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.

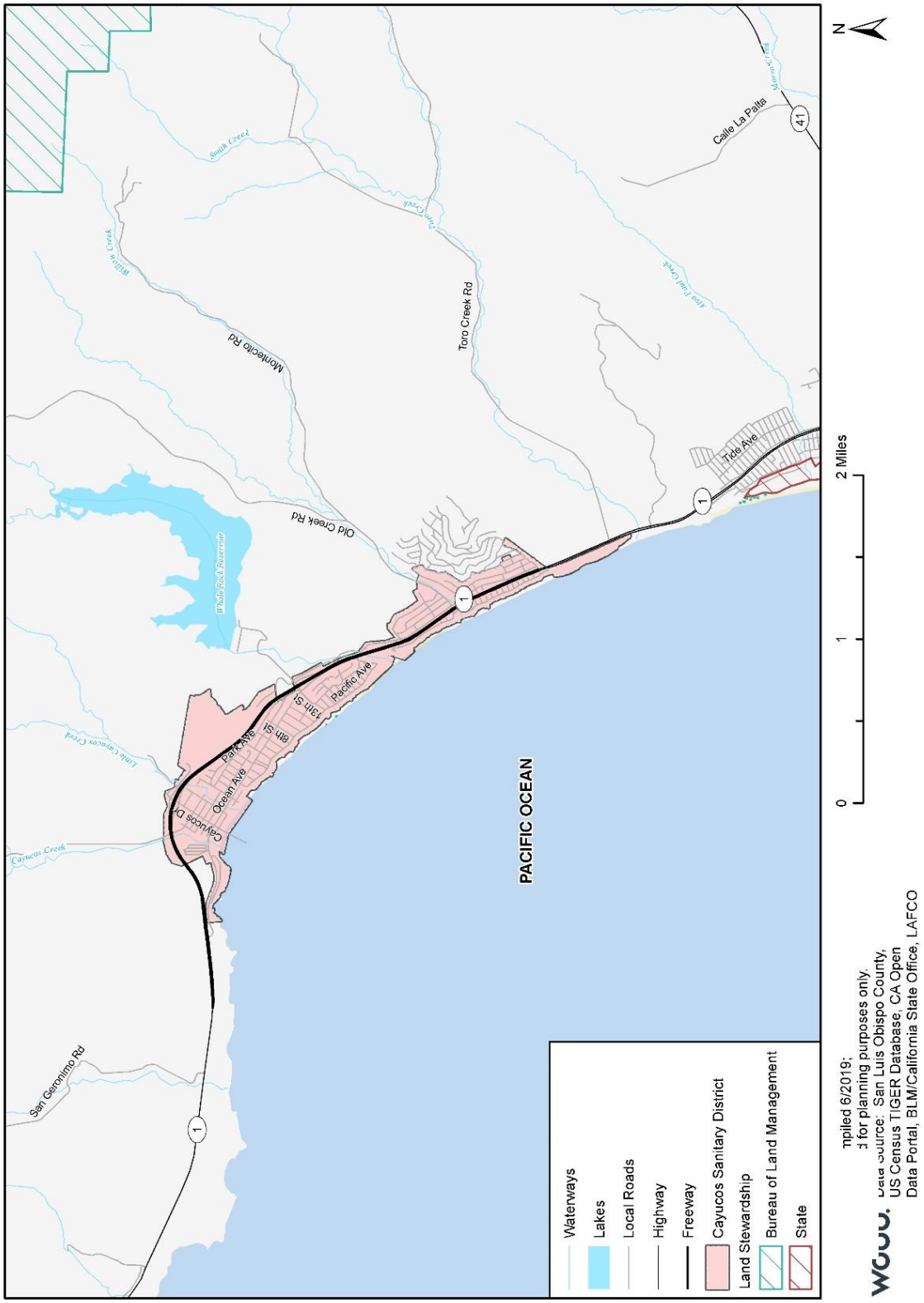
Table Q. 1 Cayucos Hazard Mitigation Plan Revision Planning Group

Department or Stakeholder	Title
Cayucos Sanitary District Staff	District Manager

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 Powers Agreement and construct and operate a separate Wastewater Treatment Plant. Cayucos Sanitary District will begin utilization of the separate facility once construction has been completed in as early as 2020 (Wilson 2015).

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 planning 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) and so future development trends are unlikely to lead to additional building of 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 Cayucos Sanitary District – Hazard Summaries). 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	Likely	Critical	High
Flooding	Significant	Likely	Critical	High
Slope Stability: Landslide and Debris Flows	Limited	Occasional	Limited	Medium
Tsunami and Seiche	Likely	Occasional	Critical	Medium
Wildfire	Significant	Occasional	Limited	Medium
Human Caused: Hazardous Materials	Limited	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

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 (see

Table Q.4 Cayucos Sanitary District – Hazard Summaries). 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

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:

- Human Caused: Hazardous Materials
- 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.

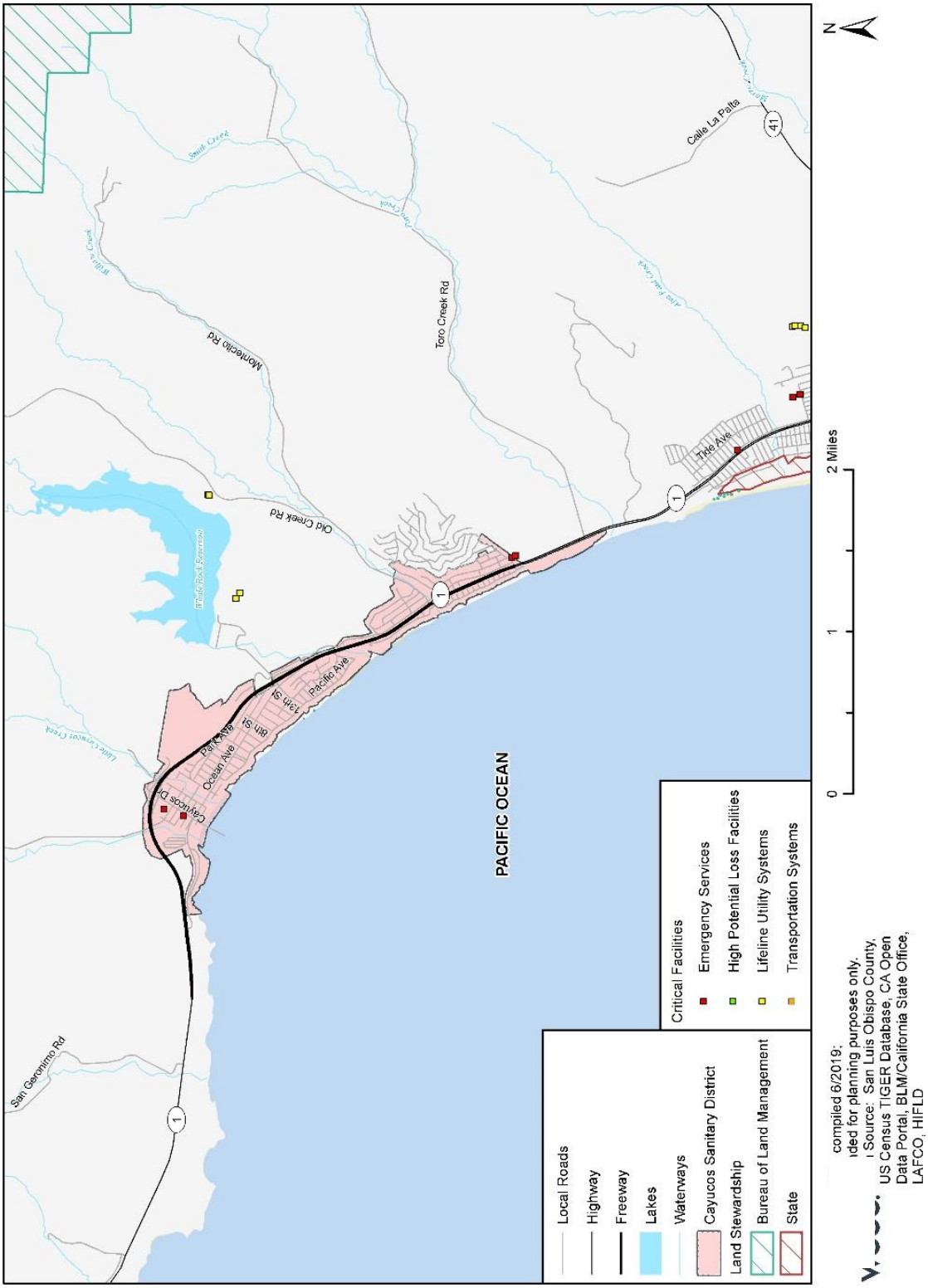
An inventory of critical facilities in the District was obtained from San Luis Obispo County, the County's Local Agency Formation Commission, or LAFCO, and the Homeland Infrastructure Foundation-Level Data (HIFLD). The combined dataset as applicable to the District is provided in Table Q.9 and illustrated 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 Flood Risk by Property Type.

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 habit 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 development 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 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 Parcel Exposure for the Cayucos Sanitary District by Parcel Types 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 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 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 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

