's participation in and compliance with the NFIP.

Landslides and Debris Flow

Landslides can damage water distribution systems in two general ways: 1) disruption of pipes and structures caused by differential movement and deformation of the ground, and 2) physical impact of debris moving downslope against pipes and structures located in the travel path. Landslides and debris flows can also contaminate above ground water supplies.

Coastal Storm/Coastal Erosion/Sea Level Rise

District facilities and properties on or near the coastline are highly vulnerable to impacts from coastal storms, coastal erosion, and sea level.

Tsunami

District facilities and properties on or near the coastline are highly vulnerable to damage from Tsunamis.

Wildfire

The District's risk and vulnerability to this hazard does not differ substantially from that of the County overall.

Human Caused: Hazardous Materials

The District's risk and vulnerability to this hazard does not differ substantially from that of the County overall.

S.4 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 capability 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 jurisdictional planning representatives used a matrix of common mitigation activities to inventory policies or programs in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed 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. In summarizing current capabilities and identifying gaps, the jurisdictional planning





representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The FCWCD capabilities are summarized below.

S.4.1 Regulatory Mitigation Capabilities

Table S.4 identifies existing regulatory capabilities the District has in place to help with future mitigation efforts. Note that many of the regulatory capabilities that can be used for the District are within the County’s jurisdiction. Refer to Chapter 6 Capability Assessment of the Base Plan for specific information related to the County’s mitigation capabilities.

Table S.4 FCWCD Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
San Luis Obispo County Flood Control and Water Conservation District Act	Yes	Various authorities for actions
Zoning ordinance	No	
Subdivision ordinance	No	
Growth management ordinance	No	
Floodplain ordinance	No	
Other special purpose ordinance (stormwater, water conservation, wildfire)	No	
Building code	No	
Fire department ISO rating	No	
Erosion or sediment control program	No	
Stormwater management program	No	
Site plan review requirements	No	
Capital improvements plan	No	
Economic development plan	No	
Local emergency operations plan	Yes	Dam failure response plans, Arroyo Grande Creek Levees
Other special plans	Yes	Integrated Regional Water Management Plan
Flood Insurance Study or other engineering study for streams	No	
Elevation certificates (for floodplain development)	No	

Source: Wood Data Collection Guide, 2019

S.4.2 Administrative/Technical Mitigation Capabilities

Table S.5 identifies the personnel responsible for activities related to mitigation and loss prevention in the FCWCD.





Table S.5 FCWCD Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	Planning/Public Works/Division Managers
Engineer/professional trained in water resources management	Yes	Public Works Engineer IV
Planner/engineer/scientist with an understanding of natural hazards	Yes	Public Works/Engineer IV
Personnel skilled in GIS	Yes	Public Works/Principle GIS Analyst
Full time building official	No	
Floodplain manager	No	
Emergency manager	No	
Grant writer	Yes	Public Works/Engineer IV/Consultants
Other personnel	Yes	Public Works/Finance/Legal
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	Public Works/Principle GIS Analyst
Warning systems/services (hydrologic data collection sites, telemetry)	Yes	Public Works/Engineer IV

Source: Wood Data Collection Guide, 2019

S.4.3 Fiscal Mitigation Capabilities

Table S.6 identifies financial tools or resources the District could potentially use to help fund mitigation activities.

Table S.6 FCWCD Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	No
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

S.4.4 Implemented Mitigation Projects

Arroyo Grande Cheek Channel: The Flood Control and Water Conservation District has developed a Waterway Management Plan to enhance the capacity and maintenance of the channel while addressing retaining critical creek habitat. The project has funding under both Proposition 1E funds and Proposition 84 funding under the IRWM. Work is expected to commence in 2019 to provide a five-year recurrence design storm and provide on-going maintenance. Subsequent phases will look toward enhancement of the existing levees to add additional capacity and reduce flooding potential, particular along the north side levee in the community of Oceano.





Meadow Creek Lagoon: Meadow Creek Lagoon is situated just behind the Arroyo Grande Creek Chanel levee in the Town of Oceano. Flow into Arroyo Grande Creek is regulated by flap gates, which when the Arroyo Grande Creek is not flowing to the ocean can cause pronounced rise in lagoon elevations with impacts to surrounding residential properties. Part of the plan to reducing flooding risk is to manage flows into the lagoon. On project, the Route 1 at 13th Storm Drain project, is currently being develop for construction in 2019/20. The project would divert flows from the lagoon into large detention basins to the east. Project funding is coming from State Transportation Funds and Community Block Grants.

S.4.5 Mitigation Outreach and Partnerships

The District runs a responsible water use outreach program to encourage conservation and efficiency by sending out public notices for water conversation and responsible water use with monthly water and sewer bills.

S.4.6 Opportunities for Enhancement

Based on the capabilities assessment, the FCWCD has several existing mechanisms in place that already help to mitigate hazards. There are also opportunities for the District to expand or improve on these policies and programs to further protect the community. Future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES. Additional training opportunities will help to inform District staff and board members on how best to integrate hazard information and mitigation projects into the District policies and ongoing duties of the District. Continuing to train District staff on mitigation and the hazards that pose a risk to the FCWCD will lead to more informed staff members who can better communicate this information to the public.

S.5 Mitigation Strategy

S.5.1 Mitigation Goals and Objectives

The District adopts the hazard mitigation goals and objectives developed by the HMPC and established in Section 7 of the Base Plan.

S.5.2 Completed and Deleted 2014 Mitigation Actions

The FCWD has not completed any mitigation actions from the 2014 LHMP, although of the District's five mitigation actions, four (4) are in progress to be completed. The planning team determined the following mitigation action from the previous action plan could be deleted:

Action 4.G Develop GIS mapping of flood areas to show property loss (potential and historical)

The County Public Works GIS team provides mapping support for FCWD efforts including incorporating FEMA GIS layers (e.g., SFHAs), delineated watershed boundaries, and geospatial data such as LOMAs/LOMRs, Elevation Certificates, etc. However, property loss information has not been shown. This action was recommended to be removed because the recommendations of the community drainage studies include long-term solutions to address property loss due to flooding.





S.5.3 Mitigation Actions

The planning team for the District identified and prioritized the following mitigation actions based on the risk assessment. The Flood Control and Water Conservation District was established to address flood mitigation and water quantity/quality. As such, hazards other than flood and drought are outside the District's purview and are not addressed by mitigation actions. Because the FCWCD's footprint is countywide, and is managed by County Public Works staff as a sub-district of the County, mitigation actions against other hazards in the base plan and other annexes also serve to mitigate those hazards for the FCWCD.

Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. 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. Actions with an '*' are those that mitigate losses to future development.





Table S.7 San Luis Obispo Flood Control and Water Conservation District Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
FCWCD. 1	Flood	Review and revise the policies of the San Luis Obispo County Flood Control and Water Conservation District to help reduce the exposure to flood hazards	Flood Control and Water Conservation District	Little to no cost	Staff Time/ Dept. Budget	Medium	1 yr.	In progress
FCWCD. 2	Flood	Identify flood prone areas within communities and define mitigation options under Community Drainage Studies. Engage stakeholders in defining, funding, and implementing community drainage facilities.	Flood Control and Water Conservation District	Little to no cost	Staff Time/ Dept. Budget	High	1 yr.	In progress. Drainage facility projects are identified in the community drainage studies. Implementation is in progress. The following projects identified in the studies are under development: Hwy 1 at 13th Street drainage (Oceano), Salinas Avenue drainage (Templeton), Mallagh Street drainage (Nipomo), Mountain Springs Road sedimentation basin (Paso Robles). Revise to: Continue to develop and update the community drainage studies and prioritize and implement the recommended solutions.
FCWCD. 3	Flood	Continue to update and enhance Emergency Response Plan for Arroyo Grande Creek Levee System. Develop safeguards for levee protection. Implement Arroyo Grande Waterway Management Plan to maximize floodway capacity of the facility.	Flood Control and Water Conservation District	Little to no cost	Staff Time/ Dept. Budget	High	1 yr.	In progress. The County's Dam and Levee Failure Plan, which covers the Arroyo Grande Creek Levee, was updated in February 2015 and February 2016. The Arroyo Grande Creek Levee Failure Emergency Response Plan was updated in March 2016. Revisions include: revised checklists to reflect actual response actions; divided checklists by position; updated figures and





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
								<p>maps to reflect current conditions; updated emergency contact information; added Appendix 3: Radio Procedures and Call List; added Appendix 6: Personal Safety Plan. The District has continued to work cooperatively with the State and Federal funding agencies for implementing flood related improvements. The District has been awarded the following grants: Proposition 1E Stormwater Flood Management Grant (\$2.8M, 2013) Proposition 84 IRWM Implementation Grant (\$2.2M, 2013) FEMA Hazard Mitigation Grant (\$3.0M, 2018)</p> <p>The Oceano Drainage Improvement Project (Hwy 1 at 13th Street) is funded by various state and federal grants.</p>
FCWCD. 4	Flood	Continue to work cooperatively with the state and federal flood related agencies for funding improvements through grant and agency programs	Flood Control and Water Conservation District	Little to no cost	FEMA HMA/ Staff Time/ Dept. Budget	High	Ongoing	In progress
FCWCD 5.	Drought	Develop a Regional Water Infrastructure Resiliency Plan to identify key interconnections to construct and agreements to get water from where it	Flood Control and Water Conservation District	\$75,000	FCWCD	High	1-2 yr.	New





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
		is to where it is needed to mitigate water shortages and drought impacts						
FCWCD 6	Dam Incidents	Perform destructive testing of the Lopez Dam to quantify previous investigation data and direct what repairs are needed. Conduct geotechnical investigation on Lopez Terminal Dam.	FCWCD, DSOD	\$450,000	FEMA-HHPD	High	TBD (pending DSOD review and approval of previous non-destructive testing assessment.)	The Lopez Dam and Lopez Terminal Dam are considered to be a high hazard dams by the Dept. of Safety of Dams (DSOD) due to the large population downstream. DSOD mandated that all spillways of High Hazard Dams be investigated for structural integrity and design. Preliminary studies have shown that although the Lopez Dam spillway is in fair condition it needs repairs related to spillway under drains, crack repair, spalling concrete repair, and various other maintenance items that will insure that the spillway performs well in a spill event. The Lopez Terminal Dam seismic assessment is in process.





S.6 Implementation and Maintenance

Moving forward, the San Luis Obispo Flood Control and Water Conservation District will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Chapter 8 in the Base Plan.

S.6.1 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 District to help inform updates of FCWCD plans, and in the development of additional plans, programs and policies. Understanding the hazards that pose a risk and the specific vulnerabilities of the District will help in future capital improvement planning for the FCWCD. The District may utilize the hazard information when reviewing a site plan or other type of development applications with the boundaries of the FCWCD area. As noted in Chapter 8.0 Plan Implementation, the HMPC representatives from the FCWCD 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 HMPC plan review meeting.

S.6.2 Monitoring, Evaluation and Updating the Plan

The FCWCD will follow the procedures to Monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Chapter 8 of the Base Plan. The District will continue to involve the public in mitigation, as described in Section 8.3 of the base plan. The Deputy Directors of County Public Works will be responsible for representing the District in the County HMPC, and for coordination with County staff and departments during plan updates. The San Luis Obispo Flood Control and Water Conservation District 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.

S.7 Attachments

Attachment A: District Assets at Risk from Applicable Hazards



ATTACHMENT A: Flood Control and Water Conservation District Assets at Risk from Applicable Hazards

Flood Control and Water Conservation District (FCWCD) Properties	Asset Location (Latitude and Longitude)	Total Value in Dollars (K for thousands or M for millions)	Total Land Area (in Acres)	Wildfire	Floods	Adverse Weather	Tsunami	Earthquake	Fault Rupture/ Groundshaking / Liquefaction	Coastal Storm / Coastal Erosion	Landslides	Naturally-Occurring Biological Agents	Agricultural Pest Infestation and Plant Disease
017-292-001(SLO CO FLOOD CONTROL & WATER CONS DIST) TRACT 1639 LT 1	35.6551°N, 120.3852°W	\$0	0.46			X		X	X		X	X	X
020-282-012(SLO CO FLOOD CONTROL & WATER CONS DIST) PM 56-39 PTN PARS 148 & 150	35.5824°N - 120.6817°W	\$0	1			X		X	X		X	X	X
021-012-032(SLO CO FLOOD CONTROL & WATER CONS DIST) PM 50-94 PAR 88	35.7616°N - 120.6972°W	\$0	0.2			X		X	X		X	X	X
021-013-048(SLO CO FLOOD CONTROL & WATER CONS DIST) PM 50-94 PAR 67	35.7596°N 4-120.6961°W	\$0	0.12			X		X	X		X	X	X
022-122-039(SLO CO FLOOD CONTROL & WATER CONS DIST) CAM PINES U7 PTN LTS 116-121 & PTN RD	35.5681°N - 121.1019°W	\$79,371	0.1	X	AE	X	X	X	X	X	X	X	X
022-126-034(SLO CO FLOOD CONTROL & WATER CONS DIST)000.50AC VACANT	35.5661°N - 121.1001°W	\$0	1.78	X	A	X	X	X	X	X	X	X	X
027-221-034(FLOOD CONTROL ZONE 16) T25S R12E PTN SEC 21	35.7471°N - 120.6851°W	\$380	0.06	X		X		X	X		X	X	X
027-221-035(FLOOD CONTROL ZONE 16) T25S R12E PTN SEC 21	35.7464°N 2-120.6849°W	\$0	2.15	X		X		X	X		X	X	X
034-431-049(SLO CO FLOOD CONTROL & WATER CONS DIST) PM 20/12 PTN PAR B	35.4757°N - 120.6226°W	\$190,931	3.08	X		X		X	X		X	X	X





Flood Control and Water Conservation District (FCWCD) Properties	Asset Location (Latitude and Longitude)	Total Value in Dollars (K for thousands or M for millions)	Total Land Area (in Acres)	Wildfire	Floods	Adverse Weather	Tsunami	Earthquake	Fault Rupture/ Groundshaking / Liquefaction	Coastal Storm / Coastal Erosion	Landslides	Naturally-Occurring Biological Agents	Agricultural Pest Infestation and Plant Disease
044-571-006(COUNTY SERVICE AREA 18) TR 1241-1 LT 100	35.2143°N - 120.6300°W	\$0	3.72			X		X	X		X	X	X
046-191-061(SLO CO FLOOD CONTROL & WATER CONS DIST) PTN MORRO RK VW NO 1 & PTN TN CAY	35.4521°N - 120.8999°W	\$0	2.93			X	X	X	X	X	X	X	X
047-021-013(FLOOD CONTROL ZONE 3)100.26AC VACANT	35.1850°N - 120.4827°W	\$0	61.23			X		X	X		X	X	X
047-081-044(FLOOD CONTROL ZONE 3)120.95AC FILTRATION PLANT PTN	35.1779°N - 120.5365°W	\$0	26.81			X		X	X			X	X
047-081-045(FLOOD CONTROL ZONE 3)120.95AC FILTRATION PLANT PTN	35.1731°N - 120.5351°W	\$0	104.57	X		X		X	X			X	X
047-081-050(FLOOD CONTROL ZONE 3)025.06AC FILTRATION PLANT PTN	35.1691°N 2- 120.5343°W	\$0	30.61	X		X		X	X			X	X
047-125-022(FLOOD CONTROL ZONE 3) RHO COR DE P STEELE SB PTN LT 3	35.1400°N - 120.5465°W	\$0	0.34		AE with Floodway	X		X	X			X	X
048-031-034(FLOOD CONTROL ZONE 3)037.76AC VACANT	35.2144°N - 120.4861°W	\$0	32.91	X		X		X	X		X	X	X
048-031-036(FLOOD CONTROL ZONE 3)370.00AC VACANT	35.2116°N - 120.4776°W	\$0	402.48	X		X		X	X		X	X	X
048-031-037(FLOOD CONTROL ZONE 3)585.00AC VACANT	35.2094°N - 120.4964°W	\$0	552.4	X		X		X	X		X	X	X
048-041-026(FLOOD CONTROL ZONE 3)186.00AC VACANT	35.2240°N - 120.4747°W	\$0	192.16	X		X		X	X		X	X	X





Flood Control and Water Conservation District (FCWCD) Properties	Asset Location (Latitude and Longitude)	Total Value in Dollars (K for thousands or M for millions)	Total Land Area (in Acres)	Wildfire	Floods	Adverse Weather	Tsunami	Earthquake	Fault Rupture/ Groundshaking / Liquefaction	Coastal Storm / Coastal Erosion	Landslides	Naturally-Occurring Biological Agents	Agricultural Pest Infestation and Plant Disease
048-051-019(FLOOD CONTROL ZONE 3)583.00AC VACANT	35.2083°N - 120.4575°W	\$0	565.97	X		X		X	X		X	X	X
048-061-013(FLOOD CONTROL ZONE 3)040.00AC VACANT	35.2033°N - 120.5079°W	\$0	37.9	X		X		X	X		X	X	X
048-061-015(FLOOD CONTROL ZONE 3) T31S R14E PTN SEC 34 LESS 40% MIN RTS	35.1776°N - 120.4544°W	\$0	1.76	X		X		X	X		X	X	X
048-061-057(FLOOD CONTROL ZONE 3)353.00AC VACANT	35.1867°N - 120.4628°W	\$0	342.17	X		X		X	X		X	X	X
048-061-058(FLOOD CONTROL ZONE 3)639.00AC VACANT	35.1918°N - 120.4816°W	\$0	639.27	X		X		X	X		X	X	X
048-061-059(FLOOD CONTROL ZONE 3)304.00AC VACANT	35.2022°N - 120.4827°W	\$0	282.19		A	X		X	X		X	X	X
048-071-016(FLOOD CONTROL ZONE 3)366.00AC RECREATION	35.1953°N - 120.4612°W	\$0	390.58	X		X		X	X		X	X	X
048-071-017(FLOOD CONTROL ZONE 3)624.00AC VACANT	35.1961°N - 120.4485°W	\$0	592.27	X		X		X	X		X	X	X
048-101-001(FLOOD CONTROL ZONE 3)150.00AC VACANT	35.2002°N - 120.4731°W	\$0	148.51	X		X		X	X		X	X	X
048-101-002(FLOOD CONTROL ZONE 3)025.27AC UNDER LOPEZ LAKE	35.1927°N - 120.4741°W	\$0	26		A	X		X	X		X	X	X
061-082-002(FLOOD CONTROL ZONE 1)000.25AC VACANT	35.1022°N - 120.6267°W	\$0	0.33		AE	X	X	X	X			X	X
061-093-038(FLOOD CONTROL ZONE 1)004-094 AC	35.1008°N - 120.6265°W	\$0	3.61		AE	X	X	X	X			X	X





Flood Control and Water Conservation District (FCWCD) Properties	Asset Location (Latitude and Longitude)	Total Value in Dollars (K for thousands or M for millions)	Total Land Area (in Acres)	Wildfire	Floods	Adverse Weather	Tsunami	Earthquake	Fault Rupture/ Groundshaking / Liquefaction	Coastal Storm / Coastal Erosion	Landslides	Naturally-Occurring Biological Agents	Agricultural Pest Infestation and Plant Disease
061-161-012(FLOOD CONTROL ZONE 16)060.40AC	35.0984°N - 120.6230°W	\$0	1.26	X	AE	X	X	X	X	X		X	X
062-061-011(FLOOD CONTROL ZONE 16)000.11AC VACANT	35.1041°N - 120.6094°W	\$0	0.09			X	X	X	X			X	X
062-064-020(FLOOD CONTROL ZONE 16)000.15AC DRAINAGE BASIN	35.1032°N - 120.6087°W	\$0	0.15			X	X	X	X			X	X
062-104-012(FLOOD CONTROL ZONE 16) PM 50-65 PAR 10	35.1008°N - 120.6006°W	\$60,007	0.15			X	X	X	X			X	X
062-261-065(FLOOD CONTROL ZONE 16)000.14AC DRAINAGE	35.1063°N - 120.6104°W	\$0	0.14			X	X	X	X			X	X
062-304-016(FLOOD CONTROL ZONE 16) TR 2305 LT 16	35.0983°N - 120.5967°W	\$0	0.19			X	X	X	X			X	X
064-332-064(COUNTY SERVICE AREA 10A)000.13AC VACANT	35.4307°N - 120.8772°W	\$0	0.13			X	X	X	X	X	X	X	X
064-333-008(COUNTY SERVICE AREA 10A) MORRO STR 4 BL 56 LTS 13 & 14	35.4305°N - 120.8769°W	\$7,193	0.08			X	X	X	X	X	X	X	X
069-062-007(COUNTY SERVICE AREA 23) TN OF STA MARG PTN BLK 63 & PTN RD	35.3888°N - 120.6121°W	\$0	0.27			X		X	X			X	X
069-161-018(COUNTY SERVICE AREA 23) PM 25-4 PTN PAR 13	35.3893°N - 120.6012°W	\$6,891	0.25			X		X	X			X	X
073-094-001(COUNTY SERVICE AREA 10)001.14AC VACANT	35.4391°N - 120.8875°W	\$0	1.12			X	X	X	X		X	X	X
073-095-008(SLO CO FLOOD CONTROL & WATER CONS DIST) RHO MORRO CAY PTN LT 53	35.4449°N - 120.8912°W	\$0	7.97			X	X	X	X		X	X	X