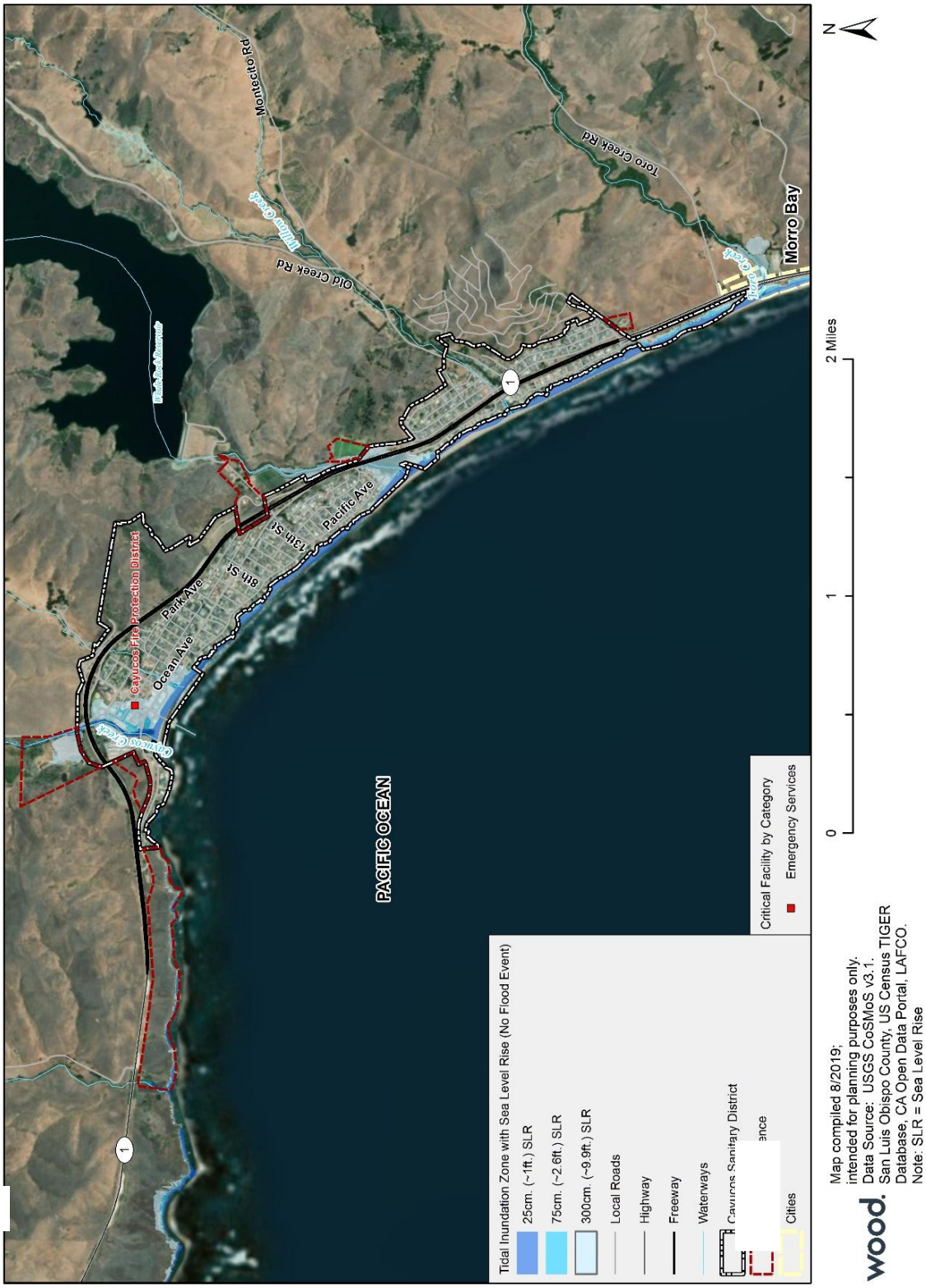
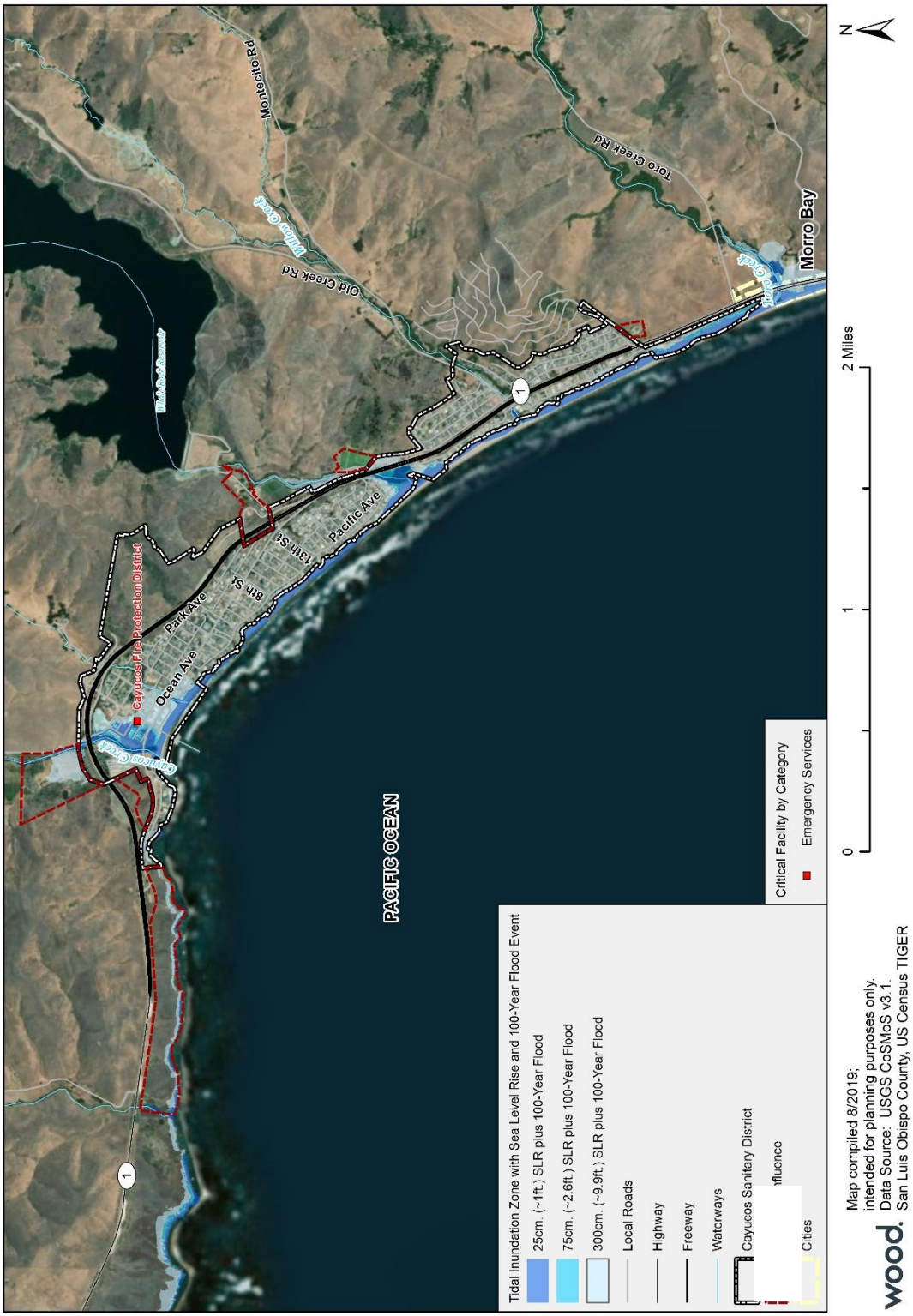


Figure Q.3 Cayucos SD Sea Level Rise Scenario Analysis: Tidal Inundation and 1% Annual Chance Flood



Earthquake

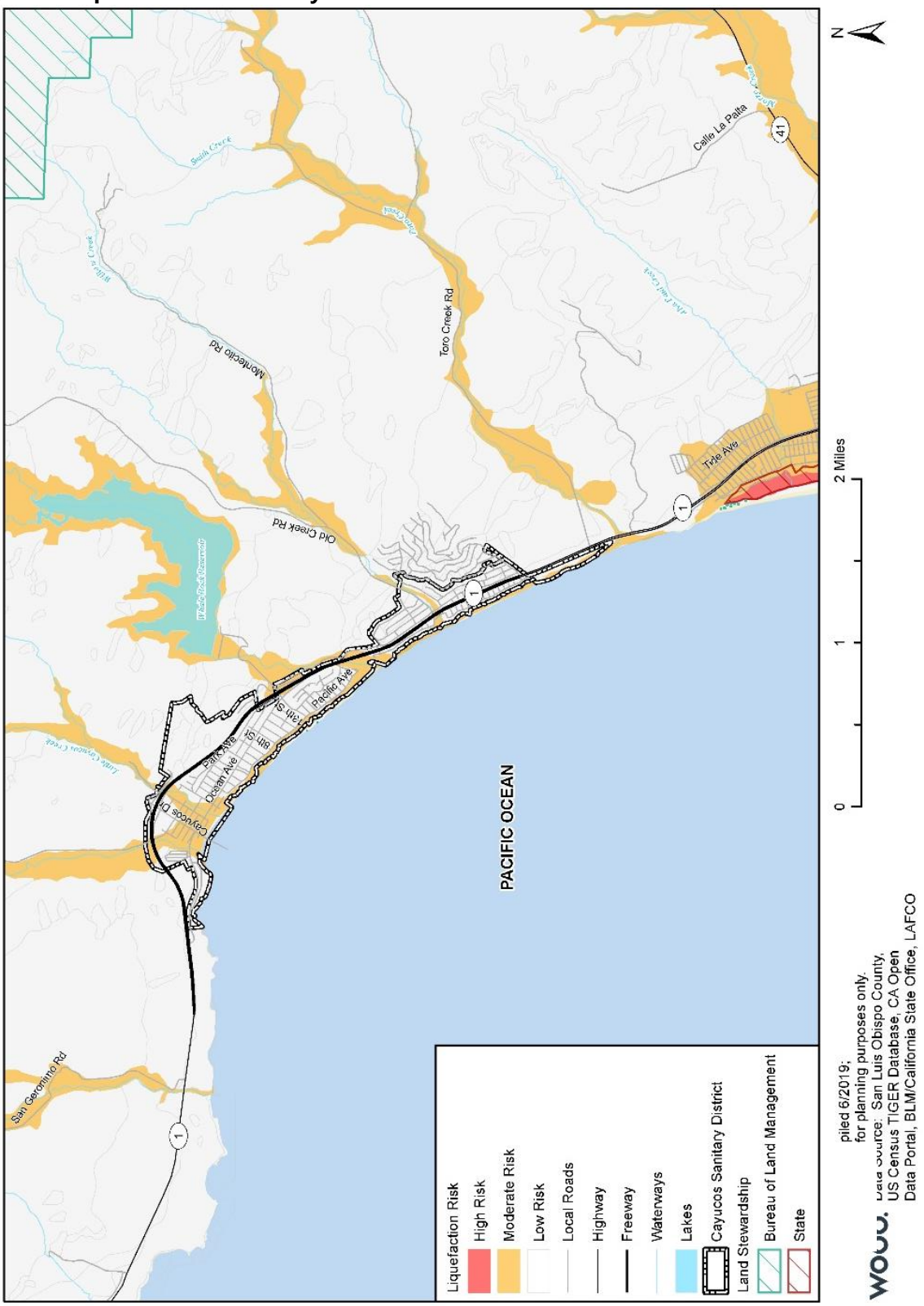
The central coast region of California has a long history of damaging earthquakes. Large earthquakes can originate from the San Andreas fault system and ground shaking can potentially affect the District. Soils in the low bluffs and along riparian corridors of Cayucos are subject to moderate liquefaction 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 **Medium 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.

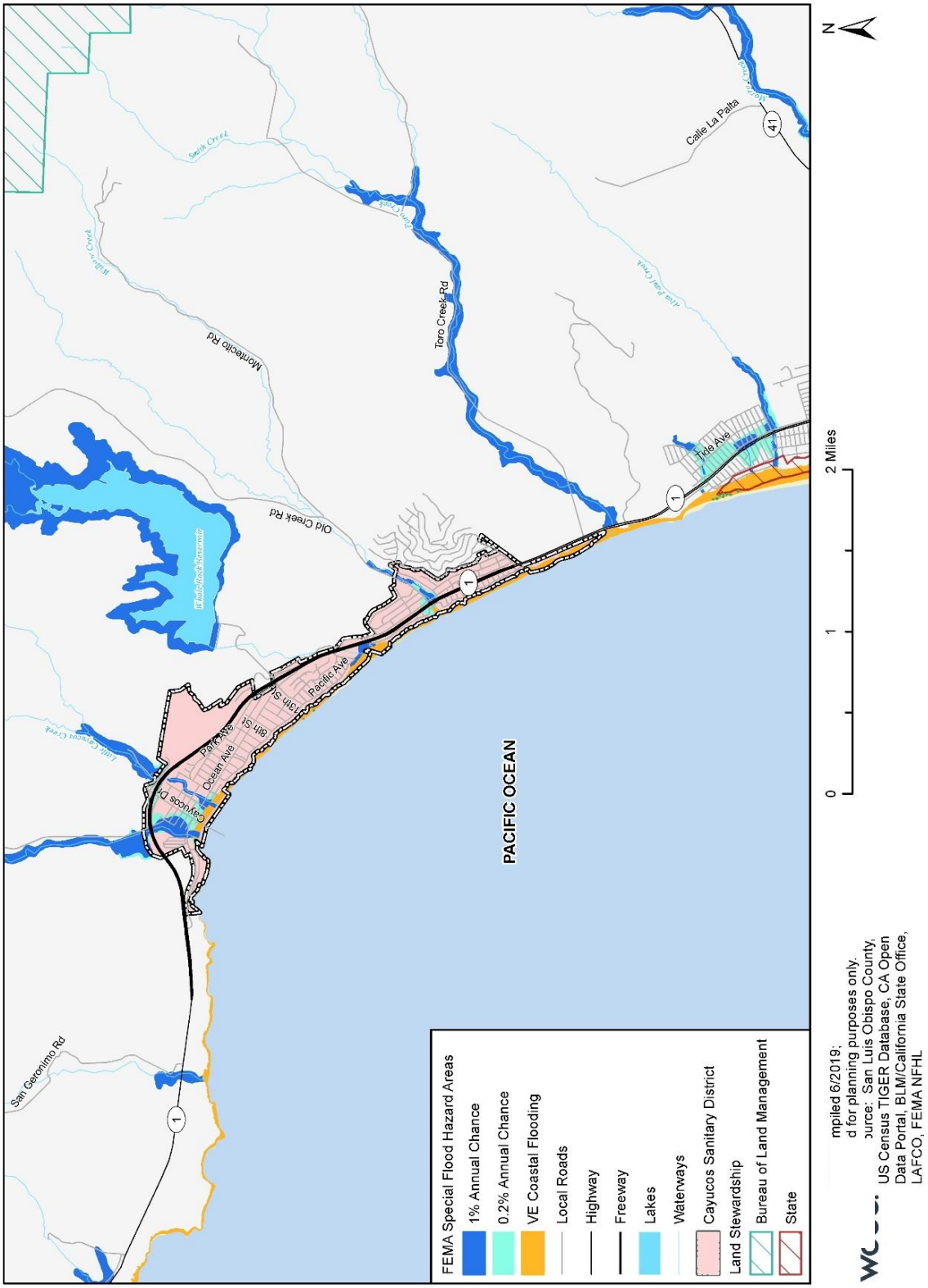
Cayucos SD does not participate separately in the National Flood Insurance Program (NFIP) but will continue to support the County's participation in and compliance with the NFIP.