Flood Control and Water Conservation District (FCWCD) Properties	Asset Location (Latitude and Longitude)	Total Value in Dollars (K for thousands or M for millions)	Total Land Area (in Acres)	Wildfire	Floods	Adverse Weather	Tsunami	Earthquake	Fault Rupture/ Groundshaking / Liquefaction	Coastal Storm / Coastal Erosion	Landslides	Naturally-Occurring Biological Agents	Agricultural Pest Infestation and Plant Disease
075-011-053(FLOOD CONTROL ZONE 1A)005.33AC VACANT	35.1036°N - 120.5851°W	\$0	5.08		AE	X	X	X	X			X	X
075-393-007(FLOOD CONTROL ZONE 1A)001.29AC VACANT	35.1031°N - 120.5785°W	\$0	1.22		AE with Floodway	X	X	X	X			X	X
080-091-023(SLO CO FLOOD CONTROL & WATER CONS DIST)002.457AC GRAZING	35.7607°N - 120.8873°W	\$0	2.4		A	X		X	X		X	X	X
085-012-031(SLO CO FLOOD CONTROL & WATER CONS DIST)024.69AC VACANT	35.0903°N - 120.3673°W	\$0	25.82	X	A	X		X	X		X	X	X
091-373-017(COUNTY SERVICE AREA 1D)000.46AC HOLDING POND	35.0350°N - 120.4964°W	\$0	0.46			X		X	X			X	X
091-382-016(FLOOD CONTROL ZONE 16) TR 1427 LT 16	35.0340°N - 120.4993°W	\$0	0.43			X		X	X			X	X
092-051-017(FLOOD CONTROL ZONE 4)004.82AC VACANT	34.9745°N - 120.5537°W	\$0	5.18		A	X	X	X	X		X	X	X
092-061-009(FLOOD CONTROL ZONE 4)013.77AC VACANT	34.9748°N - 120.5478°W	\$0	11.47		A	X	X	X	X		X	X	X
092-061-010(FLOOD CONTROL ZONE 4)004.87AC VACANT	34.9823°N - 120.5388°W	\$0	3.8		A	X	X	X	X		X	X	X
092-093-011(COUNTY SERVICE AREA 1)002.29AC DRAINAGE IMPOUND AREA	35.0168°N - 120.4929°W	\$0	2.28			X		X	X			X	X
092-094-004(COUNTY SERVICE AREA 1) LA MESA TR PTN LTS 15 & 16	35.0166°N - 120.4924°W	\$11,858	0.13			X		X	X			X	X
092-105-013(COUNTY SERVICE AREA 1)000.05AC ACCESS DRAINAGE IMPOUND AREA	35.0167°N - 120.4923°W	\$0	0.06			X		X	X			X	X





Flood Control and Water Conservation District (FCWCD) Properties	Asset Location (Latitude and Longitude)	Total Value in Dollars (K for thousands or M for millions)	Total Land Area (in Acres)	Wildfire	Floods	Adverse Weather	Tsunami	Earthquake	Fault Rupture/ Groundshaking / Liquefaction	Coastal Storm / Coastal Erosion	Landslides	Naturally-Occurring Biological Agents	Agricultural Pest Infestation and Plant Disease
092-107-023(FLOOD CONTROL ZONE 16)000.10AC SEWER TREATMENT & DISPOSAL SITE	35.0189°N - 120.4933°W	\$0	0.11			X		X	X			X	X
092-120-020(FLOOD CONTROL ZONE 16) TR 1658 LT 20	35.0316°N - 120.4931°W	\$6,235	0.29			X		X	X			X	X
092-126-001(FLOOD CONTROL ZONE 16) TR 1647 LT 1	35.0309°N - 120.4943°W	\$38,891	0.36			X		X	X			X	X
092-128-021(FLOOD CONTROL ZONE 16) TR 1805 LT 21	35.0310°N - 120.4901°W	\$0	0.21			X		X	X			X	X
092-128-040(FLOOD CONTROL ZONE 16) TR 1805 LT 40	35.0292°N - 120.4933°W	\$0	0.2			X		X	X			X	X
092-129-001(FLOOD CONTROL ZONE 16) TR 1700 LT 1	35.0304°N - 120.4905°W	\$37,439	0.15			X		X	X			X	X
092-136-055(FLOOD CONTROL ZONE 16) TR 2282 LT 10	35.0343°N - 120.4962°W	\$0	0.1			X		X	X			X	X
092-136-065(FLOOD CONTROL ZONE 16) TR 1792 LT 8	35.0343°N - 120.4946°W	\$0	0.13			X		X	X			X	X
092-137-022(FLOOD CONTROL ZONE 16) TR 1556 LT 22	35.0331°N - 120.4923°W	\$0	0.33			X		X	X			X	X
092-143-057(FLOOD CONTROL ZONE 16) TRACT 1445 LT 57	35.02590°N - 120.4843°W	\$0	0.4			X		X	X			X	X
092-144-020(FLOOD CONTROL ZONE 16) TR 1608 LT 20	35.0278°N - 120.4812°W	\$0	0.16			X		X	X			X	X





Flood Control and Water Conservation District (FCWCD) Properties	Asset Location (Latitude and Longitude)	Total Value in Dollars (K for thousands or M for millions)	Total Land Area (in Acres)	Wildfire	Floods	Adverse Weather	Tsunami	Earthquake	Fault Rupture/ Groundshaking / Liquefaction	Coastal Storm / Coastal Erosion	Landslides	Naturally-Occurring Biological Agents	Agricultural Pest Infestation and Plant Disease
092-145-040(FLOOD CONTROL ZONE 16) TRACT 1640 LT 40	35.0272°N - 120.4828°W	\$0	0.28			X		X	X			X	X
092-145-049(FLOOD CONTROL ZONE 16) MESA GRANDE TR PTN LT 20	35.0276°N - 120.4813°W	\$0	0.09			X		X	X			X	X
092-147-022(FLOOD CONTROL ZONE 16) TRACT 1627 LT 22	35.0288°N - 120.4799°W	\$0	0.3			X		X	X			X	X
092-183-012(FLOOD CONTROL ZONE 16) TR 1898-1 LT 58	35.0199°N - 120.4875°W	\$0	0.91			X		X	X			X	X
092-261-020(FLOOD CONTROL ZONE 16) TR 2530 LT 23	35.0348°N - 120.4807°W	\$0	0.31			X		X	X			X	X
092-291-055(COUNTY SERVICE AREA 1C) TR 458 LT 51	35.0269°N 8-120.4770°W	\$0	3.94			X		X	X			X	X
092-446-008(COUNTY SERVICE AREA 1)000.77AC VACANT	35.0159°N - 120.4996°W	\$0	1.56			X		X	X			X	X
092-453-001(FLOOD CONTROL ZONE 16)000.16AC WATER STORAGE	35.0192°N - 120.4933°W	\$0	0.16			X		X	X			X	X
092-462-050(COUNTY SERVICE AREA 1B)000.60AC STORM WATER DETENTION AREA	35.0242°N - 120.4824°W	\$0	0.13			X		X	X			X	X
092-463-032(COUNTY SERVICE AREA 1B)000.14AC SEWAGE DISPOSAL SITE TR 414 LT 73	35.0245°N - 120.4820°W	\$0	0.61			X		X	X			X	X
092-512-029(FLOOD CONTROL ZONE 16) TR 2409 LT 29	35.0257°N - 120.4957°W	\$0	0.53			X		X	X			X	X
092-532-018(FLOOD CONTROL ZONE 16) TR 1692 LT 22	35.0265°N - 120.4876°W	\$36,405	0.21			X		X	X			X	X





Flood Control and Water Conservation District (FCWCD) Properties	Asset Location (Latitude and Longitude)	Total Value in Dollars (K for thousands or M for millions)	Total Land Area (in Acres)	Wildfire	Floods	Adverse Weather	Tsunami	Earthquake	Fault Rupture/ Groundshaking / Liquefaction	Coastal Storm / Coastal Erosion	Landslides	Naturally-Occurring Biological Agents	Agricultural Pest Infestation and Plant Disease
092-533-028(FLOOD CONTROL ZONE 16) TR 1692 LT 58	35.0266°N - 120.4906°W	\$8,112	0.97			X		X	X			X	X
092-551-038(FLOOD CONTROL ZONE 16) TR 607 LT 28	35.0257°N - 120.4804°W	\$0	0.52			X		X	X			X	X
092-573-010(FLOOD CONTROL ZONE 16) TR 2299 LT 10	35.0285°N - 120.4945°W	\$0	0.2			X		X	X			X	X





T.1 District Profile

T.1.1 Mitigation Planning History and 2019 Process

This Annex was created during the development of the 2019 San Luis Obispo County Hazard Mitigation Plan Update. The South San Luis Obispo County Sanitation District was previously part of the Multi-Jurisdictional Local Hazard Mitigation Plan for the cities of Grover Beach, Arroyo Grande, and Lucia Mar Unified School District which was approved by FEMA in December 2015. The previous mitigation plan was not incorporated into other District planning mechanisms.

The Plant Superintendent of the South San Luis Obispo County Sanitation District (South SLO County Sanitation District, or the District) was the representative on the county Hazard Mitigation Planning Committee and took the lead for developing the plan and this annex in coordination with the South SLO District Local Planning Team (Planning Team). The local (District) Planning Team will be responsible for implementation and maintenance of the plan.

Table T.1 South San Luis Obispo County Sanitation District Hazard Mitigation Plan Planning Team

Department or Stakeholder	Title
South SLO County Sanitation District	Plant Superintendent
South SLO County Sanitation District	District Administrator

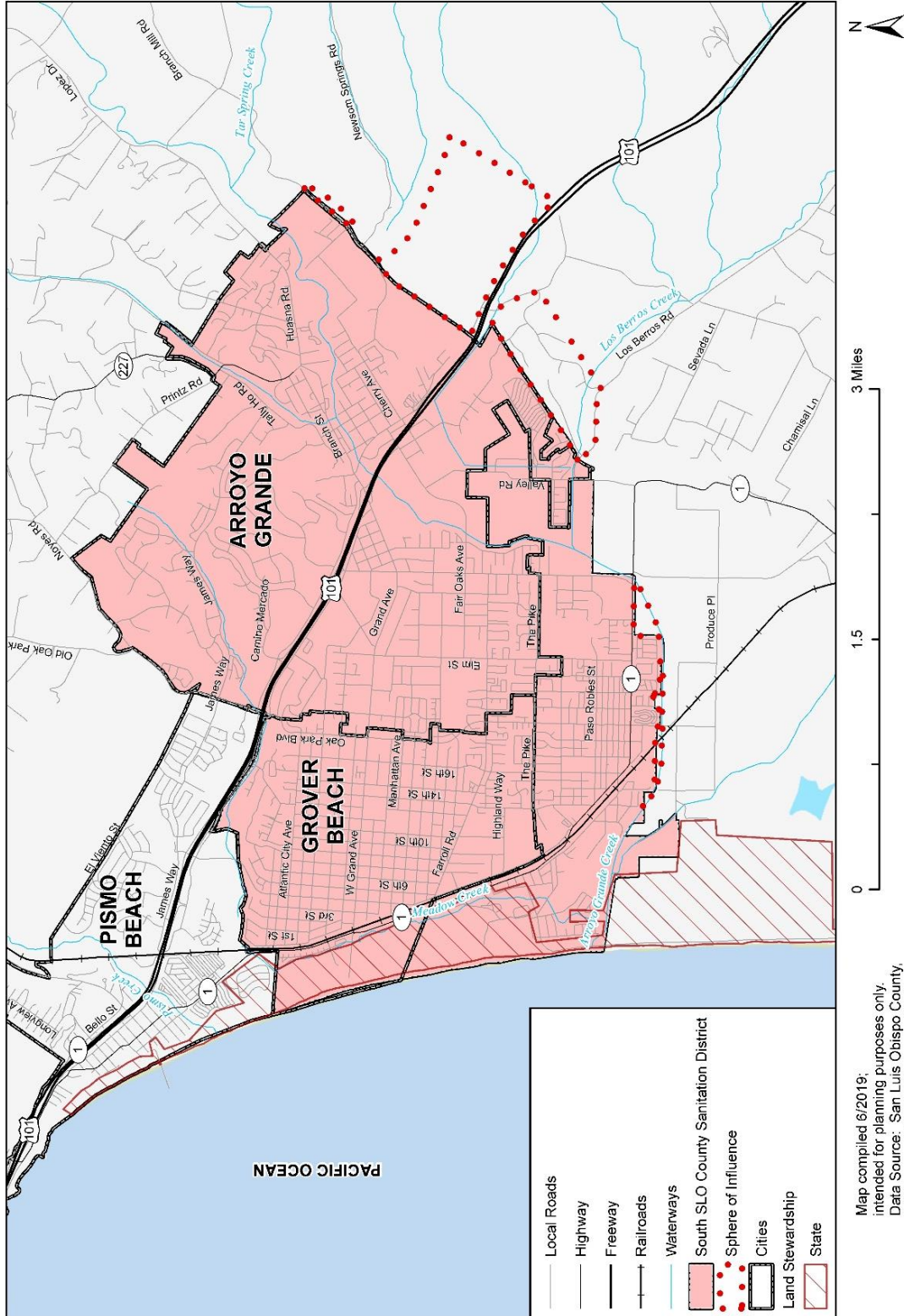
More details on the planning process followed and how the jurisdictions, service districts and stakeholders participated can be found in Section 3 of the Base Plan, along with how the public was involved during the 2019 update.