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



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).

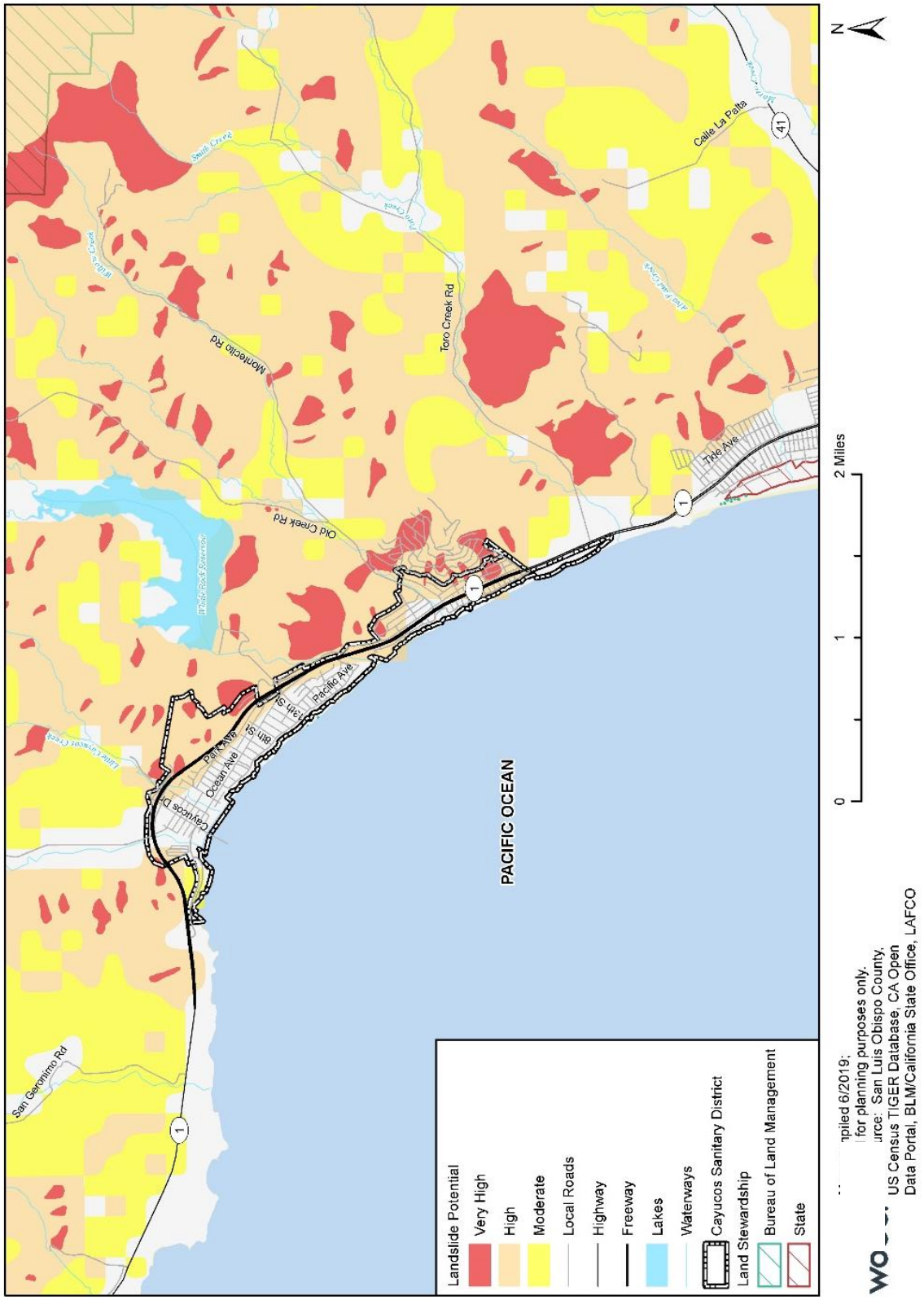
Figure Q.6 displays the various areas in the District subject to landslide potential. With regards to critical facilities, two have been found to overlap with high landslide potential areas. These are the combined California Department of Forestry and Fire Protection Station 11 (Cayucos Fire Station). 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



Tsunami and Seiche

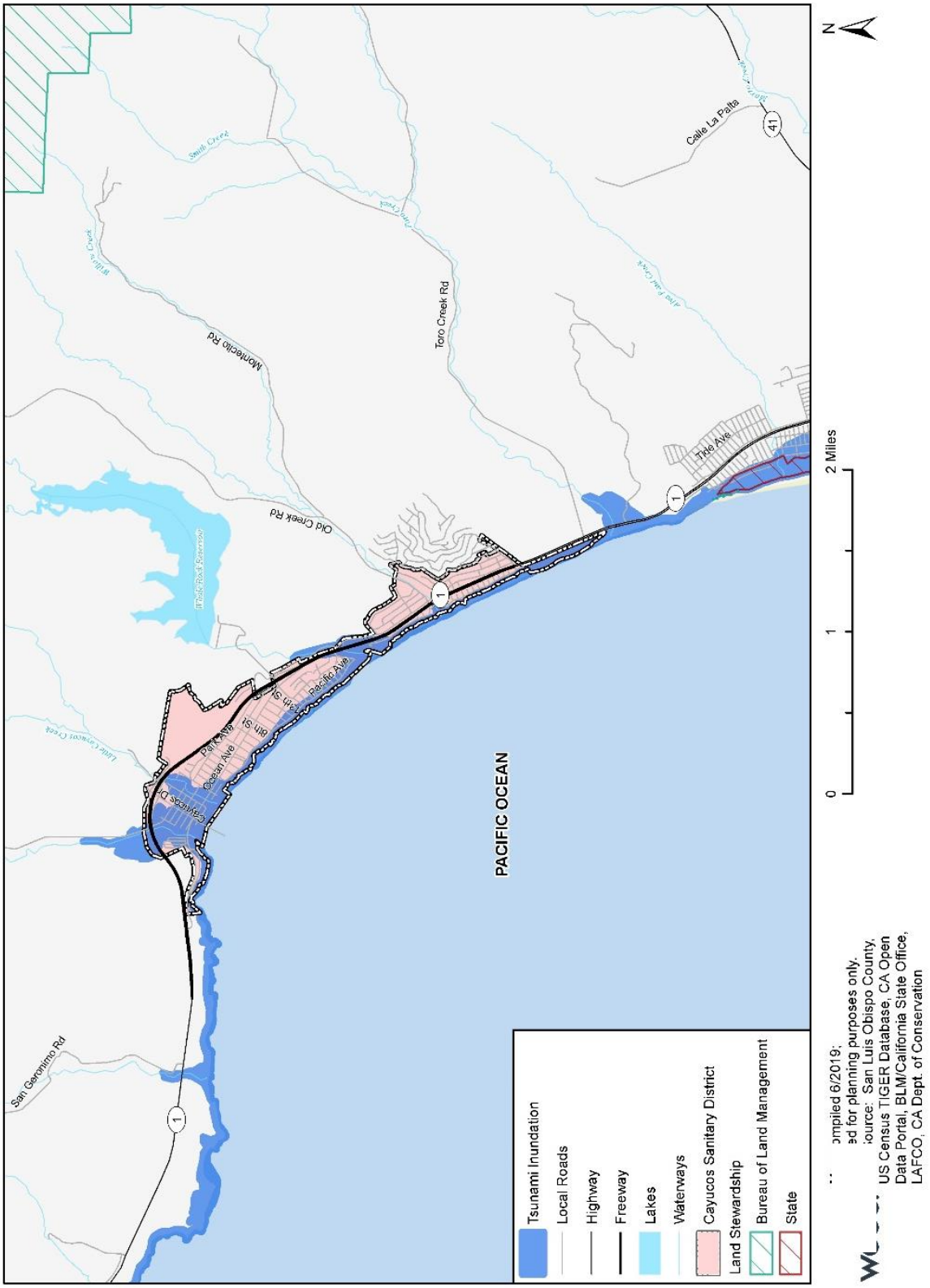
Tsunamis can be generated by offshore seismic activity and generate strong surges with the potential to damage and inundate coastal areas. Tsunamis generally affect coastal communities and low-lying waterways in the vicinity of the coast. Cayucos varies from narrow sandy beaches backed by undeveloped 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

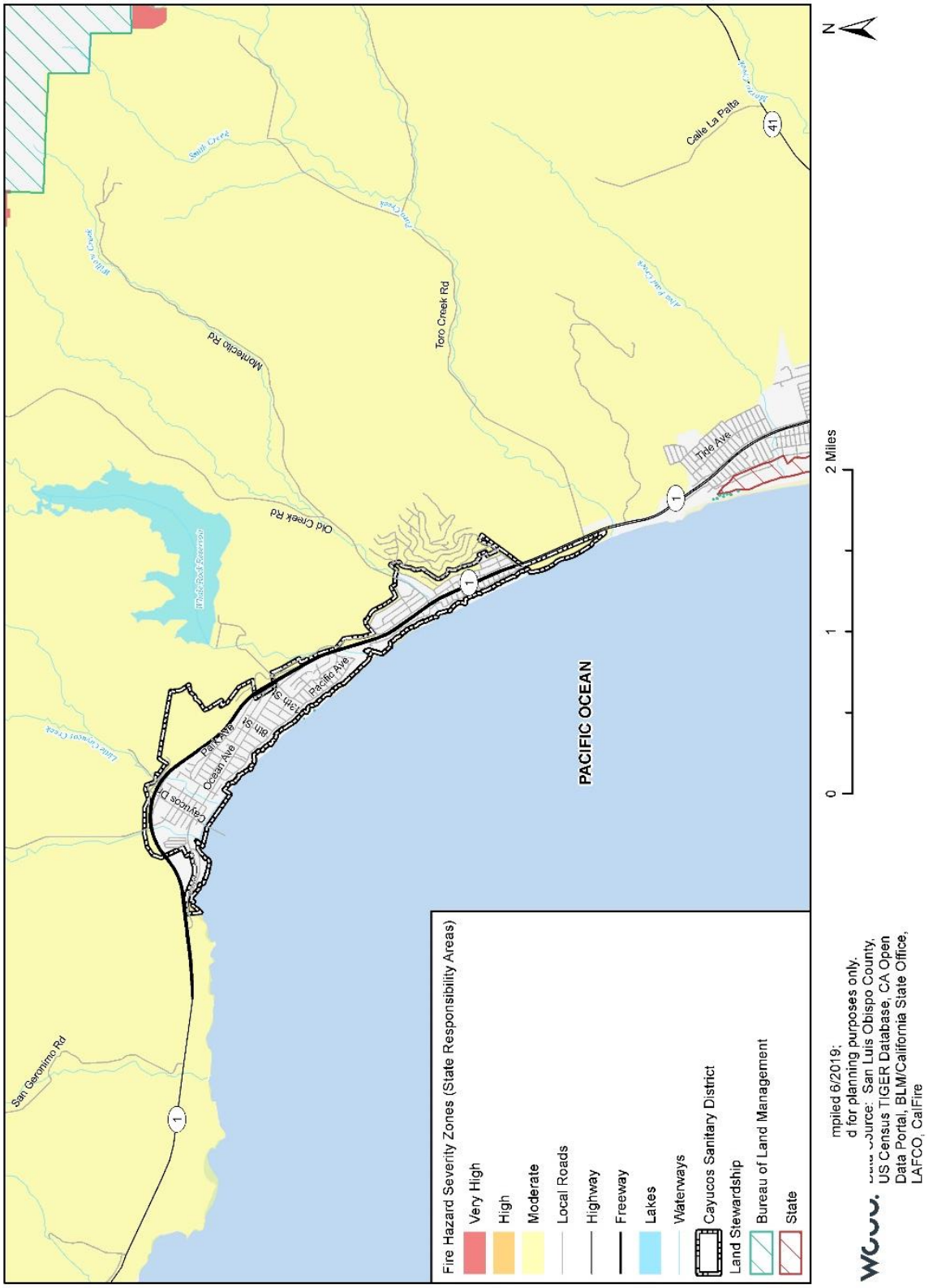
The FEMA Fire Hazard Severity Zones in Cayucos are moderate, and no properties exist within high or very high severity zones. The District is at risk of potential wildfire originating in the hills to the east, where high and very high severity zones occur. There are approximately 172 parcels located 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	No	County
Zoning ordinance	No	County
Subdivision ordinance	No	County
Growth management ordinance	No	County
Floodplain ordinance	No	County
Other special purpose ordinance (stormwater, water conservation, wildfire)	No	County
Building code	No	County
Fire department ISO rating	No	County
Erosion or sediment control program	No	County
Stormwater management program	No	County
Site plan review requirements	Yes	Cayucos Sanitary District
Capital improvements plan	Yes	Cayucos Sanitary District
Economic development plan	No	County