Figure T.1 below is a map showing the South SLO County Sanitation District including its sphere of influence and nearby areas.





Figure T.1 South San Luis Obispo County Sanitation District



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office, LAFCO





T.1.2 District Overview

In 1958 the Grover City County Water Board commissioned several engineering studies aimed at investigating the rising nitrate levels observed in the local groundwater sources. At that time both Grover City and the Oceano community were entirely unsewered and depended on individual septic tanks. While Arroyo Grande had sewer systems at that time, said systems led to a wastewater treatment facility located at the “sewer farm,” and the partially treated wastewater was disposed onto nearby lands. Because of the studies carried out upon that engineering commissioning, it was determined there was a need to better address the septic tank and sewer farm impacts on nearby lands and groundwater resources. To solve these issues, the South San Luis Obispo County Sanitation District was founded on September 3, 1963. Upon this new sanitation district development, nine miles of trunk sewer lines were built, as well as a new wastewater treatment plant and an ocean outfall line to get rid of the treated wastewater. To date, further improvements have taken place as well expansions in the wastewater systems. Key years when improvements, additions, or other constructions were incorporated into the District’s infrastructure include 1978, 1979, 1986, 1990, and 2005.

Currently, the District provides wastewater collection, treatment and disposal services to the three-member agencies of Arroyo Grande, Grover Beach, and the Oceano Community Services District (CSD). The District is governed by a District Board composed of three members appointed by each of the member agencies. This Board makes policy and operational decisions based on recommendations of the District Administrator, engineers, and District staff, and establishes policies, goals, and objectives in the best interest of the District. It additionally approves budgets, expenditures, and related District functions.

The District’s commitment to public health is focused on sound environmental design, educational opportunities, effectively working with homeowners and businesses, and appropriate and responsible construction mechanisms. The District engages in a fats, oils, and grease (FOG) safe release program as well as a pretreatment of chemicals and substances program to prevent the introduction of pollutants into the water and land, while protecting personnel from hazardous materials exposure. Currently the District’s staff is composed of the District Administrator, a bookkeeper/secretary, and six operational staff.

T.1.3 Development Trends

Since the Sanitation District encompasses and provides services for Arroyo Grande, Grover Beach, and the Oceano Community Services District it is expected that development and changes in the community will follow those of the two cities and Service District (i.e. the Sanitation District’s members). For more information on these member communities refer to the Base Plan as well as Annex A (Arroyo Grande), Annex C (Grover Beach), and Annex M (Oceano).

T.1.4 Other Community Planning Efforts

Coordination and synchronization with other community planning mechanisms and efforts are vital to the success of this Plan. To have a thorough evaluation of hazard mitigation practices already in place, appropriate planning procedures should also involve identifying and reviewing existing plans, policies, regulations, codes, tools, and other actions are designed to reduce a community’s risk and vulnerability from natural hazards.

As an unincorporated community, the South SLO County Sanitation District is referenced in other County and City planning documents and regulated by County policies and planning mechanisms. Integrating existing planning efforts, mitigation policies, and action strategies into this annex establishes a credible, comprehensive document that weaves the common threads of a community’s values together. The development of this Special District annex involved a comprehensive review of existing plans, studies, reports, and initiatives from San Luis Obispo County and the Sanitation District that relate to hazards or hazard mitigation. A high-level summary of



the key plans, studies and reports is summarized in Table T.2. Information on how they informed the update are noted and incorporated where applicable.

In addition to the development standards within the existing Local Hazard Mitigation Plans by Arroyo Grande and Grover Beach, there are County planning mechanisms that regulate future and existing development within the District’s planning area. Refer to Sea Level Rise as well as Section 6 of the Base Plan for more information on the plans, policies, regulations and staff that govern the South SLO County Sanitation District.

Table T.2 Summary of Review of Key Plans, Studies, and Reports for the Sanitation District

Plan, Study, Report Name	How Document Informed the Annex
County of San Luis Obispo Local Hazard Mitigation Plan (2014)	Informed past hazard event history, hazard profile and background, and mitigation strategy information.
South SLO County Sanitation District 2018 Strategic Plan	Obtained current District information, ongoing efforts, water use information, etc.
San Luis Obispo County 2014 Integrated Regional Water Management Plan	Obtained information on water use in Nipomo, water management regions, and the drought/water scarcity hazard.
State of California’s Hazard Mitigation Plan – Updated 2018	General information on hazards, events, and vulnerability assessments.
San Luis Obispo County Dam and Levee Failure Evacuation Plan – Updated 2016	Flooding, dam, and levee hazard information and recent studies.
2014-2016 Resource Summary Report for San Luis Obispo County’s General Plan	Pulled information about water resources, reliability, and ongoing efforts to increase resilience in the county and District of Nipomo as related to drought.
Multi-Jurisdictional Local Hazard Mitigation Plan for the City of Arroyo Grande, City of Grover Beach, Lucia Mar Unified School District, and the South San Luis Obispo County Sanitation District - 2015	General background information on the Sanitation District and its member communities as well as hazards, events, mitigation capabilities, goals, etc.
Oceano Community Services District Local Hazard Mitigation Plan – 2018	General background information on the community as well as hazards, events, mitigation capabilities, goals, etc.

T.2 Hazard Identification and Summary

The Sanitation District Planning Team identified the key hazards that affect the District, and summarized their frequency of occurrence, spatial extent, potential magnitude, and overall significance specific to the District (see Table T.3 South SLO County Sanitation District Hazard Risk Summary). There are no hazards that are unique to this Sanitation District.





Table T.3 South SLO County Sanitation District Hazard Risk Summary

Hazard	Geographic Area	Probability of Future Occurrence	Magnitude/Severity (Extent)	Overall Significance
Agricultural Pest Infestation and Disease	Limited	Highly Likely	Negligible	Medium
Coastal Flood/Coastal Erosion/Sea Level Rise	Limited	Likely	Critical	Medium
Dam Incidents and Failure	Extensive	Unlikely	Catastrophic	Medium
Drought and Water Shortage	Significant	Likely	Limited	Low
Earthquake and Liquefaction	Significant	Highly Likely	Critical	High
Flood	Significant	Highly Likely	Limited	Medium
Tsunami and Seiche	Limited	Occasional	Limited	Low
Wildfire	Significant	Occasional	Limited	Low
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		

T.3 Vulnerability Assessment

The intent of this section is to assess the Sanitation District’s vulnerability separately from that of the County, which has already been assessed in Section 5 Hazard Identification and Risk Assessment of the Base Plan. This vulnerability assessment analyzes the population, property, and other assets (e.g. critical facilities, historic assets) at risk to hazards ranked of medium or high significance, or that may vary from other parts of the planning area.

The key information to support the Hazard Identification and Risk Assessment (HIRA) for this Annex was collected through a Data Collection Guide document, which was distributed to each participating municipality, community services district, or special district to complete during the planning process. Information was collected for the Oceano CSD as well as the cities of Arroyo Grande and Grover Beach, and was analyzed and summarized to identify and rank all the hazards that could impact anywhere within the County, as well as to rank the hazards and identify the related vulnerabilities unique to this District. In addition, the Sanitation District planning team was asked to share information on past hazard events that have affected the District.





Each participating jurisdiction or district was in support of the main hazard summary identified in the Base Plan (See Section 5.1). However, the hazard summary rankings for each jurisdictional annex may vary slightly due to specific hazard risk and vulnerabilities unique to that jurisdiction. Identifying these differences helps the reader to differentiate the Sanitation District’s risk and vulnerabilities from that of the overall County.

The hazard summaries in Table T.3 reflect the hazards that could potentially affect the District in major ways. Based on this analysis, the priority hazard (High Significance) for mitigation is Earthquake/Liquefaction. The second priority hazards (Medium Significance) are Agricultural Pest Infestation/Disease, Dam Incidents/Failure, and Flood. The discussion of vulnerability for each of the assessed hazards is in contained in the following sections. Those of Medium or High significance for the Sanitation District are identified below.

- Agricultural Pest Infestation/Disease
- Coastal Flood/Coastal Erosion/Sea Level Rise
- Dam Incidents/Failure
- Earthquake/Liquefaction
- Flood

Other Hazards

Hazards assigned a significance rating of Low or Not Applicable may not be assessed within this annex. The hazards to the planning area which were rated by the Planning Committee are summarized under Section T.2 herein (Hazard Identification and Summary). The majority were given minimum priority due to a lack of exposure, vulnerability, and/or no probability of occurrence or previous history or losses, though some may contain a loss estimate discussion and further information, based again on potential risk to the District, under Section 5 of the Base Plan.

T.3.1 Assets at Risk

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

Values at Risk

The following data on property exposure is derived from San Luis Obispo County Assessor’s data. This data should only be used as a guideline to overall values in the Sanitation District (which is again composed of the Cities of Arroyo Grande and Grover Beach as well as the Oceano CSD), given the information has some limitations. Table T.4 shows the exposure of properties (e.g., the values at risk based on improvement and content values only) broken down by property type for the South SLO County Sanitation District. Refer to the Base Plan Section 5.2 (HIRA Asset Summary) for more details on value information, content calculations, and overall parcel analysis methodology.

Table T.4 Property Exposure Values for the Sanitation District by Parcel Type

Property Type	Parcel Count	Improved Value	Content Value	Total Value
Agricultural	11	\$968,849	\$968,849	\$1,937,698
Commercial	615	\$258,747,007	\$258,747,007	\$517,494,014
Government/ Utilities	159	\$89,487	--	\$89,487
Other/Exempt/Misc.	430	\$95,164,067	--	\$95,164,067
Residential	9,574	\$1,839,157,626	\$919,578,813	\$2,758,736,439
Multi-Family Residential	1,480	\$311,791,472	\$155,895,736	\$467,687,208
Mobile/Manufactured Homes	69	\$19,177,930	\$9,588,965	\$28,766,895





Property Type	Parcel Count	Improved Value	Content Value	Total Value
Residential: Other	1,161	\$252,818,098	\$126,409,049	\$379,227,147
Industrial	32	\$12,647,758	\$18,971,637	\$31,619,395
Vacant	69	\$16,911,610	--	\$16,911,610
TOTAL	13,600	\$2,807,473,904	\$1,490,160,056	\$4,297,633,960

Source: San Luis Obispo County 2019 Assessor data; ParcelQuest; Wood Plc analysis

Note: these values contain a combination of properties found within the Cities of Arroyo Grande and Grover Beach, and the Oceano CSD. Refer to the respective annexes and Base Plan documents for additional information.