Regulatory Tool	Yes/No	Comments
Local emergency operations plan	No	County
Other special plans	No	County
Flood Insurance Study or other engineering study for streams	No	County
Elevation certificates (for floodplain development)	No	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	District Manager
Personnel skilled in GIS	No	
Full time building official	No	
Floodplain manager	No	
Emergency manager	No	
Grant writer	No	
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)	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 Cayucos Sanitary District CSD Fiscal Mitigation Capabilities 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	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Incur debt through general obligation bonds	Yes

Financial Resources	Accessible/Eligible to Use (Yes/No)
Incur debt through special tax bonds	Yes
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

Based on San Luis Obispo County protocols.

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. PENDING.

Table Q.16 Cayucos Sanitary District's Mitigation Action Plan - Pending

ID	Hazard(s) Mitigated	Description/Background/Benefits	Lead Agency and Partners	Cost Estimate	Potential Funding	Priority	Timeline	Status/ Implementation Notes

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. 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.

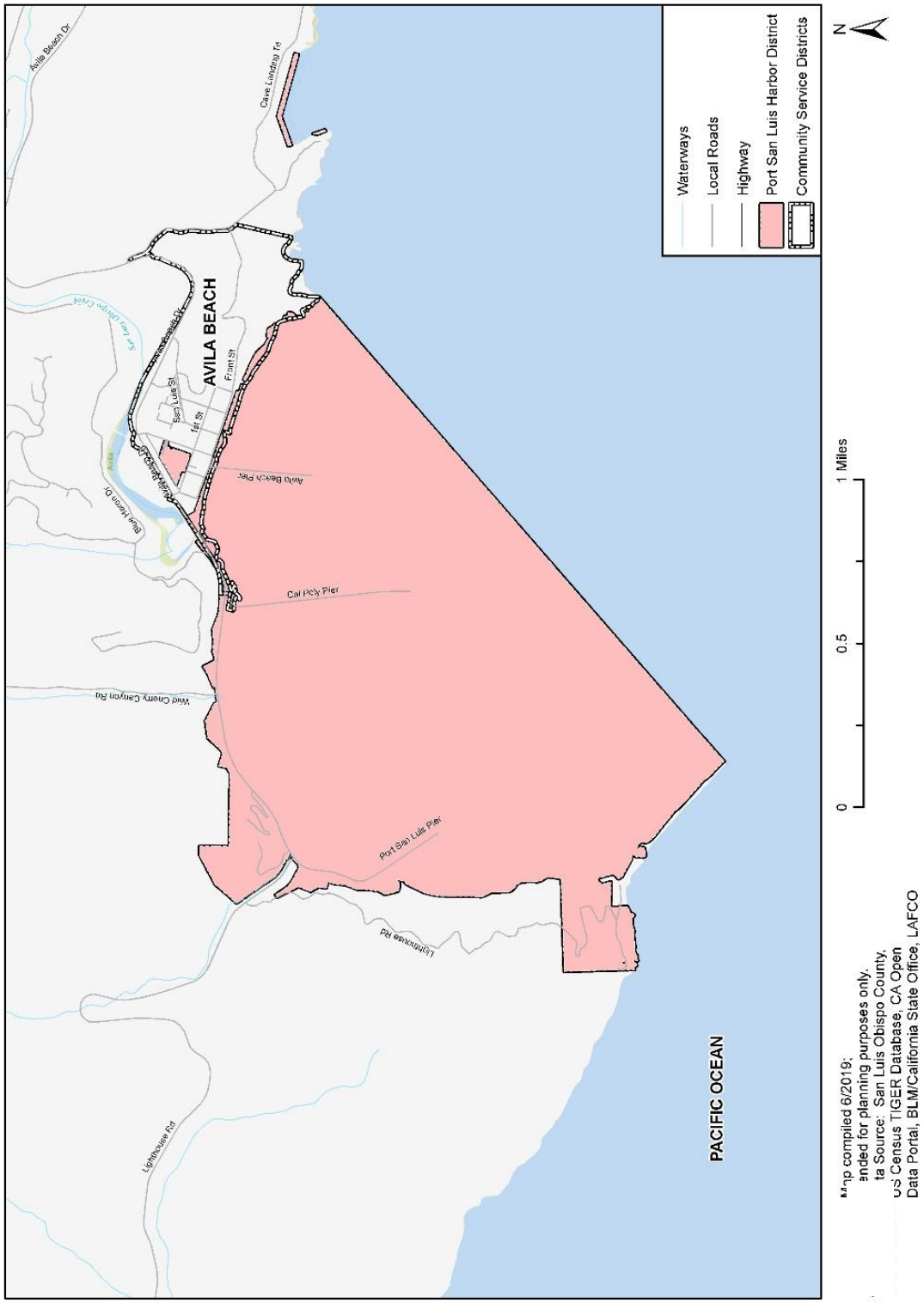
Table R. 1 Port San Luis Harbor District Hazard Mitigation Plan Planning Team

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



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.2. 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

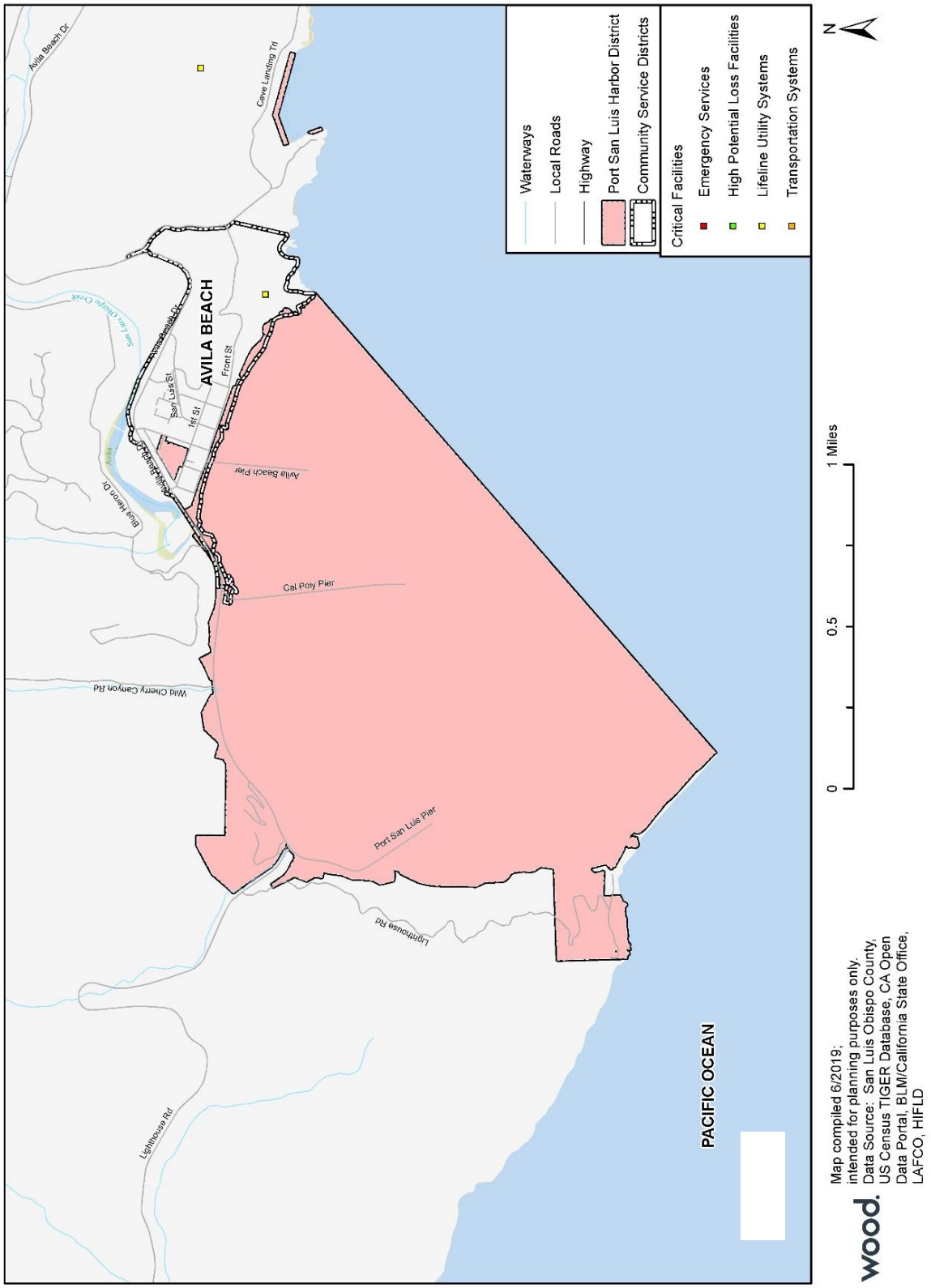
Critical Facilities and Infrastructure

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. 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. Adverse weather hazards pose a **Medium Significance** hazard, per the District's local planning team.