Critical Facilities and Infrastructure

A critical facility is one that is essential to providing utility or direction either during the response to an emergency or during the recovery operation. See Section 5 of the Base Plan for more details on the definitions and categories of critical facilities.

An inventory of critical facilities in the Sanitation District based on San Luis Obispo County GIS data as well as structures obtained from the Homeland Infrastructure Foundation-Level Dataset (HIFLD) is provided in Table T.5 and Table T.6, as well as illustrated in Figure T.2. The four types of Critical Facilities categorized by San Luis Obispo County and its jurisdictions' and Districts' planning teams are: Emergency Services, High Potential Loss Facilities, Lifeline Utility Systems, and Transportation Systems. Note that the Sanitation District has identified 49 critical facilities total, although there are no High Potential Loss Facilities within the District's boundaries. In addition, 10 of the 49 total facilities in the Sanitation District are found within the Oceano boundaries alone but are accounted for as part of the South SLO County District for reference; these Oceano facilities will be marked with asterisks (*) in Table T.6. Refer to Section 5.2 of the Base Plan for more information on the Assets used throughout this annex and the county-wide analyses.

Table T.5 Summary of Sanitation District's Critical Facilities

Facility Category	Facility Type	Count
Emergency Services	Day Care Facilities	14
	Emergency Medical Service Stations	4
	Fire Stations	3
	Hospitals	2
	Local Law Enforcement	3
	Nursing Homes	2
	Private Schools	5
	Public Schools	9
	Urgent Care	1
Lifeline Utility Systems	FM Transmission Towers	1
	Microwave Service Towers	1
	Paging Transmission Towers	1
	Wastewater Treatment Plants	1
	Water Treatment Facilities	1
Transportation Systems	Airports	1
TOTAL		49

Source: San Luis Obispo County Planning and Building; LAFCO; HIFLD; Wood Plc analysis





Table T.6 Details about Sanitation District’s Critical Facilities

Facility Type	Name
Airport	Oceano County Airport
Day Care Facilities	Arroyo Grande Montessori School
	Arroyo Grande United Methodist Children's Center
	California State Preschool at Grover Beach
	Capslo - Oceano Migrant Children's Center
	Capslo - Five Cities Head Start
	Child's Smile Day Care
	Dandy Lion Montessori School
	Oceano First 5
	Open Door Pre-School
	Peace Christian Preschool
	St Patrick's Mercy Preschool
	Valley View Children's Center
	Village Preschool
	YMCA South County Preschool
Emergency Medical Service Stations	Arroyo Grande Fire Department
	Grover Beach Fire Department
	Oceano Community Services District
	San Luis Ambulance Service - Arroyo Grande
Fire Stations	Arroyo Grande Fire Department
	Grover Beach Fire Department
	Oceano Community Services District
FM Transmission Towers	--
Hospitals	Arroyo Grande Community Hospital
	Marian Regional Medical Center, Arroyo Grande
Local Law Enforcement	Arroyo Grande Police Department
	Grover Beach Police Department
	San Luis Obispo County Sheriff's Department - South Station
Microwave Service Towers	--
Nursing Homes	Alder House
	Wyndham Residence
Paging Transmission Towers	--
Private Schools	Arroyo Grande Montessori School
	Coastal Christian School
	Dandy Lion Montessori School
	St. Patrick's Catholic School
	Valley View Adventist Academy
Public Schools	Arroyo Grande High
	Fairgrove Elementary
	Grover Beach Elementary
	Grover Heights Elementary
	Harloe Elementary
	Ocean View Elementary
	Oceano Elementary





Facility Type	Name
	Paulding Middle
	Santa Lucia ROP
Urgent Care	Doctors Office - Urgent Care
Water Treatment Facilities	Central Coast Water Treatment
Wastewater Treatment Plant	South San Luis Obispo Sd Wastewater Treatment Plant

Source: San Luis Obispo County Planning and Building; LAFCO; HIFLD

Critical Processes at Wastewater Treatment Plant

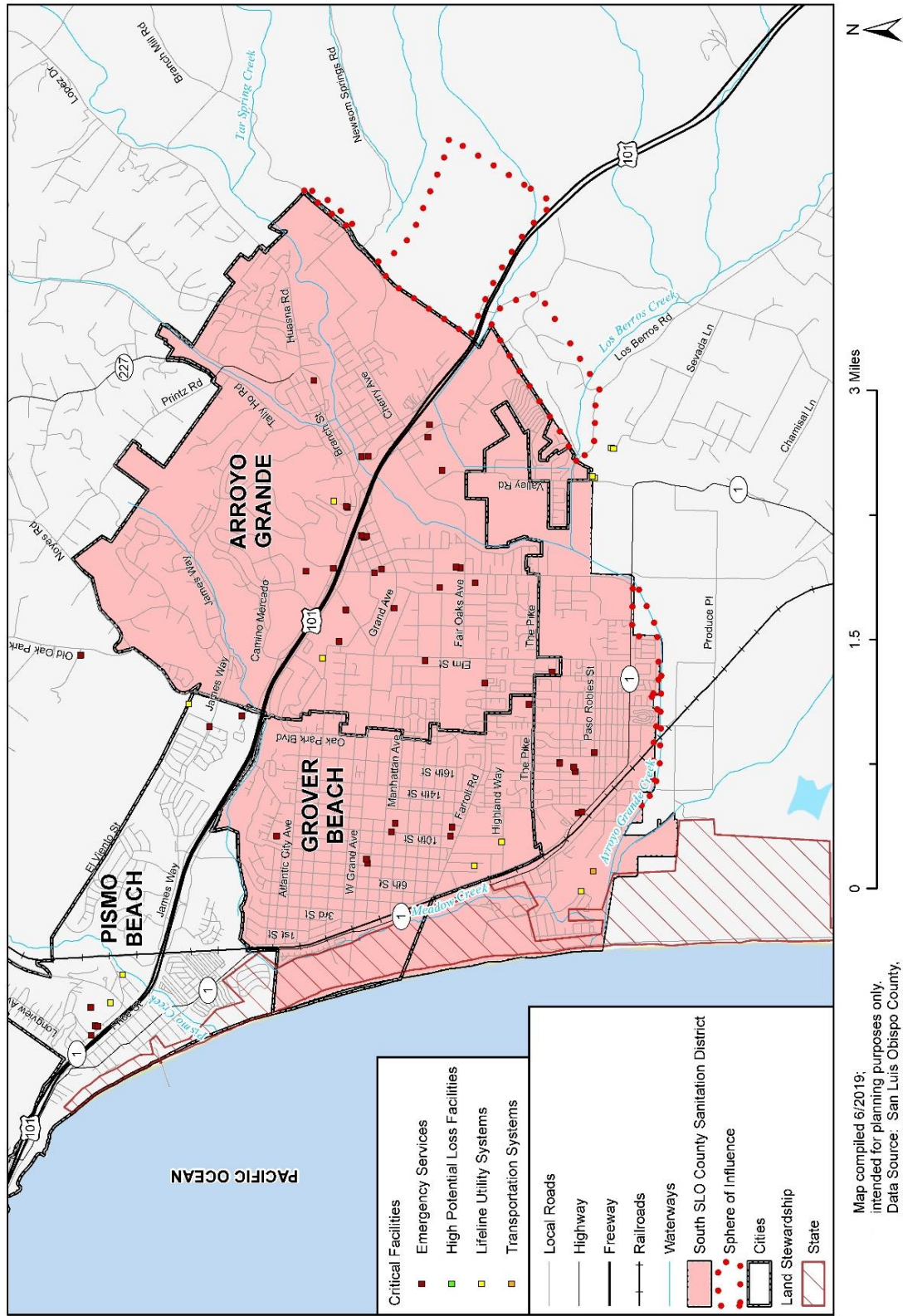
Additional Essential Infrastructures to the District noted by the Planning Team are noted below and fall under the Lifeline Utility System category:

- Headworks
- Main Control Center
- Primary Clarifiers (2)
- Fixed Film Reactor
- Secondary Clarifier
- Chlorine Contact Tank
- Emergency Generator





Figure T.2 Critical Facilities in the Sanitation District



Map compiled 6/2019;
intended for planning purposes only.
Data Source: San Luis Obispo County,
US Census TIGER Database, CA Open
Data Portal, BLM/California State Office,
LAFCO, HIFLD



Emergency Service Facilities

The Sanitation District contains 43 Emergency Services facilities aimed at providing for the health and welfare of the entire community. These include day care facilities, emergency medical service stations, fire stations, hospitals/urgent care facilities, local law enforcement, nursing homes, and schools as noted in Table T.5.

Transportation Systems and High Potential Loss Facilities

One critical transportation facility is present within the boundaries of the Sanitation District. This is the Oceano County Airport located within the Oceano CSD.

No high potential loss facilities such as power plants were identified by the County, HIFLD dataset, or the Planning Team.

Lifeline Utility Systems

A potential of five lifeline facilities have been identified for the South SLO County Sanitation District. These are noted in Table T.5 and Table T.6. Other facilities or structures falling within the lifeline utility systems category may be present in or nearby the District (e.g. oil/gas, electric power, communication systems), but those were not found to serve a critical purpose or function to the Sanitation District.

Historic and Cultural Resources

Historical assets include local, county, state, and potentially federally listed historic sites. Based on data provided by the County of San Luis Obispo and LAFCO, it was found that there are three historic and cultural resources in the Sanitation District boundaries. These are summarized in Table T.7 below.

Table T.7 Sanitation District’s Historic and Cultural Resources

Area Plan Where Noted	Property Name	Year	Description	At Risk of These Hazards
San Luis Bay Area Plan – Inland	South Pacific Railroad Depot	--	South Pacific Railroad Depot	Dam inundation (by Lopez Dam); Moderate liquefaction risk; Tsunami inundation
	Temple of the People, Halcyon	1903	Built by a utopian religious group	Dam inundation (by Lopez Dam); Moderate liquefaction risk
San Luis Bay Area Plan - Coastal	Coffee T. Rice House	1886	--	Dam inundation (by Lopez Dam); Moderate liquefaction risk

Source: San Luis Obispo County Planning and Building; LAFCO

Natural Resources

Natural assets may include wetlands, threatened and endangered species, or other environmentally sensitive areas. Natural and environmental 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. 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. Because the Sanitation District encompasses the Cities of Arroyo Grande and Grover Beach as well as the Oceano CSD, referring to these respective annexes as well as the documents within the Base Plan is recommended to get more details on natural resources of interest within this special district.