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 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 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

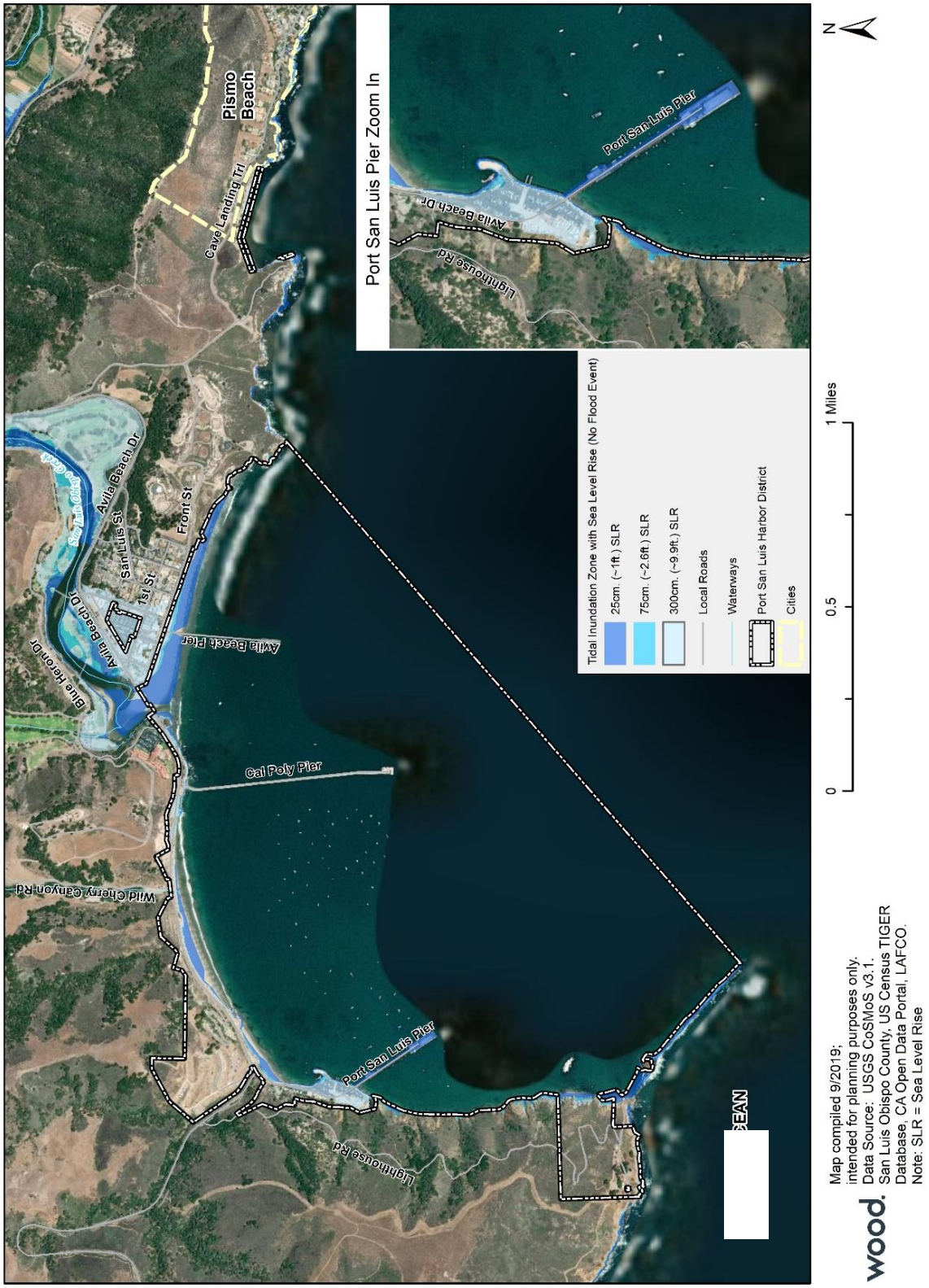
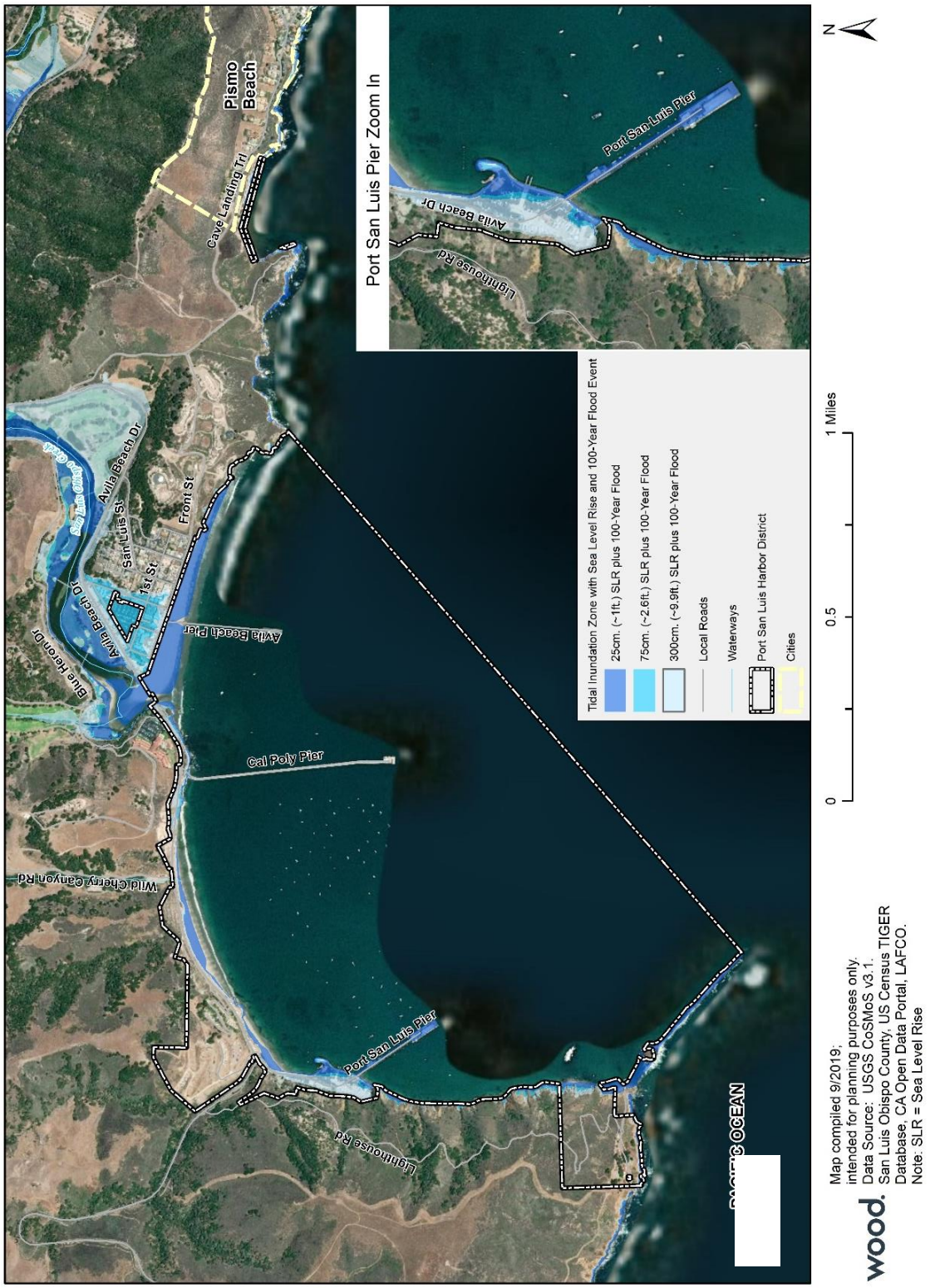


Figure R.4 Port San Luis Sea Level Rise Scenario Analysis: Tidal Inundation and 1% Annual Chance Flood



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.

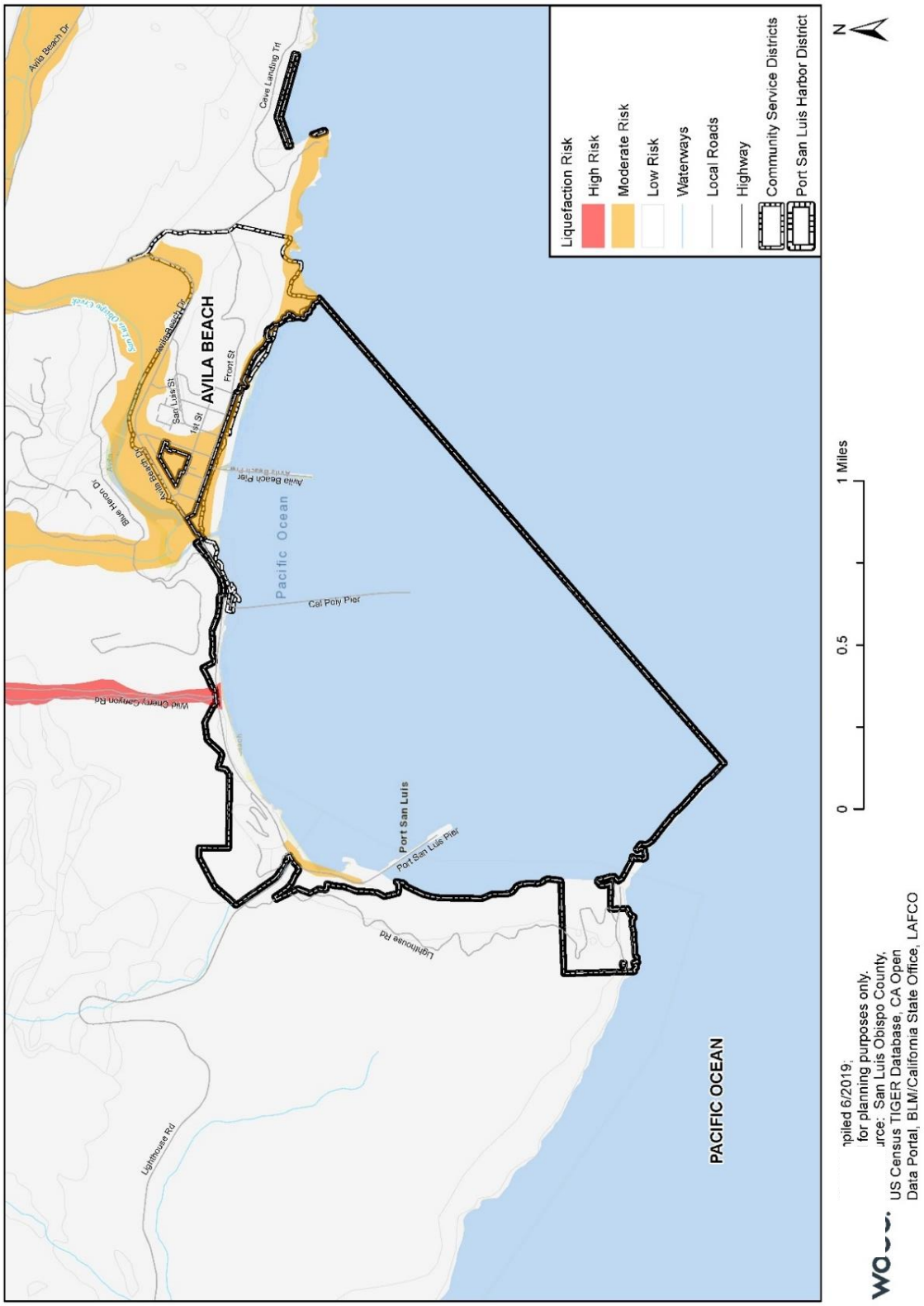
Liquefaction, the result of ground shaking causing fine grained, saturated soils to liquefy and act as a fluid, poses a risk to the District as well. Figure R. 5 depicts the areas of the District at risk of high, moderate, or low liquefaction, while Table R. 8 summarizes the parcels found to overlap 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



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.