Economic Assets

Because the Sanitation District encompasses the Cities of Arroyo Grande and Grover Beach as well as the Oceano CSD, referring to these respective annexes as well as the documents within the Base Plan is recommended to get more details on economic assets within this special district. However, below is some key information about the economic assets in these three Sanitation District member communities:

- Grover Beach has recently experienced growth in Wholesale Trade and the Manufacturing sectors; some amount of land is available in the business park area of the city for business expansion and relocation. Because of this, certain hazards such as those affecting the landscape (e.g. earthquake, liquefaction) could be important if choosing to develop in these available areas.
- Arroyo Grande contains two of the largest employers in the County, such as the Arroyo Grande Community Hospital which employs over 400 people. This facility is located within a dam inundation zone, which could have devastating impacts on the local economy due to financial losses as well as affect the community's ability to respond to and recover from potential dam failure events.
- The Oceano CSD's top two industries are retail trade and agriculture/forestry/fishing/hunting. A natural disaster that affected these and forced shops or commercial spaces to close would have significant impacts on the local economy, as would events such as severe weather, flooding, or earthquakes on the agricultural and tourism industries.

T.3.2 Estimating Potential Losses

This section details vulnerability to specific hazards of medium or high significance, where quantifiable, noted by the Planning Team. Impacts of past events and vulnerability to specific hazards are further discussed below, though Section 5 of the Base Plan should be referenced for more details on the County's HIRA findings and hazard profiles.

Agricultural Pest Infestation and Disease

Due to Arroyo Grande, Grover Beach, and Oceano CSD containing relatively large amounts of agricultural fields, this hazard was ranked as a **Medium Significance** hazard in the District. Pests and related diseases/pathogens have the potential to affect the local economy and agricultural landscapes by hurting or destroying crops and livestock. The number of invasive pests and pathogens newly detected in California and the rest of the United States has increased at alarming rates in recent years, and that trend is projected to continue into the future. A specific concern of the County is tree vulnerability and mortality. Over 100 million trees have died and more continue to die due to many years of drought that have weakened trees, and left millions of acres of forestland highly susceptible to insect attacks. The drought stress is exacerbated in forests with too many trees competing for limited resources, especially water. Forest pests (insects and diseases) annually destroy ten times the volume of timber lost to due to forest fires. For more information and details on this hazard and its effects on the county and the communities refer to Section 5.3.2 Agricultural Pest and Disease.

Dam Incidents and Failure

The Sanitation District is at risk of dam failure incidents based on its location downstream of the Lopez Dam. The Lopez Dam is a high hazard earthen dam located just southwest of the Lopez Lake, about eight miles northeast of Arroyo Grande. If this dam were to fail and flood through the Arroyo Grande River into the Sanitation District or any of its three-member communities, major damages could be expected; it could inundation more than half of Grover Beach and Arroyo Grande, as well as the vast majority of the Oceano CSD. Refer to the Arroyo Grande, Grover Beach, and Oceano Annexes in this Plan. Table T.8 summarizes the critical facilities that fall within the Lopez Dam's inundation extents as determined by the GIS overlay analysis.



Table T.8 Critical Facilities in the Sanitation District within the Lopez Dam Inundation Extents

Critical Facility Type	Facility Total
Day Care Facilities	9
Emergency Medical Service Stations	2
Fire Stations	2
Hospitals	2
Local Law Enforcement	1
Microwave Service Stations	2
Nursing Homes	2
Private Schools	2
Public Schools	6
Wastewater Treatment Plants	1
Water Treatment Facilities	1
Airports	1
TOTAL	31

Source: San Luis Obispo County Planning and Building Dept., HIFLD, Wood Plc Analysis

A failure of the Lopez Dam would also affect Highway 101 and other important local roads, hence impeding or reducing flows of goods, people, and resources into and out of the cities and CSD, potentially impacting the entire region. Refer to Section 5.3.5 Dam Incidents for more details on the hazard and the analysis performed at the County level. This hazard holds **Medium Significance** for the Sanitation District.

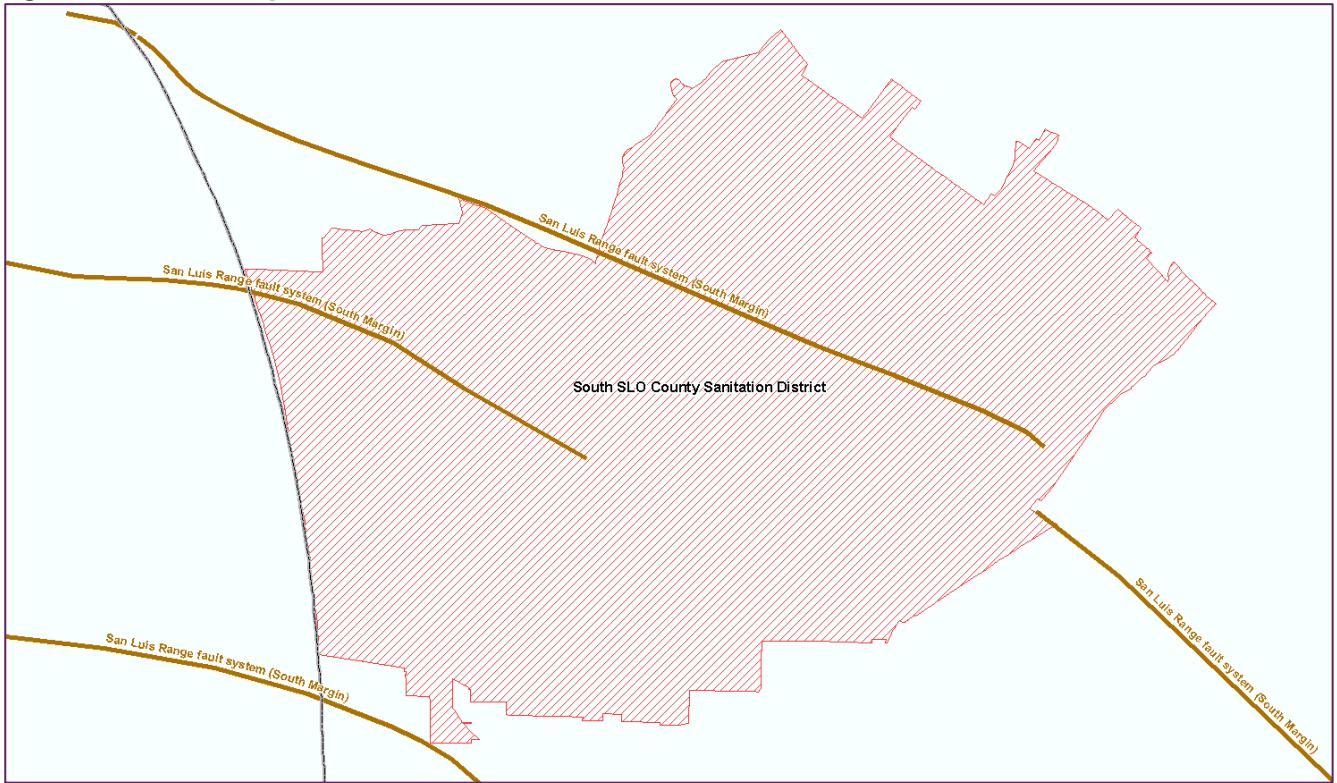
Earthquake and Liquefaction

The Sanitation District is underlaid by several earthquake faults such as those part of the San Luis Range/South Margin fault system. (See a very basic layout of the District and surrounding faults in Figure T-3). The seismic hazards of earthquake coupled with liquefaction (both of which are discussed in more detail in Section 5.3.7 of the Base Plan) are ranked as **High Significance** hazards due to the large degree of liquefiable soil risk in the Grover Beach, Arroyo Grande, and Oceano communities (see each respective City or CSD Annex for more information).





Figure T.3 Earthquake Faults near the Sanitation District



Source: USGS; San Luis Obispo County Planning and Building; LAFCO

Many people and properties would be expected to be affected by a moderate or major seismic event in the area, as noted in the Base Plan and three community Annexes. Additionally, 44 of the Sanitation District’s 49 critical facilities are located within moderately liquefiable soils (based on GIS analysis). Table T.9 summarizes these facilities based on type and count.





Table T.9 Critical Facilities in Moderate Liquefaction Risk Areas in the Sanitation District

Critical Facility Type	Facility Total
Day Care Facilities	12
Emergency Medical Service Stations	4
Fire Stations	3
Hospitals	2
Local Law Enforcement	3
Microwave Service Stations	2
Nursing Homes	2
Private Schools	3
Public Schools	8
Wastewater Treatment Plants	1
Water Treatment Facilities	1
Airports	1
Paging Transmission Towers	1
Urgent Care	1
TOTAL	44

Source: San Luis Obispo County Planning and Building Dept., HIFLD, Wood Plc Analysis

Flood

The Sanitation District is at risk of riverine flooding based on FEMA data last updated for San Luis Obispo County in February of 2019. Per the maps and analysis available in Section 5.3.8 of the Base Plan, as well as the Arroyo Grande, Grover Beach, and Oceano CSD Annexes, major sources of flooding in the District include the 100- and 500-year flood events as well as coastal flooding. These major sources of flooding are summarized in the bullet list below based on the three member communities. The main areas that would experience major flooding are the Oceano CSD (on the west, south, and east), the west and north of Grover Beach, and the northwest, south, central-east, and north/northeast of Arroyo Grande. Based on the information summarized in this chapter as well as the Planning Team’s recommendations, flood is ranked as a **Medium Significance** hazard for the Sanitation District.

The Sanitation District is not required to participate separately in the National Flood Insurance Program (NFIP) but will continue to support the County’s participation in and compliance with the NFIP.

Major Sources of Flooding in the District:

- Arroyo Grande Creek
- Pismo Creek
- Tar Spring Creek
- Meadow Creek
- Los Berros Creek
- Smaller tributaries of the five waterways named above
- Coastal flooding (of type VE based on FEMA flood zone designations) on the beach front

Flood Control Zones

The San Luis Obispo County Flood Control and Water Conservation District was founded in 1945, and this entity provides general funding to help communities identify flooding problems, recommend solutions, and help





implement projects while establishing zones to benefit the funding of specific mitigation projects. The following two zones encompass portions of the Sanitation District:

- Zone 1: Arroyo Grande Creek Channel/Zone 1A – Los Berros Diversion Channel of Arroyo Grande Creek
- Zone 3: Arroyo Grande Creek

Refer to Section 5.3.8 of the Base Plan for more details on these flood control zones as well as past or ongoing projects that affect or relate to this Sanitation District.

Levees

There is one levee system that provides flood protection and hence reduces the risk to people and structures in the Sanitation District, per the San Luis Obispo County Dam and Levee Failure Evacuation Plan completed in 2016. The Arroyo Grande Creek Levee System is especially vulnerable to flooding, and severe riverine-based inundation occurred from the Arroyo Grande Creek back in the 1950s, causing damages on farmlands and nearby infrastructure. The Arroyo Grande Creek Flood Control Project was established as a result of these flooding events to confine the Arroyo Grande Creek from its confluence with Los Berros Creek downstream. While this levee confines water and potential losses just south of the Oceano CSD, south and east of the Oceano Airport (refer to Figure 5-4 Arroyo Grande Levee System of the Section 5.3.8 in the Base Plan), future potential damages or losses could be greatly avoided to the Sanitation District’s members, particularly between Highway 1 and the 22nd Street bridges, thanks to this levee system.

A main failure of this levee system was noted in March of 2001 when a heavy rain event caused breaching on the south side of the levee, between the Arroyo Grande Creek and the Union Pacific railroad bridge. Hundreds of acres of farmland, as well as residences and properties, were flooded and damaged.