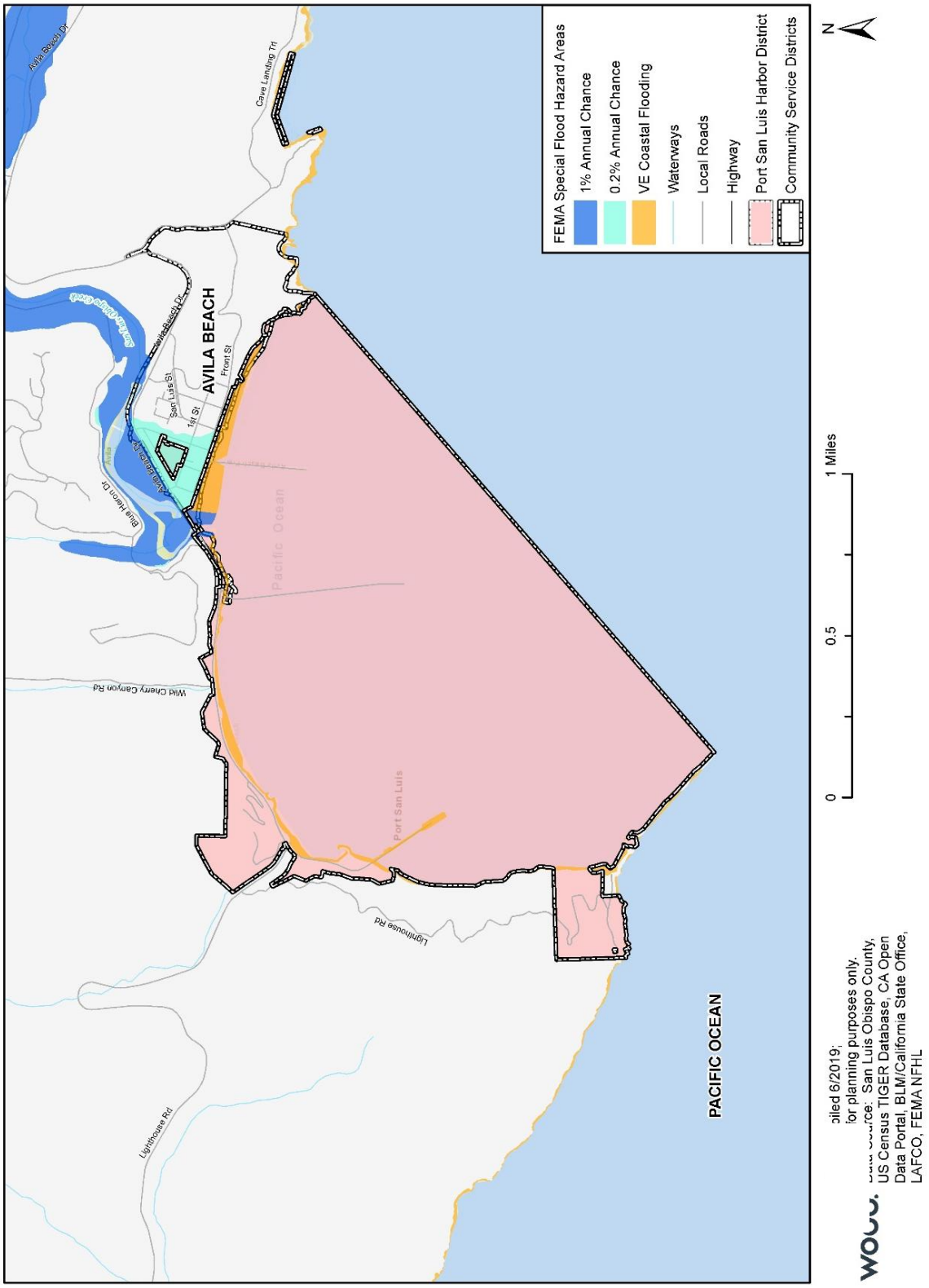
Limitations: This analysis may include structures in the floodplains that are elevated at or above the level of the base-flood elevation, which will likely mitigate flood damage.

The Harbor District in 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



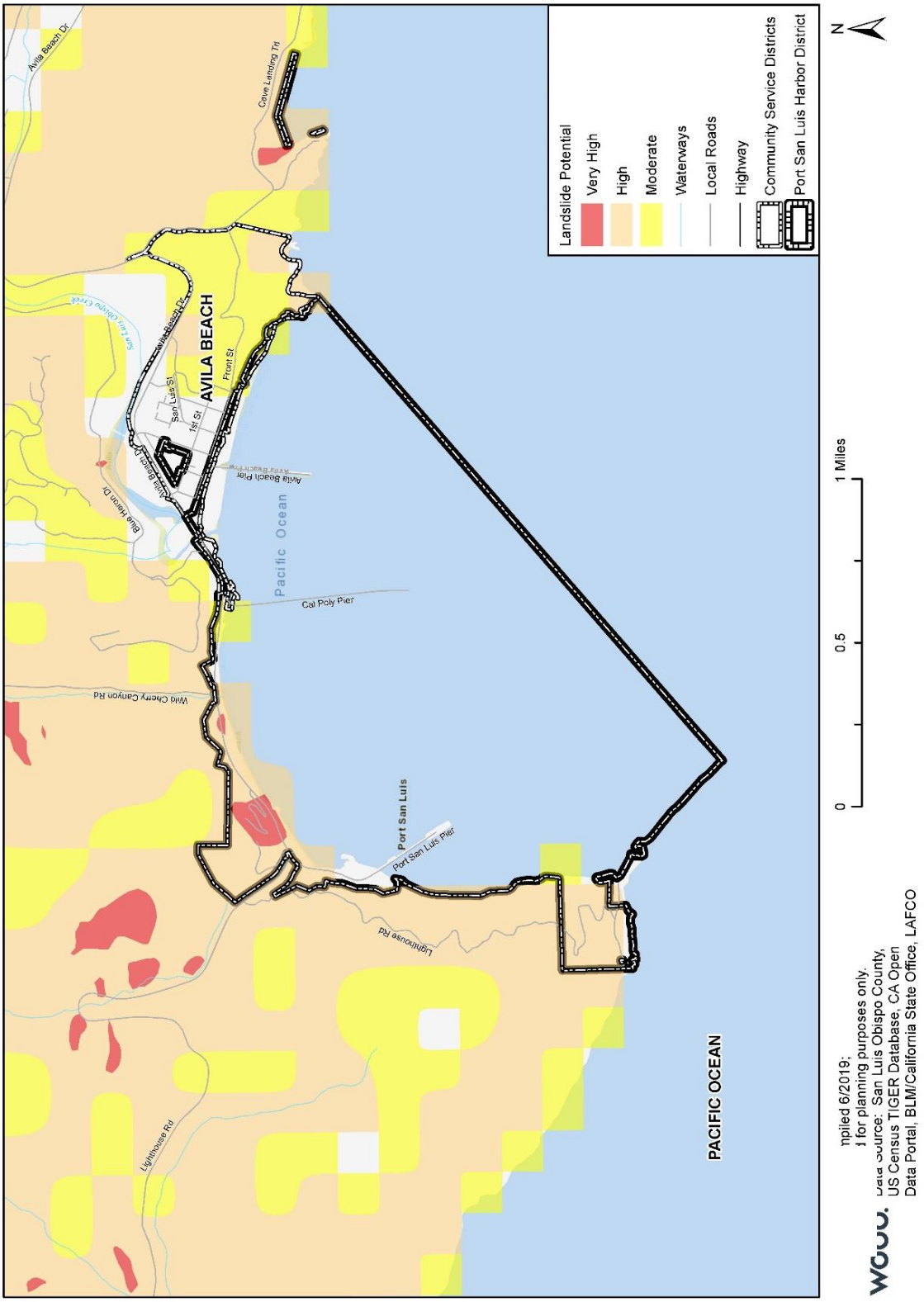
Landslides and Debris Flow

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.

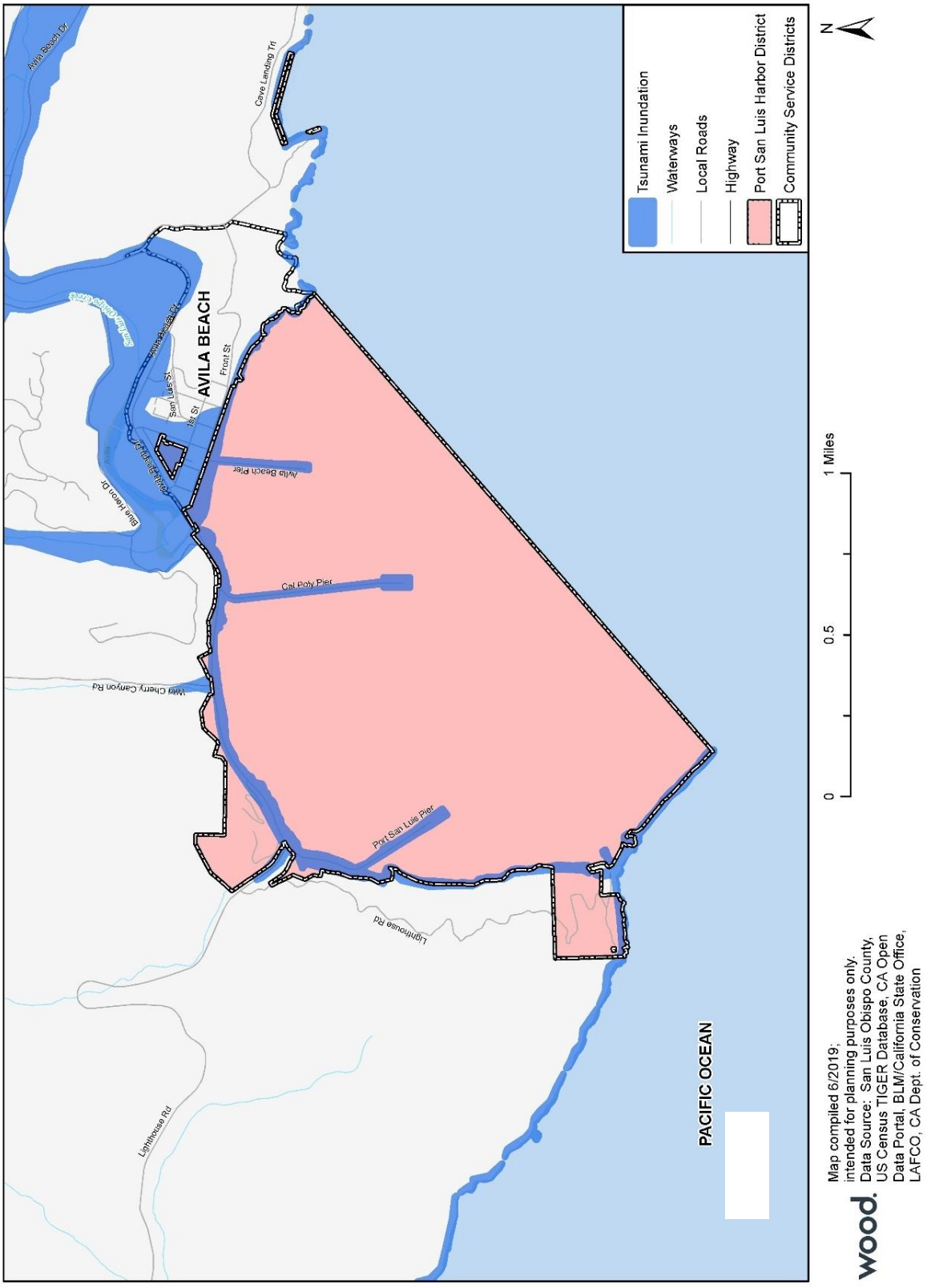
Figure R. 8 below displays the tsunami inundation areas affecting the District and nearby community of Avila Beach, while Table R. 10 summarizes the 10 ten/utilities/exempt parcels found in these inundation extents, based on GIS parcel analysis. Overall, the local planning team rated tsunami and seiche 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



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).