Critical Facilities at Risk

Based on GIS overlay analysis of the Sanitation District’s boundaries with the FEMA flood hazard areas, a total of five critical facilities were found to overlap with the District’s floodplains. Two are located in the Oceano CSD, while three are in parts of Arroyo Grande or Grover Beach. Table T.10 below summarizes these facilities.

Table T.10 Critical Facilities in FEMA Flood Hazard Areas in the Sanitation District

Critical Facility Type	Name	Flood Event	Total Facilities
Day Care Facilities	YMCA South County Preschool	500-Year	5
Public Schools	Arroyo Grande High School		
	Santa Lucia ROP		
Airports	Oceano County Airport	100-Year	
Wastewater Treatment Plants	South San Luis Obispo SD Wastewater Treatment Plant		

Source: San Luis Obispo County Planning and Building Dept., HIFLD, FEMA NFHL, Wood Plc Analysis

Coastal Storm/Coastal Erosion/Sea Level Rise

As part of the 2019 HMP planning effort, a sea level rise risk assessment was completed to determine how sea level rise may affect coastal jurisdictions and critical facilities and how coastal flooding might be exacerbated in the future. The only critical facility that would be affected by sea level rise is the wastewater treatment plan, and there is no risk until the 300 cm scenario. Table T.11 and Table T.12 summarize the other properties at risk of inundation by sea level rise and sea level rise combined with a 1% annual chance coastal flood. The area of inundation by sea level rise and sea level rise combined with the 1% coastal flood are shown in Figure T.4 and





Figure T.5, respectively. See Section 5.3.4 Coastal Storm/Coastal Erosion/Sea Level Rise in the base plan for more details on the scenarios and data sources used for this analysis.

Table T.11 Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Agricultural	--	--	1	--	--	1
Commercial	--	--	15	--	--	19
Government/Utilities	--	--	13	--	--	16
Other/Exempt/Misc.	--	--	21	--	--	29
Residential	--	--	147	--	--	177
Multi-Family Residential	--	--	74	--	--	85
Mobile/Manufactured Homes	--	--	1	--	--	2
Residential: Other	--	--	20	--	--	24
Industrial	--	--	1	--	--	3
Vacant	--	--	2	--	--	2
Total	--	--	295	--	--	358

Source: Wood analysis with USGS CoSMoS 3.1 data

Table T.12 Improved Values of Properties Inundated by Sea Level Rise and Sea Level Rise with 1% Annual Chance Flood*

Property Type	25-cm SLR	75-cm SLR	300-cm SLR	25-cm SLR w/ 1% Flood	75-cm SLR w/ 1% Flood	300-cm SLR w/ 1% Flood
Agricultural	--	--	\$165,701	--	--	\$165,701
Commercial	--	--	\$2,392,580	--	--	\$2,929,341
Government/Utilities**	--	--	\$0	--	--	\$0
Other/Exempt/Misc.**	--	--	\$6,073,385	--	--	\$6,928,953
Residential	--	--	\$23,571,351	--	--	\$28,460,496
Multi-Family Residential	--	--	\$7,721,566	--	--	\$12,459,912
Mobile/Manufactured Homes	--	--	\$281,303	--	--	\$586,646
Residential: Other	--	--	\$2,792,785	--	--	\$4,238,793
Industrial	--	--	\$62,392	--	--	\$107,956
Vacant	--	--	\$242,315	--	--	\$242,315
Total	\$0	\$0	\$43,303,378	\$0	\$0	\$56,120,113

*South SLO Sanitation District encompasses the Cities of Grover Beach and Arroyo Grande as well as the majority of the Oceano CSD. As such, the totals for the Sanitation District may be duplicative when compared to the other cities' and the CSD's totals.

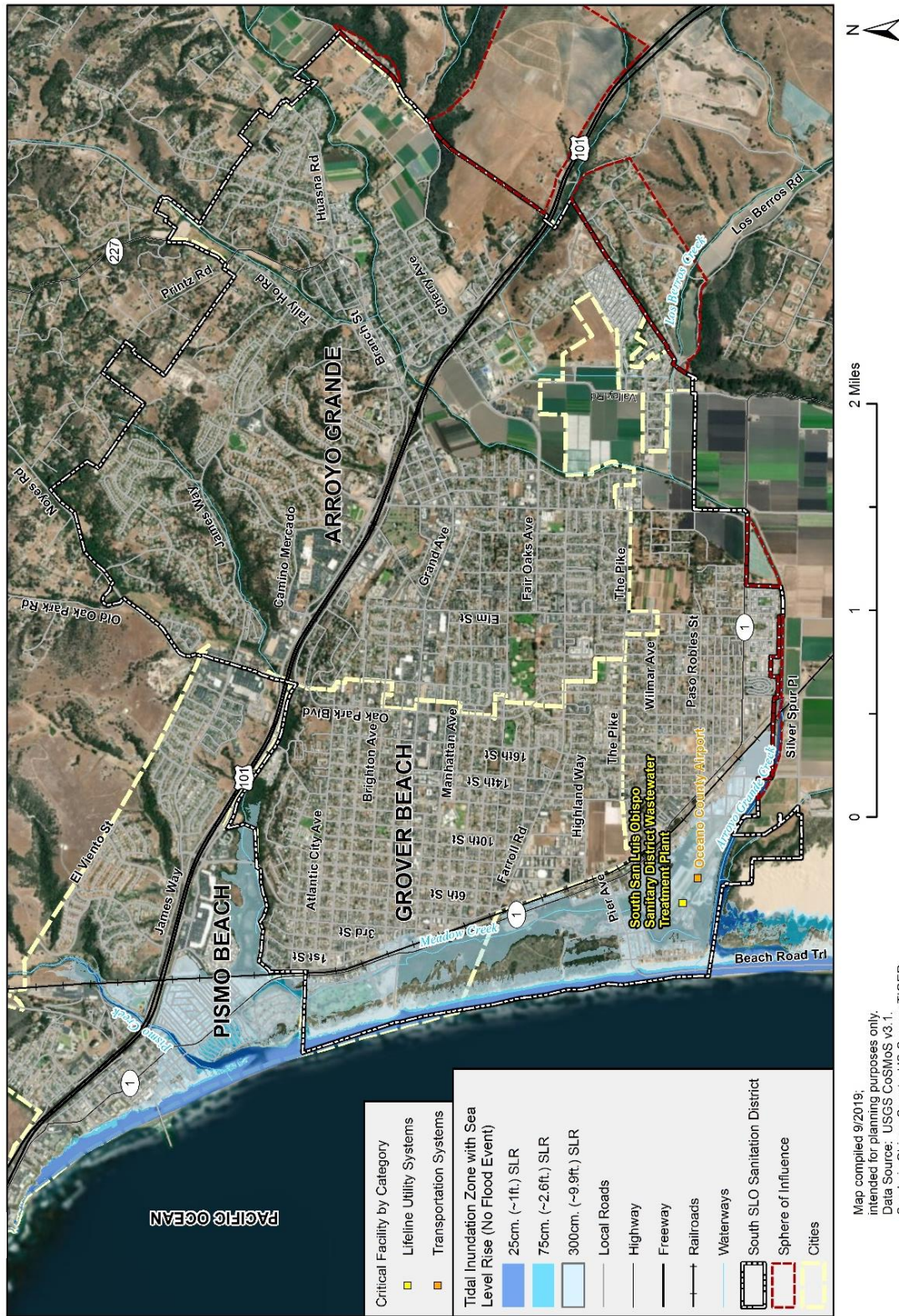
**Values may be underestimated as some values not available in parcel data due to being exempt from tax assessment; Port San Luis values represent pier valuations provided by the District.

Source: Wood analysis with USGS CoSMoS 3.1 data





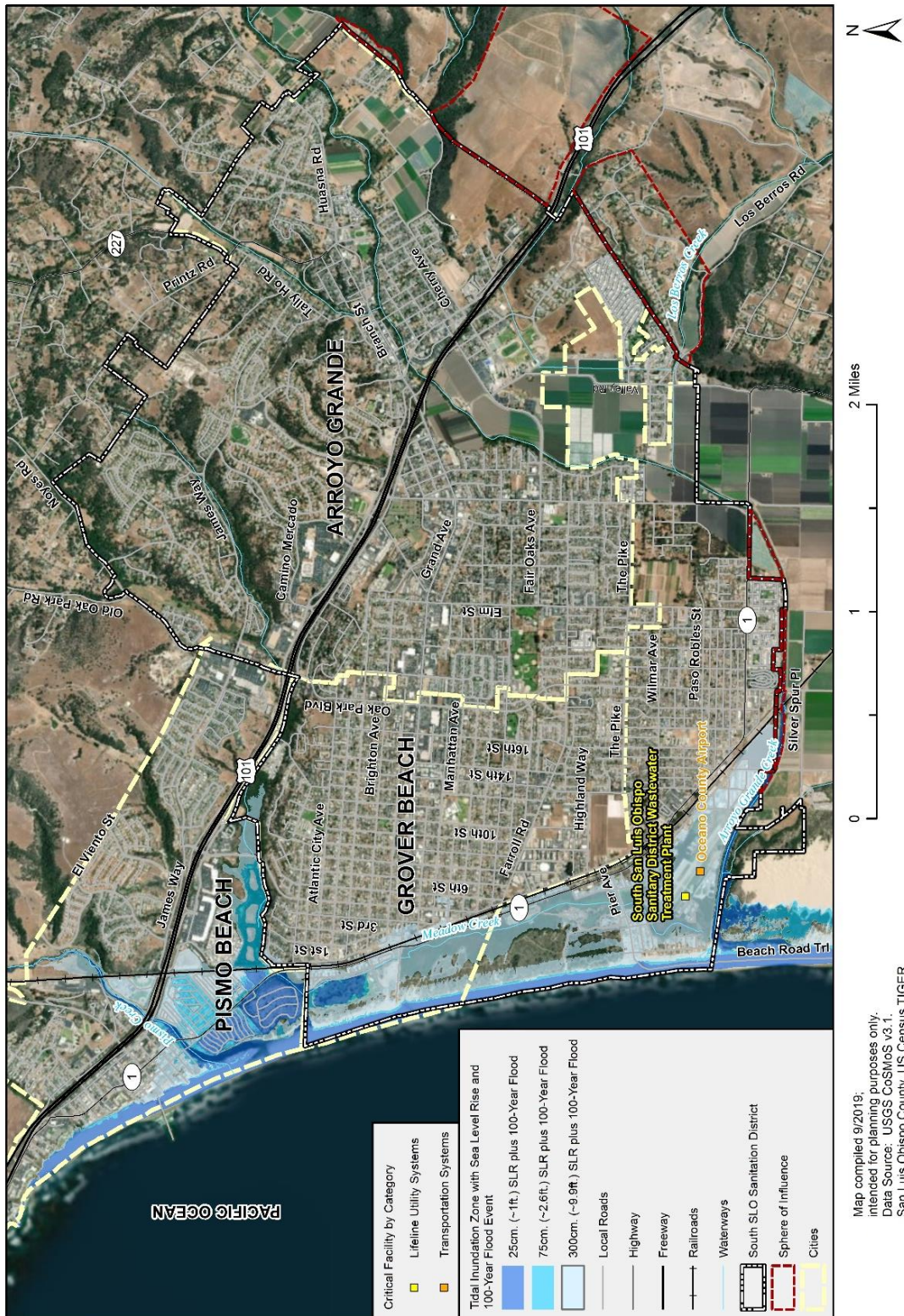
Figure T.4 South SLO Sanitation District Sea Level Rise Scenario Analysis: Tidal Inundation Only



Map compiled 9/2019; intended for planning purposes only.
 Data Source: USGS CoSMoS v3.1.
 San Luis Obispo County, US Census TIGER Database, CA Open Data Portal, LAFCO.
 Note: SLR = Sea Level Rise



Figure T.5 South SLO Sea Level Rise Scenario Analysis: Tidal Inundation and 1% Annual Chance Flood



Map compiled 9/2019;
intended for planning purposes only.
Data Source: USGS CoSMoS v3.1,
San Luis Obispo County, US Census TIGER
Database, CA Open Data Portal, LAFCO
Note: SLR = Sea Level Rise





T.4 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 capability 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 jurisdictional and District planning representatives used a matrix of common mitigation activities to inventory policies or programs in place. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contributed to reducing hazard-related losses.