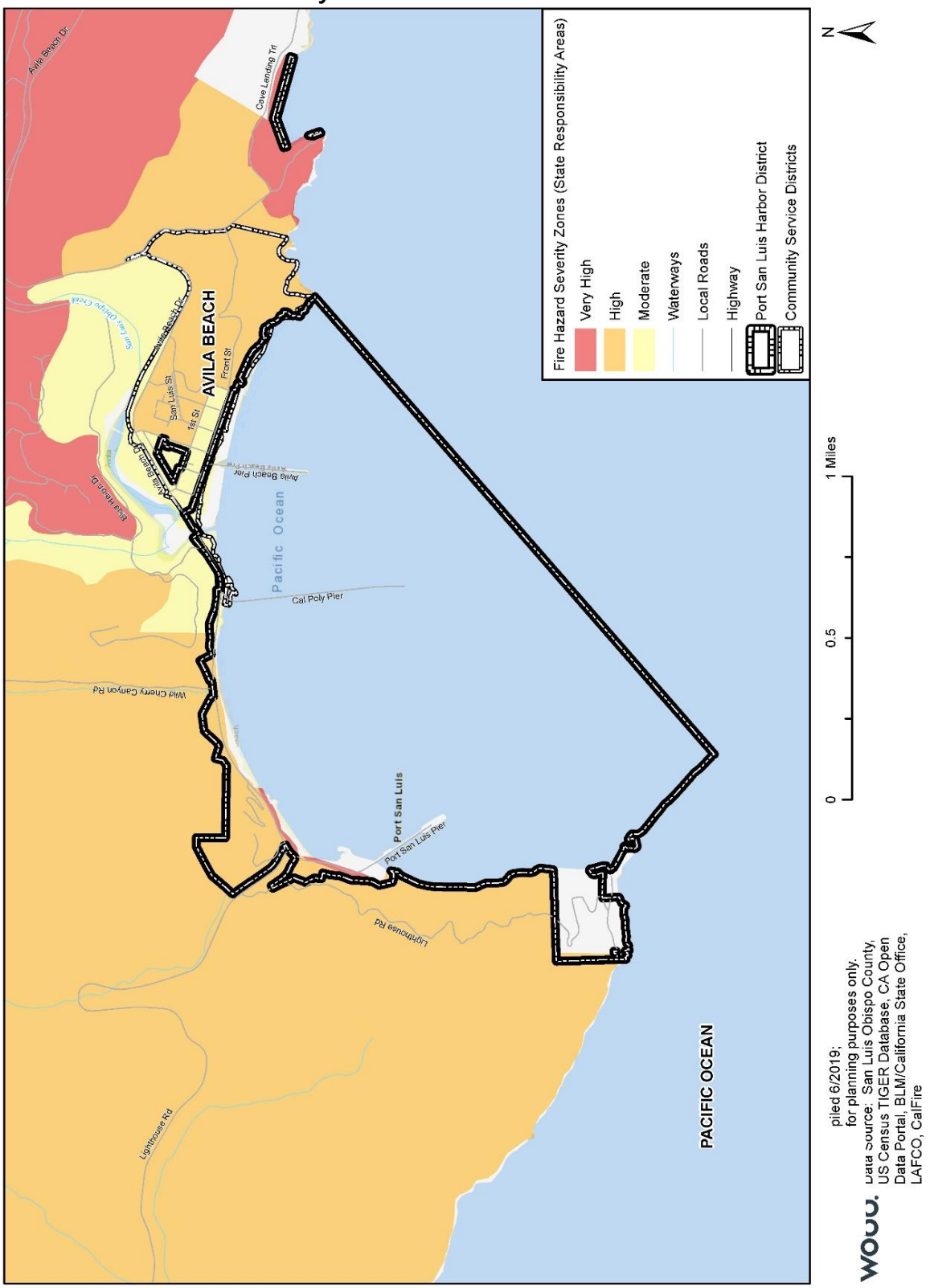
Figure R. 9 Wildfire Hazard Severity Zones in and Near the Port San Luis Harbor District below depicts the wildfire hazard zones within State Responsibility Areas in and near the District. Based on parcel analysis performed in GIS, it was found that a total of 11 properties overlap with either moderate 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 CalOES Warning Center does not specifically report any hazardous materials incidents within the District boundaries from 1994 through October of 2018. CalOES 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 Port San Luis Harbor District Regulatory Mitigation Capabilities 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 Port San Luis Harbor District Administrative/Technical Mitigation Capabilities 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

Personnel Resources	Yes/No	Department/Position
Grant writer	Yes	Harbor Manager & Facilities Dept.
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 Port San Luis Harbor District Fiscal Mitigation Capabilities**Error! Reference source not found.** 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 CalOES. 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

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.sdrma.org

Report Date: 07/10/2019

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**						

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Report Date: 07/10/2019
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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 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 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.5 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.6 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

Personnel Resources	Yes/No	Department/Position
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. 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.8 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
								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) The Oceano Drainage Improvement Project (Hwy 1 at 13th Street) is funded by various state and federal grants.
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	Flood Control and Water	$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
		agreements to get water from where it is to where it is needed to mitigate water shortages and drought impacts	Conservation District					

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 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.

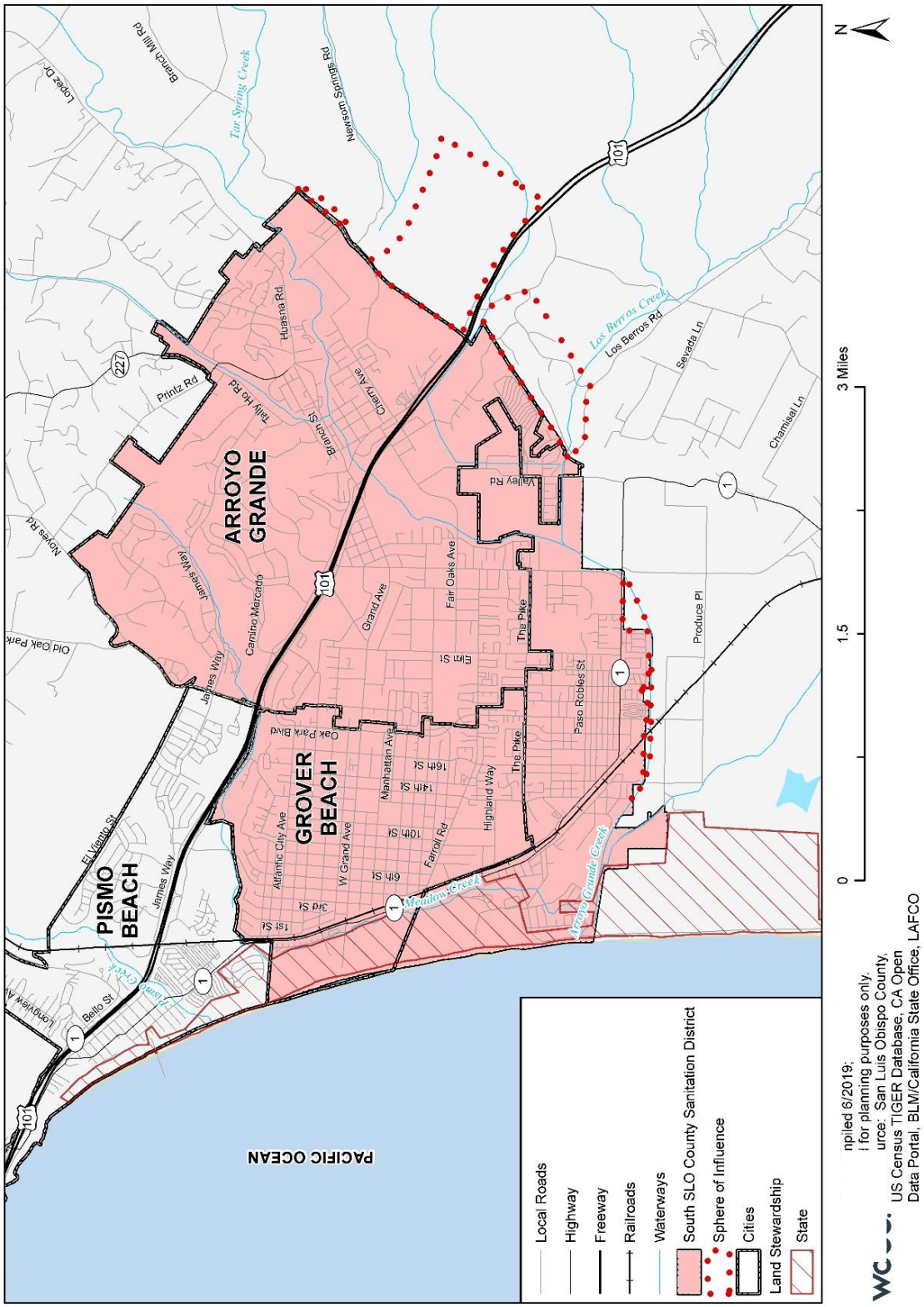
Table T.1 South San Luis Obispo County Sanitation District Hazard Mitigation Plan Planning Team

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



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 South SLO County Sanitation District Hazard Risk Summary 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 Property Exposure Values for the Sanitation District by Parcel Type 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 Faculties 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

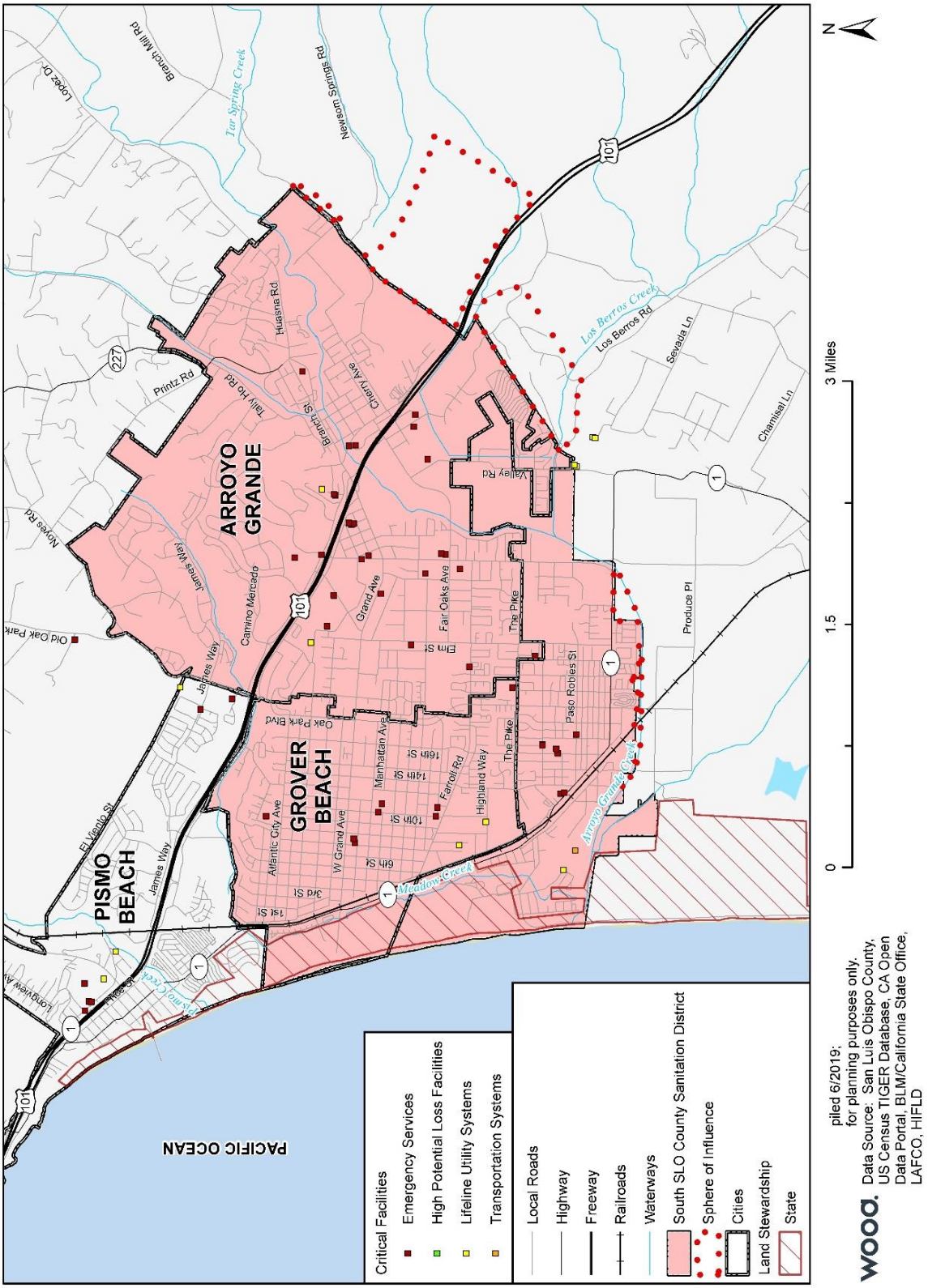
Source: San Luis Obispo County Planning and Building; LAFCO; HIFLD

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



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 Summary of Sanitation District's Critical Facilities and Table T.6.