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

T.4.1 Regulatory Mitigation Capabilities

Table T.11 identifies existing regulatory capabilities the District has in place to help with future mitigation efforts. Note: many of the regulatory capabilities that can be used for the District are within the County’s jurisdiction. Refer to the Base Plan’s Section 6 Capability Assessment for specific information related to the County’s mitigation capabilities as well as more details on this topic.

Table T.13 Sanitation District Regulatory Mitigation Capabilities

Regulatory Tool	Yes/No	Comments
General plan	No	
Zoning ordinance	No	
Subdivision ordinance	No	
Growth management ordinance	No	
Floodplain ordinance	No	
Other special purpose ordinance (stormwater, water conservation, wildfire)	Yes	Sanitary Sewer System Use Ordinance 2011-1 and Pretreatment Ordinance 1994-1
Building code	No	
Fire department ISO rating	No	
Erosion or sediment control program	No	
Stormwater management program	No	
Site plan review requirements	No	
Capital improvements plan	No	
Economic development plan	No	
Local emergency operations plan	No	
Other special plans	No	
Flood Insurance Study or other engineering study for streams	No	
Elevation certificates (for floodplain development)	No	

Source: Wood Data Collection Guide, 2019; Sanitation District





T.4.2 Administrative/Technical Mitigation Capabilities

Table T.12 identifies the personnel responsible for activities related to mitigation and loss prevention in the South SLO County Sanitation District.

Table T.14 Sanitation District Administrative/Technical Mitigation Capabilities

Personnel Resources	Yes/No	Department/Position/Comments
Planner/engineer with knowledge of land development/land management practices	Yes	District Administrator
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	District Administrator
Planner/engineer/scientist with an understanding of natural hazards	Yes	District Administrator
Personnel skilled in GIS	Yes	Operators
Full time building official	No	
Floodplain manager	No	
Emergency manager	No	
Grant writer	No	
Other personnel	Yes	District Administrator (Professional Engineer), Certified Wastewater Treatment Plant Operators, ELAP Certified Laboratory Technician, Secretary/Bookkeeper
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	Arc GIS of Trunk Sewer Line
Warning systems/services (Reverse 9-11, outdoor warning signals)	No	

Source: Wood Data Collection Guide, 2019; Sanitation District

T.4.3 Fiscal Mitigation Capabilities

Table T.13 identifies financial tools or resources that the District could potentially use to help fund mitigation activities.

Table T.15 Sanitation District Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	No
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	No
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activities	No
Withhold spending in hazard prone areas	No





T.4.4 Mitigation Outreach and Partnerships

The South SLO County Sanitation District runs a responsible water use outreach program to encourage conservation and efficiency by sending out public notices via quarterly newsletters, school outreach efforts, and bill stuffers for water conservation, responsible water use, and sewer misuse examples. Other outreach, partnership, and general District efforts include those stated in existing planning mechanisms such as the Local Hazard Mitigation Plan shared by the participating jurisdictions (Arroyo Grande and Grover Beach) and the special district (Oceano), last updated in 2015.

T.4.5 Other Mitigation Efforts

The following mitigation projects were noted by the Planning Team as being completed since the 2015 plan.

- Completed August 2016: Sea Level Rise Analysis. To assess the existing and future flood exposure of the wastewater treatment facility, including estimates of the flood elevations and frequencies, which will be used to inform the environmental review, permitting, and design of the District's Redundancy Project.
- Completed December 2018: Coastal Hazards Monitoring Plan. Study to prepare a Coastal Hazards Monitoring Plan that can be implemented by the District to track how hazards change over time, and to document actions and responses for managing those hazards.
- Completed January 2019: SSLO Sanitation District Wastewater Treatment Plant Redundancy Project Geotechnical Report. This report provides geotechnical recommendations for the design of a new clarifier, aeration basin, blower building, equipment pads and associated piping. The proposed improvements if implemented according to the recommendations in the report will add redundancy to the existing wastewater treatment plant and add resiliency to the plan relative to flooding, seismic, and coastal hazards, notably soil liquefaction.

T.4.6 Opportunities for Enhancement

Based on this capability assessment and the noted information from existing plans and efforts (e.g., those noted in the District's Strategic Plan from 2018), the South SLO County Sanitation District has several existing mechanisms in place that help to mitigate hazards. There are also opportunities for the District to expand or improve on these policies and programs to further protect the community. Future improvements may include: providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and Cal OES; or obtaining official certification such as Storm Ready or FireWise certifications. Additional training opportunities will help to inform District staff and board members on how best to integrate hazard information and mitigation projects into the District policies and ongoing duties of the District. Continuing to train District staff on mitigation and the hazards that pose a risk to the South SLO County Sanitation District will lead to more informed staff members who can better communicate this information to the public and prevent or respond to changes in development and the District makeup overall. Furthermore, the Planning Team for the District noted that South SLO Sanitation District often seeks to find opportunities to reinforce and strengthen its infrastructure during the initial design of facilities planned to be built. The District has developed a robust Coastal Hazards Monitoring Plan. A review process that involves assessing existing facilities against hazards to determine their vulnerability has not been fully cataloged, so the District hopes to continue these ongoing efforts in the future.

T.5 Mitigation Strategy

T.5.1 Mitigation Goals and Objectives

The Sanitation District adopts those hazard mitigation goals and objectives developed by the County Planning Team and described in Section 7 of the Base Plan: Mitigation Strategy.





T.5.2 Completed 2015 Mitigation Actions

The South SLO County Sanitation District has completed two mitigation actions identified in the 2015 plan. These completed actions have reduced vulnerability to hazards and increased local capability to implement additional mitigation actions. The following are the completed mitigation actions:

- SD.3 Sea Level Rise Analysis. To assess the existing and future flood exposure of the wastewater treatment facility, including estimates of the flood elevations and frequencies, which will be used to inform the environmental review, permitting, and design of the District's Redundancy Project.
- SD.4 Coastal Hazards Monitoring Plan. Study to prepare a Coastal Hazards Monitoring Plan that can be implemented by the District to track how hazards change over time, and to document actions and responses for managing those hazards.

T.5.3 Mitigation Actions

The Planning Team for the South SLO County Sanitation District identified and prioritized the following mitigation actions based on the conducted risk assessment (see Table T.1). Actions were prioritized using the process described in Section 7.2.1 of the Base Plan. 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. Actions with an asterisk (*) are those that mitigate losses to future development.





Table T.14 South SLO County Sanitation District’s Mitigation Action Plan

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
SD.1	Coastal Flood/ Coastal Erosion/ Sea Level Rise	Coastal Monitoring Program. Regularly monitoring flood and other coastal hazards at the site and management responses to those hazards both on and off site. Identifying how those hazards are impacting and affecting operations of the wastewater treatment plant. Identifying changes necessary to allow continued appropriate and required functioning of the plant. Identifying flood/hazard “triggers” to establish when actions (such as retrofits, upgrades, and including plant relocation) need to be pursued in response to specific flood/hazard events or flood management activities.	SSLOCSD	\$10,000 to \$50,000	SSLOCS/ FEMA HMA	High	Annual implementation	New. Benefits would include reduced coastal flooding impacts
SD.2	Flood; Coastal Flood/ Coastal Erosion/ Sea Level Rise; Earthquake, Dam incident	Redundancy Project - Flood Risk Mitigation Strategy. All critical new and existing facilities will be installed or upgraded to be protected from the 100-year flood event on Arroyo Grande Creek as defined by Flood Insurance Rate Map (FIRM) maps. This would also protect these facilities from floods caused by sea level rise for the design life of the facilities and provide additional protection from dam incident flooding.	SSLOCSD	\$10,000 to \$50,000	SSLOCS/ Redundancy Project	High	2-3 yrs.	New Benefits include Protection of critical structures, equipment, continued operations of the wastewater treatment plant during a 100-year flood event. Redundant facilities will also be designed according to current state seismic design standards.
SD.3	Earthquake	Wastewater Treatment Plant Redundancy Project – Implementation of liquefaction hazard mitigation measures per	SSLOCSD	\$10,000 to \$50,000	SSLOCSD/ Redundancy Project	High	More than 5 yrs.	New Benefits: Ability to conceptualize the





ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes
		the 2019 Redundancy Project Geotechnical Report during construction of additional treatment infrastructure.						cost of relocating the plant if necessary, in the future. (\$130,000,000 in 2016 dollars to relocate); relocation would incorporate current seismic design and provide added dam incident mitigation benefits.





T.6 Implementation and Maintenance

Moving forward, the South SLO County Sanitation District will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Section 8 Implementation and Monitoring of the Base Plan.

T.6.1 Incorporation into Existing Planning Mechanisms

The information contained within this annex and the Base Plan, including results from the Vulnerability Assessments and the Mitigation Strategy, will be used by the District to help inform updates of the Sanitation District's existing plans (e.g. Strategic Plan) as well as in the development of additional local plans, programs, regulations, and policies. Understanding the hazards that pose a risk and the specific vulnerabilities to the District and its sphere of influence will help in future capital improvement planning and development for the District. The San Luis Obispo County Planning & Building Department may utilize the hazard information when reviewing a site plan or other type of development applications within or nearby the boundaries of the South SLO County Sanitation District area. As noted in Section 8 Implementation and Monitoring, the Planning Team representative/s from the South SLO County Sanitation District will report on efforts to integrate the hazard mitigation plan into local plans, programs, regulations, and policies and will report on these efforts at the annual Hazard Mitigation Plan and Planning Team review meeting.

T.6.2 Monitoring, Evaluation and Updating the Plan

The South SLO County Sanitation District will follow the procedures to monitor, review, and update this plan in accordance with San Luis Obispo County as outlined in Section 8 of the Base Plan. The District will continue to involve the public in mitigation, as described in Section 8.3 of the base plan. The CSD General Manager will be responsible for representing the Community Services District in related County Hazard Mitigation Plan meetings or events, and for coordination with County staff and departments during plan updates. The Sanitation District realizes it is important to review the plan regularly and update it every five years in accordance with the FEMA Disaster Mitigation Act Requirements as well as other State of California requirements.





T.7 Attachments