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 Summary of Sanitation District's Critical Facilities 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**

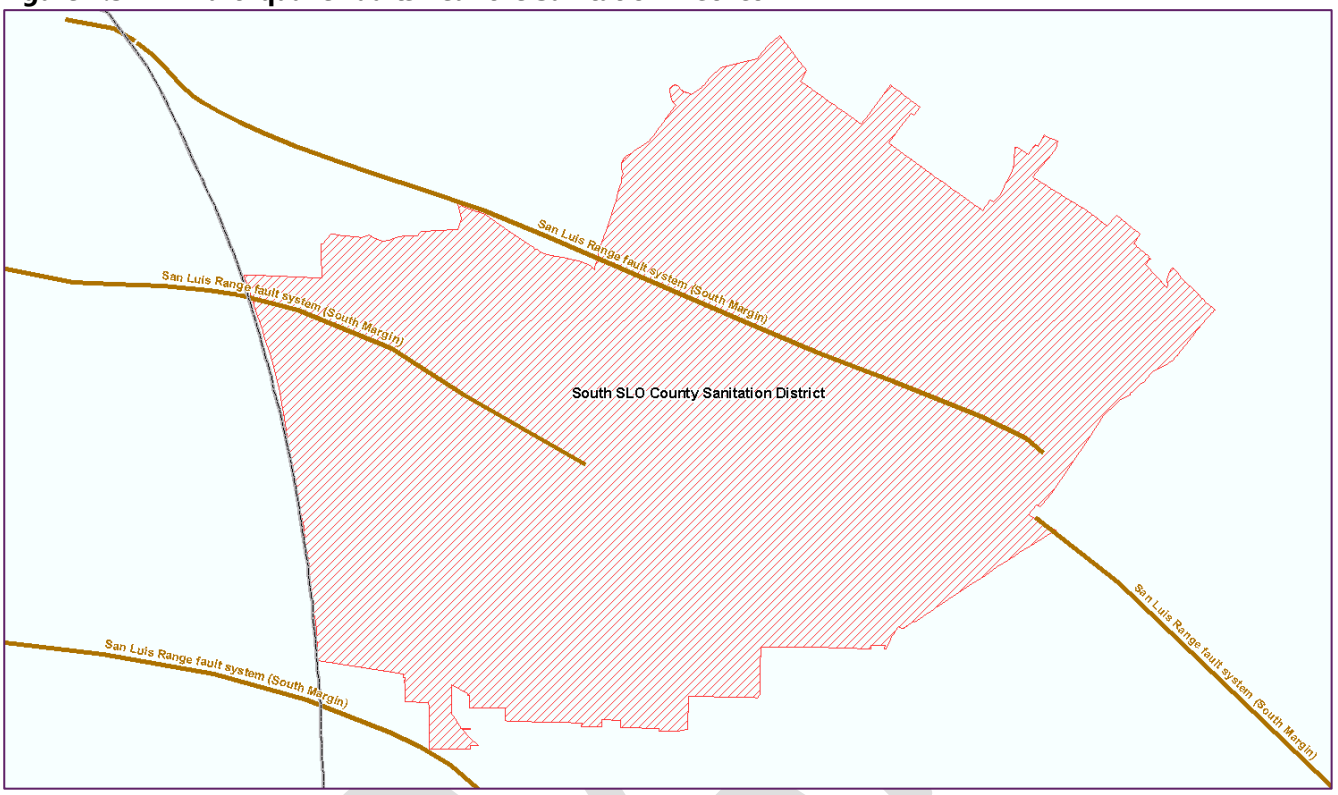
Source: San Luis Obispo County Planning and Building Dept., HIFLD, Wood Plc Analysis

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

Critical Facility Type	Facility Total
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

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 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 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 emcompases 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

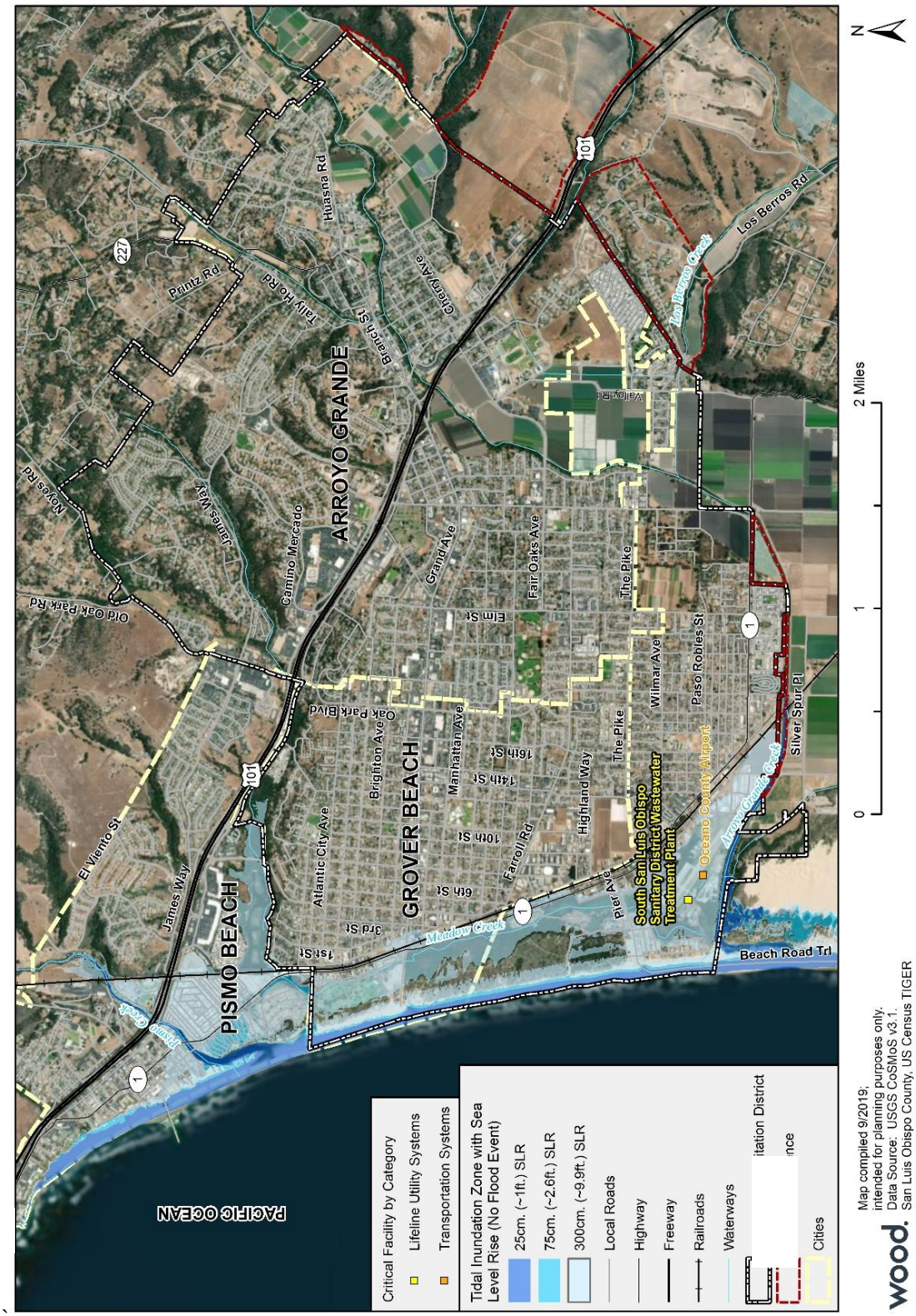
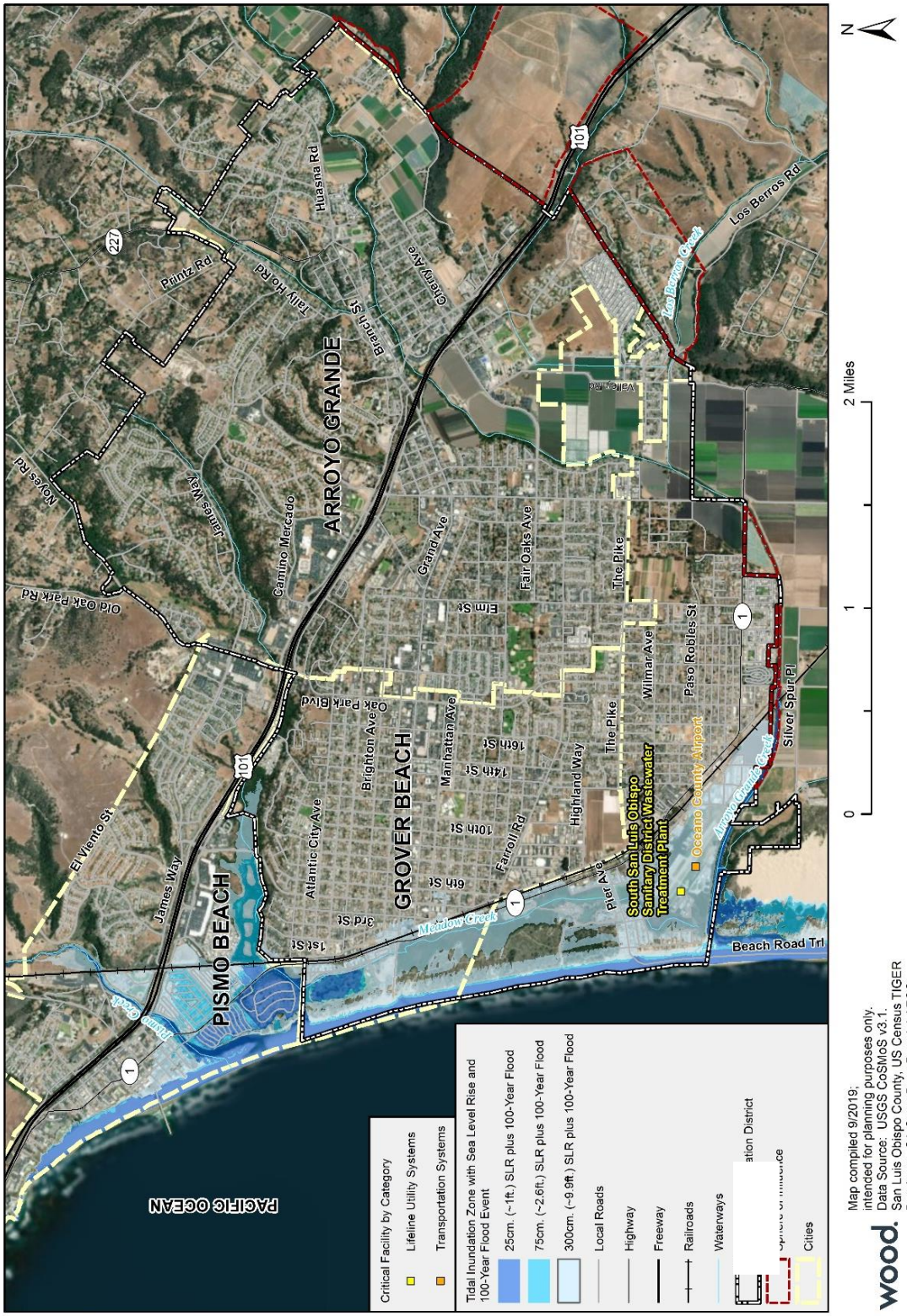


Figure T.5 South SLO Sea Level Rise Scenario Analysis: Tidal Inundation and 1% Annual Chance Flood



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 conversation, 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 CalOES; 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.5	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

1. Wastewater Treatment Plant Map
2. Process Flow Diagram
3. Trunk Sewer Atlas Cover Page w/ District Boundaries